



POINT GREY
RESEARCH

ActiveFlyCap

ActiveX Control for FlyCapture
Reference

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Table of Contents

Table of Contents	3
1 Overview	5
1.1 Supported Programming Languages.....	5
1.2 Manual Registration.....	5
1.3 Supporting downloads	5
1.4 Adding the Control.....	6
1.4.1 Visual Studio 2005	6
1.4.2 Visual C++ 6	7
1.4.3 Visual Basic 6	8
2 Declarations	10
2.1 Structures	10
2.1.1 CameraInfo.....	10
2.1.2 ImageInfo	10
2.1.3 AbsPropertyStruct	10
2.1.4 AbsPropertyRangeStruct.....	10
2.1.5 PropertyStruct	11
2.1.6 PropertyRangeStruct.....	11
2.1.7 TriggerStruct.....	11
2.1.8 StrobeStruct	11
2.1.9 Format7QueryStruct.....	11
2.1.10 Format7SettingsStruct.....	12
2.1.11 PacketInfo	12
3 Properties	13
3.1 Misc Properties	13
3.1.1 EnableRightClickMenu	13
3.2 General Camera Properties.....	13
3.2.1 Camera.....	13
3.2.2 Start	13
3.2.3 Display.....	13
3.2.4 AutoResize	13
3.2.5 VideoMode	14
3.2.6 FrameRate	14
3.2.7 AsyncBusSpeed	14
3.2.8 IsochBusSpeed	14
3.2.9 GrabTimeout	14
4 Methods.....	15
4.1 General Methods	15
4.1.1 DrawSingleImage	15
4.1.2 GetCameraInfo	15
4.1.3 CheckVideoMode	15
4.1.4 GetFormat7PacketInfo	15

4.1.5	GetPacketInfo	15
4.2	GUI Methods.....	15
4.2.1	ToggleSettingsWindowState	15
4.2.2	GetSettingsWindowState	15
4.2.3	ShowCameraSelectionModal	15
4.3	1394 Bus Methods.....	16
4.3.1	BusCameraCount.....	16
4.3.2	BusEnumerateCameras	16
4.4	Format 7 Methods.....	16
4.4.1	QueryFormat7Image	16
4.4.2	GetFormat7Settings	16
4.4.3	SetFormat7Settings.....	16
4.5	Camera Property Methods	16
4.5.1	GetCameraAbsPropertyEx.....	16
4.5.2	SetCameraAbsPropertyEx	16
4.5.3	GetCameraAbsPropertyRange	16
4.5.4	GetCameraProperty	17
4.5.5	SetCameraProperty.....	17
4.5.6	GetCameraPropertyRange.....	17
4.6	Trigger / Strobe Methods.....	17
4.6.1	GetTrigger	17
4.6.2	SetTrigger.....	17
4.6.3	SetTriggerBroadcast	17
4.6.4	GetStrobe	17
4.6.5	SetStrobe	17
4.6.6	SetStrobeBroadcast	17
4.7	Memory Channel Methods	17
4.7.1	GetNumMemoryChannels.....	17
4.7.2	GetCurrentMemoryChannel	18
4.7.3	SaveToMemoryChannel.....	18
4.7.4	RestoreFromMemoryChannel.....	18
4.8	Register Methods.....	18
4.8.1	GetCameraRegister	18
4.8.2	SetCameraRegister.....	18
4.8.3	ReadRegisterBlock.....	18
4.8.4	WriteRegisterBlock.....	18
5	Events.....	19
5.1	General Events	19
5.1.1	CameraArrival	19
5.1.2	CameraRemoval	19
5.1.3	BusReset.....	19
5.1.4	Image.....	19
6	Technical Support Resources	20
7	Contacting Point Grey Research Inc.....	21

1 Overview

The ActiveFlyCap control allows users to easily insert an ActiveX control into a GUI application and control PGR cameras easily without having to worry about writing additional code to draw images onto the screen.

1.1 Supported Programming Languages

The following programming languages are supported:

- Visual Basic 6
- Visual Basic.Net
- Visual C#
- Visual C++

Any language capable of interacting with ActiveX controls (e.g. in a Windows Form) should be able to interface with ActiveFlyCap.

1.2 Manual Registration

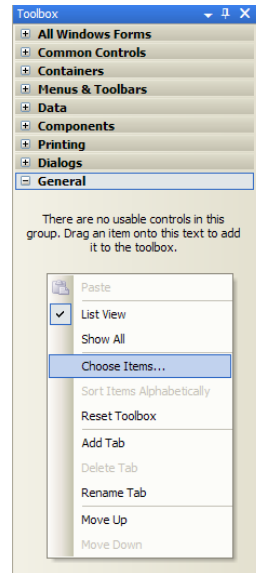
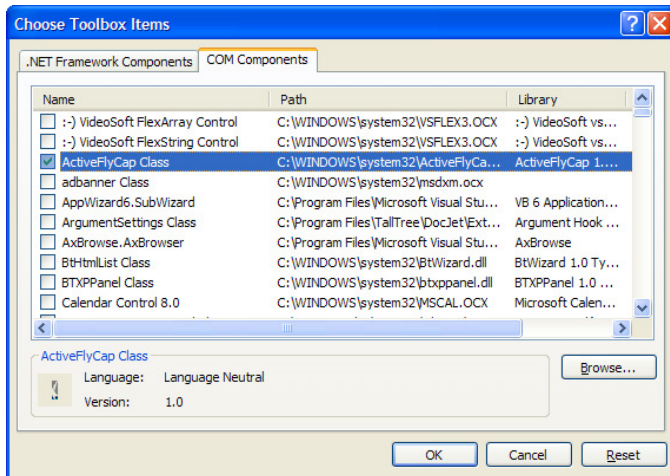
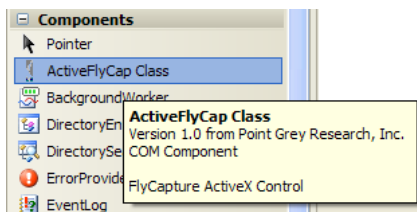
In the event that the control must be manually registered, call regsvr32 with the name of the control (`ActiveFlyCap.dll`). The FlyCapture DLLs (`FlyCapture.dll` and `FlyCaptureGUI.dll`) should also be present in the system.

1.3 Supporting downloads

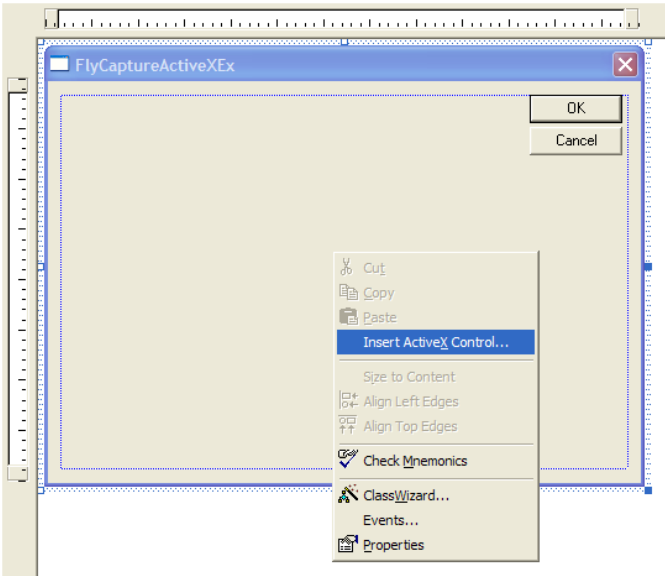
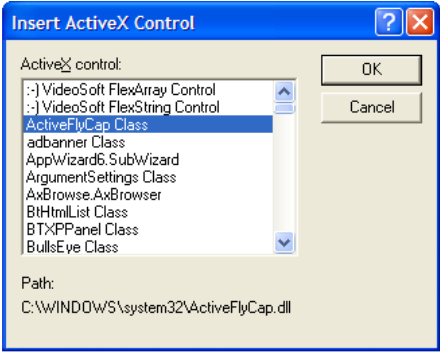
It may be necessary to install the Microsoft Visual C++ 2005 SP1 Redistributable Package. The package can be downloaded directly from Microsoft at the following URL: <http://www.microsoft.com/downloads/details.aspx?FamilyID=200b2fd9-ae1a-4a14-984d-389c36f85647&displaylang=en>.

1.4 Adding the Control

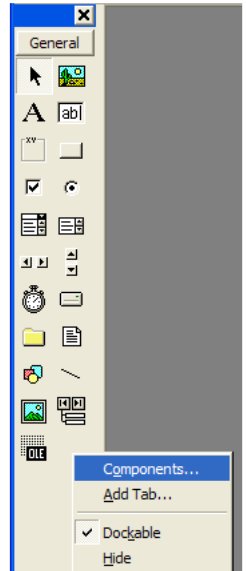
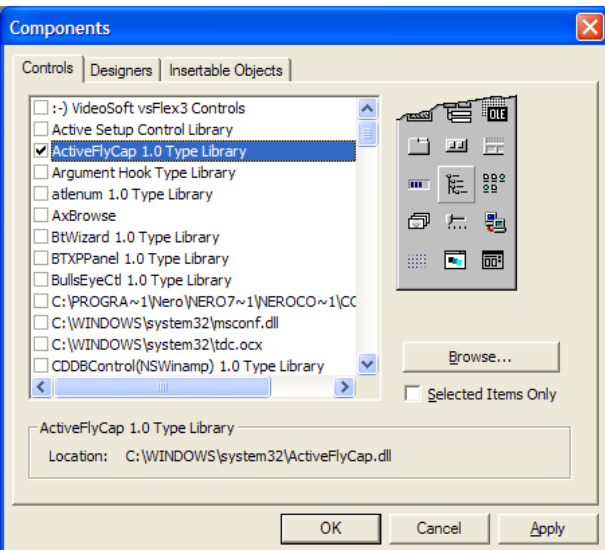
1.4.1 Visual Studio 2005

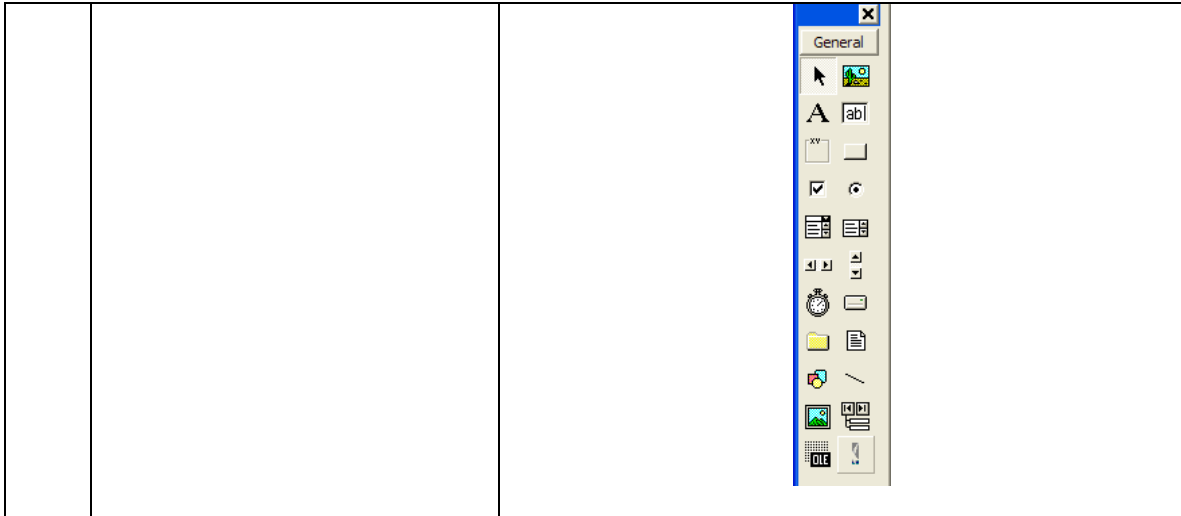
Step	Instruction	Screenshot
1	In a GUI-based application, right click the <i>Toolbox</i> and select <i>Choose Items</i> .	
2	Under <i>COM Components</i> , make sure that the <i>ActiveFlyCap</i> class is selected.	
3	The <i>ActiveFlyCap</i> control component will now appear in the <i>Toolbox</i> .	

1.4.2 Visual C++ 6

Step	Instruction	Screenshot
1	Right click a dialog in the dialog editor and select <i>Insert ActiveX Control</i> .	
2	Select the ActiveFlyCap class and click <i>Ok</i> .	

1.4.3 Visual Basic 6

Step	Instruction	Screenshot
1	Right click the <i>Toolbox</i> and select <i>Components</i> .	
2	Select the ActiveFlyCap Type Library and click <i>Ok</i> .	
3	The ActiveFlyCap component will now appear in the <i>Toolbox</i> .	



2 Declarations

2.1 Structures

In order to pass multiple arguments to the control, structures are used to contain data that will be passed between the application, the ActiveFlyCap control and the FlyCapture library. Structures do not have to be populated before use. Any incoming parameters must be supplied as a separate argument when the function is called.

2.1.1 CameraInfo

Type	Name	Description
LONG	lSerialNumber	Serial number of the camera
CameraType	camType	Camera type (B&W or Color)
CameraModel	camModel	Model of camera
BSTR	bstrModelName	Model name
BSTR	bstrVendorName	Vendor name
BSTR	bstrSensorInfo	Sensor info
LONG	lDCAMVer	DCAM version. Divide this number by 100 for the actual number
LONG	lNodeNum	Node number
LONG	lBusNum	Bus number
BusSpeed	maxBusSpeed	Maximum bus speed

2.1.2 ImageInfo

Type	Name	Description
LONG	lRows	Number of rows in the image
LONG	lCols	Number of columns in the image
LONG	lRowInc	Number of bytes per row in the image
LONG	lNumImages	Number of images contained within
DCAMVideoMode	videoMode	Video mode
PixelFormat	pixelFmt	Pixel format

2.1.3 AbsPropertyStruct

Type	Name	Description
BOOL	bOnePush	One push status
BOOL	bOnOff	On/off status
BOOL	bAuto	Auto status
FLOAT	fValue	Value

2.1.4 AbsPropertyRangeStruct

Type	Name	Description
BOOL	bSupported	Whether the property has absolute value support
FLOAT	fMin	Minimum value

FLOAT	fMax	Maximum value
BSTR	bstrUnits	Units for the property
BSTR	bstrUnitAbbv	Abbreviated units for the property

2.1.5 PropertyStruct

Type	Name	Description
BOOL	bOnePush	One push status
BOOL	bOnOff	On/off status
BOOL	bAuto	Auto status
LONG	lValueA	Value A
LONG	lValueB	Value B

2.1.6 PropertyRangeStruct

Type	Name	Description
BOOL	bSupported	Whether the property has absolute value support
BOOL	bOnePush	One push support
BOOL	bReadOut	Whether the value can be read out
BOOL	bOnOff	On/off support
BOOL	bAuto	Auto support
BOOL	bManual	Manual support
FLOAT	fMin	Minimum value
FLOAT	fMax	Maximum value

2.1.7 TriggerStruct

Type	Name	Description
BOOL	bOnOff	On/off support
LONG	lPolarity	Polarity
LONG	lSource	Source
LONG	lRawValue	Raw value
LONG	lMode	Trigger mode
LONG	lParameter	Parameter

2.1.8 StrobeStruct

Type	Name	Description
BOOL	bOnOff	On/off support
BOOL	bPolarity	Polarity
LONG	lDelay	Delay
LONG	lDuration	Duration

2.1.9 Format7QueryStruct

Type	Name	Description
BOOL	bAvailable	Whether the mode is available in Format 7
LONG	lMaxImagePixelsWidth	Maximum horizontal width
LONG	lMaxImagePixelsHeight	Maximum horizontal height
LONG	lPixelUnitHorz	Horizontal step size of the Format 7 image
LONG	lPixelUnitVert	Vertical step size of the Format 7 image
LONG	lOffsetUnitHorz	Horizontal step size of offset of the Format

		7 image
LONG	lOffsetUnitVert	Vertical step size of the offset of the Format 7 image
LONG	lPixelFormat	Bit field containing supported pixel formats

2.1.10 Format7SettingsStruct

Type	Name	Description
LONG	lMode	Format 7 mode
LONG	lImagePosLeft	Left offset
LONG	lImagePosTop	Top offset
LONG	lImageWidth	Image width
LONG	lImageHeight	Image height
LONG	lPacketSizeBytes	Packet size in bytes
FLOAT	fBandwidth	Percentage of bandwidth

2.1.11 PacketInfo

Type	Name	Description
LONG	lMinSizeBytes	Minimum packet size in bytes
LONG	lMaxSizeBytes	Maximum packet size in bytes

3 Properties

The property get/set functions always return a HRESULT in C++. The HRESULT can have several possible values:

Name	Description
S_OK	Success
E_FAIL	Failure
E_INVALIDARG	Invalid argument
E_POINTER	Invalid pointer

In VB and C#, the return value is the value of the property itself. An error or exception handler should always be used appropriately.

3.1 Misc Properties

3.1.1 EnableRightClickMenu

Enables or disables the right click menu. The right click menu contains basic functionality such as starting and stopping the camera, as well as showing the camera control dialog. It is set to 0 (off) by default.

3.2 General Camera Properties

3.2.1 Camera

Get or set the index of the currently selected camera. This **does not** start the camera. -1 is returned if there is no camera currently selected.

3.2.2 Start

Start grabbing images. This is equivalent to starting the camera in LockLatest mode. This **does not** draw the image to screen. Setting this to 0 will stop the camera.

3.2.3 Display

Draw all incoming images onto control.

3.2.4 AutoResize

Automatically resize the image to fit the control. If the value is `FALSE`, then scroll bars will appear to enable movement around the image.

3.2.5 VideoMode

Get or set the current video mode.

Setting the video mode is only possible if the Start property is 0.

3.2.6 FrameRate

Get or set the current frame rate.

Setting the frame rate is only possible if the Start property is 0.

3.2.7 AsyncBusSpeed

Get or set the current asynchronous bus speed (S100, S200, S400, S800).

Setting the bus speed is only possible if the Start property is 0.

3.2.8 IsochBusSpeed

Get or set the current isochronous bus speed (S100, S200, S400, S800).

Setting the bus speed is only possible if the Start property is 0.

3.2.9 GrabTimeout

Get or set the grab timeout.

0 is a non-blocking grab call.

-1 is equivalent to FLYCAPTURE_INFINITE.

4 Methods

4.1 General Methods

4.1.1 DrawSingleImage

Draw the latest image to the control. This is only used when the Display property is set to 0.

4.1.2 GetCameraInfo

Get camera info.

4.1.3 CheckVideoMode

Check if the specified video mode and frame rate combination is supported.

4.1.4 GetFormat7PacketInfo

Get the Format 7 packet info for a particular mode, image size and pixel format.

4.1.5 GetPacketInfo

Get the packet info for a particular DCAM mode

4.2 GUI Methods

4.2.1 ToggleSettingsWindowState

Toggle the display of the camera control dialog.

4.2.2 GetSettingsWindowState

Get the status of the camera control dialog.

4.2.3 ShowCameraSelectionModal

Show the camera selection dialog. If the camera associated with this control is grabbing images, it will be stopped. Selecting a camera from the dialog will set the active camera to the selected one.

4.3 1394 Bus Methods

4.3.1 BusCameraCount

Get the number of cameras on the bus.

4.3.2 BusEnumerateCameras

Get an array containing a list of cameras on the bus. The contents of the array are strings containing the camera name as well as the serial number in parentheses.

4.4 Format 7 Methods

4.4.1 QueryFormat7Image

Get the possible settings for a particular Format 7 mode.

4.4.2 GetFormat7Settings

Get the current Format 7 settings.

4.4.3 SetFormat7Settings

Set the current Format 7 settings. If the image offsets are the only parameter being changed, then this can be done when the camera is started. Otherwise, the camera must be stopped in order for the call to succeed.

4.5 Camera Property Methods

These methods enable the user to get the camera properties.

4.5.1 GetCameraAbsPropertyEx

Get detailed absolute property.

4.5.2 SetCameraAbsPropertyEx

Set detailed absolute property.

4.5.3 GetCameraAbsPropertyRange

Get absolute property range.

4.5.4 GetCameraProperty

Get detailed property.

4.5.5 SetCameraProperty

Set detailed property.

4.5.6 GetCameraPropertyRange

Get detailed property range.

4.6 Trigger / Strobe Methods

4.6.1 GetTrigger

Get trigger status.

4.6.2 SetTrigger

Set trigger status.

4.6.3 SetTriggerBroadcast

Set and broadcast trigger status.

4.6.4 GetStrobe

Get strobe status.

4.6.5 SetStrobe

Set strobe status.

4.6.6 SetStrobeBroadcast

Set and broadcast strobe broadcast.

4.7 Memory Channel Methods

4.7.1 GetNumMemoryChannels

Get the number of memory channels available.

4.7.2 GetCurrentMemoryChannel

Get the number of the memory channel currently being used.

4.7.3 SaveToMemoryChannel

Save current settings to the specified memory channel.

4.7.4 RestoreFromMemoryChannel

Restore settings from the specified memory channel.

4.8 Register Methods

4.8.1 GetCameraRegister

Get the register value at the specified offset.

4.8.2 SetCameraRegister

Set the register value at the specified offset.

4.8.3 ReadRegisterBlock

Get the register block at the specified offset.

4.8.4 WriteRegisterBlock

Set the register block at the specified offset.

5 Events

5.1 General Events

5.1.1 CameraArrival

A new camera has arrived on the bus. Depending on the bus topology, the index used to refer to cameras may have changed. It is highly recommended that `BusEnumerateCameras()` be called to refresh the camera list.

5.1.2 CameraRemoval

A camera has been removed from the bus. Depending on the bus topology, the index used to refer to cameras may have changed. It is highly recommended that `BusEnumerateCameras()` be called to refresh the camera list.

5.1.3 BusReset

A bus reset has occurred.

5.1.4 Image

A new image has been received from the camera. `GetImageInformation()` can be called when this message is received in order to obtain more information about the image.

6 Technical Support Resources

Point Grey Research Inc. endeavors to provide the highest level of technical support possible to our customers. Most support resources can be accessed through the Product Support section of our website: www.ptgrey.com/support.

Creating a Customer Login Account

The first step in accessing our technical support resources is to obtain a Customer Login Account. This requires a valid name, e-mail address, and camera serial number. To apply for a Customer Login Account go to www.ptgrey.com/support/downloads/.

Knowledge Base

Our on-line knowledge base at www.ptgrey.com/support/kb/ contains answers to some of the most common support questions. It is constantly updated, expanded, and refined to ensure that our customers have access to the latest information.

Product Downloads

Customers with a Customer Login Account can access the latest software and firmware for their cameras from our downloads site at www.ptgrey.com/support/downloads. We encourage our customers to keep their software and firmware up-to-date by downloading and installing the latest versions.

Contacting Technical Support

Before contacting Technical Support, have you:

1. *Read the product documentation and user manual?*
2. *Searched the Knowledge Base?*
3. *Downloaded and installed the latest version of software and/or firmware?*

If you have done all the above and still can't find an answer to your question, contact our Technical Support team at www.ptgrey.com/support/contact/.

7 Contacting Point Grey Research Inc.

For any questions, concerns or comments please contact us via the following methods:

Email: For all general questions about Point Grey Research please contact us at info@ptgrey.com.

For technical support (existing customers only) contact us at <http://www.ptgrey.com/support/contact/>.

Knowledge Base: Find answers to commonly asked questions in our knowledge base at <http://www.ptgrey.com/support/kb/>.

Downloads: Users can download the latest manuals and software from <http://www.ptgrey.com/support/downloads/>

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