Connecting Point Grey Camera to Computer using GigE

If using GigE with the USB adapter. make sure you install the driver for the adapter. EITHER the adapter will come with a CD or internet link where you can install the driver OR when you connect the adapter, the computer will automatically find the driver and load it. After the driver is installed, continue with the following directions.

1. Make sure you have Vision Acquisition Software on the computer. Check this by searching NI License Manager and checking that Vision Acquisition is 'Activated' (Figure 1). If it doesn't show up in the tree to the left, it needs to be installed. If the software is not listed as 'Activated', select 'Activate' in the upper left corner and follow the directions. If it prompts you for a NI User account, Cameron or Monroe can supply this to you.

Once you have Vision Acquisition installed, close the License Manager.

🐺 NI License Manager			_		×		
Options Help							
🞇 Activate 😼 Display Computer Information							
Local Licenses Local Licenses Development System Development System Modules Toolkits Vision Acquisition Software February 2016	Field Associated Software	Value Vision Acquisition Software					
	Software Version Product Name	February 2016 Vision Acquisition Software					
	Serial Number	M21X92415					
	License File Expiration	Never					
	Status	Value Vision Acquisition Software February 2016 Vision Acquisition Software M21X92415 Never Activated for this computer. NI Vision Acquisition Software includes the following features: NI-IMAQ is driver software for NI 17/x smart cameras, as well as parallel digital an NI-IMAQdx is driver software that supports NI 177x smart cameras, as well as IEEE NI-IMAQ I/O is driver software for controlling reconfigurable input/output on ce					
Sision Acquisition Software February 2016	Description	NI Vision Acquisition Software includes the following features:					
		NI-IMAQ is driver software for NI 17xx smart cameras, as well as parall	vftware for NI 17xx smart cameras, as well as parallel digital and Camera				
		NI-IMAQdx is driver software that supports NI 177x smart cameras, as	well as IE	EEE 1394	GigE V		
		NI-IMAQ I/O is driver software for controlling reconfigurable input/or	tput on	certain i	mage a		

Figure 1. NI License Manager Screenshot

2. Install the following drivers from Point Grey's website. You'll need to create an account. <u>https://www.ptgrey.com/downloads/getsecuredownloaditem</u> /10700

Printed on the side of the camera is the name. Using the pull down menus, find the downloads that correspond to your camera and operating system

- a. Download two items (Figure 2):
 - i. Under 'Software' download: FlyCap2 SDK Version (get the newest version which will not match the version on the screen shot below)
 - ii. Under 'Firmware' download: the camera firmware (the name will change depending on the camera you have. Flea3 is used in this example)

b. Run the FlyCap executable and follow the instructions. (you don't need to supply user info, just skip it) VERY IMPORTANT: SELECT THE INTERFACE DRIVER YOU NEED FOR YOUR CAMERA. IT SHOULD BE GIGE. IF YOU DON'T HAVE THE RIGHT DRIVER, THE CAMERA WILL NOT WORK.

c. Unzip the camera drivers to a known location on the computer.

Software (8)

Latest FlyCapture2 Viewer

The FlyCapture Viewer package can be used to view images from our single lens Firewire, GigE, USB2, and USB3 cameras, excluding 'Blackfly S' models (see Spinnaker SDK for BFS software). This Viewer package is a minimal installer which will only install our FlyCap2 demo application as well as the minimum necessary binaries and drivers. For access to the full SDK, documentation, older dlls, and example source code, please download the full SDK.

- [↓] FlyCapture 2.10 Release Notes 07/13/2016 43.44KB
- 🛍 [↓] FlyCapture 2.10.3.266 Viewer Windows (64-bit) 11/22/2016 30.1424MB
- [↓] FlyCapture 2.10.3.266 Viewer Windows (32-bit) 11/21/2016 29.1424MB

Latest FlyCapture2 Full SDK

The FlyCapture Full SDK package can be used to work with FLIR Firewire, GigE, USB2, and USB3 cameras, excluding 'Blackfly S' models (see Spinnaker SDK for BFS software). The complete SDK contains all documentation, example source code, precompiled examples, and libraries required to develop your application using our FlyCapture2 SDK. For a minimal installation which only contains our FlyCap2 camera viewer and minimal drivers and runtimes/libraries, please download the FlyCapture2 Viewer download.

□ [↓] FlyCapture 2.10 - Release Notes — 07/13/2016 - 43.44KB
 □ [↓] FlyCapture 2.10.3.266 SDK Windows (32 bit) = 11/22/2016 = 340.1416MB
 □ [↓] FlyCapture 2.10.3.266 SDK - Windows (64-bit) — 11/22/2016 = 351.1416MB
 □ [↓] FlyCapture 2.10.3.266 Windows GTK Runtimes (32 bit) = 07/01/2016 = 63.896MB
 □ [↓] FlyCapture 2.10.3.266 - Windows GTK Runtimes (64-bit) — 07/01/2016 = 63.896MB

Firmware (2)

Flea3 GigE Firmware

This is the latest version of firmware for the Flea3 GE camera. For Firewire and USB3 variants, please refer to their corresponding firmware downloads.

Figure 2. Point Grey downloads page populated after selecting camera and operating system.

d. Once FlyCapture is installed, GigE Configurator will automatically launch.

e. Under Network Adapters on the left panel, select Ethernet (Figure 3). MTU value should read 9000 but if it doesn't, select Open Network Connections, go to the Advanced tab, highlight Jumbo Packets, and select the value (to the right) to be 9014 bytes and select OK at the bottom of the window.

File Help			
Naturok Adapters	Adapter Information	Ethernet)	
Ethernet	Manufacturer:	Intel	
Port Grey GgE Vision Devices Pead PL3-GE-1352M (13072532) Frewall and Filter Driver Settings Operating	Description:	Intel(FI) Ethemet Connection (2) 1215-LM	
	Operational Status:	Up	
	Speed:	1.0 Gbps (Ggabit)	
MTU: MAC / DHCP IP Add Subne	MTU:	0000	Open Network Connections
	MAC Address	48 4D 7E F1 86 00	
	746°8 9444	Outlind	
	IP Address: Suburt Mask:	132 236 94 19	Intel(R) Ethernet Connection (2) 1219-LM Properties
	Jan a ran.	200 . 200 . 200	Teaming VLANa Driver Details Events
			General Link Speed Advanced Power Management
			Setings Value: Audio Sciliat Legacy Setiot Conceptibily Mode Packet Proty & VLAN Pedromance Options
			C > Use Default
			Enables Juribo Packet capability for TCHP packets. In situations where large packets make up the majority of traffic and additional idency can be trievrated, Junito Packets can reduce CPU utilization and improve wire efficiency.
Refresh			Junto Packets are larger than standard Ethernet frames, which are approximately 1.5k in size.
dministrator Mode: Yes Windows Firewalk	Enabled		NOTE: Changing this setting may cause a momentary
			the second second de

Figure 3. GigE Configurator, setting network packet size

f. If camera says (BAD) next to the name, select the camera in the left panel, and select 'Automatically Force IP' (Figure 4). The program will refresh, populate with camera information and not say (BAD) anymore. Close GigE Configurator.

Figure 4. Camera properties before and after IP address is forced and program refreshes.

g. Open UpdatorGUI3. The camera should appear in the top box (Figure 5). Once you have unzipped the folder containing the camera firmware, select Open in the middle of the window. Navigate to the unzipped firmware folder and select the *.ez2 file. Select Open and then Update. The progress bars should go wild as well as the indicator light on the camera. Select Quit when the update finishes.

Point Gray Research Formane Updator 3 Camera List (1 camera detected) Role Name Spin Color Point PLACE 1220# Cold Bios and VM Point PLACE 1220# Cold	UpdatorGUI Ceenigt Part Ger Research 2011 Send Number Research 2011 Send Number Research 2010 Proceeds to 1920/2010 10/2010 Proceeds 20	- 3	× = = = × Pa	Califor (Body) = [1 - A [*]
Progress Loci Progress Gibid Progress Gibid Progress Generit Question: N/A Operation Prevare Lpdas Re: Chathog2 Privat Chathog	Force Pilo Camera	Fateuri Open Uodate		www.united to a transmission of the second s
Leg Descing dreaments (181 Games Dever (FGHAschame) - Nationalade (181 THE Comer (Developed) - State and the Comercised of the Dever (FGHAschame) - State and the Comercised Comercised (Comercised - State and the Comercised of the other state of the Comercised - State Developed (Comercised - State of the Comercised - State of	Booking Document D	Cameras > RLP-06-1283-00-002 (2) > RLP-06-1 Cameras > RLP-06-1283-00-002 (2) > RLP-06-1 Parts modified ametes,files 3/25/2017 1132 AM Sea2 3/25/2017 1132 AM	243-86-962	Seech (1,3-66-1,23,3-60-102) P (3 - 1) (0) (3
	Fie name		v	Formulare files (*.452,*.4im) v Open Cancel

Figure 5. UpdatorGUI3 to update camera firmware.

3. Open up NI-MAX. In the left panel (Figure 6), navigate to My System->Devices and Interface->Point Grey Research *camera name*. If the camera doesn't show up, something went wrong. Test the camera by clicking Snap or Grab to get images from the camera. If the camera is working in NI-MAX, LabVIEW will be able to find and use the camera in software.

Roint Grey Research Flea3 FL3-GE-1352M "Flea3 FL3-GE-1352M" - Measurement 8	Automation Exp	lorer			-	
File Edit View Tools Help ♥ ■ My System ♥ ■ Devices and Interfaces ● ASRL1:INSTR "COM1" ♥ ■ Network Devices ◎ Point Drev Research Flea3 FL3-GE-13S2M "Flea3 FL3-GE-13S2M" > ⑤ Software > ⑧ Remote Systems	K South 2	Refresh IÞ Snap	► Gub [Histogram	Save Image	Mide Help
	Video Mode Pixel Format Dutput Image Type Region of let Left	1284:d62 Mone 8 Mone 8 Auto V terest)(4 Widt)(2 Height	Speed ()[1280 # ()[360	Timeou Packet	Size Rafer to th topics for i about usin Viewer usin Pannina Palistica	e folgening nformation g the image AXX:

Figure 6. NI-MAX will confirm that LabVIEW can use the camera.