Automation Command Reference Manual

for

WaveSurfer Oscilloscopes

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Introduction

This manual provides a comprehensive reference of all the commands available to a controlling application when using WaveSurfer oscilloscopes. Automation enables the controlling application to run on the instrument itself.

PLEASE NOTE THE FOLLOWING:

- Available commands include ones for purchased options you may or may not have on your oscilloscope. For more information, contact your local LeCroy sales office for more information about options available for your instrument.

- While we encourage the use of our code examples provided in our manuals, cutting and pasting code samples directly from this .pdf manual into scripts **cause syntax errors** (typically illegal ASCII quotation characters). Carefully review code sample formatting during reuse.

The information in this manual is split into **Control** and **Processor** sections, each with their own table of contents.

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LECROY.XSTREAMDSO

app

This is the root of the automation hierarchy, all other nodes are accessed from this point.

AutoSetup	Action
ClearSweeps	Action
Exit	Action
FirmwareVersion	String
Height	Property
HideClock	Bool
InstrumentID	String
InstrumentModel	String
Left	Property
Maximize	Action
Minimize	Action
Quit()	Method
ResetPreferences	Action
Restore	Action
SetToDefaultSetup	Action
Shutdown	Action
Sleep([in] double timeoutMilliseconds)	Method
Top	Property
TouchScreenEnable	Bool
WaitUntilIdle([in] double timeoutSeconds)	Method
Width	Property
Windowed	Action
WindowState	Property

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Popup a dialog containing the instrument model
MsgBox "Model is: " & app.InstrumentModel
```

AutoSetup

Action

Description

Starts an AutoSetup operation. When input channels are visible, AutoSetup operates only on those visible channels. If no channels are visible, all channels are affected by AutoSetup. With more than one channel visible, the first visible channel in numerical order, that has a detectable signal applied to it, is automatically set up for edge triggering.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Start an Auto-Setup process.
app.AutoSetup
```

ClearSweeps
Action

Description

Clears all accumulated sweeps for all subsystems. These include Channel Pre-Processing, Math, Measure, and Display Persistence. Note that subsystem-specific clear sweeps controls are also available. For the details please refer to the ClearSweeps control for each subsystem.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Clear all accumulated sweeps for all subsystems.
app.ClearSweeps
```

Exit
Action

Description

Equivalent to app.Quit() method.

FirmwareVersion
String

Range   Any number of characters

Description

Queries the firmware version of the instrument in the form - "1.0.0 (build 12345)"

Example
```
' Microsoft Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Query the firmware version number of the instrument.
MsgBox "Firmware Version is: " + app.FirmwareVersion
```

Height
Property

Description

Sets/Queries the height in pixels of the instrument display on the PC screen.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the height of the instrument window to 400 pixels.
app.Height = 400
```

HideClock
Bool

Description

Hides/Shows the clock that resides in the lower-right corner of the display of the instrument.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Hide the clock for 3 seconds.
app.HideClock = True
app.Sleep(3000)
app.HideClock = False
```

InstrumentID
String

Range   Any number of characters

Description

Reads the complete ID of the instrument in the format: "LECROY,WM8500,WM000001,0.0.0",
which includes the maker, the instrument model number, the serial number, and the version number.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Present the ID of the instrument.
MsgBox app.InstrumentID
```

InstrumentModel
String

Range   Any number of characters

Description

Queries the model number of the instrument.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Present the model number of the instrument.
MsgBox app.InstrumentModel
```

Left
Property

Description

Sets/Queries the position in pixels of the left edge of the instrument display on the PC screen. The
position is measured from the left edge of the screen to the left edge of the instrument window.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")
' Set the position of the left edge of the instrument window to 100 pixels.
app.Left = 100
```

Maximize
Action

Description

Maximize the instrument window to fill the underlying desktop.
Equivalent to app.WindowState = 1

Minimize

Action

Description

Minimizes the instrument window to reveal the underlying desktop. It will display a small window in the bottom right corner of the display, which when clicked will restore the window to full-screen mode. To programmatically restore the window refer to the app.WindowState control.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Minimize the instrument display.
app.Minimize
```

Quit()

Method

Description

Closes the instrument application. The instrument will prompt the user with an 'Are you sure?' dialog before closing down. Note that until the user responds to the dialog, control via Automation will be blocked.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Quit the instrument application with a confirmation prompt.
app.Quit
```

ResetPreferences

Action

Description

Resets all scope preferences to their default states. The set includes the current remote communications port, the color palette settings, etc. but does not include the main DSO controls such as V/Div, T/Div, etc. These main instrument controls can be reset using the SetToDefaultSetup control.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Reset all instrument preferences.
app.ResetPreferences
```

Restore

Action

Description

Restore the instrument display to its position and size before the last minimize request.

SetToDefaultSetup
Action

Description

Restores the instrument setup to its default state. Note that certain settings will not be restored to the default state. These are the user preferences, such as the current remote communications port, and the color settings, which may be reset, if required, using the ResetPreferences action.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Restore the instrument to its default state.
app.SetToDefaultSetup
```

Shutdown
Action

Description

Shuts down the instrument. It will prompt the user with an 'Are you sure?' dialog before shutting down. Note that until the user responds to the dialog, control via Automation will be blocked.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Shut down the instrument with a confirmation prompt.
app.Shutdown
```

Sleep([in] double timeoutMilliseconds)
Method

Description

Causes the main execution thread of the instrument application to sleep for the specified time period, defined in milliseconds.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

MsgBox "Sleeping for 10 seconds..."
app.Sleep(10000)
MsgBox "Sleep finished"
```

Top
Property

Description

Sets/Queries the position in pixels of the top edge of the instrument display on the PC screen. The position is measured downwards from the top of the screen to the top of the instrument window.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the position of the top edge of the instrument window to 100 pixels.
app.Top = 100
```

TouchScreenEnable

Bool

Description

Sets/Queries the state of the touch-screen enable control. This is equivalent to the front-panel Touch Screen button.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Disable touch-screen if it is enabled.
if app.TouchScreenEnable = True then
   app.TouchScreenEnable = False
End if
```

WaitUntilIdle([in] double timeoutSeconds)

Method

Description

Waits until either the application is idle or the specified timeout expires, specified in seconds. This evaluates to True if the application completes before the timeout expires, and to False if a timeout occurs.
When Trigger mode is Auto or Run, the application is never Idle. In this case the call to WaitUntilIdle returns after the next acquisition and any configured processing.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Wait with a timeout of five seconds.
app.WaitUntilIdle(5)
```

Width

Property

Description

Sets/Queries the width in pixels of the instrument display on the PC screen.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the width of the instrument window to 800 pixels.
app.Width = 800
```

Windowed

Action

Description

Places the instrument application in windowed mode (as opposed to full-screen mode). Places the application in the upper-part of the display screen with a sizable border.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the instrument display into the windowed mode.
app.Windowed
```

WindowState *Property*

Description

Sets/Queries the state of the PC window used by the instrument display.
0   windowed
1   full screen
2   minimized
Trying to set values greater than 2 or less than 0 will result in the value 0 (windowed) being set.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the instrument window state to windowed.
app.WindowState = 0
```

ACQUISITION
app.Acquisition

This group of variables controls the input channels C1, C2, C3 and C4, the timebase, the trigger, and the Aux Output.

Names of the form app.Acquisition.Channels.xxxx are aliases of simpler names which are described in this section of the manual. Examples of alias pairs are as follows -
app.Acquisition.Channels("Cx") is equivalent to app.Acquisition.Cx
app.Acquisition.Channels(1) is equivalent to app.Acquisition.C1
app.Acquisition.Channels("Cx").Out.Result is equivalent to app.Acquisition.Cx.Out.Result

Acquire([in] double timeoutSeconds, [in] long bForceTriggerOnTimeout)	Method
Calibrate	Action
CalNeeded	Integer
ClearSweeps	Action
HorOffset	Double
TriggerMode	Enum

Acquire([in] double timeoutSeconds, [in] long bForceTriggerOnTimeout) *Method*

Description

Action/Query. Takes a single acquisition. The first of the two arguments specifies a timeout; the second, which is optional, specifies whether or not to force a trigger when the timeout occurs.
Evaluates to True if a trigger occurred, or False if a timeout occurred.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")
' Start an acquisition, wait for up to 5 seconds for a trigger
' event, force a software trigger if a hardware trigger is not
' detected before the 5 second timeout expires.
triggerDetected = app.Acquisition.Acquire(5, true)
```

Calibrate

Action

Description

Initiates a full calibration of the acquisition system of the instrument.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Start a calibration.
app.Acquisition.Calibrate
```

CalNeeded

Integer

Range   From -2147483648 to 2147483647 step 1

Description

Query: Indicates whether calibration is required or not.

Based on hexadecimal bit value, it provides following information:
0x00000001: Front end calibration is required
0x00000002: Digitizers delay matching is required
0x00000004: Digitizers gain matching is required
0x00000008: Trigger level calibration is required
0xFFFFFFFF(-1): All of above calibrations are required

ClearSweeps

Action

Description

Resets any accumulated average data or persistence data for channel waveforms (C1..C4). Valid only when one or more channels have waveform averaging or persistence enabled in their pre-processing settings. Note that an average may be reset on an individual basis using app.Acquisition.Cx.ClearSweeps control.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Clear accumulated sweeps for channels C1...C4
app.Acquisition.ClearSweeps

' Clear accumulated sweeps for only C1
app.Acquisition.C1.ClearSweeps
```

HorOffset

Double

Range   From -1e-006 to 1e-006 step 4e-009

Description

same as "app.Acquisition.Horizontal.HorOffset.cvar"

TriggerMode *Enum*

Description

Sets/Queries the trigger mode, using values from the following list -
Auto, Norm, Normal, Single, Stopped.

Auto: After a timeout, if a real hardware trigger is not received, then force a trigger so there are automatically lots of updates.

Normal: Accepts triggers as rapidly as the system permits, but likewise will wait "forever" for a trigger, without updating anything.

Single: Arm the acquisition system to acquire once, and do not rearm automatically after. Once a trigger is received and the data processed, the instrument finishes in the "Stopped" state.

Stop: Finishes the current acquisition and does not re-arm.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Place the instrument in stopped mode and take one acquisition.
app.Acquisition.TriggerMode = "Stopped"
app.Acquisition.Acquire(5)
```

Values

Auto	Auto-trigger
Normal	Normal Trigger
Single	Single Trigger
Stopped	No trigger possible, Stopped

AUXOUTPUT *app.Acquisition.AuxOutput*

Controls for the Auxilliary output BNC, which can be programmed as a simple square-wave signal source, or as a pulse which is asserted when various events occur, including Trigger Enabled, Trigger Out, and Pass/Fail.

AuxInCoupling	Enum
AuxMode	Enum
CalMode	Enum
Mode	Enum

Example

```
' Microsoft Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Setup the Auxiliary output to be a squarewave with an amplitude
' of 500mV a frequency of 5kHz
app.Acquisition.AuxOutput.Mode = "Square"
app.Acquisition.AuxOutput.Amplitu
```

AuxInCoupling *Enum*

Description

Sets the input coupling for the Auxiliary input path.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the coupling of the Auxiliary socket, when used as an input, to
ground.
' In this condition, no input signal reaches the instrument.
app.Acquisition.AuxOutput.AuxInCoupling = "GND"
```

Values

DC50	DC, 50ohms coupling
GND	Grounded

AuxMode   *Enum*

Description

Configures AUX Output type in WR and WS series of scopes.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the Auxiliary output to trigger output signal.
app.Acquisition.AuxOutput.AuxMode = "TriggerOut"
```

Values

Off	No output
PassFail	Pulse on Pass fail condition
TriggerEnabled	Trigger enabled signal from trigger circuitry.
TriggerOut	Internal trigger output signal from trigger circuitry

CalMode   *Enum*

Description

Configures Cal Output type in WR and WS series of scopes.

Example
```
' Follwoing example will set CAL output to 1 KHz, 0.5V square wave.
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set cal output to Square wave
app.Acquisition.AuxOutput.CalMode = "Square"

' Set cal output amplitude to 0.5 V with 1 MOhm impedence
app.Acquisition.AuxOutput.Amplitude = "0.5"

' Set cal output frequency to 1 KHz
app.Acquisition.AuxOutput.Frequency = "1000"
```

Values

Square	Square wave

Mode *Enum*

Description

Sets/Queries the output mode of the AUX OUT connector. (Applicable to WM, SDA, DDA, WP series of scopes)

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the output of the AUX OUT connector to output
' a pulse on a pre-determined Pass-Fail decision.
app.Acquisition.AuxOutput.Mode = "PassFail"
```

Values

DCLevel	Emit a DC level
Off	Output Disabled
PassFail	Pulse-out controlled by Pass/Fail system
Square	Square-wave signal generator
TriggerEnabled	Pulse-out when trigger is enabled
TriggerOut	Pulse-out when trigger occurs

CHANNELS
app.Acquisition.Channels

This group of variables controls the acquisition channels C1, C2, C3 and C4.

Names of the form app.Acquisition.Channels.xxxx are aliases of simpler names which are described in the section of the manual which is devoted to app.Acquisition. Examples of alias pairs are as follows -
app.Acquisition.Channels("Cx") is equivalent to app.Acquisition.Cx
app.Acquisition.Channels(1) is equivalent to app.Acquisition.C1
app.Acquisition.Channels("Cx").Out.Result is equivalent to app.Acquisition.Cx.Out.Result

Example

```
Set app = CreateObject("LeCroy.XStreamDSO")

For X = 1 To 4
    app.Acquisition.Channels(X).VerScale = 0.2
Next
```

CX
app.Acquisition.Cx

This group of variables controls the input channels C1, C2, C3 and C4.

Names of the form app.Acquisition.Channels.xxxx are aliases of simpler names which are described in the section of the manual which is devoted to app.Acquisition. Examples of alias pairs are as follows -
app.Acquisition.Channels("Cx") is equivalent to app.Acquisition.Cx
app.Acquisition.Channels("Cx").Out.Result is equivalent to app.Acquisition.Cx.Out.Result

AverageSweeps	Integer
BandwidthLimit	Enum
ClearSweeps	Action
Coupling	Enum
Deskew	Double

EnhanceResType	Enum
FindScale	Action
InterpolateType	Enum
Invert	Bool
LabelsPosition	String
LabelsText	String
Persisted	Bool
PersistenceSaturation	Integer
PersistenceTime	Enum
ProbeAttenuation	Double
ProbeName	String
ShowLastTrace	Bool
UseGrid	String
VerOffset	Double
VerScale	DoubleLockstep
VerScaleVariable	Bool
View	Bool
ViewDecode	Bool
ViewLabels	Bool

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Setup Channel C1
app.Acquisition.C1.VerScale = 0.5
app.Acquisition.C1.VerOffset = 0.0
app.Acquisition.C1.Coupling = "DC50"

' Setup Channel C2
app.Acquisition.C2.VerScale = 0.1
```

AverageSweeps   *Integer*

Range   From 1 to 1000000 step 1

Description

Sets/Queries the number of averaging sweeps for input channel Cx. This is distinct from the math function app.Math.Fx. If the number of sweeps is 1 (the default value), the data will not be averaged.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the number of sweeps for channel C1 to 25.
app.Acquisition.C1.AverageSweeps = 25
```

BandwidthLimit   *Enum*

Description

Sets/Queries the bandwidth limit for input channel Cx, in Hz. Note that this control is an enum, and therefore requires a string value, and not a scalar value.
Note that bandwidth limit choices vary between DSO models.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the bandwidth limit for C2 to 20 MHz.
app.Acquisition.C2.BandwidthLimit = "20MHz"
```

Values

200MHz	
20MHz	
Full	

ClearSweeps   *Action*

Description

Clears all accumulated average data and persistence data for this channel. See app.Acquisition.ClearSweeps for a control that clears accumulated data for channels 1..4, or app.ClearSweeps for a control that clears accumulated data for all subsystems (including Math/Measure/Display, etc.)

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Reset channel C1
app.Acquisition.C1.ClearSweeps

' Reset channels C1..C4
app.Acquisition.ClearSweeps
```

Coupling

Enum

Description

Sets/Queries the input coupling of input channel Cx.
Note that coupling choices vary between instrument models. WavePro 7000 instruments for example support AC1M and DC1M modes in addition to DC50 and GND choices.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Inspect the input coupling for channel C2
CoupleC2 = app.Acquisition.C2.Coupling

' Set the coupling to DC, 50 ohms
app.Acquisition.C2.Coupling = "DC50"
```

Values

AC1M	
DC1M	
DC50	
Gnd	

Deskew

Double

Range From -1.8e-006 to 1.8e-006 step 1e-012

Description

Sets/Queries the deskew of input channel Cx to produce a required alignment with another trace.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")
```

EnhanceResType

Enum

Description

Enhance resolution setting (Noise Filter). Set to 'None' to turn off the filter.

Values

0.5bits	
1.5bits	
1bits	
2.5bits	
2bits	
3bits	
None	

FindScale

Action

Description

Starts FindScale operation for this chanel. This operation will adjust channel's v/div and offset control such that the signal is visible on the screen with in +/- 3 div.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

'Find vertical scale of channel 1
app.Acquisition.C1.FindScale
```

InterpolateType

Enum

Description

Sets/Queries the type of interpolation used for input channel Cx. Note that Sinx/x interpolation increases the size of the trace by a factor of 10, beware when using this option with long records.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

'  Set the interpolation for channel C3 to (sin x)/x
app.Acquisition.C3.InterpolateType = "Sinxx"
```

Values

Linear	Linear interpolation
Sinxx	Sinx/x interpolation

Invert

Bool

Description

Sets/Queries whether input channel Cx is inverted.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set channel C2 to be inverted.
app.Acquisition.C2.Invert = True
```

LabelsPosition

String

Range   Any number of characters

Description

Sets / Queries the horizontal position of the label attached to the acquisition trace Cx. The unit of measurement is the unit of the horizontal scale. The measurement is made from the trigger point. Note that this control is a string, not a numeric value. This allows multiple labels to be positioned, as shown in the example below.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Add a couple of labels to trace C1, one at 0ns, and one at 55ns
app.SetToDefaultSetup
app.Acquisition.C1.ViewLabels = True
app.Acquisition.C1.LabelsPosition = "0.0,55e-9"
app.Acquisition.C1.LabelsText = "Hello,World"
```

LabelsText

String

Range   Any number of characters

Persisted

Bool

Description

Sets/Queries the persisted state of the waveform. If the Display.LockPersistence control is set to 'AllLocked' then the persisted state of all displayed waveforms will be the same. If the Display.LockPersistence control is set to 'PerTrace' then the persisted state of each waveform may be independently controlled.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set persistence on for trace C1
app.Display.LockPersistence = "PerTrace"
app.Acquisition.C1.Persisted = True
```

PersistenceSaturation

Integer

Range   From 0 to 100 step 1

Description

Sets/Queries the saturation threshold for persisted waveforms.
All information at this level or above will be recorded with the same color or intensity.
See the general description above for a discussion of the locked and unlocked persistence modes.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the persistence saturation level for trace C1.
app.Acquisition.C1.PersistenceSaturation = 60
```

PersistenceTime

Enum

Description

Sets/Queries the state of the Persistence Time control. Controls the persistence decay time for this trace. See the general description above for a discussion of the locked and unlocked persistence modes.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the persistence time for the persistence trace of channel C1 to 10
seconds.
app.Acquisition.C1.PersistenceTime = "10s"
```

Values

0.5s	
10s	
1s	
20s	
2s	
5s	
Infinite	

ProbeAttenuation

Double

Range From 1e-006 to 10000 step 1e-006

Description

Sets/Queries the probe attenuation. The probe attenuation is the factor by which the signal is made smaller, for example, 10 means that the probe divides by 10, and is referred to as a ÷10 probe. Note that certain passive probes may be marked as 'x10', even though they actually divide the input signal by a factor of 10.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

'  Set the probe attenuation for channel C1 to 100
app.Acquisition.C1.ProbeAttenuation = 100
```

ProbeName

String

Range Any number of characters

Description

Queries the name of connected probe.

ShowLastTrace

Bool

Description

Sets/Queries the state of the Show Last Trace control. If True then when this trace is displayed in persistence mode the last acquired waveform will be superimposed on the accumulating persistence map.

See the general description above for a discussion of the locked and unlocked persistence modes.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Makes the last acquired trace invisible for the
' persistence trace of channel C1.
app.Acquisition.C1.ShowLastTrace = False
```

UseGrid

String

Range   Any number of characters

Description

Sets/Queries the graticule on which the trace is displayed. Typical values include:

YT1..YT8:   one of the YT graticules used in Single, Dual, Quad, and Octal display modes.
NotOnGrid: not displayed on any graticule.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Switch to dual grid mode, place C1 on the lower graticule
' and C2 on the upper graticule.
app.Display.GridMode = "Dual"
app.Acquisition.C1.UseGrid = "YT2"
app.Acquisition.C2.UseGrid = "YT1"
```

VerOffset

Double

Range   From -1 to 1 step 0.0005

Description

Sets/Queries the vertical offset of input channel Cx. The setting resolution in volts lies in the range 0.25% to 0.5%, depending on the numerical value.

Note that the available offset range is dependent upon the current V/Div setting, and also the instrument model.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the vertical offset for C1 to 10 mV.
app.Acquisition.C1.VerOffset = 0.01
```

VerScale
DoubleLockstep

Range   From 0.002 to 10 step 0.0005, locked to 1 2 5, fine grain allowed=true, on=false

Description

Sets/Queries the vertical scale (in Volts/Division) of an input channel. When variable gain (VerScaleVariable control) is disabled, the control will clip values to a 1..2..5 sequence. When variable gain is enabled, the setting resolution lies in the range 1% to 2%, depending upon the numerical value.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set C1 to a scale of 250mV/Div in Variable Scale mode
app.Acquisition.C1.VerScaleVariable = True
app.Acquisition.C1.VerScale = 0.25
```

VerScaleVariable
Bool

Description

Sets/Queries the state of the variable vertical scale control for channel Cx. When the variable scale is enabled, the setting resolution lies in the range 1% to 2%, depending on the numerical value. If a knowledge of the exact value is important, the value should be read back after a setting has been made.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the variable vertical scale for C1 to On.
app.Acquisition.C1.VerScaleVariable = True
```

View
Bool

Description

Sets/Queries the channel's 'Viewed' state. When True the channel waveform is displayed on one of the display graticules. Note that even when a channel is not visible it may be used as a source for Math, Measure, etc.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Make channel C3 visible.
app.Acquisition.C3.View = True
```

ViewDecode
Bool

ViewLabels *Bool*

Description

Sets/Queries whether the user-defined labels for the trace are visible.
See Also: LabelsPosition and LabelsText controls.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Show the user-defined label for trace C2.
app.Acquisition.C2.ViewLabels = True
```

RESULT

app.Acquisition.Cx.Out.Result

Properties of the type xxxx.Out.Result.yyyy are those of the last completed acquisition. They are not affected if other controls are changed after that acquisition was completed. This distinction between "Out.Result" properties and other controls is most important when the trigger mode is Single or Stopped. You should treat "Out.Result" properties as read-only.

Several of these properties mention the 'frame', this is the term used to describe the visible portion of the trace, which is generally smaller than the acquired waveform. The frame could be used for example to display a 500pt. window onto a 1Mpt. Trace, or vertically it could be used to show the 'center' 10mV of a 100mV pk trace.

For a full overview of the properties of waveform (or other) results, please see Chapter 1.

HORIZONTAL

app.Acquisition.Horizontal

This group of variables controls the timebase, the sampling, and the trigger delay.

AcquiredSegments	Integer
AcquisitionDuration	Double
ExtClockFrequency	Double
ExtCoupling	Enum
HorOffset	Double
HorOffsetOrigin	Double
HorScale	DoubleLockstep
HorUnits	String
MaxSamples	DoubleLockstep
NumPoints	Integer
NumSegments	Integer
ReferenceClock	Enum
SampleClock	Enum
SampleMode	Enum
SamplingRate	Double
SequenceTimeout	Double
SequenceTimeoutEnable	Bool
SetExtClockFrequency	Bool
Source	Enum

TimePerPoint	Double
UseLegacyDefault	Enum

AcquiredSegments

Integer

Range   From 0 to 100000 step 1

AcquisitionDuration

Double

Range   From 1e-012 to 1e+012 step 1e-015

Description

Queries the duration of the last completed acquisition. The result may depend on the spacing of the triggers in sequence mode, and it may depend on the number of averages when a channel is in averaging mode.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Obtain the duration of the last completed acquistion.
AcqDuration = app.Acquisition.Horizontal.AcquisitionDuration
MsgBox AcqDuration
```

ExtClockFrequency

Double

Range   From 0.001 to 100000 step 0.001

ExtCoupling

Enum

Description

Specific to WR and WS series of the scope.
Sets/Queries coupling of external trigger/clock input.

Values

DC1M	
DC50	

HorOffset

Double

Range   From -1e-006 to 2e-006 step 4e-009

Description

Sets/Queries the horizontal position of the trigger time, relative to the origin set by HorOffsetOrigin, in seconds. Positive to the right, negative to the left. The setting resolution is about 1% to 2&.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the horizontal trigger offset to 200 ns.
app.Acquisition.Horizontal.HorOffset = 2.0e-7
```

HorOffsetOrigin *Double*

Range From 0 to 10 step 1

Description

Sets/Queries the origin, in graticule divisions, of the time scale in which HorOffset is measured.
The value 0 corresponds to the left edge of the graticule. The value 10 corresponds to the right edge
of the graticule. Requesting a value outside the range will select the nearest allowed value.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the origin of the horizontal trigger offset to 4.0 divisions.
app.Acquisition.Horizontal.HorOffsetOrigin = 4.0
```

HorScale *DoubleLockstep*

Range From 2e-010 to 1000 step 2e-009, locked to 1 2 5, fine grain allowed=false, on=false

Description

Sets/Queries the horizontal scale in time per division.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the horizontal acquisition scale to 200 ns/div.
app.Acquisition.Horizontal.HorScale = 2.0e-7
```

HorUnits *String*

Range Any number of characters

Description

Queries the units in which the horizontal scale is measured.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Obtain the units of the horizontal scale.
HorizUnit = app.Acquisition.Horizontal.HorUnits
```

MaxSamples *DoubleLockstep*

Range From 500 to 1e+007 step 25000, locked to 1 2.5 5, fine grain allowed=false, on=false

Description

Sets/Queries the maximum permissible number of samples to be used in the acquisition memories.
At the faster sample rates, the actual number used may be less than this maximum.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the available memory length per channel to 500
app.Acquisition.Horizontal.MaxSamples = 500
```

NumPoints
Integer

Range From 2 to 100000000 step 1

Description

Queries the number of samples in the current setting of the acquisition memory. For sequence mode, this refers to the number if samples per segment, not to the number in the complete set.
Use MaxSamples to limit the number of samples acquired.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Obtain the number of points being used in the acquisition memory.
NumberOfPoints = app.Acquisition.Horizontal.NumPoints
MsgBox NumberOfPoints
```

NumSegments
Integer

Range From 2 to 500 step 1

Description

Sets/Queries the number of segments in the sequence mode of acquisition. Only valid when SampleMode = "Sequence'

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Enable sequence mode and capture 500 segments
app.Acquisition.Horizontal.SampleMode = "Sequence"
app.Acquisition.Horizontal.NumSegments = 500
```

ReferenceClock
Enum

Description

Sets/Queries the source of the acquisition reference clock.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the source of the reference clock to External.
app.Acquisition.Horizontal.ReferenceClock = "EXT"
```

Values

EXT	External reference (use rear-panel BNC)
INT	Internal reference clock

SampleClock
Enum

Description

Sets/Queries the source for the sample clock.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the sample clock to expect an external source.
app.Acquisition.Horizontal.SampleClock = "External"
```

Values

INT	

SampleMode
Enum

Description

Sets/Queries the mode of acquisition as real-time or sequence or random interleaved sampling. Note that RIS mode and sequence mode are not available over the entire range of time-bases, and are not available simultaneously.
WaveExpert differences: CIS and SEQ are the only timebase modes.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the mode of acquisition to random interleaved sampling.
app.Acquisition.Horizontal.SampleMode = "RIS"
' WaveExpert example
app.Acquisition.Horizontal.SampleMode = "CIS"
```

Values

RealTime	
WStream	

SamplingRate
Double

Range   From 500 to 5e+009 step (2 digits)

Description

Queries the sampling rate. This is the effective sampling rate of the traces, rather than the sample rate of the ADCs.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Inspect the effective sampling rate of the signal.
SamplingRate = app.Acquisition.Horizontal.SamplingRate
```

SequenceTimeout *Double*

Range From 0.01 to 100 step 0.01

Description

Sets/Queries the timeout in segment mode of acquisition if insufficient triggers are received.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the sequence mode timeout to 10 seconds
app.Acquisition.Horizontal.SequenceTimeout = 10.0
```

SequenceTimeoutEnable *Bool*

Description

Sets/Queries the enabling of the sequence mode timeout.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Enable the sequence mode timeout.
app.Acquisition.Horizontal.SequenceTimeoutEnable = True
```

SetExtClockFrequency *Bool*

Source *Enum*

Values

C1	
C2	
C3	
C4	
Ext	
ExtDivide10	
Line	

TimePerPoint *Double*

Range From 1e-012 to 1e+012 step 1e-012

Description

Queries the time interval between successive samples in the acquisition.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Obtain the time per point of the acquisition.
timePerPt = app.Acquisition.Horizontal.TimePerPoint
MsgBox timePerPt
```

UseLegacyDefault   *Enum*

Values

Never	
No	
Yes	

TRIGGER   *app.Acquisition.Trigger*

This group of cvars controls all aspects of the trigger, except for trigger delay, which is in Acquisition.Horizontal.

Names of the form app.Acquisition.Trigger.Sources.xxxx are aliases of simpler names which are described in this section of the manual. Examples of alias pairs are as follows -
 app.Acquisition.Trigger.Sources("Cx") is equivalent to app.Acquisition.Trigger.Cx
 app.Acquisition.Trigger.Sources("Ext") is equivalent to app.Acquisition.Trigger.Ext
 app.Acquisition.Trigger.Sources("Line") is equivalent to app.Acquisition.Trigger.Line
Please see under Acquisition.Channels("Cx") for a programming example.

HoldoffType	Enum
PatternType	Enum
ProbeName	String
Source	Enum
Type	Enum
ZeroLevel	Action

HoldoffType   *Enum*

Description

Sets/Queries type of hold-off trigger.

Values

Events	Holdoff by events, specified in HoldoffEvents
Off	No Trigger Holdoff
Time	Holdoff by time, specified in HoldoffTime

PatternType
Enum

Description
Sets/Queries the pattern (Logic) trigger type.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the pattern trigger type to Nand.
app.Acquisition.Trigger.Type = "Logic"
app.Acquisition.Trigger.PatternType = "Nand"
```

Values

And	
Nand	
Nor	
Or	

ProbeName
String

Range   Any number of characters

Description
The name of the probe connected to the Ext trigger input
("None" if no probe is present)

Source
Enum

Description
Sets/Queries the trigger source.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the trigger source to external.
app.Acquisition.Trigger.Source = "Ext"
```

Values

C1	
C2	
C3	
C4	
Ext	
ExtDivide10	
Line	

Type   *Enum*

Description

Sets/Queries the trigger type (mode).

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the trigger type to glitch.
app.Acquisition.Trigger.Type = "Glitch"
```

Values

Dropout	
Edge	
Glitch	
Interval	
Logic	
Qualify	
Runt	
Serial	
SlewRate	
State	
TV	
Width	

ZeroLevel   *Action*

Description

Sets the trigger level to zero volts.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the trigger level to zero volts.
app.Acquisition.Trigger.ZeroLevel
```

CX   *app.Acquisition.Trigger.Cx*

This group of varables controls triggering from the input channels C1, C2, C3 and C4.

InputImpedance	Enum
Level	Double
Level2	Double
PatternState	Enum
Slope	Enum
WindowSize	Double

InputImpedance   *Enum*

Description

Reads the input impedance of channel C1, in Ohms

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the input impedance of C1 trigger.
ZinC1 = app.Acquisition.Trigger.C1.InputImpedance
MsgBox ZinC1
```

Values

50	

Level
Double

Range   From -0.205 to 0.205 step 0.0005

Description

Sets/Queries the trigger level for the internal trigger from channel Cx. The setting resolution ranges from about 1.5% to about 2.5%, depending on the numerical value.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the trigger level to 55 mV for triggering on channel C1.
app.Acquisition.Trigger.C1.Level = 0.055
```

Level2
Double

Range   From -0.205 to 0.205 step 0.0005

PatternState
Enum

Description

Sets/Queries the pattern state for the input channel Cx. Only valid when the trigger mode is set to 'Logic'.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the pattern state for channel C1 to low.
app.Acquisition.Trigger.C1.PatternState = "Low"
```

Values

DontCare	
High	
Low	

Slope *Enum*

Description

Sets/Queries the direction of the transition to be used for internal triggering from channel Cx.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the direction of the transition as negative
' for triggering on channel C1.
app.Acquisition.Trigger.C1.Slope = "Negative"
```

Values

Either	
Negative	
Positive	
Window	

WindowSize *Double*

Range   From 0.02 to 0.205 step 0.0005

EXT

app.Acquisition.Trigger.Ext

This group of variables controls the external trigger.

Coupling	Enum
InputImpedance	Enum
Level	Double
Level2	Double
PatternState	Enum
Slope	Enum
WindowSize	Double

Coupling *Enum*

Description

Sets/Reads the input coupling of the external trigger input.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the input coupling of the external trigger input.
ZinCoupling = app.Acquisition.Trigger.Ext.Coupling
MsgBox ZinCoupling
```

Values

AC	
DC	
HFREJ	

LFREJ	

InputImpedance

Enum

Description

Reads the input impedance of the external trigger.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the input impedance of external trigger input.
ZinExt = app.Acquisition.Trigger.Ext.InputImpedance
MsgBox ZinExt
```

Values

50	

Level

Double

Range   From -0.41 to 0.41 step 0.001

Description

Sets/Queries the trigger level for the external trigger.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the trigger level to 55 mV for triggering from
' the external trigger socket.
app.Acquisition.Trigger.Ext.Level = 0.055
```

Level2

Double

Range   From -0.41 to 0.41 step 0.001

PatternState

Enum

Description

Sets/Queries the pattern state for the external trigger input.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the pattern state to low for triggering from
' the external trigger socket.
app.Acquisition.Trigger.Ext.PatternState = "Low"
```

Values

DontCare	
High	
Low	

Slope *Enum*

Description

Sets/Queries the direction of the transition used for the external trigger.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the direction of the transition as positive for triggering
' from the external trigger socket.
app.Acquisition.Trigger.Ext.Slope = "Positive"
```

Values

Either	
Negative	
Positive	
Window	

WindowSize *Double*

Range From 0.04 to 0.41 step 0.001

SERIAL *app.Acquisition.Trigger.Serial*

ClockSource	Enum
CSSource	Enum
DataSource	Enum
LevelAbsolute	Double
LevelHighAbsolute	Double
Protocol	Enum

ClockSource *Enum*

Description

Defines channel with the clock signal (if applies to protocol) to trigger on serial data

Values

C1	
C2	
C3	
C4	
Ext	
ExtDivide10	

CSSource
Enum

Description
Defines channel with the chip select signal (if applies to protocol) to trigger on serial data

Values

C1	
C2	
C3	
C4	
Ext	
ExtDivide10	

DataSource
Enum

Description
Defines channel with the Data signal (mandatory) to trigger on serial data

Values

C1	
C2	
C3	
C4	
Ext	
ExtDivide10	

LevelAbsolute
Double

Range From 0 to 5 step 0.1

Description
Defines the threshold level applied to Serial data inputs (Data, Clock, CS)

LevelHighAbsolute
Double

Range From 0 to 5 step 0.1

Description
Defines the upper threshold level applied to tri-modal Serial Data protocol inputs (FlexRay)

Protocol

Enum

Description

Defines the actual active trigger Serial standard (Protocol)

Values

CAN	
I2C	
I2S	
LIN	
MIL1553	
RS232	
SPI	
UART	

I2C

app.Acquisition.Trigger.Serial.I2C

AckCondition	Enum
AddressLength	Enum
AddressValue	BitPattern
AddressWithRW	Bool
AtPosition	Enum
ByteBitOrder	Enum
DefaultLevel	Double
Direction	Enum
FrameCondition	Enum
NeedDualLevels	Bool
NeededSources	Enum
PatternLength	Integer
PatternOperator	Enum
PatternValue	BitPattern
PatternValue2	BitPattern
SupportsDigital	Bool
ViewingMode	Enum

AckCondition

Enum

Values

Ack	
DontCare	
NoAck	

AddressLength

Enum

Values

10Bits	
7Bits	

AddressValue

BitPattern

Range MaxBits=10 NumBits=8 NumBytes=1 AllowedBitValues=01X PaddingChar=X PadAlign=Left SizeAlign=BitFix Format=Ehex

AddressWithRW

Bool

AtPosition

Enum

Values

DontCare	
Value	

ByteBitOrder

Enum

Values

LSB	
MSB	

DefaultLevel

Double

Range From -1.79769e+308 to 1.79769e+308 step 0.001

Direction

Enum

Values

DontCare	
Read	
Write	

FrameCondition

Enum

Values

Addr	
AddrData	
EEPROM	
FrameLength	
NoAck	
Restart	
Start	
Stop	

NeedDualLevels

Bool

NeededSources   *Enum*

Values

ClockSource	
DataSource	

PatternLength   *Integer*

Range   From 0 to 12 step 1

PatternOperator   *Enum*

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

PatternValue   *BitPattern*

Range   MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=ByteVar Format=Ehex

PatternValue2   *BitPattern*

Range   MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=ByteVar Format=Ehex

SupportsDigital   *Bool*

ViewingMode   *Enum*

Values

Binary	
Hex	

CAN   *app.Acquisition.Trigger.Serial.Protocol (Standard = "CAN")*

AdaptedSamplingPoint	Double
AddressFormat	Enum
AddressOperator	Enum
AddressValue	BitPattern
AddressValue2	BitPattern
BitRate	Double
ByteOrder	Enum

DefaultLevel	Double
NeedDualLevels	Bool
NeededSources	Enum
NumSamplingPoints	Enum
PatternBitLength	Integer
PatternBitPos	Integer
PatternOperator	Enum
PatternValue	BitPattern
PatternValue2	BitPattern
RequestedSamplingPoint	Double
SignType	Enum
SupportsDigital	Bool
SynchJumpWidth	Integer
TriggerCondition	Enum
Tseg1	Integer
Tseg2	Integer
ViewingMode	Enum

AdaptedSamplingPoint
Double

Range   From 20 to 90 step 0.01

AddressFormat
Enum

Values

ALL	
EXT	
STD	

AddressOperator
Enum

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

AddressValue
BitPattern

Range   MaxBits=29 NumBits=11 NumBytes=2 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=BitFix Format=Ehex

AddressValue2 *BitPattern*

Range MaxBits=29 NumBits=11 NumBytes=2 AllowedBitValues=01 PaddingChar=1
PadAlign=Left SizeAlign=BitFix Format=Ehex

BitRate *Double*

Range From 10000 to 1e+006 step 1

ByteOrder *Enum*

Values

Intel	
Motorola	

DefaultLevel *Double*

Range From -1.79769e+308 to 1.79769e+308 step 0.001

NeedDualLevels *Bool*

NeededSources *Enum*

Values

DataSource	

NumSamplingPoints *Enum*

Values

1	
3	

PatternBitLength *Integer*

Range From 0 to 64 step 1

PatternBitPos *Integer*

Range From 0 to 63 step 1

PatternOperator *Enum*

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

PatternValue		**BitPattern**
Range	MaxBits=64 NumBits=8 NumBytes=1 AllowedBitValues=01X PaddingChar=X PadAlign=Left SizeAlign=BitFix Format=Ehex	

PatternValue2		**BitPattern**
Range	MaxBits=64 NumBits=8 NumBytes=1 AllowedBitValues=01 PaddingChar=0 PadAlign=Left SizeAlign=BitFix Format=Ehex	

RequestedSamplingPoint		**Double**
Range	From 20 to 90 step 0.01	

SignType   *Enum*

Values

SignedInt	
UnsignedInt	

SupportsDigital   *Bool*

SynchJumpWidth		**Integer**
Range	From 1 to 4 step 1	

TriggerCondition   *Enum*

Values

All	
Error	
ID	
IdData	
Remote	

Tseg1		**Integer**
Range	From 3 to 16 step 1	

Tseg2		**Integer**
Range	From 2 to 8 step 1	

ViewingMode   *Enum*

Values

Binary	
Hex	

I2C   *app.Acquisition.Trigger.Serial.Protocol (Standard = "I2C")*

AckCondition	Enum

AddressLength	Enum
AddressValue	BitPattern
AddressWithRW	Bool
AtPosition	Enum
ByteBitOrder	Enum
DefaultLevel	Double
Direction	Enum
FrameCondition	Enum
NeedDualLevels	Bool
NeededSources	Enum
PatternLength	Integer
PatternOperator	Enum
PatternValue	BitPattern
PatternValue2	BitPattern
SupportsDigital	Bool
ViewingMode	Enum

AckCondition   *Enum*

Values

Ack	
NoAck	

AddressLength   *Enum*

Values

10Bits	
7Bits	

AddressValue   *BitPattern*

Range MaxBits=10 NumBits=8 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=BitFix Format=Ehex

AddressWithRW   *Bool*

AtPosition   *Enum*

Values

Value	

ByteBitOrder   *Enum*

Values

LSB	
MSB	

DefaultLevel   *Double*

> **Range**   From -1.79769e+308 to 1.79769e+308 step 0.001

Direction   *Enum*

Values

Read	
Write	

FrameCondition   *Enum*

Values

Addr	
AddrData	
EEPROM	
FrameLength	
NoAck	
Restart	
Start	
Stop	

NeedDualLevels   *Bool*

NeededSources   *Enum*

Values

ClockSource	
DataSource	

PatternLength   *Integer*

> **Range**   From 0 to 12 step 1

PatternOperator   *Enum*

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

PatternValue   *BitPattern*

Range MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=ByteVar Format=Ehex

PatternValue2   *BitPattern*

Range MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=ByteVar Format=Ehex

SupportsDigital   *Bool*

ViewingMode   *Enum*

Values

Binary	
Hex	

I2S   *app.Acquisition.Trigger.Serial.Protocol (Standard = "I2S")*

AudioChannel	Enum
BitsInChannel	Integer
ByteBitOrder	Enum
ChipSelCondition	Enum
ClockPol	Enum
DefaultLevel	Double
EnableInterFrame	Bool
I2SCondition	Enum
I2SVariant	Enum
NeedDualLevels	Bool
NeededSources	Enum
PatternBitsLen	Integer
PatternLength	Integer
PatternOperator	Enum
PatternValue	BitPattern
PatternValue2	BitPattern
StartBitInChannel	Integer
SupportsDigital	Bool
TimeOutLenInNanoSec	Double
ViewingMode	Enum
WSFrameStart	Enum

AudioChannel   *Enum*

Values

Left	
Right	

BitsInChannel *Integer*

> **Range** From 1 to 32 step 1

ByteBitOrder *Enum*

> **Values**

LSB	
MSB	

ChipSelCondition *Enum*

> **Values**

Auto	
Manual	
None	

ClockPol *Enum*

> **Values**

Negative	
Positive	

DefaultLevel *Double*

> **Range** From -1.79769e+308 to 1.79769e+308 step 0.001

EnableInterFrame *Bool*

I2SCondition *Enum*

> **Values**

Clip	
Data	
FallingEdge	
Glitch	
Mute	
RisingEdge	

I2SVariant *Enum*

> **Values**

I2S	
LJ	
RJ	

NeedDualLevels *Bool*

NeededSources *Enum*

Values

ClockSource	
CSSource	
DataSource	

PatternBitsLen *Integer*

Range From 1 to 32 step 1

PatternLength *Integer*

Range From 0 to 8 step 1

PatternOperator *Enum*

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

PatternValue *BitPattern*

Range MaxBits=32 NumBits=32 NumBytes=4 AllowedBitValues=01X PaddingChar=X PadAlign=Right SizeAlign=BitVar Format=Ehex

PatternValue2 *BitPattern*

Range MaxBits=32 NumBits=32 NumBytes=4 AllowedBitValues=01 PaddingChar=0 PadAlign=Right SizeAlign=BitVar Format=Ehex

StartBitInChannel *Integer*

Range From 0 to 31 step 1

SupportsDigital *Bool*

TimeOutLenInNanoSec *Double*

Range From 4e-008 to 0.0026214 step 4e-008

ViewingMode *Enum*

Values

Binary	
Hex	

WSFrameStart   *Enum*

Values

Falling	
Rising	

LIN   *app.Acquisition.Trigger.Serial.Protocol (Standard = "LIN")*

AddressOperator	Enum
AddressValue	BitPattern
AddressValue2	BitPattern
BitRate	Double
DefaultLevel	Double
NeedDualLevels	Bool
NeededSources	Enum
PatternLength	Integer
PatternOperator	Enum
PatternValue	BitPattern
PatternValue2	BitPattern
SupportsDigital	Bool
TriggerCondition	Enum
ViewingMode	Enum

AddressOperator   *Enum*

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

AddressValue   *BitPattern*

Range   MaxBits=6 NumBits=6 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=BitFix Format=Ehex

AddressValue2   *BitPattern*

Range   MaxBits=6 NumBits=6 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=BitFix Format=Ehex

BitRate *Double*

> **Range** From 300 to 20000 step 1

DefaultLevel *Double*

> **Range** From -1.79769e+308 to 1.79769e+308 step 0.001

NeedDualLevels *Bool*

NeededSources *Enum*

> **Values**

DataSource	

PatternLength *Integer*

> **Range** From 0 to 8 step 1

PatternOperator *Enum*

> **Values**

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

PatternValue *BitPattern*

> **Range** MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01X PaddingChar=X
> PadAlign=Left SizeAlign=ByteVar Format=Ehex

PatternValue2 *BitPattern*

> **Range** MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01 PaddingChar=0
> PadAlign=Left SizeAlign=ByteVar Format=Ehex

SupportsDigital *Bool*

TriggerCondition *Enum*

> **Values**

Break	
Error	
FrameID	
IDData	

ViewingMode   *Enum*

Values

Binary	
Hex	

MIL1553   *app.Acquisition.Trigger.Serial.Protocol (Standard = "MIL1553")*

BitRate	Double
C1_ModeCode	Enum
C1_ModeCodeOP	Enum
C1_RTAddress	BitPattern
C1_RTAddress2	BitPattern
C1_RTAddressOP	Enum
C1_RTSubAddress	BitPattern
C1_RTSubAddress2	BitPattern
C1_RTSubAddressOP	Enum
C1_WordCount	Integer
C1_XmitRcv	Enum
C2_ModeCode	Enum
C2_ModeCodeOP	Enum
C2_RTAddress	BitPattern
C2_RTAddress2	BitPattern
C2_RTAddressOP	Enum
C2_RTSubAddress	BitPattern
C2_RTSubAddress2	BitPattern
C2_RTSubAddressOP	Enum
C2_WordCount	Integer
C2_XmitRcv	Enum
D_PatternBitLength	Integer
D_PatternBitPos	Integer
D_PatternOperator	Enum
D_PatternValue	BitPattern
D_PatternValue2	BitPattern
DefaultLevel	Double
IMGTimeFrom	Double
IMGTimeOperator	Enum
IMGTimeTo	Double
NeedDualLevels	Bool
NeededSources	Enum
RespTimeFrom	Double
RespTimeOperator	Enum
RespTimeTo	Double
RHSRatio	Integer
S1_BcastRcvdBit	Enum

S1_BusyBit	Enum
S1_DynBusCtrlBit	Enum
S1_InstrBit	Enum
S1_MsgErrorBit	Enum
S1_RTAddress	BitPattern
S1_RTAddress2	BitPattern
S1_RTAddressOP	Enum
S1_SRQBit	Enum
S1_SubSystFlagBit	Enum
S1_TermFlagBit	Enum
S2_BcastRcvdBit	Enum
S2_BusyBit	Enum
S2_DynBusCtrlBit	Enum
S2_InstrBit	Enum
S2_MsgErrorBit	Enum
S2_RTAddress	BitPattern
S2_RTAddress2	BitPattern
S2_RTAddressOP	Enum
S2_SRQBit	Enum
S2_SubSystFlagBit	Enum
S2_TermFlagBit	Enum
SupportsDigital	Bool
TrigOnBadManchesterEncoding	Bool
TrigOnBadWordCount	Bool
TrigOnIdleError	Bool
TrigOnInvalidSync	Bool
TrigOnNonContiguousData	Bool
TrigOnParityError	Bool
TrigOnStatusAddressMismatch	Bool
TrigOnSyncError	Bool
Type	Enum
TypeTransfer	Enum

BitRate   *Double*

Range   From 500000 to 4e+007 step 1000

C1_ModeCode

Enum

Values

0DynamicBusControl	
10Reserved	
11Reserved	
12Reserved	
13Reserved	
14Reserved	
15Reserved	
16TransmitVectorWord	
17Synchronize	
18TransmitLastComman	
19TransmitBITWord	
1Synchronize	
20SelectedTransmitterSh	
21OverrideSelectedTran	
22Reserved	
23Reserved	
24Reserved	
25Reserved	
26Reserved	
27Reserved	
28Reserved	
29Reserved	
2TransmitStatusWord	
30Reserved	
31Reserved	
3InitiateSelfTest	
4TransmitterShutdown	
5OverrideTransmitterShu	
6InhibitTerminalFlag	
7OverrideInhibitTerminal	
8ResetRemoteTerminal	
9Reserved	

C1_ModeCodeOP

Enum

Values

Equal	
Greater	
GreaterOrEqual	
NotEqual	
Smaller	
SmallerOrEqual	

C1_RTAddress *BitPattern*

Range MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=BitFix Format=Ehex

C1_RTAddress2 *BitPattern*

Range MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=BitFix Format=Ehex

C1_RTAddressOP *Enum*

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

C1_RTSubAddress *BitPattern*

Range MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=BitFix Format=Ehex

C1_RTSubAddress2 *BitPattern*

Range MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=BitFix Format=Ehex

C1_RTSubAddressOP *Enum*

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

C1_WordCount *Integer*

Range From 0 to 31 step 1

C1_XmitRcv

Enum

Values

0	
1	
X	

C2_ModeCode

Enum

Values

0DynamicBusControl	
10Reserved	
11Reserved	
12Reserved	
13Reserved	
14Reserved	
15Reserved	
16TransmitVectorWord	
17Synchronize	
18TransmitLastComman	
19TransmitBITWord	
1Synchronize	
20SelectedTransmitterSh	
21OverrideSelectedTran	
22Reserved	
23Reserved	
24Reserved	
25Reserved	
26Reserved	
27Reserved	
28Reserved	
29Reserved	
2TransmitStatusWord	
30Reserved	
31Reserved	
3InitiateSelfTest	
4TransmitterShutdown	
5OverrideTransmitterShu	
6InhibitTerminalFlag	
7OverrideInhibitTerminal	
8ResetRemoteTerminal	
9Reserved	

C2_ModeCodeOP
Enum

Values

Equal	
Greater	
GreaterOrEqual	
NotEqual	
Smaller	
SmallerOrEqual	

C2_RTAddress
BitPattern

Range MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=BitFix Format=Ehex

C2_RTAddress2
BitPattern

Range MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=BitFix Format=Ehex

C2_RTAddressOP
Enum

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

C2_RTSubAddress
BitPattern

Range MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=BitFix Format=Ehex

C2_RTSubAddress2
BitPattern

Range MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=BitFix Format=Ehex

C2_RTSubAddressOP

Enum

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

C2_WordCount

Integer

Range   From 0 to 31 step 1

C2_XmitRcv

Enum

Values

0	
1	
X	

D_PatternBitLength

Integer

Range   From 0 to 16 step 1

D_PatternBitPos

Integer

Range   From 0 to 511 step 1

D_PatternOperator

Enum

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

D_PatternValue

BitPattern

Range   MaxBits=16 NumBits=8 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=ByteVar Format=Ehex

D_PatternValue2 *BitPattern*

Range MaxBits=16 NumBits=8 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=ByteVar Format=Ehex

DefaultLevel *Double*

Range From -1.79769e+308 to 1.79769e+308 step 0.001

IMGTimeFrom *Double*

Range From 0 to 3.2752e-005 step 8e-009

IMGTimeOperator *Enum*

Values

Greater	
InRange	
OutRange	
Smaller	

IMGTimeTo *Double*

Range From 0 to 3.2752e-005 step 8e-009

NeedDualLevels *Bool*

NeededSources *Enum*

Values

DataSource	

RespTimeFrom *Double*

Range From 0 to 3.2752e-005 step 8e-009

RespTimeOperator *Enum*

Values

Greater	
InRange	
OutRange	
Smaller	

RespTimeTo *Double*

Range From 0 to 3.2752e-005 step 8e-009

RHSRatio *Integer*

Range From 0 to 100 step 1

S1_BcastRcvdBit *Enum*

Values

0	
1	
X	

S1_BusyBit *Enum*

Values

0	
1	
X	

S1_DynBusCtrlBit *Enum*

Values

0	
1	
X	

S1_InstrBit *Enum*

Values

0	
1	
X	

S1_MsgErrorBit *Enum*

Values

0	
1	
X	

S1_RTAddress *BitPattern*

Range   MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=BitFix Format=Ehex

S1_RTAddress2 *BitPattern*

Range   MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=BitFix Format=Ehex

S1_RTAddressOP

Enum

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

S1_SRQBit

Enum

Values

0	
1	
X	

S1_SubSystFlagBit

Enum

Values

0	
1	
X	

S1_TermFlagBit

Enum

Values

0	
1	
X	

S2_BcastRcvdBit

Enum

Values

0	
1	
X	

S2_BusyBit

Enum

Values

0	
1	
X	

S2_DynBusCtrlBit

Enum

Values

0	
1	
X	

S2_InstrBit

Enum

Values

0	
1	
X	

S2_MsgErrorBit

Enum

Values

0	
1	
X	

S2_RTAddress

BitPattern

Range   MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=BitFix Format=Ehex

S2_RTAddress2

BitPattern

Range   MaxBits=5 NumBits=5 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=BitFix Format=Ehex

S2_RTAddressOP

Enum

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

S2_SRQBit

Enum

Values

0	
1	
X	

S2_SubSystFlagBit

Enum

Values

0	
1	
X	

S2_TermFlagBit

Enum

Values

0	
1	
X	

SupportsDigital

Bool

TrigOnBadManchesterEncoding

Bool

TrigOnBadWordCount

Bool

TrigOnIdleError

Bool

TrigOnInvalidSync

Bool

TrigOnNonContiguousData

Bool

TrigOnParityError

Bool

TrigOnStatusAddressMismatch

Bool

TrigOnSyncError

Bool

Type

Enum

Values

Error	
Timing	
Transfer	
Word	

TypeTransfer

Enum

Values

All	
BCRTRcv	
Modecommand	
ModecommandDataRcv	
ModecommandDataXmit	
RTBCXmit	
RTRT	

RS232

app.Acquisition.Trigger.Serial.Protocol (Standard = "RS232")

AtPosition	Enum
BitRate	Double
ByteBitOrder	Enum
DefaultLevel	Double
FrameDelimiter	Enum
InterFrameMinBits	Integer
NeedDualLevels	Bool
NeededSources	Enum
NumDataBits	Integer
ParityType	Enum
PatternLength	Integer
PatternOperator	Enum
PatternPosition	Integer
PatternValue	BitPattern
PatternValue2	BitPattern
Polarity	Enum
RS232Mode	Bool
StopBitLength	Enum
SupportsDigital	Bool
TrigOnBadParity	Bool
UARTCondition	Enum
ViewingMode	Enum

AtPosition

Enum

Values

Value	

BitRate

Double

Range From 300 to 1e+007 step 1

ByteBitOrder *Enum*

Values

LSB	

DefaultLevel *Double*

Range   From -1.79769e+308 to 1.79769e+308 step 0.001

FrameDelimiter *Enum*

Values

Manual	
None	

InterFrameMinBits *Integer*

Range   From 1 to 65535 step 1

NeedDualLevels *Bool*

NeededSources *Enum*

Values

DataSource	

NumDataBits *Integer*

Range   From 5 to 8 step 1

ParityType *Enum*

Values

Even	
None	
Odd	

PatternLength *Integer*

Range   From 0 to 12 step 1

PatternOperator *Enum*

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

PatternPosition *Integer*

Range From -1 to 2047 step 1

PatternValue *BitPattern*

Range MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=ByteVar Format=Ehex

PatternValue2 *BitPattern*

Range MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=ByteVar Format=Ehex

Polarity *Enum*

Values

IdleLow	

RS232Mode *Bool*

StopBitLength *Enum*

Values

1.5bit	
1bit	
2bits	

SupportsDigital *Bool*

TrigOnBadParity *Bool*

UARTCondition *Enum*

Values

Data	

ViewingMode   *Enum*

Values

Binary	
Hex	

SPI   *app.Acquisition.Trigger.Serial.Protocol (Standard = "SPI")*

ByteBitOrder	Enum
ChipSelCondition	Enum
ClockPhase	Enum
ClockPolarity	Enum
CSPolarity	Enum
DefaultLevel	Double
EnableInterFrame	Bool
NeedDualLevels	Bool
NeededSources	Enum
PatternBitLength	Integer
PatternBitPos	Integer
PatternOperator	Enum
PatternValue	BitPattern
PatternValue2	BitPattern
SignType	Enum
SPIVariant	Enum
SupportsDigital	Bool
TimeOutLen	Double
ViewingMode	Enum

ByteBitOrder   *Enum*

Values

LSB	
MSB	

ChipSelCondition   *Enum*

Values

Auto	
Manual	

ClockPhase *Enum*

Values

0	
1	

ClockPolarity *Enum*

Values

0	
1	

CSPolarity *Enum*

Values

ActiveHigh	
ActiveLow	

DefaultLevel *Double*

Range From -1.79769e+308 to 1.79769e+308 step 0.001

EnableInterFrame *Bool*

NeedDualLevels *Bool*

NeededSources *Enum*

Values

ClockSource	
CSSource	
DataSource	

PatternBitLength *Integer*

Range From 0 to 96 step 1

PatternBitPos *Integer*

Range From 0 to 95 step 1

PatternOperator

Enum

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

PatternValue

BitPattern

Range MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01X PaddingChar=X
PadAlign=Left SizeAlign=BitVar Format=Ehex

PatternValue2

BitPattern

Range MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01 PaddingChar=0
PadAlign=Left SizeAlign=BitVar Format=Ehex

SignType

Enum

Values

SignedInt	
UnsignedInt	

SPIVariant

Enum

Values

DDR	
SIOP	
SPI	
SSPI	

SupportsDigital

Bool

TimeOutLen

Double

Range From 4e-008 to 0.0026214 step 4e-008

ViewingMode

Enum

Values

Binary	
Hex	

UART

app.Acquisition.Trigger.Serial.Protocol (Standard = "UART")

AtPosition	Enum
Bit9State	Enum
BitRate	Double
ByteBitOrder	Enum
DefaultLevel	Double
FrameDelimiter	Enum
InterFrameMinBits	Integer
NeedDualLevels	Bool
NeededSources	Enum
NumDataBits	Integer
ParityType	Enum
PatternLength	Integer
PatternOperator	Enum
PatternPosition	Integer
PatternValue	BitPattern
PatternValue2	BitPattern
Polarity	Enum
StopBitLength	Enum
SupportsDigital	Bool
TrigOnBadParity	Bool
UARTCondition	Enum
ViewingMode	Enum

AtPosition   *Enum*

Values

Value	

Bit9State   *Enum*

Values

0	
1	
X	

BitRate   *Double*

Range   From 300 to 1e+007 step 1

ByteBitOrder   *Enum*

Values

LSB	
MSB	

DefaultLevel *Double*

Range From -1.79769e+308 to 1.79769e+308 step 0.001

FrameDelimiter *Enum*

Values

Manual	
None	

InterFrameMinBits *Integer*

Range From 1 to 65535 step 1

NeedDualLevels *Bool*

NeededSources *Enum*

Values

DataSource	

NumDataBits *Integer*

Range From 5 to 9 step 1

ParityType *Enum*

Values

Even	
None	
Odd	

PatternLength *Integer*

Range From 0 to 12 step 1

PatternOperator *Enum*

Values

Equal	
Greater	
GreaterOrEqual	
InRange	
NotEqual	
OutRange	
Smaller	
SmallerOrEqual	

PatternPosition *Integer*

Range From -1 to 2047 step 1

PatternValue   *BitPattern*

Range	MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01X PaddingChar=X PadAlign=Left SizeAlign=ByteVar Format=Ehex

PatternValue2   *BitPattern*

Range	MaxBits=96 NumBits=8 NumBytes=1 AllowedBitValues=01 PaddingChar=0 PadAlign=Left SizeAlign=ByteVar Format=Ehex

Polarity   *Enum*

Values

IdleHigh	
IdleLow	

StopBitLength   *Enum*

Values

1.5bit	
1bit	
2bits	

SupportsDigital   *Bool*

TrigOnBadParity   *Bool*

UARTCondition   *Enum*

Values

Data	

ViewingMode   *Enum*

Values

Binary	
Hex	

CURSORS   *app.Cursors*

This set of variables controls the cursor system.

Track	Bool
XPos1	Double
XPos2	Double
YPos1	Double
YPos2	Double

Track   *Bool*

Description

Sets/Queries the state of tracking of a pair of cursors. If tracking is enabled then when the first cursor is moved, the second will track at a constant distance from it.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set cursors tracking on.
app.Cursors.Track = True
```

XPos1 *Double*

Range From -1.79769e+308 to 1.79769e+308 step 0

Description

Sets/Queries the horizontal position of the first cursor, in the units of the horizontal variable.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the horizontal position of the first cursor to 50 ns.
app.Cursors.XPos1 = 50e-9
```

XPos2 *Double*

Range From -1.79769e+308 to 1.79769e+308 step 0

Description

Sets/Queries the horizontal position of the second cursor, in the units of the horizontal variable.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the horizontal position of the second cursor to 4.5 ms.
app.Cursors.XPos2 = 4.5e-3
```

YPos1 *Double*

Range From -3.99 to 3.99 step 0.01

Description

Sets/Queries the vertical position of the first cursor, in graticule divisions.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the vertical position of the first cursor.
app.Cursors.YPos1 = 3.4
```

YPos2 *Double*

Range   From -3.99 to 3.99 step 0.01

Description

Sets/Queries the vertical position of the second cursor, in graticule divisions.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the vertical position of the second cursor.
app.Cursors.YPos2 = 2.1
```

DISPLAY

app.Display

This set of variables controls the properties of the screen display of the instrument.

AxisLabels	Bool
C1Color	Color
C1PrintColor	Color
C2Color	Color
C2PrintColor	Color
C3Color	Color
C3PrintColor	Color
C4Color	Color
C4PrintColor	Color
ClearSweeps	Action
DisplayMode	Enum
F1Color	Color
F1PrintColor	Color
FactoryDefault	Action
GridIntensity	Integer
GridMode	Enum
M1Color	Color
M1PrintColor	Color
M2Color	Color
M2PrintColor	Color
M3Color	Color
M3PrintColor	Color
M4Color	Color
M4PrintColor	Color
Persisted	Bool
PersistenceLastTrace	Bool
PersistenceSaturation	Integer
PersistenceStyle	Enum
PersistenceTime	Enum
PreviewPrintColors	Action
TraceStyle	Enum

AxisLabels

Bool

Description

Sets/Queries the visibility of the labels that show the horizontal and vertical limits of each grid.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Show the axis labels.
app.Display.AxisLabels = True
```

C1Color

Color

Range   From 0 to 16777215

Description

Sets/Queries the color of trace C1, using a number in the range 0 to FFFFFF in hexadecimal. The possible colors are made from any combination of the primary colors, which are set in hexadecimal as Blue = &HFF0000, Green = &HFF00, Red = &HFF. The value may be entered in decimal or in hexadecimal, though hexadecimal is usually more convenient. Note that if the intensity of a color is to be reduced or increased by a numerical factor, an AND operation must be used afterwards, to prevent corruption of other primary colors.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

Red = &Hff: Green = &H80: Blue = &H00

' Set the color of channel C1 trace to orange
app.Display.C1Color = (Blue * &H10000) + (Green * &H100) + Red
```

C1PrintColor

Color

Range   From 0 to 16777215

Description

Sets/Queries the color, in the printing palette, of trace C1, using a number in the range 0 to FFFFFF in hexadecimal. The primary colors are Blue = &HFF0000, Green = &HFF00, Red = &HFF in hexadecimal.
The value may be entered in decimal or in hexadecimal.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

Red = &Hff: Green = &H80: Blue = &H00

' Set the color of channel C1 trace to orange for printing.
app.Display.C1PrintColor = (Blue * &H10000) + (Green * &H100) + Red
```

C2Color

Color

Range   From 0 to 16777215

Description

Please see C1Color.

C2PrintColor

Color

Range   From 0 to 16777215

Description

Please see C1Printcolor.

C3Color

Color

Range   From 0 to 16777215

Description

Please see C1Color.

C3PrintColor

Color

Range   From 0 to 16777215

Description

Please see C1Printcolor.

C4Color

Color

Range   From 0 to 16777215

Description

Please see C1Color.

C4PrintColor

Color

Range   From 0 to 16777215

Description

Please see C1Printcolor.

ClearSweeps

Action

Description

Initiates the Clear Sweeps operation. Clears history only for persistence traces, see the main Clear Sweeps control 'app.ClearSweeps', or the ClearSweeps control in other subsystems for other options.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Initiate a clear sweeps action for persistence traces.
app.Display.ClearSweeps
```

DisplayMode

Enum

Description

Sets/Queries the display mode as either "Scope", showing the normal instrument screen, or "WebEdit", showing the web processor editing panel. Note that WebEdit mode is available only with certain software options, including XMATH and XMAP.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Switch to WebEdit mode
app.Display.DisplayMode = "WebEdit"
```

Values

Scope	

F1Color

Color

Range   From 0 to 16777215

Description

Please see C1Color.

F1PrintColor

Color

Range   From 0 to 16777215

Description

Please see C1Printcolor.

FactoryDefault

Action

Description

Restores the display of the instrument to the factory default settings

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Restore the display to the factory pre-set state.
app.Display.FactoryDefault
```

GridIntensity

Integer

Range   From 0 to 100 step 1

Description

Sets/Queries the grid intensity as a percentage of the maximum value, with a resolution of 1%.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the grid intensity to 60% of the maximum.
app.Display.GridIntensity = 60
```

GridMode

Enum

Description

Sets/Queries the grid mode. The commands "Single" and "Dual", for example, set the grid mode until countermanded. "Auto" allows the instrument to set the grid mode most suitable for the current number of visible traces.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Enter Octal grid mode
app.Display.GridMode = "Octal"
```

Values

Single	Single grid mode
XY	XY grid mode
XYSingle	XY + Single grid mode

M1Color

Color

Range   From 0 to 16777215

Description

Please see C1Color.

M1PrintColor

Color

Range   From 0 to 16777215

Description

Please see C1Printcolor.

M2Color

Color

Range   From 0 to 16777215

Description

Please see C1Color.

M2PrintColor

Color

Range   From 0 to 16777215

Description

Please see C1Printcolor.

M3Color

Color

Range   From 0 to 16777215

Description

Please see C1Color.

M3PrintColor

Color

Range   From 0 to 16777215

Description

Please see C1Printcolor.

M4Color

Color

Range   From 0 to 16777215

Description

Please see C1Color.

M4PrintColor

Color

Range   From 0 to 16777215

Description

Please see C1Printcolor.

Persisted

Bool

Description

Sets/Queries whether persistence mode is in use. If the previously set persistence mode is per trace, the persisted cvar will be set as true by this command, even if none of the traces has been set to persistence mode.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the state of persistence mode.
Persist = app.Display.Persisted
```

PersistenceLastTrace

Bool

Description

Sets/Queries whether the last created trace is shown over the persistence trace.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the persistence display to show the last trace
' on top of the persistence trace.
app.Display.PersistenceLastTrace = True
```

PersistenceSaturation

Integer

Range   From 0 to 100 step 1

Description

Sets/Queries the population level, relative to the maximum possible level, at which the persistence traces reach maximum intensity, and above which there are no further changes in color or intensity.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the persistence saturation level to 60%.
app.Display.PersistenceSaturation = 60
```

PersistenceStyle

Enum

Description

Sets/Queries the type of persistence trace displayed.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the persistence style to color graded.
app.Display.PersistenceStyle = "ColorGraded"
```

Values

Analog	
ColorGraded	

PersistenceTime

Enum

Description

Sets/Queries decay time for trace persistence, expressed as a number of seconds, or as "infinity".

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the persistence time to 10 seconds.
app.Display.PersistenceTime = "10s"
```

Values

0.5s	
10s	
1s	
20s	
2s	
5s	
Infinite	

PreviewPrintColors *Action*

Description

Show the instrument display in the current color scheme selected for printing.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Show the current color scheme selected for printing.
app.Display.PreviewPrintColors
```

TraceStyle *Enum*

Description

Sets/Queries the style in which traces are drawn.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the state of the persistence mode.
TraceStyle = app.Display.TraceStyle
```

Values

Line	Connect adjacent samples with straight lines
Points	Show only the sample points

ELECTRICALTELECOM
app.ElectricalTelecom

Root Automation node to control Electrical Telecom (ET-PMT) package. This package is performing Pulse Mask Test on diferent SONET/SDH standards.

ClearSweeps	Action
Polarity	Enum
Run	Action
Setup	Action
Source	Enum
Standard	Enum
Stop	Action
VerticalAlign	Action

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.WaveMasterApplication.1")

'Select an stadard, run the test and get results after a while
app.ElectricalTelecom.Standard = "E1Tp"
app.ElectricalTelecom.Source = "C2"
app.ElectricalTelecom.Setup
app.ElectricalTelecom.Run
app.Sleep 10000
app.ElectricalTelecom.Pause
passed = CStr(app.ElectricalTelecom.NumPass)
tested = CStr(app.ElectricalTelecom.NumTested)
MsgBox passed + " passed of " + tested + " tests"
```

ClearSweeps

Action

Description

The ClearSweeps allows you to reset the sweep count and start testing over again.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.WaveMasterApplication.1")

'Select an stadard, run the test and clear the counter after a while
app.ElectricalTelecom.Standard = "E1Coax"
app.ElectricalTelecom.Setup
app.ElectricalTelecom.Run
app.Sleep 5000
app.ElectricalTelecom.Pause
app.Sleep 5000
app.ElectricalTelecom.ClearSweeps
```

Polarity

Enum

Description

In many electrical standards, such as DS-1, alternate "ones" are inverted. Each time a one is transmitted it is either a positive or negative going pulse depending upon the polarity of the previous one. This type of coding is referred to as AMI (alternate mark inversion). The Polarity control allows you to select which polarity (positive or negative) pulse to test.
The STS-3E and STM-1E standards use CMI (code mark inversion) pulse coding. In CMI coding, a one remains high for the full bit period while a zero has a transition to the low state in the middle of the bit period. The Polarity control allows you to select whether a 1 or 0 is to be tested.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.WaveMasterApplication.1")

'Select a stadard and set polarity to 'neg'
app.ElectricalTelecom.Standard = "E1Coax"
app.ElectricalTelecom.Polarity = "neg"
app.ElectricalTelecom.Setup
```

Values

neg	Negative pulse
pos	Positive pulse

Run   *Action*

Description

The Setup button applies the appropriate settings to the oscilloscope for testing the selected standard. Different standards require a particular termination, and an error message will appear at the bottom of the oscilloscope screen if the wrong (or no) adapter is present. However, this error will not prevent the instrument from making the measurement; that is, measurements can be made without the specific adapters. But if the signal is out of range for the standard, the setup operation will generate an error message and the Run button will be grayed out. The signal will appear on the screen, but no testing will be possible.

Before the Setup button is pressed, the Run and Clear Sweeps buttons appear grayed out. These buttons become available (not grayed out) upon successful completion of a setup. At that time, a Re-Align button will replace the Setup button.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.WaveMasterApplication.1")

'Select an stadard and run the test
app.ElectricalTelecom.Standard = "E1Coax"
app.ElectricalTelecom.Setup
app.ElectricalTelecom.Run
app.Sleep 5000
app.ElectricalTelecom.Pause    'pause the test after 5 seconds
app.Sleep 5000
app.ElectricalTelecom.Run      'and continue after 5 other seconds
```

Setup   *Action*

Description

After the Telecom Standard has been choosed, the Source set, the 'Setup' command will perform all acquisition setup, make the appropriate alignments and make test ready to run.

This is one of the action to control the state machine of Mask Testing : Setup, ReAlign, Stop, Pause, Run and VerticalAlign.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.WaveMasterApplication.1")

'Select an stadard and run the test
app.ElectricalTelecom.Standard = "E1Coax"
app.ElectricalTelecom.Setup
app.ElectricalTelecom.Run
app.Sleep 5000
app.ElectricalTelecom.Pause    'pause the test after 5 seconds
```

Source *Enum*

Description

Specify on which channel (C1 to C4) the electrical signal to be tested is connected.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.WaveMasterApplication.1")

'Select an stadard and the source
app.ElectricalTelecom.Standard = "E1Coax"
app.ElectricalTelecom.Source = "C4"
app.ElectricalTelecom.Setup
```

Values

C1	
C2	
C3	
C4	

Standard *Enum*

Description

Select the Telecom Standards that will be used to make alignments and mask test.
Available standards are listed in the 'Standard' field of this database :
D:\Masks\PulseMasksProp.mdb. (whithout spaces and special characters).

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.WaveMasterApplication.1")

'Select an stadard and the source
app.ElectricalTelecom.Standard = "E1Coax"
app.ElectricalTelecom.Source = "C4"
app.ElectricalTelecom.Setup
```

Values

DS1	ANSI T1 DS1 standard on 100 ohm line (using AP100)
DS3	ANSI T1 DS3 standard on 75 ohm coax (using PP090 probe)
E1coax	ITU-T E1 on 75 ohm coax (using PP090 probe)
E1TP	ITU-T E1 on 120 ohm twisted pairs (using AP120 probe)
E2	ITU-T E2 on 75 ohm coax (using PP090 probe)
E3	ITU-T E3 on 75 ohm coax (using PP090 probe)
E4	ITU-T E4 on 75 ohm coax (using PP090 probe)
Off	
STM1E	ITU-T STM-1E on 75 ohm coax (using PP090 probe)
STS1	ANSI T1 STS-1 on 75 ohm coax (using PP090 probe)
STS3E	ANSI T1 STS-3E on 75 ohm coax (using PP090 probe)

Stop
Action

Description

Stop the test and reset counters. After this command, a new 'Setup' must be made.
This is one of the action to control the state machine of Mask Testing : Setup, ReAlign, Stop, Pause, Run and VerticalAlign.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.WaveMasterApplication.1")

'Select an stadard and run the test
app.ElectricalTelecom.Standard = "E1Coax"
app.ElectricalTelecom.Setup
app.ElectricalTelecom.Run
app.Sleep 5000
app.ElectricalTelecom.Pause    'pause the test after 5 seconds
app.Sleep 5000
app.ElectricalTelecom.Stop     'Stop the test
```

VerticalAlign
Action

Description

For test that allow that, it's possible to perform a Vertical re-alignment .

ET
app.ElectricalTelecom.ET

Aligned waveform output of Electrical Telecom package. From there, all it's diplay settings can be changed. See "executive setup" chapter for more details.

BipolarLevel	Double
ClearSweeps	Action
LabelsPosition	String
LabelsText	String
LFCutoff	Double
Persisted	Bool
PersistenceSaturation	Integer
PersistenceTime	Enum
ShowLastTrace	Bool
Source	Enum
UseGrid	String
View	Bool
ViewLabels	Bool

BipolarLevel
Double

Range   From -100 to 100 step 1e-005

ClearSweeps
Action

Description

Clear any accumulated result data. Useful for example to restart an average, or parameter statistics.

LabelsPosition

String

Range Any number of characters

Description

Sets / Queries the horizontal position of the label attached to the acquisition trace Cx. The unit of measurement is the unit of the horizontal scale. The measurement is made from the trigger point. Note that this control is a string, not a numeric value. This allows multiple labels to be positioned, as shown in the example below.

LabelsText

String

Range Any number of characters

LFCutoff

Double

Range From 1 to 5e+010 step 4

Persisted

Bool

Description

Sets/Queries the persisted state of the waveform. If the Display.LockPersistence control is set to 'AllLocked' then the persisted state of all displayed waveforms will be the same. If the Display.LockPersistence control is set to 'PerTrace' then the persisted state of each waveform may be independently controlled.

PersistenceSaturation

Integer

Range From 0 to 100 step 1

Description

Sets/Queries the saturation threshold for persisted waveforms.
All information at this level or above will be recorded with the same color or intensity.
See the general description above for a discussion of the locked and unlocked persistence modes.

PersistenceTime

Enum

Description

Sets/Queries the state of the Persistence Time control. Controls the persistence decay time for this trace. See the general description above for a discussion of the locked and unlocked persistence modes.

Values

0.5s	
10s	
1s	
20s	
2s	
5s	
Infinite	

ShowLastTrace *Bool*

Description

Sets/Queries the state of the Show Last Trace control. If True then when this trace is displayed in persistence mode the last acquired waveform will be superimposed on the accumulating persistence map.
See the general description above for a discussion of the locked and unlocked persistence modes.

Source *Enum*

Values

C1	
C2	
C3	
C4	

UseGrid *String*

Range Any number of characters

View *Bool*

Description

Sets/Queries the trace's 'Viewed' state. When true, the trace is displayed on one of the display graticules. Note that even when a trace is not visible, it may be used as a source for Math, Measure, etc.

ViewLabels *Bool*

Description

Sets/Queries whether the user-defined labels for the trace are visible.
See Also: LabelsPosition and LabelsText controls.

RESULT *app.ElectricalTelecom.ET.Out.Result*

HARDCOPY *app.HardCopy*

This set of variables controls the transfer of information about the screen display to destinations such as such as disc files, internal memories, printers and remote computers.

Destination	Enum
Directory	FileName
EMailMessage	String
GridAreaOnly	Bool
HardcopyArea	Enum
ImageFileFormat	Enum
PreferredFilename	String
Print	Action
PrintLogo	Bool

UseColor	Enum

Destination
Enum

Description
Sets/Queries the destination for hard copy.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the destination for hard copy to e-mail.
app.Hardcopy.Destination = "EMail"
```

Values

Clipboard	Send to clipboard for pasting into other applications
EMail	Send image in an E-Mail
File	Store image in a file
Printer	Print to a local, or networked printer
Remote	Special case used for remote printing, not usually used

Directory
FileName

Range Any number of characters

Description
Sets/Queries the directory for hard copy to a file.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the directory for hard copy to files as "D:\HC"
app.Hardcopy.Directory = "D:\HC"
```

EMailMessage
String

Range Any number of characters

Description
Sets/Queries the e-mail message.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Create the e-mail message - "Results for run 89".
app.Hardcopy.EMailMessage = "Results for run 89"
```

GridAreaOnly

Bool

Description

Sets/Queries whether hard copy is of grid area only.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the status of Grid Area Only.
GridArea = app.Hardcopy.GridAreaOnly
```

HardcopyArea

Enum

Description

Sets/Queries the area of the screen to be included in a hard copy.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Select the DSO screen area for hard copy.
app.Hardcopy.HardCopyArea = "DSOWindow"
```

Values

DSOWindow	Include only the DSO window
FullScreen	Include the full display screen
GridAreaOnly	Include the grid area only (doesn't include menus)

ImageFileFormat

Enum

Description

Sets/Queries the file format for hard copy data.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Select the format PNG for a file of hard copy data.
app.Hardcopy.Destination = "File"
app.Hardcopy.ImageFileFormat = "PNG"
```

Values

BMP	Windows Bitmap
BMPCOMP	8-bit Windows Bitmap
JPEG	JPEG - JFIF Compliant
PNG	Portable Network Graphics
PSD	Adobe Photoshop 3.0
TIFF	Tagged Image File Format

PreferredFilename
String

Range   Any number of characters

Description
Sets/Queries the preferred file name to use for hard copy.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the preferred filename to PrintFile.
app.Hardcopy.PreferredFilename = "PrintFile"
```

Print
Action

Description
Initiates a hard copy.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Initiate a hard copy.
app.Hardcopy.Print
```

PrintLogo
Bool

Description
Control whether the LeCroy logo will be superimposed on hardcopies.

UseColor
Enum

Description
Defines the color scheme to be used when printing.

Values

BW	Optimized for black and white printers
Print	Use print colors (white background)
Std	As presented on DSO display

LABNOTEBOOK
app.LabNotebook

Provides access to the 'LabNotebook' feature. This allows the entire scope state (Waveforms, Setups, Display Images) to be stored, annotated, recalled, emailed, etc.

AttachFilesToEMail	Bool
BackupDatabase	Action
BackupFilename	String
BackupFolder	FileName
BackupToFolder	Action
BackupToMemoryStick	Action
ClearFilter	Action
CompactDatabase	Action
ConnectToFPHardCopy	Bool

CreateReport	Action
DeleteAll	Action
DeleteRecord	Action
EMailRecord	Action
FilterRecords	Action
FlashBackToRecord	Action
Format	Enum
HardcopyArea	Enum
InternalView	Action
MyLabNotebookMD	FileName
NextRecord	Action
PreviousRecord	Action
PrintRecord	Action
PromptBeforeSaving	Bool
RecordList	Enum
ReportLogo	FileName
ReportsDirectory	FileName
Save	Action
ScribbleBeforeSaving	Bool
StartNew	Action
UseDefaultLogo	Bool
UseDefaultTemplate	Bool
UsePrintColor	Bool
ViewRecord	Action
XSLTemplate	FileName

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Save the current state of the DSO into the Notebook
app.LabNotebook.ScribbleBeforeSaving = False
app.LabNotebook.PromptBeforeSaving = False
app.LabNotebook.Save

' Create a PDF report, and store it in the root of drive
C:app.LabNotebook.ReportsDirectory = "C:\"
app.LabNotebook.Format = "PDF"
app.LabNotebook.CreateReport

' Send the report in an email
app.Preferences.Email.Mode = "SMTP"
app.Preferences.Email.DefaultRecipient = "somebody@somewhere.com"
app.LabNotebook.EMailRecord
```

AttachFilesToEMail   *Bool*

Description

If true, the DSO Setup, and all enabled waveforms will be attached to any emailed report.

BackupDatabase *Action*

Description

Backup the current LabNotebook database. Note that this control will present a modal dialog, prompting for the backup filename and folder.
Use the BackupToFolder control to skip the dialog.

BackupFilename *String*

Range   Any number of characters

Description

Contains the filename into which the LabNotebook is stored, when the BackupDatabase request is made.

BackupFolder *FileName*

Range   Any number of characters

Description

Contains the folder into which the LabNotebook is stored, when the BackupDatabase request is made.

BackupToFolder *Action*

Description

Create a backup of the current LabNotebook database into the file specified by the BackupFolder/BackupFilename controls.

BackupToMemoryStick *Action*

Description

Create a backup of the current LabNotebook database into a file on an attached memory stick.

ClearFilter *Action*

Description

Clear the NoteBook entry filter.

CompactDatabase *Action*

Description

Compact the LabNotebook database. Useful if entries have been deleted from the database, to reclaim disk space.

ConnectToFPHardCopy *Bool*

Description

If True, the front-panel 'Print Screen' button is overridden to create a LabNotebook entry instead of its normal function.

CreateReport *Action*

Description

Create a report (PDF/RTF/HTML) of the currently selected notebook entry.

DeleteAll   *Action*

Description

Delete all LabNotebook entries.
Note that this action will popup a modal dialog, requesting confirmation.

DeleteRecord   *Action*

Description

Delete the currently selected LabNotebook record.
Note that this will popup a modal dialog requesting confirmation.

EMailRecord   *Action*

Description

Email the currently selected record, in the selected format (PDF/RTF/HTML), to the recipient specified
in the email setup (app.Preferences.Email).

FilterRecords   *Action*

Description

Popup a dialog proposing various filtering methods, including date, and/or keword based filters.

FlashBackToRecord   *Action*

Description

Restore (FlashBack) the scope to the state that it was in when the current lab notebook entry was
saved.
This may include the setup, and active waveforms.

Format   *Enum*

Description

File Format in which exported reports are saved.

Values

HTML	
PDF	Adobe Acrobat file
RTF	Rich-text file (MS Wordpad, Word, etc.)

HardcopyArea   *Enum*

Description

Defines the region of the display that is stored when creating a new entry in the notebook.

Values

DSOWindow	Contents of DSO window, incl. dialog + menu bar
FullScreen	Entire windows display area
GridAreaOnly	Grid area only

InternalView *Action*

Description

View the selected Lab Notebook entry within the DSO's graticule area.
Contrast with the 'ViewRecord' control, which presents the selected Lab Notebook entry in an external HTML browser.

MyLabNotebookMD *FileName*

Range   Any number of characters

Description

Filename of the currently active Lab Notebook database.

NextRecord *Action*

Description

Move to (select) the next entry in the notebook.

PreviousRecord *Action*

Description

Move to (select) the previous entry in the notebook.

PrintRecord *Action*

Description

Print the selected Lab Notebook entry. This action will present a popup allowing the target printer to be selected .

PromptBeforeSaving *Bool*

Description

If true, the DSO will prompt the interactive user for a summary, and description, before the notebook entry is created.

RecordList *Enum*

Description

The list of entries in the Lab Notebook, named using a GUID.

Values

ReportLogo *FileName*

Range   Any number of characters

Description

Contains the full pathname of the logo which will appear on Lab Notebook pages.

ReportsDirectory *FileName*

Range   Any number of characters

Description

The directory in which Lab Notebook reports are created.

Save   *Action*

Description

Initiate the creation of a new Lab Notebook entry.

ScribbleBeforeSaving   *Bool*

Description

If True, the DSO will allow the interactive user to 'scribble' (annotate) the report page before it is saved.

StartNew   *Action*

Description

Start a new Lab Notebook. This action will prompt the interactive user for the filename of the new Lab Notebook database file.

UseDefaultLogo   *Bool*

Description

If True, the default logo is used on Lab Notebook pages. If False, the logo specifeid by the ReportLogo control is used instead.

UseDefaultTemplate   *Bool*

Description

If True, the default xsl template is used when creating reports from LabNotebook pages.
If False, the template file specified by the XSLTemplate control is used instead.

UsePrintColor   *Bool*

Description

If True, 'print colors' are used when storing an image of the display. These use a white background, as opposed to black, to save toner/ink.

ViewRecord   *Action*

Description

View the selected Lab Notebook entry in an external HTML browser.
Contrast with the 'ViewInternal' control, which presents the selected Lab Notebook entry within the DSO's graticule area.

XSLTemplate   *FileName*

Range   Any number of characters

Description

Filename of the XSL template used in creating reports from Lab Notebook pages.

LOGICANALYZER   *app.LogicAnalyzer*

LALogicFamilyA	Enum
LALogicFamilyB	Enum
LAThresholdA	Double
LAThresholdB	Double
LineNames	String

SkewAnalogTrigger	Double

LALogicFamilyA

Enum

Values

CMOS2.5V	
CMOS3.3V	
CMOS5V	
ECL	
PECL	
TTL	
UserDefined	

LALogicFamilyB

Enum

Values

CMOS2.5V	
CMOS3.3V	
CMOS5V	
ECL	
PECL	
TTL	
UserDefined	

LAThresholdA

Double

Range From -4.9 to 5.27 step 0.01

LAThresholdB

Double

Range From -4.9 to 5.27 step 0.01

LineNames

String

Range Any number of characters

Description

List of Digital Line Names

SkewAnalogTrigger

Double

Range From -1e-006 to 1e-006 step 1e-009

DIGITALX

app.LogicAnalyzer.Digitalx

BusName	String
Digital0	Bool
Digital1	Bool
Digital2	Bool

Digital3	Bool
Digital4	Bool
Digital5	Bool
Digital6	Bool
Digital7	Bool
DisplayMode	Enum
LineHeight	Double
LineNames	String
UseGrid	String
VerPosition	Double
View	Bool

BusName   *String*

> **Range** Any number of characters

Digital0   *Bool*

Digital1   *Bool*

Digital2   *Bool*

Digital3   *Bool*

Digital4   *Bool*

Digital5   *Bool*

Digital6   *Bool*

Digital7   *Bool*

DisplayMode   *Enum*

> **Values**

Collapse	
Expand	

LineHeight   *Double*

> **Range** From 0.2 to 10 step 0.02

LineNames   *String*

> **Range** Any number of characters

UseGrid   *String*

> **Range** Any number of characters

VerPosition

Double

Range   From -3.8 to 10 step 0.05

View

Bool

Description

Sets/Queries the trace's 'Viewed' state. When true, the trace is displayed on one of the display graticules. Note that even when a trace is not visible, it may be used as a source for Math, Measure, etc.

RESULT

app.LogicAnalyzer.Digitalx.Out.Result

TRIGGER

app.LogicAnalyzer.Trigger

DigitalPatternArrayLogic0	Enum
DigitalPatternArrayLogic1	Enum
DigitalPatternArrayLogic10	Enum
DigitalPatternArrayLogic11	Enum
DigitalPatternArrayLogic12	Enum
DigitalPatternArrayLogic13	Enum
DigitalPatternArrayLogic14	Enum
DigitalPatternArrayLogic15	Enum
DigitalPatternArrayLogic16	Enum
DigitalPatternArrayLogic17	Enum
DigitalPatternArrayLogic18	Enum
DigitalPatternArrayLogic19	Enum
DigitalPatternArrayLogic2	Enum
DigitalPatternArrayLogic20	Enum
DigitalPatternArrayLogic21	Enum
DigitalPatternArrayLogic22	Enum
DigitalPatternArrayLogic23	Enum
DigitalPatternArrayLogic24	Enum
DigitalPatternArrayLogic25	Enum
DigitalPatternArrayLogic26	Enum
DigitalPatternArrayLogic27	Enum
DigitalPatternArrayLogic28	Enum
DigitalPatternArrayLogic29	Enum
DigitalPatternArrayLogic3	Enum
DigitalPatternArrayLogic30	Enum
DigitalPatternArrayLogic31	Enum
DigitalPatternArrayLogic4	Enum
DigitalPatternArrayLogic5	Enum
DigitalPatternArrayLogic6	Enum
DigitalPatternArrayLogic7	Enum

DigitalPatternArrayLogic8	Enum
DigitalPatternArrayLogic9	Enum
DigitalTriggerByteHex0	String
DigitalTriggerByteHexA0	String
DigitalTriggerSet	Enum
DigitalTriggerType	Enum
I2CAccessType	Enum
I2CAddressCompare	Enum
I2CAddressValue	String
I2CAddressValueLast	String
I2CDataCompare	Enum
I2CDataValue	String
I2CDataValueLast	String
I2CTriggerType	Enum
Interval	Enum
IntervalHigh	Double
LAConnectWarn	String
LATriggerWarn	String
LogicBusSource	Enum
Source	Enum
SPIBitsPerPacket	Integer
SPIInactivePeriodBetweenPacketEnabled	Bool
SPIInactivePeriodBetweenPacketValue	Double
SPITriggerFormat	Enum
SPITriggerMode	Enum
SPITriggerSource	Enum
SPITriggerValue	String
SPITriggerValueLast	String
SPIWhichBitArrivesFirst	Enum
TrigSlope	Enum
Type	Enum

DigitalPatternArrayLogic0   *Enum*

Description

Allows to select a value for digital line 0 of Logic Pattern Trigger. Value can be Zero, One, Don't Care, Rising Edge, Falling Edge or Either Edge.

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic1 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic10 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic11 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic12 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic13
Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic14
Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic15
Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic16
Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic17 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic18 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic19 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic2 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic20

Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic21

Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic22

Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic23

Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic24   *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic25   *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic26   *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic27   *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic28 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic29 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic3 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic30 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic31 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic4 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic5 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic6 *Enum*

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic7
Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic8
Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalPatternArrayLogic9
Enum

Values

DontCare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalTriggerByteHex0
String

Range Any number of characters

DigitalTriggerByteHexA0
String

Range Any number of characters

DigitalTriggerSet
Enum

Values

Dontcare	
EitherEdge	
FallingEdge	
One	
RisingEdge	
Zero	

DigitalTriggerType

Enum

Values

Interval	
Logic	
LogicBus	

I2CAccessType

Enum

Values

AcknowledgedRead	
AcknowledgedReadWrite	
AcknowledgedWrite	
NotAcknowledgedRead	
NotAcknowledgedRead	
NotAcknowledgedWrite	
Read	
ReadWrite	
Write	

I2CAddressCompare

Enum

Values

Matching	
NotMatching	

I2CAddressValue

String

Range Any number of characters

I2CAddressValueLast

String

Range Any number of characters

I2CDataCompare

Enum

Values

Matching	
NotMatching	

I2CDataValue

String

Range Any number of characters

I2CDataValueLast

String

Range Any number of characters

I2CTriggerType

Enum

Values

Address	
AnyCycle	
DataAndAddress	

Interval

Enum

Values

GreaterThan	
InRange	
LessThan	
OutOfRange	

IntervalHigh

Double

Range   From 8e-009 to 0.00837 step 8e-009

LAConnectWarn

String

Range   Any number of characters

LATriggerWarn

String

Range   Any number of characters

LogicBusSource

Enum

Description

Allows to select the Digital Source of Logic Bus trigger. Only those bits that are defined to be part of selected Digital Group are allowed to be defined in the Logic Bus trigger value.

Values

Digital1	
Digital2	
Digital3	
Digital4	

Source *Enum*

Values

A0	
A1	
A10	
A11	
A12	
A13	
A14	
A15	
A2	
A3	
A4	
A5	
A6	
A7	
A8	
A9	
B0	
B1	
B10	
B11	
B12	
B13	
B14	
B15	
B2	
B3	
B4	
B5	
B6	
B7	
B8	
B9	

SPIBitsPerPacket *Integer*

Range From 2 to 32 step 1

SPIInactivePeriodBetweenPacketEnabled *Bool*

SPIInactivePeriodBetweenPacketValue *Double*

Range From 8e-009 to 0.00837 step 8e-009

SPITriggerFormat
Enum

Values

ASCII	
Binary	
Hexadecimal	

SPITriggerMode
Enum

Values

CPHAS0CPOL0	
CPHAS0CPOL1	
CPHAS1CPOL0	
CPHAS1CPOL1	

SPITriggerSource
Enum

Values

MISO	
MOSI	

SPITriggerValue
String

Range Any number of characters

SPITriggerValueLast
String

Range Any number of characters

SPIWhichBitArrivesFirst
Enum

Values

LSB	
MSB	

TrigSlope
Enum

Values

Negative	
Positive	

Type
Enum

Values

I2C	
Interval	
Logic	

MATH
app.Math

Variables of the form app.Math.xxxx control the mathematical functions F1 through F8.

Names of the form app.Math.Functions("Fx").xxxx are aliases of simpler names which are described in this section of the manual. Examples of alias pairs are as follows -
    app.Math.Functions("Fx") is equivalent to app.Math.Fx
    app.Math.Functions("Fx").Out.Result is equivalent to app.Math.Fx.Out.Result
    app.Math.Functions("Fx").Zoom is equivalent to app.Math.Zoom.Fx
Please see under Acquisition.Channels for a programming example.

ClearSweeps	Action
ResetAll	Action

ClearSweeps
Action

Description
Clear sweeps for history functions such as average, histogram and trend. See also the general 'app.ClearSweeps' control which clears accumulated data for all subsystems, including persistence, measurement statistics, etc.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Clear sweeps for all history functions.
app.Math.ClearSweeps
```

ResetAll
Action

Description
Reset the math subsystem to its default state.
All currently selected math operators, and other settings will be lost.

FUNCTIONS
app.Math.Functions

Names of the form app.Math.Functions("Fx").xxxx are aliases of simpler names which are described in the section of the manual which is devoted to app.Math. Examples of alias pairs are as follows -
    app.Math.Functions("Fx") is equivalent to app.Math.Fx
    app.Math.Functions("Fx").Out.Result is equivalent to app.Math.Fx.Out.Result
    app.Math.Functions("Fx").Zoom is equivalent to app.Math.Zoom.Fx
Please see under Acquisition.Channels for a programming example.

FX
app.Math.Fx

This set of variables controls the math functions F1 through F8.

ClearSweeps	Action
DoResetZoom	Action
DoStoreToMemoryTrace	Action
Equation	String

LabelsPosition	String
LabelsText	String
MathMode	Enum
Operator1	Enum
Persisted	Bool
PersistenceSaturation	Integer
PersistenceTime	Enum
ShowLastTrace	Bool
Source1	Enum
UseGrid	String
View	Bool
ViewLabels	Bool

ClearSweeps
Action

Description

Clears accumulated data for a single function trace.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Reset accumulation for trace F1
app.Math.F1.ClearSweeps
```

DoResetZoom
Action

Description

Resets the zoom state of math trace Fx.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Reset zoom of math function F3.
app.Math.F3.DoResetZoom
```

DoStoreToMemoryTrace
Action

Description

Store data from math function Fx to a memory trace.
Destination for F1 will be M1, F2 will be M2, etc.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Store math function F2 to a memory trace.
app.Math.F2.DoStoreToMemoryTrace
```

Equation
String

Range   Any number of characters

Description

Queries the equation which defines the math function Fx.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the definition of math function F3.
EquationF3 = app.Math.F3.Equation
MsgBox EquationF3
```

LabelsPosition
String

Range   Any number of characters

Description

Sets / Queries the horizontal position of the label attached to the trace Fx. The unit of measurement is the unit of the horizontal scale. The measurement is made from the trigger point.
Note that this control is a string, not a numeric value. This allows multiple labels to be positioned, as shown in the example below.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Add a couple of labels to trace F1, one at 0ns, and one at 55ns
app.SetToDefaultSetup
app.Math.F1.View = True
app.Math.F1.ViewLabels = True
app.Math.F1.LabelsPosition = "0.0, 55e-9"
app.Math.F1.LabelsText = "Hello,World"
```

LabelsText
String

Range   Any number of characters

Description

Sets / Queries the text that appears in labels attached to acquisition trace Cx. Multiple labels may be specified by using comma as a delimiter. See the documentation on LabelsPosition for an example of use.

MathMode   *Enum*

Description

Sets/Queries the math mode.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the mode of the math function F1
app.Math.F1.MathMode = "TwoOperators"
```

Values

OneOperator	Single math operator
TwoOperators	Chain two math operators

Operator1   *Enum*

Description

Sets/Queries the first operator of math function Fx. When MathMode = "OneOperator, this is the only math operator, when MathMode = "TwoOperator", this is the first of two operators. Note that when MathMode = "Graph", this control has no effect.
Note also that the list of available math operators varies depending upon the instrument model number, and the list of installed software options.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Define the first operator of math function F1 as an Average
app.Math.F1.View = True
app.Math.F1.MathMode = "OneOperator"
app.Math.F1.Operator1 = "Average"
```

Values

AbsoluteValue	
Average	
Derivative	
Difference	
EnhancedResolution	
Envelope	
FFT	
Floor	
Integral	
Invert	
Null	
Product	
Ratio	
Reciprocal	
Rescale	
Roof	
Square	
SquareRoot	
Sum	
Zoom	

Persisted

Bool

Description

Sets/Queries the persisted state of the function waveform. If the Display.LockPersistence control is set to 'AllLocked' then the persisted state of all displayed waveforms will be the same. If the Display.LockPersistence control is set to 'PerTrace' then the persisted state of each waveform may be independently controlled.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set persistence on for trace F3.
app.Math.F3.Persisted = True
```

PersistenceSaturation

Integer

Range   From 0 to 100 step 1

Description

Sets/Queries the saturation threshold for persisted waveforms. All information at this level or above will be recorded with the same color or intensity. See the general description above for a discussion of the locked and unlocked persistence modes.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the persistence saturation level for trace F1.
app.Math.F1.PersistenceSaturation = 40
```

PersistenceTime

Enum

Description

Sets/Queries the state of the Persistence Time control. Controls the persistence decay time for this trace. See the general description above for a discussion of the locked and unlocked persistence modes.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the persistence time for the trace F1 to 10 seconds.
app.Math.F1.PersistenceTime = "10s"
```

Values

0.5s	
10s	
1s	
20s	
2s	
5s	
Infinite	

ShowLastTrace
Bool

Description

Sets/Queries the state of the Show Last Trace control. If True then when this trace is displayed in persistence mode the last acquired waveform will be superimposed on the accumulating persistence map. See the general description above for a discussion of the locked and unlocked persistence modes.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Do not show the last trace for the persistence trace of trace F1.
app.Math.F1.ShowLastTrace = False
```

Source1
Enum

Description

Sets/Queries the first source of the first operator in Fx. Note that the two possible sources of Operator1 are Source1 and Source2, Source3 is the second source to Operator2, with the first source of Operator2 being the ouput of Operator1.
Note that the list of available sources is dependent upon the instrument model, and it's installed software options.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Define the first source of math function F1 as C3.
app.Math.F1.Source1 = "C3"
```

Values

C1	
C2	
C3	
C4	
Digital1	
Digital2	
Digital3	
Digital4	
ET	
M1	
M2	
M3	
M4	
Z1	
Z2	
Z3	
Z4	

UseGrid *String*

> **Range** Any number of characters

> **Description**
>
> Sets/Queries the grid in use for the math trace Fx.
> See also app.Acquisition.Cx.UseGrid.

> **Example**
>
> ```
> ' Visual Basic Script
> Set app = CreateObject("LeCroy.XStreamDSO")
>
> ' Place math trace F3 on grid YT4.
> app.Math.F3.UseGrid = "YT4"
> ```

View *Bool*

> **Description**
>
> Sets/Queries whether the trace of math function Fx is visible. Note that even when math traces are not visible, but are being used as inputs to other math functions and/or measurements, they are computed.

> **Example**
>
> ```
> ' Visual Basic Script
> Set app = CreateObject("LeCroy.XStreamDSO")
>
> ' Show math trace F3.
> app.Math.F3.View = True
> ```

ViewLabels *Bool*

> **Description**
>
> Sets/Queries whether trace labels, defined with LabelsText and LabelsPosition controls, are shown.

> **Example**
>
> ```
> ' Visual Basic Script
> Set app = CreateObject("LeCroy.XStreamDSO")
>
> ' Show the user-defined trace label for trace F1
> app.Math.F1.ViewLabels = True
> ```

OPERATOR1SETUP *app.Math.Fx.Operator1Setup*

This node is dynamically created, and will contain the controls for the operator currently selected into Operator1.
See the Math/Measure Control reference at the end of this manual for a lost of these controls.

RESULT *app.Math.Fx.Out.Result*

Properties of the type xxxx.Out.Result.yyyy are those of the last completed acquisition. They are not affected if other cvars are changed after that acquisition was completed. This distinction between "Out.Result" properties and other cvars is most important when the trigger mode is Single or Stopped. You should treat "Out.Result" properties as read-only.

For a detailed description of all properties available for the output of a Math Function, please see Chapter 1.

ZOOM

app.Math.Fx.Zoom

This set of variables controls the zoom functions for math trace Fx.

HorPos	Double
HorZoom	Double
ResetZoom	Action
VariableHorZoom	Bool
VariableVerZoom	Bool
VerPos	Double
VerZoom	Double

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Turn on trace F1, will default to Zoom-Only
app.Math.F1.View = True
app.Math.F1.Source1 = "C1"

' Zoom trace F1 by a factor of 2 horizontally and vertically
app.Math.F1.Zoom.Rese
```

HorPos

Double

Range   From -0.5 to 0.5 step (8 digits)

Description

Sets/Queries the horizontal position of center of the grid on the zoomed trace Fx. The unit of measurement is the screen width, that is, 0.3 means a shift of three of the ten divisions. A positive value moves the trace to the left.

HorZoom

Double

Range   From 0.1 to 1e+006 step (8 digits)

Description

Sets/Queries the horizontal magnification of the trace Fx. The magnification will be in a 1 2 5 10 sequence unless variable horizontal magnification has been set.

ResetZoom

Action

Description

Reset the trace Fx to x1 zoom and zero offset in both axes, so that it is identical to its input trace.

VariableHorZoom

Bool

Description

Sets/Queries the ability to zoom horizontally by a continuously variable factor. Note that if a horizontal zoom of 0.9 is set, while variable zoom is off, the horizontal zoom will be set to 1.0. If the variable zoom is then enabled, the factor of 0.9 will have been remembered, and it will be used. Note that the previous value will not be remembered during a power-cycle.

VariableVerZoom *Bool*

Description

Sets/Queries the ability to zoom vertically by a continuously variable factor. Note that if a vertical zoom of 0.9 is set, while variable zoom is off, the vertical zoom will be set to 1.0. If the variable zoom is then enabled, the factor of 0.9 will have been remembered, and it will be used. Note that the previous value will not be remembered during a power-cycle.

VerPos *Double*

Range From -1.5 to 1.5 step (8 digits)

Description

Sets/Queries the vertical position of center of the grid on the zoomed trace Fx. The unit of measurement is the screen height, that is, 0.375 means a shift of three of the eight divisions. A positive value moves the trace downwards.

VerZoom *Double*

Range From 0.1 to 100 step (8 digits)

Description

Sets/Queries the vertical magnification of the trace Fx. The magnification will be in a 1 2 5 10 sequence unless VariableVerZoom has been set to True, in which case it will be continuously variable.

XY
app.Math.XY

This set of variables controls the display of data in X vs. Y mode. Only Valid when the instrument is in XY, XYSingle, or XYDual display modes.

ClearSweeps	Action
InputX	Enum
InputY	Enum
Persisted	Bool
PersistenceSaturation	Integer
PersistenceTime	Enum
ShowLastTrace	Bool

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Switch to XY+Dual Grid Mode
app.Display.GridMode = "XYDual"

' Configure XY to show C1 vs. C2 in 3D Persistence mode
app.Math.XY.InputX = "C1"
app.Math.XY.InputY = "C2"
app.Math
```

ClearSweeps *Action*

Description

Clears persistence X-Y plot.

InputX *Enum*

Description

Sets/Queries the name of the input channel for the X axis of the X-Y plot.

Values

C1	
C2	
C3	
C4	
Digital1	
Digital2	
Digital3	
Digital4	
ET	
F1	
M1	
M2	
M3	
M4	
Z1	
Z2	
Z3	
Z4	

InputY
Enum

Description

Sets/Queries the name of the input channel for the Y axis of the X-Y plot.

Values

C1	
C2	
C3	
C4	
Digital1	
Digital2	
Digital3	
Digital4	
ET	
F1	
M1	
M2	
M3	
M4	
Z1	
Z2	
Z3	
Z4	

Persisted
Bool

Description

Sets/Queries the persisted state of the X-Y plot. If the Display.LockPersistence control is set to 'AllLocked' then the persisted state of all displayed waveforms will be the same. If the Display.LockPersistence control is set to 'PerTrace' then the persisted state of each waveform may be independently controlled.

PersistenceSaturation
Integer

Range From 0 to 100 step 1

Description

Sets/Queries the saturation threshold for persisted X-Y plot. All information at this level or above will be recorded with the same color or intensity. See the general description above for a discussion of the locked and unlocked persistence modes.

PersistenceTime *Enum*

Description

Sets/Queries the state of the Persistence Time control. Controls the persistence decay time for the Xy persistence. See the general description above for a discussion of the locked and unlocked persistence modes.

Values

0.5s	
10s	
1s	
20s	
2s	
5s	
Infinite	

ShowLastTrace *Bool*

Description

Sets/Queries the state of the Show Last Trace control. If True then when this trace is displayed in persistence mode the last acquired waveform will be superimposed on the accumulating persistence map.
See the general description above for a discussion of the locked and unlocked persistence modes.

RESULT

app.Math.XY.Out.Result

Properties of the type xxxx.Out.Result.yyyy are those of the last completed acquisition. They are not affected if other cvars are changed after that acquisition was completed. This distinction between "Out.Result" properties and other cvars is most important when the trigger mode is Single or Stopped. You should treat "Out.Result" properties as read-only.

Note that this XY result object is very similar, but not identical to the result object exposed by the channel and math traces. The differences are due to the fact that the XY trace returns pairs of data values, one for X, one for Y.

For a detailed description of all properties available for the output of an XY trace, please see Chapter 1.

MEASURE

app.Measure

Variables of the form app.Measure control the parameters P1 through P8, and their associated statistical results and histicons.

Names of the forms app.Measure.Measure("Premote").xxxx and app.Measure.Measure("Px").xxxx are aliases of simpler names which are described in this section of the manual. Examples of alias pairs are as follows -
    app.Measure.Measure("Premote").OutResult is equivalent to app.Measure."Premote".OutResult
    app.Measure.Measure("Px").Statistics is equivalent to app.Measure.Px.Statistics
Please see under Acquisition.Channels for a programming example.

ClearAll	Action
ClearSweeps	Action
SetGateToDefault	Action
ShowMeasure	Bool

StatsOn	Bool
StdGateStart	Double
StdGateStop	Double

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' get into the custom parameter mode
app.Measure.MeasureMode = "MyMeasure"
app.Measure.ClearAll
app.Measure.StatsOn = True
app.Measure.HistoOn = False

' Configure P1 to measure a
```

ClearAll
Action

Description

Resets all parameter setups, turning each of the parameters view to "off", the MeasurementType to "measure"and the selected paramEngine to "Null".

ClearSweeps
Action

Description

Clears the accumulated statistics for parametersP1 to P8 as well as the acumulated statistics for their associated histicons.

SetGateToDefault
Action

Description

Sets the measure gate to its default state. Valid only when in either Std. Vertical or Std. Horizontal measurement modes. For MyMeasure see the equivalent controls under Px.

ShowMeasure
Bool

Description

Defines whether the measure results table is displayed or not.

StatsOn
Bool

Description

Sets/Queries the visibility of parameter statistics. Note: the statistics are accumulated whether the view of them is on or not, so you needn't have StatsOn = "On" to collect statistics.

StdGateStart
Double

Range   From 0 to 10 step 0.01

Description

Sets/Queries the position of the left hand limit of the measure gate (n divisions).
Valid only when in either Std. Vertical or Std. Horizontal measurement modes. For MyMeasure see the equivalent controls under Px.

StdGateStop   *Double*

Range   From 0 to 10 step 0.01

Description

Sets/Queries the position of the right hand limit of the measure gate (in divisions). Valid only when in either Std. Vertical or Std. Horizontal measurement modes. For MyMeasure see the equivalent controls under Px.

MEASURE   *app.Measure.Measure*

Names of the forms app.Measure.Measure("Premote").xxxx and app.Measure.Measure("Px").xxxx are aliases of simpler names which are described in the section of the manual which is devoted to app.Measure. Examples of alias pairs are as follows -

app.Measure.Measure("Premote").OutResult is equivalent to app.Measure."Premote".OutResult

app.Measure.Measure("Px").Statistics is equivalent to app.Measure.Px.Statistics

Please see under app.Acquisition.Channels("Cx") for a programming example.

PREMOTE   *app.Measure.PRemote*

GateByRange	Bool
GateByWform	Bool
WformSource	Enum

GateByRange   *Bool*

GateByWform   *Bool*

WformSource *Enum*

Values

C1	
C2	
C3	
C4	
DigitalA0	
DigitalA1	
DigitalA10	
DigitalA11	
DigitalA12	
DigitalA13	
DigitalA14	
DigitalA15	
DigitalA2	
DigitalA3	
DigitalA4	
DigitalA5	
DigitalA6	
DigitalA7	
DigitalA8	
DigitalA9	
DigitalB0	
DigitalB1	
DigitalB10	
DigitalB11	
DigitalB12	
DigitalB13	
DigitalB14	
DigitalB15	
DigitalB2	
DigitalB3	
DigitalB4	
DigitalB5	
DigitalB6	
DigitalB7	
DigitalB8	
DigitalB9	
ET	
F1	
M1	
M2	
M3	
M4	
Z1	

Z2	
Z3	
Z4	

RESULT

app.Measure.PRemote.histo.Result

RESULT

app.Measure.PRemote.last.Result

RESULT

app.Measure.PRemote.max.Result

RESULT

app.Measure.PRemote.mean.Result

RESULT

app.Measure.PRemote.min.Result

RESULT

app.Measure.PRemote.num.Result

RESULT

app.Measure.PRemote.sdev.Result

STATISTICS

app.Measure.PRemote.Statistics

PX

app.Measure.Px

This set of variables controls the parameters P1 through P8, (when the MeasureMode is "MyMeasure", otherwise these are predefined) and the statistical results and histicons which depend on them.

GateByRange		Bool

GateByRange	Bool
GateByWform	Bool
GateStart	Double
GateStop	Double
MeasurementType	Enum
ParamEngine	Enum
Source1	Enum

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

app.Measure.MeasureMode = "MyMeasure"

' Set parameter P1 to math on parameters.
App.Measure.P1.MeasurementType = "math"
```

GateByRange   *Bool*

Description

If True, only measurements who's value(s) fall between the limits defined by the LowerLimit and UpperLimit controls, are accepted.

GateByWform   *Bool*

Description

If True, measurements are gated by the state of the waveform defined by the WformSource control.

GateStart   *Double*

Range   From 0 to 10 step 0.01

Description

Sets/Reads the position of the left hand edge of the measure gate for parameter Px.

GateStop   *Double*

Range   From 0 to 10 step 0.01

Description

Sets/Reads the position of the right hand edge of the measure gate for parameter Px.

MeasurementType   *Enum*

Description

Sets/Queries the measurement type of the parameter Px.

Values

measure	Standard measurement mode (parametric of a trace waveform)

ParamEngine *Enum*

Description

Sets/Queries the parameter (measurement on a trace) for Px. This setting applies only if the MeasurementType control is set to "measure".

Values

Amplitude	
Area	
Base	
Delay	
DutyCycle	
Fall	
Fall8020	
Frequency	
I2StoValue	
Maximum	
Mean	
Minimum	
Null	
OvershootNegative	
OvershootPositive	
PeakToPeak	
Period	
Phase	
Rise	
Rise2080	
RootMeanSquare	
Skew	
StandardDeviation	
Top	
Width	
WidthNegative	

Source1   *Enum*

Description

Sets/Queries the first trace source of the parameter Px. Used only when MeasurementType = "measure", for MeasurementType = "math", refer to PSource1.

Values

C1	
C2	
C3	
C4	
DigitalA0	
DigitalA1	
DigitalA10	
DigitalA11	
DigitalA12	
DigitalA13	
DigitalA14	
DigitalA15	
DigitalA2	
DigitalA3	
DigitalA4	
DigitalA5	
DigitalA6	
DigitalA7	
DigitalA8	
DigitalA9	
DigitalB0	
DigitalB1	
DigitalB10	
DigitalB11	
DigitalB12	
DigitalB13	
DigitalB14	
DigitalB15	
DigitalB2	
DigitalB3	
DigitalB4	
DigitalB5	
DigitalB6	
DigitalB7	
DigitalB8	
DigitalB9	
ET	
F1	
M1	
M2	

M3	
M4	
Z1	
Z2	
Z3	
Z4	

RESULT

app.Measure.Px.histo.Result

RESULT

app.Measure.Px.last.Result

RESULT

app.Measure.Px.max.Result

RESULT

app.Measure.Px.mean.Result

RESULT

app.Measure.Px.min.Result

RESULT

app.Measure.Px.num.Result

OPERATOR

app.Measure.Px.Operator

This path specifies that the selected ParamEngine or ArithEngine control variables are "here"

RESULT

app.Measure.Px.Out.Result

Properties of the type xxxx.Out.Result.yyyy are those of the last completed acquisition. They are not affected if other cvars are changed after that acquisition was completed. This distinction between "Out.Result" properties and other cvars is most important when the trigger mode is Single or Stopped. You should treat "Out.Result" properties as read-only.

RESULT

<div align="right">*app.Measure.Px.sdev.Result*</div>

STATISTICS

<div align="right">*app.Measure.Px.Statistics*</div>

This set of variables controls the statistical summaries that are provided for all the parameters.

MEMORY

<div align="right">*app.Memory*</div>

Variables of the form app.Memory.xxxx control the memories M1 through M4.

Names of the form app.Memory.Memories("Mx").xxxx are aliases of simpler names which are described in this section of the manual. Examples of alias pairs are as follows -
   app.Memory.Memories("Mx").Out.Result is equivalent to app.Memory.Mx.Out.Result
   app.Memory.Memories("Mx").Zoom is equivalent to app.Memory.Mx.Zoom
Please see under app.Acquisition.Channels("Cx") for a programming example.

ClearAllMem	Action

ClearAllMem

<div align="right">***Action***</div>

Description

   Clears the contents of all trace memories.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Clear the contents of all trace memories.
app.Memory.ClearAllMem
```

MEMORIES

<div align="right">*app.Memory.Memories*</div>

Names of the form app.Memory.Memories("Mx").xxxx are aliases of simpler names which are described in the section of the manual which is devoted to app.Memory. Examples of alias pairs are as follows -
   app.Memory.Memories("Mx").Out.Result is equivalent to app.Memory.Mx.Out.Result
   app.Memory.Memories("Mx").Zoom is equivalent to app.Memory.Mx.Zoom
Please see under Acquisition.Channels for a programming example.

MX

<div align="right">*app.Memory.Mx*</div>

This set of variables controls the memories M1 through M4.

ClearMem	Action

Copy	Action
LabelsPosition	String
LabelsText	String
Source1	Enum
UseGrid	String
UserText	String
View	Bool
ViewLabels	Bool

ClearMem
Action

Description

Initiates a clear memory operation for memory Mx.

Copy
Action

Description

Copy the trace specified by the Source1 control into this memory.

LabelsPosition
String

Range   Any number of characters

Description

Sets / Queries the horizontal position of the label attached to the acquisition trace Cx. The unit of measurement is the unit of the horizontal scale. The measurement is made from the trigger point. Note that this control is a string, not a numeric value. This allows multiple labels to be positioned, as shown in the example below.

LabelsText
String

Range   Any number of characters

Source1
Enum

Description

Source trace for Copy operations (see 'Copy' control)

Values

C1	
C2	
C3	
C4	
Digital1	
Digital2	
Digital3	
Digital4	
ET	
F1	
M2	
M3	
M4	
Z1	
Z2	
Z3	
Z4	

UseGrid
String

Range   Any number of characters

Description

Sets/Queries the grid used for memory trace Mx.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set memory trace M2 to use grid YT3.
app.Memory.M2.UseGrid = "YT3"
```

UserText
String

Range   Any number of characters

Description

Text field, used to attach arbitrary comments to a memory waveform.

View
Bool

Description

Sets/Queries whether memory trace Mx is visible.

ViewLabels   *Bool*

Description

Sets/Queries whether labels are visible for trace Mx.

RESULT   *app.Memory.Mx.Out.Result*

See app.Acquisition.Cx.Out.Result for a definition of methods and properties used to access the Mx waveform result.

ZOOM   *app.Memory.Mx.Zoom*

This set of variables controls zooming of the memory traces M1 through M4.

HorPos	Double
HorZoom	Double
ResetZoom	Action
VariableHorZoom	Bool
VariableVerZoom	Bool
VerPos	Double
VerZoom	Double

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Save C1 into M1
app.SaveRecall.Waveform.SaveTo = "Memory"
app.SaveRecall.Waveform.SaveSource = "C1"
app.SaveRecall.Waveform.SaveDestination = "M1"
app.SaveRecall.Waveform.DoSave
```

HorPos   *Double*

Range   From -0.5 to 0.5 step (8 digits)

Description

Sets/Queries the horizontal position of center of the grid on the zoomed trace Mx. The unit of measurement is the screen width, that is, 0.3 means a shift of three of the ten divisions. A positive value moves the trace to the left.

HorZoom   *Double*

Range   From 0.1 to 1e+006 step (8 digits)

Description

Sets/Queries the horizontal magnification of the trace Mx. The magnification will be in a 1 2 5 10 sequence unless variable horizontal magnification has been set.

ResetZoom   *Action*

Description

Resets the zoom for trace Mx.

VariableHorZoom   *Bool*

Description

Sets/Queries the ability to zoom horizontally by a continuously variable factor as opposed to a factor that follows a 1, 2, 5 sequence.

VariableVerZoom   *Bool*

Description

Sets/Queries the ability to zoom vertically by a continuously variable factor as opposed to a factor that follows a 1, 2, 5 sequence.

VerPos   *Double*

Range   From -1.5 to 1.5 step (8 digits)

Description

Sets/Queries the vertical position of center of the grid on the zoomed trace Mx. The unit of measurement is the screen height, that is, 0.375 means a shift of three of the eight divisions. A positive value moves the trace downwards.

VerZoom   *Double*

Range   From 0.1 to 100 step (8 digits)

Description

Sets/Queries the vertical magnification of the trace Mx. The magnification will be in a 1 2 5 10 sequence unless variable vertical magnification has been set.

PASSFAIL   *app.PassFail*

Names of the forms app.PassFail("Qremote").xxxx and app.PassFail("Qx").xxxx are aliases of simpler names which are described in this section of the manual. Examples of alias pairs are as follows -

app.PassFail.PassFail("Qremote").Operator is equivalent to app.PassFail.Qremote.Operator
app.PassFail.PassFail("Qx").Out.Result is equivalent to app.PassFail.Qx.Out.Result

Please see under app.Acquisition.Channels("Cx") for a programming example.

ActionOn	Enum
Alarm	Bool
PredefinedConditions	Enum
PrintScreen	Bool
Pulse	Bool
Save	Bool
Stop	Bool
Testing	Bool

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Setup Parameter P1 to be the amplitude of C1
app.Measure.MeasureMode = "MyMeasure"
app.Measure.P1.ParamEngine = "Ampl"
app.Measure.P1.Source1 = "C1"
app.Measure.P1.View = True
```

ActionOn
Enum

Description
Sets/Queries whether a Pass condition or a Fail condition will initiate the pre-selected actions.

Values

Fail	
Pass	

Alarm
Bool

Description
Sets/Queries whether Alarm is included in the PassFail actions.

PredefinedConditions
Enum

Description
Sets/Queries the logical criteria that must be met in a pass-fail test. For example, the condition AnyTrue means that the pass-fail criterion is met if at least one of the test conditions results in a True result.

Values

AllTrue	

PrintScreen
Bool

Description
Sets/Queries whether Print Screen is included in the PassFail actions.

Pulse
Bool

Description
Sets/Queries whether Pulse is included in the PassFail actions. This action emits a pulse from the Aux output socket.

Save
Bool

Description
Sets/Queries whether Save is included in the PassFail actions.

Stop
Bool

Description
Sets/Queries whether Stop is included in the PassFail actions.

Testing
Bool

Description
Sets/Queries whether PassFail testing is on.

RESULT
app.PassFail.LastPass.Result

RESULT

QX

This set of variables controls the tests Q1 through Q8 in the pass fail system.

ClearSweeps	Action
ConditionEngine	Enum
Equation	String
ShortDescription	String
View	Bool
WSource1	Enum

ClearSweeps

Action

Description
ClearSweeps

ConditionEngine

Enum

Description
Sets/Queries whether pass-fail test Qx uses mask testing or parameter comparison.

Values

MaskTestCondition	

Equation

String

Range   Any number of characters

Description
Inspects the equation for pass-fail test Qx. A typical equation would be "All P3 < 0.7071".

ShortDescription

String

Range   Any number of characters

Description
ShortDescription

View

Bool

Description
Sets/Queries whether pass-fail test Qx is visible.

WSource1   *Enum*

Description

WSource1

Values

C1	
C2	
C3	
C4	
ET	
F1	
M1	
M2	
M3	
M4	
XY	
Z1	
Z2	
Z3	
Z4	

RESULT   *app.PassFail.Qx.Out.Result*

Properties of the type xxxx.Out.Result.yyyy are those of the last completed acquisition. They are not affected if other cvars are changed after that acquisition was completed. This distinction between "Out.Result" properties and other cvars is most important when the trigger mode is Single or Stopped. You should treat "Out.Result" properties as read-only.

RESULT   *app.PassFail.Rate.Result*

RESULT   *app.PassFail.Tests.Result*

PREFERENCES   *app.Preferences*

This set of variables controls user preferences for the instrument setup and operation.

AudibleFeedback	Bool
EnhancedPrecisionMode	Bool
HorOffsetControl	Enum
Language	Enum

OffsetControl	Enum

AudibleFeedback

Bool

Description

Sets/Queries whether audible feedback is enabled, to sound when a control is touched.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Turn on the audible feedback function.
app.Preferences.AudibleFeedback = True
```

EnhancedPrecisionMode

Bool

Description

EnhancedPrecisionMode

HorOffsetControl

Enum

Description

HorOffsetControl.

Values

Div	
Time	

Language

Enum

Description

Language

Values

ChineseSimplified	
English	
French	
German	
Italian	
Japanese	
Korean	

OffsetControl

Enum

Description

Sets/Queries whether Vertical Offset constant in Volts or Divisions when the vertical scale control is changed.

Values

Div	
Volts	

EMAIL

This set of variables controls user preferences for the instrument e-mail system.
E-Mail may be sent when the hardcopy button is pressed when the hardcopy system is appropriately configured. Two standards are supported, SMTP (Simple Mail Transport Protocol), and MAPI (Messaging Application Programming Interface).

DefaultRecipient	String
Mode	Enum
OriginatorAddress	String
SendTestMail	Action
SMTPServer	String

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Configure the originator and recipient addresses, replace these with
' appropriate values for your corporate network.
app.Preferences.Email.DefaultRecipient = "recipientAddress@do
```

DefaultRecipient
String

Range Any number of characters

Description
Sets/Queries the default recipient of e-mail transmissions.

Mode
Enum

Description
Sets/Queries the transmission mode for e-mail.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

'  Set e-Mail mode to MAPI.
app.Preferences.EMail.Mode = "MAPI"
```

Values

MAPI	Messaging Application Programming Interface (Uses Outlook Express by default)
SMTP	Simple Mail Transfer Protocol, requires an SMTP server

OriginatorAddress
String

Range Any number of characters

Description
Sets/Queries the originator address for e-mail. This may be any address, and will be used when the recipient replies to a mail, note that the instrument doesn't necessarily have to have it's own E-Mail account in order to use this.

SendTestMail

Action

Description

Sends a message by e-mail to test the system.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

'  Send an e-Mail message to test the system.
app.Preferences.EMail.SendTestMail
```

SMTPServer

String

Range   Any number of characters

Description

Sets/Queries the name of the SMTP Server for e-mail. Ask your system administrator if you are unsure of what value to set this to.

RECALLSETUPLOCK

app.RecallSetupLock

SAVERECALL

app.SaveRecall

Controls for the Save/Recall subsystem. Includes nodes for saving and recalling both Waveforms and Panels (Setups).

ShowLSIBExport	Action
ShowSaveTable	Action

ShowLSIBExport

Action

ShowSaveTable

Action

SETUP

app.SaveRecall.Setup

Controls for Saving and Recalling instrument setups.

DoRecallDefaultNvlPanel	Action
DoRecallDefaultPanel	Action
DoRecallPanel	Action
DoSavePanel	Action
InternalName1	String
InternalName2	String
InternalName3	String
InternalName4	String
InternalName5	String
InternalName6	String

PanelDir	FileName
PanelFilename	FileName
RecallInternal1	Action
RecallInternal2	Action
RecallInternal3	Action
RecallInternal4	Action
RecallInternal5	Action
RecallInternal6	Action
SaveInternal1	Action
SaveInternal2	Action
SaveInternal3	Action
SaveInternal4	Action
SaveInternal5	Action
SaveInternal6	Action

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Reset to default setup
app.SaveRecall.Setup.DoRecallDefaultPanel

' Store the current setup into the first of the 6 setup stores.
app.SaveRecall.Setup.InternalName1 = "My Setup1"
```

DoRecallDefaultNvlPanel   *Action*

Description

Recalls the factory set NVL (preference) panel settings. These are controls which are not affected when the default panel is recalled, and includes items such as the color preferences, remote control preferences, etc. Use with care!, especially when invoking via the VBS? Remote command via GPIB or TCP/IP, which could result in the controller being disconnected when the default port is selected.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Recall the factory default nvl panel settings.
app.SaveRecall.Setup.DoRecallDefaultNvlPanel
```

DoRecallDefaultPanel   *Action*

Description

Recalls the factory set panel settings.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Recall the factory default panel settings.
app.SaveRecall.Setup.DoRecallDefaultPanel
```

DoRecallPanel
Action

Description
Recall the panel file named in the PanelFilename control.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Create the filename for the next panel setup to be recalled.
app.SaveRecall.Setup.PanelFilename = "Setup89"

' Recall the panel setup from the named file.
app.SaveRecall.Setup.DoRecallPanel
```

DoSavePanel
Action

Description
Saves the current panel settings to the previously specified file. If the filename already exists, the file will be over-written without a prompt.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Create the filename for the next panel setup save.
app.SaveRecall.Setup.PanelFilename = "TestSave"

' Save the panel setup to the named file.
app.SaveRecall.Setup.DoSavePanel
```

InternalName1
String

Range
Any number of characters

Description
Sets/Queries the name of internal panel setup memory 1.

InternalName2
String

Range
Any number of characters

Description
Please see InternalName1.

InternalName3
String

Range
Any number of characters

Description
Please see InternalName1.

InternalName4
String

Range
Any number of characters

Description
Please see InternalName1.

InternalName5 *String*

> **Range** Any number of characters

> **Description**
>
> Please see InternalName1.

InternalName6 *String*

> **Range** Any number of characters

> **Description**
>
> Please see InternalName1.

PanelDir *FileName*

> **Range** Any number of characters

> **Description**
>
> Directory in which setups are stored/recalled.

PanelFilename *FileName*

> **Range** Any number of characters

> **Description**
>
> Sets/Queries the current filename for saving a panel setup. Note that a '.lss' extension is automatically appended if not supplied.

RecallInternal1 *Action*

> **Description**
>
> Recall the settings which are stored in internal panel memory 1.

> **Example**
> ```
> ' Visual Basic Script
> Set app = CreateObject("LeCroy.XStreamDSO")
>
> ' Recall the settings from internal panel memory 1.
> app.SaveRecall.Setup.RecallInternal1
> ```

RecallInternal2 *Action*

> **Description**
>
> Please see RecallInternal1.

RecallInternal3 *Action*

> **Description**
>
> Please see RecallInternal1.

RecallInternal4 *Action*

> **Description**
>
> Please see RecallInternal1.

RecallInternal5   *Action*

Description
Please see RecallInternal1.

RecallInternal6   *Action*

Description
Please see RecallInternal1.

SaveInternal1   *Action*

Description
Saves the current instrument settings into internal panel memory 1.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Save the current settings into internal panel memory 1.
app.SaveRecall.Setup.SaveInternal1
```

SaveInternal2   *Action*

Description
Please see SaveInternal1.

SaveInternal3   *Action*

Description
Please see SaveInternal1.

SaveInternal4   *Action*

Description
Please see SaveInternal1.

SaveInternal5   *Action*

Description
Please see SaveInternal1.

SaveInternal6   *Action*

Description
Please see SaveInternal1.

TABLE   *app.SaveRecall.Table*

Delimiter	Enum
DoSave	Action
SaveSource	Enum
TableDir	FileName
TableFormat	Enum
TableTitle	String

Delimiter *Enum*

Values

Comma	
Semicolon	
Space	
Tab	

DoSave *Action*

SaveSource *Enum*

Values

AllDisplayed	

TableDir *FileName*

Range Any number of characters

TableFormat *Enum*

Values

ASCII	
Excel	

TableTitle *String*

Range Any number of characters

UTILITIES

app.SaveRecall.Utilities

Controls used to manage files and folders, including the ability to create and delete folders, and the ability to delete files.

CreateDir	Action
DeleteAll	Action
DeleteFile	Action
Directory	FileName

CreateDir *Action*

Description

Creates the directory specified in the Directory control.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Create a named directory
app.SaveRecall.Utilities.Directory = "C:\MyDir"
```

```
app.SaveRecall.Utilities.CreateDir
```

DeleteAll
Action

Description

Deletes all files in the directory specified by the Directory control without a cautionary prompt.
Use with care! Files cannot be recovered if deleted accidentally.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Delete all files without showing a yes/no prompt.
app.SaveRecall.Utilities.Directory = "C:\MyDir"
app.SaveRecall.Utilities.DeleteAll
```

DeleteFile
Action

Description

Deletes the file named by the Filename control

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Delete the named file
app.SaveRecall.Utilities.Filename = "C:\MyDir\MyFile.txt"
app.SaveRecall.Utilities.DeleteFile
```

Directory
FileName

Range   Any number of characters

Description

Defines the directory which will be used for the operations in this automation node.

WAVEFORM
app.SaveRecall.Waveform

Contains controls used for saving and recalling waveforms.

Delimiter	Enum
DoRecall	Action
DoSave	Action
RecallDestination	Enum
RecallFrom	Enum
RecallSource	Enum
SaveDestination	Enum
SaveSource	Enum
SaveTo	Enum
TraceTitle	String
WaveFormat	Enum
WaveformDir	FileName

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")
```

```
' Save C1 into M1
app.SaveRecall.Waveform.SaveTo = "Memory"
app.SaveRecall.Waveform.SaveSource = "C1"
app.SaveRecall.Waveform.SaveDestination = "M1"
app.SaveRecall.Waveform.DoSave
```

Delimiter
Enum

Description

Sets/Queries the delimiter to use when saving data in ASCII text mode.

Values

Comma	
Semicolon	
Space	
Tab	

DoRecall
Action

Description

Recall waveform data into a trace memory. Source may be either an internal memory (M1..M4), or a file on a mass-storage device, depending on the state of the 'RecallFrom' control.

DoSave
Action

Description

Save waveform data into an internal memory, or file on a mass-storage device, using the pre-specified source and destination.

RecallDestination
Enum

Description

Sets/Queries the destination for waveform recall. When the DoRecall action is executed the waveform will be transferred into this destination trace.

Values

M1	
M2	
M3	
M4	

RecallFrom
Enum

Description

Sets/Queries the type of source for waveform recall.

Values

File	Recall from file on a mass-storage device
Memory	Recall from one of the internal memories (M1..M4)

RecallSource   *Enum*

Description

Sets/Queries the source for recalling waveform data. Used only when recalling from an internal memory with RecallSource = "Memory".

Values

M1	
M2	
M3	
M4	

SaveDestination   *Enum*

Description

Sets/Queries the destination to which waveform data will be saved. Used only when the SaveTo = "Memory".

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

'  Setup to store trace C2 into M4 and perform the save operation
app.SaveRecall.Waveform.SaveTo = "Memory"
app.SaveRecall.Waveform.SaveSource = "C2"
app.SaveRecall.Waveform.SaveDestination = "M4"
app.SaveRecall.Waveform.DoSave
```

Values

M1	
M2	
M3	
M4	

SaveSource *Enum*

Description

Sets/Queries the source from which waveform data will be saved.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

'  Set the destination to memory for waveform save.
app.SaveRecall.Waveform.SaveTo = "Memory"
'  Set the source to C2, for saving a waveform.
app.SaveRecall.Waveform.SaveSource = "C2"
'  Set the destination to memory M4, for saving a waveform.
app.SaveRecall.Waveform.SaveDestination = "M4"
'  Save waveform data as previously specified.
app.SaveRecall.Waveform.DoSave
```

Values

AllDisplayed	
C1	
C2	
C3	
C4	
Digital1	
Digital2	
Digital3	
Digital4	
ET	
F1	
M1	
M2	
M3	
M4	
Z1	
Z2	
Z3	
Z4	

SaveTo
Enum

Description

Sets/Queries type of destination for waveform save.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

'  Set the destination to Memory for waveform save.
app.SaveRecall.Waveform.SaveTo = "Memory"
```

Values

File	Save into file on a mass-storage device
Memory	Save into an internal memory (M1..M4)

TraceTitle
String

Range Any number of characters

Description

Sets/Queries the title (prefix) to use when naming saved traces. This prefix will have the family (sequence) number appended to it when forming the filename.

WaveFormat
Enum

Description

Sets/Queries the format to use when saving waveform data into a file. 'Binary' is the most efficient, storing one or two bytes per data sample, depending upon the number of significant bits. When in ASCII mode, the Subformat and Delimiter controls define the data format.

Values

ASCII	Plain ASCII files with choice of various delimiters
Binary	LeCroy's standard binary waveform format
Excel	
MathCad	
MATLAB	

WaveformDir
FileName

Range Any number of characters

Description

Sets/Queries the directory for storing waveform files.

SERIALDECODE
app.SerialDecode

AnnotationPositionPreference	Enum
LinkedToTrigger1	Bool
LinkedToTrigger2	Bool
LinkedToTrigger3	Bool
LinkedToTrigger4	Bool
SelectDecoder	Enum

AnnotationPositionPreference   *Enum*

Values

OnNoisyTrace	
OnTrace	

LinkedToTrigger1   *Bool*

LinkedToTrigger2   *Bool*

LinkedToTrigger3   *Bool*

LinkedToTrigger4   *Bool*

SelectDecoder   *Enum*

Values

Decode1	
Decode2	
Decode3	
Decode4	

AUDIOI2S   *app.SerialDecode.Decode[n].Protocol (Protocol = "AudioI2S")*

Annotate	Enum
BitOrder	Enum
BitsInChannel	Integer
BitsPerByte	Integer
ByteSlicer	Enum
ClockLevelPercent	Double
ClockLevelType	Enum
ClockPhase	Enum
ColumnState	String
Conversion	Enum
CSLevelPercent	Double
CSLevelType	Enum
CSLockMode	Enum
CSOffset	Integer
CSPolarity	Enum
DataLevelPercent	Double
DataLevelType	Enum
IgnoreCS	Bool
MinSamplesPerBit	Integer
ViewingMode	Enum

Annotate
Enum

Values

All	
Left	
Right	

BitOrder
Enum

Values

LSB	
MSB	

BitsInChannel
Integer

Range From 1 to 32 step 1

BitsPerByte
Integer

Range From 2 to 32 step 1

ByteSlicer
Enum

Values

CSbased	
CSbasedMulti	
HolebasedMulti	
NoHole	
Std	
UserCol	

ClockLevelPercent
Double

Range From 0 to 100 step 0.1

ClockLevelType
Enum

Values

Absolute	
Percent	

ClockPhase
Enum

Values

Negative	
Positive	

ColumnState
String

Range Any number of characters

Conversion *Enum*

Values

Binary	
Binary2Cpl	

CSLevelPercent *Double*

Range From 0 to 100 step 0.1

CSLevelType *Enum*

Values

Absolute	
Percent	

CSLockMode *Enum*

Values

Falling	
Rising	

CSOffset *Integer*

Range From 0 to 31 step 1

CSPolarity *Enum*

Values

ActiveHigh	
ActiveLow	

DataLevelPercent *Double*

Range From 0 to 100 step 0.1

DataLevelType *Enum*

Values

Absolute	
Percent	

IgnoreCS *Bool*

MinSamplesPerBit *Integer*

Range From 4 to 100 step 1

ViewingMode   *Enum*

Values

Binary	
dB	
Dec	
Hex	

AUDIOLJ   *app.SerialDecode.Decode[n].Protocol (Protocol = "AudioLJ")*

Annotate	Enum
BitOrder	Enum
BitsInChannel	Integer
BitsPerByte	Integer
ByteSlicer	Enum
ClockLevelPercent	Double
ClockLevelType	Enum
ClockPhase	Enum
ColumnState	String
Conversion	Enum
CSLevelPercent	Double
CSLevelType	Enum
CSLockMode	Enum
CSOffset	Integer
CSPolarity	Enum
DataLevelPercent	Double
DataLevelType	Enum
IgnoreCS	Bool
MinSamplesPerBit	Integer
ViewingMode	Enum

Annotate   *Enum*

Values

All	
Left	
Right	

BitOrder   *Enum*

Values

LSB	
MSB	

BitsInChannel

Integer

Range From 1 to 32 step 1

BitsPerByte

Integer

Range From 2 to 32 step 1

ByteSlicer

Enum

Values

CSbased	
CSbasedMulti	
HolebasedMulti	
NoHole	
Std	
UserCol	

ClockLevelPercent

Double

Range From 0 to 100 step 0.1

ClockLevelType

Enum

Values

Absolute	
Percent	

ClockPhase

Enum

Values

Negative	
Positive	

ColumnState

String

Range Any number of characters

Conversion

Enum

Values

Binary	
Binary2Cpl	

CSLevelPercent

Double

Range From 0 to 100 step 0.1

CSLevelType

Enum

Values

Absolute	
Percent	

CSLockMode

Enum

Values

Falling	
Rising	

CSOffset

Integer

Range From 0 to 31 step 1

CSPolarity

Enum

Values

ActiveHigh	
ActiveLow	

DataLevelPercent

Double

Range From 0 to 100 step 0.1

DataLevelType

Enum

Values

Absolute	
Percent	

IgnoreCS

Bool

MinSamplesPerBit

Integer

Range From 4 to 100 step 1

ViewingMode

Enum

Values

Binary	
dB	
Dec	
Hex	

AUDIORJ

app.SerialDecode.Decode[n].Protocol (Protocol = "AudioRJ")

Annotate	Enum

BitOrder	Enum
BitsInChannel	Integer
BitsPerByte	Integer
ByteSlicer	Enum
ClockLevelPercent	Double
ClockLevelType	Enum
ClockPhase	Enum
ColumnState	String
Conversion	Enum
CSLevelPercent	Double
CSLevelType	Enum
CSLockMode	Enum
CSOffset	Integer
CSPolarity	Enum
DataLevelPercent	Double
DataLevelType	Enum
IgnoreCS	Bool
MinSamplesPerBit	Integer
ViewingMode	Enum

Annotate
Enum

Values

All	
Left	
Right	

BitOrder
Enum

Values

LSB	
MSB	

BitsInChannel
Integer

Range From 1 to 32 step 1

BitsPerByte
Integer

Range From 2 to 32 step 1

ByteSlicer

Enum

Values

CSbased	
CSbasedMulti	
HolebasedMulti	
NoHole	
Std	
UserCol	

ClockLevelPercent

Double

Range From 0 to 100 step 0.1

ClockLevelType

Enum

Values

Absolute	
Percent	

ClockPhase

Enum

Values

Negative	
Positive	

ColumnState

String

Range Any number of characters

Conversion

Enum

Values

Binary	
Binary2Cpl	

CSLevelPercent

Double

Range From 0 to 100 step 0.1

CSLevelType

Enum

Values

Absolute	
Percent	

CSLockMode
Enum

Values

Falling	
Rising	

CSOffset
Integer

Range   From 0 to 31 step 1

CSPolarity
Enum

Values

ActiveHigh	
ActiveLow	

DataLevelPercent
Double

Range   From 0 to 100 step 0.1

DataLevelType
Enum

Values

Absolute	
Percent	

IgnoreCS
Bool

MinSamplesPerBit
Integer

Range   From 4 to 100 step 1

ViewingMode
Enum

Values

Binary	
dB	
Dec	
Hex	

AUDIOTDM
app.SerialDecode.Decode[n].Protocol (Protocol = "AudioTDM")

Annotate	Enum
BitOrder	Enum
BitsInChannel	Integer
BitsPerByte	Integer
ByteSlicer	Enum
ClockLevelPercent	Double
ClockLevelType	Enum

ClockPhase	Enum
ColumnState	String
Conversion	Enum
CSLevelPercent	Double
CSLevelType	Enum
CSLockMode	Enum
CSOffset	Integer
CSPolarity	Enum
DataLevelPercent	Double
DataLevelType	Enum
IgnoreCS	Bool
MinSamplesPerBit	Integer
ViewingMode	Enum

Annotate   *Enum*

Values

All	
Audio1	
Audio2	
Audio3	
Audio4	
Audio5	
Audio6	
Audio7	
Audio8	

BitOrder   *Enum*

Values

LSB	
MSB	

BitsInChannel   *Integer*

Range From 1 to 32 step 1

BitsPerByte   *Integer*

Range From 2 to 32 step 1

ByteSlicer
Enum

Values

CSbased	
CSbasedMulti	
HolebasedMulti	
NoHole	
Std	
UserCol	

ClockLevelPercent
Double

Range From 0 to 100 step 0.1

ClockLevelType
Enum

Values

Absolute	
Percent	

ClockPhase
Enum

Values

Negative	
Positive	

ColumnState
String

Range Any number of characters

Conversion
Enum

Values

Binary	
Binary2Cpl	

CSLevelPercent
Double

Range From 0 to 100 step 0.1

CSLevelType
Enum

Values

Absolute	
Percent	

CSLockMode
Enum

Values

Falling	
Rising	

CSOffset
Integer

Range From 0 to 31 step 1

CSPolarity
Enum

Values

ActiveHigh	
ActiveLow	

DataLevelPercent
Double

Range From 0 to 100 step 0.1

DataLevelType
Enum

Values

Absolute	
Percent	

IgnoreCS
Bool

MinSamplesPerBit
Integer

Range From 4 to 100 step 1

ViewingMode
Enum

Values

Binary	
dB	
Dec	
Hex	

CAN
app.SerialDecode.Decode[n].Protocol (Protocol = "CAN")

BitRate	Double
ColumnState	String
GMLAN	Bool
LevelPercent	Double
LevelType	Enum
ShowStuffBits	Bool
Tolerance	Double

ViewingMode	Enum

BitRate
Double

Range   From 10 to 2e+007 step 1

ColumnState
String

Range   Any number of characters

GMLAN
Bool

LevelPercent
Double

Range   From 0 to 100 step 0.1

LevelType
Enum

Values

Absolute	
Percent	

ShowStuffBits
Bool

Tolerance
Double

Range   From 0.01 to 10 step 0.01

ViewingMode
Enum

Values

Hexadecimal	

CANHL
app.SerialDecode.Decode[n].Protocol (Protocol = "CANHL")

BitRate	Double
ColumnState	String
GMLAN	Bool
LevelPercent	Double
LevelType	Enum
ShowStuffBits	Bool
Tolerance	Double
ViewingMode	Enum

BitRate
Double

Range   From 10 to 2e+007 step 1

ColumnState   *String*

Range   Any number of characters

GMLAN   *Bool*

LevelPercent   *Double*

Range   From 0 to 100 step 0.1

LevelType   *Enum*

Values

Absolute	
Percent	

ShowStuffBits   *Bool*

Tolerance   *Double*

Range   From 0.01 to 10 step 0.01

ViewingMode   *Enum*

Values

Hexadecimal	

GMCANHL   *app.SerialDecode.Decode[n].Protocol (Protocol = "GMCANHL")*

BitRate	Double
ColumnState	String
GMLAN	Bool
LevelPercent	Double
LevelType	Enum
ShowStuffBits	Bool
Tolerance	Double
ViewingMode	Enum

BitRate   *Double*

Range   From 10 to 2e+007 step 1

ColumnState   *String*

Range   Any number of characters

GMLAN   *Bool*

LevelPercent *Double*

> **Range** From 0 to 100 step 0.1

LevelType *Enum*

> **Values**

Absolute	
Percent	

ShowStuffBits *Bool*

Tolerance *Double*

> **Range** From 0.01 to 10 step 0.01

ViewingMode *Enum*

> **Values**

Hexadecimal	

GMCANLAN

app.SerialDecode.Decode[n].Protocol (Protocol = "GMCANLAN")

BitRate	Double
ColumnState	String
GMLAN	Bool
LevelPercent	Double
LevelType	Enum
ShowStuffBits	Bool
Tolerance	Double
ViewingMode	Enum

BitRate *Double*

> **Range** From 10 to 2e+007 step 1

ColumnState *String*

> **Range** Any number of characters

GMLAN *Bool*

LevelPercent *Double*

> **Range** From 0 to 100 step 0.1

LevelType *Enum*

Values

Absolute	
Percent	

ShowStuffBits *Bool*

Tolerance *Double*

Range From 0.01 to 10 step 0.01

ViewingMode *Enum*

Values

Hexadecimal	

I2C

app.SerialDecode.Decode[n].Protocol (Protocol = "I2C")

AddressWithRW	Bool
BitRate	Double
ClockLevelPercent	Double
ClockLevelType	Enum
ColumnState	String
DataLevelPercent	Double
DataLevelType	Enum
Tolerance	Double
ViewingMode	Enum

AddressWithRW *Bool*

BitRate *Double*

Range From 10 to 2e+006 step 1

ClockLevelPercent *Double*

Range From 0 to 100 step 0.1

ClockLevelType *Enum*

Values

Absolute	
Percent	

ColumnState *String*

Range Any number of characters

DataLevelPercent
Double

Range   From 0 to 100 step 0.1

DataLevelType
Enum

Values

Absolute	
Percent	

Tolerance
Double

Range   From 0.01 to 10 step 0.01

ViewingMode
Enum

Values

ASCII	
Binary	
Dec	
Hex	

LIN
app.SerialDecode.Decode[n].Protocol (Protocol = "LIN")

BitRate	Double
ColumnState	String
LevelPercent	Double
LevelType	Enum
LINVersion	Enum
Tolerance	Double

BitRate
Double

Range   From 1000 to 20000 step 1

ColumnState
String

Range   Any number of characters

LevelPercent
Double

Range   From 0 to 100 step 0.1

LevelType
Enum

Values

Absolute	
Percent	

LINVersion *Enum*

Values

ALL	
J2602	
Rev1.3	
Rev2.x	

Tolerance *Double*

Range From 0.01 to 10 step 0.01

MIL1553 *app.SerialDecode.Decode[n].Protocol (Protocol = "MIL1553")*

BitRate	Double
ColumnState	String
FBO	Double
HalfSyncWidth	Double
LevelHAbsolute	Double
LevelHType	Enum
LevelLAbsolute	Double
LevelLType	Enum
MinSamplesPerBit	Integer
NPproximity	Double
TableMode	Enum
ViewingMode	Enum

BitRate *Double*

Range From 1000 to 2e+007 step 50

ColumnState *String*

Range Any number of characters

FBO *Double*

Range From 0 to 50 step 0.1

HalfSyncWidth *Double*

Range From 4e-008 to 0.025 step 1e-008

LevelHAbsolute *Double*

Range From -10 to 10 step 0.05

LevelHType *Enum*

Values

Absolute	
Percent	

LevelLAbsolute *Double*

Range From -10 to 10 step 0.05

LevelLType *Enum*

Values

Absolute	
Percent	

MinSamplesPerBit *Integer*

Range From 4 to 100 step 1

NPproximity *Double*

Range From 1e-009 to 0.005 step 1e-009

TableMode *Enum*

Values

Transfer	
Word	

ViewingMode *Enum*

Values

Binary	
Hex	

RS232

app.SerialDecode.Decode[n].Protocol (Protocol = "RS232")

BitRate	Double
ByteOrderUI	Enum
ColumnState	String
DataBitsUI	Integer
LevelPercent	Double
LevelType	Enum
Parity	Enum
ParityUI	Enum
PolarityUI	Enum
StopBitsUI	Enum
Tolerance	Double

ViewingMode	Enum

BitRate   *Double*

Range From 30 to 5e+008 step 1

ByteOrderUI   *Enum*

Values

LSB	
MSB	

ColumnState   *String*

Range Any number of characters

DataBitsUI   *Integer*

Range From 5 to 16 step 1

LevelPercent   *Double*

Range From 0 to 100 step 0.1

LevelType   *Enum*

Values

Absolute	
Percent	

Parity   *Enum*

Values

Even	
Mark	
None	
Odd	
Space	

ParityUI   *Enum*

Values

Even	
None	
Odd	

PolarityUI

Enum

Values

IdleHigh	
IdleLow	

StopBitsUI

Enum

Values

1	
2	

Tolerance

Double

Range   From 0.01 to 10 step 0.01

ViewingMode

Enum

Values

ASCII	
Binary	
Hex	

SIOP

app.SerialDecode.Decode[n].Protocol (Protocol = "SIOP")

BitOrder	Enum
BitsPerByte	Integer
ByteSlicer	Enum
ClockLevelPercent	Double
ClockLevelType	Enum
ClockPhase	Enum
ClockPolarity	Enum
ColumnState	String
Conversion	Enum
CSLevelPercent	Double
CSLevelType	Enum
CSLockMode	Enum
CSPolarity	Enum
DataLevelPercent	Double
DataLevelType	Enum
DDR	Bool
IgnoreCS	Bool
InterFrameSetup	Enum
InterFrameTime	Double
MinSamplesPerBit	Integer
TDMChannel	Integer
ViewingMode	Enum

BitOrder   *Enum*

Values

LSB	
MSB	

BitsPerByte   *Integer*

Range From 2 to 32 step 1

ByteSlicer   *Enum*

Values

CSbased	
CSbasedMulti	
HolebasedMulti	
NoHole	
Std	
UserCol	

ClockLevelPercent   *Double*

Range From 0 to 100 step 0.1

ClockLevelType   *Enum*

Values

Absolute	
Percent	

ClockPhase   *Enum*

Values

0	
1	

ClockPolarity   *Enum*

Values

0	
1	

ColumnState   *String*

Range Any number of characters

Conversion
Enum

Values

Binary	
Binary2Cpl	

CSLevelPercent
Double

Range   From 0 to 100 step 0.1

CSLevelType
Enum

Values

Absolute	
Percent	

CSLockMode
Enum

Values

Both	
Falling	
Rising	

CSPolarity
Enum

Values

ActiveHigh	
ActiveLow	

DataLevelPercent
Double

Range   From 0 to 100 step 0.1

DataLevelType
Enum

Values

Absolute	
Percent	

DDR
Bool

IgnoreCS
Bool

InterFrameSetup
Enum

Values

Auto	
Manual	

InterFrameTime   *Double*

Range   From 1e-009 to 10 step 1e-009

MinSamplesPerBit   *Integer*

Range   From 4 to 100 step 1

TDMChannel   *Integer*

Range   From 1 to 8 step 1

ViewingMode   *Enum*

Values

ASCII	
Binary	
Dec	
Hex	

SPI   *app.SerialDecode.Decode[n].Protocol (Protocol = "SPI")*

BitOrder	Enum
BitsPerByte	Integer
ByteSlicer	Enum
ClockLevelPercent	Double
ClockLevelType	Enum
ClockPhase	Enum
ClockPolarity	Enum
ColumnState	String
Conversion	Enum
CSLevelPercent	Double
CSLevelType	Enum
CSLockMode	Enum
CSPolarity	Enum
DataLevelPercent	Double
DataLevelType	Enum
DDR	Bool
IgnoreCS	Bool
InterFrameSetup	Enum
InterFrameTime	Double
MinSamplesPerBit	Integer
TDMChannel	Integer
ViewingMode	Enum

BitOrder   *Enum*

Values

LSB	
MSB	

BitsPerByte
Integer

Range From 2 to 32 step 1

ByteSlicer
Enum

Values

CSbased	
CSbasedMulti	
HolebasedMulti	
NoHole	
Std	
UserCol	

ClockLevelPercent
Double

Range From 0 to 100 step 0.1

ClockLevelType
Enum

Values

Absolute	
Percent	

ClockPhase
Enum

Values

0	
1	

ClockPolarity
Enum

Values

0	
1	

ColumnState
String

Range Any number of characters

Conversion
Enum

Values

Binary	
Binary2Cpl	

CSLevelPercent
Double

Range From 0 to 100 step 0.1

CSLevelType
Enum

Values

Absolute	
Percent	

CSLockMode
Enum

Values

Both	
Falling	
Rising	

CSPolarity
Enum

Values

ActiveHigh	
ActiveLow	

DataLevelPercent
Double

Range From 0 to 100 step 0.1

DataLevelType
Enum

Values

Absolute	
Percent	

DDR
Bool

IgnoreCS
Bool

InterFrameSetup
Enum

Values

Auto	
Manual	

InterFrameTime
Double

Range From 1e-009 to 10 step 1e-009

MinSamplesPerBit
Integer

Range From 4 to 100 step 1

TDMChannel *Integer*

Range From 1 to 8 step 1

ViewingMode *Enum*

Values

ASCII	
Binary	
Dec	
Hex	

SPICUSTOM

app.SerialDecode.Decode[n].Protocol (Protocol = "SPICustom")

BitOrder	Enum
BitsPerByte	Integer
ByteSlicer	Enum
ClockLevelPercent	Double
ClockLevelType	Enum
ClockPhase	Enum
ClockPolarity	Enum
ColumnState	String
Conversion	Enum
CSLevelPercent	Double
CSLevelType	Enum
CSLockMode	Enum
CSPolarity	Enum
DataLevelPercent	Double
DataLevelType	Enum
DDR	Bool
IgnoreCS	Bool
InterFrameSetup	Enum
InterFrameTime	Double
MinSamplesPerBit	Integer
TDMChannel	Integer
ViewingMode	Enum

BitOrder *Enum*

Values

LSB	
MSB	

BitsPerByte   *Integer*

Range   From 2 to 32 step 1

ByteSlicer   *Enum*

Values

CSbased	
CSbasedMulti	
HolebasedMulti	
NoHole	
Std	
UserCol	

ClockLevelPercent   *Double*

Range   From 0 to 100 step 0.1

ClockLevelType   *Enum*

Values

Absolute	
Percent	

ClockPhase   *Enum*

Values

0	
1	

ClockPolarity   *Enum*

Values

0	
1	

ColumnState   *String*

Range   Any number of characters

Conversion   *Enum*

Values

Binary	
Binary2Cpl	

CSLevelPercent   *Double*

Range   From 0 to 100 step 0.1

CSLevelType
Enum

Values

Absolute	
Percent	

CSLockMode
Enum

Values

Both	
Falling	
Rising	

CSPolarity
Enum

Values

ActiveHigh	
ActiveLow	

DataLevelPercent
Double

Range From 0 to 100 step 0.1

DataLevelType
Enum

Values

Absolute	
Percent	

DDR
Bool

IgnoreCS
Bool

InterFrameSetup
Enum

Values

Auto	
Manual	

InterFrameTime
Double

Range From 1e-009 to 10 step 1e-009

MinSamplesPerBit
Integer

Range From 4 to 100 step 1

TDMChannel
Integer

Range From 1 to 8 step 1

ViewingMode   *Enum*

Values

ASCII	
Binary	
Dec	
Hex	

SPIDDR   *app.SerialDecode.Decode[n].Protocol (Protocol = "SPIDDR")*

BitOrder	Enum
BitsPerByte	Integer
ByteSlicer	Enum
ClockLevelPercent	Double
ClockLevelType	Enum
ClockPhase	Enum
ClockPolarity	Enum
ColumnState	String
Conversion	Enum
CSLevelPercent	Double
CSLevelType	Enum
CSLockMode	Enum
CSPolarity	Enum
DataLevelPercent	Double
DataLevelType	Enum
DDR	Bool
IgnoreCS	Bool
InterFrameSetup	Enum
InterFrameTime	Double
MinSamplesPerBit	Integer
TDMChannel	Integer
ViewingMode	Enum

BitOrder   *Enum*

Values

LSB	
MSB	

BitsPerByte   *Integer*

Range   From 2 to 32 step 1

ByteSlicer *Enum*

Values

CSbased	
CSbasedMulti	
HolebasedMulti	
NoHole	
Std	
UserCol	

ClockLevelPercent *Double*

Range From 0 to 100 step 0.1

ClockLevelType *Enum*

Values

Absolute	
Percent	

ClockPhase *Enum*

Values

0	
1	

ClockPolarity *Enum*

Values

0	
1	

ColumnState *String*

Range Any number of characters

Conversion *Enum*

Values

Binary	
Binary2Cpl	

CSLevelPercent *Double*

Range From 0 to 100 step 0.1

CSLevelType

Enum

Values

Absolute	
Percent	

CSLockMode

Enum

Values

Both	
Falling	
Rising	

CSPolarity

Enum

Values

ActiveHigh	
ActiveLow	

DataLevelPercent

Double

Range From 0 to 100 step 0.1

DataLevelType

Enum

Values

Absolute	
Percent	

DDR

Bool

IgnoreCS

Bool

InterFrameSetup

Enum

Values

Auto	
Manual	

InterFrameTime

Double

Range From 1e-009 to 10 step 1e-009

MinSamplesPerBit

Integer

Range From 4 to 100 step 1

TDMChannel

Integer

Range From 1 to 8 step 1

ViewingMode *Enum*

Values

ASCII	
Binary	
Dec	
Hex	

SSPI

app.SerialDecode.Decode[n].Protocol (Protocol = "SSPI")

BitOrder	Enum
BitsPerByte	Integer
ByteSlicer	Enum
ClockLevelPercent	Double
ClockLevelType	Enum
ClockPhase	Enum
ClockPolarity	Enum
ColumnState	String
Conversion	Enum
CSLevelPercent	Double
CSLevelType	Enum
CSLockMode	Enum
CSPolarity	Enum
DataLevelPercent	Double
DataLevelType	Enum
DDR	Bool
IgnoreCS	Bool
InterFrameSetup	Enum
InterFrameTime	Double
MinSamplesPerBit	Integer
TDMChannel	Integer
ViewingMode	Enum

BitOrder *Enum*

Values

LSB	
MSB	

BitsPerByte *Integer*

Range From 2 to 32 step 1

ByteSlicer   *Enum*

Values

CSbased	
CSbasedMulti	
HolebasedMulti	
NoHole	
Std	
UserCol	

ClockLevelPercent   *Double*

Range From 0 to 100 step 0.1

ClockLevelType   *Enum*

Values

Absolute	
Percent	

ClockPhase   *Enum*

Values

0	
1	

ClockPolarity   *Enum*

Values

0	
1	

ColumnState   *String*

Range Any number of characters

Conversion   *Enum*

Values

Binary	
Binary2Cpl	

CSLevelPercent   *Double*

Range From 0 to 100 step 0.1

CSLevelType
Enum

Values

Absolute	
Percent	

CSLockMode
Enum

Values

Both	
Falling	
Rising	

CSPolarity
Enum

Values

ActiveHigh	
ActiveLow	

DataLevelPercent
Double

Range   From 0 to 100 step 0.1

DataLevelType
Enum

Values

Absolute	
Percent	

DDR
Bool

IgnoreCS
Bool

InterFrameSetup
Enum

Values

Auto	
Manual	

InterFrameTime
Double

Range   From 1e-009 to 10 step 1e-009

MinSamplesPerBit
Integer

Range   From 4 to 100 step 1

TDMChannel
Integer

Range   From 1 to 8 step 1

ViewingMode   *Enum*

Values

ASCII	
Binary	
Dec	
Hex	

UART   *app.SerialDecode.Decode[n].Protocol (Protocol = "UART")*

BitRate	Double
ByteOrderUI	Enum
ColumnState	String
DataBitsUI	Integer
LevelPercent	Double
LevelType	Enum
Parity	Enum
ParityUI	Enum
PolarityUI	Enum
StopBitsUI	Enum
Tolerance	Double
ViewingMode	Enum

BitRate   *Double*

Range   From 30 to 5e+008 step 1

ByteOrderUI   *Enum*

Values

LSB	
MSB	

ColumnState   *String*

Range   Any number of characters

DataBitsUI   *Integer*

Range   From 5 to 16 step 1

LevelPercent   *Double*

Range   From 0 to 100 step 0.1

LevelType   *Enum*

Values

Absolute	
Percent	

Parity   *Enum*

Values

Even	
Mark	
None	
Odd	
Space	

ParityUI   *Enum*

Values

Even	
None	
Odd	

PolarityUI   *Enum*

Values

IdleHigh	
IdleLow	

StopBitsUI   *Enum*

Values

1	
2	

Tolerance   *Double*

Range   From 0.01 to 10 step 0.01

ViewingMode   *Enum*

Values

ASCII	
Binary	
Hex	

DECODEX   *app.SerialDecode.Decodex*

AnnotationPosition	Enum

DataSource	Enum
OutputFile	FileName
Protocol	Enum
View	Bool
ViewDecode	Bool

AnnotationPosition

Enum

Values

Bottom	
Centered	
OnNoisyTrace	
OnTrace	
Top	

DataSource   *Enum*

Description

The Data Source has to be entered here. The source can be any channel, function or memory. The Data Source is required for every protocol supported whereas Clock and Chip Select might not be

Values

C1	
C2	
C3	
C4	
DigitalA0	
DigitalA1	
DigitalA10	
DigitalA11	
DigitalA12	
DigitalA13	
DigitalA14	
DigitalA15	
DigitalA2	
DigitalA3	
DigitalA4	
DigitalA5	
DigitalA6	
DigitalA7	
DigitalA8	
DigitalA9	
DigitalB0	
DigitalB1	
DigitalB10	
DigitalB11	
DigitalB12	
DigitalB13	
DigitalB14	
DigitalB15	
DigitalB2	
DigitalB3	
DigitalB4	
DigitalB5	
DigitalB6	
DigitalB7	
DigitalB8	
DigitalB9	
ET	
F1	
M1	
M2	

M3	
M4	
Z2	
Z3	
Z4	

OutputFile
FileName

Range   Any number of characters

Description
The name and path of the File used to export the Decoded Table

Protocol
Enum

Description
The protocol currently decoded by this Decoder. At the time of this writing (July of 2007) we support 7 protocols:8b10, CAN, FlexRay, I2C, LIN, UART, SPI. The options purchased govern the list of visible protocol in this field.

Values

AudioI2S	
AudioLJ	
AudioRJ	
AudioTDM	
CAN	
CANHL	
GMCANHL	
GMCANLAN	
I2C	
LIN	
MIL1553	
RS232	
SIOP	
SPI	
SPICustom	
SPIDDR	
SSPI	
UART	

View
Bool

Description
Turns the Table View on and off.

ViewDecode
Bool

Description
Turns the Annotation View on and off.

DECODE
app.SerialDecode.Decodex.Decode

BitRate	Double
ColumnState	String
LevelPercent	Double
LevelType	Enum
ViewingMode	Enum

BitRate   *Double*

Range   From 10 to 2e+007 step 1

Description

The Bitrate of the data stream to be decoded

ColumnState   *String*

Range   Any number of characters

Description

This variable lists the visibility state of the columns in the decoded table
Each column is named, followed by an equal sign and the state on or off.
On turns on the column, off turns it off.

Example

```
The following command would show 3 columns
Time=on|Data=on|DataLength=on
whereas this comand would only show Time and DataLength
Time=on|Data=on|DataLength=off
```

LevelPercent   *Double*

Range   From 0 to 100 step 0.1

Description

The threshold between zeros and ones expressed in Percent of the distance between top and base.

LevelType   *Enum*

Description

The selection between absolute and relative threshold mode

Values

Absolute	
Percent	

ViewingMode   *Enum*

Description

Selects viewing mode, usually between Binary,Hexadecimal, ASCII

Values

Hexadecimal	

RESULT   *app.SerialDecode.Decodex.Out.Result*

SYSTEMCONTROL

app.SystemControl

FrontPanelEventTimestamp	String
ModalDialogTimeout	Integer
PersistentMessage	String

FrontPanelEventTimestamp

String

Range   Any number of characters

ModalDialogTimeout

Integer

Range   From 0 to 120 step 1

Description

Set a timeout, in units of seconds, used to auto-dismiss modal dialogs, with their default responses.

PersistentMessage

String

Range   Any number of characters

DATETIMESETUP

app.Utility.DateTimeSetup

This set of variables controls user the date and time setup. In addition to manual controls for hh/mm/ss, dd/mm/yy, there is the ability to set the time and date from an Internet clock using the SNTP protocol.

CurrentDateAndTime	String
Day	Integer
Hour	Integer
Minute	Integer
Month	Integer
Second	Integer
SetFromSNTP	Action
Validate	Action
Year	Integer

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set time/date from the NIST Internet clock
app.Utility.DateTimeSetup.SetFromSNTP
```

CurrentDateAndTime

String

Range   Any number of characters

Description

Reads the current date and time from the real-time calendar and clock.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the current date and time from the real-time calendar and clock.
app.Utility.DateTimeSetup.CurrentDateAndTime
```

Day

Integer

Range From 1 to 31 step 1

Description

Sets/Queries the day of the month setting of the real-time clock as a number.
The value will not be accepted by the clock until app.Utility.DateTimeSetup.Validate
is sent. All time/date controls are validated at the same time.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the day of the month as 21.
app.Utility.DateTimeSetup.Day = 21
app.Utility.DateTimeSetup.Validate
```

Hour

Integer

Range From 0 to 23 step 1

Description

Sets/Queries the hours setting of the real-time clock as a number.
The value will not be accepted by the clock until app.Utility.DateTimeSetup.Validate
is sent. All time/date controls are validated at the same time.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the hour as 13.
app.Utility.DateTimeSetup.Hour = 13
app.Utility.DateTimeSetup.Validate
```

Minute

Integer

Range From 0 to 59 step 1

Description

Sets/Queries the minutes setting of the real-time clock as a number.
The value will not be accepted by the clock until app.Utility.DateTimeSetup.Validate
is sent. All time/date controls are validated at the same time.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the minute as 34.
app.Utility.DateTimeSetup.Minute = 34
app.Utility.DateTimeSetup.Validate
```

Month
Integer

Range From 1 to 12 step 1

Description
Sets/Queries the month setting of the real-time clock as a number.
The value will not be accepted by the clock until app.Utility.DateTimeSetup.Validate
is sent. All time/date controls are validated at the same time.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the month as August.
app.Utility.DateTimeSetup.Month = 8
app.Utility.DateTimeSetup.Validate
```

Second
Integer

Range From 0 to 59 step 1

Description
Sets/Queries the seconds setting of the real-time clock as a number.
The value will not be accepted by the clock until app.Utility.DateTimeSetup.Validate
is sent. All time/date controls are validated at the same time.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the seconds as 55.
app.Utility.DateTimeSetup.Second = 55
app.Utility.DateTimeSetup.Validate
```

SetFromSNTP
Action

Description
Sets the real time clock from the simple network time protocol.

Example
```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the real time clock from the simple network time protocol.
app.Utility.DateTimeSetup.SetFromSNTP
```

Validate   *Action*

Description

Validates any new settings. This action is equivalent to clicking 'Validate Changes' on the Date/Time page.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the day, hour, and minute, and validate.
app.Utility.DateTimeSetup.Day = 3
app.Utility.DateTimeSetup.Hour = 5
app.Utility.DateTimeSetup.Minute = 8

app.Utility.DateTimeSetup.Validate
```

Year   *Integer*

Range   From 2000 to 2037 step 1

Description

Sets/Queries the year setting of the real-time clock as a number.
The value will not be accepted by the clock until app.Utility.DateTimeSetup.Validate
is sent. All time/date controls are validated at the same time.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set the year as 2003.
app.Utility.DateTimeSetup.Year = 2003
app.Utility.DateTimeSetup.Validate
```

OPTIONS   *app.Utility.Options*

Options subsystem, contains controls to query the list of installed software and hardware options.

InstalledHWOptions	String
InstalledSWOptions	String
ScopeID	String

InstalledHWOptions   *String*

Range   Any number of characters

Description

Shows a list of the installed hardware options.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the list of installed hardware options and present
' in a popup dialog
MsgBox app.Utility.Options.InstalledHWOPtions
```

InstalledSWOptions   *String*

Range   Any number of characters

Description

Shows list of installed software options.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the list of installed software options and display
' in a popup dialog
MsgBox app.Utility.Options.InstalledSWOPtions
```

ScopeID   *String*

Range   Any number of characters

Description

Queries the ID of the instrument. This ID should be specified when purchasing software options for your instrument.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Read the ID of the instrument.
MsgBox app.Utility.Options.ScopeID
```

REMOTE   *app.Utility.Remote*

Controls related to the remote control section of the instrument. Note that in this context Automation is not considered part of 'Remote'. Remote control currently includes control using ASCII remote commands from GPIB or TCP/IP.

Assistant	Enum
Interface	Enum
RestrictControl	Enum
SetToErrorsOnlyAndClearAtStartup	Bool

Assistant   *Enum*

Description

Sets/Queries the setting of the remote assistant.

Values

EO	Log errors only
FD	Log all remote commands/queries
OFF	Turn the assistant off

Interface
Enum

Description

Sets/Queries the currently selected type of currently selected remote control interface.

Values

LXI	
Off	
TCPIP	

RestrictControl
Enum

Description

Sets/Queries whether remote control is restricted to certain hosts, where the host name is defined either by IP address, or dns name.

Values

No	
Yes	

SetToErrorsOnlyAndClearAtStartup
Bool

Description

Enable the resetting of the remote assistant to 'Errors Only' mode when the instrument is reset. Also ensure s that the remote assistant log is cleared upon startup.
This control is set by default to lower the risk that the remote assistant will be set to 'Full Dialog' mode and be forgotten, causing a decrease in remote control performance.

CIOPORTU3GPIB
app.Utility.Remote.IOManager.CIOPortU3GPIB

GpibAddress	Integer

GpibAddress
Integer

Range   From 1 to 30 step 1

CLSIBPORT
app.Utility.Remote.IOManager.CLSIBPort

WAVESCAN
app.WaveScan

This is the root of the WaveScan automation hierarchy.

WaveScan enables you to search for unusual events in a single capture, or to scan for an event in many acquisitions over a long period of time.

It may be considered a kind of software trigger.

Enable	Bool

FindRare1Sigma	Action
FindRare3Sigma	Action
FindRare5Sigma	Action
FindUseMean	Action
ShowTimes	Bool

Enable   *Bool*

Description

Sets/Queries the WaveScan enabled state.

FindRare1Sigma   *Action*

Description

Preset the filter limit and delta to find rare events. Uses the history of measurements since the last Clear Sweeps, or control change, to set the limit and delta to capture +/- 1 sigma events.

FindRare3Sigma   *Action*

Description

Preset the filter limit and delta to find rare events. Uses the history of measurements since the last Clear Sweeps, or control change, to set the limit and delta to capture +/- 3 sigma events.

FindRare5Sigma   *Action*

Description

Preset the filter limit and delta to find rare events. Uses the history of measurements since the last Clear Sweeps, or control change, to set the limit and delta to capture +/- 5 sigma events.

FindUseMean   *Action*

Description

Setup the filter to find measurements with values > the current statistical mean.

ShowTimes   *Bool*

SCANDECODE   *app.WaveScan.ScanDecode*

ClearSweeps	Action
TableLocation	String
View	Bool

ClearSweeps   *Action*

Description

Clear any accumulated result data. Useful for example to restart an average, or parameter statistics.

TableLocation   *String*

Range   Any number of characters

View
Bool

Description

Sets/Queries the trace's 'Viewed' state. When true, the trace is displayed on one of the display graticules. Note that even when a trace is not visible, it may be used as a source for Math, Measure, etc.

RESULT
app.WaveScan.ScanDecode.Out.Result

ZOOM
app.Zoom

QuickZoom	Action
ResetAll	Action

QuickZoom
Action

Description

Zoom all Cx that are on at an horizontal factor of 10.

ResetAll
Action

Description

Reset all Zx to their default settings.

ZX
app.Zoom.Zx

ClearSweeps	Action
DoStoreToMemoryTrace	Action
Equation	String
LabelsPosition	String
LabelsText	String
Persisted	Bool
PersistenceSaturation	Integer
PersistenceTime	Enum
ShowLastTrace	Bool
Source	Enum
UseGrid	String
View	Bool
ViewLabels	Bool

ClearSweeps
Action

Description

Clear any accumulated result data. Useful for example to restart an average, or parameter statistics.

DoStoreToMemoryTrace   *Action*

Description

Store the content of Zx into the corresponding Memory Slot (Mx).

Equation   *String*

Range   Any number of characters

Description

Same as app.Math.Fx.Equation.

LabelsPosition   *String*

Range   Any number of characters

Description

Sets / Queries the horizontal position of the label attached to the acquisition trace Cx. The unit of measurement is the unit of the horizontal scale. The measurement is made from the trigger point. Note that this control is a string, not a numeric value. This allows multiple labels to be positioned, as shown in the example below.

LabelsText   *String*

Range   Any number of characters

Persisted   *Bool*

Description

Sets/Queries the persisted state of the waveform. If the Display.LockPersistence control is set to 'AllLocked' then the persisted state of all displayed waveforms will be the same. If the Display.LockPersistence control is set to 'PerTrace' then the persisted state of each waveform may be independently controlled.

PersistenceSaturation   *Integer*

Range   From 0 to 100 step 1

Description

Sets/Queries the saturation threshold for persisted waveforms.
All information at this level or above will be recorded with the same color or intensity.
See the general description above for a discussion of the locked and unlocked persistence modes.

PersistenceTime
Enum

Description

Sets/Queries the state of the Persistence Time control. Controls the persistence decay time for this trace. See the general description above for a discussion of the locked and unlocked persistence modes.

Values

0.5s	
10s	
1s	
20s	
2s	
5s	
Infinite	

ShowLastTrace
Bool

Description

Sets/Queries the state of the Show Last Trace control. If True then when this trace is displayed in persistence mode the last acquired waveform will be superimposed on the accumulating persistence map.
See the general description above for a discussion of the locked and unlocked persistence modes.

Source
Enum

Description

Zoom source trace.

Values

C1	
C2	
C3	
C4	
Digital1	
Digital2	
Digital3	
Digital4	
ET	
F1	
M1	
M2	
M3	
M4	
Z2	
Z3	
Z4	

UseGrid *String*

Range Any number of characters

Description

Sets/Queries the grid in use for the zoom trace Zx.
See also app.Acquisition.Cx.UseGrid.

View *Bool*

Description

Sets/Queries the trace's 'Viewed' state. When true, the trace is displayed on one of the display graticules. Note that even when a trace is not visible, it may be used as a source for Math, Measure, etc.

ViewLabels *Bool*

Description

Sets/Queries whether the user-defined labels for the trace are visible.
See Also: LabelsPosition and LabelsText controls.

RESULT

app.Zoom.Zx.Out.Result

ZOOM

app.Zoom.Zx.Zoom

HorPos	Double
HorZoom	Double
ResetZoom	Action
VariableHorZoom	Bool
VariableVerZoom	Bool
VerPos	Double
VerZoom	Double

HorPos *Double*

Range From -0.5 to 0.5 step (8 digits)

Description

Horizontal Position of the trace, normalized to a value between -0.5 and 0.5. A value of zero is the default, and indicates no position change relative to the source trace.

HorZoom *Double*

Range From 0.1 to 1e+006 step (8 digits)

Description

Horizontal Zoom setting. Locked to a 1, 2, 5 sequence unless VariableHorZoom is set to True .

ResetZoom   *Action*

Description

Resets the zoom settings to their default values.

VariableHorZoom   *Bool*

Description

Enable/Disable the variable Horizontal Zoom control. If enabled, the HorZoom control may be set to a value other than the standard 1, 2, 5 sequence.

VariableVerZoom   *Bool*

Description

Enable/Disable the variable Vertical Zoom control. If enabled, the VerZoom control may be set to a value other than the standard 1, 2, 5 sequence.

VerPos   *Double*

Range   From -1.5 to 1.5 step (8 digits)

Description

Vertical Position of the trace, normalized to a value between -1.5 and 1.5. A value of zero is the default, and indicates no position change relative to the source trace.

VerZoom   *Double*

Range   From 0.1 to 100 step (8 digits)

Description

Vertical Zoom setting. Locked to a 1, 2, 5 sequence unless VariableVerZoom is set to True .

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AVERAGE

app.Math.Fx.OperatorYSetup (Operator = "Average")

Waveform Averaging.

AverageType	Enum
ClearSweeps	Action
InvalidInputPolicy	Bool
Sweeps	Integer

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Turn trace F1 on and setup to average the data from C1
' Average mode is set to Continuous
app.Math.F1.View = True
app.Math.F1.Operator1 = "Average"
app.Math.F1.MathMode = "OneOpe
```

AverageType   *Enum*

Description

Sets / Queries the averaging mode. Continuous and Summation modes are supported.

Values

Continuous	
Summed	

ClearSweeps   *Action*

Description

Clears all averaged sweeps.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Clear sweeps for average in trace F1.
app.Math.F1.Operator1Setup.ClearSweeps
```

InvalidInputPolicy   *Bool*

Sweeps   *Integer*

Range   From 1 to 1000000 step 1

Description

Sets / Queries the number of sweeps to be averaged when trace Fx is set to averaging - continuous or summed.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set number of sweeps to be averaged in trace F1 as 20.
app.Math.F1.Operator1Setup.Sweeps = 20
```

DERIVATIVE

app.Math.Fx.OperatorYSetup (Operator = "Derivative")

Computes the derivative of the waveform (next_sample_value - this_sample_value) / horizontal_sample_interval.

EnableAutoScale	Bool
FindScale	Action
VerOffset	Double
VerScale	DoubleLockstep

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Start a find scale operation for derivative function trace F1
app.Math.F1.View = True
app.Math.F1.MathMode = "OneOperator"
app.Math.F1.Operator1 = "Derivative"
app.Math.F1.Operato
```

EnableAutoScale   *Bool*

Description

Sets/Queries whether the autoscale function is enabled for the derivative function trace Fx. If enabled, an auto-scale operation is performed whenever the setup changes.

FindScale   *Action*

Description

Initiates a Find Scale action, to set a suitable vertical scale for the derivative function trace Fx.

VerOffset   *Double*

Range   From -1e+006 to 1e+006 step 1e-009

Description

Sets/Queries the vertical offset of the derivative function trace Fx.

VerScale *DoubleLockstep*

Range From 1e-012 to 1e+013 step 10000, locked to 1 2 5, fine grain allowed=false, on=false

Description

Sets/Queries the vertical scale of the derivative function Fx.

ENHANCEDRESOLUTION

app.Math.Fx.OperatorYSetup (Operator = "EnhancedResolution")

Bits	Enum

Bits *Enum*

Description

Number of bits of enhanced resolution. ERES is a FIR filter with a gaussian frequency response.

Values

0.5	Enhance by 0.5 bits
1	Enhance by 1 bits
1.5	Enhance by 1.5 bits
2	Enhance by 2 bits
2.5	Enhance by 2.5 bits
3	Enhance by 3 bits

ENVELOPE

app.Math.Fx.OperatorYSetup (Operator = "Envelope")

Envelope of minimum and maximum values for an ensemble of sweeps, or 'Extrema'

ClearSweeps	Action
LimitNumSweeps	Bool
Sweeps	Integer

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Configure F3 to be an envelope of C1
app.Math.F3.View = True
app.Math.F3.Source1 = "C1"
app.Math.F3.MathMode = "OneOperator"
app.Math.F3.Operator1 = "Envelope"
app.Math.F3.Operat
```

ClearSweeps *Action*

Description

Initiates a Clear Sweeps operation for envelope function trace Fx.

LimitNumSweeps   *Bool*

Sweeps   *Integer*

Range   From 1 to 1000000 step 1

Description

Sets/Queries the maximum number of sweeps to be used by the envelope function trace Fx.

FFT
app.Math.Fx.OperatorYSetup (Operator = "FFT")

Fast Fourier Transform of waveform data.

SuppressDC	Bool
Type	Enum
Window	Enum

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Configure F3 to perform an FFT of C1
app.Math.F3.View = True
app.Math.F3.Source1 = "C1"
app.Math.F3.MathMode = "OneOperator"
app.Math.F3.Operator1 = "FFT"
app.Math.F3.Operator1Se
```

SuppressDC   *Bool*

Description

Enables/Disables suppression of the value at zero frequency in the FFT spectrum.

Type   *Enum*

Description

Sets/Queries the type of FFT spectrum for function trace Fx.

Values

Magnitude	Magnitude with linear vertical scale
PowerSpectrum	Power Spectrum

Window
Enum

Description

Sets/Queries the type of window for the FFT function trace Fx.

Values

BlackmanHarris	
FlatTop	
Hamming	
Rectangular	
VonHann	

FLOOR
app.Math.Fx.OperatorYSetup (Operator = "Floor")

Most negative or minimum values for an ensemble of sweeps, or "Floor"

ClearSweeps	Action
LimitNumSweeps	Bool
Sweeps	Integer

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Configure F1 to measure the Floor of the first 1000
' sweeps of C1
app.Math.F1.View = True
app.Math.F1.Source1 = "C1"
app.Math.F1.MathMode = "OneOperator"
app.Math.F1.Operator1
```

ClearSweeps
Action

Description

Initiates a clear sweeps action for the Floor function trace Fx.

LimitNumSweeps
Bool

Sweeps
Integer

Range From 1 to 1000000 step 1

Description

Sets/Queries the maximum number of sweeps for the Floor function trace Fx.

INTEGRAL
app.Math.Fx.OperatorYSetup (Operator = "Integral")

Integral of the linearly rescaled (multiplier and adder) input.

Adder	Double
AutoFindScale	Bool

FindScale	Action
Multiplier	Double
VerOffset	Double
VerScale	DoubleLockstep

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Configure F1 to integrate C1
app.Math.F1.View = True
app.Math.F1.Source1 = "C1"
app.Math.F1.MathMode = "OneOperator"
app.Math.F1.Operator1 = "Integral"
app.Math.F1.Operator1Setup
```

Adder   *Double*

Range   From -1e-009 to 1e-009 step 1e-012

Description

Sets/Queries the additive A for the integral function Fx, where Fx = M . Input + A.

AutoFindScale   *Bool*

Description

Set/Query the state of the 'AutoFindScale' cvar, which enables the automatic scaling of the Integral when the acquisition setup changes.

FindScale   *Action*

Description

Initiates an action to find suitable vertical offset and scale for the integral function trace Fx.

Multiplier   *Double*

Range   From -1e+006 to 1e+006 step 1e-006

Description

Sets/Queries the multiplying constant M for the integral function Fx, where Fx = M . Input + A

VerOffset   *Double*

Range   From -1e+006 to 1e+006 step 1e-015

Description

Sets/Queries the vertical offset for the integral function trace Fx.

VerScale   *DoubleLockstep*

Range   From 1e-012 to 1e+007 step 0.01, locked to 1 2 5, fine grain allowed=false, on=false

Description

Sets/Queries the vertical scale for the integral function trace Fx.

RESCALE

app.Math.Fx.OperatorYSetup (Operator = "Rescale")

Linearly transform the vertical values of a waveform.

Adder	Double
CustomUnit	Bool
Multiplier	Double

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Configure F1
app.Math.F1.View = True
app.Math.F1.Source1 = "C1"
app.Math.F1.MathMode = "OneOperator"
app.Math.F1.Operator1 = "Rescale"
app.Math.F1.Operator1Setup.Adder = 2.0
app
```

Adder   *Double*

Range   From -1e+018 to 1e+018 step (9 digits)

Description

Sets/Queries the additive constant A in the rescale function Fx = M.Input + A

CustomUnit   *Bool*

Description

Enables/Disables the application of a custom unit of measurement to the rescale function trace Fx.

Multiplier   *Double*

Range   From -1e+018 to 1e+018 step (9 digits)

Description

Sets/Queries the multiplicative constant M in the rescale function Fx = M.Input + A

ROOF

app.Math.Fx.OperatorYSetup (Operator = "Roof")

Most positive or maximum values for an ensemble of sweeps, or "Roof"

ClearSweeps	Action
LimitNumSweeps	Bool
Sweeps	Integer

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Configure F1 to measure the Roof of the first 1000
' sweeps of C1
app.Math.F1.View = True
app.Math.F1.Source1 = "C1"
app.Math.F1.MathMode = "OneOperator"
app.Math.F1.Operator1 =
```

Description

Initiates a clear sweeps action for the roof function trace Fx.

LimitNumSweeps *Bool*

Sweeps *Integer*

Range From 1 to 1000000 step 1

Description

Sets/Queries the maximum number of sweeps for the Roof function trace Fx.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set function trace F2 to roof.
app.Math.F2.Operator1 = "Roof"
' Set the maximum number of sweeps to 150.
app.Math.F2.Operator1Setup.Sweeps = 150
```

AMPLITUDE
app.Measure.Px.Operator (ParamEngine = "Amplitude")

AREA
app.Measure.Px.Operator (ParamEngine = "Area")

Calculates the area of the input waveform relative to zero.

Cyclic	Bool

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set parameter P1 to area.
app.Measure.P1.View = True
app.Measure.P1.MeasurementType = "measure"
app.Measure.P1.ParamEngine = "Area"
app.Measure.P1.Source1 = "C1"

' Enable cycli
```

Cyclic *Bool*

Description

Enables/Disables cyclic calculation of area parameter Px, that is calculated using a whole number of cycles of the signal.

Note: the HelpMarkers aid in observing over which region of the waveform the measurement is made.

<div align="right">

BASE

app.Measure.Px.Operator (ParamEngine = "Base")

</div>

<div align="right">

MAXIMUM

app.Measure.Px.Operator (ParamEngine = "Maximum")

</div>

Calculates the maximum vertical value of the waveform

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")
app.Measure.P1.ParamEngine = "Maximum"
```

<div align="right">

MEAN

app.Measure.Px.Operator (ParamEngine = "Mean")

</div>

Calculates the mean value of the input waveform's vertical values. When Cyclic = true, the range of values used is limited to a whole number of cycles.

Cyclic	Bool

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set parameter P1 to mean.
app.Measure.P1.ParamEngine = "Mean"
' Set the mean parameter for cyclic measurements.
app.Measure.P1.Operator.Cyclic = true
```

Cyclic   *Bool*

Description

Sets/Queries whether the mean parameter Px is to be measured over a number of complete cycles.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set parameter P2 to mean.
app.Measure.P2.ParamEngine = "Mean"
' Set the mean parameter for cyclic measurements.
app.Measure.P2.ParamEngine.Cyclic = True
```

<div align="right">

MINIMUM

app.Measure.Px.Operator (ParamEngine = "Minimum")

</div>

Calculates the minimum value of a waveform

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

app.Measure.P1.ParamEngine = "Minimum"
```

OVERSHOOTNEGATIVE

app.Measure.Px.Operator (ParamEngine = "OvershootNegative")

OVERSHOOTPOSITIVE

app.Measure.Px.Operator (ParamEngine = "OvershootPositive")

PEAKTOPEAK

app.Measure.Px.Operator (ParamEngine = "PeakToPeak")

PHASE

app.Measure.Px.Operator (ParamEngine = "Phase")

OutputType	Enum
RefFindLevel	Action
RefHysteresis	Double
RefLevelType	Enum
RefPercentLevel	Double
RefSlope	Enum
SigFindLevel	Action
SigHysteresis	Double
SigLevelType	Enum
SigPercentLevel	Double
SigSlope	Enum

OutputType   *Enum*

Description

Sets/Queries the output type for Phase Px.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set parameter P1 to phase difference.
app.Measure.P1.ParamEngine = "Phase"
' Set the output unit as radians.
app.Measure.P1.Operator.OutputType = "Radians"
```

Values

Degrees	
DEGREES360	
Percent	
Radians	
RADIANSTWOPI	

RefFindLevel

Action

Description

Find the test level for the reference trace.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set parameter P3 to phase difference.
app.Measure.P3.ParamEngine = "Phase"
' Find the test level for the reference trace.
app.Measure.P3.Operator.RefFindLevel
```

RefHysteresis

Double

Range   From 0 to 10 step 0.1

Description

Sets/Queries the hysteresis range for the reference trace.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set parameter P1 to phase difference.
app.Measure.P1.ParamEngine = "Phase"
' Set the reference hysteresis in graticule divisions.
app.Measure.P1.Operator.RefHysteresis = 0.7
```

RefLevelType
Enum

Description

Sets/Queries the unit of measurement for the test level of the reference trace.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set parameter P1 to phase difference.
app.Measure.P1.ParamEngine = "Phase"
' Set the reference level to be measured in absolute units.
app.Measure.P1.Operator.RefLevelType = "Absolute"
```

Values

Absolute	
Percent	

RefPercentLevel
Double

Range   From 0 to 100 step 1

Description

Sets/Queries the test level for the reference trace in percent.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set parameter P3 to phase difference.
app.Measure.P3.ParamEngine = "Phase"
' Set the reference test level in percent.
app.Measure.P3.Operator.RefPercentLevel = 55
```

RefSlope
Enum

Description

Sets/Queries the polarity of the measured reference transitions.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set parameter P1 to phase difference.
app.Measure.P1.ParamEngine = "Phase"
' Set the reference slope to negative.
app.Measure.P1.Operator.RefSlope = "Neg"
```

Values

Both	
Neg	
Pos	

SigFindLevel

Action

Description

Causes the engine to find a suitable level for either SigLevelType ("Absolute"or "Percent")

SigHysteresis

Double

Range From 0 to 10 step 0.1

Description

Sets/Queries the hysteresis range for the signal.

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")

' Set parameter P3 to phase difference.
app.Measure.P3.ParamEngine = "Phase"
' Set the signal hysteresis in graticule divisions.
app.Measure.P3.Operator.SigHysteresis = 0.7
```

SigLevelType

Enum

Description

Sets/Queries which level to use "Percent" or "Absolute" for transitions on the signal

Values

Absolute	
Percent	

SigPercentLevel

Double

Range From 0 to 100 step 1

Description

Sets/Queries the test level for the signal in percent.

SigSlope

Enum

Description

Sets/Queries the polarity of the measured signal transitions.

Values

Both	
Neg	
Pos	

ROOTMEANSQUARE

app.Measure.Px.Operator (ParamEngine = "RootMeanSquare")

Cyclic	Bool

Cyclic

Bool

Description

If true, the calculation is limited to a whole number of cycles detected in the input.

SKEW

app.Measure.Px.Operator (ParamEngine = "Skew")

Calculates the skew between two clock signal waveforms

Clock1FindLevel	Action
Clock1Hysteresis	Double
Clock1LevelIs	Enum
Clock1PctLevel	Double
Clock1Slope	Enum
Clock2FindLevel	Action
Clock2Hysteresis	Double
Clock2LevelIs	Enum
Clock2PctLevel	Double
Clock2Slope	Enum
Deskew	Double
UpSamplingFactor	Integer

Example

```
' Visual Basic Script
Set app = CreateObject("LeCroy.XStreamDSO")
app.Measure.MeasureMode = "MyMeasure"
app.Measure.P1.ParamEngine = "Skew"
```

Clock1FindLevel   *Action*

Description

Automatically find a suitable level for Clock1, for either "Percent" or "Absolute" levels

Clock1Hysteresis   *Double*

Range   From 0 to 10 step 0.1

Description

Sets/Queries hysteresis for transition detection used for Clock1

Clock1LevelIs   *Enum*

Description

Sets/Queries whether to use Percent or Absolute levels for Clock1

Values

Absolute	
Percent	

Clock1PctLevel
Double

Range   From 0 to 100 step 1

Description

Sets/Queries the "Percent" of the amplitude of Clock1 to use for a transition level, if Clock1LevelIs = "Percent"

Clock1Slope
Enum

Description

Sets/Queries the polarity of transitions detected on Clock1

Values

Both	
Neg	
Pos	

Clock2FindLevel
Action

Description

Using ParamEngine = "Skew", please refer to the corresponding variable for the Hold Time parameter.

Clock2Hysteresis
Double

Range   From 0 to 10 step 0.1

Description

Sets/Queries hysteresis for transition detection used for Clock1

Clock2LevelIs
Enum

Description

Sets/Queries whether to use Percent or Absolute levels for Clock2

Values

Absolute	
Percent	

Clock2PctLevel
Double

Range   From 0 to 100 step 1

Description

Sets/Queries the "Percent" of the amplitude of Clock2 to use for a transition level, if Clock2LevelIs = "Percent"

Clock2Slope
Enum

Description

Sets/Queries the polarity of transitions detected on Clock2

Values

Both	
Neg	
Pos	

Deskew
Double

Range From -1e-008 to 1e-008 step 1e-012

UpSamplingFactor
Integer

Range From 1 to 20 step 1

STANDARDDEVIATION
app.Measure.Px.Operator (ParamEngine = "StandardDeviation")

Cyclic	Bool

Cyclic
Bool

Description

If true, the calculation is limited to a whole number of cycles detected in the input.

TOP
app.Measure.Px.Operator (ParamEngine = "Top")

Thank you for using Remote Control and Automation on your WaveSurfer Oscilloscope.