

iRecHS2

Installation manual

08/07/2020

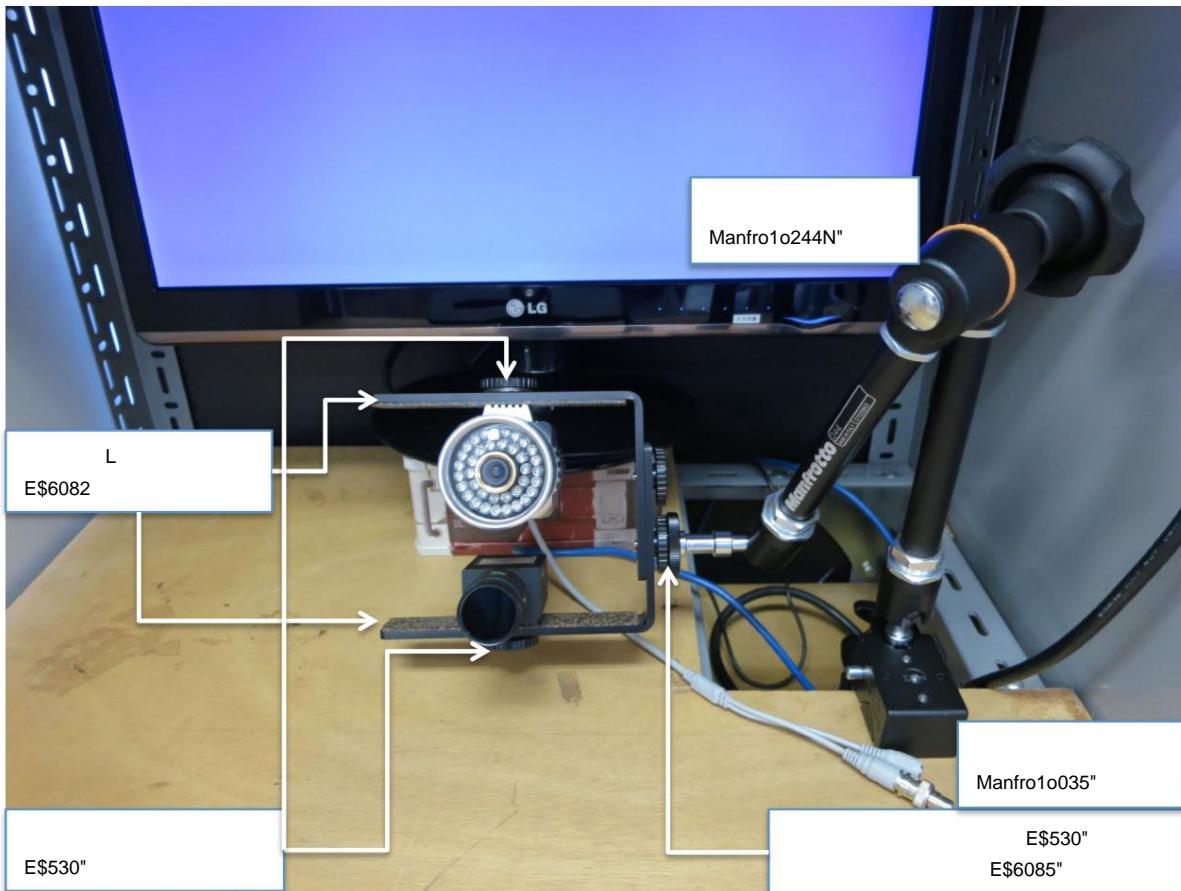
National Research Development Corporation
of Industrial Science and Technology Research
Group

yyy

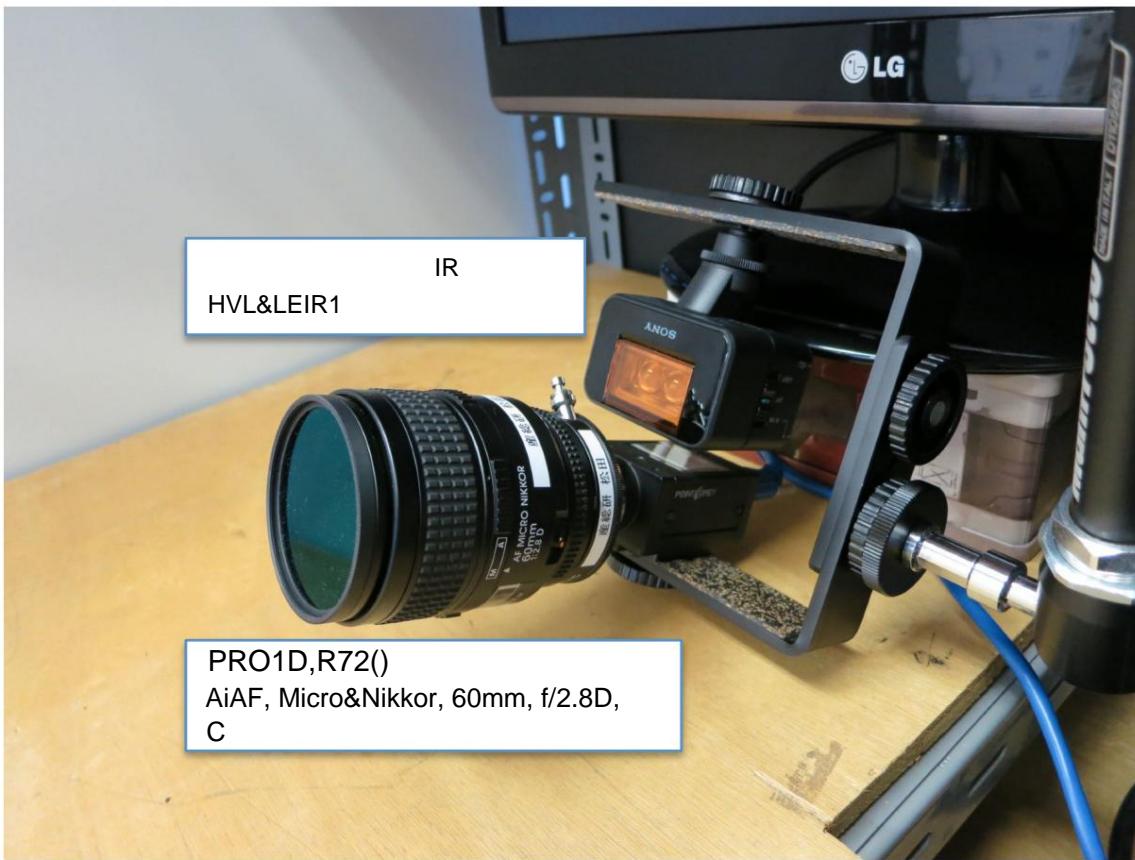
1. Hardware	3
ÿÿSoftware installation procedure	9
ÿÿ Install DA converter software	10
3.1 Software download	10
3.2 Expanding the downloaded file	10
3.3 Run INF\WDM\Aio\Setup.exe	11
3.4 Run APIPAC\AioWdm\Disk1\setup.exe	12
ÿÿInstallation of DA converter board	13
ÿÿDA converter operation confirmation	13
ÿÿTroubleshooting	16
ÿÿPoint Gray Research FlyCapture software installation	21
ÿÿCheck the operation of the camera in the attached application	29
ÿÿFirewire camera firmware update	31
ÿÿÿInstallation of iRecHS2.exe.	35

1. Hardware

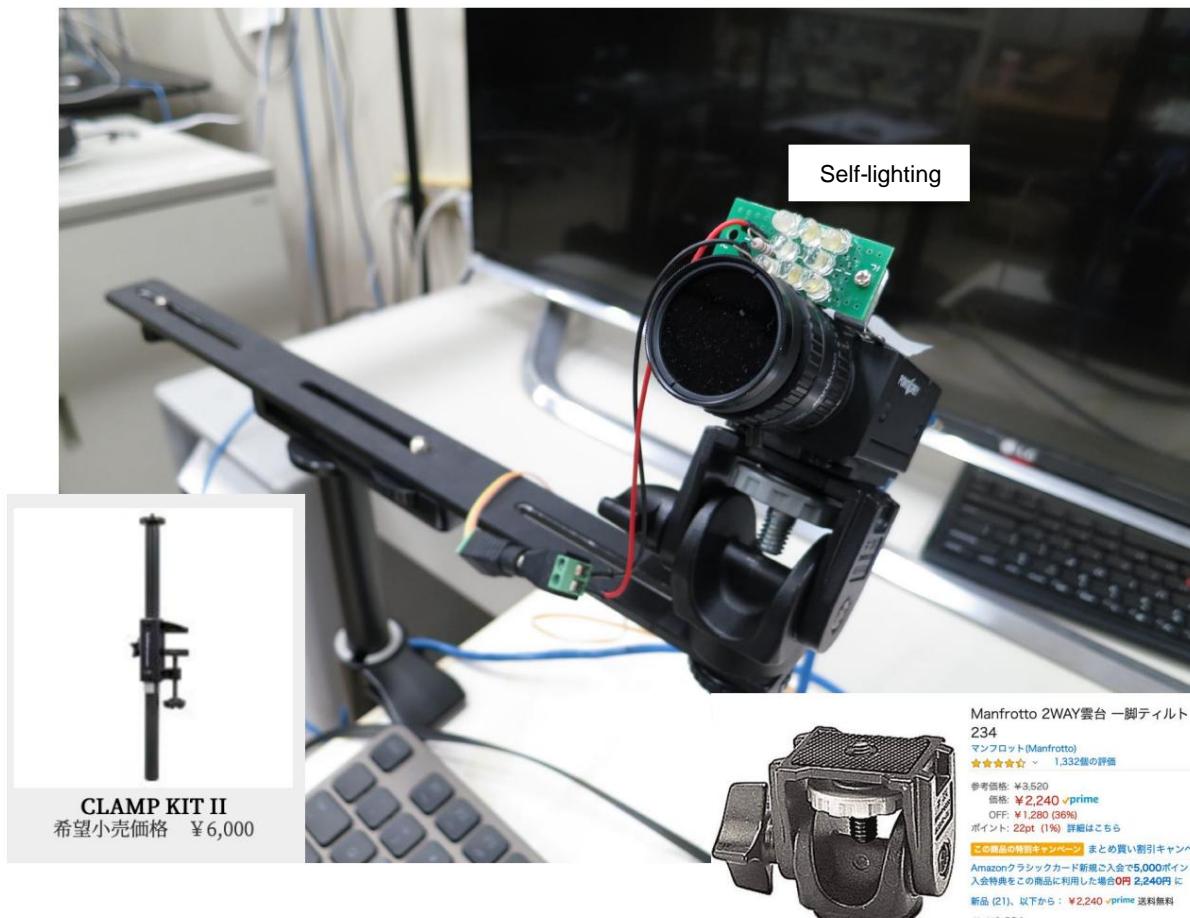
Camera installation example



Example combinations of portable lighting



Examples of ジュラルミン



The camera recommends USB3.0 connection of Grasshopper3 (GS3-U3-41C6NIR-C).

Grasshopper 3 uses a 1-inch CMOS lens, so it can be used with a compatible lens. The video IR light battery can adjust the amount of light, and rechargeable batteries can be used. 1004) also can be used. Part of it needs to be covered with aluminum foil.

yyyyyyLEDyyy[http://](http://akizukidensi.com/catalog/g/gK-00094/)

[http://](http://akizukidensi.com/catalog/g/gM-04458/)

The equipment for fixing the camera should be installed in accordance with the above-mentioned usage pattern.

	Product name	society	Option	URL
Camera GS3-U3-41C6NIR-C(y) FLIR			ACC-01-2300 USB3.0 port	https://www.flir.jp/products/grasshopper3-usb3?model=GS3-U3-41C6NIR-C
Chameleon3 USB3 CM3-U3-13Y3M-CS	FLIR		ACC-01-2300 USB3.0 port y yyyyyy yyyyyy (ACC-01-000 3) 2/3 inch	https://www.flir.jp/products/chameleon3-usb3/?model=CM3-U3-13Y3M-CS
Lens M7528-MP 75mm	CBC			https://uniel-denshi.co.jp/CCTV-LENSES/CBC/CBC_MEGAPIXEL/M7528-MP.html
M3514-MP 35mm	CBC		Use 2/3 inch	https://uniel-denshi.co.jp/CCTV-LENSES/CBC/CBC_MEGAPIXEL/M3514-MP.html
M1614MP2 16mm	CBC		Use 2/3 inch	https://uniel-denshi.co.jp/CCTV-LENSES/CBC/CBC_MEGAPIXEL/M1614-MP.html
yyyyyy	R-72 M30.5 X 0.5	Edmund optics	for M7528-MP M3514-MP M1614MP2	https://www.edmundoptics.jp/p/m305-x-05-mounted-uvvis-cut-off-filter-r-72/20315/
yyyyy	Battery video IR light HVL-LEIR1	SONY yyyy	y	https://www.amazon.co.jp/dp/B00B06EO6O/
yyyy	CCD camera AVC-1004		AC power supply	http://www.akibasecurity.com/avc-1004.html
Lyyyy yyy	E-6082	yyy	yy	http://www.amazon.co.jp/dp/B0017IBEWML
Screw driver E-530		yyy	yy	http://www.amazon.co.jp/dp/B005LEWXTQ
screw nut	E-6085	yyy	1	http://www.amazon.co.jp/dp/B005LEWZ62/

	Product name	society	Option	URL
Arm 244N		Manfrotto		https://www.manfrotto.com/jp-ja/photo-variable-friction/arm-italian/craftsmanship-244n/
Lamp035		Manfrotto		https://www.manfrotto.com/jp-ja/super-photo-clamp-without-stud/aluminum-035/
Top Tilt Head	234	Manfrotto		https://www.manfrotto.com/jp-ja/monopod-tilt head-234/
Clamp II		Velbon		https://www.velbon.com/jp/catalog/accessory/clampkitii.html
Plate II		Velbon		https://www.velbon.com/jp/catalog/accessory/supremagplateii.html
TILT HEAD	THD-23	Velbon		https://www.velbon.com/jp/catalog/panhead/thd23.html
2WAY Clamp		Kenko		https://www.kenkotokina.co.jp/imaging/equipment/digital/close/etc/4961607809198.html

Change it according to the distance. 75mm/35mm/16mm
 Reference <http://www.uniel-denshi.co.jp/CCTV-LENSES/CBC/CBC-ALL.html>

Windows 10

64bit version of the operating system (development environment is Windows 10pro 64bit). If you use a DA, it has a PCI-Express slot that can be installed. If you use USB3.0, it has a USB3.0 interface. The memory is 16GB. The CPU is as fast as possible.

DA converter

If you want to output the line data with DA conversion voltage, the following DA converter is required. This is the terminal for connecting the measuring device, cable, etc. Please refer to the above page. AO-1604L LPE is ült has analog output 4chüdigital output 4chüdigital input 4ch. For output,AO0...x coordinate/x direction angleüAO1..y coordinate/y direction angleüAO2...pupil hole radius ü AO3.

üyyyyyyhorizontalüverticalüyyyyyy required. 4ch

Contec AO-1604L-LPE <https://www.contec.com/jp/products-services/daq-control/pc-helper/pcie-card/ao-1604l-lpe/price/>

Contec AO-1608L-LPE <https://www.contec.com/jp/products-services/daq-control/pc-helper/pcie-card/ao-1608l-lpe/feature/>

Cable

<https://www.contec.com/jp/products-services/daq-control/daq-accessories/pcb50ps-p/price/>

üyy

<https://www.contec.com/jp/products-services/daq-control/daq-accessories/epd-50a/price/>

Digital output is used with a 14-point window or a 4-point window. It can be done. Refer to the item of software option. The relationship between interface connector and output is refer to manual üyyüü. http://www2.contec.co.jp/dl_data/LYGF32/LYGF32_090902.pdf

Software installation procedure

- Installation of DA converter software.
- Installation of DA converter software.
- Installation of PointGrey camera software.

Do it in order.

Since it is necessary to download the software from the Internet, install it while the computer is connected to the network.

After the DA converter software installation is finished, connect the DA converter to the computer. If you don't use the DA converter, install the camera software.

Install DA converter software

3.1 Software for download

Windows version high function analog output

driver API-AIO(WDM) development environment(Windows)

[Ver. 6.10 https://www.contec.com/jp/download/download-list/?itemid=321ff895-4061-40a2-a32e-960227cac6e7#software](https://www.contec.com/jp/download/download-list/?itemid=321ff895-4061-40a2-a32e-960227cac6e7#software)

The following is a screenshot of the old version, but the latest version is readable.

<http://www.contec.co.jp/product/device/apipac/index.html#AIOWDM>

API-AIO(WDM) アナログ入出力ドライバ 高機能WDM版								
バージョン	4.50 [2014.03.07] 概要説明・バージョンアップ履歴 (README)							
※ CD-ROM 版 API-PAC(W32) Ver. Mar. 2011 の収録バージョンは 4.00 です。								
対応OS	Windows 8 32bit	Windows 7 32bit	Windows 2008 32bit	Windows Vista 32bit	Windows 2003 32bit	Windows XP 32bit	Windows 2000	Windows Me
	Windows 8 64bit	Windows 7 64bit	Windows 2008 64bit	Windows Vista 64bit	Windows 2003 64bit	Windows XP 64bit	Windows 98	
対応デバイス製品	対応デバイス製品一覧							
ダウンロード	開発環境(フルセット)			実行環境(ランタイムのみ)			オンラインヘルプのみ	
バージョン	4.53 [2014.04.21] 概要説明・バージョンアップ履歴 (README)							
Ver.4.53 は実行環境のみの先行リリースです。								
ダウンロード	実行環境(ランタイムのみ)							
<p><注意事項></p> <p>以下のケースでは、バスマスター用バッファが最大1MByte以下に制限されます。</p> <ul style="list-style-type: none"> ■4GByte以上のメモリ搭載時 <ul style="list-style-type: none"> ・Windows 64bit版 および Windows 32bit版 で、PAE(物理アドレス拡張) 有効の場合 ■4GByte未満のメモリ搭載時 <ul style="list-style-type: none"> ・ボードを実装するPC(マザーボード)のBIOS設定で、[Memory Reclaiming] 機能が有効の場合 ※PC(マザーボード)によっては、BIOS設定で、[Memory Reclaiming] 機能の有効・無効が変更できない場合もありますので、事前にご確認頂きますようお願いいたします。 								
<p>API-AIO(WDM) は、アナログ入出力デバイス用の新しいドライバソフトです。 従来の API-AIO(98/PC) に対して「より使いやすく便利に」「より高機能に」を目指して開発されました。</p> <p>API-AIO(98/PC)との使い分け、API-AIO(WDM)の仕様や特長などのご紹介はこちらへ</p>								



PAGE TOPへ

3.2 Open the downloaded file Create

a tmp folder on the desktop and download it

Move LZF826AIOWDM_450F.exe. After that, run this file and expand it.



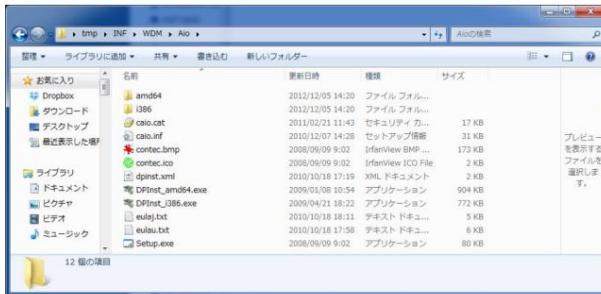
The state after expansion.

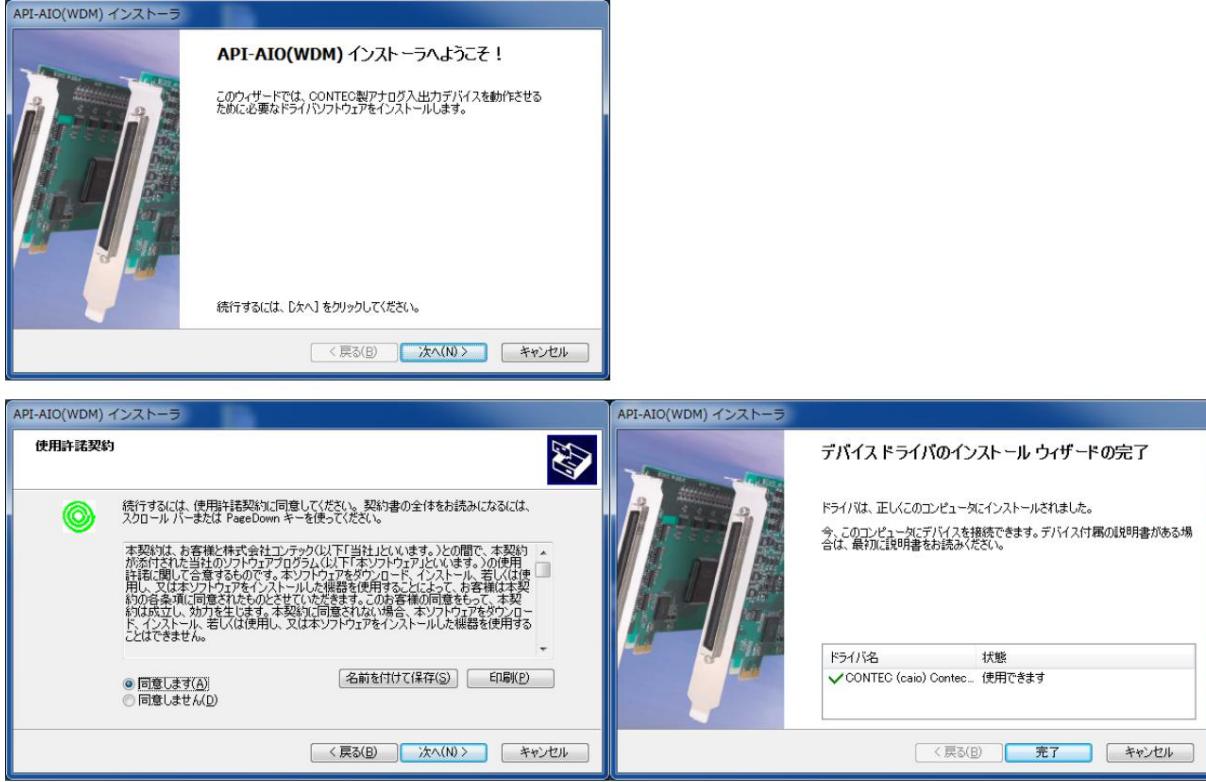


If the following message is displayed during deployment, click on ``This program is installed correctly.''

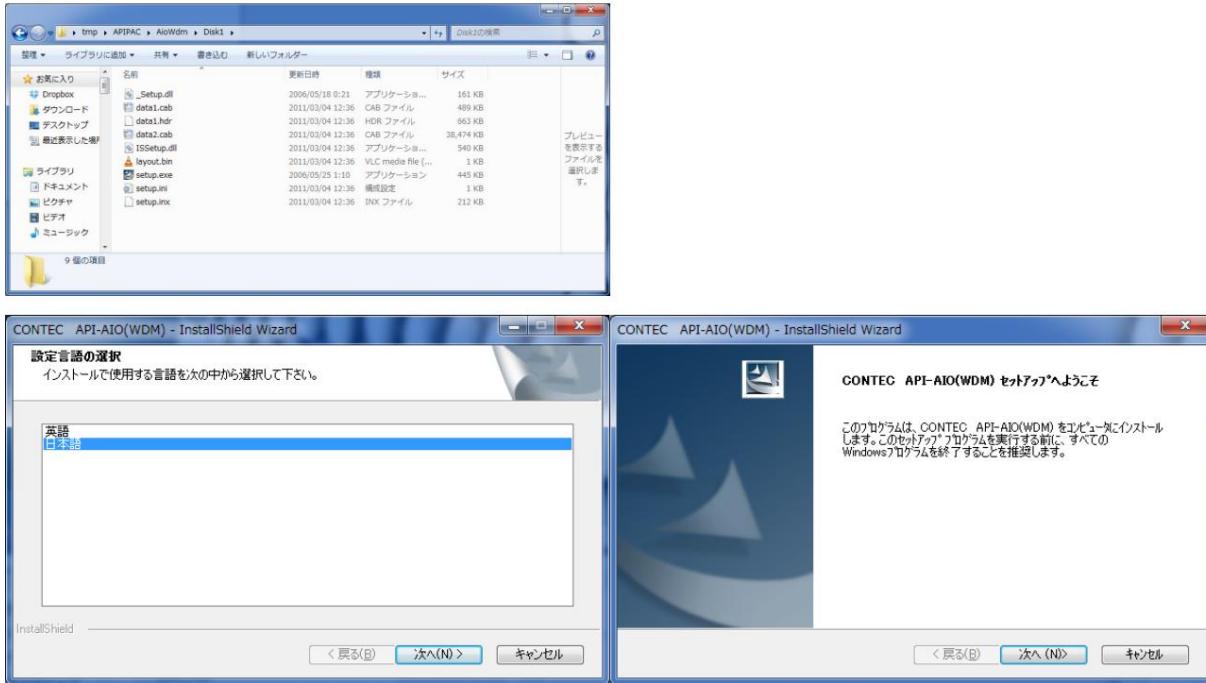


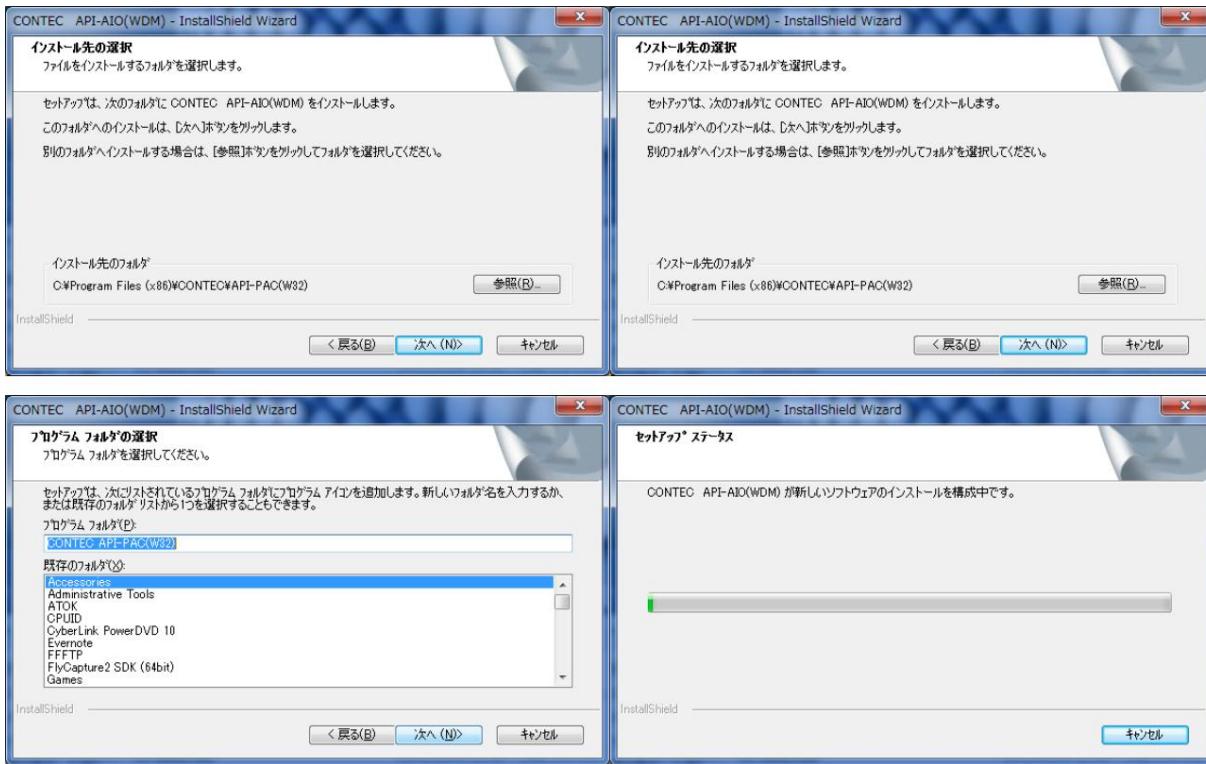
3.3 Run INF\WDM\Aio\Setup.exe





3.4 Run APIPAC\AioWdm\Disk1\setup.exe





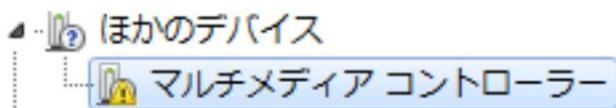
Turn off the power of the computer after installing the DA converter board.

DA Konverter Operation

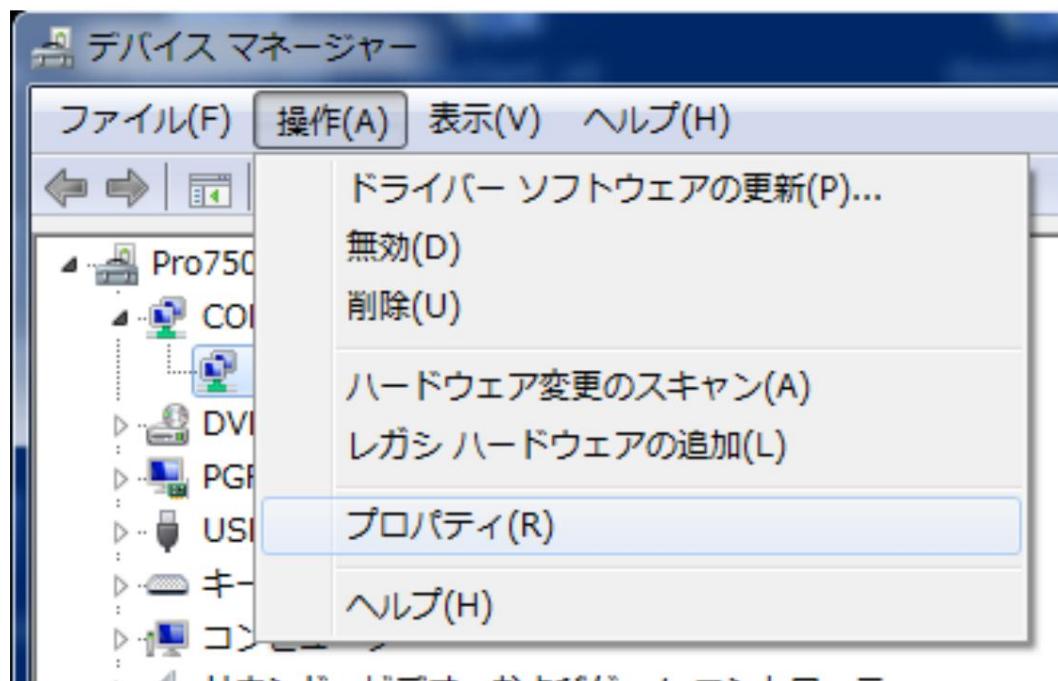
Check Device Manager (Start Menu->Computer >Click->Property-> or Control Panel(large icon)->System-> Confirm that it has been added.



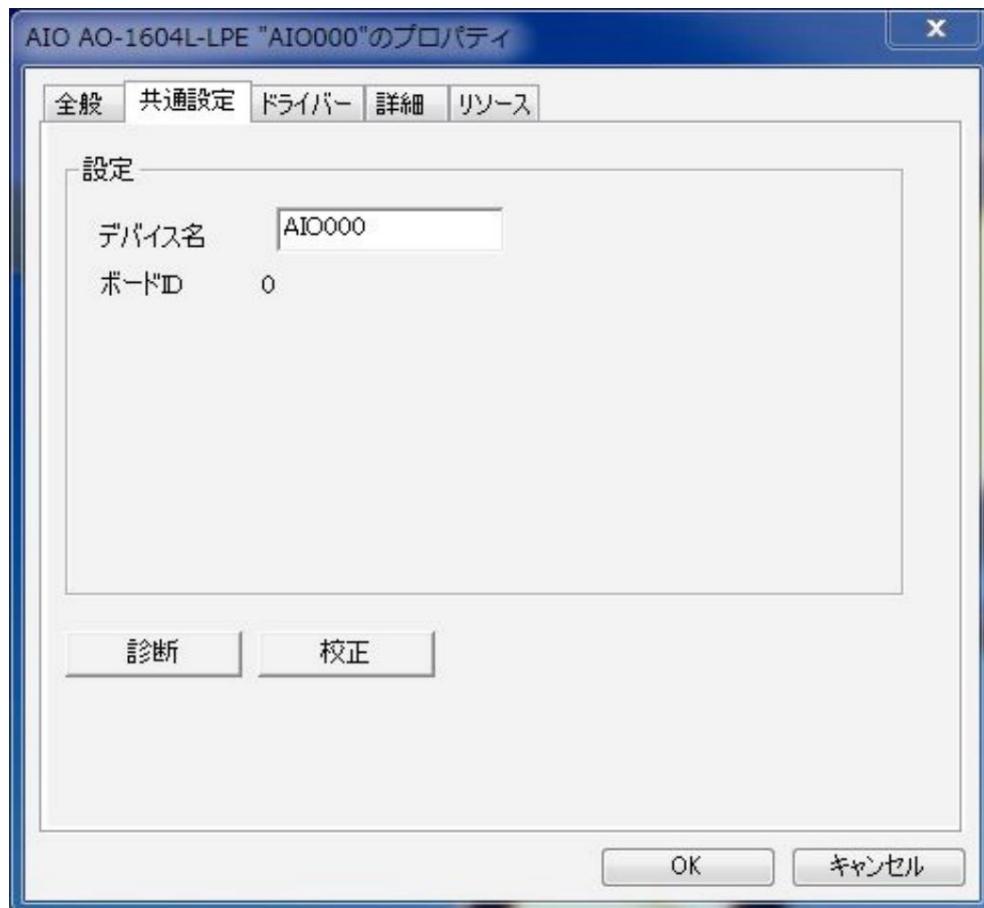
If the device is not checked as described above, please refer to troubleshooting.



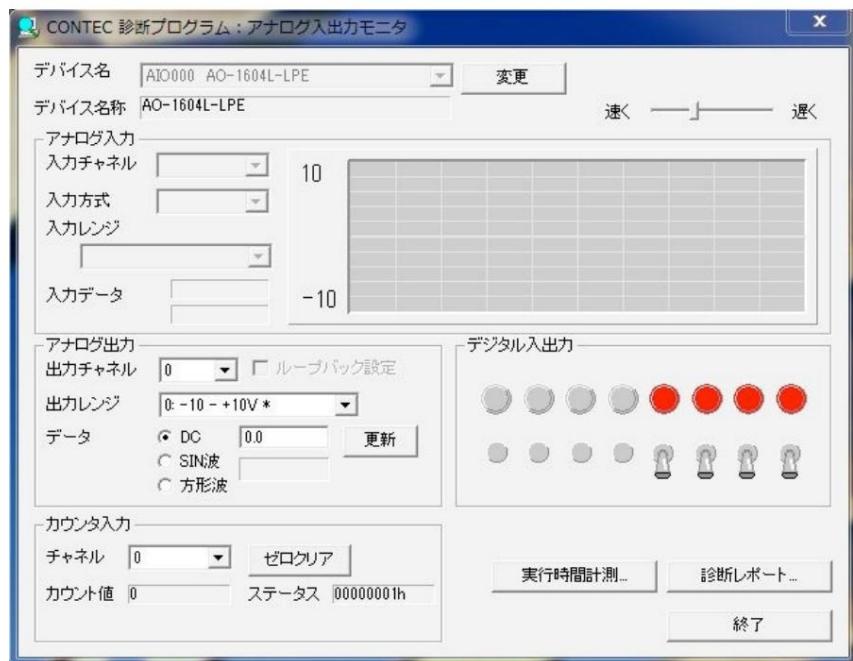
Click on the above and select the property, or select the property after selecting the menu option.



Select the general setting tab and press the diagnosis button.

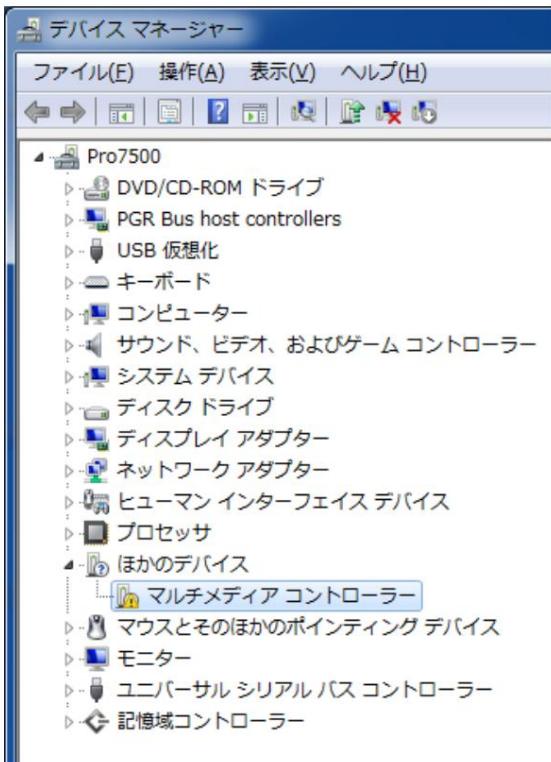


Connect an oscilloscope to the output of the DAC, and confirm that the output is output by operating the following.

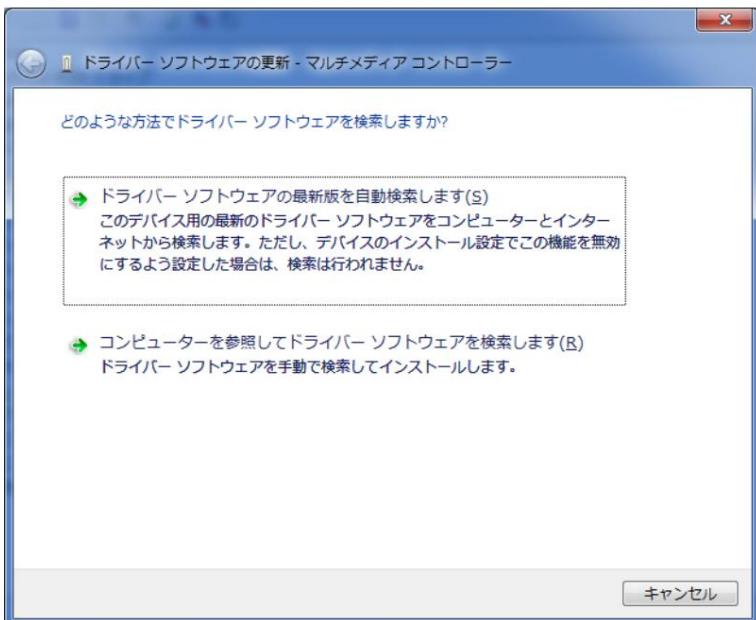


ÿÿTroubleshooting

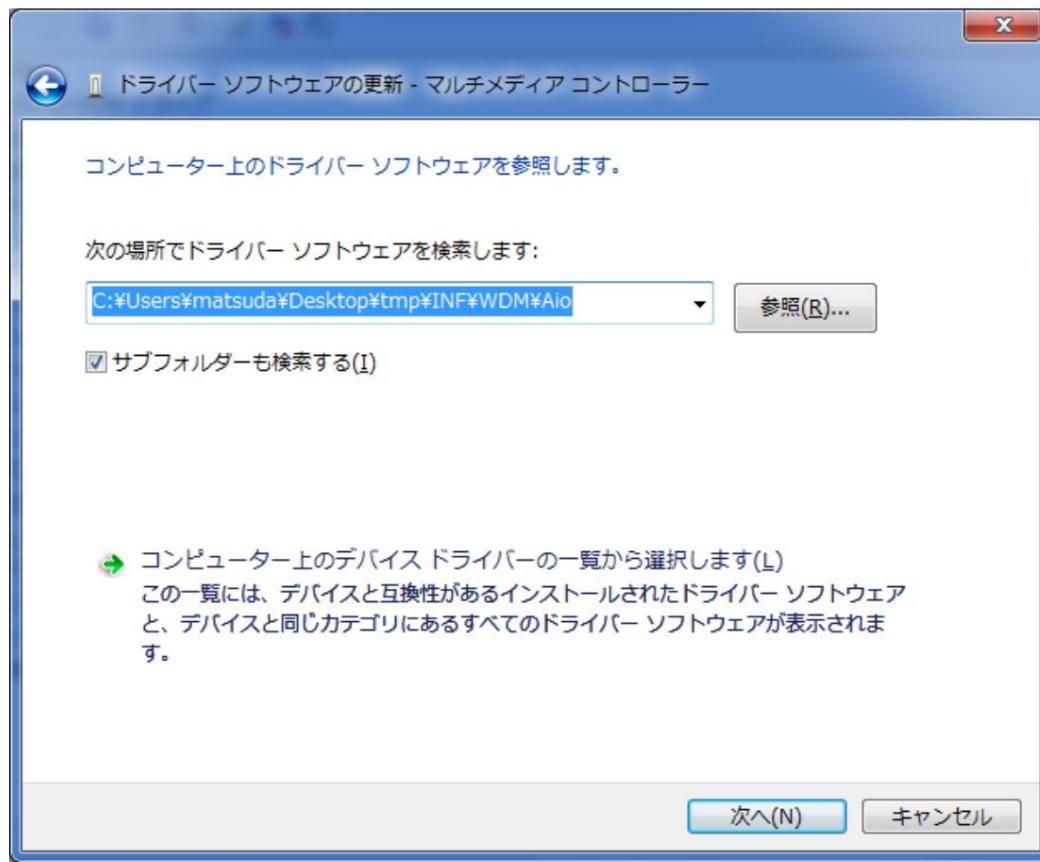
If the DAC board is not recognized normally. Before installing the software, if the board is damaged, if the appropriate device driver is not selected, the following will happen.



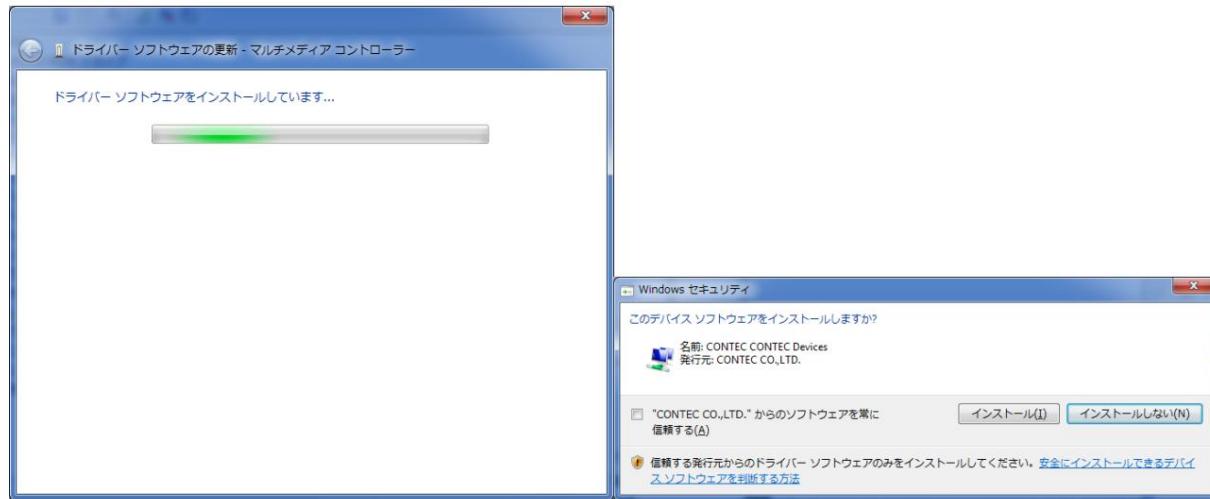
ÿÿClick on ÿMultimedia ControllerÿÿMultimedia Controllerÿabove and select ÿDriver Software Update (P)...ÿÿÿÿÿÿ



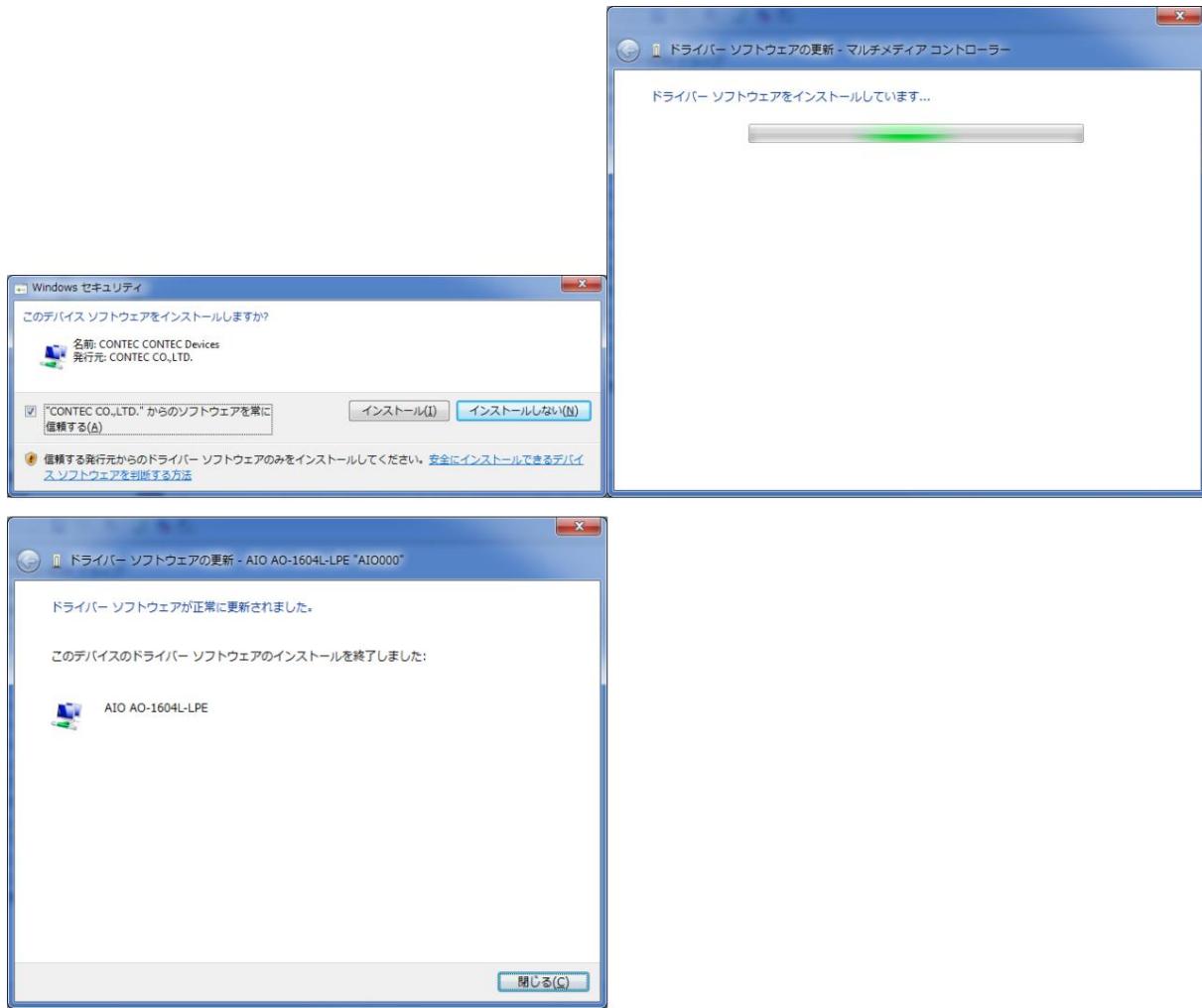
Search for the driver software in the following place: Refer to (R)...
yyyyyN)yyyyy



Proceed as follows.



CONTEC CO., LTD.



Check the device manager and confirm that it is properly recognized as follows.

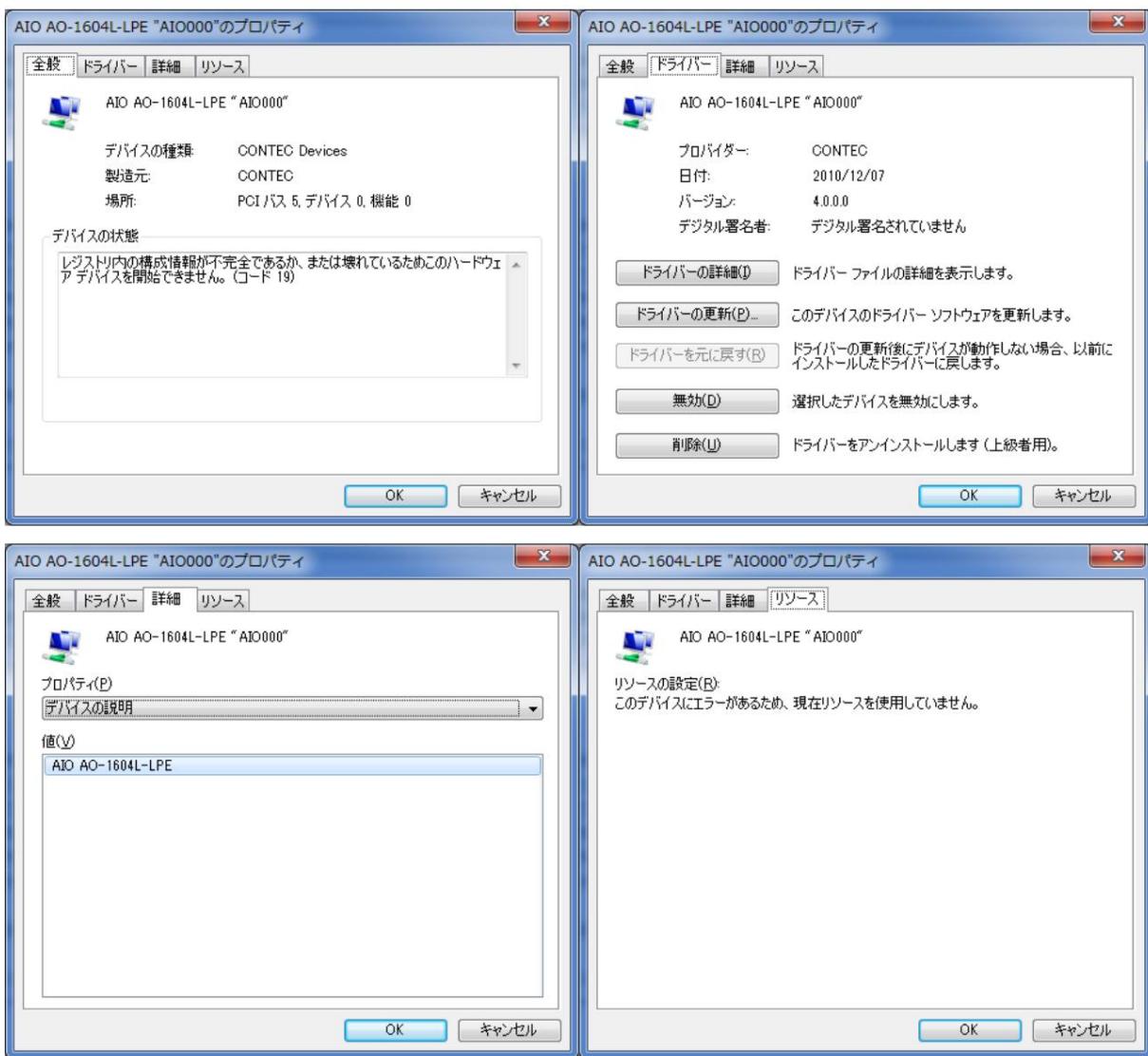


Trouble shooting

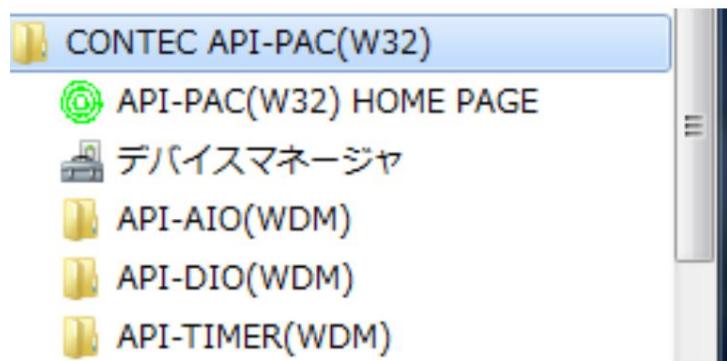
Device Manager AIO AO-1604L-LPE "AIO000" is not available



When you look at the properties of the DAC from the device manager, it looks like the following.



When starting the device manager, the following error occurs when the device manager is started.



Start Menu -> Computer -> Click -> Property -> Control panel icon -> System -> Device to start up.

ÿÿPoint Gray Research FlyCapture software installation

1. FlyCapture_2.13.3.61_x64.exeÿUpdated 2019/04/27ÿ

<https://flir.app.boxcn.net/v/Flycapture2SDK/folder/73493389920>

The screenshot shows a web interface for downloading the latest FlyCapture2 Full SDK. At the top right are 'ログイン' (Login) and 'サインアップ' (Sign Up) buttons. Below them is a 'ダウンロード' (Download) button. The main area displays a list of files under 'Flycapture2 > Windows > Latest FlyCapture2 Full SDK'. The list includes:

- FlyCapture_2.13.3.61_x86.exe (Updated 2019年4月27日, 305.1 MB)
- FlyCapture_2.13.3.61_x64.exe (Updated 2019年4月27日, 307 MB)
- Feedback to Developers (Updated 2019年8月2日, --)

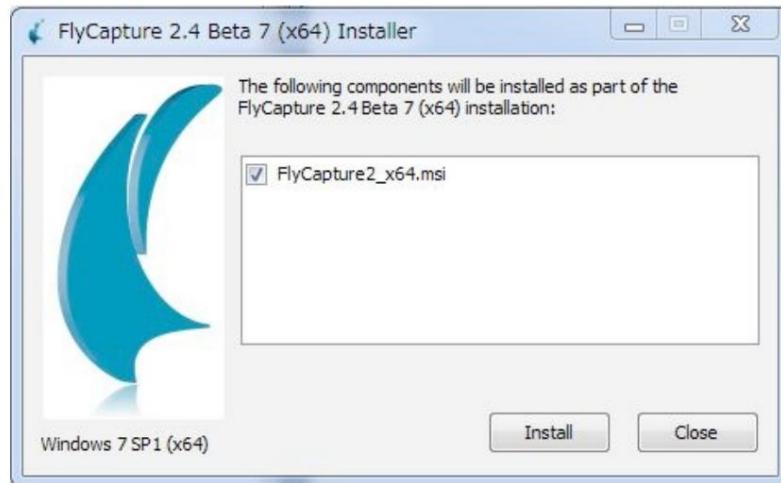
To the right of the file list are detailed file properties:

- Folder Properties
- Owner: Machine Vision Support Team
- Enterprise owner: FLIR Systems Inc.
- Created: 2019年4月17日 14:05
- Last modified: 2019年8月3日 2:40
- Size: 612.1 MB

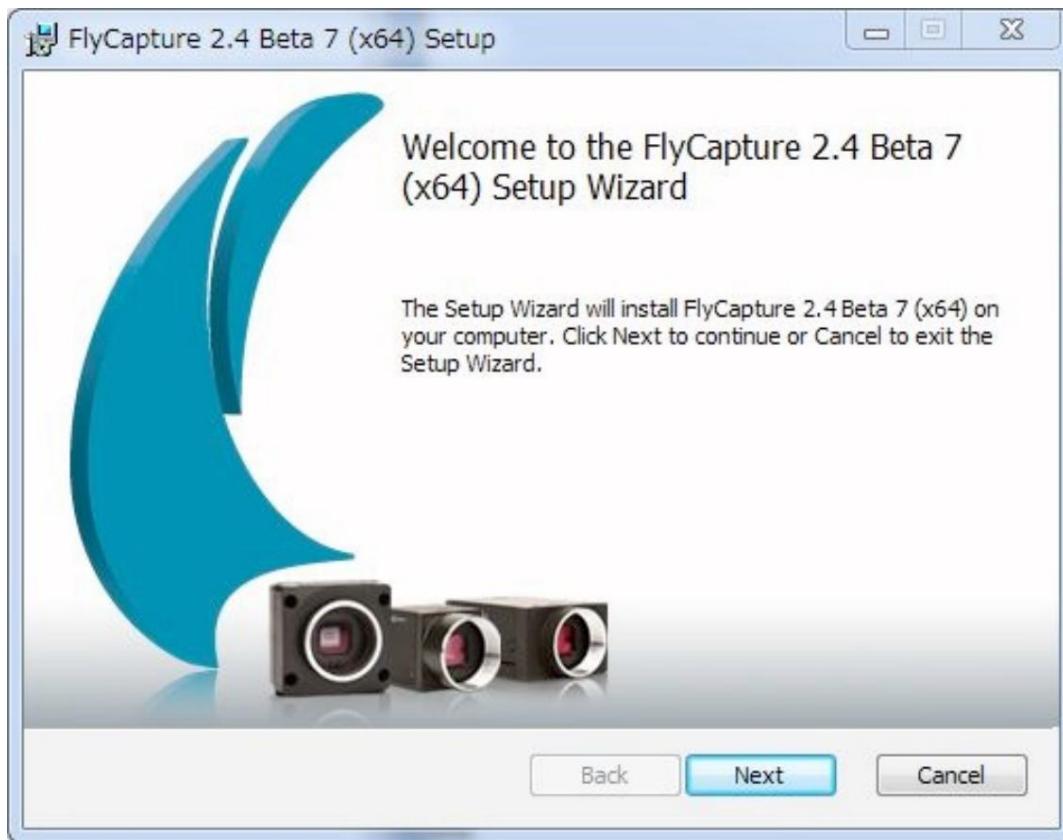
To access, download FlyCapture_2.13.3.61_x64.exe.

ÿÿAfter the download is finished, run the file

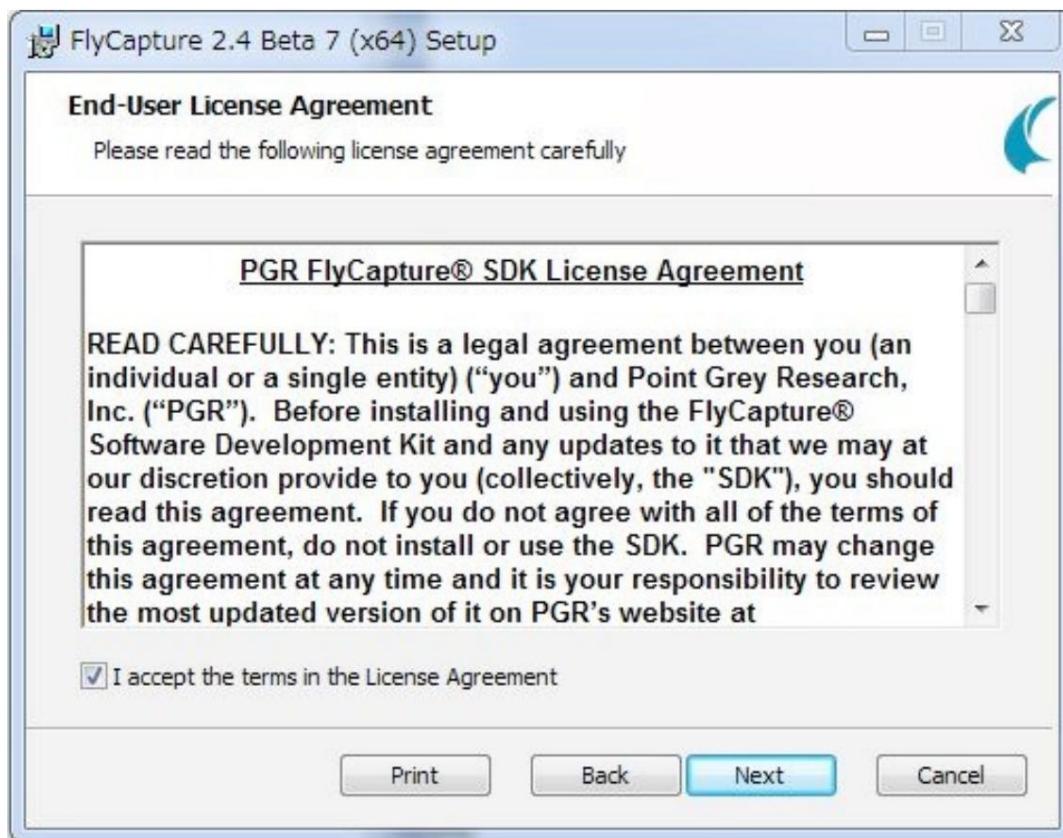
(FlyCapture 2.4 Beta 7 is used for screen capture. ÿÿÿÿÿÿ). If you are asked to install Microsoft .NET, etc., please check those software. Click the install button.



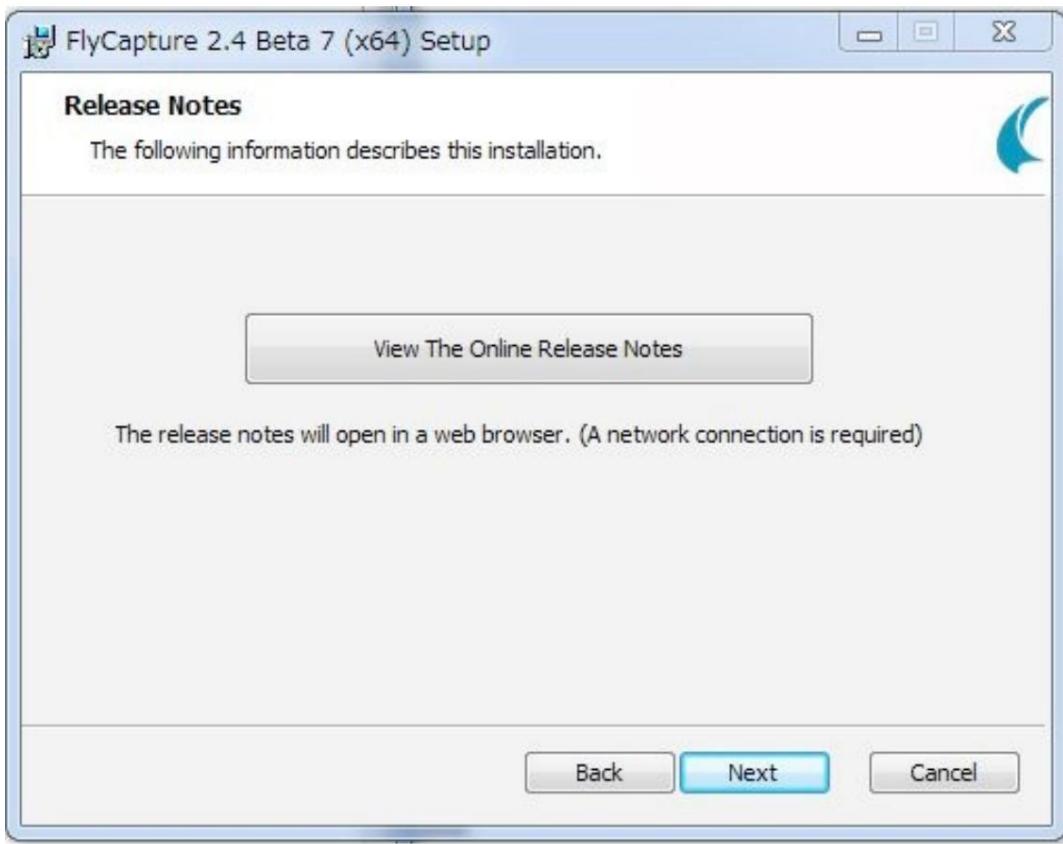
Click Next.



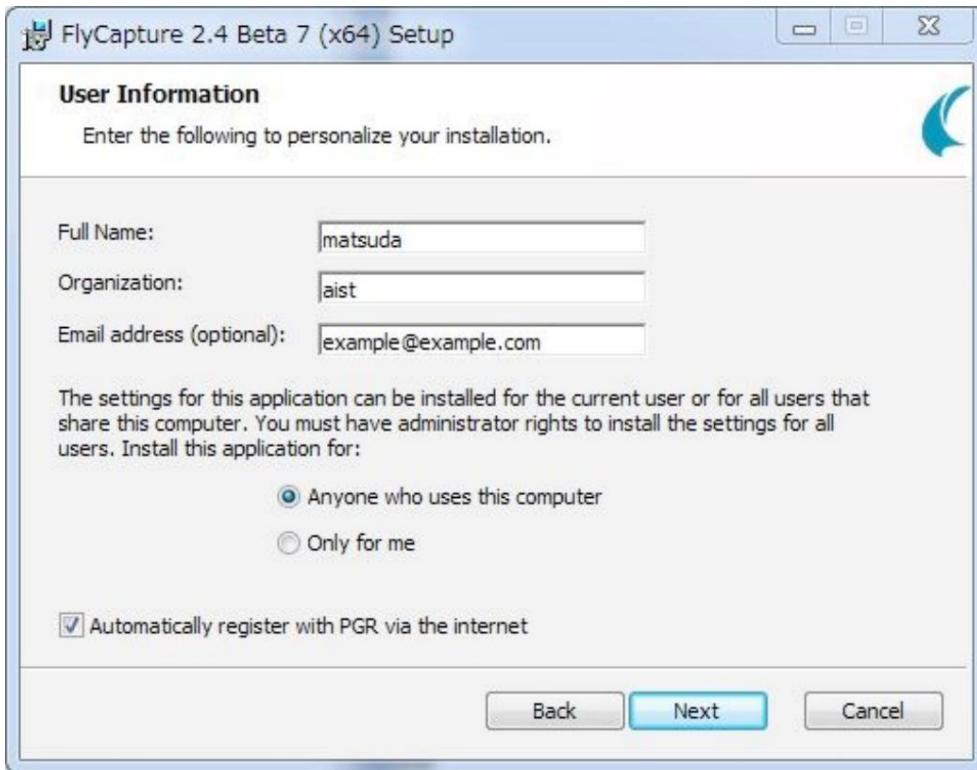
I accept the terms in the License Agreement.



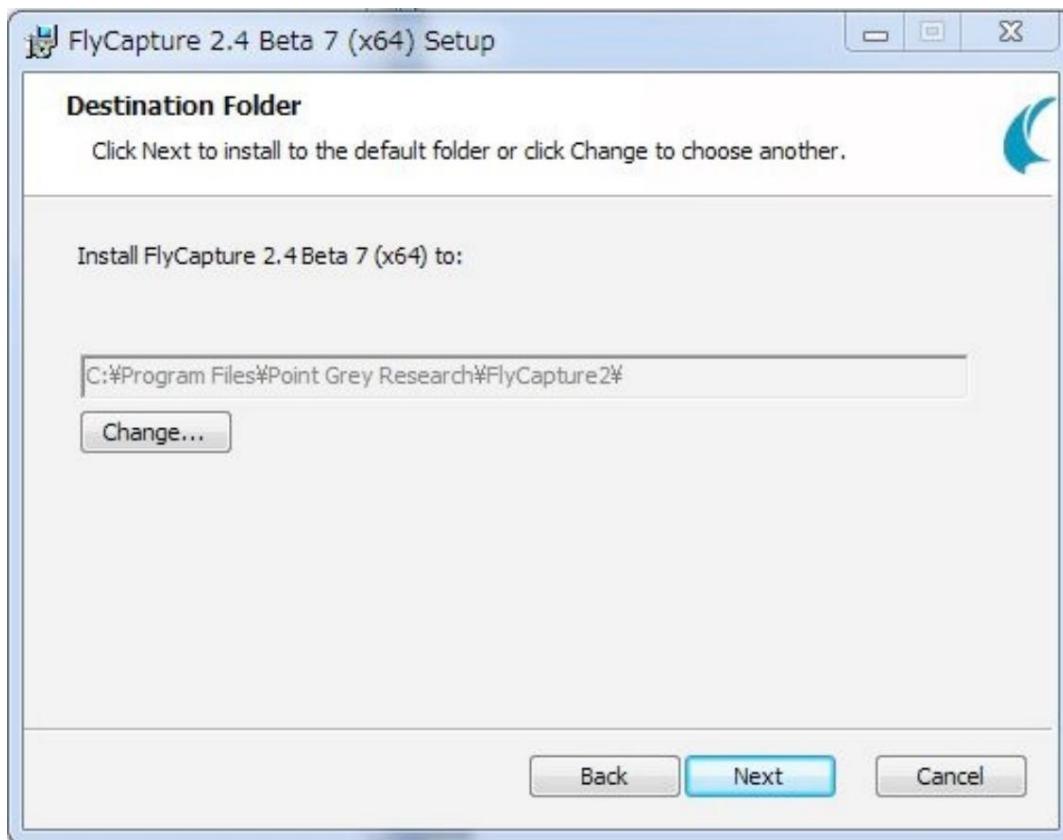
Press the Next button.



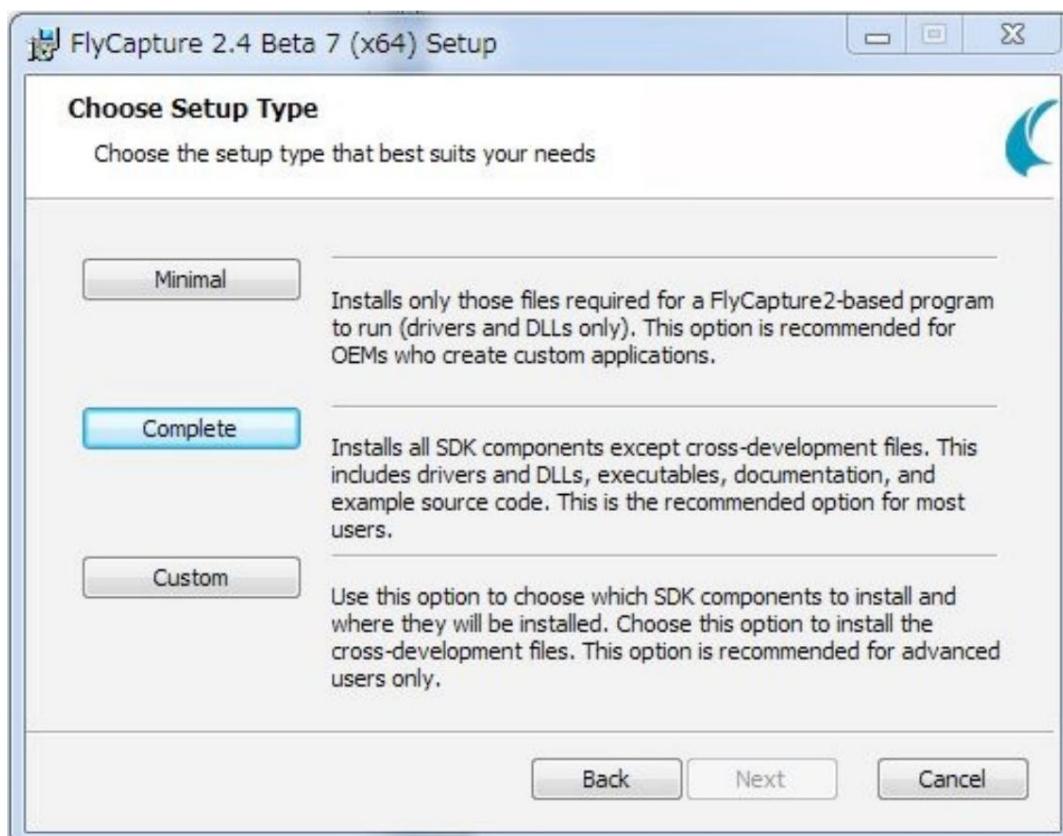
Enter your e-mail address. Anyone who uses this computer will automatically register with PGR via the internet.



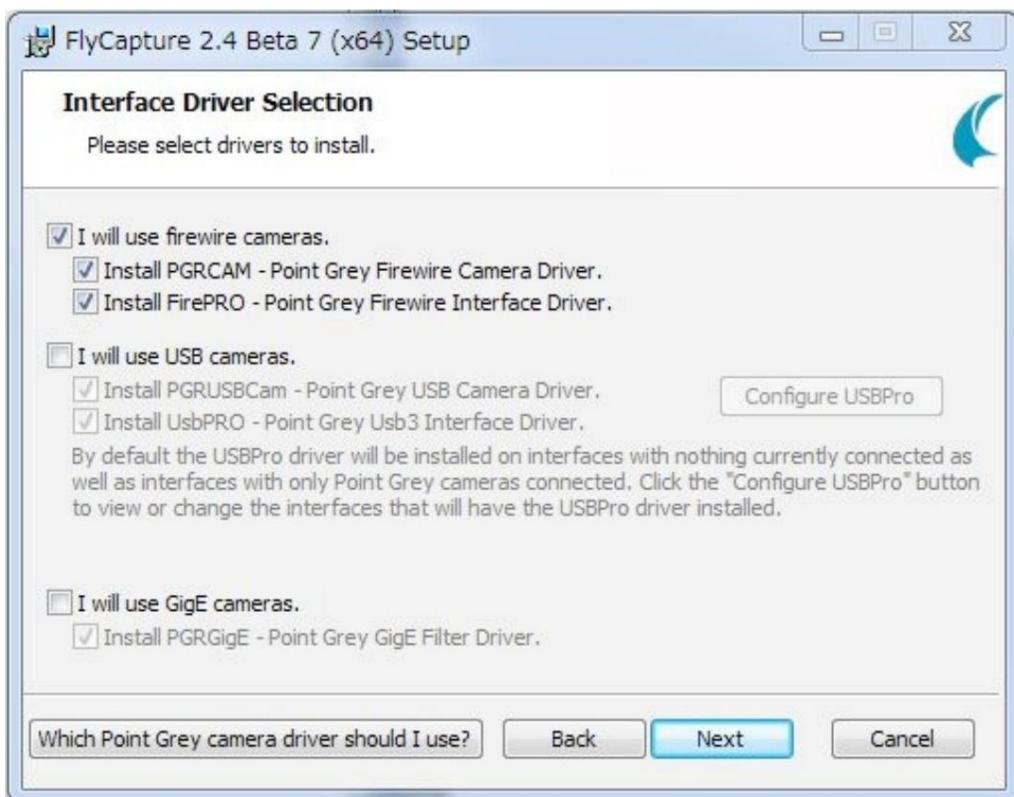
To install the folder, press the Next button.



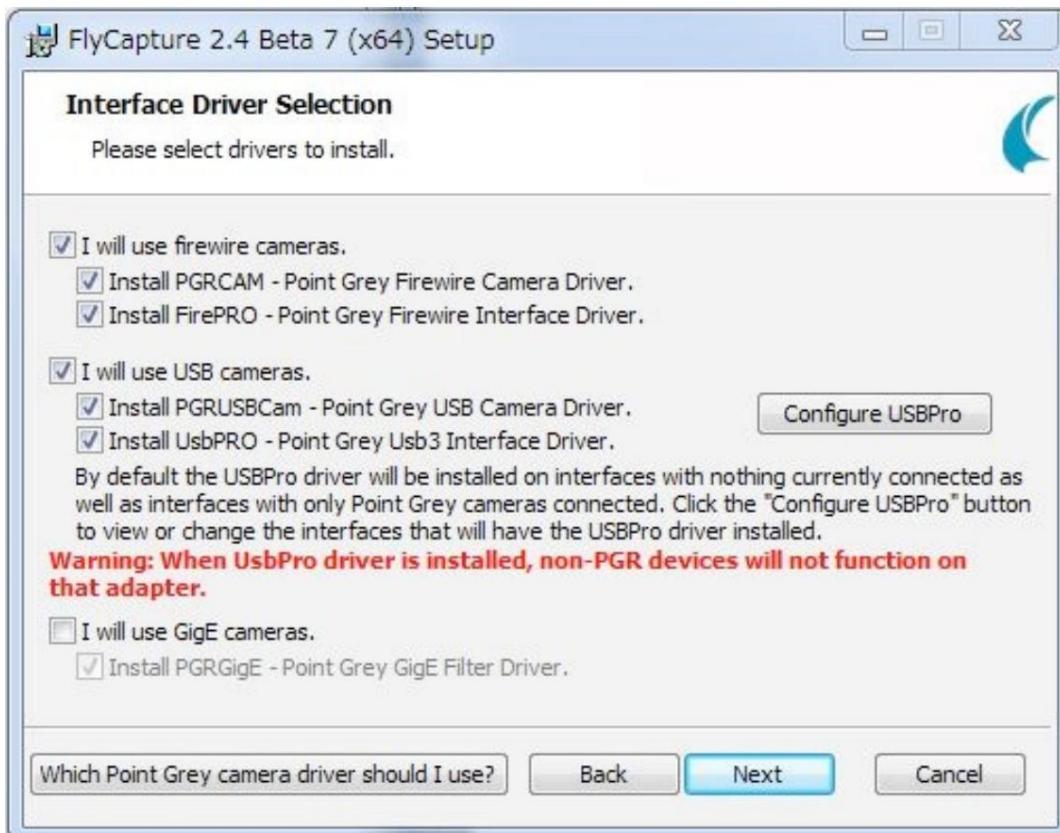
Select Complete and press the Next button.



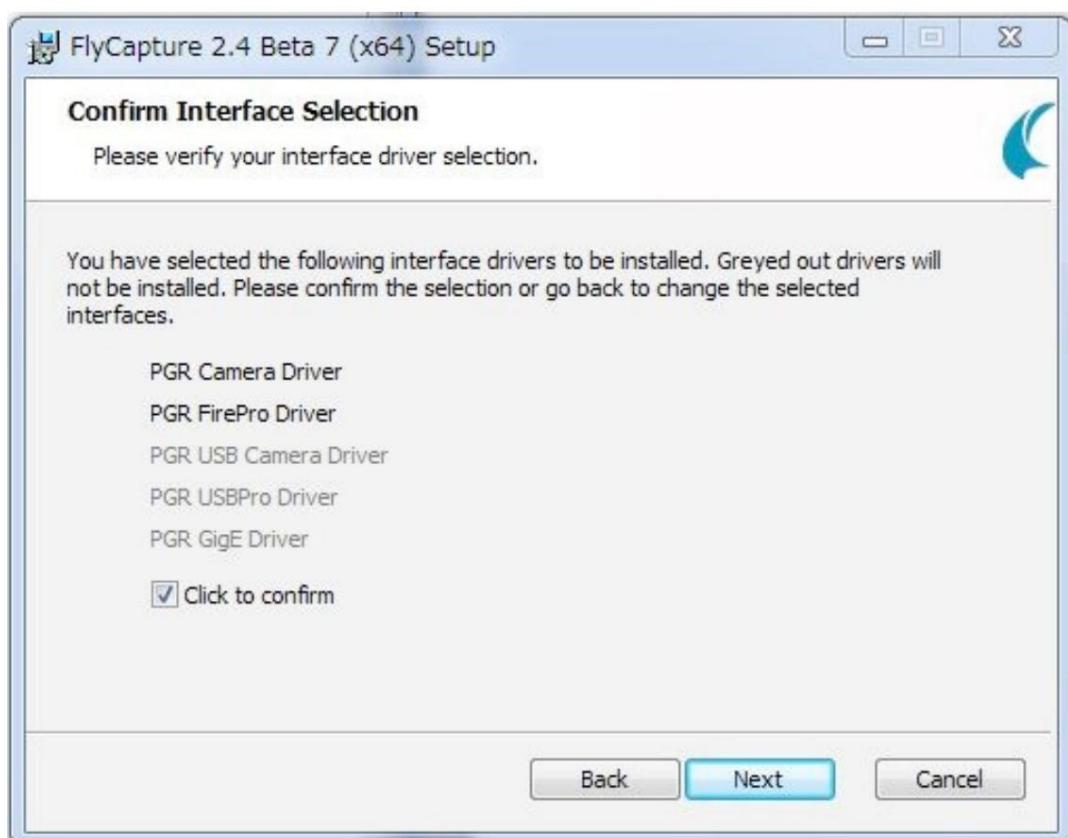
If you want to use Firewire Camera, set the check box as follows, and click Next.



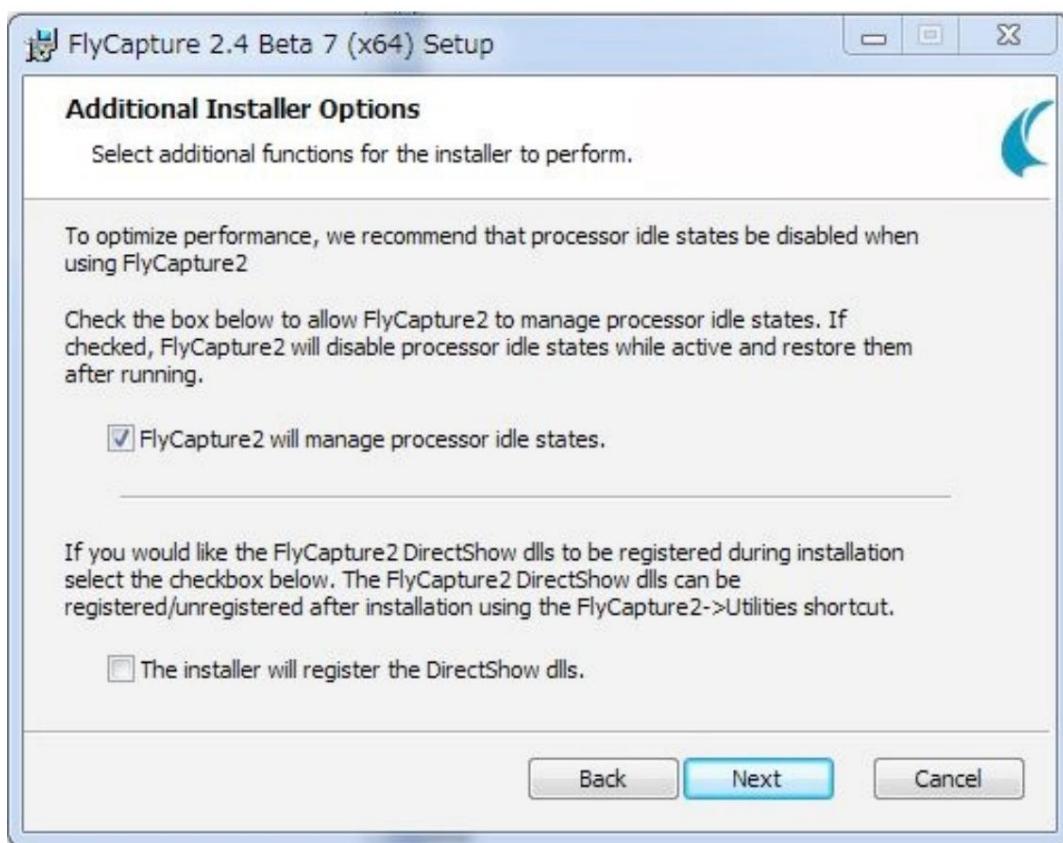
If you use a USB3.0 camera and do not connect a USB3.0 camera other than PointGreyResearch's camera, check the following.



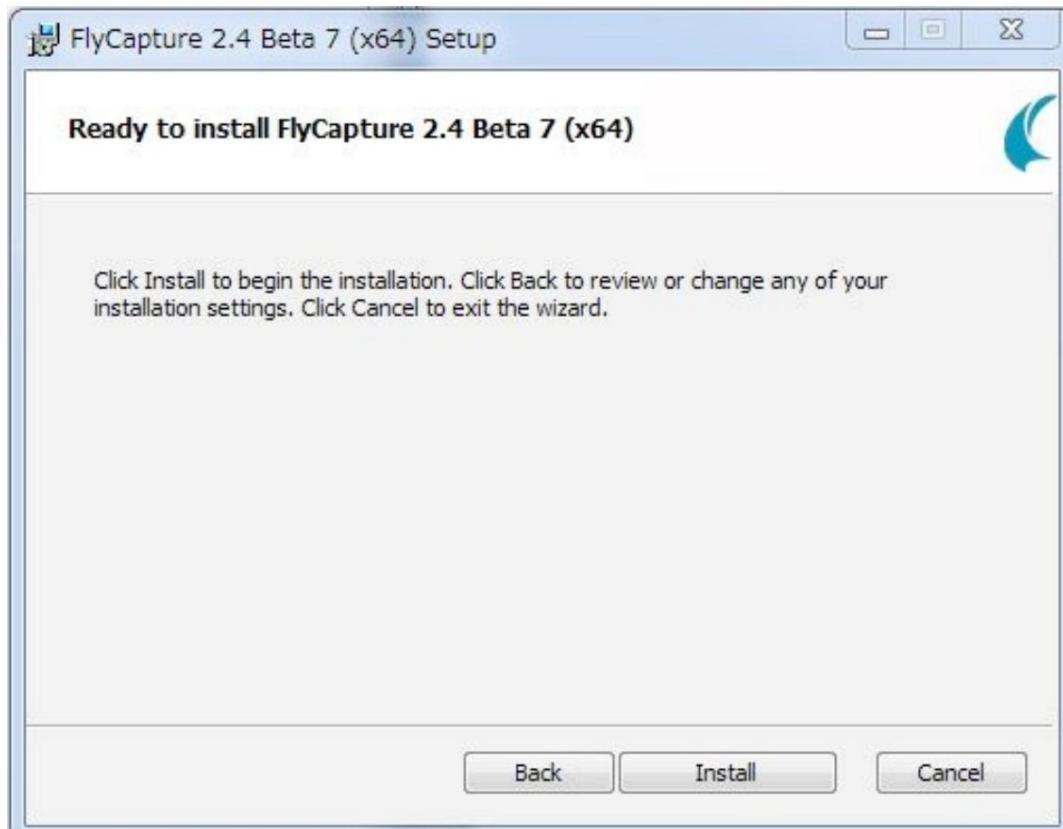
If you select Firewire camera, the following will be displayed. Click to confirm, check the box, and press the Next button.



By default, check the following and press the Next button. Because DirectShow is not used, it is not necessary to check the check box below.



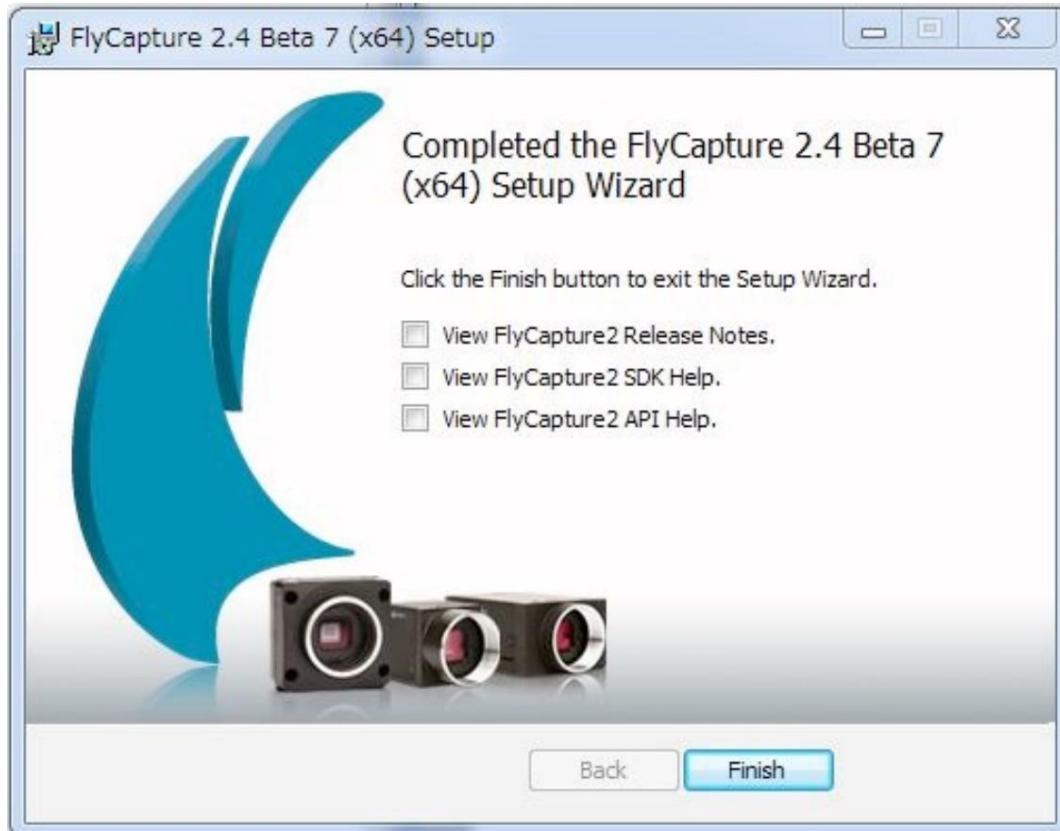
Above, the installation setting items are finished. Press the Install button.



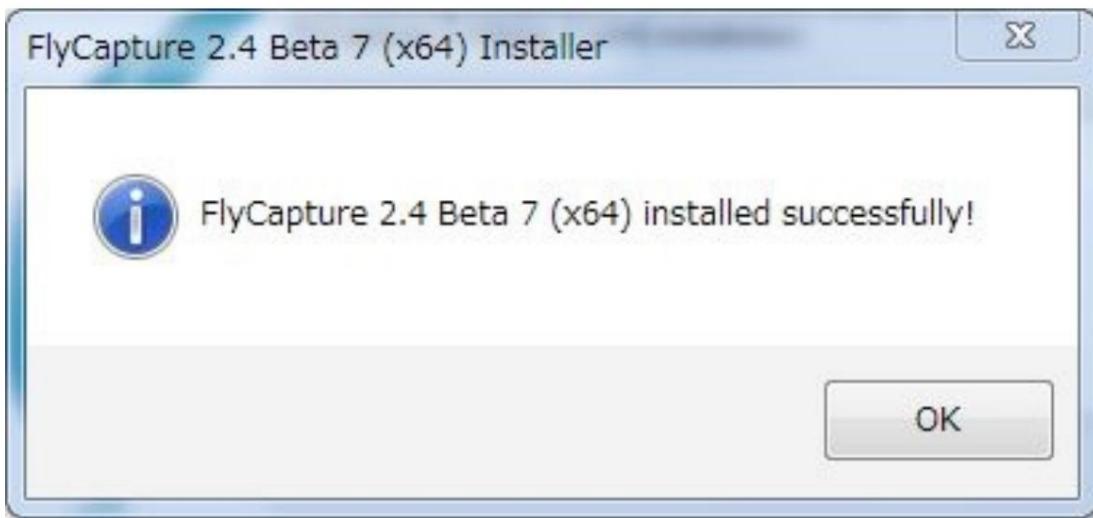
Installation starts.



Press the Finish button.



If the installation is successful, the following message will appear.



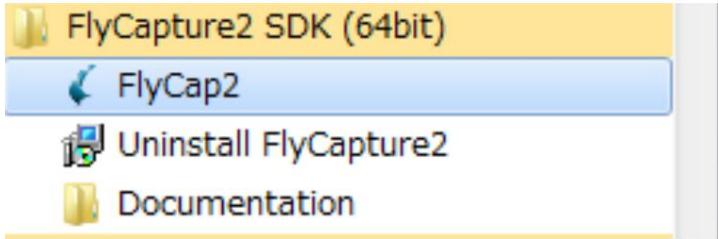
This is the end of the installation.

→ Restart.

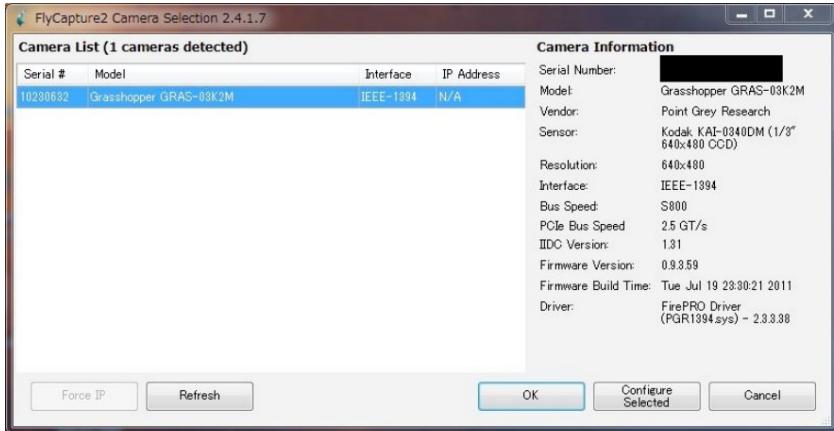
→ When the computer starts, connect the camera.

→ Check the operation of the camera in the attached application

From Start menu, start FlyCap2.



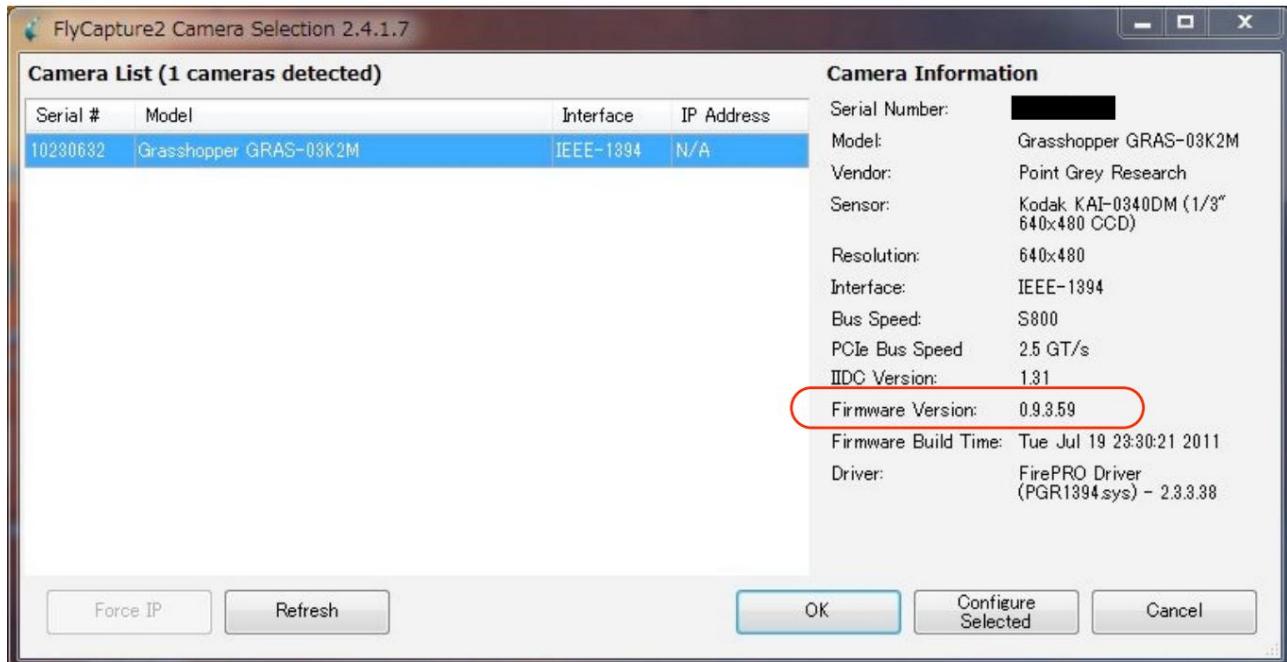
As follows, when the camera appears in the Camera List, the installation is successful. Press the OK button and start the application to confirm the operation.



Firewire camera firmware update

How to update Grasshopper GRAS-03K2M firmware.

It contains firmware. Originally, it can be downloaded from PointGreyResearch website, but it does not exist in 0.9.3-38 site.



Download: [Grasshopper Firmware v0.9 Release 38](#)

Description:

This is the latest firmware for the Grasshopper camera. Please use UpdaterGUI in the firmware package to update the camera. [read release notes]

Date: 2011/11/21

File Size: 7.45 MB

File Type: zip

ViewPlus

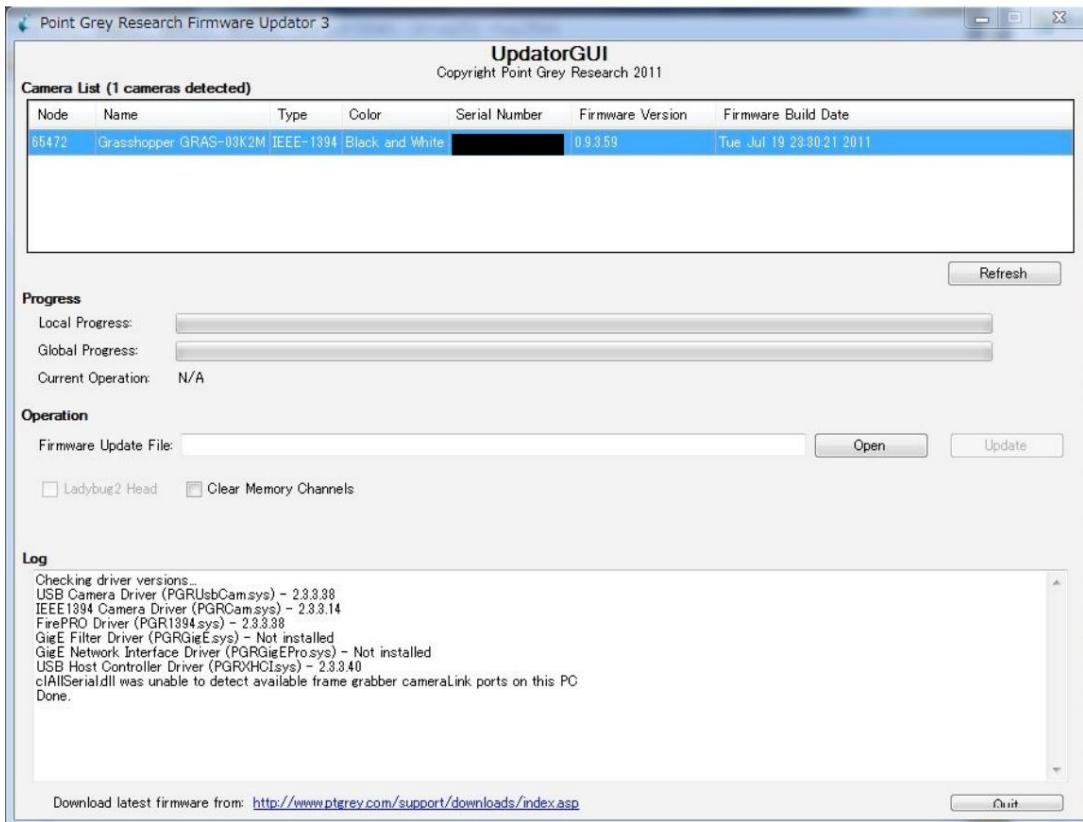
Expand the above file and confirm that grasshopper 0.9.3-59.ez2 is in the grasshopper-0.9.3-59 folder.

Updating the firmware only connect the camera (Do not connect the camera other than Point Gray Research to update the firmware).

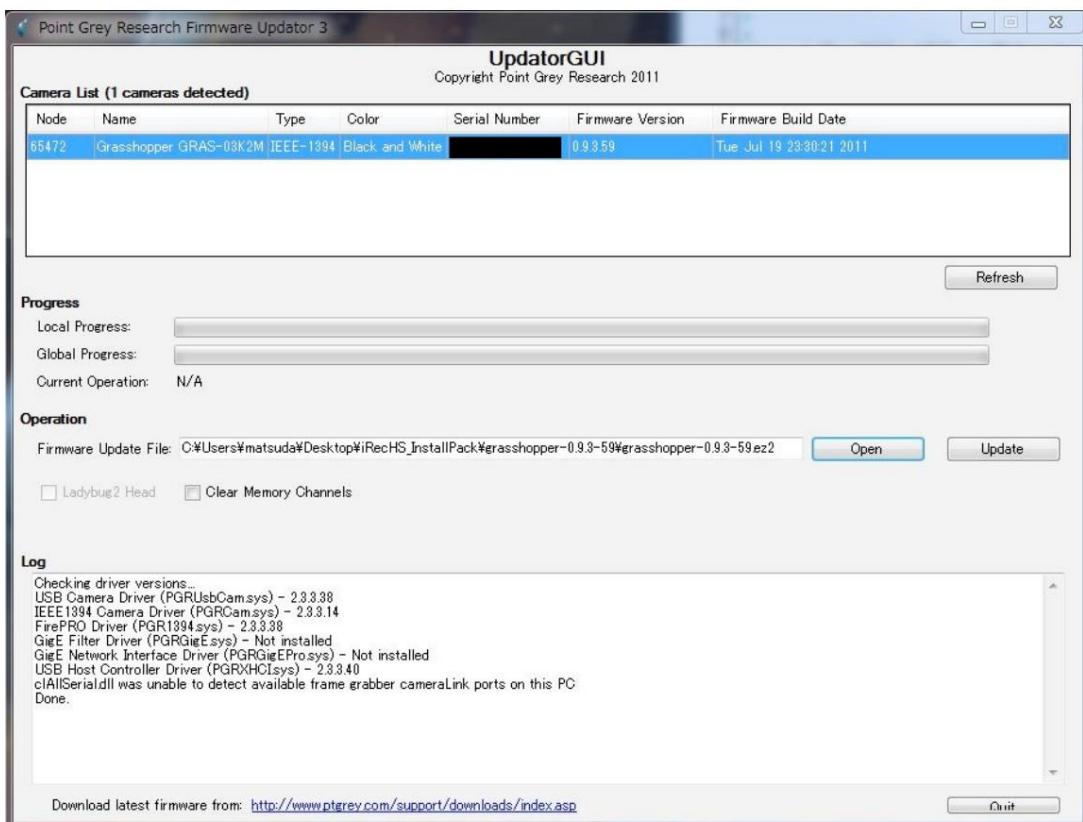
Start firmware update software.

C:\Program Files\Point Gray Research\FlyCapture2\bin64\UpdaterGUI3.exe double click

The screen after startup. Check that the camera appears on the list. Press the Open button, and select grasshopper-0.9.3-59.ez2.



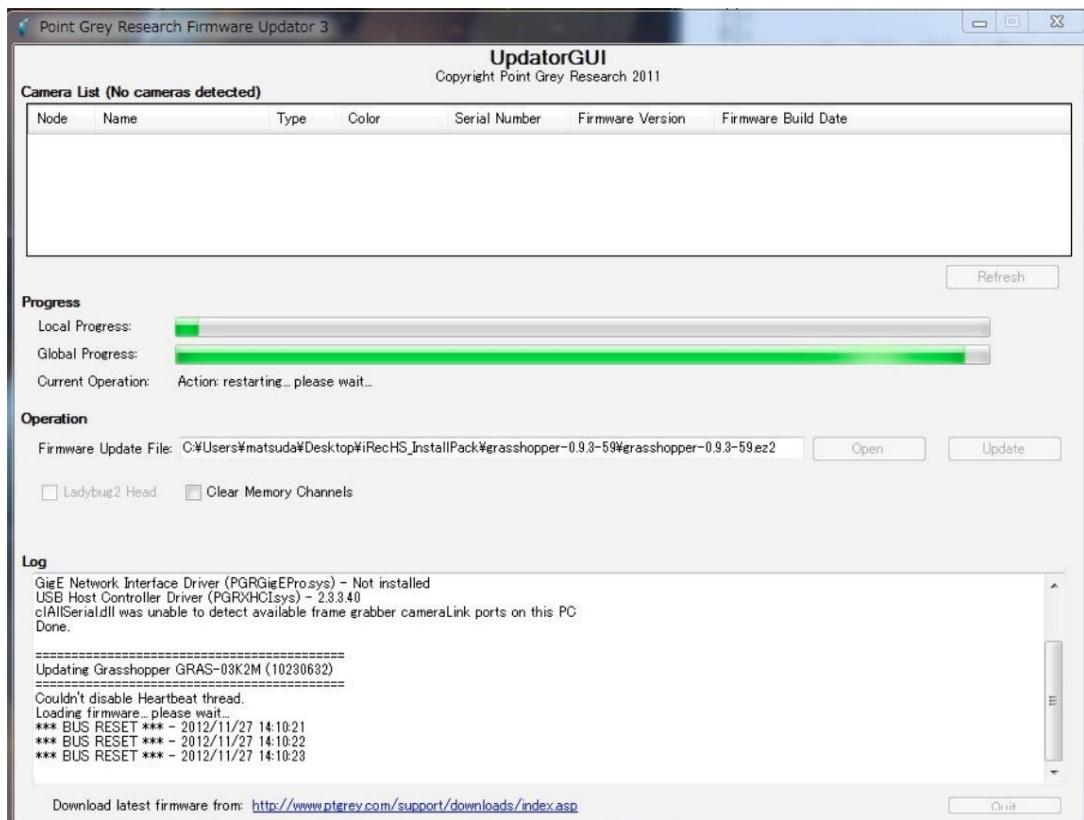
If the Firmware Update File is specified, press the Update button.



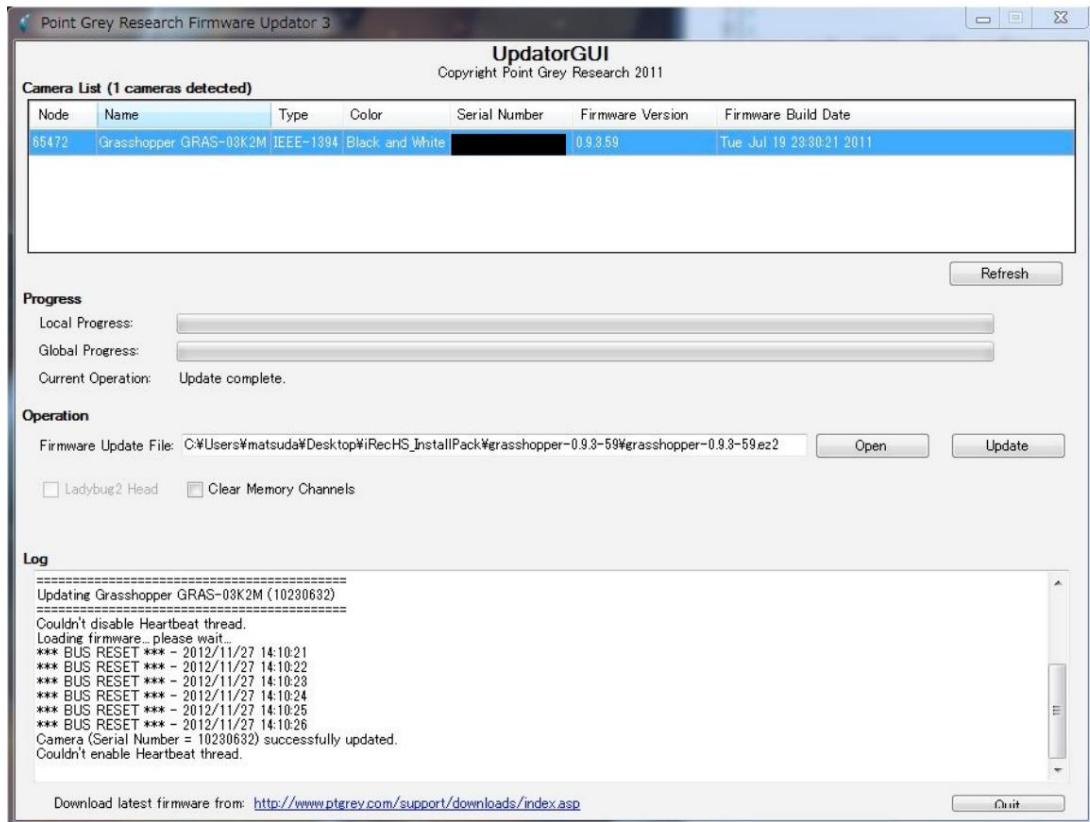
ÿýPlease confirm that there are multiple cameras.



ÿýUpdate start.



When the update is finished, press the Quit button on the right to exit. Confirm that the firmware version is up.



Installation of iRecHS2.exe.

Visual Studio C++ redistributable installation package

https://github.com/Psychtoolbox-3/Psychtoolbox-3/raw/master/Psychtoolbox-PsychContributed/vcredist_x64_2015-2019.exe

When iRecHS2.exe is executed, the message ``MSVCP120.dll is not available.''

Copy iRecHS2.exe to a suitable folder. This program will save the setting when the program is finished. Create setting.txt in the folder where iRecHS2.exe exists. The directory of iRecHS2 will be saved in a folder. iRecHS2 will create it automatically if the folder does not exist. At the moment, the folder name/location cannot be changed.

When iRecHS2.exe is compiled, the FlyCapture driver software used is different, and an error message may appear at startup. In that case, you need to change the version of FlyCapture to the relevant version. Yes.

When starting iRecHS2.exe, there will be a warning that setting.txt does not exist. If this file does not exist, the default setting will be used. txt will be created, 2yyy, this warning will not be issued. Setting.txt can be restored by removing it from the iRecHS2.exe directory.