

## Agilent IntuiLink PSA and ESA Automation

There are two automation objects in IntuiLink PSA and ESA automation:

- ESAEZ Automation Server Object
- PSA/ESA Utilities Object



### PSA/ESA Utilities Object

Use the PSA/ESA Utilities Object to:

- Work with the spectrum analyzer connection to the PC.
- Work with the spectrum analyzer descriptions and identity.



### ESAEZ Automation Server Object

Use this Automation Server for a smaller file size and faster performance. Recommended for:

- Visual Basic
- Visual C++

### ESAEZ Automation Server Object

[Properties](#) [Methods](#) [Events](#)

The **ESAEZ Automation Server** allows you to communicate with Agilent PSA and ESA E/L/EMC-series spectrum analyzers using Visual Basic.

With the **ESAEZ Automation Server**, you can:

- control the instrument.
- download data.
- download a bitmap of the screen image.

Recommended for:

- Visual Basic
- Visual C++

**Name:** ESA Automation Server

**Description:** AgtESALib

**File Name:** AgtESA.DLL

### Syntax

ESAEZ

### Remarks

- Before you can use the **ESAEZ** object in your application, you must reference the ESA Automation Server.
- To distribute applications you create with the **ESAEZ** object, you must install and register it on the user's computer.

### Utilities Object

[See Also](#) [Properties](#) [Methods](#) [Applies To](#)

Use the Utilities Object to:

- Work with the spectrum analyzer connection to the PC.
- Work with the spectrum analyzer descriptions and identity.

## Objects

### Properties

#### CenterFrequency Property

[See Also](#) [Applies to](#)

Gets/sets the center frequency of the spectrum analyzer.

#### Syntax

*object*.CenterFrequency [ = *value* ]

#### Data Type

Double

#### Settings

*value* Sets the center frequency value in Hz unless otherwise specified. Factory default values and valid values are dependent on spectrum analyzer models, as shown below:

Model	Valid Range of Values	Factory Preset Value
HP ESA E4401B, E4411B, E7401A	-80 MHz to 1.58 GHz	750 MHz
HP ESA E4402B, E4403B, E7402A, E7403A	-80 MHz to 3.10 GHz	1.5 GHz
HP ESA E4404B, E7404A	-80 MHz to 6.78 GHz	3.35 GHz
HP ESA E4405B, E7405A	-80 MHz to 13.3 GHz	6.6 GHz
HP ESA E4407B, E4408B	-80 MHz to 27.0 GHz	13.25 GHz
HP PSA E4440A	-99.999995 MHz to 27 GHz	13.255 GHz

#### ComponentDescription Property

[See Also](#) [Applies to](#)

Returns a description of the automation server. Read-Only.

#### Syntax

*object*.ComponentDescription

#### Data Type

String

#### ComponentManufacturer Property

[See Also](#) [Applies to](#)

Returns the Component Manufacturer/Developer name. Read-Only.

#### Syntax

*object*.ComponentManufacturer

#### Data Type

String

#### ComponentProgID Property

[See Also](#) [Applies to](#)

Returns the component Program ID of the automation server. Read-Only.

**Syntax**

*object*.**ComponentProgID**

**Data Type**

String

**Remarks**

- The program ID is placed in the system registry as a cross-reference to the GUID.

**ComponentVersion Property**

[See Also](#) [Applies to](#)

Returns the version of the automation server. Read-Only.

**Syntax**

*object*.**ComponentVersion**

**Data Type**

String

**ConnectionName Property**

[See Also](#) [Applies to](#)

Get the instrument's symbolic connection address/name. Read-Only.

**Syntax**

*object*.**ConnectionName**

**Data Type**

String

**DetectDeviceErrors Property**

[See Also](#) [Applies to](#)

Enables/disables the device errors debugging function.

**Syntax**

*object*.**DetectDeviceErrors** [ = {True | False} ]

**Data Type**

Boolean

**Settings**

{True | False}

Default = FALSE

**Remarks**

- When DeviceDetectErrors is set to TRUE, the driver polls the instrument after any property or method that uses I/O to see if an error occurred. If an error is detected, the property or method will return an appropriate error.
- When DeviceDetectErrors is FALSE, the driver will not check for instrument errors. If an I/O operation results in an instrument error, it will go undetected until either:  
DeviceDetectErrors is set to TRUE, or

The `QueryInstrumentError` method is used.

### InputAttenuation Property

[See Also](#) [Applies to](#)

Gets/sets the input attenuator. This value is set at the auto value if input attenuation is set to 'On'. If input attenuation is set to 'Off', the value may be set manually.

#### Syntax

`object.InputAttenuation [ = value ]`

#### Data Type

Double

#### Settings

*value* Sets the input attenuator value in dB. Factory default value is 10 dB. Valid values are dependent on spectrum analyzer models, as shown below:

Model	Valid Range of Values
HP ESA E4401B, E4411B, E7401A	0 to 60 dB
HP ESA E4402B, E4403B, E7402A, E7403A	0 to 75 dB
HP ESA E4404B, E7404A	0 to 75 dB
HP ESA E4405B, E7405A	0 to 75 dB
HP ESA E4407B, E4408B	0 to 65 dB
HP PSA E4440A	0 to 70 dB

### InstanceName Property

[See Also](#) [Applies to](#)

Gets/sets the name of this instance of the automation server.

#### Syntax

`object.InstanceName [ = value ]`

#### Data Type

String

#### Settings

*value* As String may be set to any arbitrary string.

#### Remarks

- The instance name is used for logging and other features that require object identification.

### InstrumentFirmwareVersion Property

[See Also](#) [Applies to](#)

Returns the instrument's version. Read-Only.

#### Syntax

`object.InstrumentFirmwareVersion`

#### Data Type

String

#### Remarks

- The instrument version is returned as a part of the instrument's response to the IEEE 488.2 \*IDN? Query.

### **InstrumentManufacturer Property**

[See Also](#) [Applies to](#)

Returns the name of the instrument's manufacturer. Read-Only.

#### **Syntax**

*object*.InstrumentManufacturer

#### **Data Type**

String

### **InstrumentModel Property**

[See Also](#) [Applies to](#)

Returns the instrument's model number. Read-Only

#### **Syntax**

*object*.InstrumentModel

#### **Data Type**

String

#### **Remarks**

- This property returns the same string as the [SupportedModels property](#). For example: "4411B".

### **InstrumentSerialNumber Property**

[See Also](#) [Applies to](#)

Returns the instrument's serial number. This may not be supported by all instruments. Read-Only.

#### **Syntax**

*object*.InstrumentSerialNumber

#### **Data Type**

String

### **IO Property**

[See Also](#) [Applies to](#)

Returns an object that provides an interface to the underlying I/O automation server. Read-Only.

#### **Syntax**

*object*.IO

#### **Remarks**

- Returns the IO object from the automation server.

### **LogInterface Property**

[See Also](#) [Applies to](#)

Enables/disables the error logging facility.

**Syntax**

*object*.**LogInterface** [ = {True | False} ]

**Data Type**

Boolean

**Settings**

True enables error logging, False disables error logging. Default = False.

**Remarks**

- When enabled, the WriteLog Events are sent to clients registered In Visual Basic (using the WithEvents option).

**RangeChecking Property**

[See Also](#) [Applies to](#)

Enables/disables input value range checking.

**Syntax**

*object*.**RangeChecking** [ = {True | False } ]

**Data Type**

Boolean

**Settings**

True enables range checking, False disables range checking.

Default = True

**Remarks**

- Use this property for program development and debugging.
- When enabled, values are checked for applicability to the spectrum analyzer model. Invalid ranges are reported before the I/O operation executes.
- The range checking operation slows program execution. For fastest program execution set RangeChecking to False, [DetectDeviceErrors](#) to False and [LogInterface](#) to False.

**ReferenceLevel Property**

[See Also](#) [Applies to](#)

Gets/sets the amplitude value of the reference level for the Y-axis.

**Syntax**

*object*.**ReferenceLevel** [ = *value* ]

**Data Type**

Double

**Settings**

*value* Sets the value in the current active units. The factory preset value is 0 dBm. The valid values for the ESA models are -149.9 to 50 dBm with zero reference level offset. The valid values for the PSA models are -170 dBm to 30 dBm.

**Remarks**

- The input attenuator setting may be affected. The minimum displayed value of reference level is -327.6, and the maximum displayed value is 327.6.

### ResolutionBandwidth Property

[See Also](#) [Applies to](#)

Gets/sets the resolution bandwidth.

#### Syntax

*object.ResolutionBandwidth* [ = *value* ]

#### Data Type

Double

#### Settings

*value* Sets the resolution bandwidth in Hz, unless otherwise specified. The factory preset is 3 MHz. Valid values for the ESA models are:

- 10 Hz to 5 MHz with Option 1DR, narrow resolution bandwidth
- 1 kHz to 5 MHz without Option 1DR

Valid values for PSA models are:

- 3 MHz to 8 MHz

### ScalePerDivision Property

[See Also](#) [Applies to](#)

Gets/sets the per-division display scaling for the Y-axis.

#### Syntax

*object.ScalePerDivision* [ = *value* ]

#### Data Type

Double

#### Settings

*value* Sets the per-division display scaling in dB. The factory preset is 10 dB. Valid values are 0.01 dB to 20.0 dB.

### ScaleType Property

[See Also](#) [Applies to](#)

Gets the vertical graticule divisions as log or linear units. Read-Only.

#### Syntax

*object.ScaleType*

#### Data Type

String

#### Remarks

- By default, the units are logarithmic.

### SpanFrequency Property

[See Also](#) [Applies to](#)

Gets/sets the frequency span.

#### Syntax

*object.SpanFrequency* [ = *value* ]

#### Data Type

Double

#### Settings

*value* Sets the center frequency value in Hz unless otherwise specified. Factory default values and valid values are dependent on spectrum analyzer models, as shown below:

Model	Valid Range of Values	Factory Preset Value
HP ESA E4401B, E4411B, E7401A	0 Hz to 1.58 GHz	1.5 GHz
HP ESA E4402B, E4403B, E7402A, E7403A	0 Hz to 3.10 GHz	3.0 GHz
HP ESA E4404B, E7404A	0 Hz to 6.78 GHz	6.7 GHz
HP ESA E4405B, E7405A	0 Hz to 13.3 GHz	13.2 GHz
HP ESA E4407B, E4408B	0 Hz to 27.0 GHz	26.5 GHz
HP PSA E4440A	0 Hz to 26.5 GHz	26.49 GHz

### Remarks

- Setting the span to 0 Hz puts the analyzer into zero span.

### StartFrequency Property

[See Also](#) [Applies to](#)

Gets/sets the start frequency.

#### Syntax

*object*.StartFrequency [ = *value* ]

#### Data Type

Double

#### Settings

*value* Sets the start frequency value in Hz. The factory default value is 0 Hz for ESA models and 10.0 MHz for PSA models. Valid values are dependent on spectrum analyzer models, as shown below:

Model	Valid Range of Values
HP ESA E4401B, E4411B, E7401A	-80 MHz to 1.58 GHz
HP ESA E4402B, E4403B, E7402A, E7403A	-80 MHz to 3.10 GHz
HP ESA E4404B, E7404A	-80 MHz to 6.78 GHz
HP ESA E4405B, E7405A	-80 MHz to 13.3 GHz
HP ESA E4407B, E4408B	-80 MHz to 27.0 GHz
HP PSA E4440A	-100 MHz to 27 GHz

### StopFrequency Property

[See Also](#) [Applies to](#)

Gets/sets the stop frequency.

#### Syntax

*object*.StopFrequency [ = *value* ]

#### Data Type

Double

#### Settings



*value* Sets the stop frequency value in Hz. The factory default values and valid values are dependent on spectrum analyzer models, as shown below:

<b>Model</b>	<b>Valid Range of Values</b>	<b>Factory Preset Value</b>
HP ESA E4401B, E4411B, E7401A	-80 MHz to 1.58 GHz	1.5 GHz
HP ESA E4402B, E4403B, E7402A, E7403A	-80 MHz to 3.10 GHz	3.0 GHz
HP ESA E4404B, E7404A	-80 MHz to 6.78 GHz	6.7 GHz
HP ESA E4405B, E7405A	-80 MHz to 13.3 GHz	13.2 GHz
HP ESA E4407B, E4408B	-80 MHz to 27 GHz	26.5 GHz
HP PSA E4440A	-99.99999 MHz to 27GHz	26.5 GHz

### **SupportedModels Property**

[See Also](#) [Applies to](#)

Returns a list of supported spectrum analyzer models. Read-only.

#### **Syntax**

*object*.SupportedModels

#### **Data Type**

String

### **SweepMode Property**

[See Also](#) [Applies to](#)

Gets the sweep mode for the selected trace. Read-Only.

#### **Syntax**

*object*.SweepMode

#### **Data Type**

String

### **Settings**

Returns the value AgtESA\_SweepMode\_Continuous if the analyzer is in continuous sweeping mode.

Returns the value AgtESA\_SweepMode\_Single when there is only a single sweep.

### **SweepTime Property**

[See Also](#) [Applies to](#)

Gets/sets the time in which the instrument sweeps the display.

#### **Syntax**

*object*.SweepTime [ = *value* ]

#### **Data Type**

String

### **Settings**

*value* Sets the time, in seconds, in which the instrument sweeps the display. For ESA models, valid values are:

5 microseconds to 2000 seconds without Option AYX, fast digitized time domain sweeps

20 microseconds to 2000 seconds with Option AYX, in zero span only

For PSA models, valid values are:

1 microsecond minimum; 2 kiloseconds maximum

#### Remarks

- A span value of 0 Hz causes the analyzer to enter zero span mode. In zero span the X-axis represents time rather than frequency. In this mode, the sweep time may be set to faster values when Option AYX (fast digitized time domain sweeps) is installed.

#### Timeout Property

[See Also](#) [Applies to](#)

Gets/sets the automation server's I/O timeout value in milliseconds.

#### Syntax

*object.Timeout* [ = *value* ]

#### Data Type

Long

#### Settings

*value* As Long sets the timeout in milliseconds. For example, setting *value* to 1000 sets a 1-second timeout value. Default = 5000.

#### Remarks

- For example, use the following statement to set a 5 second timeout.

```
AgtESAScope1.Timeout = 5000
```

#### Utilities Property

[See Also](#) [Applies to](#)

Returns a [UtilitiesESA](#) object that provides an interface to a set of instrument utility functions. Read-Only.

#### Syntax

*object.Utilities*

#### VideoBandwidth Property

[See Also](#) [Applies to](#)

Gets/sets the video bandwidth.

#### Syntax

*object.VideoBandwidth* [ = *value* ]

#### Data Type

Double

#### Settings

*value* Sets the video bandwidth in Hz, unless otherwise specified. The factory preset is 3 MHz. Valid values for ESA models are 1 Hz to 3 MHz. Valid values for PSA models are 1 Hz to 50 MHz. This range is dependent on the setting of:

[ :SENSE]:BANDwidth|BWIDth [RESolution]

## Methods

### Connect Method

[See Also](#) [Applies to](#)

Connects the automation server to an instrument at the specified address or symbolic name.

### Syntax

*object*.**Connect** ( connectionname, [ IOProgID ] )

### Settings

*connectionname* As String is the symbolic name of the connection.

*IOProgID* As String is an optional I/O address of the connection.

### Data Type

String

### Remarks

- GPIB

Use a string in this form:

*GPIBm ::n*

where *m* is the board number, and *n* is the instrument GPIB address (for example, "GPIB0::22").

Alternately use a VISA address ("GPIB::22::INSTR"). The I/O operations do not require that VISA be installed on the PC.

- RS-232

Use a string in this form:

*COMm ::parametername=nn*

where *m* is the RS-232 port and *parametername* is one of the parameters described below. A comma separates multiple parameter names. Any, all, or no parameters may be used. If a parameter is missing, the default value is used.

Baud=*nnnn*            where *nnnn* are the digits of the baud rate.  
Default = 9600

Handshake=*s*            where *s* is none, xon\_xoff, or dtr\_dsr.  
Default = xon\_xoff

### Examples

```
"COM1::Baud=9600"
```

```
"COM2::Baud=2400,Handshake=xon_xoff"
```

### ClearDevice Method

[See Also](#) [Applies to](#)

Performs a device clear of the instrument.

### Syntax

*object*.**ClearDevice**

### ClearStatus Method

See Also [Applies to](#)

Clears the instrument's status registers.

#### Syntax

*object*.ClearStatus

### Close Method

See Also [Applies to](#)

Closes the communication connection with the instrument.

#### Syntax

*object*.Close

#### Remarks

- If the session is not open or has already been closed, the Close method does nothing.

### DisplayMessage Method

See Also [Applies to](#)

Writes the specified message string to the instrument's display.

#### Syntax

*object*.DisplayMessage ( *message* )

#### Settings

*message* As String is an arbitrary string.

#### Remarks

- The instrument limits the display to 44 characters.

### Enter Method

See Also [Applies to](#)

Reads data from the instrument as a string or number.

#### Syntax

*object*.Enter ( *result* [ , *format* ] )

#### Remarks

- Use this method to enter instrument data. Use the [Output method](#) to send instrument commands.
- For most applications that return a string or a number, no format argument is needed. These examples show the most common usage. *ESA* is an object in the [Applies to](#) list.

#### Returning a string

```
Dim reply As String  
ESA.Enter reply
```

#### Returning a number

Dim reading As Double  
ESA.Enter reading

## Settings

*result* returns the data. The optional Format parameter determines how the data is returned.

*format* As String determines the format of the returned data.  
Default = K (Freefield entry)

*format* is optional, or can contain one or two format identifiers separated by commas. The order of the format identifiers is ignored.

The format characters are:

"K" for Freefield entry,

"#" for don't flush buffer entry, and

IEEE 488.2 block formatted data. (See description below.)

Do not use the Freefield character and the IEEE 488.2 block characters in the same format string.

## Format Identifiers

### "K" -- Freefield

The data is interpreted based upon the data type of the result parameter. Use the data type best suited for the data returned. K is the default if no Format string is given.

<i>result</i> data type	Description
String	Characters are placed in the string. Carriage-return not immediately followed by line-feed is entered into the string. Entry to a string terminates on CR/LF, LF, or a character received with EOI true.
String()	Same as string, but parses the received characters at any comma. The entry terminates as in String or when the array is full.
Numeric	Returns the first number of the ASCII data returned from the instrument. Leading non-numeric characters are ignored. All blanks are ignored. Trailing non-numeric characters and characters sent with EOI true are delimiters. Numeric characters include digits, decimal point, +, -, e, and E when their order is meaningful. Valid data types are Byte, Long, Integer, Double, and Single.
Numeric()	Same as Numeric, but parses the ASCII string from the instrument and fills the array. The entry terminates when the array is full or at the end of data.
Variant	Same as string.
Variant ()	Same as string except that array is filled until end on CR/LF, LF, or a character is received with EOI true.

### "#" -- Don't flush buffer

Saves the remaining data in the buffer after completion of Enter method. When the instrument returns several numbers as one ASCII string, you can retain any remaining data in the buffer by using this format character when reading with an Enter method. In the following example, the instrument returns two data points. The first line reads the first data point, and the second line reads the second data point after which the data in the buffer is discarded. The variables *reading1* and *reading2* are declared as double.

```
Spectrum Analyzer.Enter reading1, "K,#"
```

Spectrum Analyzer.Enter reading2, "K"

### IEEE 488 block data

Using the Enter command with a format statement you can read IEEE 488.2 block data. This is a standard format used by some instruments to return large amounts of data in a binary form.

Setting	Description
I1	Integer, 1 byte
I2BE	Integer, 2 bytes, Big Endian
I2LE	Integer, 2 bytes, Little Endian
I4BE	Integer, 4 bytes, Big Endian
I4LE	Integer, 4 bytes, Little Endian
R4BE	Real, 4 bytes, Big Endian
R4LE	Real, 4 bytes, Little Endian
R8BE	Real, 8 bytes, Big Endian
R8LE	Real, 8 bytes, Little Endian

### GetInstrumentDateTime Method

[See Also](#) [Applies to](#)

Gets the date/time from the instrument. Read-only.

#### Syntax

*object*.GetInstrumentDateTime

#### Data Type

Variant(Date)

### GetScreenImage Method

[See Also](#) [Applies to](#)

Returns a bitmap image of what is currently displayed on the spectrum analyzer's display screen.

#### Syntax

*object*.GetScreenImage [ ( *format* ) ]

#### Data Type

Picture

#### Settings

*format* As [Agt\\_ImageFormat](#) defines the format for the image. The format can be set to BMP,GIF, TIF, JPG, WMF or EMF.

#### Remarks

- You can use the GetScreenImage method to insert the screen image in a control (such as Image or PictureBox) or you can save the screen image in a variable declared as a Picture.
- This method extends the timeout value in effect to allow for execution and then restores the timeout value to the one set by the [Timeout property](#).
- This code inserts the screen image in an image control.

```
Set Image1.Picture = AgtESA1.GetScreenImage
```

- This code will set the variable screenShot to the screen image and then insert it in an Image control.

```
Dim screenShot As Picture  
Set screenShot = AgtESA1.GetScreenImage  
Set Image1.Picture = screenShot
```

### **GetSweepNumPoints Method**

[See Also](#) [Applies to](#)

Gets the number of points in the sweep from the instrument. Read-only.

#### **Syntax**

*object*.**GetSweepNumPoints**

#### **Data Type**

Long

#### **Remarks**

- This feature is available only in ESA L-series firmware with revision A.04.00 or greater.

### **GetTrace Method**

[See Also](#) [Applies to](#)

Gets the number of points in the specified trace.

#### **Syntax**

*object*.**GetTrace** (channel)

where channel is a value of 1, 2, or 3.

#### **Data Type**

Variant array of longs. The number of points returned will be the same as the current setting on the spectrum analyzer, a number between 101 and 8192.

### **Options Method**

[See Also](#) [Applies to](#)

Returns a variant containing a list of the options installed in the currently connected instrument.

#### **Syntax**

*object*.**Options**

### **Output Method**

[See Also](#) [Applies to](#)

Sends a string to the instrument.

#### **Syntax**

*object*.**Output** ( *string* )

#### **Settings**

*string* As String.

#### **Remarks**

- Use this command to send instrument commands. Use the [Enter method](#) to read the reply from the instrument.

For example, this code requests a peak-to-peak voltage measurement

*Spectrum Analyzer* is an object in the [Applies to](#) list.

```
Spectrum Analyzer.Output "Measure:VPP?"
```

### **Preset Method**

[See Also](#) [Applies to](#)

Performs a preset of the instrument.

#### **Syntax**

*object*.Preset

### **QueryInstrumentError Method**

[See Also](#) [Applies to](#)

Returns a number and a string that report the most recent error in the instrument's error queue.

#### **Syntax**

*object*.QueryInstrumentError ( *errornumber*, *errordescription* )

#### **Data Type**

*errornumber* As Long returns the instrument error number.

*errordescription* As String returns the instrument error string.

#### **Remarks**

- The instrument errors are reported as a signed number and, on some instruments, a descriptive string. Refer to the instrument's documentation for a complete list of error codes.
- Instruments with no errors in the error queue return 0,"No Error".
- Errors are reported on a first-in, first-out basis.
- You can empty the error queue without reading all the errors using the [ClearStatus method](#).

### **ReadStateData Method**

[See Also](#) [Applies to](#)

Reads the current system setup data from the instrument. The system setup data is encoded in the binary IEEE 488.2 definite block format. The data within the definite block is encoded in the instrument's internal format.

#### **Syntax**

*object*.ReadStateData

#### **Data Type**

Variant

#### **Remarks**

- This method extends the timeout value in effect to allow for execution and then restores the timeout value to the one set by the [Timeout property](#).



### RecallState Method

[See Also](#) [Applies to](#)

Recalls the instrument state from its specified internal register and updates the current instrument state.

#### Syntax

*object*.**RecallState** ( *statenumber* )

#### Settings

*statenumber* As Long is the state register to recall.

### Reset Method

[See Also](#) [Applies to](#)

Performs a reset of the instrument.

#### Syntax

*object*.**Reset**

### SaveScreenImage Method

[See Also](#) [Applies to](#)

Saves a bitmap image of what is currently displayed on the spectrum analyzer's display screen to the specified file.

#### Syntax

*object*.**SaveScreenImage** ( *filename*, [ *format* ] )

#### Settings

*filename* As String contains a valid filename and path.

*format* As Agt\_ImageFormat sets the type of file to save (BMP, GIF, WMF, EMF, TIF, JPG).

#### Remarks

- This method extends the timeout value in effect to allow for execution and then restores the timeout value to that set by the [Timeout](#) property.

### SaveState Method

[See Also](#) [Applies to](#)

Saves the current instrument state to its specified internal register.

#### Syntax

*object*.**SaveState** ( *statenumber* )

where *statenumber* is from 2 to 30.

#### Settings

*statenumber* As long is the internal register number to use.

### SelfTest Method

[See Also](#) [Applies to](#)

Performs a self-test on the connected instrument and returns results of the test.

#### Syntax

*object*.SelfTest ( testresult, resultmessage )

### Data Types

*testresult* As Long returns a number indicating the self-test status.

*resultmessage* As String returns a string indicating the self-test result.

### Remarks

- The instrument returns a "0" and an empty string if the self-test passes.
- If the self-test has a failure, the instrument returns a value and a string indicating the nature of the failing test. Some instruments return only the *testresult* value and *resultmessage* is set to null. Refer to the instrument documentation for results returned by the \*TST command.
- This method extends the timeout value in effect to allow for execution and then restores the timeout value to the one set by the [Timeout property](#).

### StatusBits Method

[See Also](#) [Applies to](#)

Returns the contents of the 'Status Events' and 'Service Request' registers of the instrument. This is a destructive read operation. Status Event register is returned in lower word. Service Request register is returned in upper word.

### Syntax

*object*.StatusBits

### Data Type

Long

### TraceMode Method

[See Also](#) [Applies to](#)

Gets the display mode for the selected trace. Read-Only.

### Syntax

*object*.TraceMode (TRACe # |) WRITe | MAXHold | MINHold | VIEW | BLANK|)

### Data Type

String

### Settings

Returns the display mode for the selected trace, one of WRIT, MAXH, MINH, VIEW, or BLAN.

- Write puts the trace in the normal mode, updating the data.
- Maximum hold displays the highest measured trace value for all the data that has been measured since the function was turned on.
- Minimum hold displays the lowest measured trace value for all the data that has been measured since the function was turned on.
- View turns on the trace data so that it can be viewed on the display.
- Blank turns off the trace data so that it is not viewed on the display.

### VerifyDevice Method

[See Also](#) [Applies to](#)

Verifies, by returning a Boolean operator, that the connected instrument is compatible with the specified parameters.

#### Syntax

*object*.VerifyDevice ( *model*, [ *version* ], [ *serialnumber* ] )

#### Data Type

Boolean

#### Settings

*model* As String is the only required parameter.

*version* As String is an optional parameter.

*serialnumber* As String is an optional parameter.

#### WriteStateData Method

See Also [Applies to](#)

Writes system setup data in the specified buffer to the instrument and updates current system setup. See the [ReadStateData method](#).

#### Syntax

*object*.WriteStateData ( *statedata* )

where *statedata* is 2 to 30.

#### Settings

*statedata* As Variant is a buffer containing the state data.

#### Remarks

- This method extends the timeout value in effect to allow for execution and then restores the timeout value to the one set by the [Timeout property](#).

## Events

### WriteLog Event

[Applies to](#)

This event is sent from the ILog interface. The ILog interface sends diagnostic trace messages for every method of the automation server.

#### Syntax

*object*.WriteLog ( *source*, *logging*, *logmessage* )

#### Settings

*source* As String is the source of the event. *Source* should be either the [InstanceName](#) if not null or the class name parsed from the [ComponentProgID](#).

*logging* As Log Type sets the type of logging as Error, Trace, Warning, or information event.

*logmessage* As String contains the message to be logged.

#### Remarks

- The I/O and device servers let the client handle actually writing to a log or trace file, and clients are free to handle the messages however they see fit.

## Constants

### Agt\_ImageFormat Constants

Used With

<u>Value</u>	<u>Constant</u>
0	Agt_ImageFormat_BMP
2	Agt_ImageFormat_GIF
3	Agt_ImageFormat_WMF
4	Agt_ImageFormat_EMF
5	Agt_ImageFormat_TIF
6	Agt_ImageFormat_JPG

## Technical Support

### Technical Support

Agilent provides programming samples for illustration purposes only, without warranty either expressed or implied, including, but not limited to, the implied warranties of merchantability and/or fitness for a particular purpose.

This help file assumes that you are familiar with the programming language being demonstrated and the tools used to create and debug procedures. Agilent support engineers can help answer questions relating to the functionality of the software components provided by Agilent, but they will not modify these samples to provide added functionality or construct procedures to meet your specific needs.

To contact Agilent for technical assistance, refer to the support section in the README.TXT file located in the directory where you installed IntuiLink. By default, IntuiLink is installed in the following directory:

**...\Program Files\Agilent\IntuiLink\ESA**

If you have limited programming experience, please contact the manufacturer of your development language for further information and assistance.