

**Agilent U2701A/U2702A  
USB Modular  
Oscilloscopes**

**IVI-COM Programmer's  
Reference for Agilent VEE**



**Agilent Technologies**

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# Contents

## 1 Introduction to IVI-COM

Getting Started 2

Installation Guide 3

General Guidelines for Oscilloscope Programming 5

Side-by-Side SCPI and IVI-COM Comparison of the U2701A/U2702A  
Commands 6

## 2 Configuration

Count 12

Item 13

BandwidthLimit 13

Configure 15

Coupling 18

Enabled 20

Offset 22

ProbeAttenuation 24

Range 26

Name 29

Close 31

Initialize 32

Initialized 34

Configure 35

Coupling 37

Edge 39

Configure 39

Slope 41

Glitch	43
Condition	43
Configure	45
Polarity	47
Width	49
Holdoff	50
Modifier	51
Level	53
Source	54
Status	55
TV	56
Configure	56
Event	59
LineNumber	61
SignalFormat	62
Type	64
Width	66
Condition	66
Configure	68
Polarity	71
ThresholdHigh	73
ThresholdLow	74
Clear	75
ConfigureServiceRequest	76
Preset	78
Register	79
SerialPoll	81
TimeoutMilliseconds	82

WaitForOperationComplete	84
Disable	85
ErrorQuery	86
LockObject	88
Reset	89
ResetWithDefaults	90
SelfTest	91
UnlockObject	93
Enumeration Members	94
AgilentU2701AGlitchConditionEnum	94
AgilentU2701AGlitchPolarityEnum	95
AgilentU2701ASRQReasonEnum	95
AgilentU2701AStatusRegisterEnum	97
AgilentU2701AStatusSubRegisterEnum	98
AgilentU2701ATriggerCouplingEnum	99
AgilentU2701ATriggerModifierEnum	99
AgilentU2701ATriggerSlopeEnum	100
AgilentU2701ATriggerTypeEnum	101
AgilentU2701ATVSignalFormatEnum	102
AgilentU2701ATVTriggerEventEnum	103
AgilentU2701AVerticalCouplingEnum	104
AgilentU2701AWidthConditionEnum	105
AgilentU2701AWidthPolarityEnum	105

### 3 Acquisition

ConfigureRecord	108
Interpolation	110
NumberOfAverages	112
RecordLength	113

SampleMode 114  
SampleRate 116  
StartTime 117  
TimePerRecord 119  
Type 122  
Enumeration Members 124  
    AgilentU2701AAcquisitionStatusEnum 124  
    AgilentU2701AAcquisitionTypeEnum 125  
    AgilentU2701AInterpolationEnum 126  
    AgilentU2701ASampleModeEnum 126

#### **4 Waveform Display**

Abort 128  
AutoSetup 129  
Count 130  
Initiate 131  
IsWaveformElementInvalid 132  
Item 134  
    FetchWaveform 134  
    ReadWaveform 136

#### **5 Post Analysis**

Abort 140  
AutoSetup 141  
Count 142  
Initiate 143  
IsWaveformElementInvalid 144

Item	146
FetchWaveform	146
FetchWaveformMeasurement	148
ReadWaveform	150
ReadWaveformMeasurement	152
MathFunction	154
Name	156
Status	157
Enumeration Members	159
AgilentU2701AMathOperationEnum	159
AgilentU2701AMeasurementEnum	160
AgilentU2701ATimeOutEnum	163

## 6 Others

Calibrate	166
Date	167
Label	168
Time	169
Cache	170
ClearInterchangeWarnings	171
DriverSetup	172
GetNextCoercionRecord	173
GetNextInterchangeWarning	174
InterchangeCheck	175
InvalidateAllAttributes	176
IoResourceDescriptor	177
LogicalName	178

QueryInstrumentStatus	179
RangeCheck	180
RecordCoercions	181
ResetInterchangeCheck	182
Simulate	183
Description	184
GroupCapabilities	185
Identifier	186
InstrumentFirmwareRevision	187
InstrumentManufacturer	188
InstrumentModel	189
Revision	190
SpecificationMajorVersion	191
SpecificationMinorVersion	192
SupportedInstrumentModels	193
Vendor	194
SerialNumber	195

## **7 Application Example**

Introduction	198
Creating connectivity to the IVI-COM driver	198
Complete Example	207



# 1 Introduction to IVI-COM

Getting Started 2

Installation Guide 3

General Guidelines for Oscilloscope Programming 5

Side-by-Side SCPI and IVI-COM Comparison of the U2701A/U2702A  
Commands 6

This chapter introduces the remote programming basics of the U2701A/U2702A USB modular oscilloscopes. The IVI-COM programming commands provide the means to control this instrument remotely via a PC.



## Getting Started

The IVI Foundation is an open consortium founded in year 1998 to promote specifications for programming test instruments.

For complete information on the IVI Foundation and for the most up-to-date versions of all IVI specifications and components, you can visit the IVI Foundation web site at [www.ivifoundation.org](http://www.ivifoundation.org).

## Installation Guide

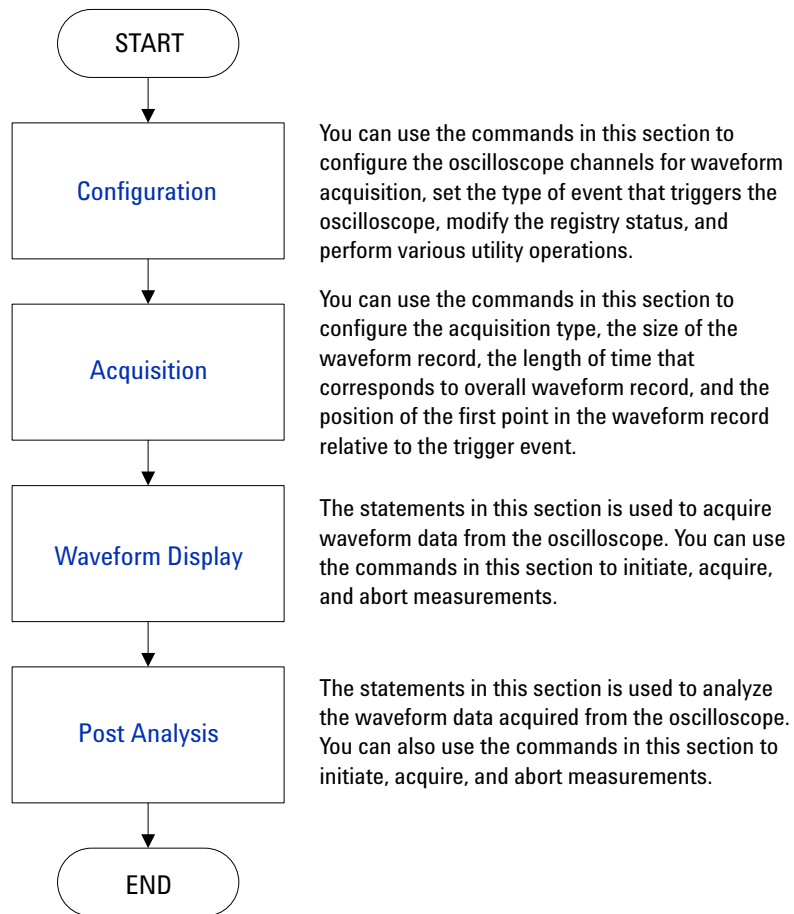
- 1 To download the AgilentU2701A IVI Driver, go to the Agilent Technical Support web site at:  
<http://www.home.agilent.com/agilent/techSupport.jsp?pid=1369621&cc=US&lc=eng&t=80029.k.0&guid=181735>
- 2 Click **Drivers & Software > IVI-COM and IVI-C for U2701A/U2702A** to download the AgilentU2701A IVI Driver package.
- 3 Save the file to any location on your hard disk.
- 4 Disconnect any instrument that is connected to your PC and close all other applications on your PC.
- 5 Double-click the saved installation file to begin installation.
- 6 The latest version of the IVI Shared Components should be downloaded from [www.ivifoundation.org](http://www.ivifoundation.org) prior to installing the AgilentU2701A IVI Driver package. It is recommended that you periodically check for newer versions of the IVI Shared Components and update as available from the IVI Foundation.
- 7 If the latest version of the IVI Shared Components is detected, installation of the AgilentU2701A IVI Driver will proceed as normal.



- 8 The **AgilentU2701A IVI Driver 1.0.0.0 Setup Wizard** dialog will appear. Click **Next** to begin.
- 9 Read the License Agreement and select **I accept the terms in the License Agreement** to proceed. You may click **Print** to print a hardcopy of the Agilent License Terms for your reference. Click **Next** to proceed.
- 10 Fill in the Customer Information Form accordingly, and click **Next**.
- 11 Select the **Typical** or **Full** option in the Setup Type to install the AgilentU2701A IVI Driver package. Advanced users may select the **Custom** option to customize the program features to be installed and where they will be installed. Click **Next** to proceed.
- 12 Click **Next** to install to the specified folder or click **Change** to install to a different folder.
- 13 Click **Install** to begin the installation of the AgilentU2701A IVI Driver package.
- 14 Click **Finish** when the installation has completed.

## General Guidelines for Oscilloscope Programming

The block diagram below illustrates the general flow of steps required to program an oscilloscope. The necessary IVI-COM driver commands are arranged to reflect this block diagram.



## Side-by-Side SCPI and IVI-COM Comparison of the U2701A/U2702A Commands

**Table 1-1** SCPI, IAgilentU2701A IVI, and IlviScope command comparison

SCPI command	IAgilentU2701A IVI command	IlviScope command
<b>IEEE 488.2 Common commands</b>		
*CLS	IAgilentU2701ASystem.Clear	-
*IDN	IlviDriver.Identity	IlviDriver.Identity
*OPC?	IAgilentU2701ASystem.WaitForOperationComplete()	-
*RST	IlviDriverUtility.Reset()	IlviDriverUtility.Reset()
<b>Root level commands</b>		
AUTO	IAgilentU2701AMeasurements.AutoSetup	IlviScopeMeasurements.AutoSetup
<b>ACQuire commands</b>		
AVERages	IAgilentU2701AAcquisition.NumberOfAverages	IlviScopeAcquisition.NumberOfAverages
MODE	IAgilentU2701AAcquisition.SampleMode	IlviScopeAcquisition.SampleMode
SRATE?	IAgilentU2701AAcquisition.SampleRate	IlviScopeAcquisition.SampleRate
TYPE	IAgilentU2701AAcquisition.Type	IlviScopeAcquisition.Type
<b>CHANnel&lt;n&gt; commands</b>		
BWLimit	IAgilentU2701AChannel.BandwidthLimit	-
COUPling	IAgilentU2701AChannel.Coupling	IlviScopeChannel.Coupling
DISPlay	IAgilentU2701AChannel.Enabled	IlviScopeChannel.Enabled
INVert	-	-
OFFSet	IAgilentU2701AChannel.Offset	IlviScopeChannel.Offset
PROBE	IAgilentU2701AChannel.ProbeAttenuation	IlviScopeChannel.ProbeAttenuation
SCALE	IAgilentU2701AChannel.Range	IlviScopeChannel.Range

**Table 1-1** SCPI, IAgilentU2701A IVI, and IlviScope command comparison

SCPI command	IAgilentU2701A IVI command	IlviScope command
<b>KEY commands</b>		
AUTO_SCALE	IAgilentU2701AMeasurements.AutoSetup	IlviScopeMeasurements.AutoSetup
CH1	IAgilentU2701AChannel.Enabled	IlviScopeChannel.Enabled
CH1_POS_DEC	IAgilentU2701AChannel.Offset	IlviScopeChannel.Offset
CH1_POS_INC	IAgilentU2701AChannel.Offset	IlviScopeChannel.Offset
CH1_SCALE_DEC	IAgilentU2701AChannel.Range	IlviScopeChannel.Range
CH1_SCALE_INC	IAgilentU2701AChannel.Range	IlviScopeChannel.Range
CH2	IAgilentU2701AChannel.Enabled	IlviScopeChannel.Enabled
CH2_POS_DEC	IAgilentU2701AChannel.Offset	IlviScopeChannel.Offset
CH2_POS_INC	IAgilentU2701AChannel.Offset	IlviScopeChannel.Offset
CH2_SCALE_DEC	IAgilentU2701AChannel.Range	IlviScopeChannel.Range
CH2_SCALE_INC	IAgilentU2701AChannel.Range	IlviScopeChannel.Range
MAIN_DELAYED	IAgilentU2701AAcquisition.StartTime	IlviScopeAcquisition.StartTime
MATH	IAgilentU2701AMeasurementsMathFunction	-
MEASURE	IAgilentU2701AMeasurement	IlviScope.Measurement
MODE_COUPLING	IAgilentU2701AChannel.Coupling	IlviScopeChannel.Coupling
SINGLE	IAgilentU2701AMeasurements.Initiate	IlviScopeMeasurements.Initiate
TIME_POS_DEC	IAgilentU2701AAcquisition.StartTime	IlviScopeAcquisition.StartTime
TIME_POS_INC	IAgilentU2701AAcquisition.StartTime	IlviScopeAcquisition.StartTime
TIME_SCALE_DEC	IAgilentU2701AAcquisition.TimePerRecord	IlviScopeAcquisition.TimePerRecord
TIME_SCALE_INC	IAgilentU2701AAcquisition.TimePerRecord	IlviScopeAcquisition.TimePerRecord
TRIG_LVL_DEC	IAgilentU2701ATrigger.Level Property	IlviScopeTrigger.Level
TRIG_LVL_INC	IAgilentU2701ATrigger.Level Property	IlviScopeTrigger.Level

**Table 1-1** SCPI, IAgilentU2701A IVI, and IIVI-Scope command comparison

SCPI command	IAgilentU2701A IVI command	IIVI-Scope command
<b>MEASure commands</b>		
FALLtime	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
FREQuency	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
NDUTycycle	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
NWIDth	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
OVERshoot	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
PDUtycycle	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
PERiod	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
PREShoot	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
PWIDth	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
RISetime	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
VAMPplitude	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
VAVerage	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
VBASe	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
VMAX	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration
VMIN	AgilentU2701AMeasurementEnum Enumeration	IIVI-ScopeMeasurementEnum Enumeration

**Table 1-1** SCPI, IAgilentU2701A IVI, and IIVI Scope command comparison

SCPI command	IAgilentU2701A IVI command	IIVI Scope command
<b>MEASure commands</b>		
VPP	AgilentU2701AMeasurementEnum Enumeration	IIVI ScopeMeasurementEnum Enumeration
VRMS	AgilentU2701AMeasurementEnum Enumeration	IIVI ScopeMeasurementEnum Enumeration
VTOP	AgilentU2701AMeasurementEnum Enumeration	IIVI ScopeMeasurementEnum Enumeration
<b>TIMebase commands</b>		
DElAYed	IAgilentU2701AAcquisition.StartTime	IIVI ScopeAcquisition.StartTime
HOLDoff	IAgilentU2701ATrigger.Holdoff	IIVI ScopeTrigger.Holdoff
POSition	IAgilentU2701AAcquisition.StartTime	IIVI ScopeAcquisition.StartTime
SCALE	IAgilentU2701AAcquisition.TimePerRecord	IIVI ScopeAcquisition.TimePerRecord
<b>TRIGger commands</b>		
[EDGE]:COUPling	IAgilentU2701ATrigger.Coupling Property	IIVI ScopeChannel.Coupling
[EDGE]:LEVel	IAgilentU2701ATrigger.Level Property	IIVI ScopeTrigger.Level
[EDGE]:SLOPe	IAgilentU2701ATriggerEdge.Slope Property	IIVI ScopeTriggerEdge.Slope
[EDGE]:SOURe	IAgilentU2701ATrigger.Source Property	IIVI ScopeTrigger.Source
[EDGE]:SWEep	IAgilentU2701ATrigger.Modifier Property	IIVI ScopeTrigger.Modifier
MODE	IAgilentU2701ATrigger.Type Property	IIVI ScopeTrigger.Type
PULSE:MODE	AgilentU2701ATriggerTypeEnum Enumeration	IIVI ScopeTriggerTypeEnum Enumeration
PULSEe:WIDTh	AgilentU2701ATriggerTypeEnum Enumeration	IIVI ScopeTriggerTypeEnum Enumeration
STATus	IAgilentU2701ATrigger.Status	-
<b>WAVEform commands</b>		
DATA?	IAgilentU2701AMeasurement.ReadWaveform	IIVI ScopeMeasurement.ReadWaveform
XINCrement?	IAgilentU2701AMeasurement.ReadWaveform	IIVI ScopeMeasurement.ReadWaveform
XORigin?	IAgilentU2701AMeasurement.ReadWaveform	IIVI ScopeMeasurement.ReadWaveform

## **1 Introduction to IVI-COM**



## 2 Configuration

Channels Interface commands starting on [page 12](#)

Close [31](#)

Initialize [32](#)

Initialized [34](#)

Trigger Interface commands starting on [page 37](#)

Status Interface commands starting on [page 75](#)

System Interface commands starting on [page 82](#)

Utility Interface commands starting on [page 85](#)

Enumeration Members [94](#)

This chapter describes the configuration commands used to program the U2701A/U2702A USB modular oscilloscopes over the remote interface. You can use the commands in this chapter to configure the oscilloscope channels for waveform acquisition, set the type of event that triggers the oscilloscope, modify the registry status, and perform various utility operations.



# Count

## Type

Property

## Function

Get

## Description

This command returns the number of channels available.

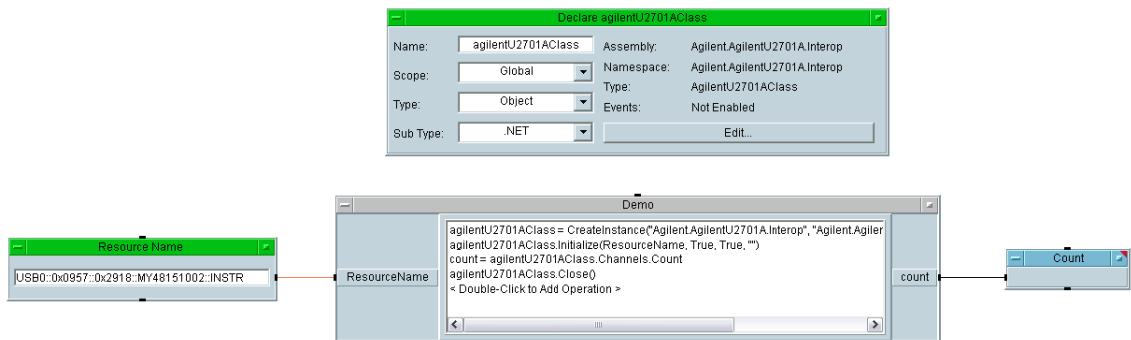
## Hierarchy

```
IAgilentU2701A
├── Channels
│   └── Count
```

## Parameters

Long/Int32

## Example



## Item

This is an interface reference pointer to the IAgilentU2701AChannel interface which is selected by the channel name.

### BandwidthLimit

#### Type

Property

#### Function

Get and Set

#### Description

This command returns/sets the bandwidth limit status for the selected channel. If `True`, the bandwidth limit for the selected channel is enabled. If `False`, the bandwidth limit for the selected channel is disabled.

#### Hierarchy

```

IAgilentU2701A
├── Channels
│   └── Item(Name)
│       └── BandwidthLimit

```

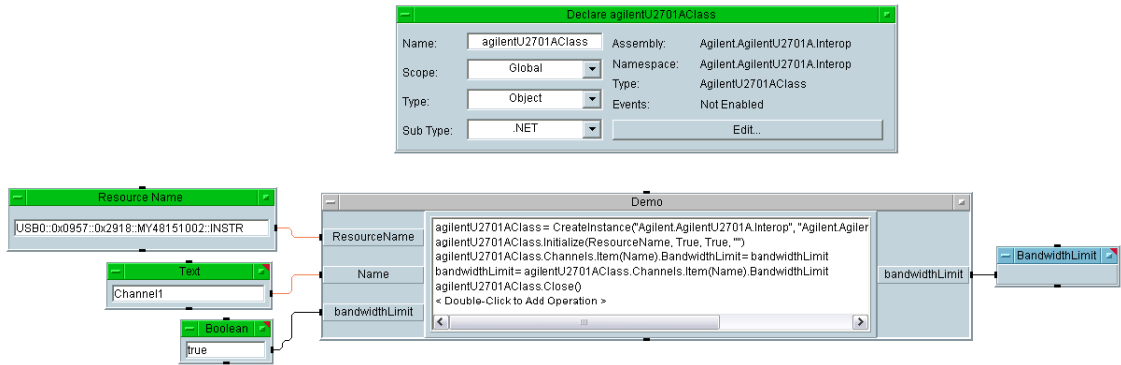
#### Parameters

Item	Type	Description
Name	String	The name of a channel. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

### Return Format

Boolean

### Example



## Configure

### Type

Method

### Function

Set

### Description

This command configures the most commonly used properties of the oscilloscope channel sub-system. Use this command to enable or disable the channel and to set the range, offset, coupling, and probe attenuation values.

### Hierarchy

```
IAgilentU2701A
├── Channels
│   ├── Item(Name)
│   └── Configure(Range, Offset, Coupling, ProbeAttenuation,
│               Enabled)
```

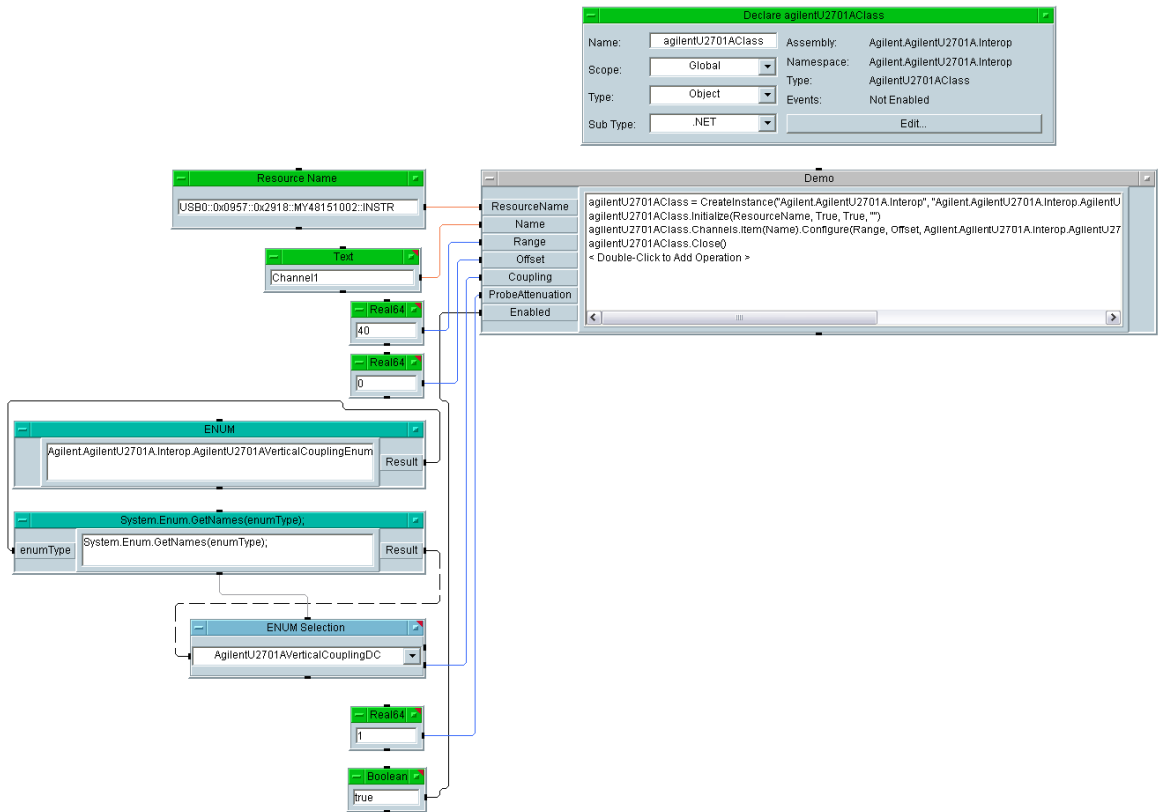
### Parameters

Item	Type	Description
Name	String	The name of a channel. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.
Range	Double	Specifies the vertical range. This value sets the Vertical <a href="#">Range</a> property.
Offset	Double	Specifies the vertical offset. This value sets the Vertical <a href="#">Offset</a> property.
Coupling	AgilentU2701A VerticalCoupling Enum	Specifies how to couple the input signal. This value sets the Vertical <a href="#">Coupling</a> property.
ProbeAttenuation	Double	Specifies the probe attenuation. This value sets the <a href="#">ProbeAttenuation</a> property.
Enabled	Boolean	Specifies if the channel is enabled for acquisition. This value sets the Channels. <a href="#">Enabled</a> property.

### Return Format

Boolean

### Example



## Coupling

### Type

Property

### Function

Get and Set

### Description

This command returns/sets how the oscilloscope couples the input signal.

### Hierarchy

```
IAgilentU2701A
  | Channels
  |   | Item(Name)
  |   |   | Coupling
```

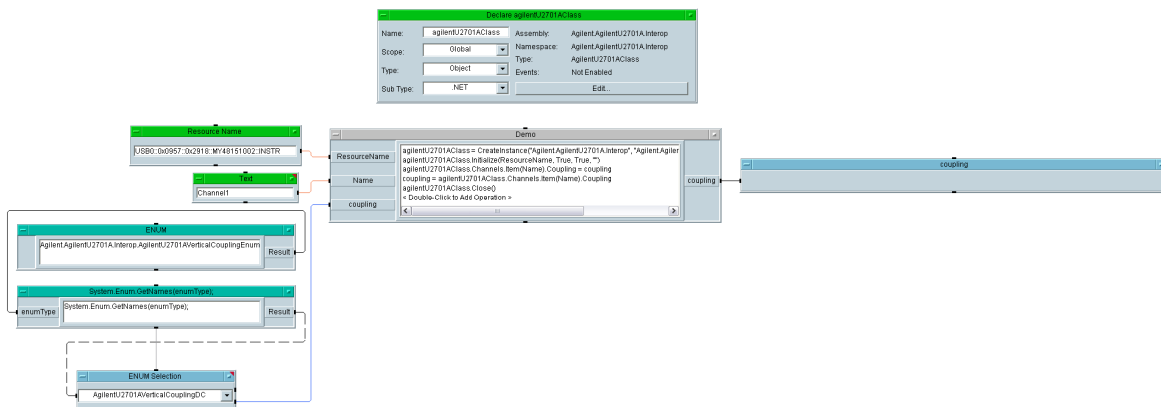
### Parameters

Item	Type	Description
Name	String	The name of a channel. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

### Return Format

Item	Type	Description
AgilentU2701A VerticalCoupling Enum	Enum	See " <a href="#">AgilentU2701AVerticalCouplingEnum</a> " on page 104.

### Example



# Enabled

### Type

Property

### Function

Get and Set

### Description

If this command is set to True, the oscilloscope acquires a waveform for this channel when the `IAgilentU2701AMeasurement.Initiate`, `IAgilentU2701AMeasurement.ReadWaveform`, `IAgilentU2701AMeasurement.ReadWaveformMeasurement`, or `IviScopeMeasurement.ReadWaveformMinMax` methods are called.

### Hierarchy

```
IAgilentU2701A
├── Channels
│   ├── Item(Name)
│   │   └── Enabled
```

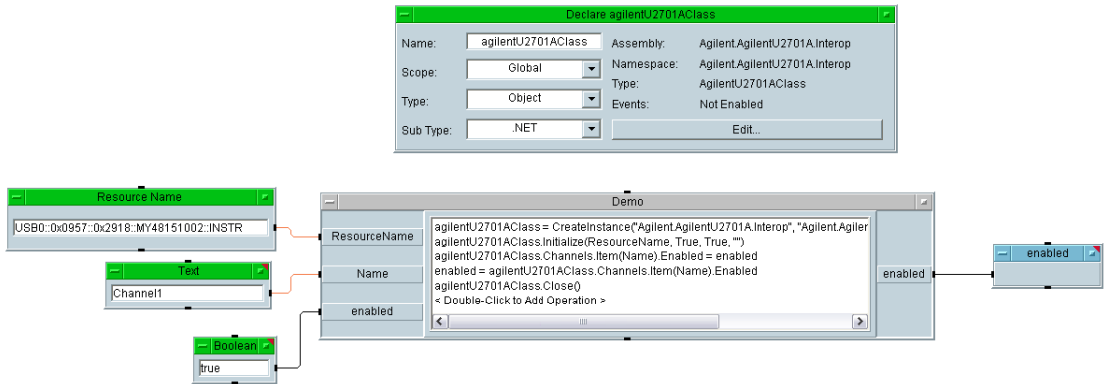
### Parameters

Item	Type	Description
Name	String	The name of a channel. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

### Return Format

Boolean

### Example



# Offset

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the location of the center of the range that was specified with the [Range](#) property. The units are expressed in volts, with respect to ground. For example, to acquire a sine wave spanning from 0.0 V to 10.0 V, set Offset to 5.0 V.

### Hierarchy

```
IAgilentU2701A
├── Channels
│   └── Item(Name)
│       └── Offset
```

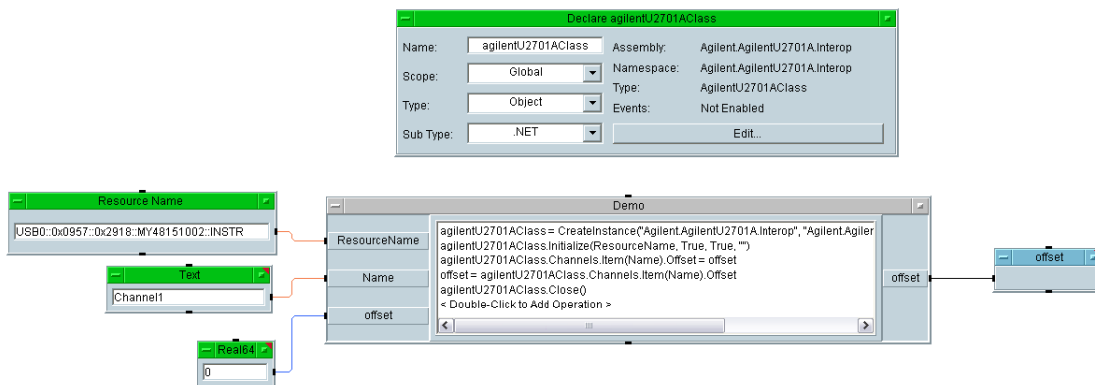
### Parameters

Item	Type	Description
Name	String	The name of a channel. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

### Return Format

Double

### Example



## ProbeAttenuation

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the scaling factor by which the probe attenuates the input signal. For example, with a 10:1 probe, the value is 10.0.

### Hierarchy

```
IAgilentU2701A
├── Channels
│   └── Item(Name)
│       └── ProbeAttenuation
```

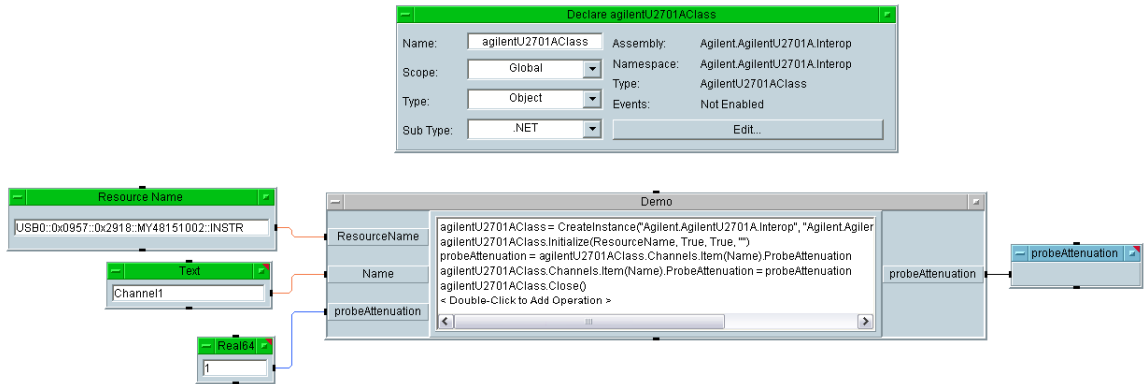
### Parameters

Item	Type	Description
Name	String	The name of a channel. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

### Return Format

Double

### Example



# Range

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the absolute value of the input range that the oscilloscope can acquire for the channel. The units are expressed in volts. For example, to acquire a sine wave spanning from -5.0 V to 5.0 V, set Range to 10.0 V.

### Hierarchy

```
IAgilentU2701A
├── Channels
│   └── Item(Name)
│       └── Range
```

### Parameters

Item	Type	Description
Name	String	The name of a channel. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

**Remarks**

The absolute value of the input range that the oscilloscope can acquire is equivalent to the Volt/Div value multiplied by eight at the scope setting.

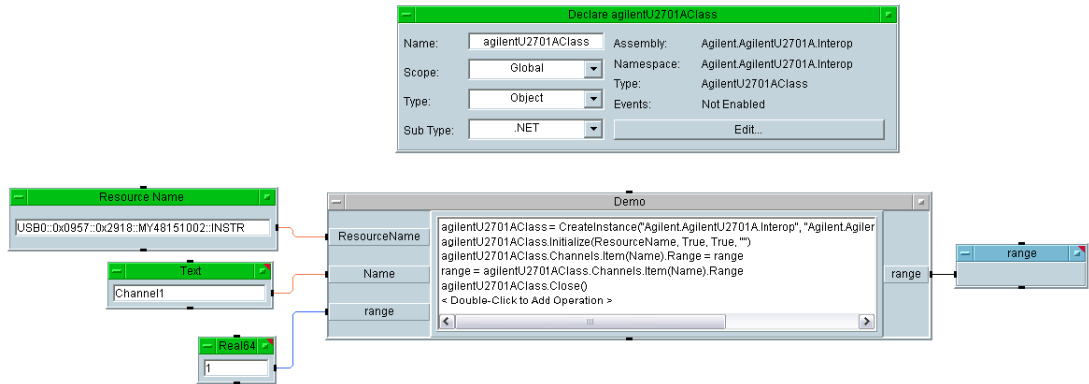
<b>Volt/Div (Attenuation = 1x)</b>	<b>Voltage range</b>
2 mV	16 mV
5 mV	40 mV
10 mV	80 mV
20 mV	160 mV
50 mV	400 mV
100 mV	800 mV
200 mV	1.6 V
500 mV	4 V
1 V	8 V
2 V	16 V
5 V	40 V

**Return Format**

Double

## 2 Configuration

### Example



## Name

### Type

Property

### Function

Get

### Description

This command returns the channel name for a given index.

### Hierarchy

```
IAgilentU2701A
  | Channels
    | Name (Index)
```

### Parameters

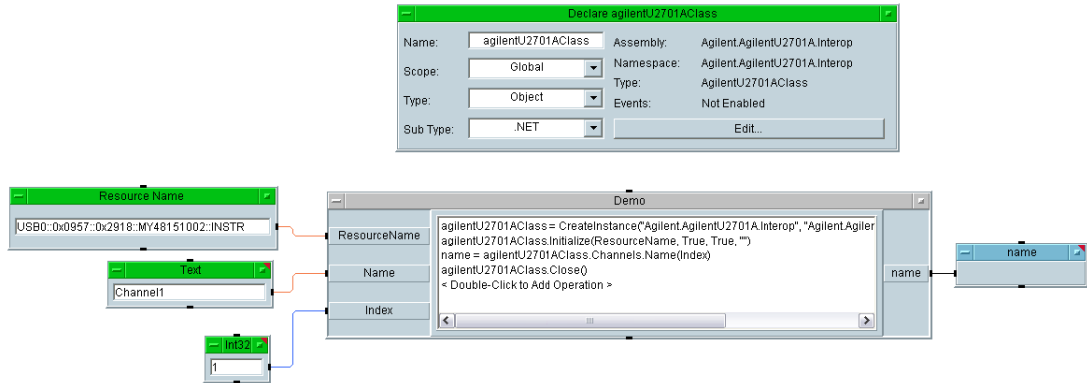
Item	Type	Description
Index	Long/Int32	One based index into the collection of channels.

### Return Format

String

## 2 Configuration

### Example



# Close

## Type

Method

## Function

Set

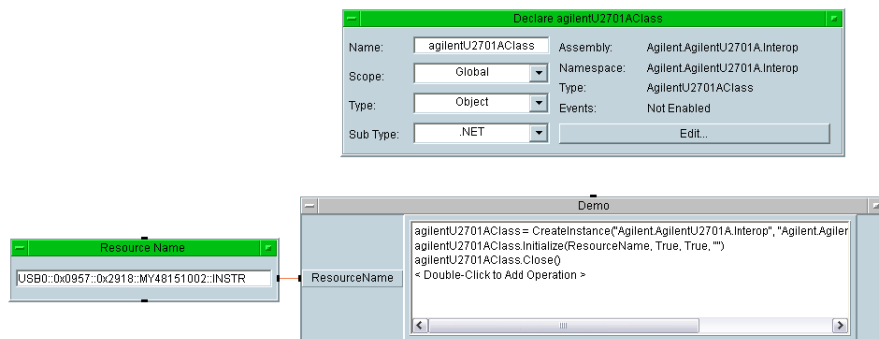
## Description

This command closes the I/O session to the instrument. Driver methods and properties that access the instrument are not accessible after Close is called.

## Hierarchy

```
IAgilentU2701A
├─ Close()
```

## Example



# Initialize

### Type

Method

### Function

Set

### Description

This command opens the I/O session to the instrument. Driver methods and properties that access the instrument are only accessible after Initialize is called. Initialize optionally performs a Reset and queries the instrument to validate the instrument model.

### Hierarchy

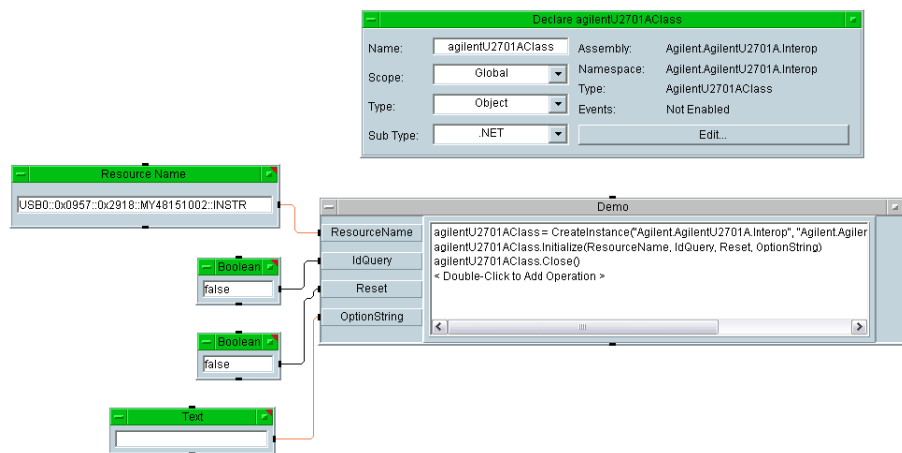
IAgilentU2701A

- Initialize(ResourceName, IdQuery, Reset, OptionString)

### Parameters

Item	Type	Description
ResourceName	String/BSTR	An IVI logical name or an instrument specific string that identifies the address of the instrument, such as a VISA resource descriptor string.
IdQuery	Boolean	Specifies whether to verify the ID of the instrument.
Reset	Boolean	Specifies whether to reset the instrument.
OptionString	String/BSTR	<p>The user can use the <i>OptionString</i> parameter to specify the initial values of certain IVI inherent attributes for the session.</p> <p>The format of an assignment in the <i>OptionString</i> parameter is "Name=Value", where <i>Name</i> is one of: <a href="#">RangeCheck</a>, <a href="#">QueryInstrumentStatus</a>, <a href="#">Cache</a>, <a href="#">Simulate</a>, <a href="#">RecordCoercions</a>, <a href="#">InterchangeCheck</a>, or <a href="#">DriverSetup</a>.</p> <p>Value is either True or False except for DriverSetup. If the <i>OptionString</i> parameter contains an assignment for the Driver Setup attribute, the Initialize function assumes that everything following "DriverSetup=" is part of the assignment.</p>

### Example



# Initialized

## Type

Property

## Function

Get

## Description

This command returns `True` between a successful call to the `Initialize` method and a successful call to the `Close` method, and `False` at all other times.

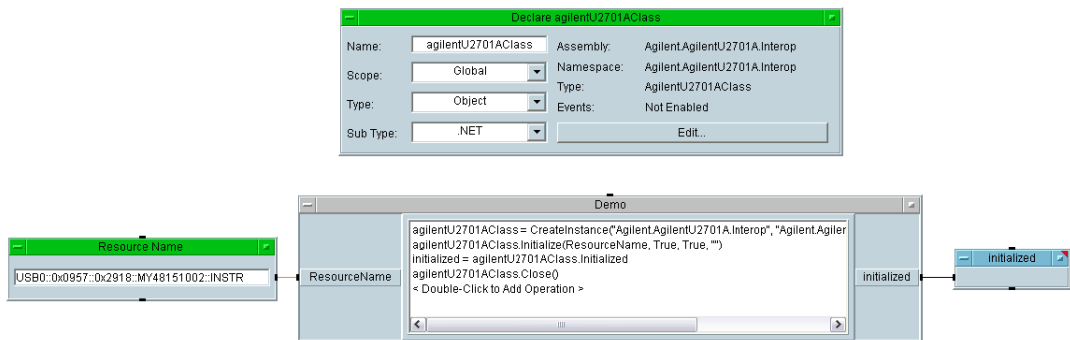
## Hierarchy

```
IAgilentU2701A
└─ Initialized
```

## Return Format

Boolean

## Example



# Configure

## Type

Method

## Function

Set

## Description

This command configures the trigger *Type* and *Holdoff*. *Holdoff* units are expressed in seconds.

## Hierarchy

```
IAgilentU2701A
├ Trigger
│   └ Configure(Type, Holdoff)
```

## Parameters

Item	Type	Description
Type	AgilentU2701A TriggerTypeEnum	Specifies the trigger type. This value sets the Trigger. <a href="#">Type</a> property. See " <a href="#">AgilentU2701ATriggerTypeEnum</a> " on page 101 for more information.
Holdoff	Double	Specifies the trigger hold-off. This value sets the Trigger. <a href="#">Holdoff</a> property.



# Coupling

## Type

Property

## Function

Get and Set

## Description

This command returns/sets how the oscilloscope couples the trigger source.

## Hierarchy

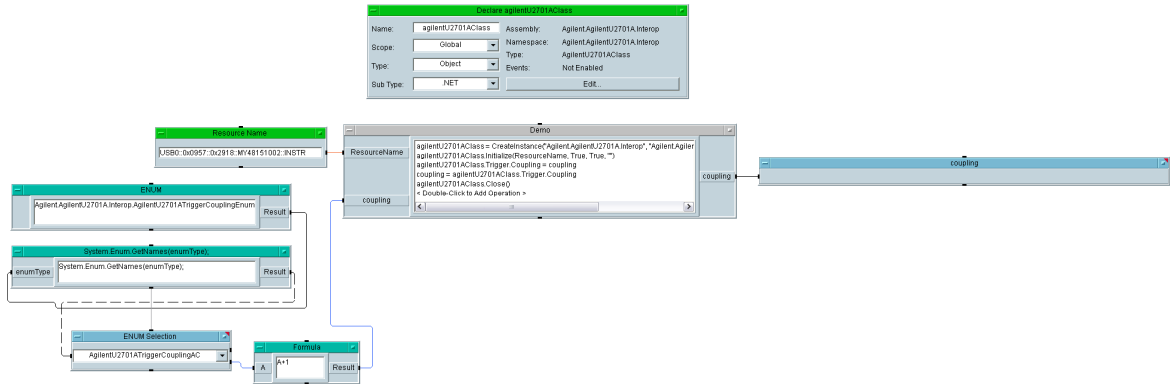
```
IAgilentU2701A
  |
  | Trigger
  |
  | Coupling
```

## Return Format

Item	Type	Description
AgilentU2701A TriggerCoupling Enum	Enum	See " <a href="#">AgilentU2701ATriggerCouplingEnum</a> " on page 99 for more information.

## 2 Configuration

### Example



# Edge

This interface configures slope of edge trigger.

## Configure

### Type

Method

### Function

Set

### Description

This command configures the conditions for edge trigger. An edge trigger occurs when the trigger source signal passes through the trigger level with the specified slope.

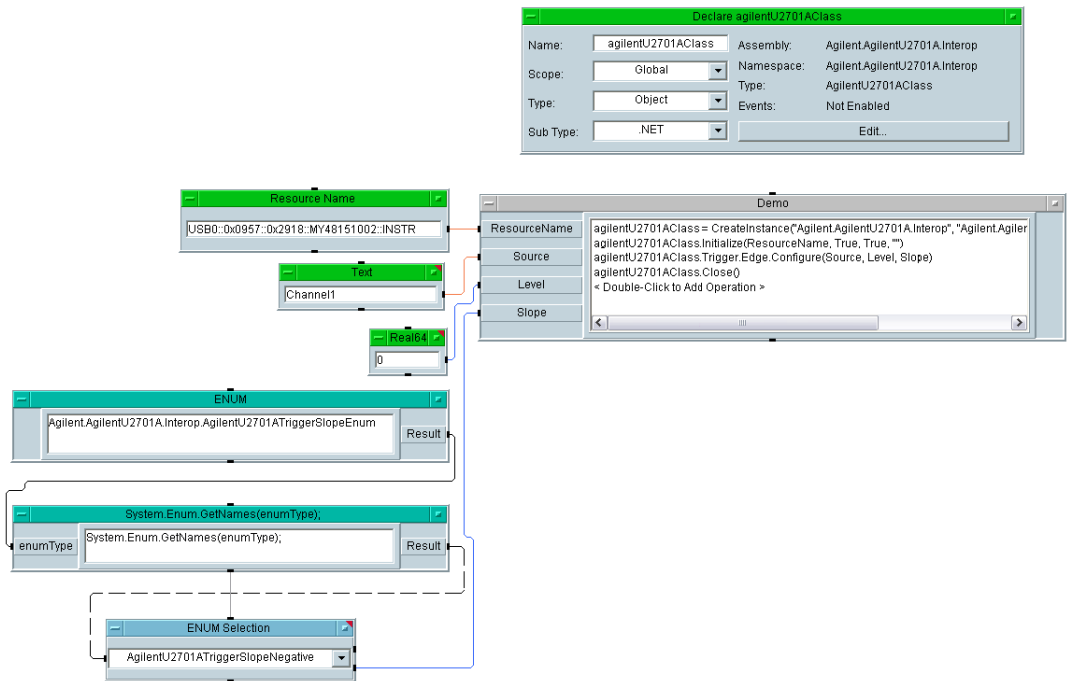
### Hierarchy

```
IAgilentU2701A
├── Trigger
│   └── Edge
│       └── Configure(Source, Level, Slope)
```

### Parameters

Item	Type	Description
Source	String	Specifies the trigger source. This value sets the Trigger.Source property.
Level	Double	Specifies the trigger level. This value sets the Trigger.Level property.
Slope	AgilentU2701A TriggerSlopeEnum	Specifies the trigger slope. This value sets the Trigger.Slope property. See “AgilentU2701ATriggerSlopeEnum” on page 100 for more information.

### Example



## Slope

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the slope, a rising or a falling edge, that triggers the oscilloscope.

### Hierarchy

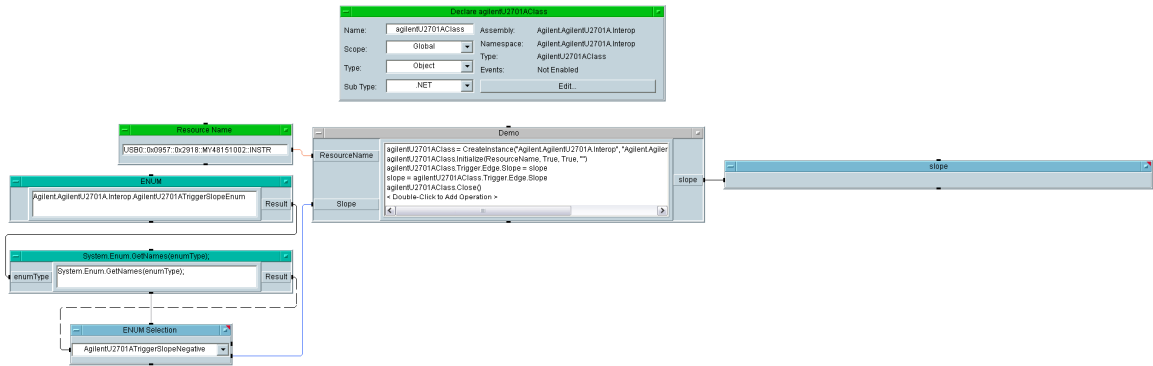
```
IAgilentU2701A
  └ Trigger
    └ Edge
      └ Slope
```

### Parameters

Item	Type	Description
AgilentU2701A TriggerSlopeEnum	Enum	See <a href="#">“AgilentU2701ATriggerSlopeEnum”</a> on page 100 for more information.

## 2 Configuration

### Example



# Glitch

This interface configures the condition, polarity, and width of the glitch trigger.

## Condition

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the glitch condition that determines whether the oscilloscope triggers on a pulse with a width less than or greater than the glitch width value.

### Hierarchy

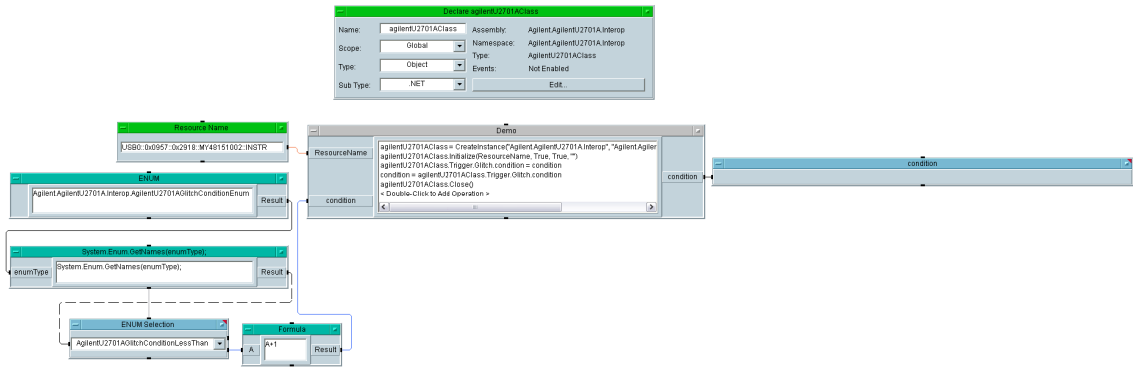
```
IAgilentU2701A
  |
  | L Trigger
  |   |
  |   | L Glitch
  |   |   |
  |   |   | L Condition
```

### Parameters

Item	Type	Description
AgilentU2701A GlitchCondition Enum	Enum	See " <a href="#">AgilentU2701AGlitchConditionEnum</a> " on page 94 for more information.

## 2 Configuration

### Example



## Configure

### Type

Method

### Function

Set

### Description

This command configures the glitch trigger *Source*, *Level*, *Width*, *Polarity*, and *Condition*. A glitch trigger occurs when the edge of a pulse that matches the *Width* and *Polarity* crosses the specified *Level* (expressed in volts).

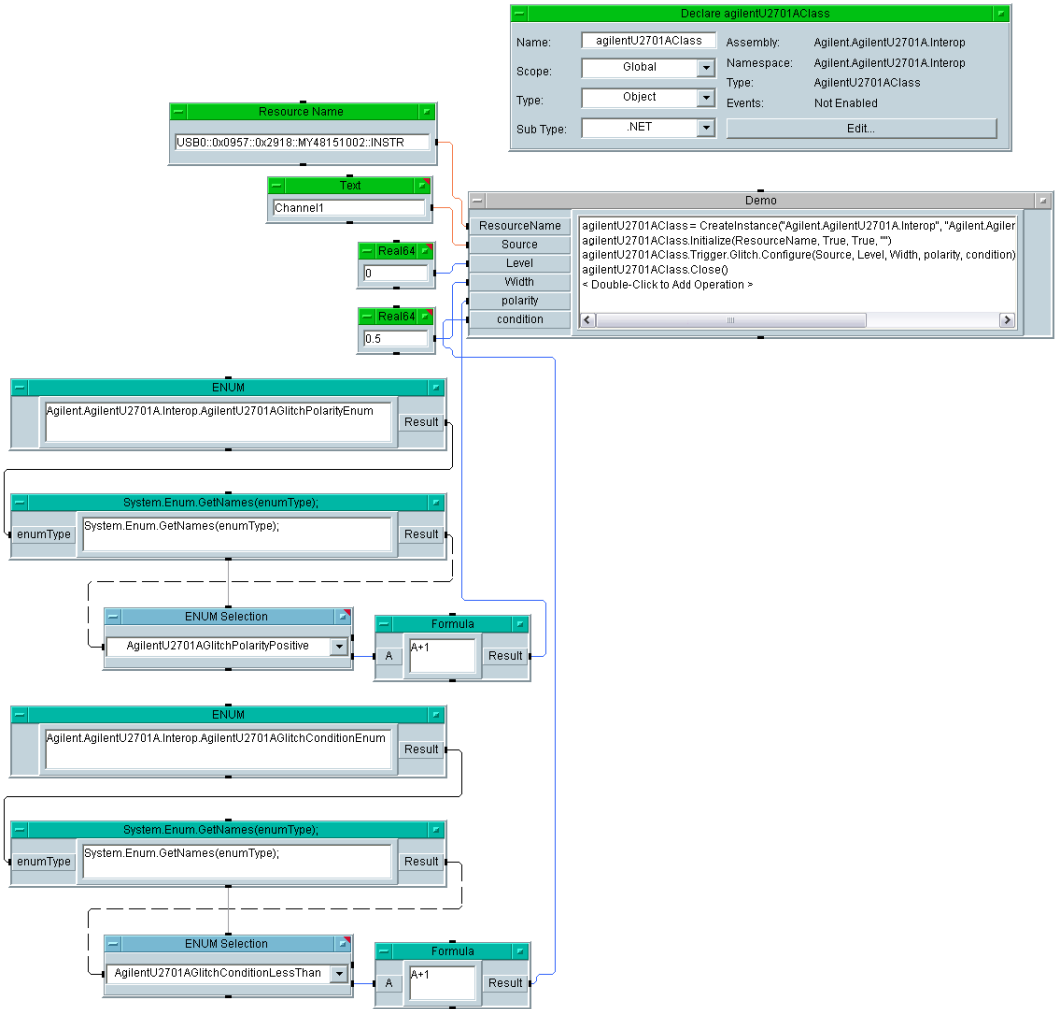
### Hierarchy

```
IAgilentU2701A
  └ Trigger
    └ Glitch
      └ Configure(Source, Level, Width, Polarity, Condition)
```

### Parameters

Item	Type	Description
Source	String	Specifies the trigger source. This value sets the <a href="#">Trigger.Source</a> property.
Level	Double	Specifies the trigger level. This value sets the <a href="#">Trigger.Level</a> property.
Width	Double	Specifies the glitch triggering glitch width in seconds. This value sets the <a href="#">Glitch.Width</a> property.
Polarity	AgilentU2701A GlitchPolarity Enum	Specifies the glitch polarity. This value sets the <a href="#">Glitch.Polarity</a> property.
Condition	AgilentU2701A GlitchCondition Enum	Specifies the glitch condition. This value sets the <a href="#">Glitch.Condition</a> property.

Example



## Polarity

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the polarity of the glitch that triggers the oscilloscope.

### Hierarchy

```
IAgilentU2701A
  |
  | L Trigger
  |   |
  |   | L Glitch
  |   |   |
  |   |   | L Polarity
```

### Return Format

Item	Type	Description
AgilentU2701A GlitchPolarity Enum	Enum	Specifies the glitch polarity. This value sets the <a href="#">Glitch.Polarity</a> property.



## Width

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the glitch width. The units are expressed in seconds.

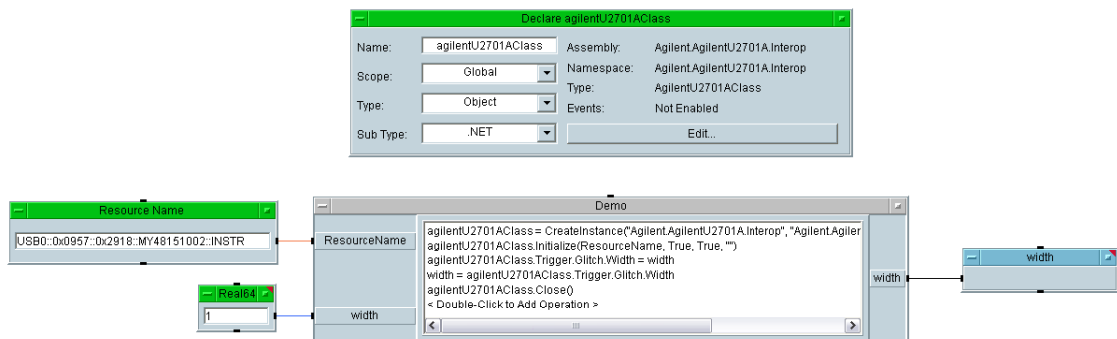
### Hierarchy

```
IAgilentU2701A
├── Trigger
│   └── Glitch
│       └── Width
```

### Return Format

Double

### Example



# Holdoff

## Type

Property

## Function

Get and Set

## Description

This command returns/sets the length of time the oscilloscope waits after it fills the acquisition buffer until the oscilloscope enables the trigger interface to detect another trigger. The units are expressed in seconds.

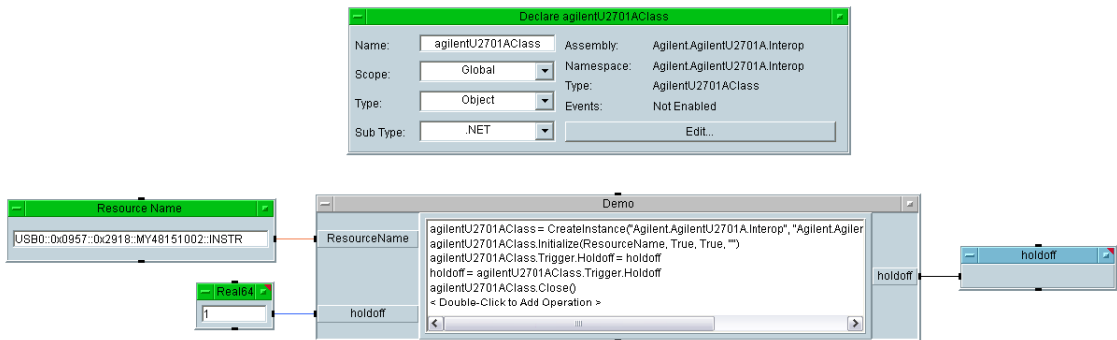
## Hierarchy

```
IAgilentU2701A  
├─ Trigger  
│ └─ Holdoff
```

## Return Format

Double

## Example



# Modifier

## Type

Property

## Function

Get and Set

## Description

This command determines the oscilloscope behavior in the absence of a trigger.

## Hierarchy

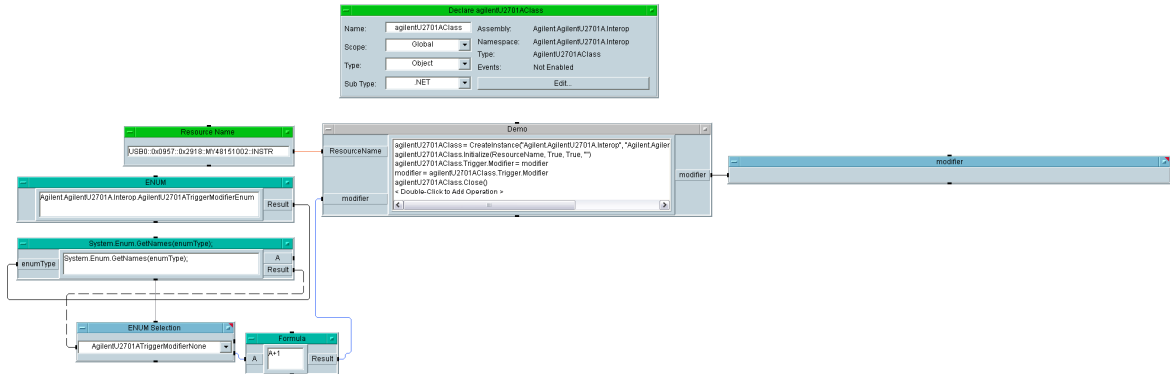
```
IAgilentU2701A
  |
  | L Trigger
  |   |
  |   | L Modifier
```

## Return Format

Item	Type	Description
AgilentU2701A TriggerModifier Enum	Enum	See " <a href="#">AgilentU2701ATriggerModifierEnum</a> " on page 99 for more information.

## 2 Configuration

### Example



# Level

## Type

Property

## Function

Get and Set

## Description

This command returns/sets the voltage threshold for the trigger interface. The units are expressed in volts.

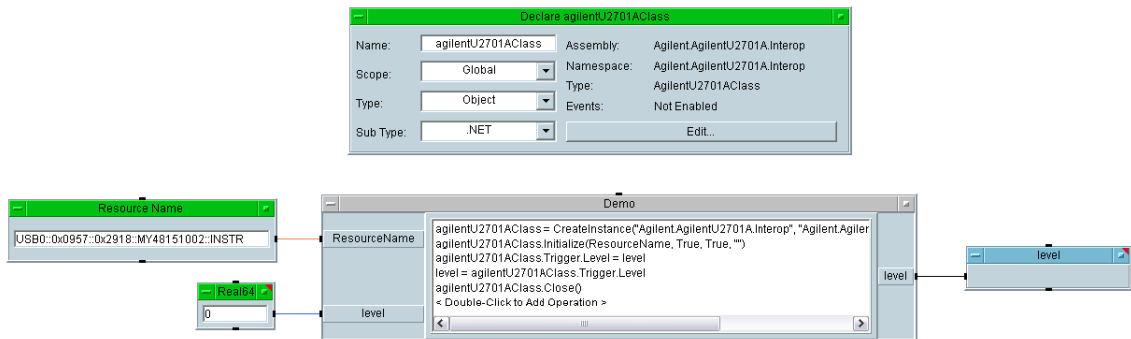
## Hierarchy

```
IAgilentU2701A
├─ Trigger
│   └─ Level
```

## Return Format

Double

## Example



# Source

## Type

Property

## Function

Get and Set

## Description

This command returns/sets the signal that the oscilloscope monitors for a trigger. It can be a channel or one of many other values.

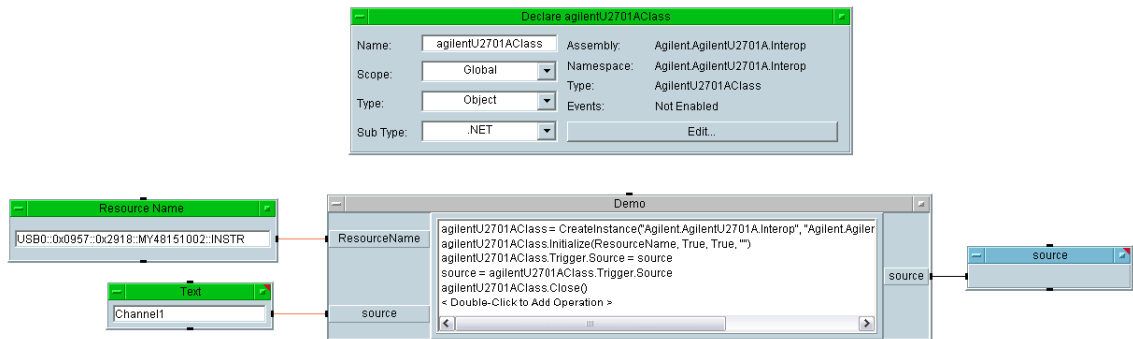
## Hierarchy

```
IAgilentU2701A
├─ Trigger
│   └─ Source
```

## Return Format

String/BSTR

## Example



# Status

## Type

Property

## Function

Get

## Description

If this command is set to `True`, the waveform starts directly after the trigger condition is met. If this command is set to `False`, the instrument has to send a force trigger to get a waveform.

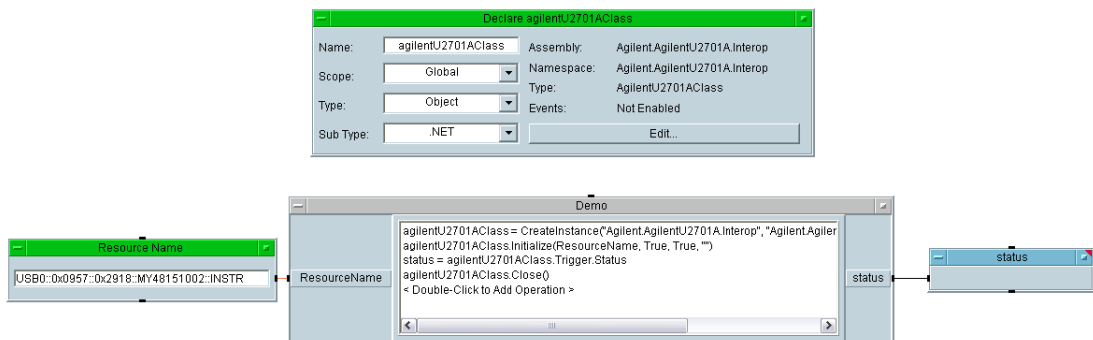
## Hierarchy

```
IAgilentU2701A
├─ Trigger
│   └─ Status
```

## Return Format

Boolean

## Example



# TV

This interface configures the signal format, number of lines, and events of the TV trigger.

## Configure

### Type

Method

### Function

Set

### Description

This command configures the TV trigger source, signal format, event, and polarity.

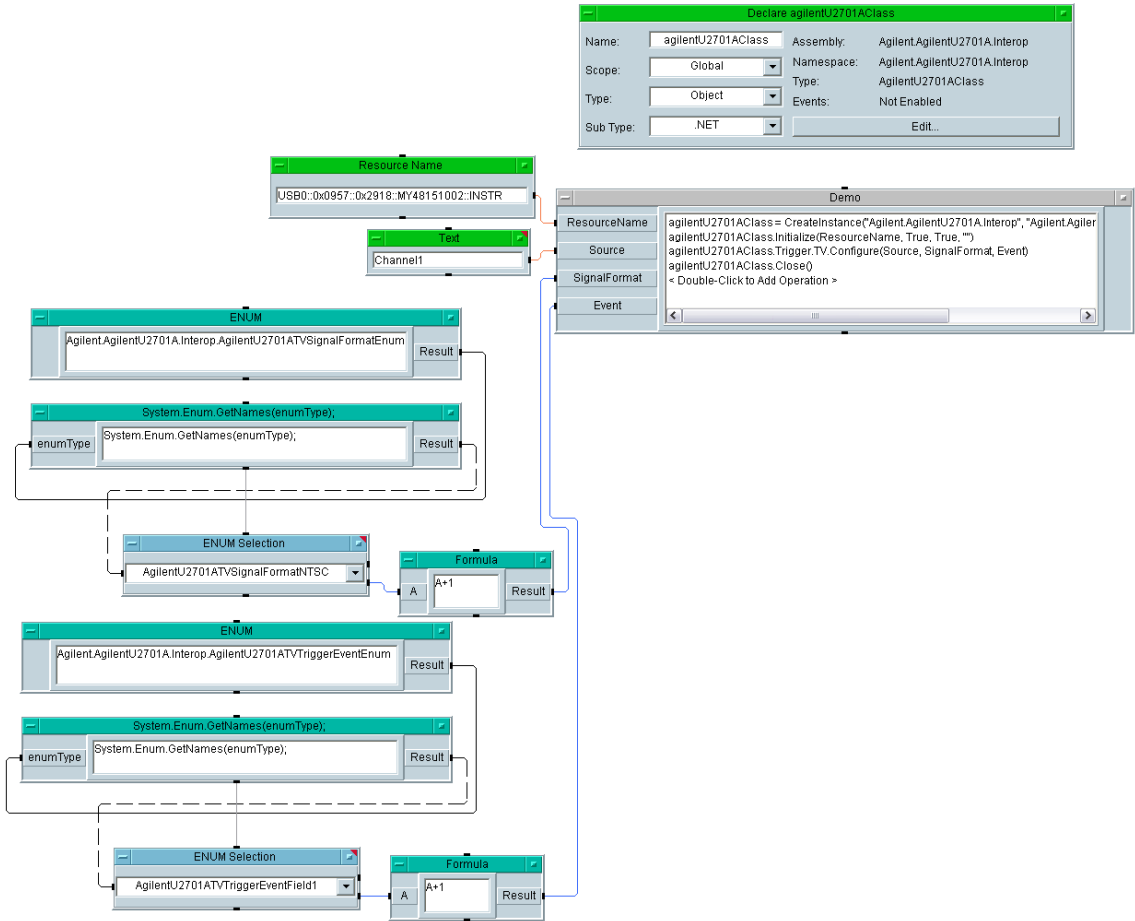
### Hierarchy

```
IAgilentU2701A
├── Trigger
│   ├── TV
│       └── Configure(Source, SignalFormat, Event)
```

**Parameters**

Item	Type	Description
Source	String	Specifies the trigger source. This value sets the <code>Trigger.Source</code> property.
SignalFormat	AgilentU2701ATV SignalFormat Enum	Specifies the TV trigger signal format. This value sets the <code>TV.SignalFormat</code> property. See <a href="#">“AgilentU2701ATVSignalFormatEnum”</a> on page 102 for more information.
Event	AgilentU2701ATV TriggerEventEnum	Specifies the TV trigger event. This value sets the <code>TV.Event</code> property. See <a href="#">“AgilentU2701ATVTriggerEventEnum”</a> on page 103 for more information.

Example



## Event

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the event on which the oscilloscope triggers.

### Hierarchy

```

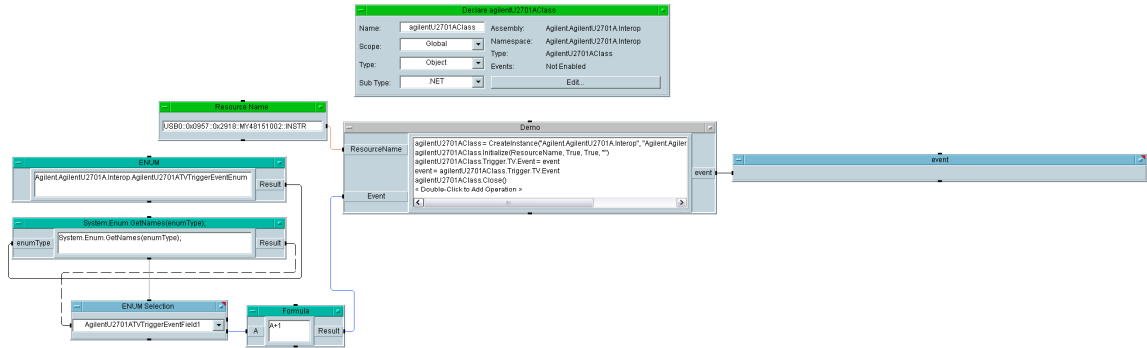
IAgilentU2701A
  |
  | L Trigger
  |   |
  |   | L TV
  |   |   |
  |   |   | L Event
  
```

### Return Format

Item	Type	Description
AgilentU2701ATV TriggerEventEnum	Enum	See “ <a href="#">AgilentU2701ATVTriggerEventEnum</a> ” on page 103 for more information.

## 2 Configuration

### Example



## LineNumber

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the line on which the oscilloscope triggers. The line number is absolute and not relative to the field of the TV signal.

### Hierarchy

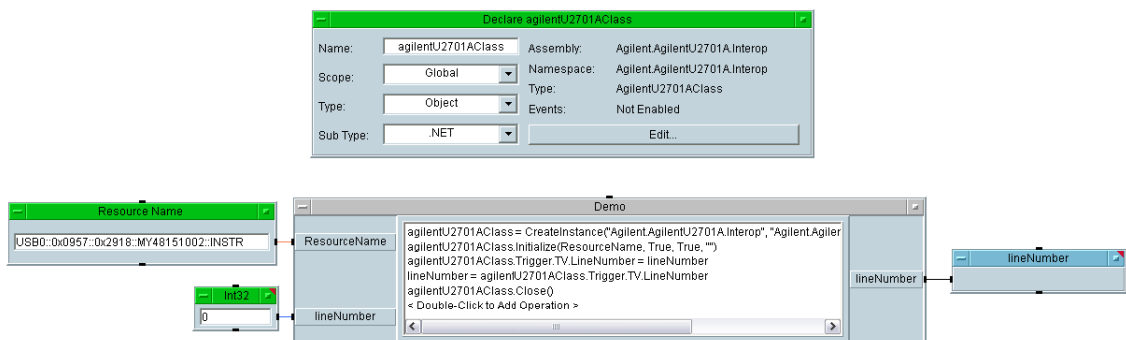
```

IAgilentU2701A
├── Trigger
│   └── TV
│       └── LineNumber
    
```

### Return Format

Long/Int32

### Example



## SignalFormat

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the format of the TV signal on which the oscilloscope triggers.

### Hierarchy

```
IAgilentU2701A
  |
  | L Trigger
  |   |
  |   | L TV
  |   |   |
  |   |   | L SignalFormat
```

### Return Format

Item	Type	Description
AgilentU2701ATV SignalFormat Enum	Enum	See “ <a href="#">AgilentU2701ATVSignalFormatEnum</a> ” on page 102 for more information.



## Type

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the kind of event that triggers the oscilloscope.

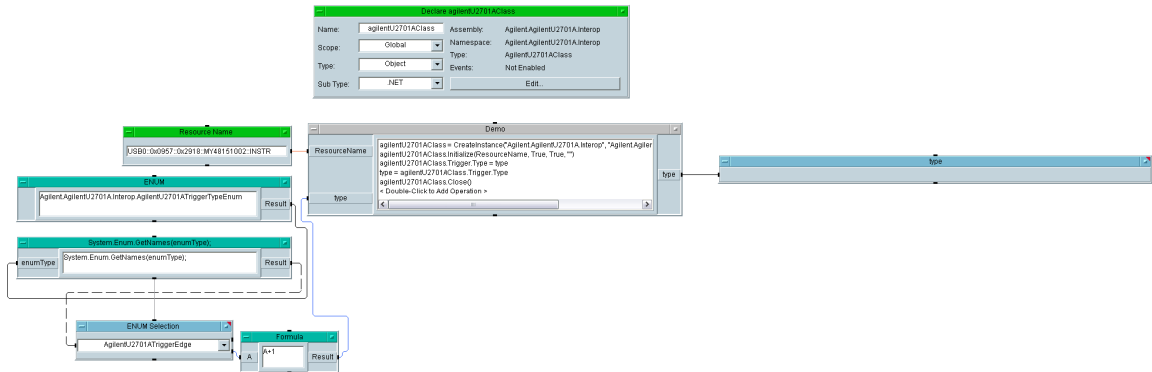
### Hierarchy

```
IAgilentU2701A
  |
  | L Trigger
  |   |
  |   | L TV
  |   |   |
  |   |   | L Type
```

### Return Format

Item	Type	Description
AgilentU2701A TriggerTypeEnum	Enum	See “ <a href="#">AgilentU2701ATriggerTypeEnum</a> ” on page 101 for more information.

### Example



# Width

This interface configures condition, polarity, and threshold level of width trigger.

## Condition

### Type

Property

### Function

Get and Set

### Description

This command returns/sets whether a pulse within or outside the high and low thresholds triggers the oscilloscope.

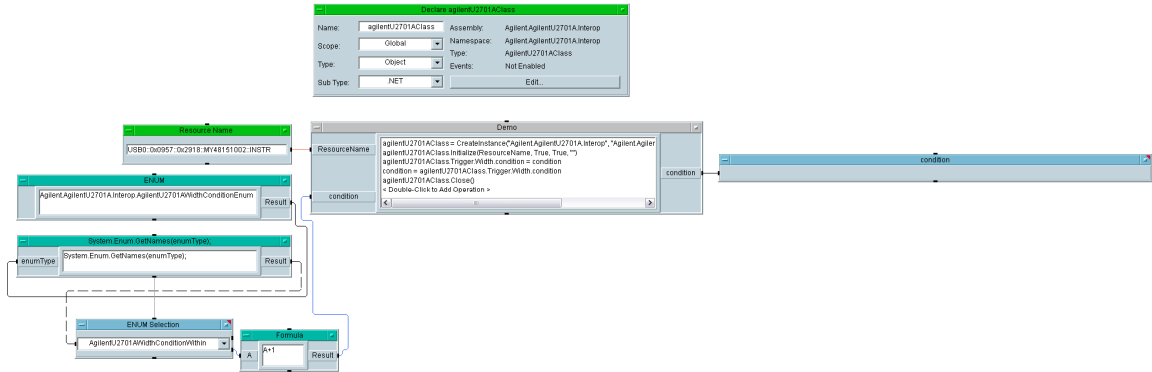
### Hierarchy

```
IAgilentU2701A
├── Trigger
│   └── Width
│       └── Condition
```

### Return Format

Item	Type	Description
AgilentU2701A WidthCondition Enum	Enum	See " <a href="#">AgilentU2701AWidthConditionEnum</a> " on page 105 for more information.

### Example



## Configure

### Type

Method

### Function

Set

### Description

This command configures the width trigger *Source*, *Level*, *ThresholdLow*, *ThresholdHigh*, *Polarity*, and *Condition*. A width trigger occurs when a pulse, which passes through *Level*, with a width between or outside, the width threshold is detected.

### Hierarchy

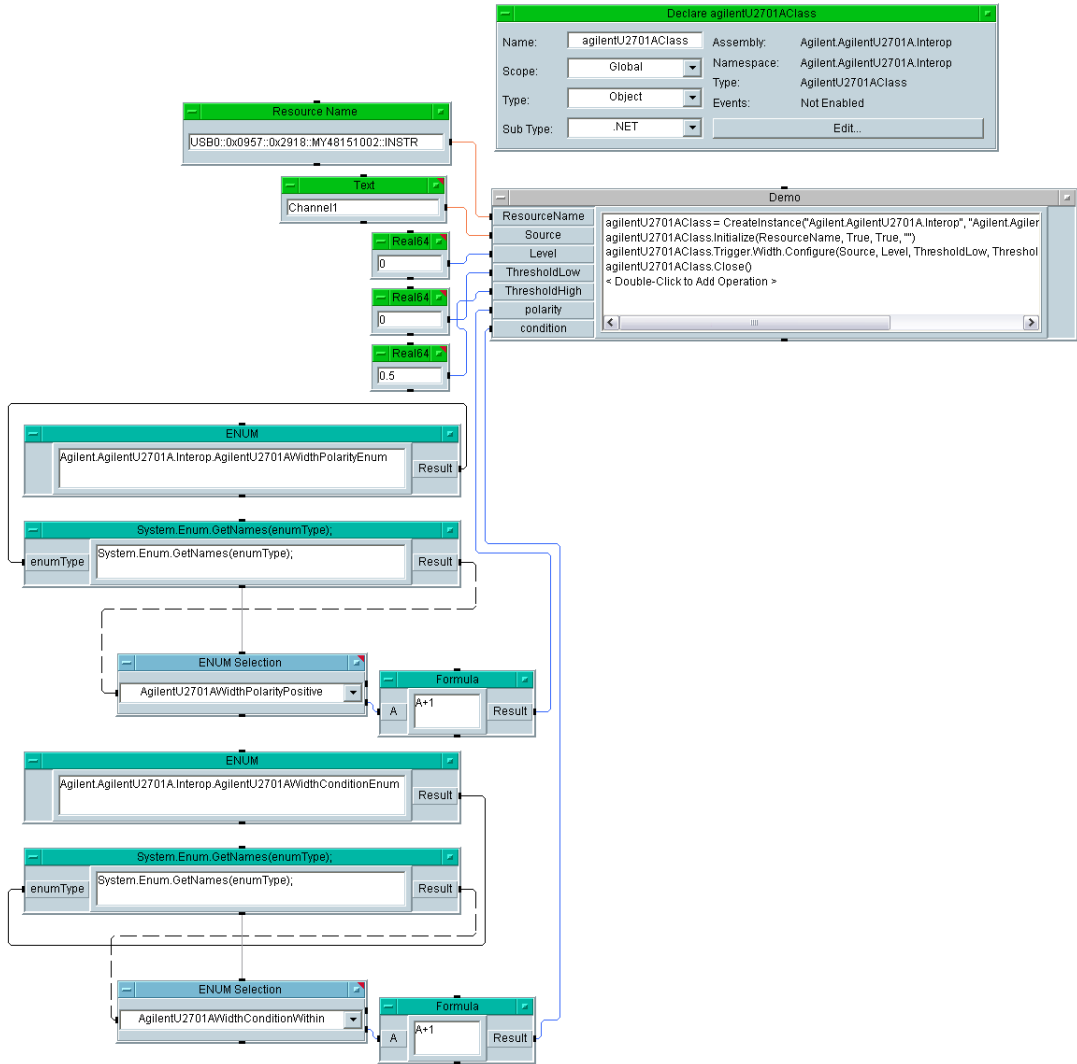
```
IAgilentU2701A
├── Trigger
│   └── Width
│       └── Configure(Source, Level, ThresholdLow, ThresholdHigh,
│                   Polarity, Condition)
```

### Parameters

Item	Type	Description
Source	String	Specifies the trigger source. This value sets the <a href="#">Trigger.Source</a> property.
Level	Double	Specifies the trigger level. This value sets the <a href="#">Trigger.Level</a> property.
ThresholdLow	Double	Sets the width triggering low threshold in seconds. This value sets the <a href="#">Width.ThresholdLow</a> property.
ThresholdHigh	Double	Sets the width triggering high threshold in seconds. This value sets the <a href="#">Width.ThresholdHigh</a> property.

Item	Type	Description
Polarity	AgilentU2701A WidthPolarity Enum	Specifies the width polarity. This value sets the <a href="#">Width.Polarity</a> property. See <a href="#">“AgilentU2701AWidthPolarityEnum”</a> on page 105 for more information.
Condition	AgilentU2701A WidthCondition Enum	Specifies the width condition. This value sets the <a href="#">Width.Condition</a> property. See <a href="#">“AgilentU2701AWidthConditionEnum”</a> on page 105 for more information.

Example



## Polarity

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the polarity of the pulse that triggers the oscilloscope.

### Hierarchy

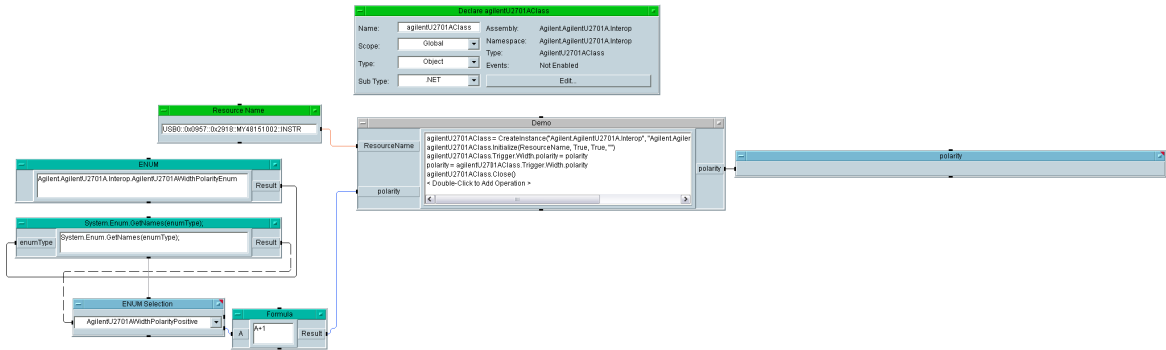
```
IAgilentU2701A
  | Trigger
    | Width
      | Polarity
```

### Return Format

Item	Type	Description
AgilentU2701A WidthPolarity Enum	Enum	See <a href="#">“AgilentU2701AWidthPolarityEnum”</a> on page 105 for more information.

## 2 Configuration

### Example



## ThresholdHigh

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the high width threshold time, expressed in seconds.

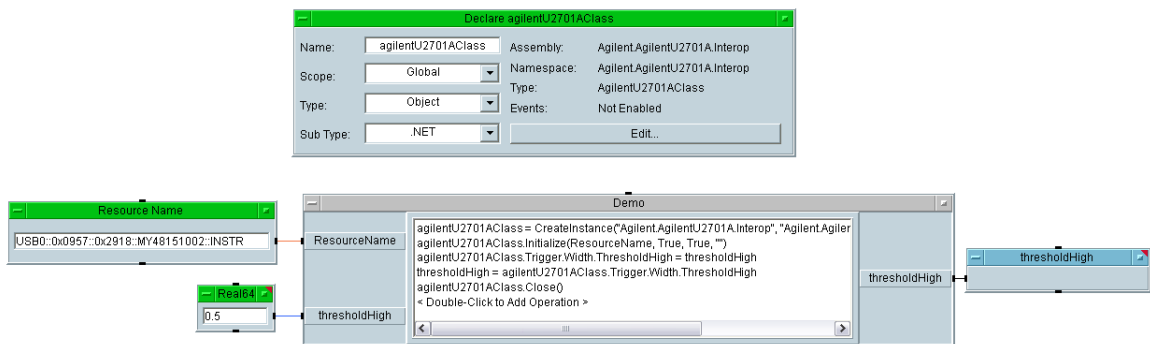
### Hierarchy

```
IAgilentU2701A
├── Trigger
│   └── Width
│       └── ThresholdHigh
```

### Return Format

Double

### Example



# ThresholdLow

## Type

Property

## Function

Get and Set

## Description

This command returns/sets the low width threshold time, expressed in seconds.

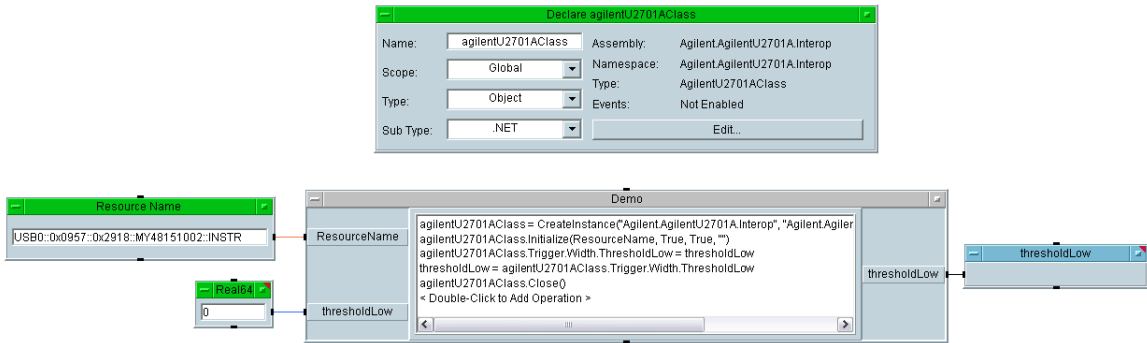
## Hierarchy

```
IAgilentU2701A
├── Trigger
│   └── Width
│       └── ThresholdLow
```

## Return Format

Double

## Example



# Clear

## Type

Method

## Function

Set

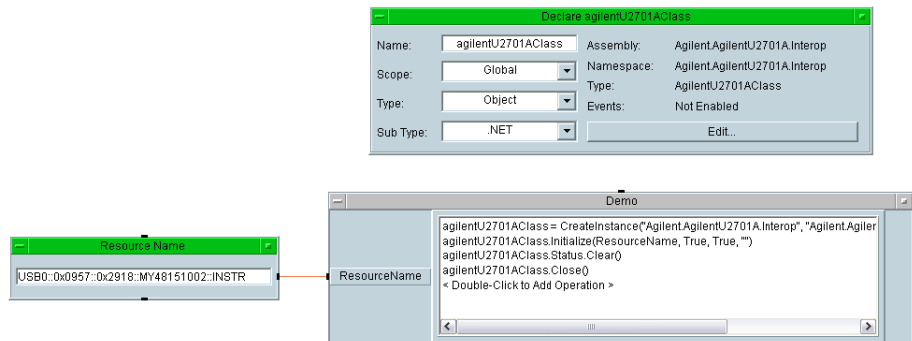
## Description

This command clears all event registers and error queues. The enable registers are unaffected.

## Hierarchy

```
IAgilentU2701A
├── Status
│   └── Clear()
```

## Example



# ConfigureServiceRequest

## Type

Method

## Function

Set

## Description

This command clears all the enable registers. It then sets the appropriate transition filters and enable registers so when the specified event(s) occur(s) the instrument requests service. All other events are disabled from generating a service request. To detect a service request the client application must poll the status byte using the [SerialPoll](#) method or [Register](#) property and test the request service bit.

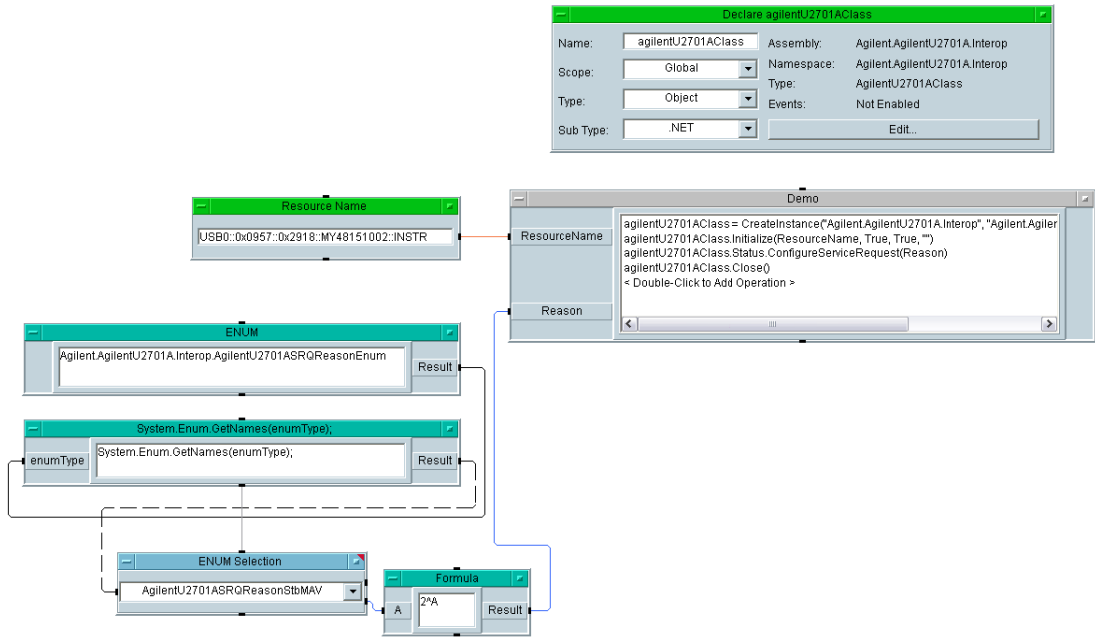
## Hierarchy

```
IAgilentU2701A
├── Status
│   └── ConfigureServiceRequest(Reason)
```

## Parameters

Item	Type	Description
Reason	AgilentU2701A SRQReasonEnum	The defined values are expressed in the powers of two: 1, 2, 4, and so on. You can OR several reasons together so multiple events can generate a service request. See <a href="#">“AgilentU2701ASRQReasonEnum”</a> on page 95 for more information.

### Example



# Preset

## Type

Method

## Function

Set

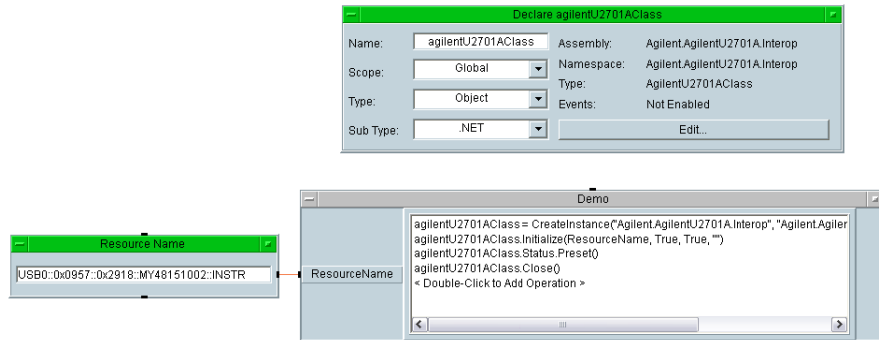
## Description

This command sets the SCPI defined enable registers and transition filters.

## Hierarchy

```
IAgilentU2701A
├── Status
│   └── Preset()
```

## Example



# Register

## Type

Property

## Function

Get and Set

## Description

This command returns/sets the instrument status registers.

## Hierarchy

```
IAgilentU2701A
  |
  | Status
  |
  | Register(Register, SubRegister, val)
```

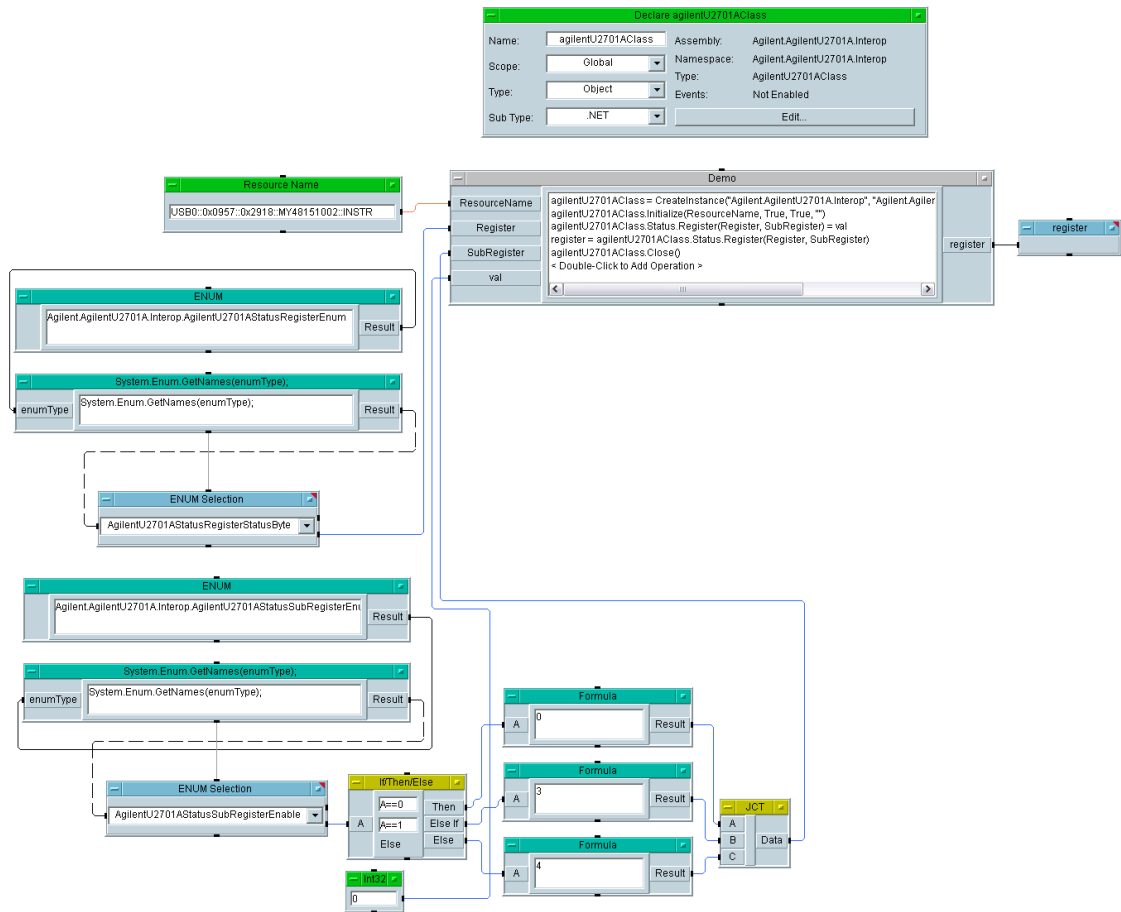
## Parameters

Item	Type	Description
Register	AgilentU2701A StatusRegister Enum	The status register to access. See <a href="#">“AgilentU2701AStatusRegisterEnum”</a> on page 97 for available registers.
SubRegister	AgilentU2701A StatusSubRegister Enum	The status sub register to access. See <a href="#">“AgilentU2701AStatusSubRegisterEnum”</a> on page 98 for available sub registers.
val	Long/Int32	Instrument Status Register value

### Return Format

Item	Type	Description
val	Long/Int32	Instrument Status Register value

### Example



# SerialPoll

## Type

Property

## Function

Get

## Description

This command returns the serial poll of the instrument status byte.

## Hierarchy

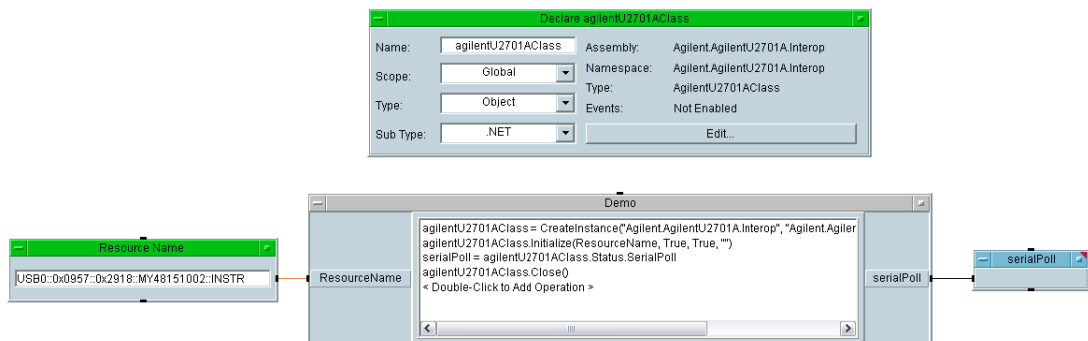
```

IAgilentU2701A
├── Status
│   └── SerialPoll
    
```

## Return Format

Long/Int32

## Example



## TimeoutMilliseconds

### Type

Property

### Function

Set

### Description

This command sets the value, in milliseconds, of the default timeout used by I/O operations. This property provides access to the driver Visa Session Timeout. Only in rare, unusual circumstances should you set this property. Driver methods and properties with operations which take a significant time to perform are responsible for adjusting the I/O timeout to an appropriate value. Some methods provide a *MaxTimeMilliseconds* parameter which gives you direct control over the timeout value for that method. Sometimes, however, increasing the timeout value can work around an obscure driver defect.

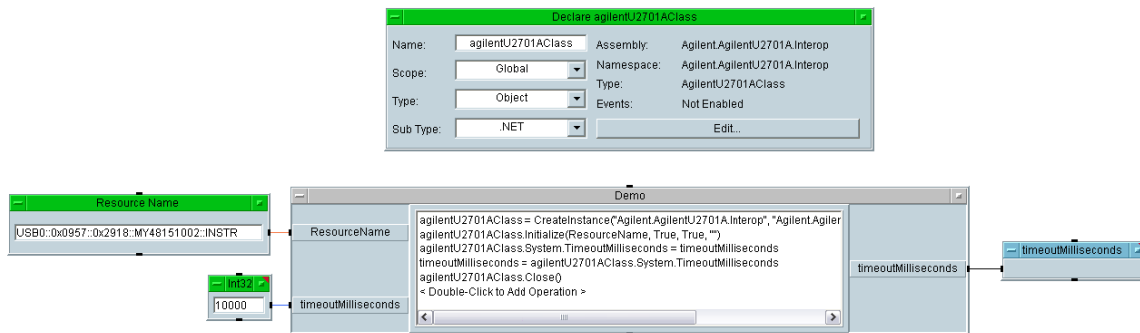
### Hierarchy

```
IAgilentU2701A
├ System
└ TimeoutMilliseconds
```

### Return Format

Long/Int32

### Example



# WaitForOperationComplete

## Type

Method

## Function

Set

## Description

This command sets the instrument not to return until previously started operations are completed or the *MaxTimeMilliseconds* time have expired.

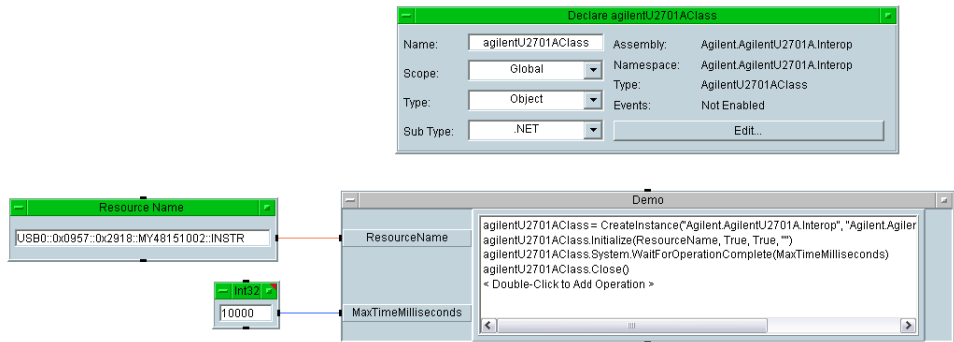
## Hierarchy

```
IAgentU2701A
├── System
│   └── WaitForOperationComplete (MaxTimeMilliseconds)
```

## Return Format

String/BTSR

## Example



# Disable

## Type

Method

## Function

Set

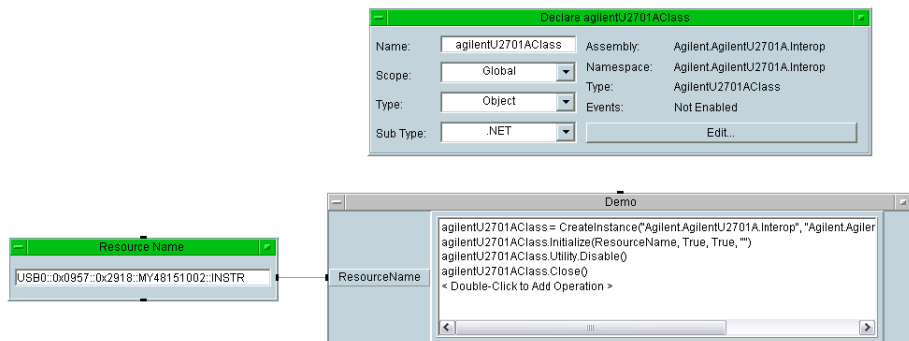
## Description

This command quickly places the instrument in a state where it has no, or minimal, effect on the external system to which it is connected. This state is not necessarily a known state.

## Hierarchy

```
IAgilentU2701A
  └ Utility
    └ Disable()
```

## Example



## ErrorQuery

### Type

Method

### Function

Get

### Description

This command queries the instrument and returns the instrument specific error information. This function can be used when [QueryInstrumentStatus](#) is `True` to retrieve error details when the driver detects an instrument error.

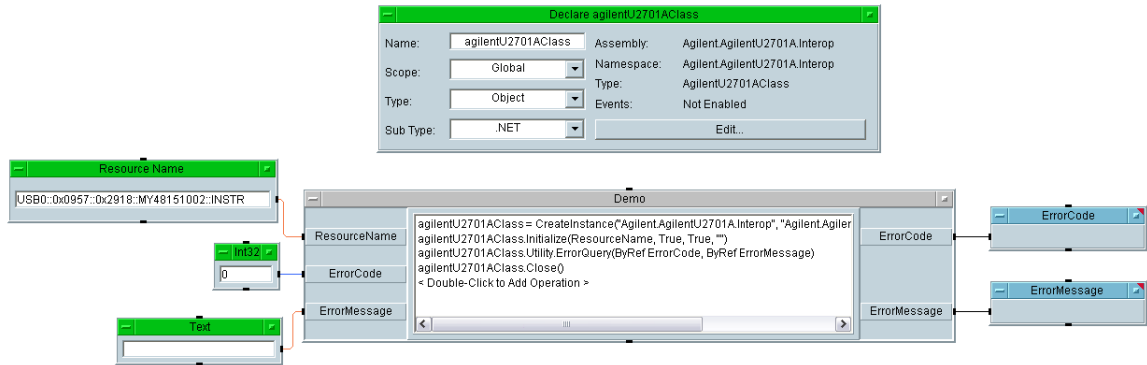
### Hierarchy

```
IAgilentU2701A
├── Utility
│   └── ErrorQuery(ErrorCode, ErrorMessage)
```

### Return Format

Item	Type	Description
ErrorCode	Long/Int32	Instrument error code.
ErrorMessage	String/BSTR	Instrument error message.

### Example



# LockObject

## Type

Method

## Function

Set

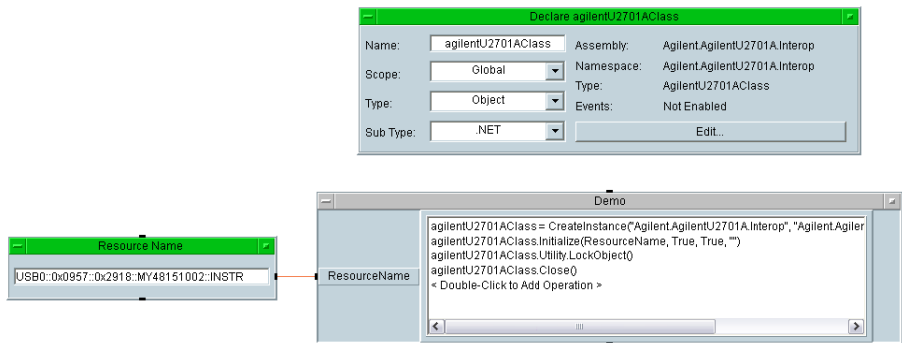
## Description

Obtains a multithread lock on the driver after waiting until all other execution threads have released their locks on the instrument session.

## Hierarchy

```
IAgilentU2701A  
├ Utility  
└ LockObject()
```

## Example



# Reset

## Type

Method

## Function

Set

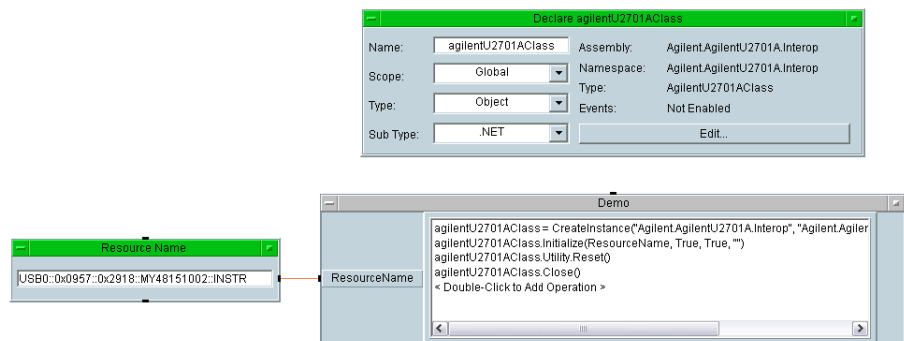
## Description

This command places the instrument in a known state and configures instrument options on which the IVI specific driver depends (for example, enabling/disabling headers). For an IEEE-488.2 instrument, Reset sends the command string `*RST` to the instrument.

## Hierarchy

```
IAgilentU2701A
├── Utility
│   └── Reset()
```

## Example



# ResetWithDefaults

## Type

Method

## Function

Set

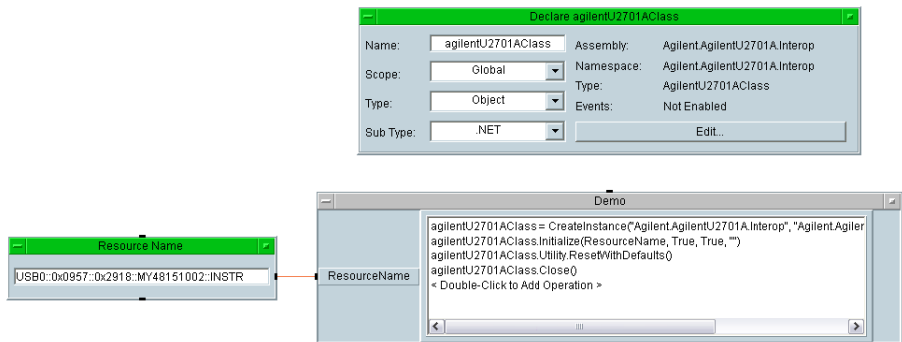
## Description

This command does the equivalent of [Reset](#) and then, disables class extension capability groups, sets attributes to initial values defined by class specs, and configures the driver to option string settings used when [Initialize](#) was last executed.

## Hierarchy

```
IAgilentU2701A
├── Utility
│   └── ResetWithDefaults()
```

## Example



# SelfTest

## Type

Method

## Function

Get

## Description

This command performs an instrument self-test, waits for the instrument to complete the test, and queries the instrument for the results. If the instrument passes the test, *TestResult* is “0” and *TestMessage* is “Self test passed”.

## Hierarchy

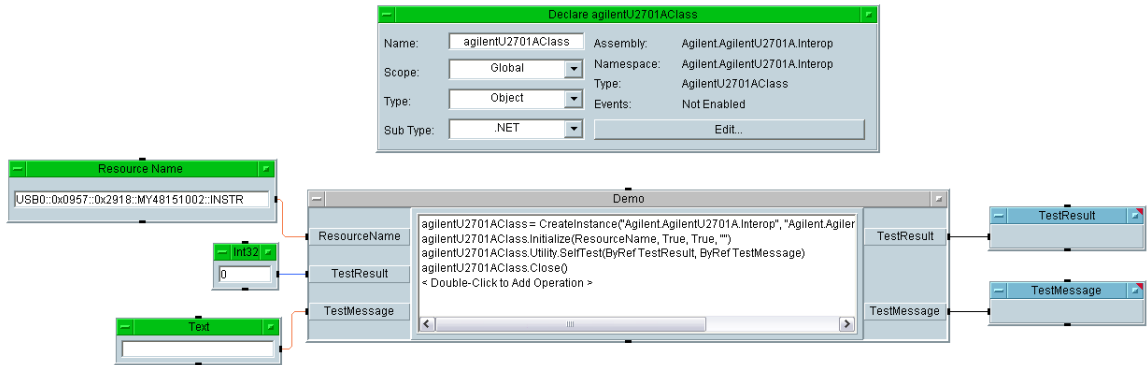
```
IAgilentU2701A
├── Utility
│   └── SelfTest(TestResult, TestMessage)
```

## Return Format

Item	Type	Description
TestResult	Long/Int32	Numeric result from the self-test operation. 0 = no error (test passed).
TestMessage	String/BSTR	Self-test status message.

## 2 Configuration

### Example



# UnlockObject

## Type

Method

## Function

Set

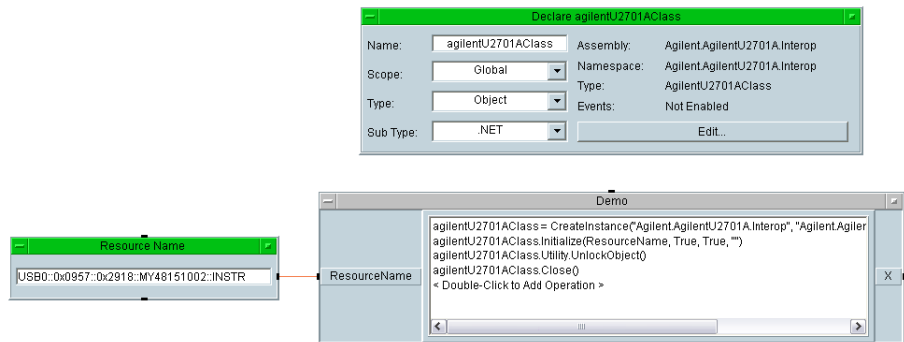
## Description

This command releases a previously obtained multithread lock.

## Hierarchy

```
IAgilentU2701A
├── Utility
│   └── UnlockObject()
```

## Example



## Enumeration Members

This section describes the members of each enumeration used in this specific IVI-COM driver.

### AgilentU2701AGlitchConditionEnum

#### Description

IVI scope class-compliant values for glitch trigger condition.

#### Members

Member name	Value	Description
AgilentU2701A GlitchCondition LessThan	1	The oscilloscope triggers when the pulse width is less than the value you specify with the <a href="#">Glitch.Width</a> property.
AgilentU2701A GlitchCondition GreaterThan	2	The oscilloscope triggers when the pulse width is greater than the value you specify with the <a href="#">Glitch.Width</a> property.

## AgilentU2701AGlitchPolarityEnum

### Description

IVI scope class-compliant values for glitch trigger polarity.

### Members

Member name	Value	Description
AgilentU2701A GlitchPolarity Positive	1	The oscilloscope triggers on a positive glitch.
AgilentU2701A GlitchPolarity Negative	2	The oscilloscope triggers on a negative glitch.

## AgilentU2701ASRQReasonEnum

### Description

Enumeration for the *Reason* parameter of the [ConfigureServiceRequest](#) method.

### Members

Member name	Value	Description
AgilentU2701A SRQReasonStb MAV	1	Message Available. Bit 4 in the status byte.
AgilentU2701A SRQReasonStb Msg	2	Error/Event Queue Message Available. Bit 2 in the status byte. The Error/Event queue may be read by the <a href="#">ErrorQuery</a> method.
AgilentU2701A SRQReasonEsr OPC	4	Operation Complete. Bit 0 of the standard event status register.

## 2 Configuration

Member name	Value	Description
AgilentU2701A SRQReasonEsr QueryError	8	Query Error. Bit 2 of the standard event status register.
AgilentU2701A SRQReasonEsr DeviceError	16	Device Dependent Error. Bit 3 of the standard event status register.
AgilentU2701A SRQReasonEsr ExecutionError	32	Execution Error. Bit 4 of the standard event status register.
AgilentU2701A SRQReasonEsr CommandError	64	Command Error. Bit 5 of the standard event status register.
AgilentU2701A SRQReasonEsr UserRequest	128	User Request. Bit 6 of the standard event status register.
AgilentU2701A SRQReasonEsr PowerOn	256	Power On. Bit 7 of the standard event status register.
AgilentU2701A SRQReasonStbTrg	512	Trigger Event has occurred. Bit 0 in the status byte register.
AgilentU2701A SRQReasonStb User	1024	User Event has occurred. Bit 1 in the status byte register.

## AgilentU2701AStatusRegisterEnum

### Description

Enumeration for the *Register* parameter of the [Register](#) property.

### Members

Member name	Value	Description
AgilentU2701A StatusRegister StatusByte	0	Status Byte register. Conditions defined by IEEE 488.2.
AgilentU2701A StatusRegister StandardEvent	1	Standard Event Status register. Conditions defined by IEEE 488.2.
AgilentU2701A StatusRegister Operation	2	Operation. Conditions which are part of the instrument's normal operation.
AgilentU2701A StatusRegister OverloadEvent	3	The Overload Status Register captures overload events and probe faults that occur on the input channels. This register does not support the Conditions subregister.
AgilentU2701A StatusRegister TriggerEvent	4	The Trigger Event Register captures the trigger event. This register does not support the Conditions or Enable subregisters.
AgilentU2701A StatusRegister ArmEvent	5	The Armed Event Register captures the arm event. An arm event occurs when the oscilloscope has fulfilled all its pre-trigger requirements and is waiting for a trigger event. This register does not support the Conditions or Enable subregisters.

## AgilentU2701AStatusSubRegisterEnum

### Description

Enumeration for the *SubRegister* parameter of the Register property in the Status interface.

### Members

Member name	Value	Description
AgilentU2701AStatusSubRegisterCondition	0	Conditions Register. Read only and not available with the Standard Event Status register. Condition bits represent the current instrument state. Reading a condition register does not change the value of the bits.
AgilentU2701AStatusSubRegisterEvent	3	Event Register. Read only and not available with the Status Byte register. Event bits capture changes in condition bits. Reading an event register clears it.
AgilentU2701AStatusSubRegisterEnable	4	Enable Register. Can be read or written and is available for all registers. Enable bits select whether an event bit causes a register summary bit, a kind of condition bit, to become True. Thus, an event can propagated to the status byte and finally to request service. Though the bits in the status byte are not technically event bits, the status byte enable register selects which bits in the status byte cause a service request.

## AgilentU2701ATriggerCouplingEnum

### Description

IVI Scope class-compliant values for trigger Coupling.

### Members

Member name	Value	Description
AgilentU2701A TriggerCouplingAC	1	The oscilloscope AC couples the trigger signal.
AgilentU2701A TriggerCouplingDC	2	The oscilloscope DC couples the trigger signal.
AgilentU2701A TriggerCouplingLF Reject	3	The oscilloscope filters out the low frequencies from the trigger signal.
AgilentU2701A TriggerCouplingHF Reject	4	The oscilloscope filters out the high frequencies from the trigger signal.

## AgilentU2701ATriggerModifierEnum

### Description

IVI Scope class-compliant values for trigger Modifier.

### Members

Member name	Value	Description
AgilentU2701A TriggerModifier None	1	The oscilloscope waits until the trigger the end-user specifies occurs.
AgilentU2701A TriggerModifier Auto	2	The oscilloscope automatically triggers if the configured trigger does not occur within the oscilloscope's timeout period.

## AgilentU2701ATriggerSlopeEnum

### Description

IVI Scope class-compliant values for edge trigger Slope.

### Members

Member name	Value	Description
AgilentU2701A TriggerSlope Negative	0	Triggers will occur on the falling edge.
AgilentU2701A TriggerSlope Positive	1	Triggers will occur on the rising edge.
AgilentU2701A TriggerSlopeEither	2	Triggers will occur on either the rising or falling edge.
AgilentU2701A TriggerSlope Alternate	3	Triggers will occur alternately on the rising and falling edges.

## AgilentU2701ATriggerTypeEnum

### Description

IVI Scope class-compliant values for trigger Type.

### Members

Member name	Value	Description
AgilentU2701A TriggerEdge	1	Configures the oscilloscope for edge triggering. An edge trigger occurs when the trigger signal specified with the <a href="#">Trigger.Source</a> property passes the voltage threshold specified with the <a href="#">Trigger.Level</a> property and has the slope specified with the <a href="#">Trigger.Slope</a> property.
AgilentU2701A TriggerGlitch	2	Configures the oscilloscope for glitch triggering. Use the <a href="#">IviScopeGlitchTrigger</a> extension properties and methods to configure the trigger.
AgilentU2701A TriggerTV	3	Configures the oscilloscope for triggering on TV signals. Use the <a href="#">IviScopeTVTrigger</a> extension properties and methods to configure the trigger.
AgilentU2701A TriggerWidth	4	Configures the oscilloscope for width triggering. Use the <a href="#">IviScopeWidthTrigger</a> extension properties and methods to configure the trigger.

## AgilentU2701ATVSignalFormatEnum

### Description

IVI Scope class-compliant values for TV trigger SignalFormat.

### Members

Member name	Value	Description
AgilentU2701ATV SignalFormat NTSC	1	Configures the oscilloscope to trigger on the NTSC signal format.
AgilentU2701ATV SignalFormatPAL	2	Configures the oscilloscope to trigger on the PAL signal format.
AgilentU2701ATV SignalFormat SECAM	3	Configures the oscilloscope to trigger on the SECAM signal format.

## AgilentU2701ATVTriggerEventEnum

### Description

IVI Scope class-compliant values for TV trigger Event.

### Members

Member name	Value	Description
AgilentU2701ATV TriggerEventField1	1	Sets the oscilloscope to trigger on field 1 of the video signal.
AgilentU2701ATV TriggerEventField2	2	Sets the oscilloscope to trigger on field 2 of the video signal.
AgilentU2701ATV TriggerEventAny Field	3	Sets the oscilloscope to trigger on any field.
AgilentU2701ATV TriggerEventAny Line	4	Sets the oscilloscope to trigger on any line.
AgilentU2701ATV TriggerEventField1 LineNumber	5	Sets the oscilloscope to trigger on a specific line number in Field 1 you specify with the <a href="#">TV.LineNumber</a> property.
AgilentU2701ATV TriggerEventField2 LineNumber	6	Sets the oscilloscope to trigger on a specific line number in Field 2 you specify with the <a href="#">TV.LineNumber</a> property.

## AgilentU2701AVerticalCouplingEnum

### Description

IVI Scope class-compliant values for channel Coupling.

### Members

Member name	Value	Description
AgilentU2701A VerticalCoupling AC	0	The oscilloscope AC couples the input signal.
AgilentU2701A VerticalCoupling DC	1	The oscilloscope DC couples the input signal.
AgilentU2701A VerticalCoupling LFReject	2	The oscilloscope rejects low frequency.
AgilentU2701A VerticalCoupling HFReject	3	The oscilloscope rejects high frequency.

## AgilentU2701AWidthConditionEnum

### Description

IAgilentU2701A instrument-specific values for the polarity of the pulse that triggers the oscilloscope.

### Members

Member name	Value	Description
AgilentU2701A WidthPolarity Positive	1	Configures the oscilloscope to trigger on positive pulses that have a width that meets the condition the user specifies with the <a href="#">Width.Condition</a> property.
AgilentU2701A WidthPolarity Negative	2	Configures the oscilloscope to trigger on negative pulses that have a width that meets the condition the user specifies with the <a href="#">Width.Condition</a> property.

## AgilentU2701AWidthPolarityEnum

### Description

IAgilentU2701A instrument-specific values for the polarity of the pulse that triggers the oscilloscope.

### Members

Member name	Value	Description
AgilentU2701A WidthPolarity Positive	1	Configures the oscilloscope to trigger on positive pulses that have a width that meets the condition the user specifies with the <a href="#">Width.Condition</a> property.
AgilentU2701A WidthPolarity Negative	2	Configures the oscilloscope to trigger on negative pulses that have a width that meets the condition the user specifies with the <a href="#">Width.Condition</a> property.

## 2 Configuration



## 3 Acquisition

ConfigureRecord	108
Interpolation	110
NumberOfAverages	112
RecordLength	113
SampleMode	114
SampleRate	116
StartTime	117
TimePerRecord	119
Type	122
Enumeration Members	124

This chapter describes the acquisition commands used to program the U2701A/U2702A USB modular oscilloscopes over the remote interface. You can use the commands in this chapter to configure the acquisition type, the size of the waveform record, the length of time that corresponds to overall waveform record, and the position of the first point in the waveform record relative to the trigger event.



# ConfigureRecord

## Type

Method

## Function

Set

## Description

This command configures the most commonly used properties of the oscilloscope channel sub-system. Use this command to enable or disable the channel and to set the range, offset, coupling, and probe attenuation values.

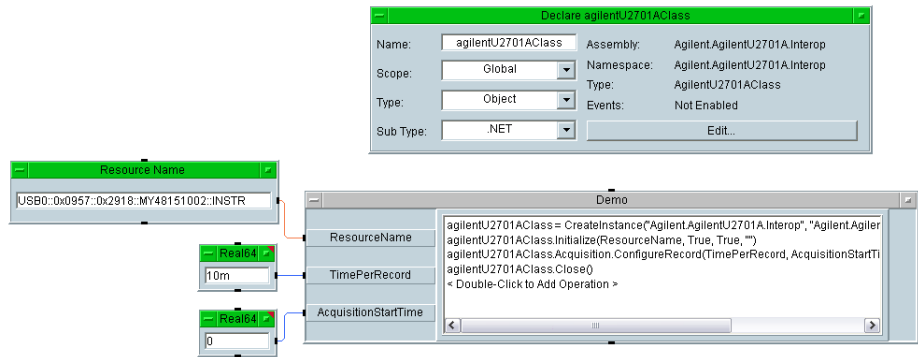
## Hierarchy

```
IAgilentU2701A
├─ Acquisition
│   └─ ConfigureRecord(TimePerRecord, AcquisitionStartTime)
```

## Parameters

Item	Type	Description
TimePerRecord	Double	Specifies the time per record. This value sets the Horizontal <a href="#">TimePerRecord</a> property.
AcquisitionStart Time	Double	Specifies the position of the first point in the waveform record relative to the trigger event. This value sets the Acquisition. <a href="#">StartTime</a> property.

## Example



## Interpolation

### Type

Property

### Function

Get and Set

### Description

This command returns/sets the interpolation method the oscilloscope uses when it cannot sample a voltage for every point in the waveform record.

### Hierarchy

```
IAgilentU2701A
  |
  | Acquisition
  |   |
  |   | Interpolation
```

### Return Format

Item	Type	Description
AgilentU2701A InterpolationEnum	Enum	See " <a href="#">AgilentU2701AInterpolationEnum</a> " on page 126.



# NumberOfAverages

## Type

Property

## Function

Get and Set

## Description

This command returns/sets the number of waveforms the oscilloscope acquires and averages before returning to idle state.

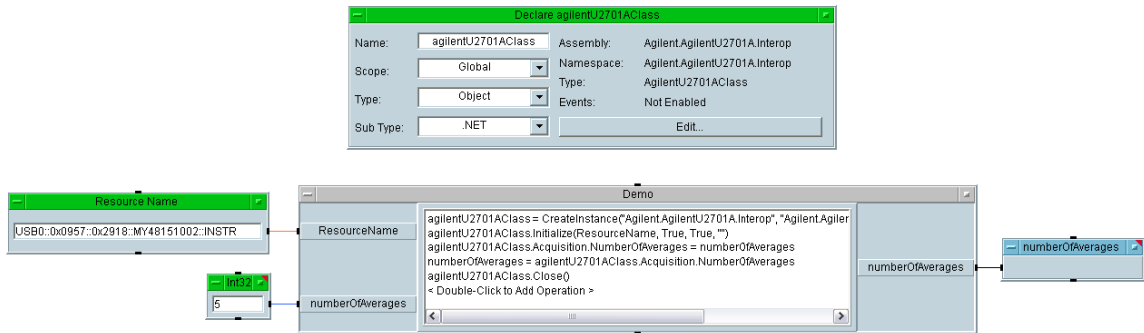
## Hierarchy

```
IAgilentU2701A
├─ Acquisition
│   └─ NumberOfAverages
```

## Return Format

Long/Int32

## Example



# RecordLength

## Type

Property

## Function

Get

## Description

This command returns the actual number of points the oscilloscope acquires for each channel. It is equal to or greater than the minimum number of points specified with the `IviScopeAcquisition.NumberOfPointsMin` command.

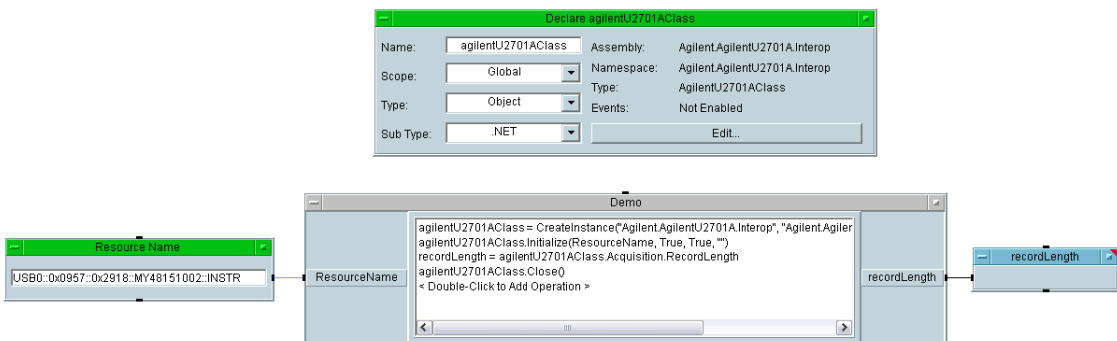
## Hierarchy

```
IAgilentU2701A
├── Acquisition
│   └── RecordLength
```

## Return Format

Long/Int32

## Example



## SampleMode

### Type

Property

### Function

Get

### Description

This command returns the sample mode that the oscilloscope is currently using.

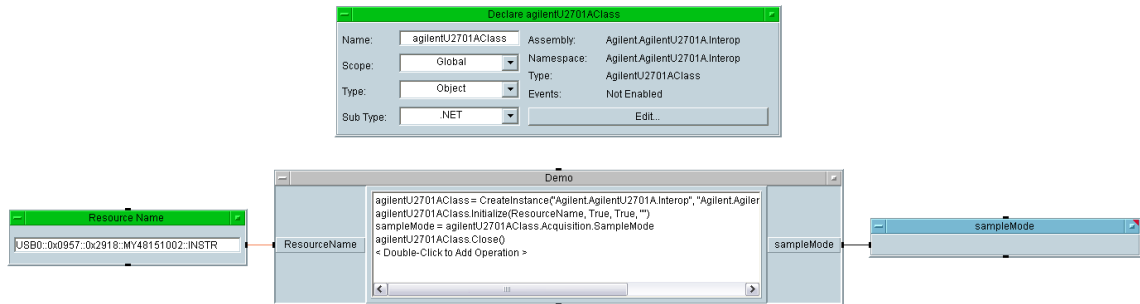
### Hierarchy

```
IAgilentU2701A
├─ Acquisition
│   └─ SampleMode
```

### Return Format

Item	Type	Description
AgilentU2701A SampleMode Enum	Enum	See <a href="#">“AgilentU2701ASampleModeEnum”</a> on page 126.

## Example



# SampleRate

## Type

Property

## Function

Get

## Description

This command returns the effective digitizing rate using the current configuration. The units are expressed in samples per second.

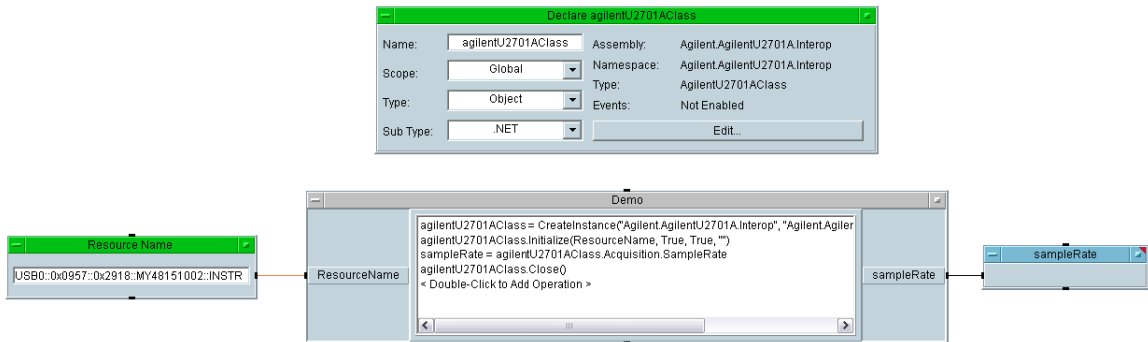
## Hierarchy

```
IAgilentU2701A  
├─ Acquisition  
└─ SampleRate
```

## Return Format

Double

## Example



# StartTime

## Type

Property

## Function

Get and Set

## Description

This command returns/sets the length of time from the trigger event to the first point in the waveform record. The units are expressed in seconds. If positive, the first point in the waveform occurs after the trigger. If negative, the first point in the waveform occurs before the trigger.

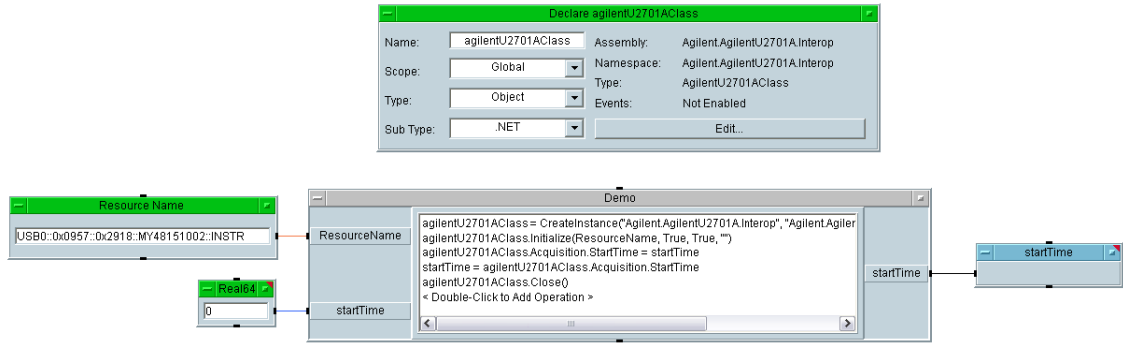
## Hierarchy

```
IAgilentU2701A
├─ Acquisition
│   └─ StartTime
```

## Return Format

Double

### Example



# TimePerRecord

## Type

Property

## Function

Get and Set

## Description

This command returns/sets the time in seconds that corresponds to the record length.

## Hierarchy

```
IAgilentU2701A
├─ Acquisition
│   └─ TimePerRecord
```

## Return Format

Double

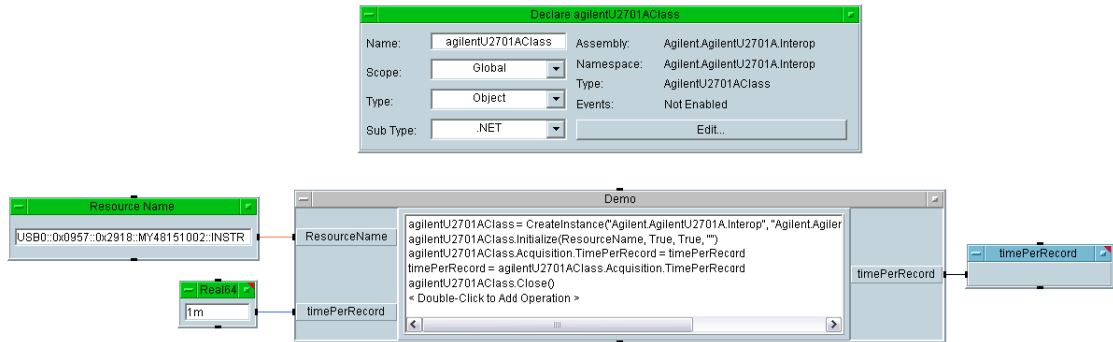
**Remarks**

The time per record length is equivalent to the Time/Div multiplied by 10 at the scope setting. The Maximum data point per second you can achieve is 1250, except when in interleave mode (only available with the Agilent Measurement Manager), you can achieve 2000 data points.

Time/Div	TimePer Record	Maximum Data Point
1 ns	10 ns	5
2 ns	20 ns	10
5 ns	50 ns	25
10 ns	100 ns	50
20 ns	200 ns	100
50 ns	500 ns	250
100 ns	1 $\mu$ s	500
200 ns	2 $\mu$ s	100
500 ns	5 $\mu$ s	1250
1 $\mu$ s	10 $\mu$ s	1250
2 $\mu$ s	20 $\mu$ s	1250
5 $\mu$ s	50 $\mu$ s	1250
10 $\mu$ s	100 $\mu$ s	1250
20 $\mu$ s	200 $\mu$ s	1250
50 $\mu$ s	500 $\mu$ s	1250
100 $\mu$ s	1 ms	1250
200 $\mu$ s	2 ms	1250
500 $\mu$ s	5 ms	1250

Time/Div	TimePer Record	Maximum Data Point
1 ms	10 ms	1250
2 ms	20 ms	1250
5 ms	50 ms	1250
10 ms	100 ms	1250
20 ms	200 ms	1250
50 ms	500 ms	1250
100 ms	1 s	1250
200 ms	2 s	1250
500 ms	5 s	1250
1 s	10 s	1250
2 s	20 s	1250
5 s	50 s	1250
10 s	100 s	1250
20 s	200 s	1250
50 s	500 s	1250

## Example



# Type

## Type

Property

## Function

Get and Set

## Description

This commands returns/sets how the oscilloscope acquires data and fills the waveform record. When set to `Envelope` or `Peak Detect`, the oscilloscope acquires minimum and maximum waveforms.

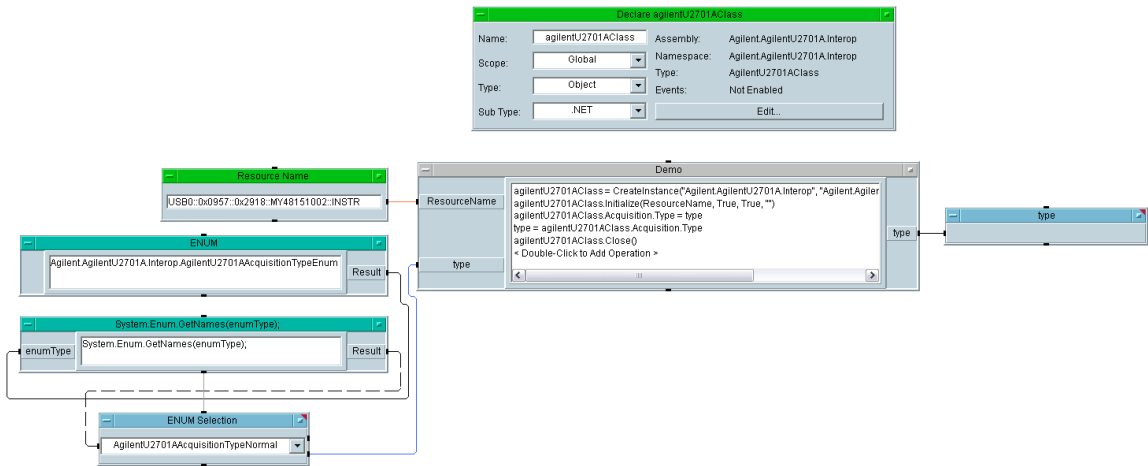
## Hierarchy

```
IAgilentU2701A
  |
  | Acquisition
  |   |
  |   | Type
```

## Return Format

Item	Type	Description
AgilentU2701A AcquisitionType Enum	Enum	See " <a href="#">AgilentU2701AAcquisitionTypeEnum</a> " on page 125.

### Example



## Enumeration Members

This section describes the members of each enumeration used in this specific IVI-COM driver.

### AgilentU2701AAcquisitionStatusEnum

#### Description

IVI scope class-compliant values for the *Status* parameter of the acquisition status method.

#### Members

Member name	Value	Description
AgilentU2701A AcqInProgress	0	The oscilloscope is still acquiring data.
AgilentU2701A AcqComplete	1	The oscilloscope has completed the acquisition.
AgilentU2701A AcqStatus Unknown	-1	The oscilloscope cannot determine the status of the acquisition.

## AgilentU2701AAcquisitionTypeEnum

### Description

IVI scope class-compliant values for acquisition type.

### Members

Member name	Value	Description
AgilentU2701A AcquisitionType Normal	0	Configures the oscilloscope to acquire one sample for each point in the waveform record. The oscilloscope uses real-time or equivalent time sampling.
AgilentU2701A AcquisitionType PeakDetect	1	Sets the oscilloscope to the peak-detect acquisition mode. The oscilloscope oversamples the input signal and keeps the minimum and maximum values that correspond to each position in the waveform record. The oscilloscope uses only real-time sampling.
AgilentU2701A AcquisitionType Average	2	Configures the oscilloscope to acquire multiple waveforms and calculates the average value for each point in the waveform record. The end-user specifies the number of waveforms to acquire with the <a href="#">NumberOfAverages</a> property. The oscilloscope uses real-time or equivalent time sampling.

## AgilentU2701AInterpolationEnum

### Description

IVI scope class-compliant values for acquisition interpolation.

### Members

Member name	Value	Description
AgilentU2701A InterpolationNone	1	The oscilloscope does not interpolate points in the waveform. Instead, the driver sets every element in the waveform record for which the oscilloscope cannot receive a value to an IEEE-defined NaN (Not-a-Number) value. Use the <a href="#">IsWaveformElementInvalid</a> method to determine if the waveform record element is invalid.
AgilentU2701A InterpolationSineX	2	The oscilloscope uses a $\sin(x)/x$ calculation to interpolate a value when it cannot resolve a voltage in the waveform record.

## AgilentU2701ASampleModeEnum

### Description

IVI Scope class-compliant values for acquisition [SampleMode](#).

### Members

Member name	Value	Description
AgilentU2701A SampleModeReal Time	0	Indicates that the oscilloscope is using real-time sampling.



## 4 Waveform Display

Abort	128
AutoSetup	129
Count	130
Initiate	131
IsWaveformElementInvalid	132
Item	134

This chapter describes the waveform display commands used to program the U2701A/U2702A USB modular oscilloscopes over the remote interface. The statements in this section is used to acquire waveform data from the oscilloscope. You can use the commands in this section to initiate, acquire, and abort measurements.



# Abort

## Type

Method

## Function

Set

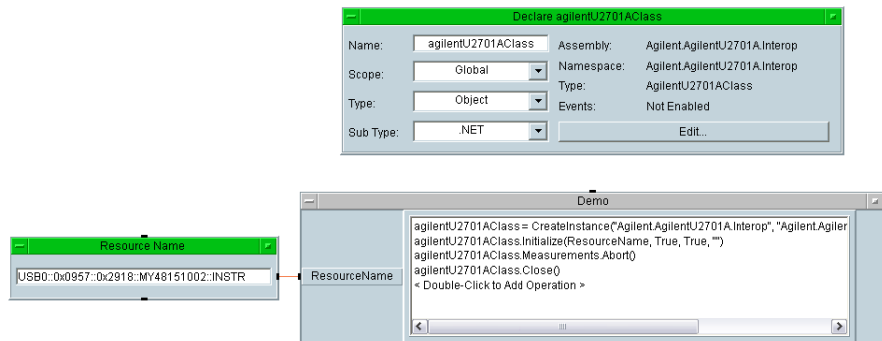
## Description

This command aborts an acquisition and returns the oscilloscope to the Idle state.

## Hierarchy

```
IAgilentU2701A  
├── Measurements  
│   └── Abort()
```

## Example



# AutoSetup

## Type

Method

## Function

Set

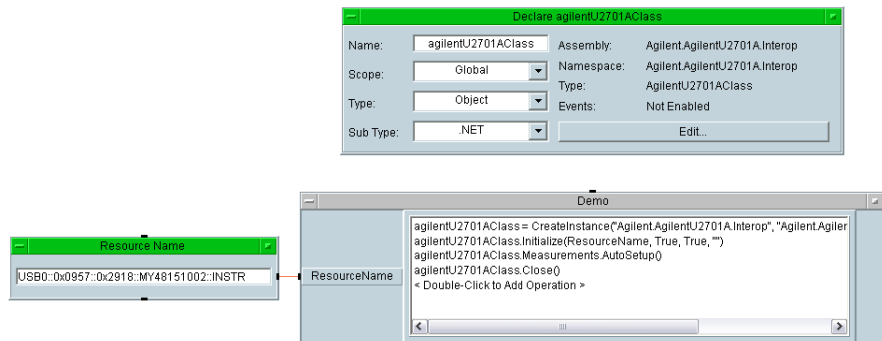
## Description

This command automatically configures all the oscilloscopes settings based on the input signals.

## Hierarchy

```
IAgilentU2701A
├── Measurements
│   └── AutoSetup()
```

## Example



# Count

## Type

Property

## Function

Get

## Description

This command returns the number of measurements.

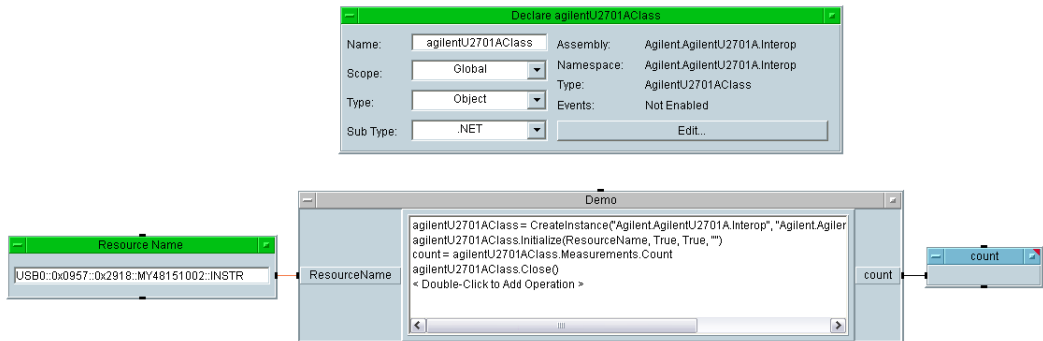
## Hierarchy

```
IAgilentU2701A  
├─ Measurements  
│   └─ Count
```

## Return Format

Long/Int32

## Example



# Initiate

## Type

Method

## Function

Set

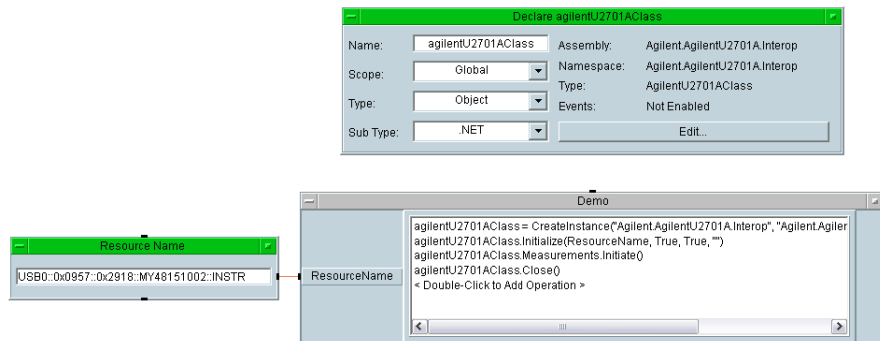
## Description

This command initiates a waveform acquisition. The oscilloscope leaves the Idle state and waits for a trigger. The oscilloscope acquires a waveform for each enabled channel.

## Hierarchy

```
IAgilentU2701A
├── Measurements
│   └── Initiate()
```

## Example



## IsWaveformElementInvalid

### Type

Method

### Function

Get

### Description

This command returns `False` if an element in a waveform array returned by the driver contains a valid voltage. This command returns `True` if an element in a waveform array returned by the driver contains a value indicating that the oscilloscope could not sample a voltage.

### Hierarchy

```
IAgilentU2701A
├── Measurements
│   └── IsWaveformElementInvalid(Element)
```

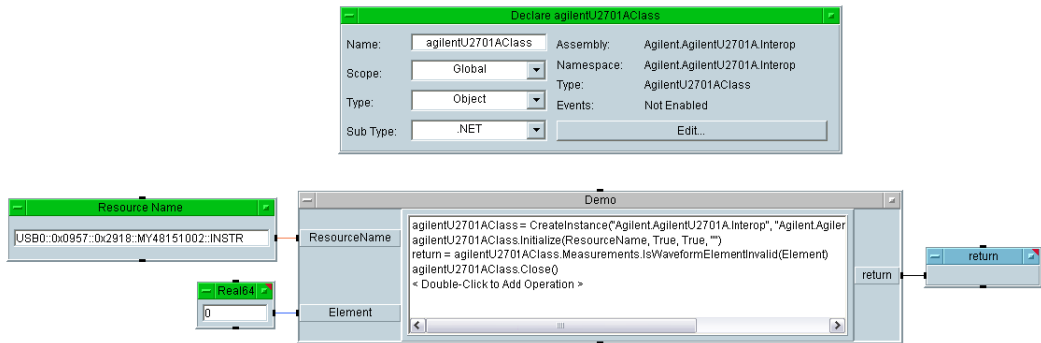
### Parameters

Item	Type	Description
Element	Double	Pass one of the values from the waveform array returned by the read and fetch waveform methods.

### Return Format

Boolean

## Example



## Item

This is an interface reference pointer to the IAgilentU2701AMeasurement interface which is selected by the measurement name.

### FetchWaveform

#### Type

Method

#### Function

Get

#### Description

This command returns a previously acquired waveform for this channel. The acquisition must be made prior to calling this method. Call this method separately for each channel.

#### Hierarchy

```
IAgilentU2701A
  └─ Measurements
     └─ Item(Name)
        └─ FetchWaveform(WaveformArray, InitialX, XIncrement)
```

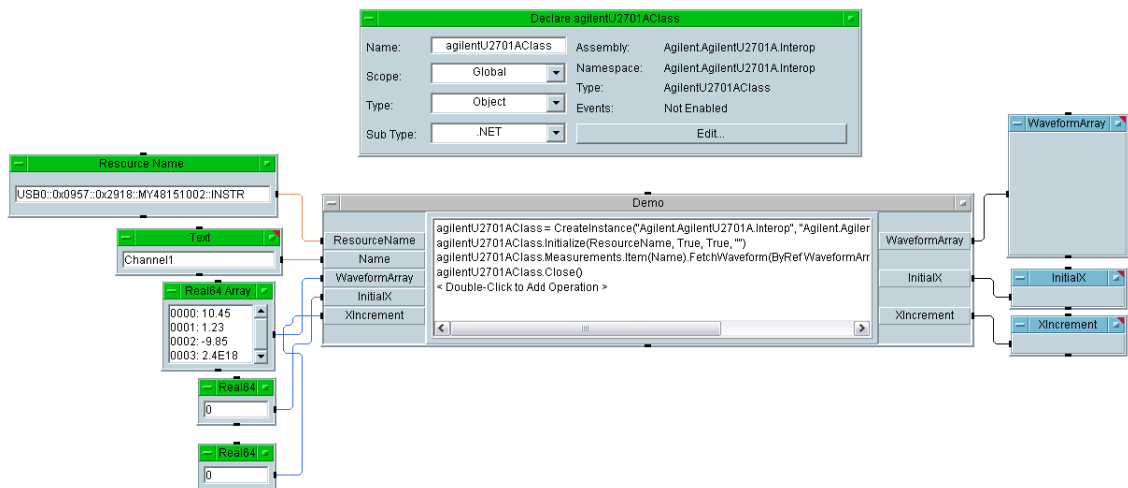
#### Parameters

Item	Type	Description
Name	String	The name of a measurement. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

## Return Format

Item	Type	Description
WaveformArray	Double	The array contains the acquired waveform. Units for the individual array elements are expressed in volts.
InitialX	Double	The time in relation to the trigger event of the first point in the waveform in seconds. Negative values mean that the first point in the waveform array was acquired before the trigger event.
XIncrement	Double	The effective time between points in the acquired waveform in seconds.

## Example



## ReadWaveform

### Type

Method

### Function

Get

### Description

This command initiates an acquisition on all enabled channels, waits (up to *MaxTime*) for the acquisition to complete, and returns the waveform for this channel. Call [FetchWaveform](#) to obtain the waveforms for other channels.

### Hierarchy

```
IAgilentU2701A
  └─ Measurements
     └─ Item(Name)
        └─ ReadWaveform(MaxTimeMilliseconds, WaveformArray,
                        InitialX, XIncrement)
```

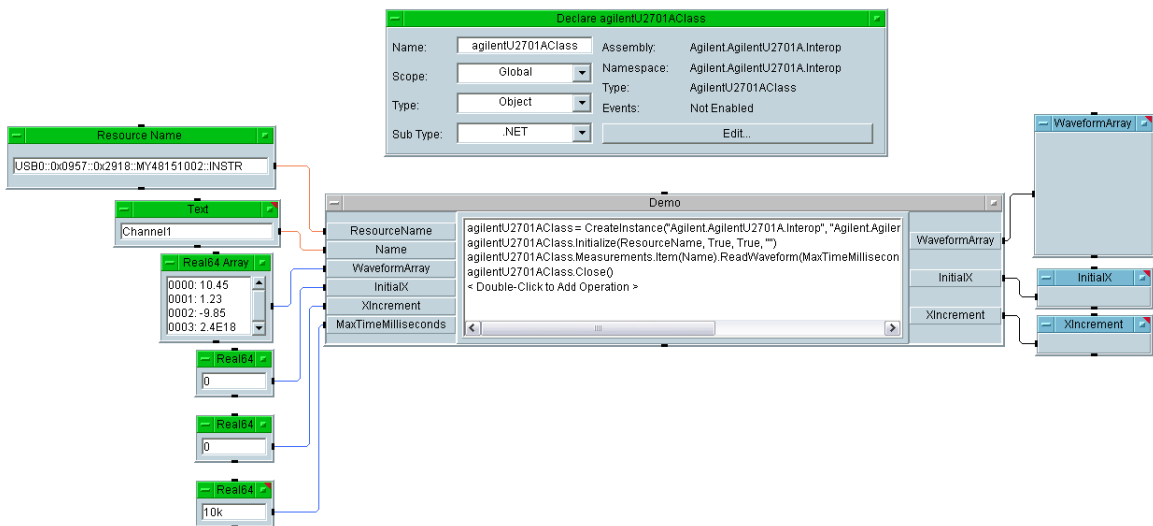
### Parameters

Item	Type	Description
Name	String	The name of a measurement. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

## Return Format

Item	Type	Description
MaxTime Milliseconds	Long/Int32	Specifies the maximum time the end-user allows for this method to complete in milliseconds.
WaveformArray	Double	The array contains the acquired waveform. Units for the individual array elements are expressed in volts.
InitialX	Double	The time in relation to the trigger event of the first point in the waveform in seconds. Negative values mean that the first point in the waveform array was acquired before the trigger event.
XIncrement	Double	The effective time between points in the acquired waveform in seconds.

## Example



## 4 Waveform Display



## 5 Post Analysis

Abort	140
AutoSetup	141
Count	142
Initiate	143
IsWaveformElementInvalid	144
Item	146
MathFunction	154
Name	156
Status	157
Enumeration Members	159

This chapter describes the post analysis commands used to program the U2701A/U2702A USB modular oscilloscopes over the remote interface. The statements in this section is used to analyze the waveform data acquired from the oscilloscope. You can also use the commands in this section to initiate, acquire, and abort measurements.



# Abort

## Type

Method

## Function

Set

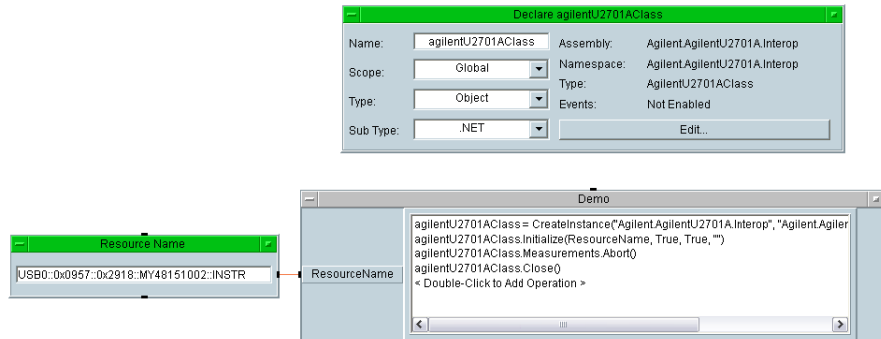
## Description

This command aborts an acquisition and returns the oscilloscope to the Idle state.

## Hierarchy

```
IAgilentU2701A
├── Measurements
│   └── Abort()
```

## Example



# AutoSetup

## Type

Method

## Function

Set

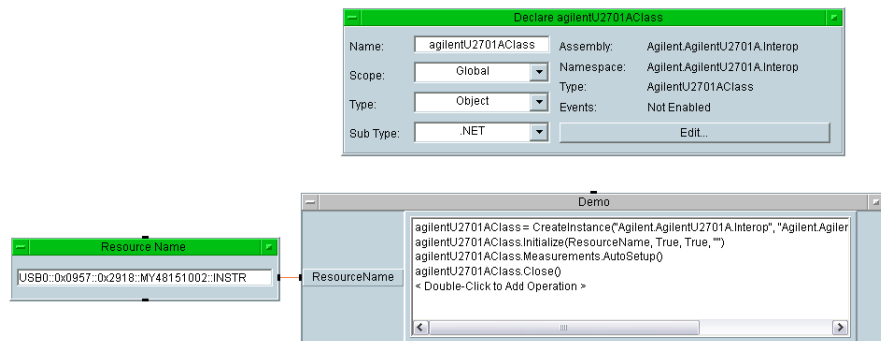
## Description

This command automatically configures all the oscilloscopes settings based on the input signals.

## Hierarchy

```
IAgilentU2701A
├── Measurements
│   └── AutoSetup()
```

## Example



# Count

## Type

Property

## Function

Get

## Description

This command returns the number of measurements.

## Hierarchy

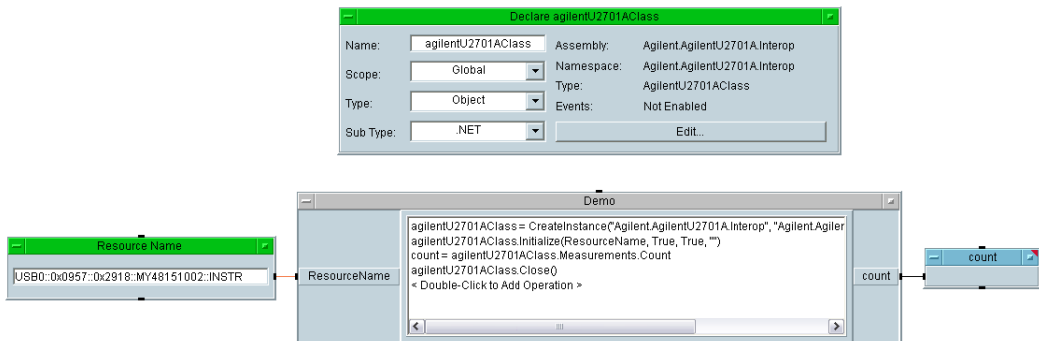
```

IAgilentU2701A
├── Measurements
│   └── Count
    
```

## Return Format

Long/Int32

## Example



# Initiate

## Type

Method

## Function

Set

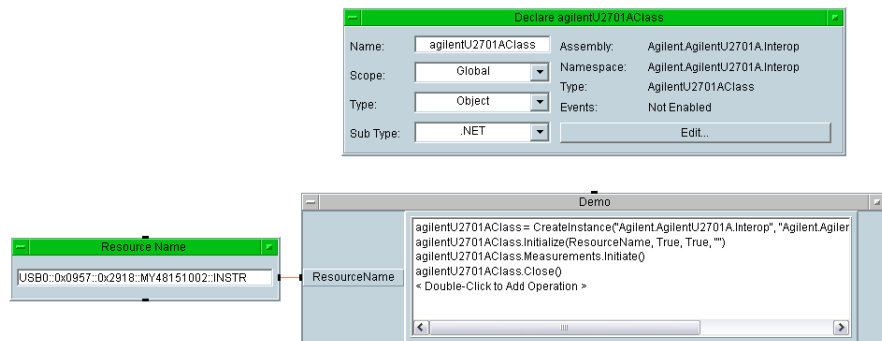
## Description

This command initiates a waveform acquisition. The oscilloscope leaves the Idle state and waits for a trigger. The oscilloscope acquires a waveform for each enabled channel.

## Hierarchy

```
IAgilentU2701A
├── Measurements
│   └── Initiate()
```

## Example



## IsWaveformElementInvalid

### Type

Method

### Function

Get

### Description

This command returns `False` if an element in a waveform array returned by the driver contains a valid voltage. This command returns `True` if an element in a waveform array returned by the driver contains a value indicating that the oscilloscope could not sample a voltage.

### Hierarchy

```
IAgilentU2701A
├── Measurements
│   └── IsWaveformElementInvalid(Element)
```

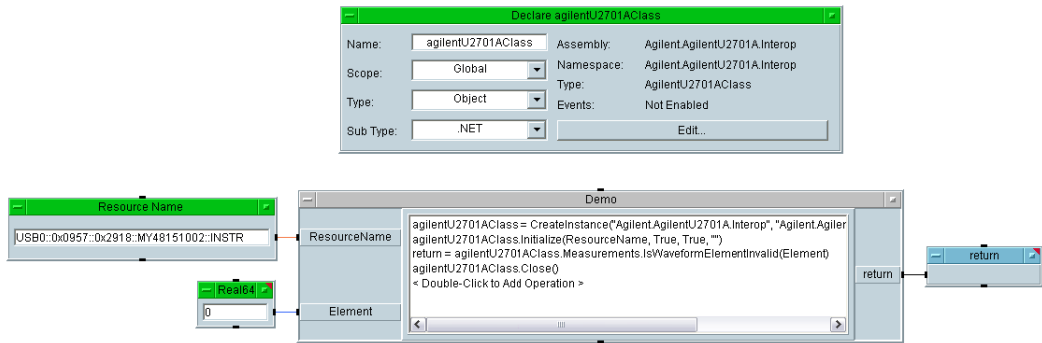
### Parameters

Item	Type	Description
Element	Double	Pass one of the values from the waveform array returned by the read and fetch waveform methods.

### Return Format

Boolean

### Example



## Item

This is an interface reference pointer to the IAgilentU2701AMeasurement interface which is selected by the measurement name.

### FetchWaveform

#### Type

Method

#### Function

Get

#### Description

This command returns a previously acquired waveform for this channel. The acquisition must be made prior to calling this method. Call this method separately for each channel.

#### Hierarchy

```

IAgilentU2701A
  └─ Measurements
     └─ Item(Name)
        └─ FetchWaveform(WaveformArray, InitialX, XIncrement)

```

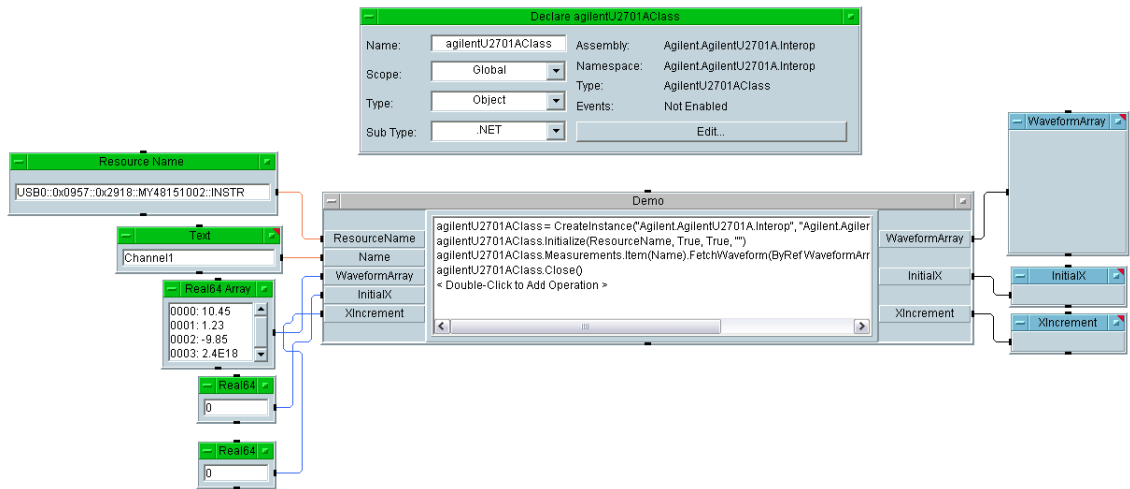
#### Parameters

Item	Type	Description
Name	String	The name of a measurement. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

### Return Format

Item	Type	Description
WaveformArray	Double	The array contains the acquired waveform. Units for the individual array elements are expressed in volts.
InitialX	Double	The time in relation to the trigger event of the first point in the waveform in seconds. Negative values mean that the first point in the waveform array was acquired before the trigger event.
XIncrement	Double	The effective time between points in the acquired waveform in seconds.

### Example



## FetchWaveformMeasurement

### Type

Method

### Function

Get

### Description

This command returns a previously acquired waveform measurement for this channel. The acquisition must be made prior to calling this method. Call this method separately for each measurement.

### Hierarchy

```

IAgilentU2701A
  └─ Measurements
     └─ Item(Name)
        └─ FetchWaveformMeasurement (MeasFunction, Measurement)
  
```

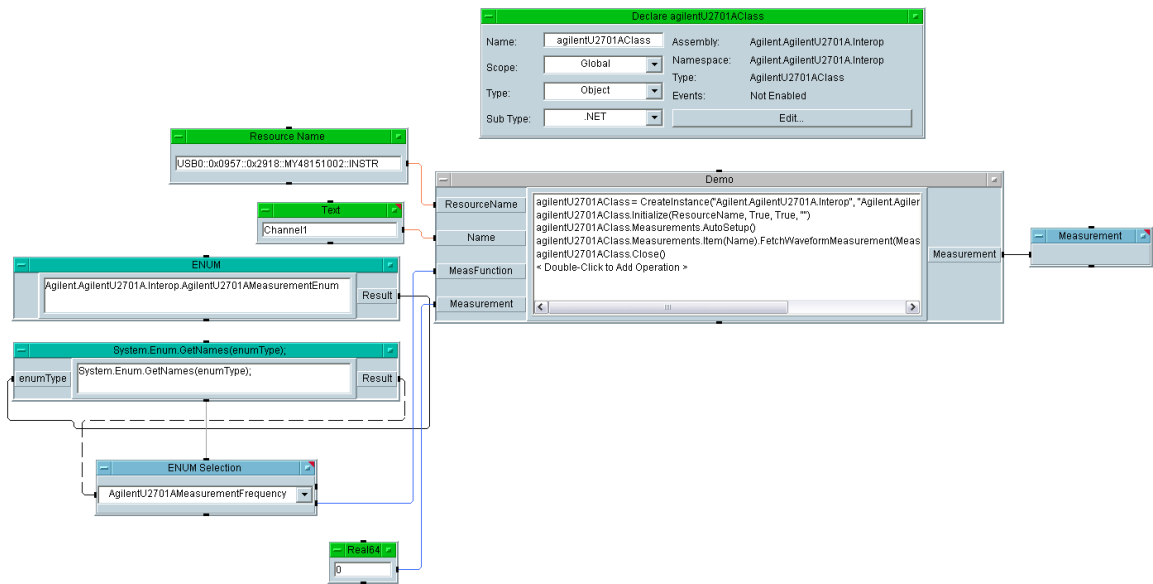
### Parameters

Item	Type	Description
Name	String	The name of a measurement. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

### Return Format

Item	Type	Description
MeasFunction	AgilentU2701A Measurement Enum	Characteristic of the acquired waveform to be measured. See " <a href="#">AgilentU2701AMeasurementEnum</a> " on page 160 for more information.
Measurement	Double	The measured value. The units depend on the measurement that the user specifies with the <i>MeasFunction</i> parameter.

### Example



## ReadWaveform

### Type

Method

### Function

Get

### Description

This command initiates an acquisition on all enabled channels, waits (up to *MaxTime*) for the acquisition to complete, and returns the waveform for this channel. Call [FetchWaveform](#) to obtain the waveforms for other channels.

### Hierarchy

```
IAgilentU2701A
├── Measurements
│   ├── Item(Name)
│   │   └── ReadWaveform(MaxTimeMilliseconds, WaveformArray,
│   │                   InitialX, XIncrement)
```

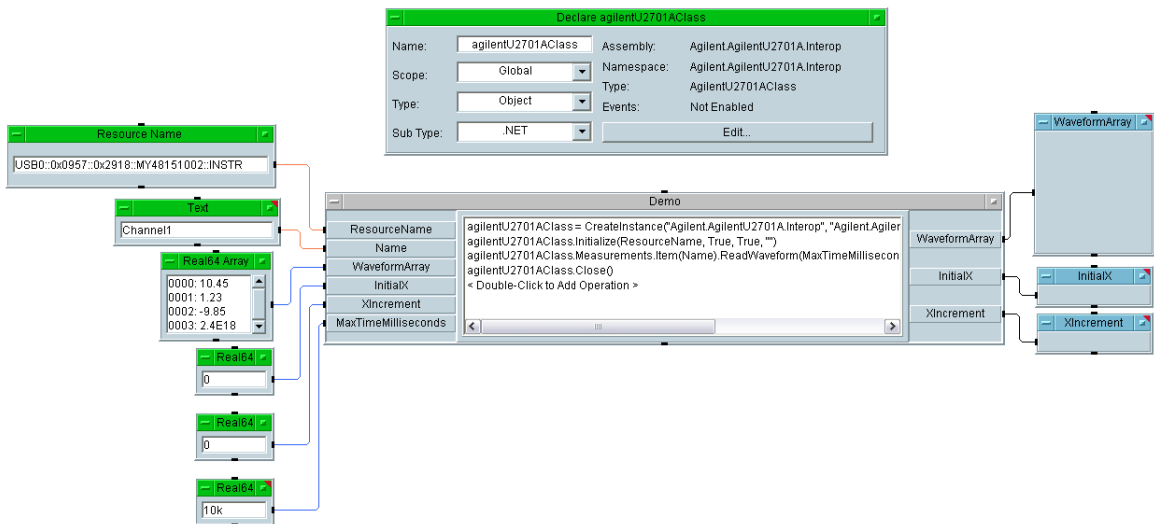
### Parameters

Item	Type	Description
Name	String	The name of a measurement. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.

### Return Format

Item	Type	Description
MaxTime Milliseconds	Long/Int32	Specifies the maximum time the end-user allows for this method to complete in milliseconds.
WaveformArray	Double	The array contains the acquired waveform. Units for the individual array elements are expressed in volts.
InitialX	Double	The time in relation to the trigger event of the first point in the waveform in seconds. Negative values mean that the first point in the waveform array was acquired before the trigger event.
XIncrement	Double	The effective time between points in the acquired waveform in seconds.

### Example



## ReadWaveformMeasurement

### Type

Method

### Function

Get

### Description

This command returns a previously acquired waveform for this channel. The acquisition must be made prior to calling this method. Call this method separately for each channel.

### Hierarchy

```

IAgilentU2701A
  └─ Measurements
     └─ Item(Name)
        └─ ReadWaveformMeasurement (MeasFunction,
           MaxTimeMilliseconds, Measurement)
  
```

### Parameters

Item	Type	Description
Name	String	The name of a measurement. It may be either a name returned by the <a href="#">Name</a> property or a name mapped to a particular repeated capability in the session in the configuration store.



## MathFunction

### Type

Method

### Function

Set

### Description

This command configures a mathematical operation for Channel 1 and 2. The operation and reverse will be set to “ADD” and “False” by default.

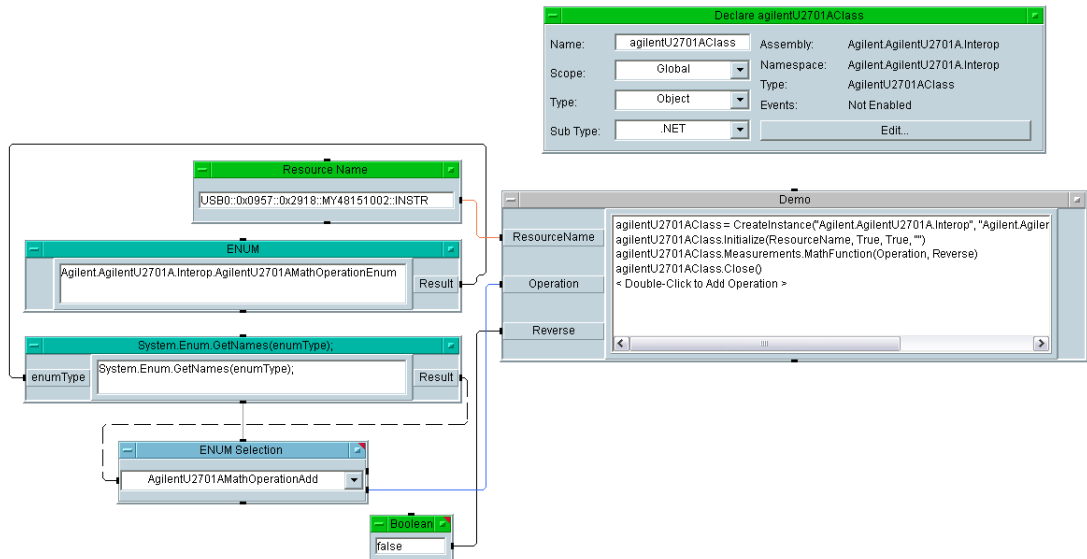
### Hierarchy

```
IAgilentU2701A
├── Measurements
│   └── MathFunction(Operation, Reverse)
```

### Parameters

Item	Type	Description
Operation	AgilentU2701A Measurement Enum	Channel 1 and Channel 2 math operation.
Reverse	Boolean	The operation order of Channel 1 and Channel 2. If True, Channel 2 <operation> Channel 1. If False ,Channel 1 <operation> Channel 2

### Example



# Name

## Type

Property

## Function

Get

## Description

This command returns the measurement name for a given index.

## Hierarchy

```
IAgilentU2701A
├── Measurements
│   └── Name (Index)
```

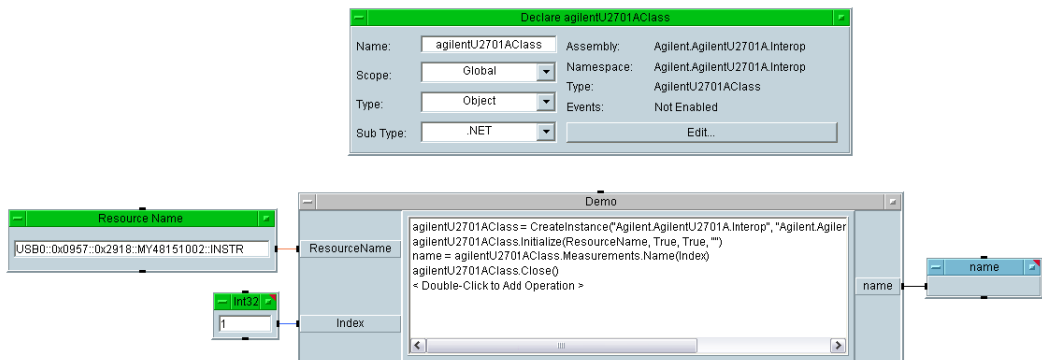
## Parameters

Item	Type	Description
Index	Long/Int32	One based index into the collection of measurements.

## Return Format

String/BSTR

## Example



## Status

### Type

Method

### Function

Get

### Description

This command returns whether an acquisition is in progress, complete, or if the status is unknown.

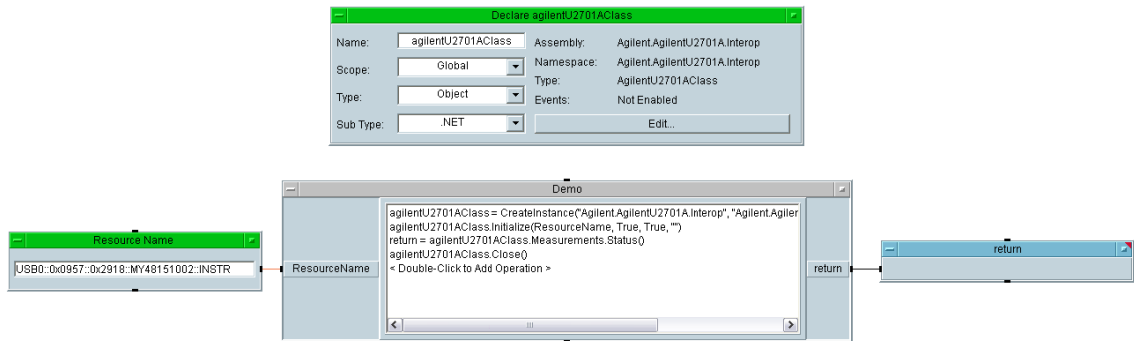
### Hierarchy

```
IAgilentU2701A
├─ Measurements
│   └─ Status()
```

### Return Format

Item	Type	Description
AgilentU2701A AcquisitionStatus Enum	Enum	See <a href="#">“AgilentU2701AAcquisitionStatusEnum”</a> on page 124.

### Example



## Enumeration Members

This section describes the members of each enumeration used in this specific IVI-COM driver.

### AgilentU2701AMathOperationEnum

#### Description

IAgilentU2701A instrument-specific values for channels mathematical operations.

**Members**

Member name	Value	Description
AgilentU2701A MathOperation Add	0	Add operation between two channels.
AgilentU2701A MathOperation Subtract	1	Subtract operation between two channels.
AgilentU2701A MathOperation Multiply	2	Multiply operation between two channels.
AgilentU2701A MathOperation Divide	3	Divide operation between two channels.

**AgilentU2701AMeasurementEnum****Description**

IVI scope class-compliant values for the *MeasFunction* parameter read and fetch methods.

**Members**

Member name	Value	Description
AgilentU2701A MeasurementRise Time	0	The length of time for a rising edge of the signal to rise from the low reference level to the high reference level. The units are expressed in seconds.
AgilentU2701A MeasurementFall Time	1	The length of time for a falling edge of the signal to fall from the high reference level to the low reference level. The units are expressed in seconds.
AgilentU2701A Measurement Frequency	2	The frequency of one complete cycle in the waveform. The units are expressed in hertz.

Member name	Value	Description
AgilentU2701A Measurement Period	3	The length of time of one complete cycle in the waveform. The units are expressed in seconds.
AgilentU2701A Measurement VoltageRMS	4	The true Root Mean Square voltage of the entire waveform. The units are expressed in volts.
AgilentU2701A Measurement VoltageRMSAC	5	The true Root Mean Square voltage(AC) of the entire waveform. The units are expressed in volts.
AgilentU2701A Measurement VoltagePeakTo Peak	6	The absolute difference between the Voltage Max and the Voltage Min. The units are expressed in volts.
AgilentU2701A Measurement VoltageMax	7	The maximum amplitude found in the entire waveform. The units are expressed in volts.
AgilentU2701A Measurement VoltageMin	8	The minimum amplitude found in the entire waveform. The units are expressed in volts.
AgilentU2701A Measurement VoltageHigh	9	The voltage that corresponds to 100% when using the reference levels. The oscilloscope calculates this value using either the min/max or histogram methods. The min/max method uses the maximum value found. The histogram method uses a common value found above the middle of the waveform. The units are expressed in volts.
AgilentU2701A Measurement VoltageLow	10	The voltage that corresponds to 0% when using the reference levels. The oscilloscope calculates this value using either the min/max or histogram methods. The min/max method uses the minimum value found. The histogram method uses a common value found below the middle of the waveform. The units are expressed in volts.
AgilentU2701A Measurement VoltageAverage	11	The arithmetic average in volts measured over the entire waveform. The units are expressed in volts.
AgilentU2701A Measurement WidthNeg	12	The length of time between the mid reference level points of a negative pulse in the waveform. The units are expressed in seconds.

Member name	Value	Description
AgilentU2701A Measurement WidthPos	13	The length of time between the mid reference level points of a positive pulse in the waveform. The units are expressed in seconds.
AgilentU2701A MeasurementDuty CycleNeg	14	The ratio of the WidthNeg to the Period of an integer number of cycles in the waveform expressed as a percentage.
AgilentU2701A MeasurementDuty CyclePos	15	The ratio of the WidthPos width to the Period of an integer number of cycles in the waveform expressed as a percentage.
AgilentU2701A Measurement Amplitude	16	The VoltageHigh less the VoltageLow expressed in volts over the entire waveform.
AgilentU2701A Measurement VoltageCycleRMS	17	The true root mean square voltage over an integer number of cycles in the waveform. The units are expressed in volts.
AgilentU2701A MeasurementOver Shoot	18	The relative waveform distortion that follows an edge transition.
AgilentU2701A Measurement Preshoot	19	The relative waveform distortion that precedes an edge transition.
AgilentU2701A Measurement Phase	20	Phase.
AgilentU2701A Measurement Delay	21	Delay.
AgilentU2701A Measurement CrestFactor	22	Crest factor.
AgilentU2701A Measurement StandardDeviation	23	Standard deviation.

Member name	Value	Description
AgilentU2701A Measurement TimeAtMax	24	Time at maximum voltage.
AgilentU2701A Measurement TimeAtMin	25	Time at minimum voltage.

## AgilentU2701ATimeOutEnum

### Description

IVI Scope class-compliant values for *maxTime* parameter of the measurement Read and Fetch methods.

### Members

Member name	Value	Description
AgilentU2701A TimeOut Immediate	0	This method returns immediately. If no measurement value exists, an error is returned.
AgilentU2701A TimeOutInfinite	-1	The method waits indefinitely for the measurement to complete.





## 6 Others

Calibration Interface commands starting on [page 166](#)

DriverOperation Interface commands starting on [page 170](#)

Identity Interface commands starting on [page 184](#)

SerialNumber [195](#)

This chapter describes the other commands used to program the U2701A/U2702A USB modular oscilloscopes over the remote interface. You can use the commands in this chapter to get and set some of the oscilloscope properties. You can also calibrate the instrument and perform various driver operations.



# Calibrate

## Type

Method

## Function

Set

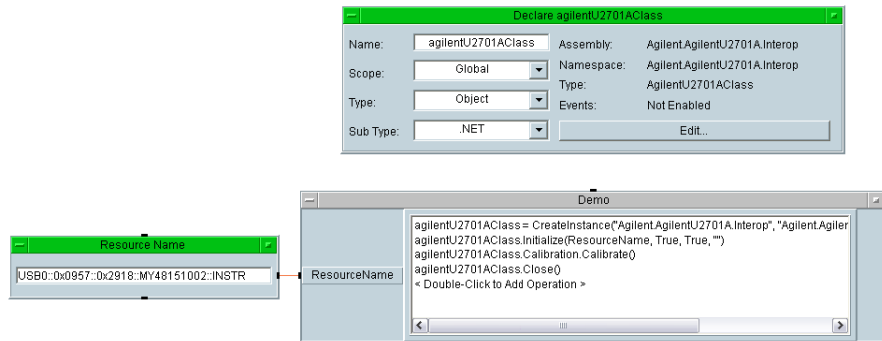
## Description

This command calibrates the instrument. This method might take several minutes to complete.

## Hierarchy

```
IAgilentU2701A
├── Calibration
│   └── Calibrate()
```

## Example



# Date

## Type

Property

## Function

Get

## Description

This command returns the date the instrument was last calibrated.

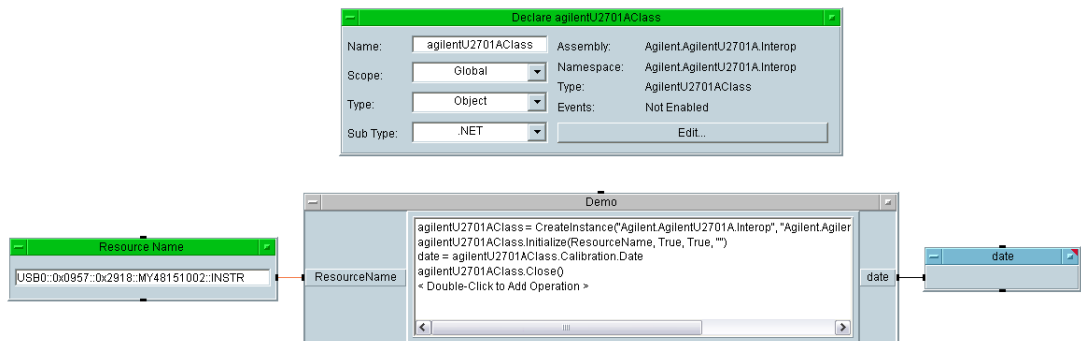
## Hierarchy

```
IAgilentU2701A
├── Calibration
│   └── Date
```

## Return Format

String/BSTR

## Example



# Label

## Type

Property

## Function

Get

## Description

This command returns the label set during the last calibration.

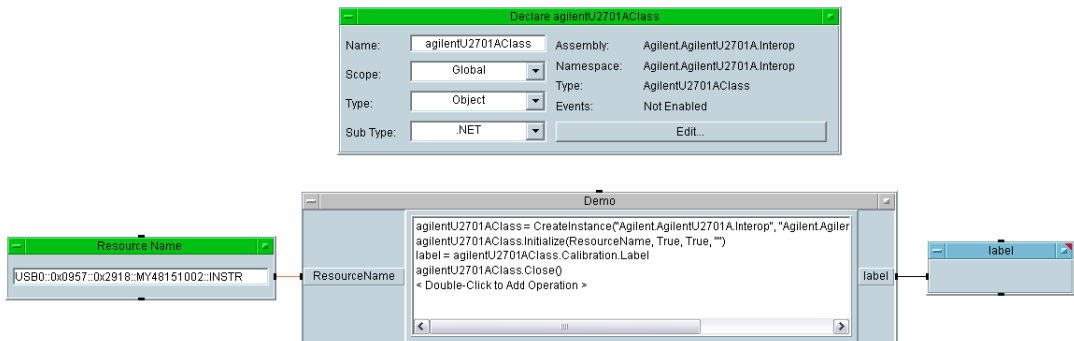
## Hierarchy

```
IAgilentU2701A
├── Calibration
│   └── Label
```

## Return Format

String/BSTR

## Example



# Time

## Type

Property

## Function

Get

## Description

This command returns the time the instrument was last calibrated.

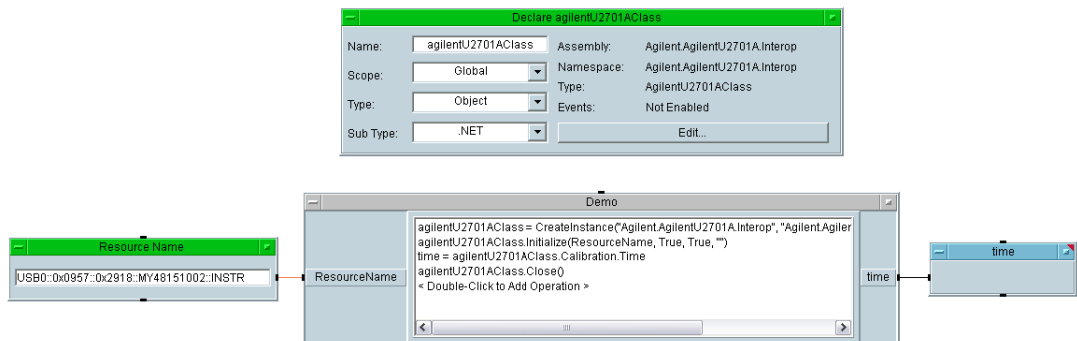
## Hierarchy

```
IAgilentU2701A
├── Calibration
│   └── Time
```

## Return Format

String/BSTR

## Example



# Cache

## Type

Property

## Function

Get and Set

## Description

Drivers may choose to always cache some instrument settings, never cache others, or optionally cache others to avoid unnecessary I/O activities to the instrument. If this command is set to `True`, the driver caches optionally cache instrument settings.

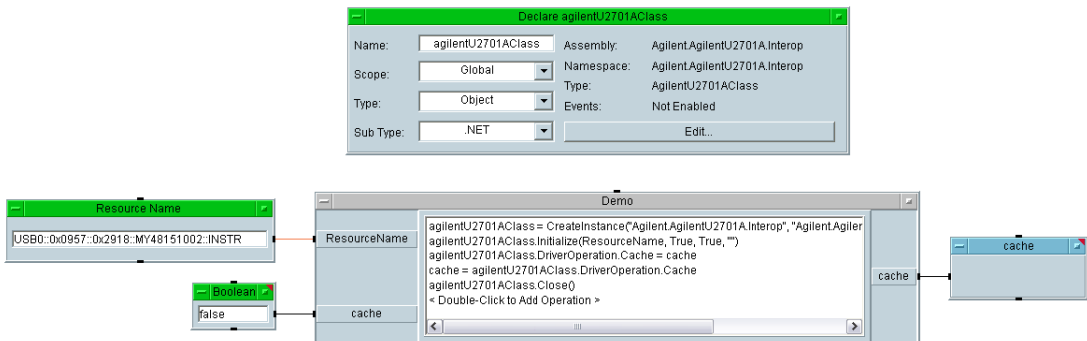
## Hierarchy

```
IAgilentU2701A
├── DriverOperation
│   └── Cache
```

## Return Format

Boolean

## Example



# ClearInterchangeWarnings

## Type

Method

## Function

Set

## Description

This command clears the list of interchangeability warnings that the IVI specific driver maintains.

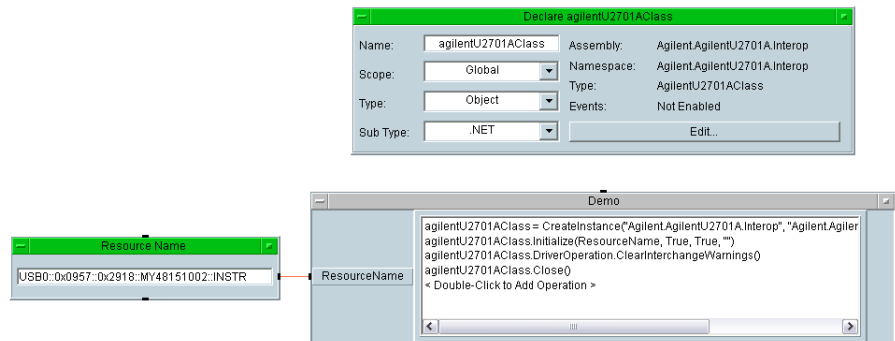
## Hierarchy

```
IAgilentU2701A
├── DriverOperation
│   └── ClearInterchangeWarnings
```

## Return Format

Boolean

## Example



# DriverSetup

## Type

Property

## Function

Get

## Description

This command returns the driver setup string. It is either specified in the configuration store or passed in the *OptionString* parameter of the function. Driver setup is empty if the driver is not initialized.

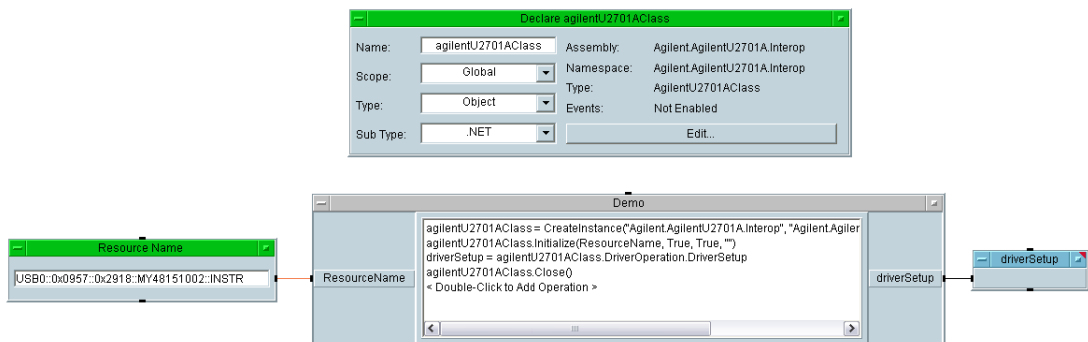
## Hierarchy

```
IAgilentU2701A
├── DriverOperation
│   └── DriverSetup
```

## Return Format

String/BTSR

## Example



# GetNextCoercionRecord

## Type

Method

## Function

Get

## Description

This command returns the oldest record from the coercion record list. Records are only added to the list if [RecordCoercions](#) is set to `True`.

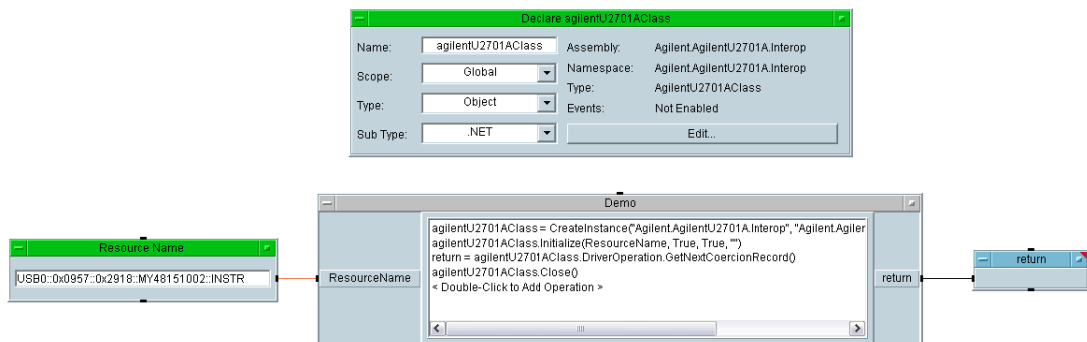
## Hierarchy

```
IAgilentU2701A
├── DriverOperation
│   └── GetNextCoercionRecord()
```

## Return Format

String/BTSR

## Example



# GetNextInterchangeWarning

## Type

Method

## Function

Get

## Description

This command returns the oldest warning from the interchange warning list. Records are only added to the list if [InterchangeCheck](#) is set to `True`.

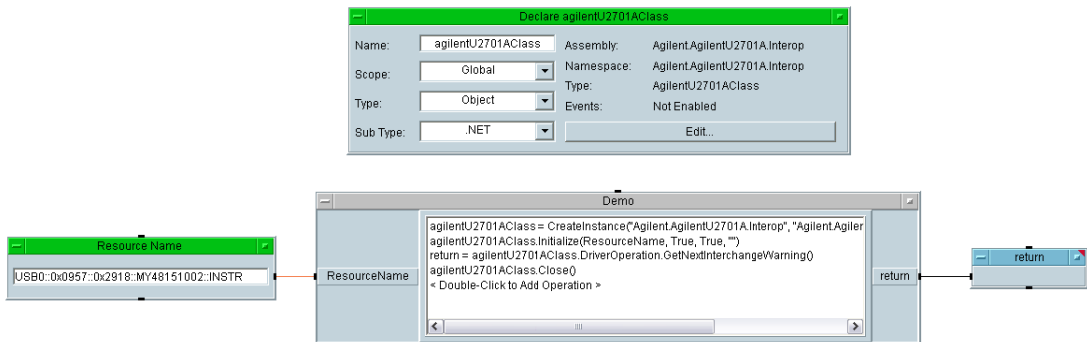
## Hierarchy

```
IAgilentU2701A
├── DriverOperation
│   └── GetNextInterchangeWarning()
```

## Return Format

String/BTSR

## Example



# InterchangeCheck

## Type

Property

## Function

Get and Set

## Description

If this command is set to `True`, the driver maintains a record of interchangeability warnings. If the driver does not support interchangeability checking, attempts to set `InterchangeCheck` to `True` returns an error.

## Hierarchy

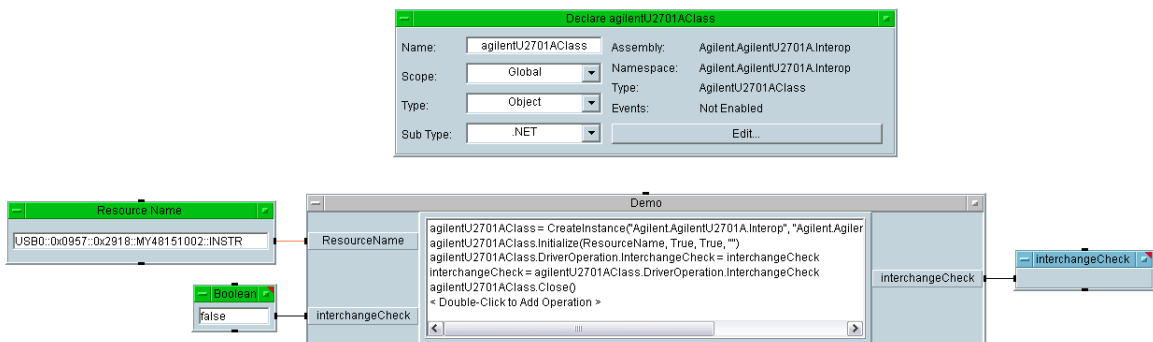
```

IAgilentU2701A
├── DriverOperation
│   └── InterchangeCheck
  
```

## Return Format

Boolean

## Example



# InvalidateAllAttributes

## Type

Method

## Function

Set

## Description

This command invalidates all of the driver cached values.

## Hierarchy

```

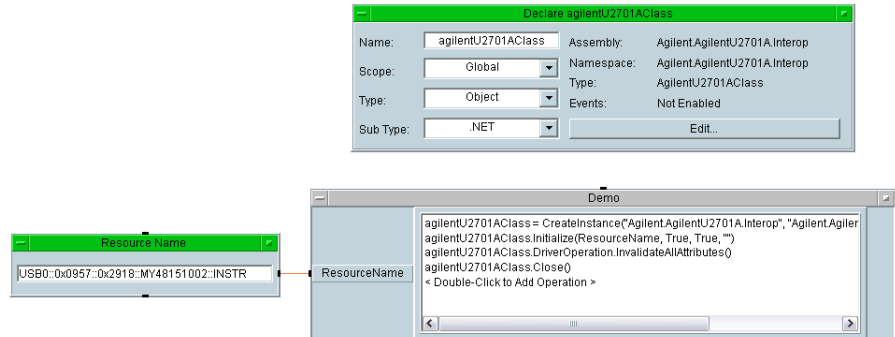
IAgilentU2701A
├── DriverOperation
│   └── InvalidateAllAttributes()

```

## Return Format

Boolean

## Example



# IoResourceDescriptor

## Type

Property

## Function

Get

## Description

This command returns the instrument resource descriptor. The resource descriptor specifies the connection to a physical device. It is either specified in the configuration store or passed in the *ResourceName* parameter of the [Initialize](#) function. It is empty if the driver is not initialized.

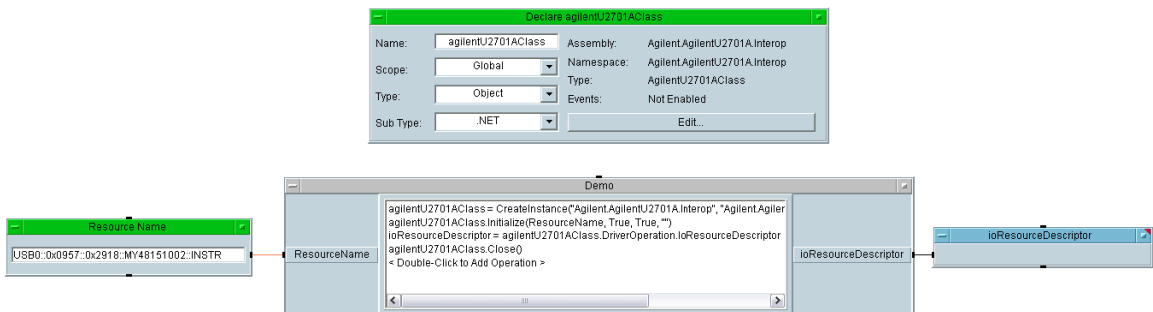
## Hierarchy

```
IAgilentU2701A
├── DriverOperation
│   └── IoResourceDescriptor
```

## Return Format

String/BSTR

## Example



# LogicalName

## Type

Property

## Function

Get

## Description

This command returns the instrument logical name. The logical name identifies a driver session in the configuration store. If logical name is not empty, the driver was initialized from the information in the driver session. If it is empty, the driver was initialized without using the configuration store.

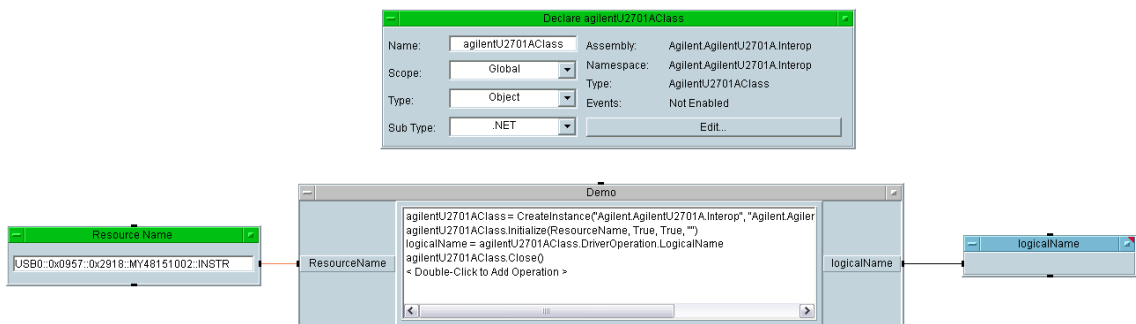
## Hierarchy

```
IAgilentU2701A
├── DriverOperation
│   └── LogicalName
```

## Return Format

String/BSTR

## Example



# QueryInstrumentStatus

## Type

Property

## Function

Get and Set

## Description

If this command is set to `True`, the driver queries the instrument status at the end of each method or property that performs I/O to the instrument. If an error is reported, use [ErrorQuery](#) to retrieve error messages one at a time from the instrument.

## Hierarchy

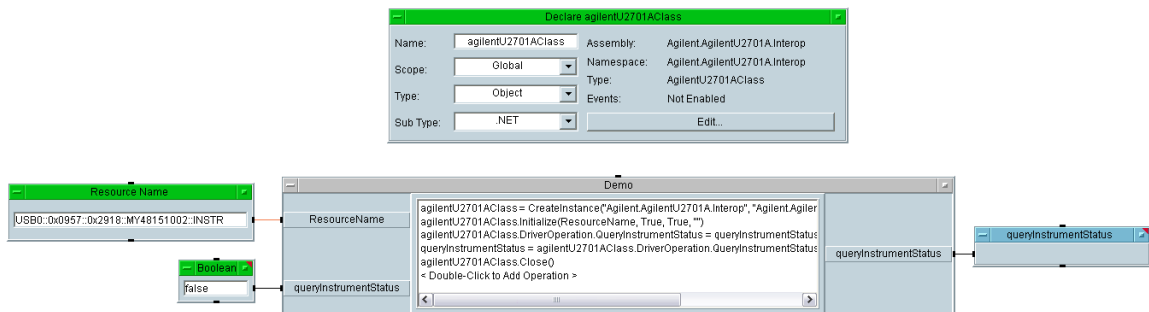
```

IAgilentU2701A
├── DriverOperation
│   └── QueryInstrumentStatus
    
```

## Return Format

Boolean

## Example



# RangeCheck

## Type

Property

## Function

Get and Set

## Description

Drivers may choose to always validate some property or parameter values, never validate others, and optionally validate others, to avoid sending invalid commands to the instrument. If this command is set to `True`, the driver performs optional validations.

## Hierarchy

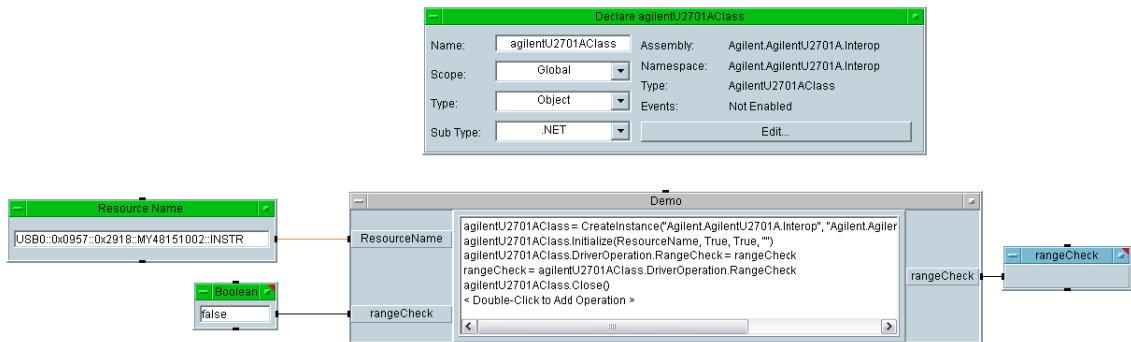
```

IAgilentU2701A
├── DriverOperation
│   └── RangeCheck
  
```

## Return Format

Boolean

## Example



# RecordCoercions

## Type

Property

## Function

Get and Set

## Description

If this command is set to `True`, the driver keeps a list of the value coercions it makes for *ViInt32* and *ViReal64* attributes. If the driver does not support coercion recording, attempts to set `RecordCoercions` to `True` will return an error.

## Hierarchy

```

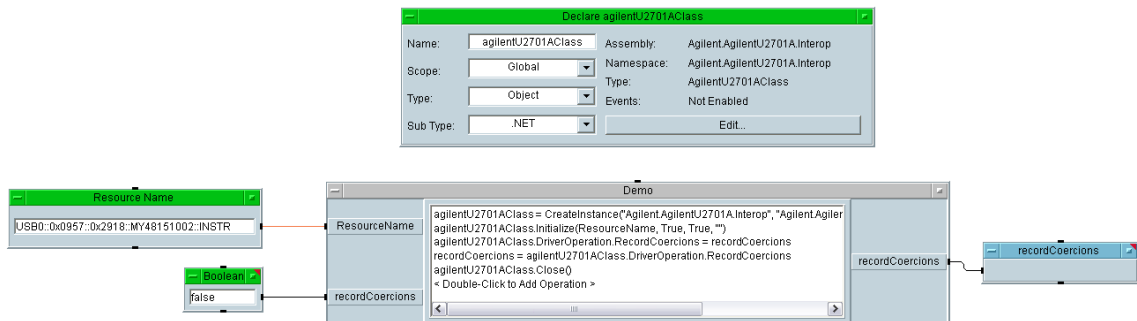
IAgilentU2701A
├── DriverOperation
│   └── RecordCoercions

```

## Return Format

Boolean

## Example



# ResetInterchangeCheck

## Type

Method

## Function

Set

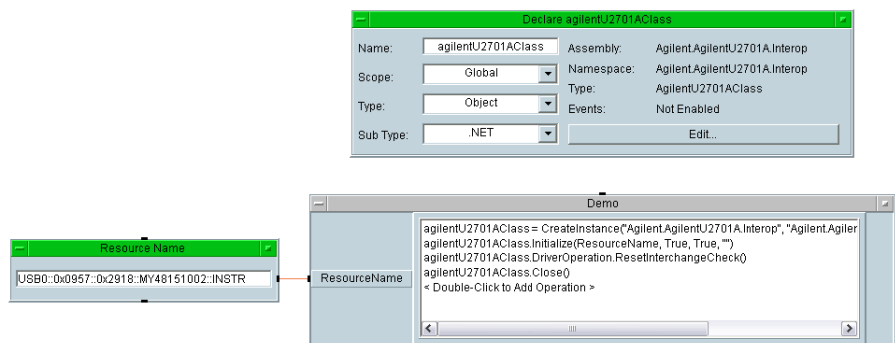
## Description

This command resets the interchangeability checking algorithms of the driver so that methods and properties that were executed prior to calling this function have no affect on whether future calls to the driver will generate interchangeability warnings or not.

## Hierarchy

```
IAgilentU2701A
├── DriverOperation
│   └── ResetInterchangeCheck()
```

## Example



# Simulate

## Type

Property

## Function

Get and Set

## Description

If this command is set to `True`, the driver does not perform I/O to the instrument, and returns simulated values for output parameters instead.

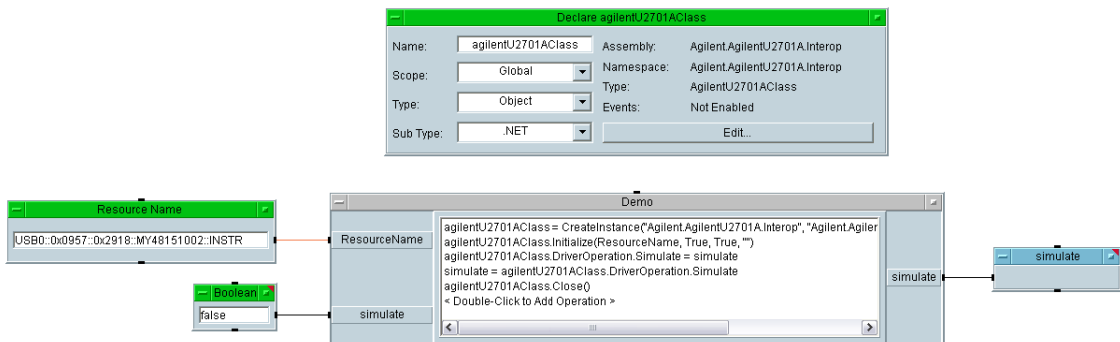
## Hierarchy

```
IAgilentU2701A
├── DriverOperation
│   └── Simulate
```

## Return Format

Boolean

## Example



## Description

### Type

Property

### Function

Get

### Description

This command returns a brief description of the implementing component. Description is limited to 256 bytes.

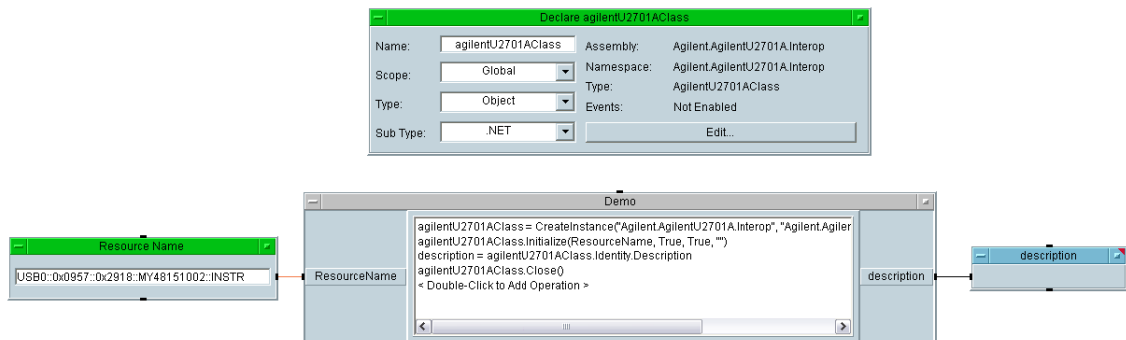
### Hierarchy

```
IAgilentU2701A
├── Identity
│   └── Description
```

### Return Format

String/BSTR

### Example



# GroupCapabilities

## Type

Property

## Function

Get

## Description

This command returns a comma-separated list of the class capability groups implemented by the driver. Capability group names are documented in the IVI class specifications. If the driver is not class compliant, the driver returns an empty string.

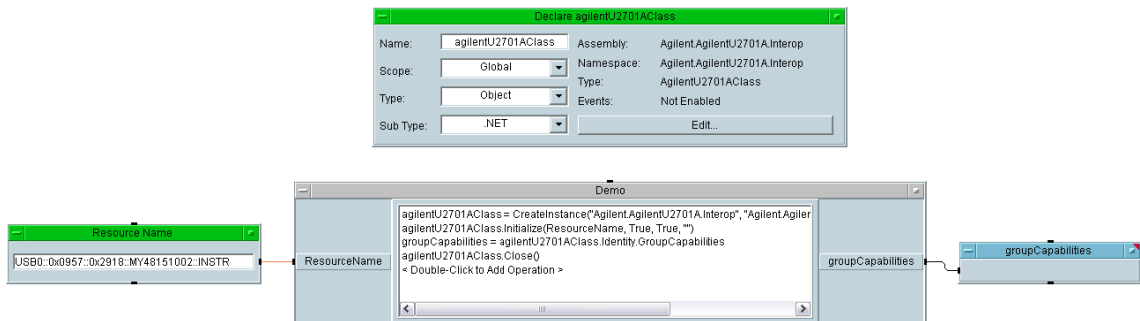
## Hierarchy

```
IAgilentU2701A
├── Identity
│   └── GroupCapabilities
```

## Return Format

String/BSTR

## Example



# Identifier

## Type

Property

## Function

Get

## Description

This command returns the case-sensitive unique identifier of the implementing IVI-COM instrument driver.

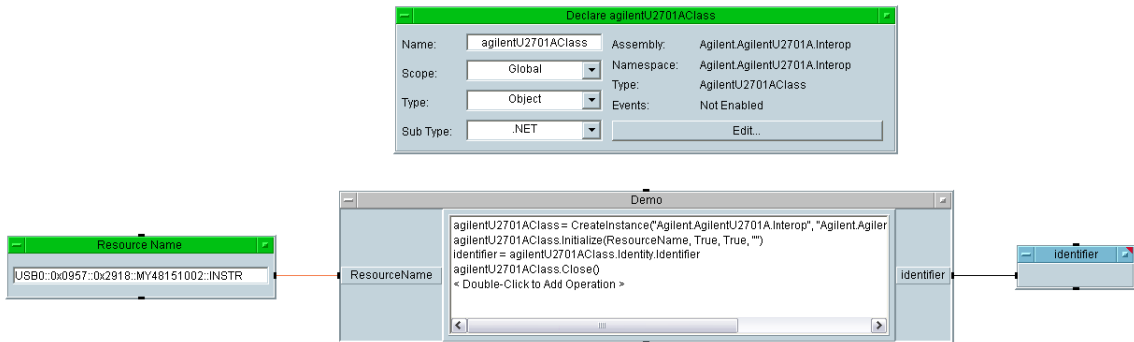
## Hierarchy

```
AgilentU2701A
├── Identity
│   └── Identifier
```

## Return Format

String/BSTR

## Example



# InstrumentFirmwareRevision

## Type

Property

## Function

Get

## Description

This command returns the firmware revision reported by the physical instrument. If **Simulate** is enabled or the instrument is not capable of reporting the firmware revision, a string is returned that explains the condition.

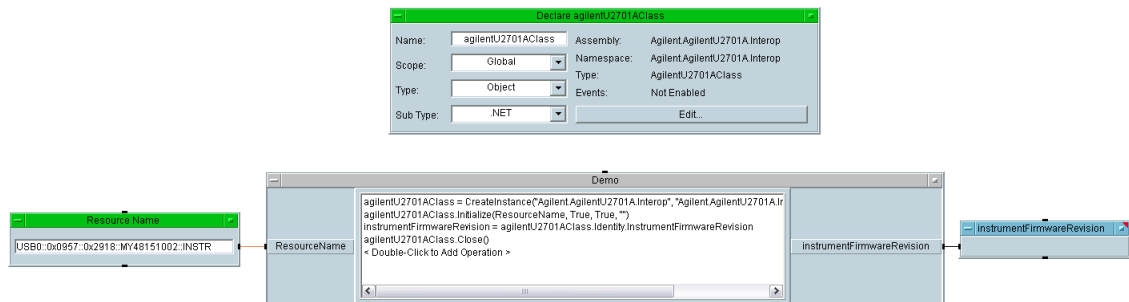
## Hierarchy

```
IAgilentU2701A
├── Identity
│   └── InstrumentFirmwareRevision
```

## Return Format

String/BSTR

## Example



# InstrumentManufacturer

## Type

Property

## Function

Get

## Description

This command returns the name of the manufacturer reported by the physical instrument. If **Simulate** is enabled or the instrument is not capable of reporting the name of the manufacturer, a string is returned that explains the condition. InstrumentManufacturer is limited to 256 bytes.

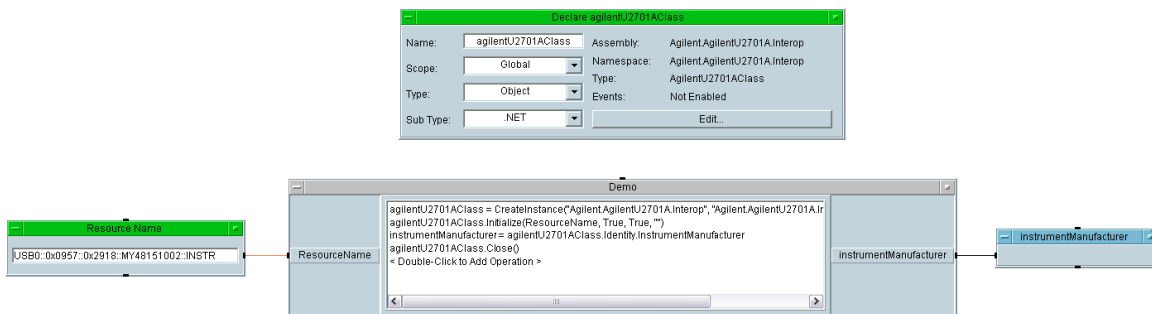
## Hierarchy

```
IAgilentU2701A
├── Identity
│   └── InstrumentManufacturer
```

## Return Format

String/BSTR

## Example



# InstrumentModel

## Type

Property

## Function

Get

## Description

This command returns the model number or name reported by the physical instrument. If **Simulate** is enabled or the instrument is not capable of reporting the model number or name, a string is returned that explains the condition. InstrumentModel is limited to 256 bytes.

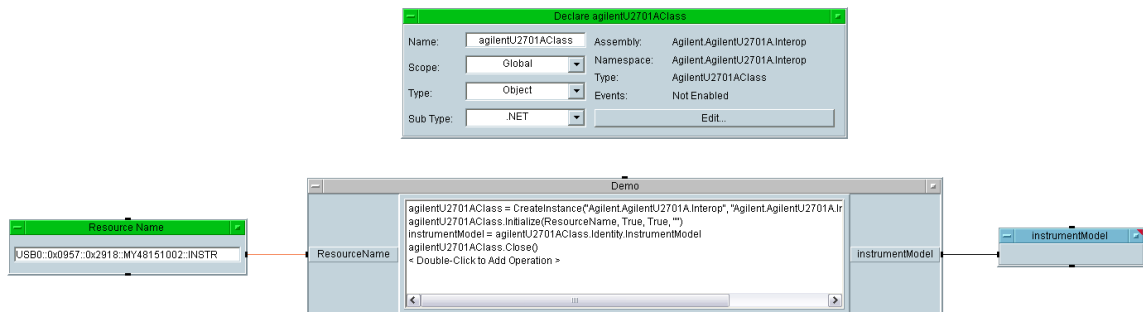
## Hierarchy

```
IAgilentU2701A
├── Identity
│   └── InstrumentModel
```

## Return Format

String/BSTR

## Example



# Revision

## Type

Property

## Function

Get

## Description

This command returns the revision of the implementing component. Revision is limited to 256 bytes.

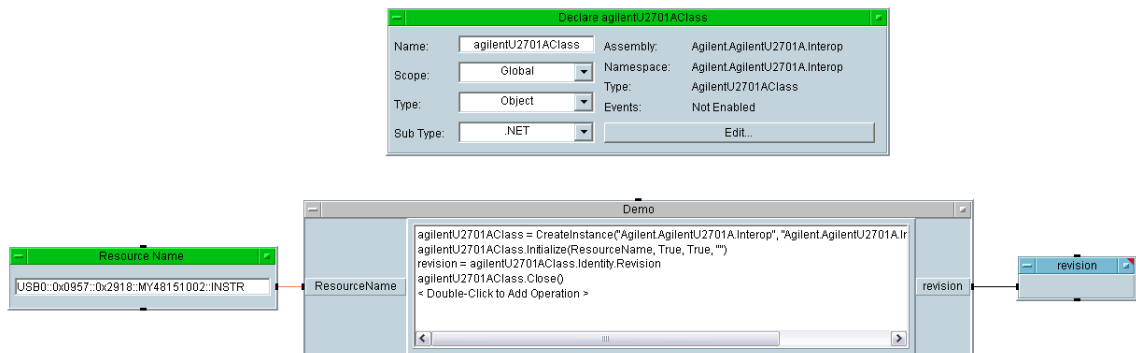
## Hierarchy

```
IAgilentU2701A
├── Identity
│   └── Revision
```

## Return Format

String/BSTR

## Example



# SpecificationMajorVersion

## Type

Property

## Function

Get

## Description

For IVI class-compliant drivers, this command returns the major version number of the instrument class specification. If the driver is not class compliant, the driver returns zero.

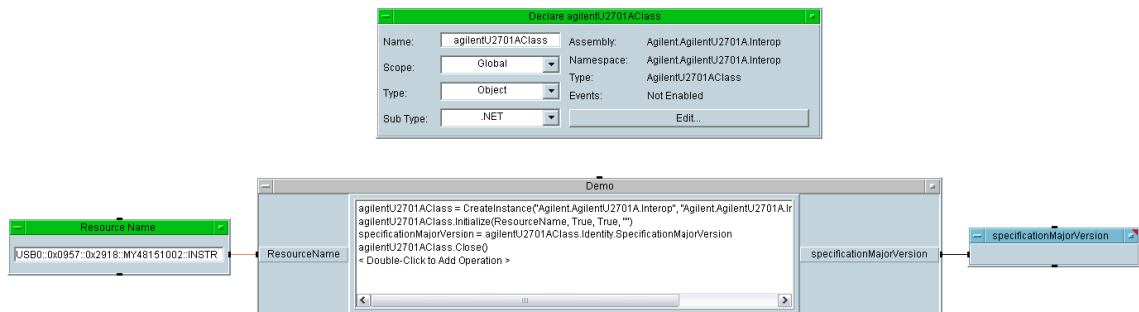
## Hierarchy

```
IAgilentU2701A
├── Identity
│   └── SpecificationMajorVersion
```

## Return Format

Long/Int32

## Example



# SpecificationMinorVersion

## Type

Property

## Function

Get

## Description

For IVI class-compliant drivers, this command returns the minor version number of the instrument class specification. If the driver is not class compliant, the driver returns zero.

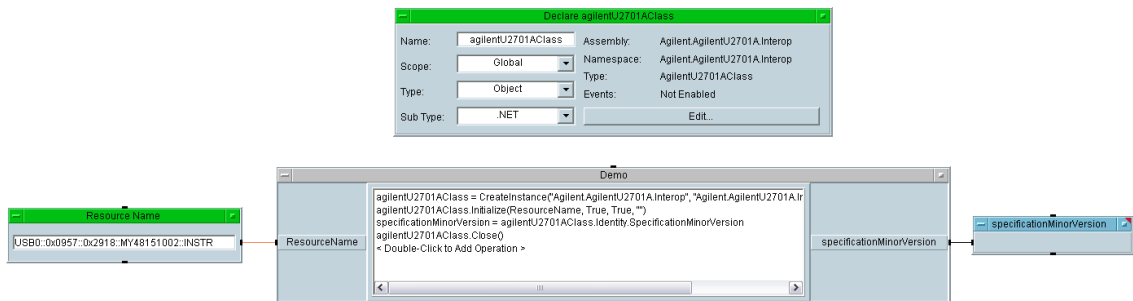
## Hierarchy

```
IAgilentU2701A
├── Identity
│   └── SpecificationMinorVersion
```

## Return Format

Long/Int32

## Example



# SupportedInstrumentModels

## Type

Property

## Function

Get

## Description

This command returns a comma-separated list of instrument models that the IVI specific driver can control. The string does not include an abbreviation for the manufacturer if it is the same for all models.

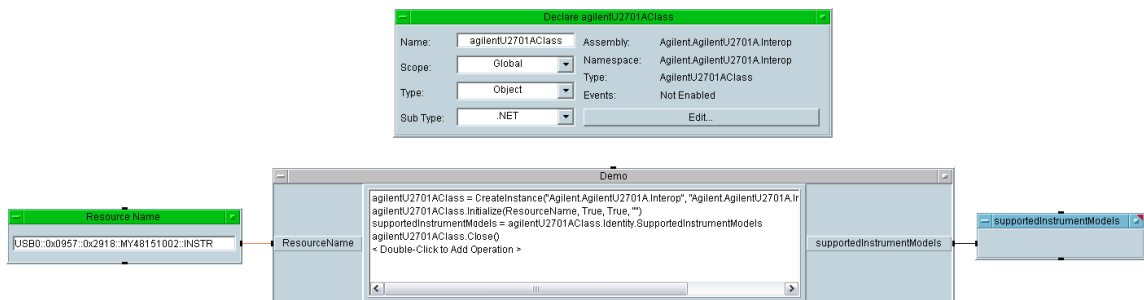
## Hierarchy

```
AgilentU2701A
├── Identity
│   └── SupportedInstrumentModels
```

## Return Format

String/BSTR

## Example



# Vendor

## Type

Property

## Function

Get

## Description

This command returns the name of the vendor that supplies the implementing component. Vendor is limited to 256 bytes.

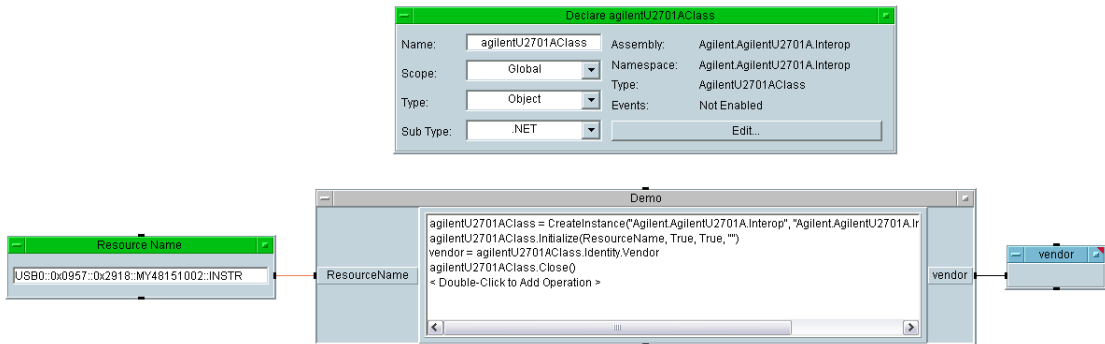
## Hierarchy

```
IAgentU2701A
├── Identity
│   └── Vendor
```

## Return Format

String/BSTR

## Example



# SerialNumber

## Type

Property

## Function

Get

## Description

This command returns the instrument serial number.

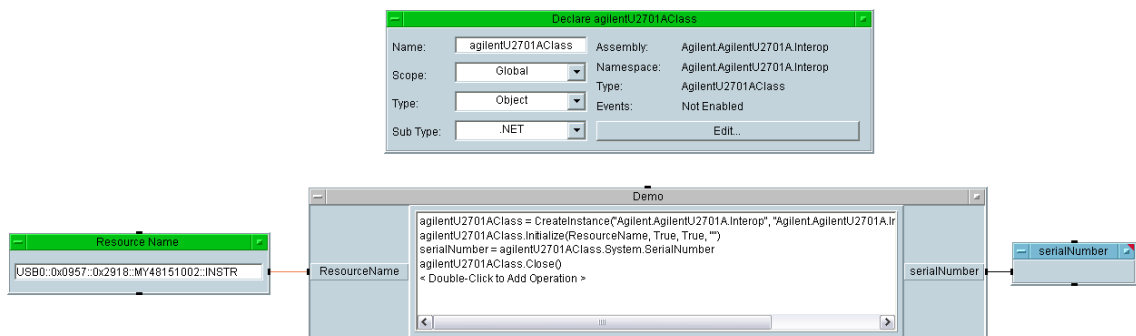
## Hierarchy

```
IAgilentU2701A
├── System
│   └── SerialNumber
```

## Return Format

String

## Example







## 7 Application Example

Introduction 198

Complete Example 207

This chapter contains an example program for the U2701A/U2702A USB modular oscilloscopes. The following program uses Agilent VEE 9.0. Refer to the instruction manual of Agilent VEE 9.0. for further details about Agilent VEE 9.0.



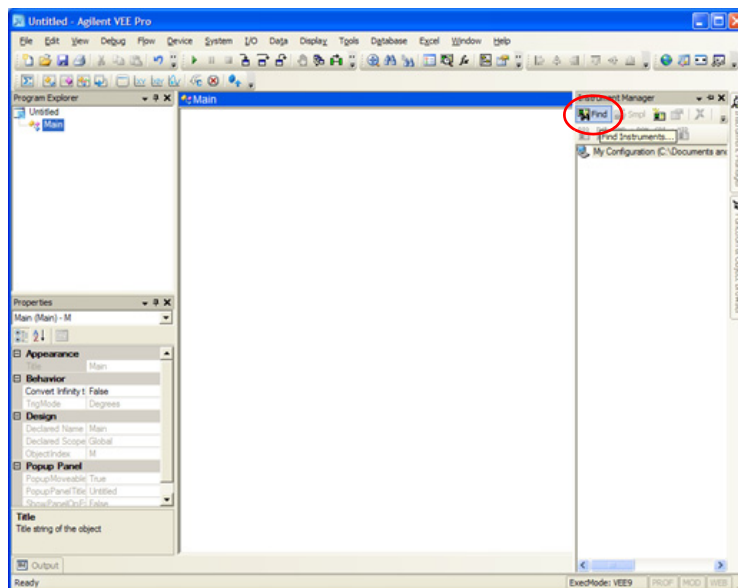
## Introduction

This section describes how the AgilentU2701A/U2702A IVI driver is used with the Agilent VEE 9.0.

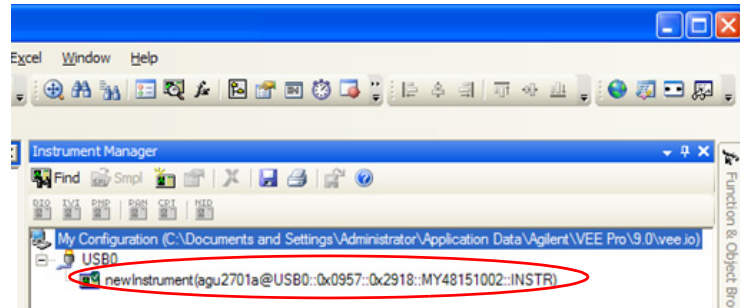
### Creating connectivity to the IVI-COM driver

Follow the steps below in order to use the IVI-COM driver in VEE:

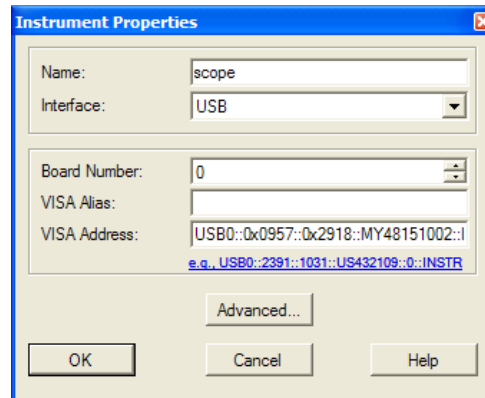
- 1 Launch VEE and open up a new work area.
- 2 Select **I/O > Instrument Manager**.
- 3 Once the U2701A/U2702A is connected and powered on, click the **Find Instruments** button.



- 4 A confirmation dialog will pop up, asking whether to send an "\*IDN?" command to identify the instrument. Click **OK** to accept and the U2701A will be added as shown below:

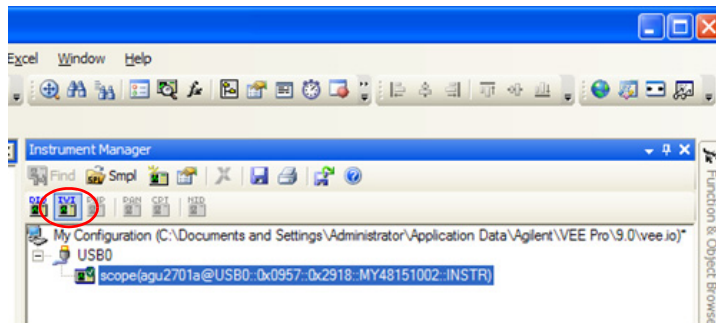


- 5 Right-click on the U2701A/U2702A and select **Instrument Properties**.
- 6 Change the Name of the instrument to another name, e.g scope for easier identification, and click **OK**.

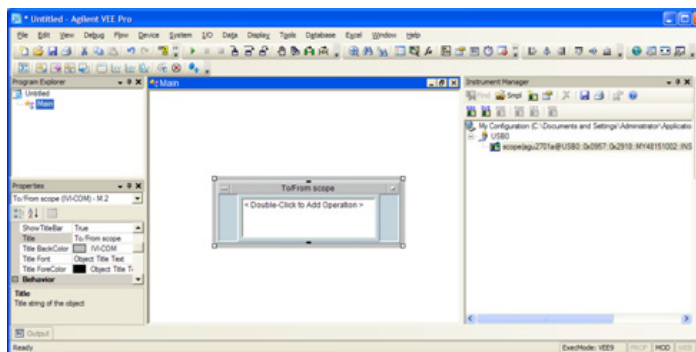


## 7 Application Example

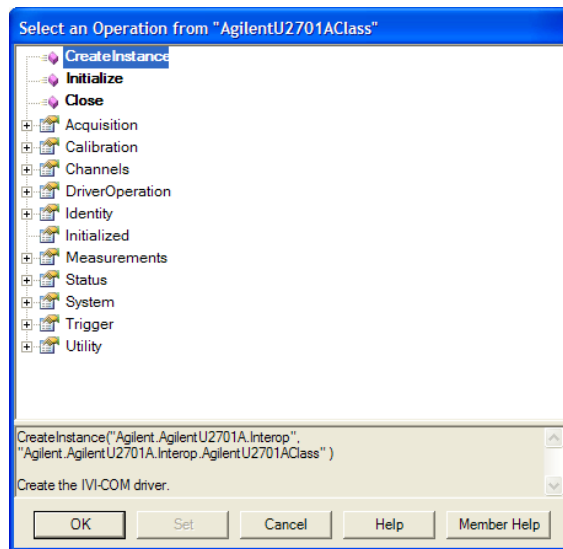
- 7 With the U2701A/U2702A selected, click the **Create IVI-COM Driver Object** button as shown in the following:



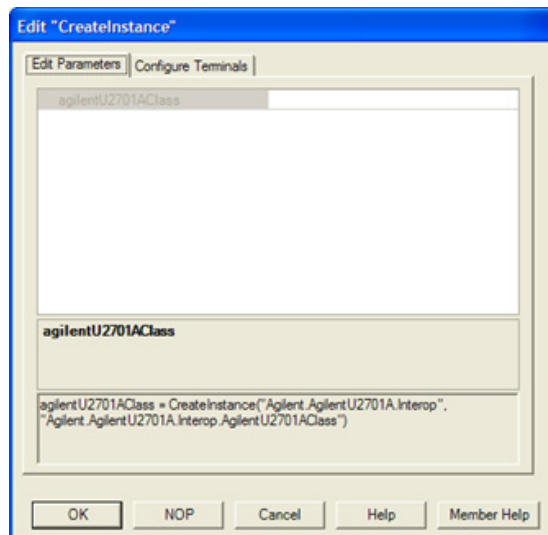
- 8 A "To/From scope" object will be seen. Place the object onto the workspace as shown below:



- 9 Double-click the line that says **Double-Click to Add Operation**. This brings up the "Select an Operation..." dialog box. Select **CreateInstance** > **OK**. **CreateInstance** should be the first operation that you call before you call any other operations for this IVI-COM driver.

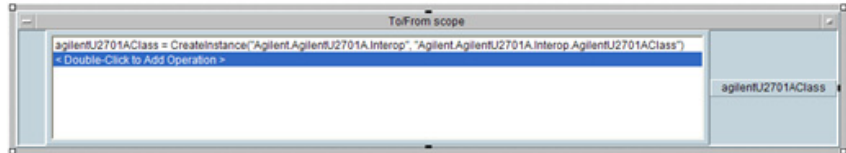


10 Click **OK** again at the "Edit CreateInstance" dialog box.

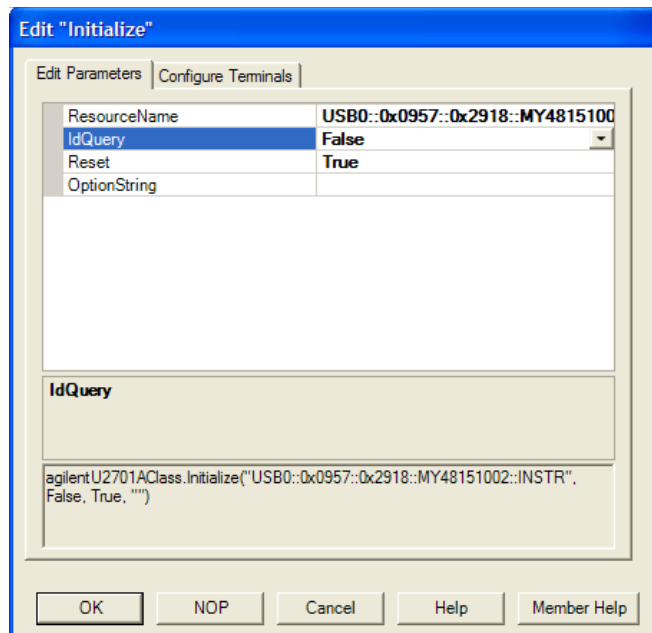


## 7 Application Example

11 The "To/From scope" object should now look like below. Double-click the highlighted line again.



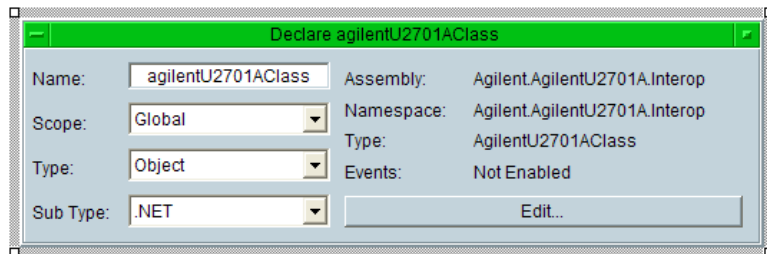
12 In the "Select an Operation" dialog box, select **Initialize** and click **OK**. In the "Edit Initialize" dialog box, notice that most of the fields have already been filled by VEE automatically including ResourceName, IdQuery, and Reset. The fields can be changed if needed.



- 13 Other operations can be added using the same method as adding the Initialize operation. After all the operations have been added, the resources need to be released by selecting the **Close** operation. Your "To/From scope" object should look like below:

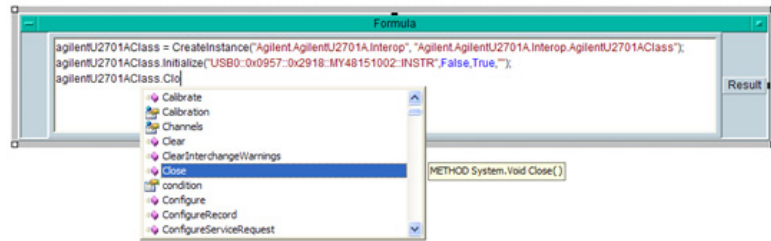


- 14 You can now hit **F5** or click the **Run** button on the toolbar to run this VEE program.
- 15 Alternatively, you can also declare a global variable named "agilentU2701AClass" by selecting **Data > Variable > Declare Variable** and set its type. To delete the "agilentU2701AClass" output terminal, right-click the "To/From scope" object and select **Delete Terminal > Output**. By doing this, the IVI-COM object can be shared with other "To/From" objects or you can use it in formula objects.

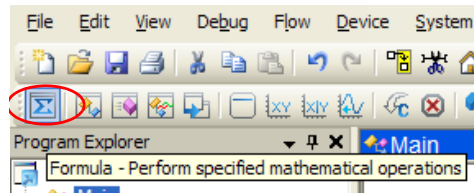


- 16 If you prefer VEE's formula object, you can easily let VEE show you what variables and functions are available and let VEE complete most of the typing for you.

## 7 Application Example

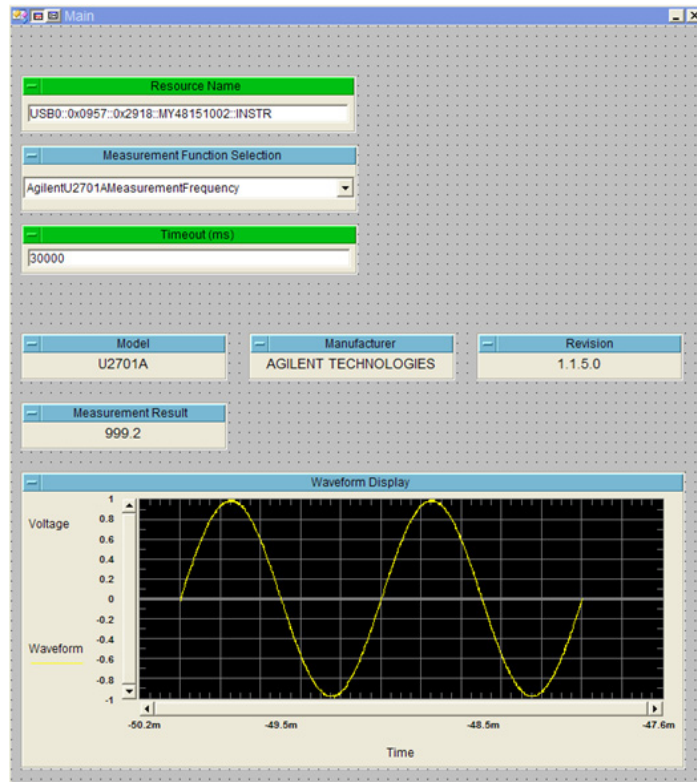


- 17** To use the formula object instead of the "To/From" object, click the **Formula** button on the toolbar.



- 18** To create a user interface for your program (e.g might include only the input and display object for a program, where the detailed execution is not needed), select the desired object to be placed and under menu item, select **Edit > Add To Panel**. Arrange the items in the Panel View as required.
- 19** Use the **To Panel** and **To Detail** button to toggle between views.

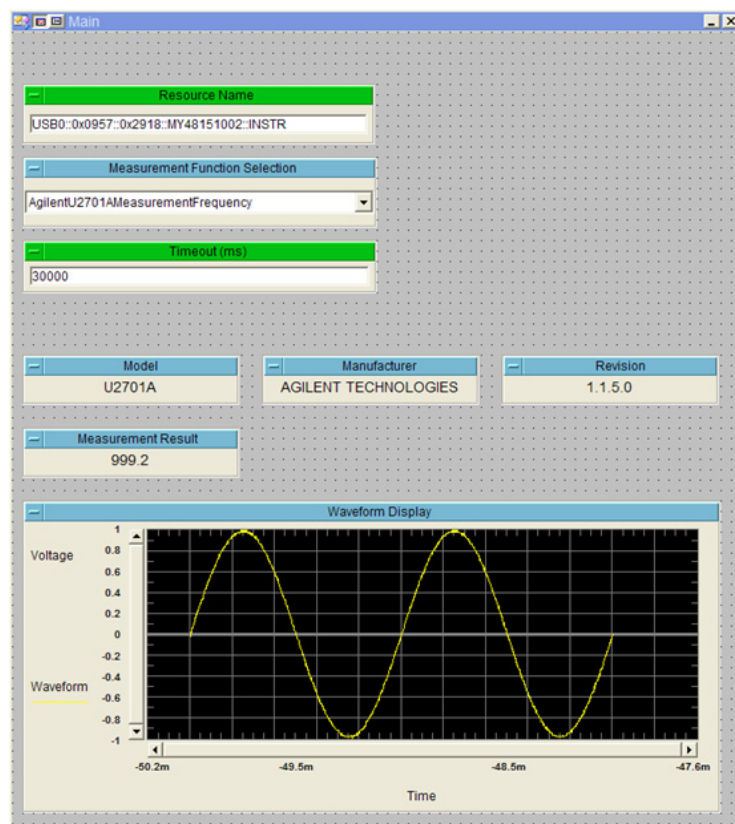
## 7 Application Example



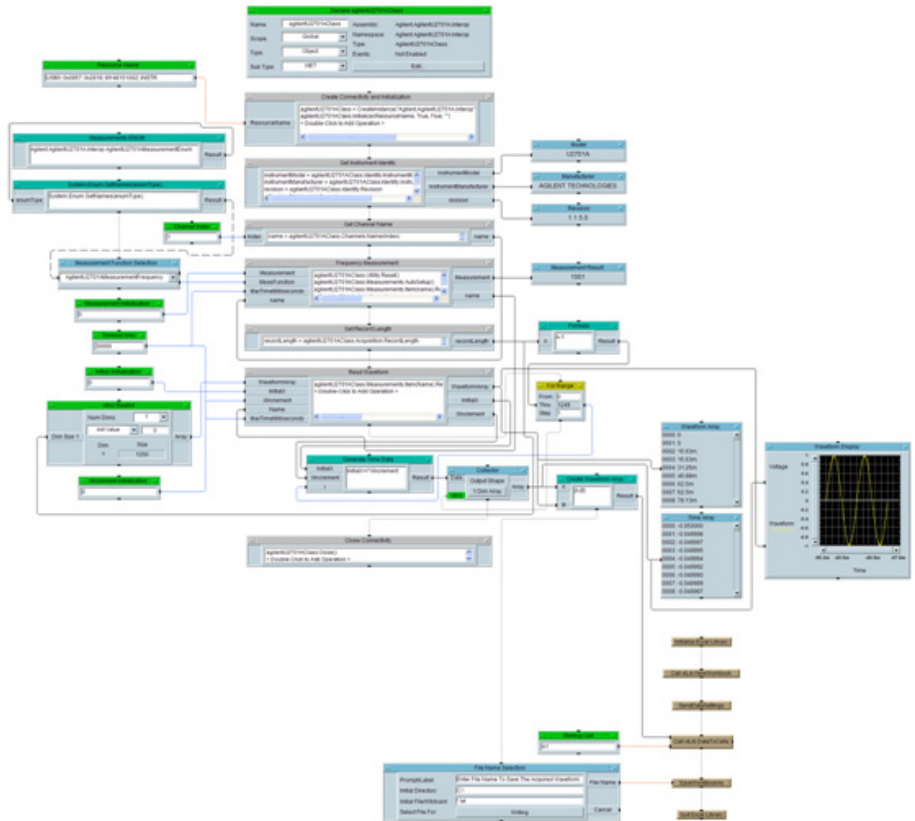
## Complete Example

This section illustrates a complete example covering steps needed to get the instrument's identity, reset the instrument, automatically scale the instrument, conducting a simple measurement, and finally acquiring and saving the waveform data using VEE 9.0.

Panel View:



Detail View:



## Command Quick Reference

Root keyword	Second-level	Third-level	Fourth-level	Page
IAgilentU2701A	Acquisition	ConfigureRecord		See <a href="#">page 108</a>
		Interpolation		See <a href="#">page 110</a>
		NumberOfAverages		See <a href="#">page 112</a>
		RecordLength		See <a href="#">page 113</a>
		SampleMode		See <a href="#">page 114</a>
		SampleRate		See <a href="#">page 116</a>
		StartTime		See <a href="#">page 117</a>
		TimePerRecord		See <a href="#">page 119</a>
		Type		See <a href="#">page 122</a>
	Calibration	Calibrate		See <a href="#">page 166</a>
		Date		See <a href="#">page 167</a>
		Label		See <a href="#">page 168</a>
		Time		See <a href="#">page 169</a>
	Channels	Count		See <a href="#">page 12</a>
			Item	BandwidthLimit
			Configure	See <a href="#">page 15</a>
			Coupling	See <a href="#">page 18</a>
			Enabled	See <a href="#">page 20</a>
			Offset	See <a href="#">page 22</a>
			ProbeAttenuation	See <a href="#">page 24</a>
			Range	See <a href="#">page 26</a>
	Name		See <a href="#">page 29</a>	
Close			See <a href="#">page 31</a>	

Root keyword	Second-level	Third-level	Fourth-level	Page	
IAgilentU2701A	DriverOperation	Cache		See <a href="#">page 170</a>	
		ClearInterchange Warnings		See <a href="#">page 171</a>	
		DriverSetup		See <a href="#">page 172</a>	
		GetNextCoercion Record		See <a href="#">page 173</a>	
		GetNextInterchange Warning		See <a href="#">page 174</a>	
		InterchangeCheck		See <a href="#">page 175</a>	
		InvalidateAllAttributes		See <a href="#">page 176</a>	
		IoResourceDescriptor		See <a href="#">page 177</a>	
		LogicalName		See <a href="#">page 178</a>	
		QueryInstrumentStatus		See <a href="#">page 179</a>	
		RangeCheck		See <a href="#">page 180</a>	
		RecordCoercions		See <a href="#">page 181</a>	
		ResetInterchange Check		See <a href="#">page 182</a>	
		Simulate		See <a href="#">page 183</a>	
		Identity	Description		See <a href="#">page 184</a>
			GroupCapabilities		See <a href="#">page 185</a>
			Identifier		See <a href="#">page 186</a>
InstrumentFirmware Revision			See <a href="#">page 187</a>		
Instrument Manufacturer			See <a href="#">page 188</a>		
InstrumentModel			See <a href="#">page 189</a>		
Revision			See <a href="#">page 190</a>		
SpecificationMajor Version		See <a href="#">page 191</a>			

Root keyword	Second-level	Third-level	Fourth-level	Page	
IAgilentU2701A	Identity	SpecificationMinor Version		See <a href="#">page 192</a>	
		SupportedInstrument Models		See <a href="#">page 193</a>	
		Vendor		See <a href="#">page 194</a>	
	Initialize			See <a href="#">page 32</a>	
	Initialized			See <a href="#">page 34</a>	
	Measurements	Abort			See <a href="#">page 128/140</a>
		AutoSetup			See <a href="#">page 129/141</a>
		Count			See <a href="#">page 130/142</a>
		Initiate			See <a href="#">page 131/143</a>
		IsWaveformElement Invalid			See <a href="#">page 132/144</a>
		Item	FetchWaveform		See <a href="#">page 134/146</a>
			FetchWaveform Measurement		See <a href="#">page 148</a>
			ReadWaveform		See <a href="#">page 136/150</a>
		ReadWaveform Measurement		See <a href="#">page 152</a>	
		MathFunction		See <a href="#">page 154</a>	
		Name		See <a href="#">page 156</a>	
	Status		See <a href="#">page 157</a>		
Status	Clear			See <a href="#">page 75</a>	
	ConfigureService Request			See <a href="#">page 76</a>	
	Preset			See <a href="#">page 78</a>	
	Register			See <a href="#">page 79</a>	
	SerialPoll			See <a href="#">page 81</a>	

Root keyword	Second-level	Third-level	Fourth-level	Page		
IAgilentU2701A	System	SerialNumber		See <a href="#">page 82/195</a>		
		TimeoutMilliseconds		See <a href="#">page 82</a>		
		WaitForOperationComplete		See <a href="#">page 84</a>		
	Trigger	Configure			See <a href="#">page 35</a>	
			Coupling		See <a href="#">page 37</a>	
			Edge	Configure	See <a href="#">page 39</a>	
		Glitch		Slope	See <a href="#">page 41</a>	
				Condition	See <a href="#">page 43</a>	
				Configure	See <a href="#">page 45</a>	
		TV		Polarity	See <a href="#">page 47</a>	
				Width	See <a href="#">page 49</a>	
			Holdoff		See <a href="#">page 50</a>	
			Modifier		See <a href="#">page 51</a>	
			Level		See <a href="#">page 53</a>	
			Source		See <a href="#">page 54</a>	
			Status		See <a href="#">page 55</a>	
			Event		Configure	See <a href="#">page 56</a>
					LineNumber	See <a href="#">page 61</a>
				SignalFormat	See <a href="#">page 62</a>	
				Type	See <a href="#">page 64</a>	
		Width		Condition	See <a href="#">page 66</a>	
	ThresholdHigh		Configure	See <a href="#">page 68</a>		
			Polarity	See <a href="#">page 71</a>		
			ThresholdHigh	See <a href="#">page 73</a>		

<b>Root keyword</b>	<b>Second-level</b>	<b>Third-level</b>	<b>Fourth-level</b>	<b>Page</b>
IAgilentU2701A	Trigger	Width	ThresholdLow	See <a href="#">page 74</a>
	Utility	Disable		See <a href="#">page 85</a>
		ErrorQuery		See <a href="#">page 86</a>
		LockObject		See <a href="#">page 88</a>
		Reset		See <a href="#">page 89</a>
		ResetWithDefaults		See <a href="#">page 90</a>
		SelfTest		See <a href="#">page 91</a>
		UnlockObject		See <a href="#">page 93</a>

## Enumeration Quick Reference

Enumeration members	Page
AgilentU2701AAcquisitionStatusEnum	See <a href="#">page 124</a>
AgilentU2701AAcquisitionTypeEnum	See <a href="#">page 125</a>
AgilentU2701AGlitchConditionEnum	See <a href="#">page 94</a>
AgilentU2701AGlitchPolarityEnum	See <a href="#">page 95</a>
AgilentU2701AInterpolationEnum	See <a href="#">page 126</a>
AgilentU2701AMathOperationEnum	See <a href="#">page 159</a>
AgilentU2701AMeasurementEnum	See <a href="#">page 160</a>
AgilentU2701ASampleModeEnum	See <a href="#">page 126</a>
AgilentU2701ASRQReasonEnum	See <a href="#">page 95</a>
AgilentU2701AStatusRegisterEnum	See <a href="#">page 97</a>
AgilentU2701AStatusSubRegisterEnum	See <a href="#">page 98</a>
AgilentU2701ATimeOutEnum	See <a href="#">page 163</a>
AgilentU2701ATriggerCouplingEnum	See <a href="#">page 99</a>
AgilentU2701ATriggerModifierEnum	See <a href="#">page 99</a>
AgilentU2701ATriggerSlopeEnum	See <a href="#">page 100</a>
AgilentU2701ATriggerTypeEnum	See <a href="#">page 101</a>
AgilentU2701ATVSignalFormatEnum	See <a href="#">page 102</a>
AgilentU2701ATVTriggerEventEnum	See <a href="#">page 103</a>
AgilentU2701AVerticalCouplingEnum	See <a href="#">page 104</a>
AgilentU2701AWidthConditionEnum	See <a href="#">page 105</a>
AgilentU2701AWidthPolarityEnum	See <a href="#">page 105</a>

# Appendix

Property	Possible values		
<b>IAgilentU2701AAcquisition.NumberOfAverages</b>	<b>Values (Int32)</b>		
	1 - 999		
<b>IAgilentU2701AAcquisition.StartTime</b> <b>IAgilentU2701AAcquisition.TimePerRecord</b>	<b>Time/Div</b>	<b>TimePerRecord</b>	<b>StartTime</b>
	1 ns	10 ns	-5 ns - 5 ns
	2 ns	20 ns	-10 ns - 10 ns
	5 ns	50 ns	-25 ns - 25 ns
	10 ns	100 ns	-50 ns - 50 ns
	20 ns	200 ns	-100 ns - 100 ns
	50 ns	500 ns	-250 ns - 250 ns
	100 ns	1 $\mu$ s	-500 ns - 500 ns
	200 ns	2 $\mu$ s	-1 $\mu$ s - 1 $\mu$ s
	500 ns	5 $\mu$ s	-2.5 $\mu$ s - 2.5 $\mu$ s
	1 $\mu$ s	10 $\mu$ s	-5 $\mu$ s - 5 $\mu$ s
	2 $\mu$ s	20 $\mu$ s	-10 $\mu$ s - 10 $\mu$ s
	5 $\mu$ s	50 $\mu$ s	-25 $\mu$ s - 25 $\mu$ s
	10 $\mu$ s	100 $\mu$ s	-50 $\mu$ s - 50 $\mu$ s
	20 $\mu$ s	200 $\mu$ s	-100 $\mu$ s - 100 $\mu$ s
	50 $\mu$ s	500 $\mu$ s	-250 $\mu$ s - 250 $\mu$ s
	100 $\mu$ s	1 ms	-500 $\mu$ s - 500 $\mu$ s
	200 $\mu$ s	2 ms	-1 ms - 1 ms
	500 $\mu$ s	5 ms	-2.5 ms - 2.5 ms
	1 ms	10 ms	-5 ms - 5 ms
	2 ms	20 ms	-10 ms - 10 ms
	5 ms	50 ms	-25 ms - 25 ms
	10 ms	100 ms	-50 ms - 50 ms
	20 ms	200 ms	-100 ms - 100 ms
50 ms	500 ms	-250 ms - 250 ms	
100 ms	1 s	-500 ms - 500 ms	

<b>IAgilentU2701AAcquisition.StartTime</b> <b>IAgilentU2701AAcquisition.TimePerRecord</b>	<b>Time/Div</b>	<b>TimePerRecord</b>	<b>StartTime</b>
	200 ms	2 s	-1 s - 1 s
	500 ms	5 s	-2.5 s - 2.5 s
	1 s	10 s	-5 s - 5 s
	2 s	20 s	-10 s - 10 s
	5 s	50 s	-25 s - 25 s
	10 s	100 s	-50 s - 50 s
	20 s	200 s	-100 s - 100 s
	50 s	500 s	-250 s - 250 s
<b>IAgilentU2701AChannels.Item</b>	<b>Name (String)</b>		
	Channel1		
	Channel2		
<b>IAgilentU2701AChannel.ProbeAttenuation</b>	<b>Value (double)</b>		
	1		
	10		
<b>IAgilentU2701AChannel.Offset</b> <b>IAgilentU2701AChannel.Range</b>	<b>Volt/Div</b>	<b>Voltage Range (Attenuation = 1x)</b>	<b>Offset</b>
	2 mV	16 mV	-8 mV - 8 mV
	5 mV	40 mV	-20 mV - 20 mV
	10 mV	80 mV	-40 mV - 40 mV
	20 mV	160 mV	-80 mV - 80 mV
	50 mV	400 mV	-200 mV - 200 mV
	100 mV	800 mV	-400 mV - 400 mV
	200 mV	1.6 V	-800 mV - 800 mV
	500 mV	4 V	-2 V - 2 V
	1 V	8 V	-4 V - 4 V
	2 V	16 V	-8 V - 8 V
5 V	40 V	-20 V - 20 V	
<b>IAgilentU2701ATriggerGlitch.Width</b>	<b>Condition LessThan (Value)</b>	<b>Condition GreaterThan (Value)</b>	
	> 7 ns	> 15 ns	

<b>IAgilentU2701ATrigger.Holdoff</b>	<b>Value (Double)</b>
	> 59 ns
<b>IAgilentU2701ATrigger.Source</b>	<b>Value (String)</b>
	Channel1
	Chan1
	CHANNEL1
	Channel2
	Chan2
	CHANNEL2
	Ext
	EXT
	<b>IAgilentU2701ATriggerTv.LineNumber</b>
1 - 263	
<b>IAgilentU2701ATriggerWidth.ThresholdHigh</b>	<b>Value (Double)</b>
	> 15 ns
<b>IAgilentU2701ATriggerWidth.ThresholdLow</b>	<b>Value (Double)</b>
	> 7 ns



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