GigE Vision Camera
Installation Guide

Ver.1.0

Kowa Optronics Co.,Ltd.

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GigE Vision Camera Installation Guide

This document is a procedure manual for connecting our GigE camera to a Windows PC and checking the camera image.

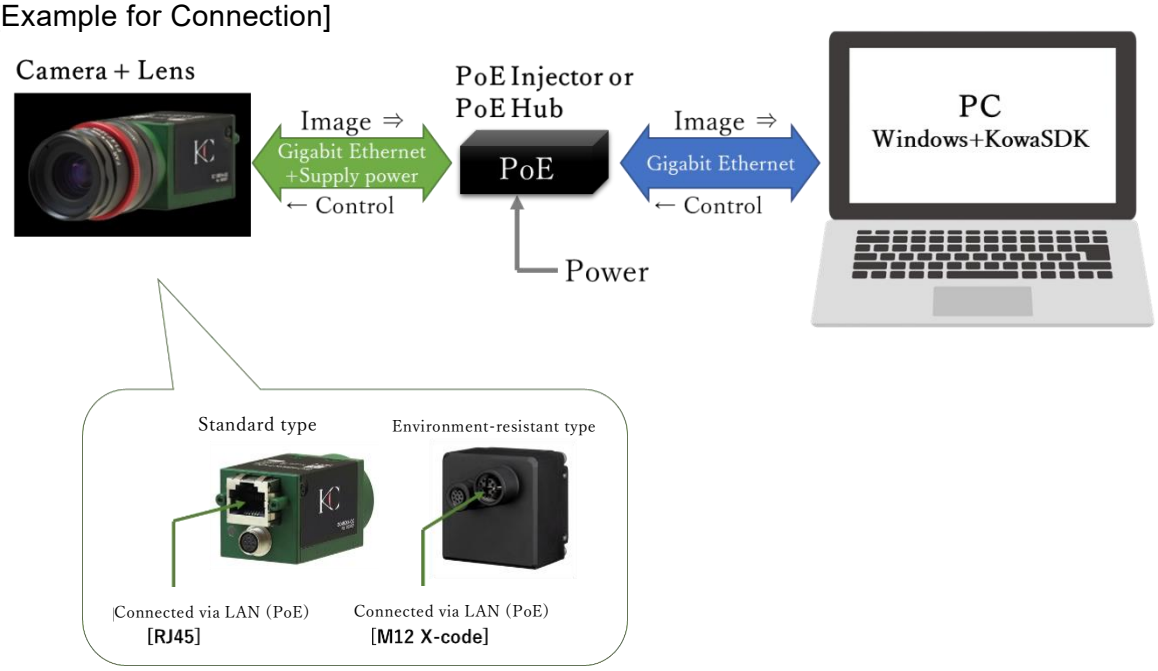
The KOWA SDK viewer app “KOWA GEV Viewer” is installed and the camera image is checked.

1. Operation Environment and Connection Example

- PC OS: Windows 10
  Screen Resolution: 1280 x 1024 or higher
  LAN: 1000BASE-T
- Camera GigE Camera
- Lens C-mount Lens
- Others PoE Injector or PoE Switching Hub
  (The power required for the camera is supplied via Ethernet.)
  LAN Cable (Cat5e or higher)
  (Environment-resistant GigE cameras are connected with M12 X-code connectors.)

Connect the camera and PC referring to the figure below. PC and camera are connected via LAN (Gigabit Ethernet). Power is also supplied to the camera via the LAN cable.

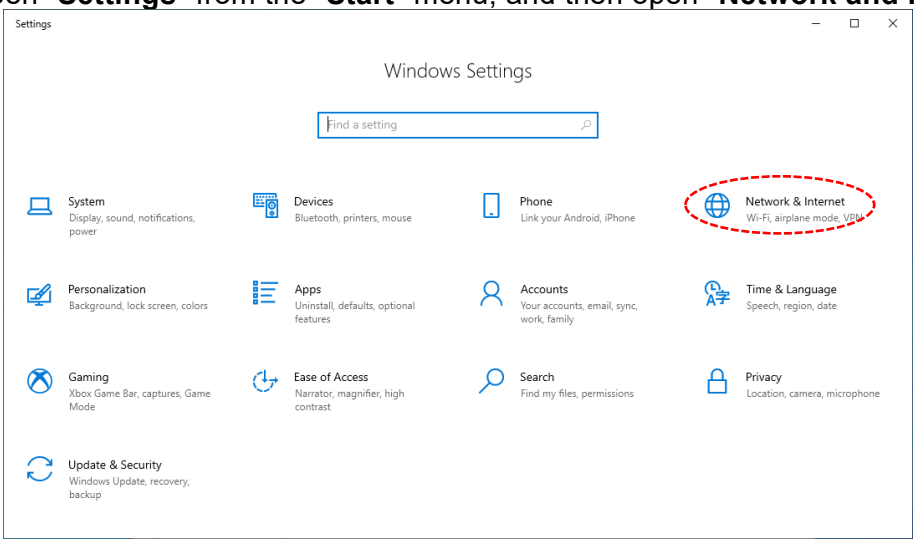
[Example for Connection]



2. Filter Driver Installation

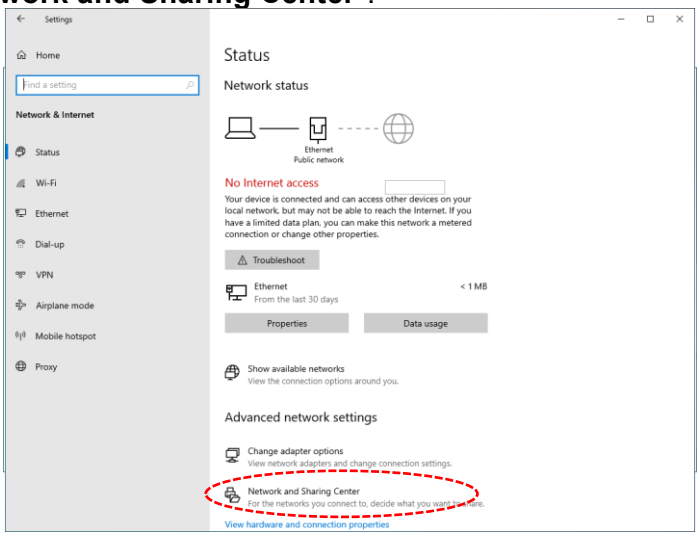
[1] Network Settings

Open “**Settings**” from the “**Start**” menu, and then open “**Network and Internet**”.



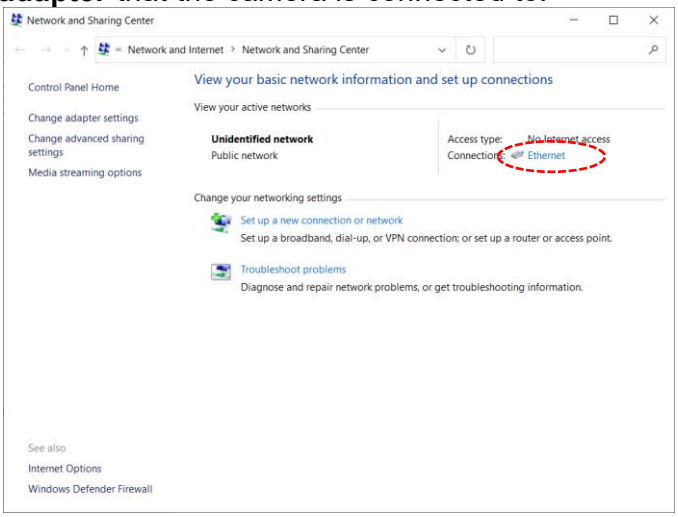
[2] Network and Sharing Center

Open "**Network and Sharing Center**".



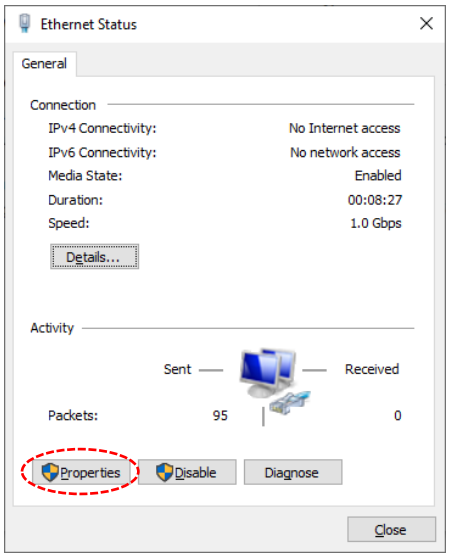
[3] Select Ethernet Adapter

Select the adapter that the camera is connected to.



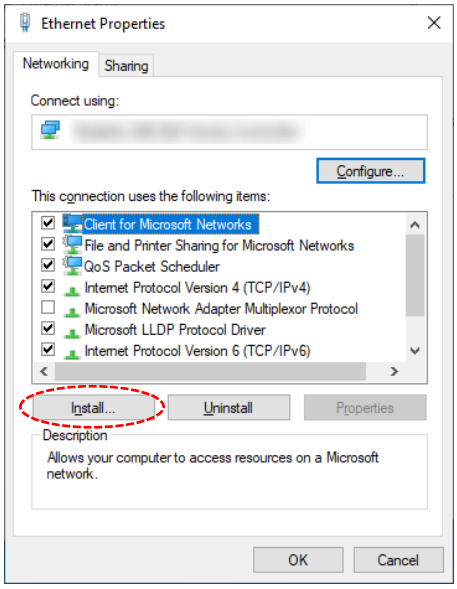
[4] Selection on Ethernet Properties

Click "**Properties**".



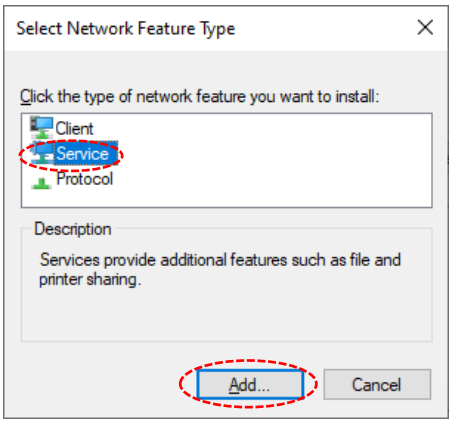
[5] Start Filter Driver Installation

Click "**Install**".



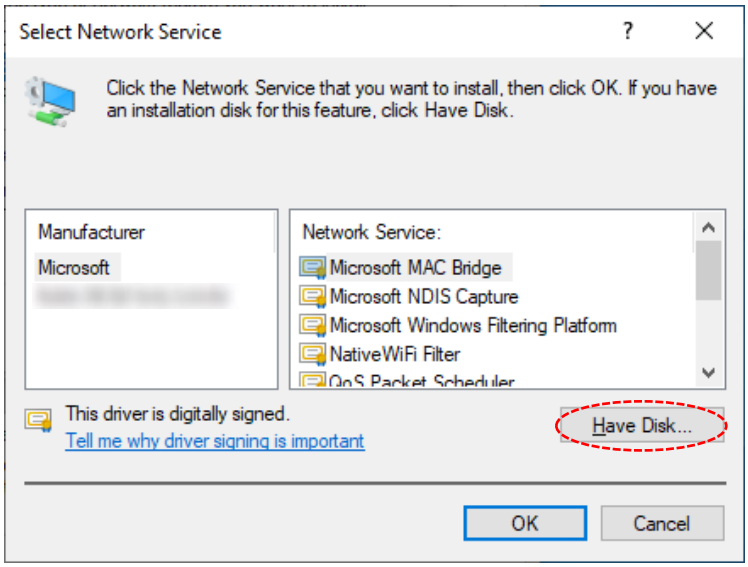
[6] Addition of Service

Select "**Service**" and click "**Add**".



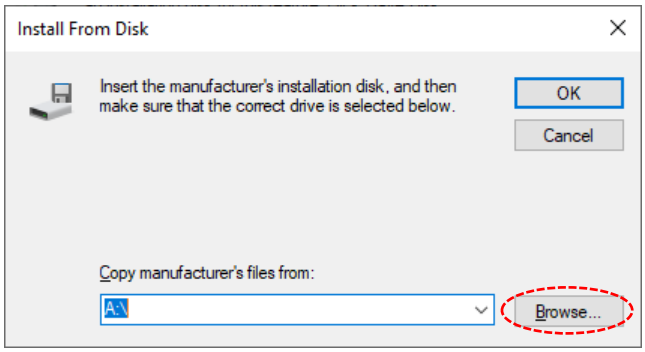
[7] Have Disk

Click "Have **Disk** ".



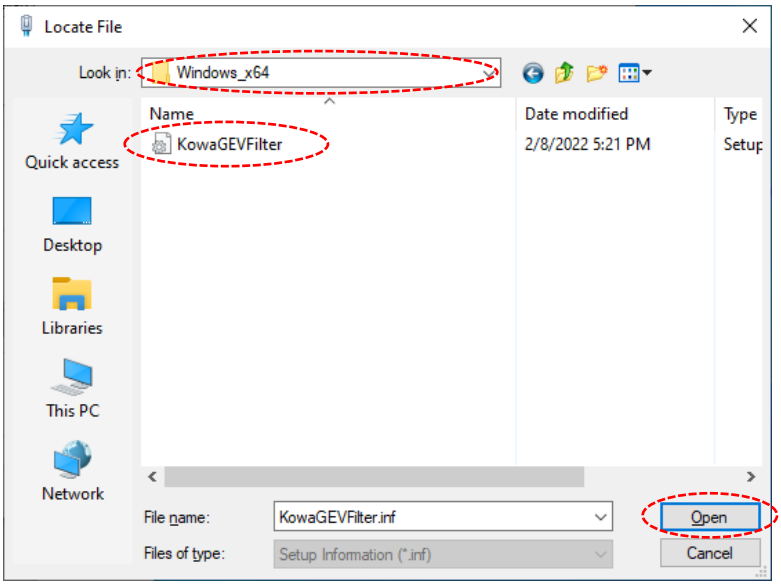
[8] Select Copy Source

Click "**Browse**".

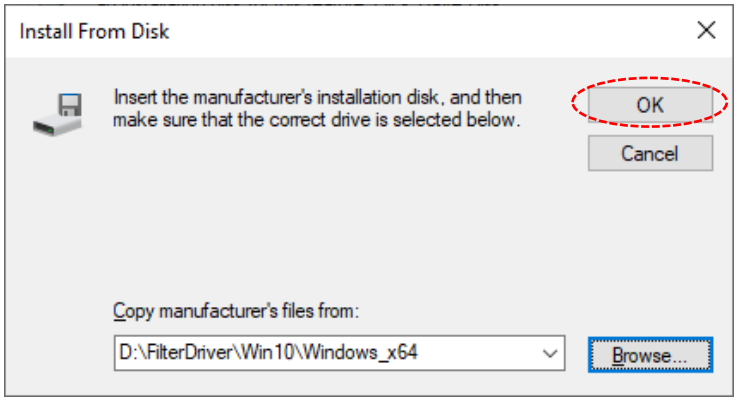


[9] Select KowaGEVFilter.inf

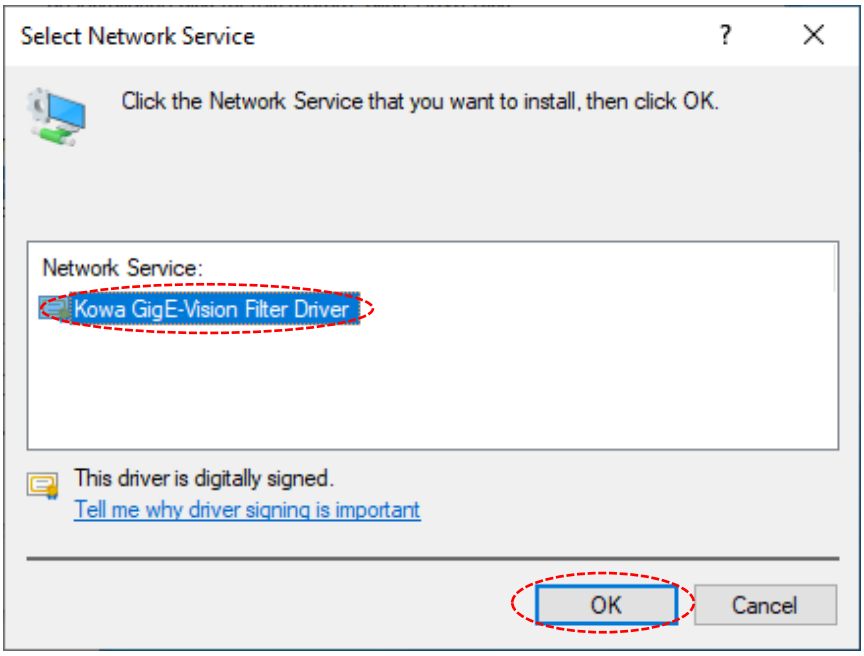
Select the folder where the filter driver is saved, select "**KowaGEVFilter.inf**", and click "**Open**".



[10] Select Copy Source
Click "**OK**".



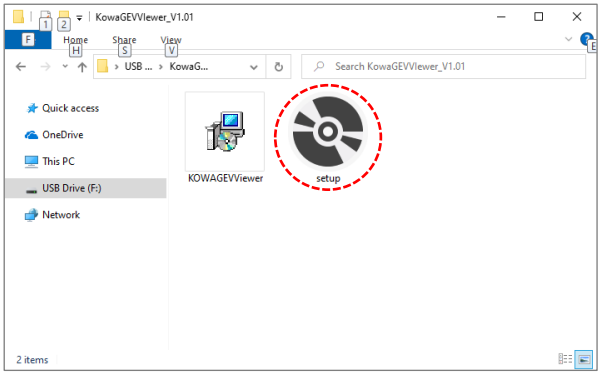
[11] Select Network Service
Select "**Kowa GigE-Vision Filter Driver**" and click "**OK**".



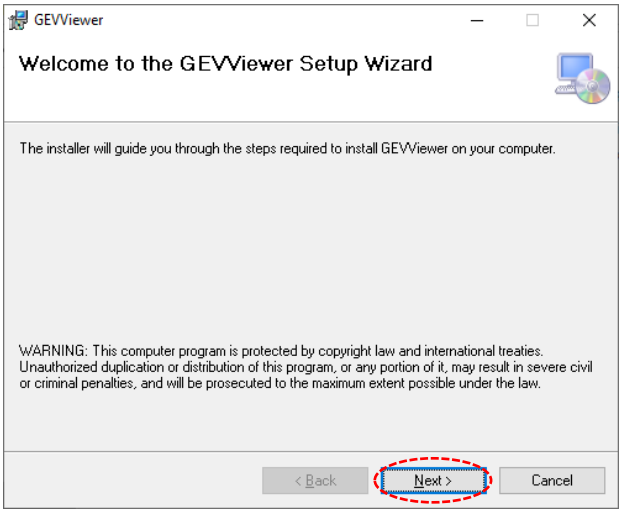
[12] Disabling of Other Companies' Filter Drivers
If another company's filter driver is installed, uncheck it in "**Ethernet Properties**".

3. KOWA GEV Viewer Installation

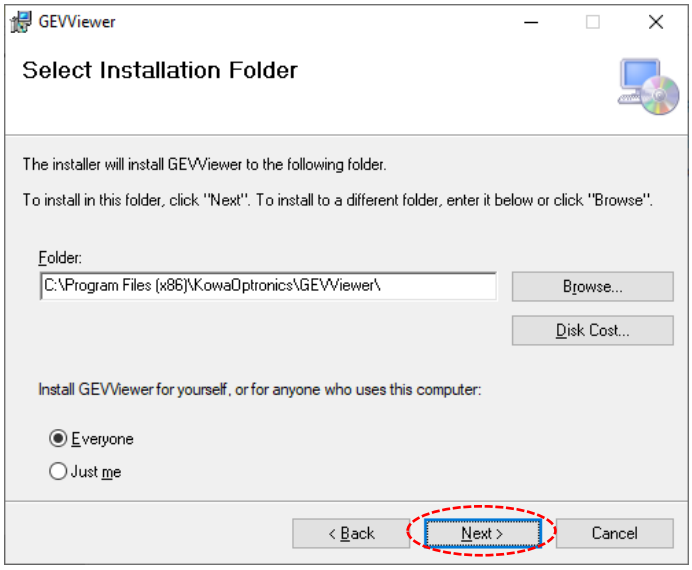
[1] Execute **setup.exe** in the KowaGEVViewer folder.



[2] Setup Wizard
Click "**Next**".

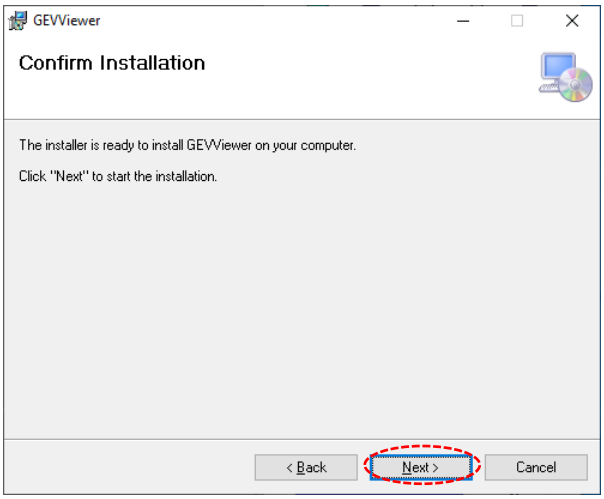


[3] Select Installation Folder
Click "**Next**".



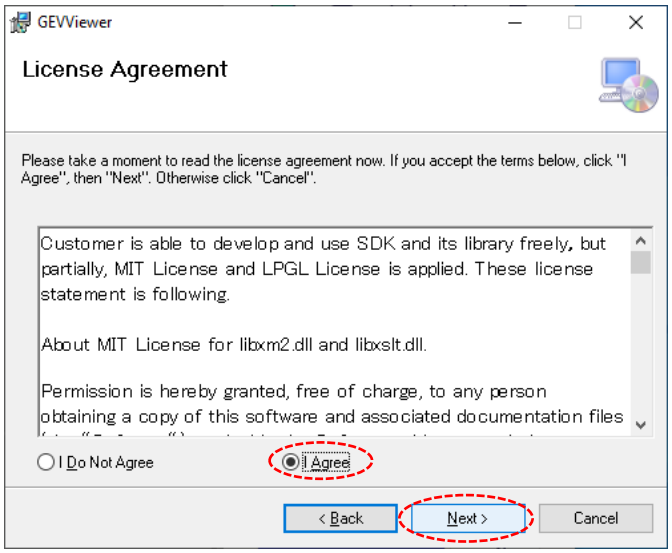
[4] Installation Confirmation

Click "**Next**".



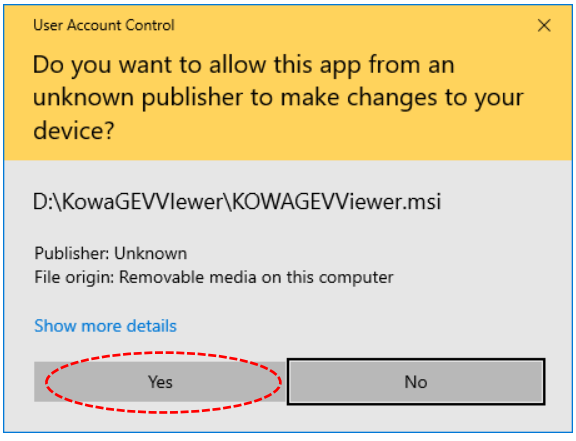
[5] License Terms

Select "**Agree**" and click "**Next**".



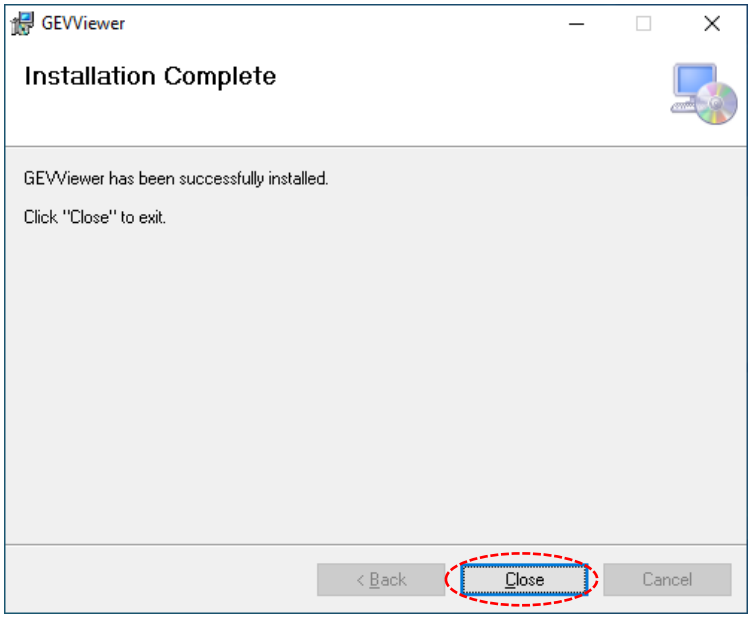
[6] Confirmation of Changes

Click "**Yes**".



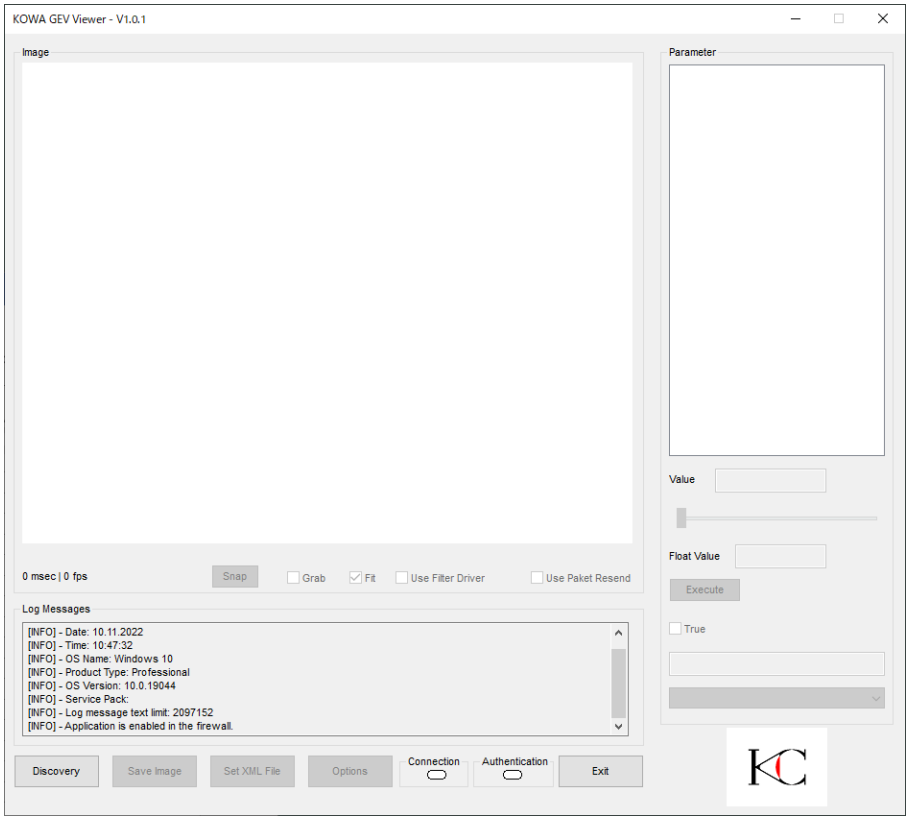
[7] Installation Completion

Installation has been completed. Click "**Close**".



Launch the app from the shortcut "**GEVViewer**" created on the desktop.
If it is not launched normally, refer to troubleshooting described later (from p.19).

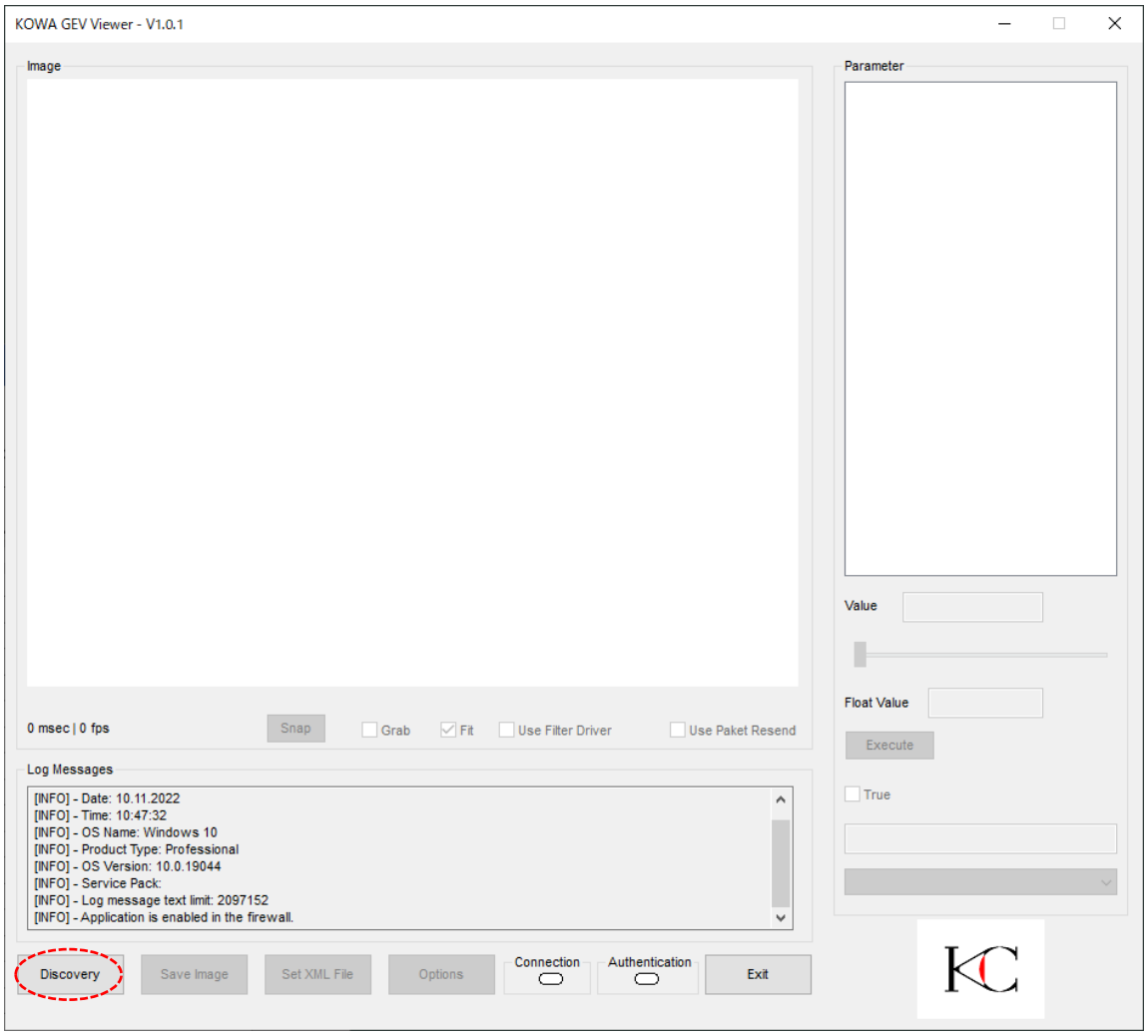
[KOWA GEV Viewer Screen]



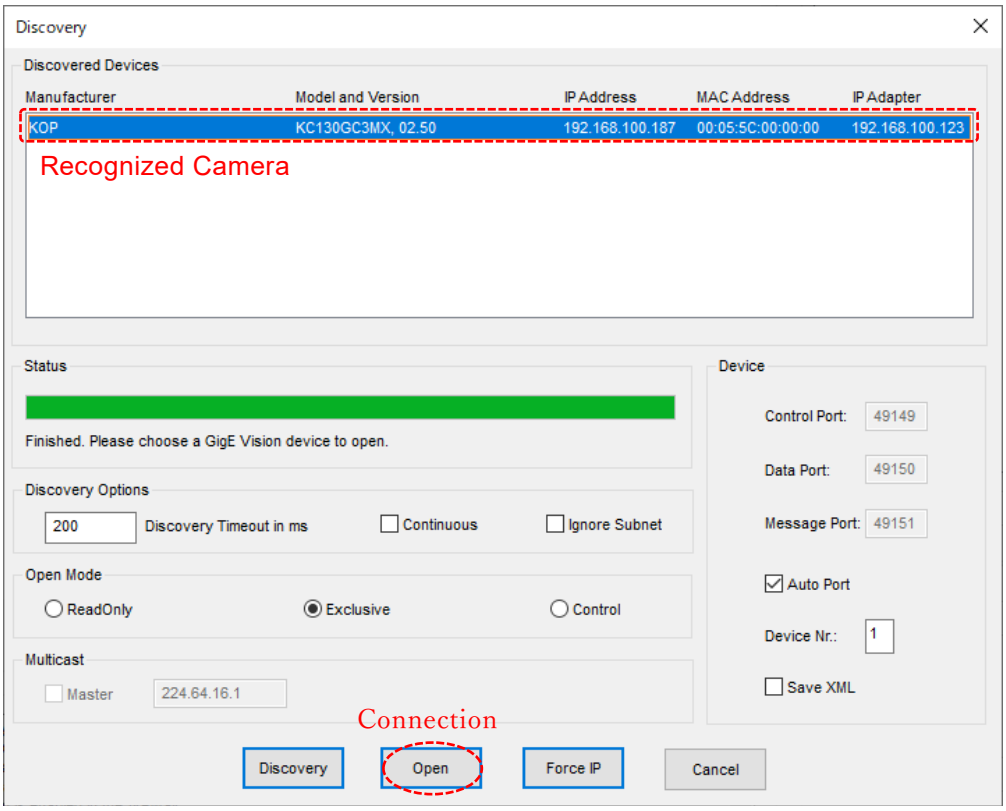
4. Camera Image Check

[1] Start KOWA GEV Viewer
Launch **KOWA GEV Viewer**.

[2] Recognition of Camera (1)
Click "**Discovery**".



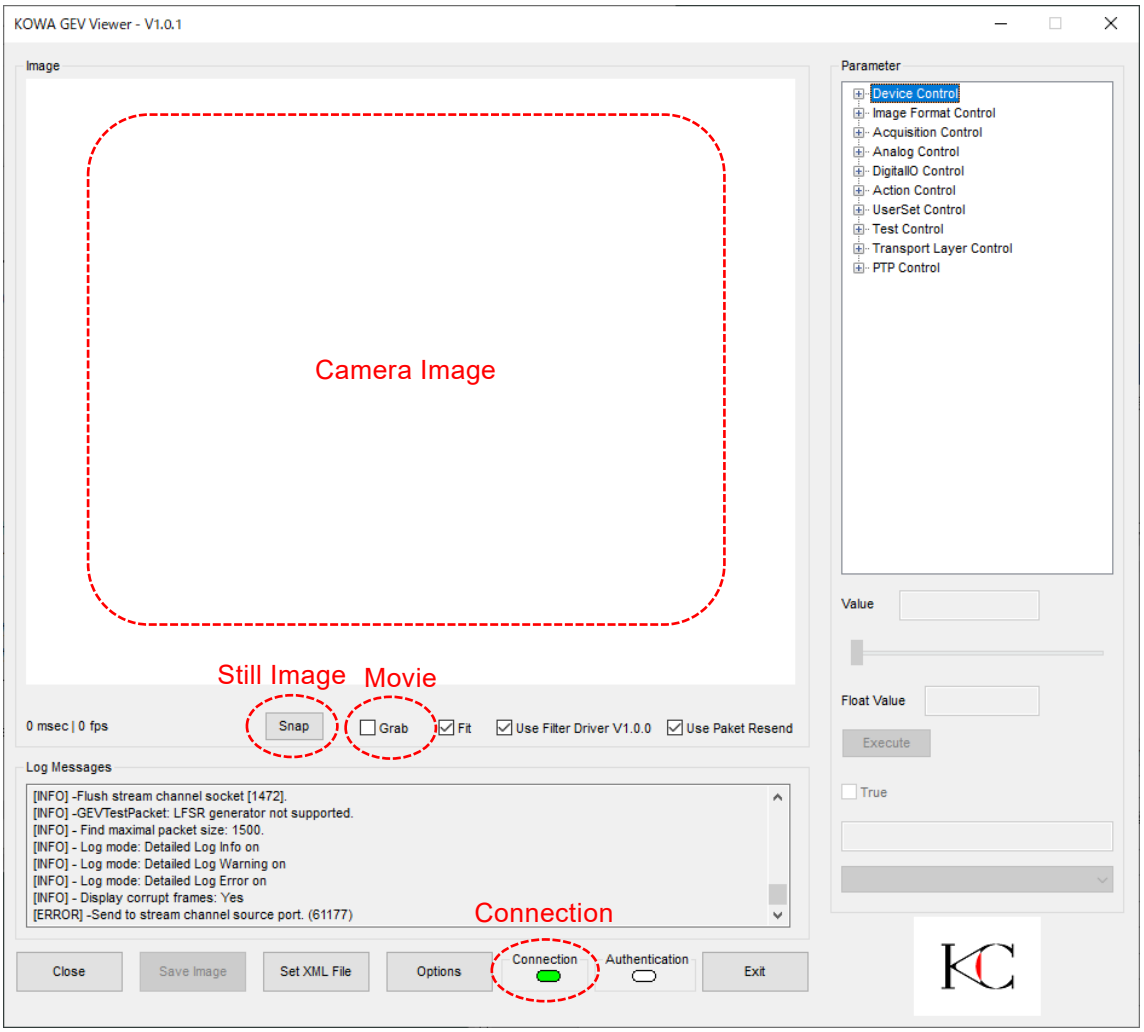
[3] Recognition of Camera (2)



If the network connection between the PC and the camera is normal, the recognized camera will be displayed in "Discovered Devices". Select the camera to connect with and click "**Open**".

If the camera is not displayed in "Discovered Devices", refer to the separate document " **IP Address Setting Procedure on GigE Vision Camera** (KOWA GEV Viewer)" and configure the camera's network settings.

[4] Check on Camera Image



"**Connection**" lights up in green when connection to the camera is completed.
If "**Grab**" is checked, the camera image will be displayed in "**Image**".

[5] Acquiring of Still Images

If "**Snap**" is clicked with "**Grab**" unchecked, a still image will be acquired. The still image acquired can be saved with "**Save Image**".

[6] Other Operations

Close: The camera is disconnected.
Options: Settings such as communication settings are configured.
Exit: The "KOWA GEV Viewer" app is exited.

Parameters: The camera settings are configured.

5. Camera Settings

This is a simple basic setting procedure. For details, please refer to the separate instruction manual.

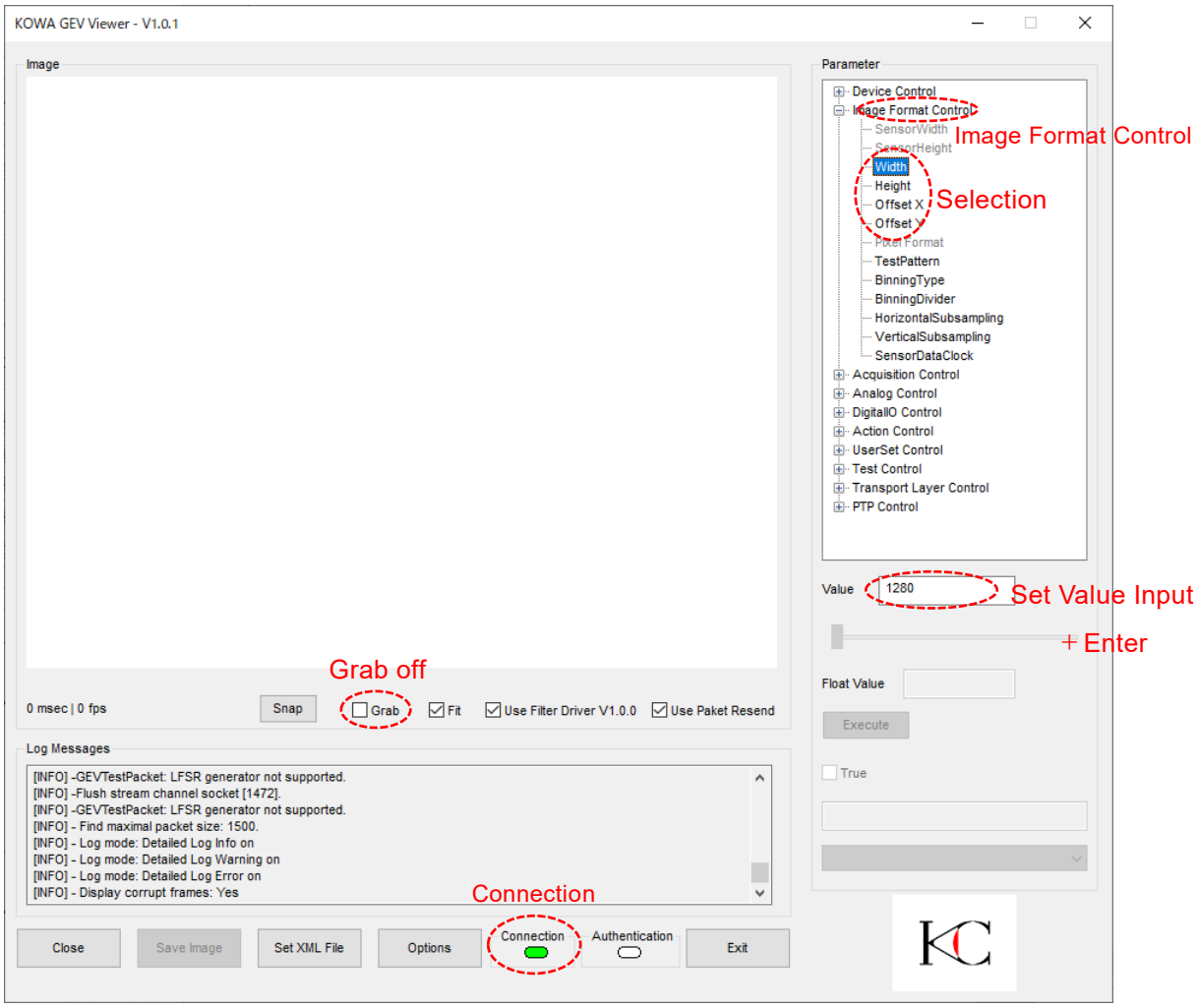
The settings are configured with the camera connected to KOWA GEV Viewer and **"Grab"** unchecked.

The settings are valid only while the camera power is on, and returns to the initial values when the camera is restarted.

5.1 Output Image Area (ROI) Settings

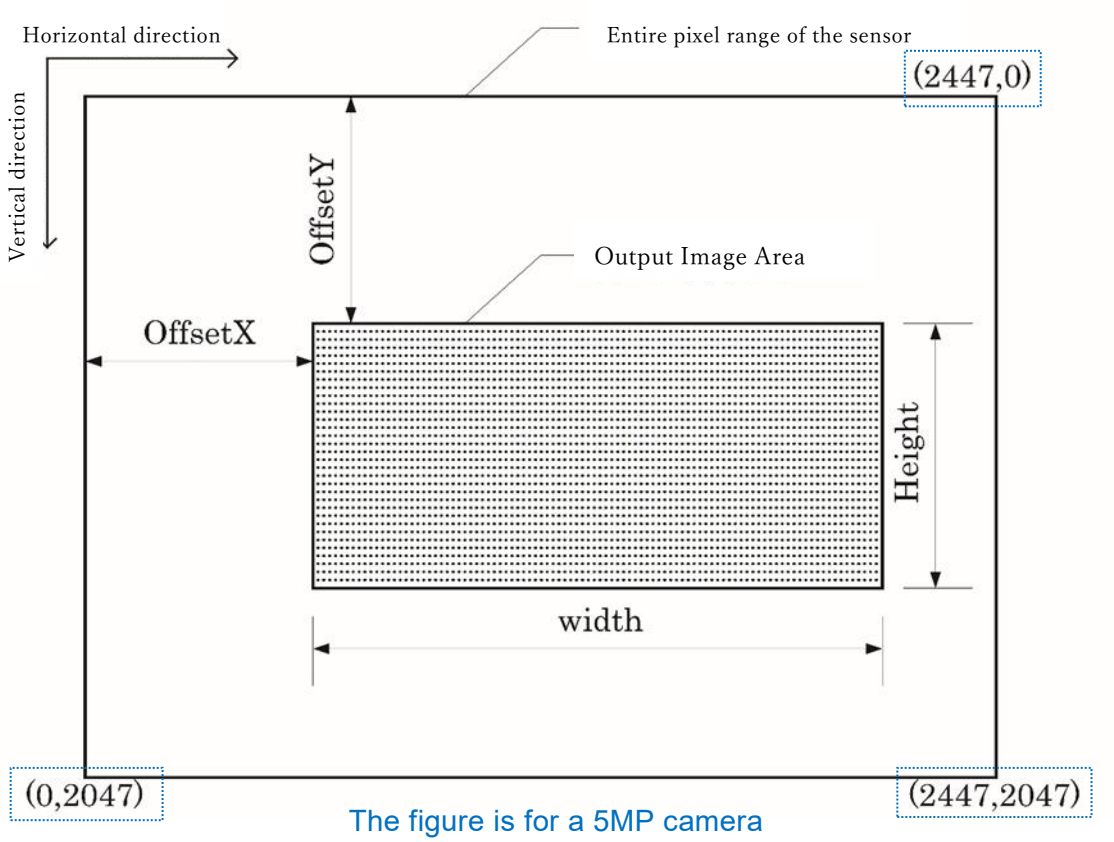
Set the output image area (image acquiring effective area). Specify the size (area pixel count) and position (offset) with "**Image Format Control**" in "**Parameters**".

With this setting, only the data of a certain area of the image acquiring sensor is sent to the PC as valid data, and unnecessary peripheral image data is not output.



Select "**Width**", "**Height**", "**Offset X**", "**Offset Y**", **input the set value in "Value"**, and click the **Enter** (Return) key. The width and height of the region and the horizontal/vertical offset are set respectively. (There are restrictions on the set value, and the input value and the actually set value may differ.)

Width: Width of Area (number of pixels) **Height**: Height of Area (number of pixels)
Offset X: Left Pixel Position of Area **Offset Y**: Upper Pixel Position of Area



The figure is for a 5MP camera

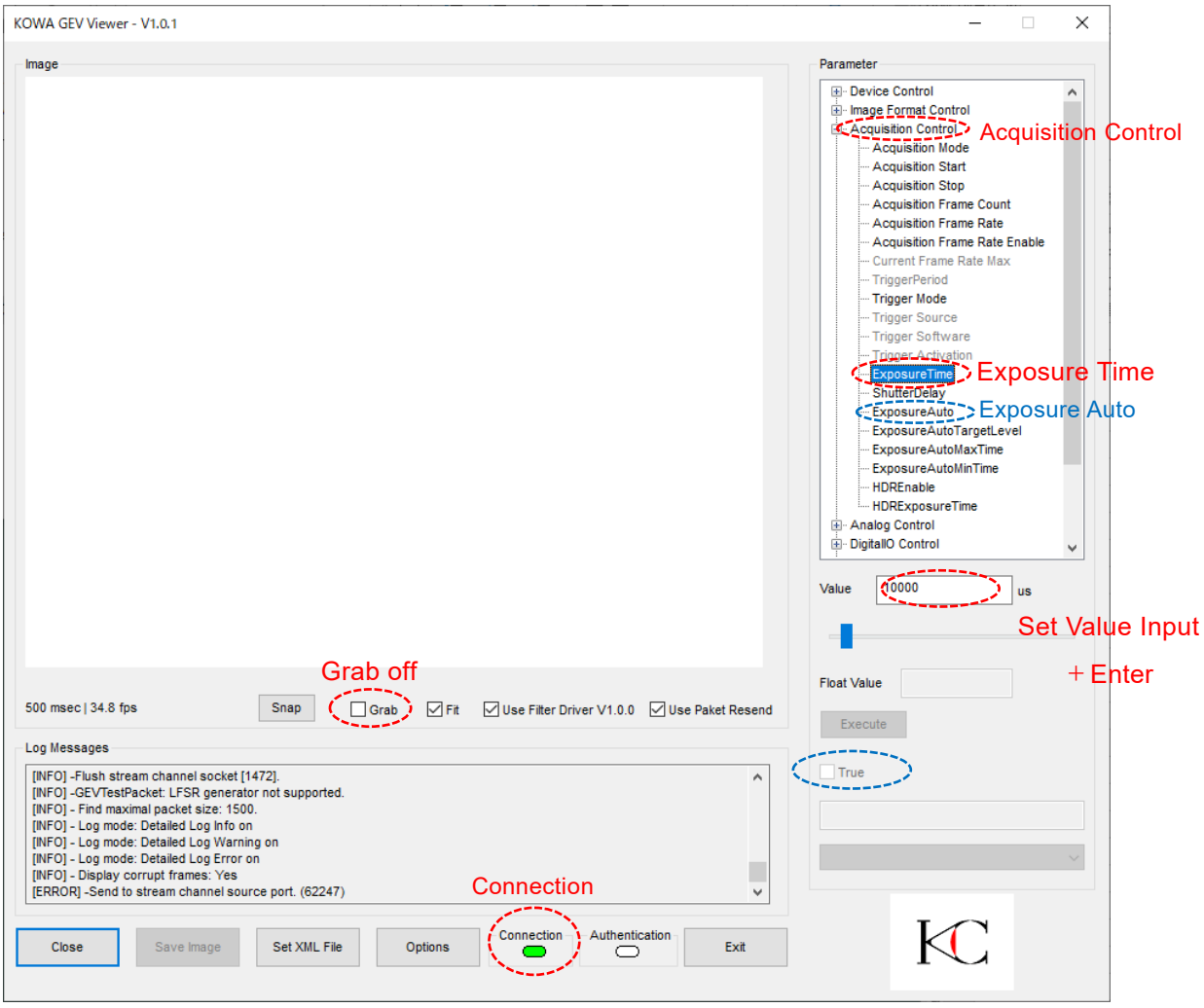
The number of image acquiring sensor pixels can be checked with "**Value**" of "**SensorWidth**" and "**SensorHeight**". The output image area is set within the entire pixel range of the sensor. If it exceeds the entire pixel range of the sensor, the offset value setting is given priority and the area size is limited.

5.2 Brightness (Exposure Time) Settings

The brightness of the image is adjusted by adjusting the exposure time of the image acquiring sensor. The exposure time (μs unit) is specified with "**Exposure Time**" in "**Acquisition Control**" of "**Parameters**".

After **inputting the set value** in "**Value**", click the **Enter** (Return) key. (There are restrictions on the set value, and the input value and the actually set value may differ.)

The initial value is 10,000. Increasing the value makes it brighter, and decreasing it makes it darker.



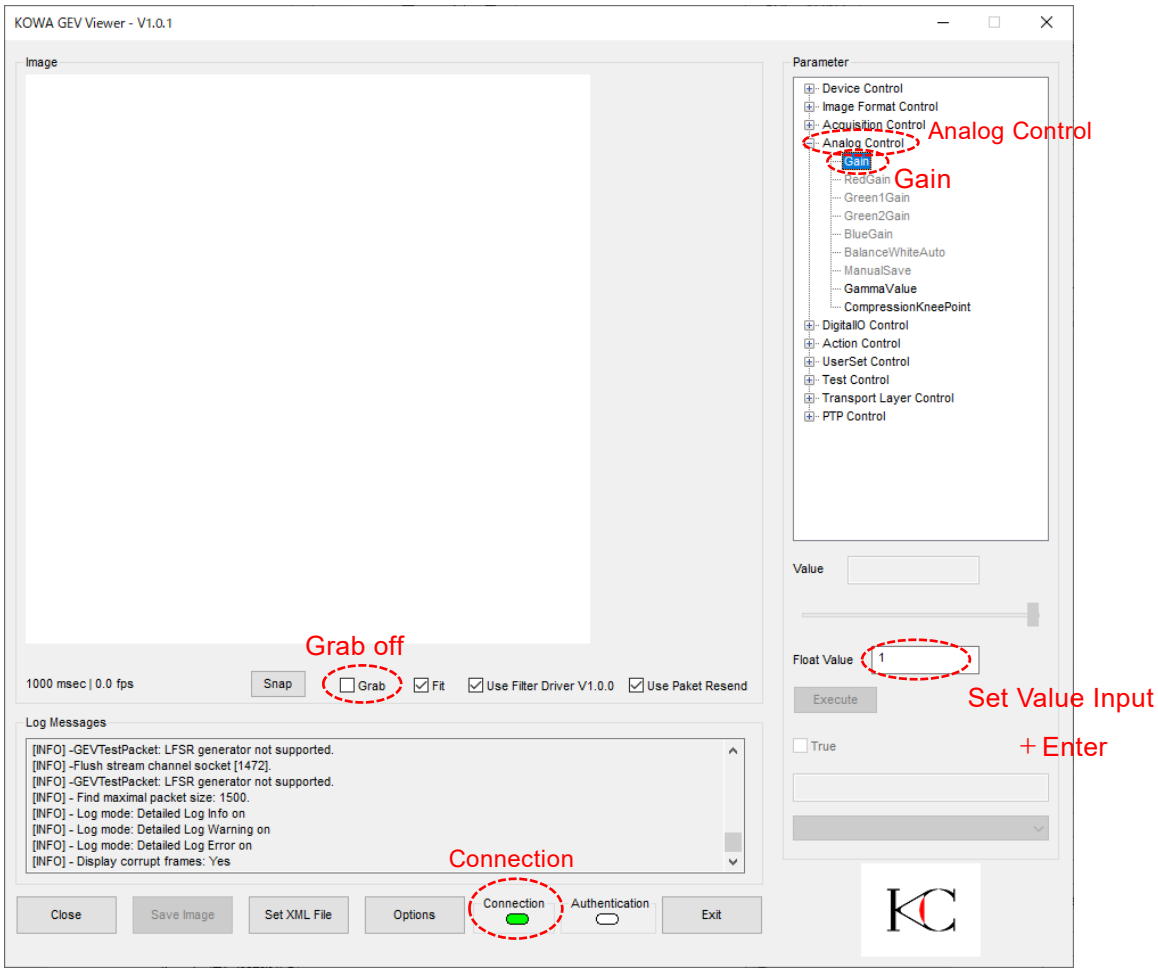
If "**True**" is checked in "**Exposure Auto**" of "**Acquisition Control**", the exposure time will be adjusted automatically.

5.3 Brightness (Gain) Settings

The brightness of the image is adjusted by adjusting the sensitivity. The magnification is specified with "**Gain**" in "**Analog Control**" of "**Parameters**".

After **inputting the set value** in "**Float Value**", click the **Enter** (Return) key. (There are restrictions on the set value, and the input value and the actually set value may differ.)

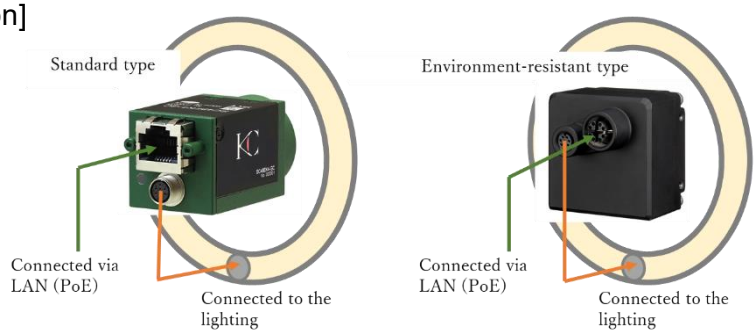
The initial value is 1. Increasing the value makes it brighter, and decreasing it makes it darker.



5.4 Lighting Control (PWM Dimming Control) Settings

Connecting the camera and the lighting, the power supply to the lighting and PWM dimming control can be done.

[Example of Connection]

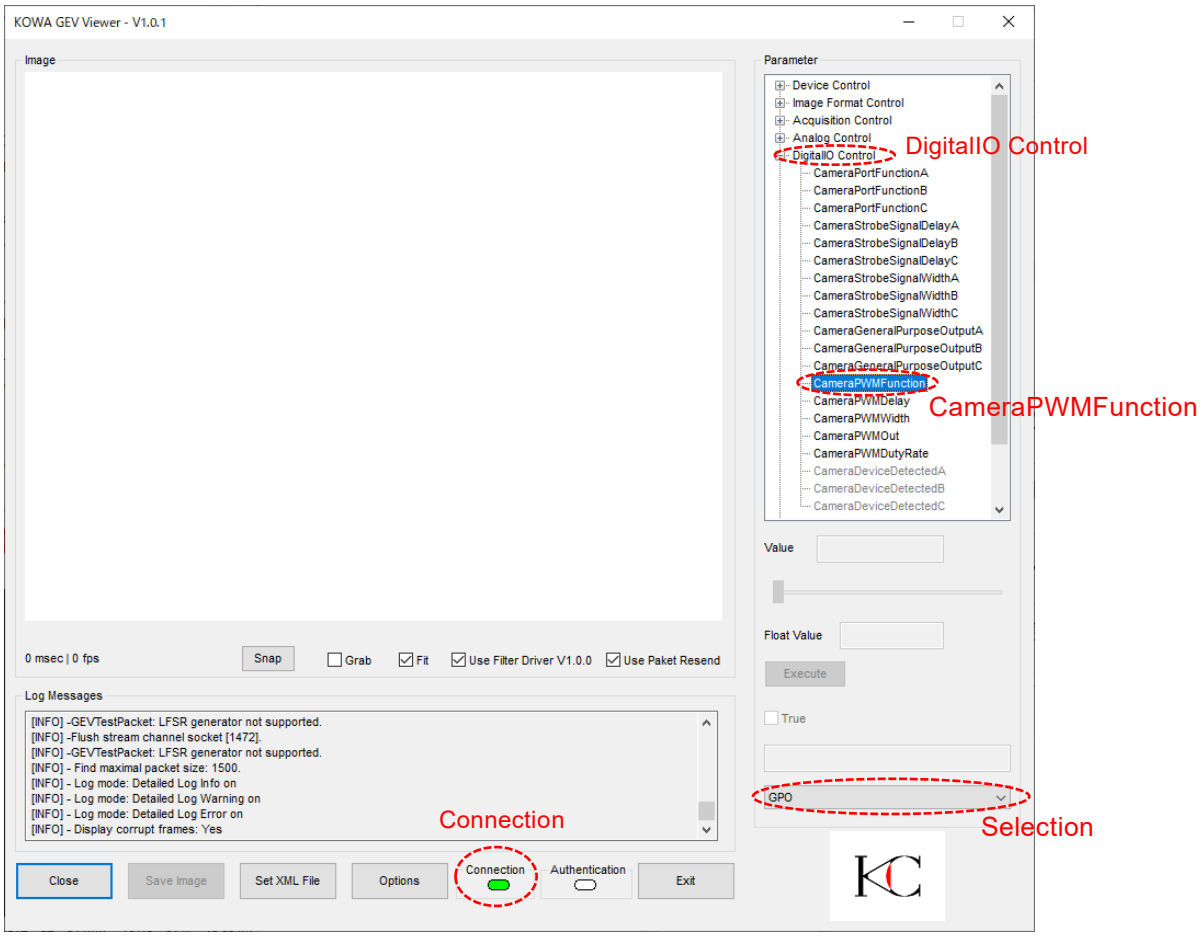


[1] Select Operation Mode

Select “**CameraPWMFunction**” in “**DigitalIO Control**” of “**Parameters**" and select the operation mode of PWM control from **the pulldown at the bottom**.

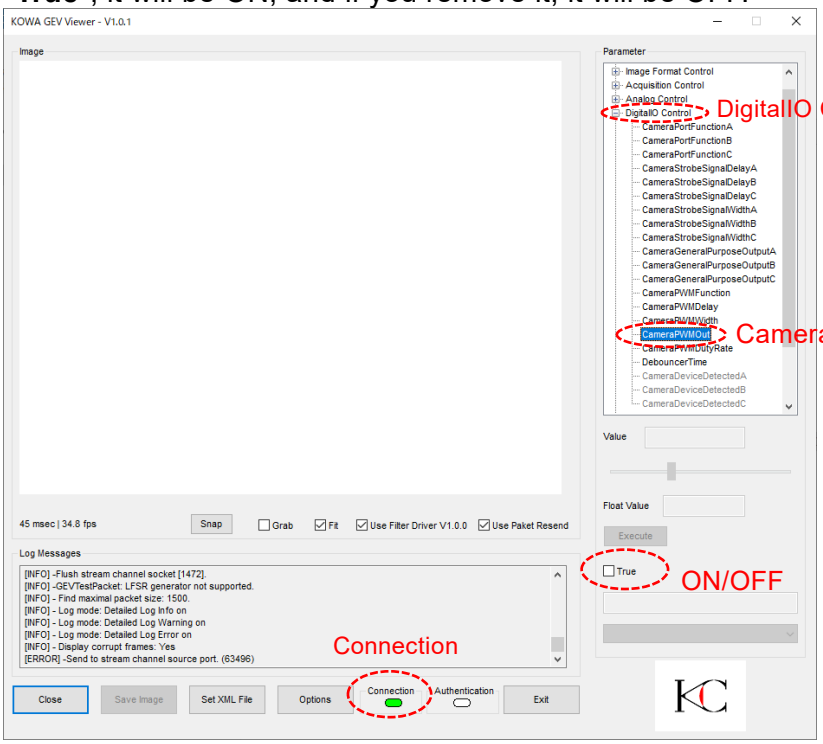
GPO : This is the user mode. The user turns the lighting on and off regardless of whether or not shooting is being performed. (PWM signal is output when "**CameraPWMOut**" is set to "**True**".)

Strobe : This is the strobe mode. The lighting is turned on during shooting. (PWM signal is output by the shooting trigger.)



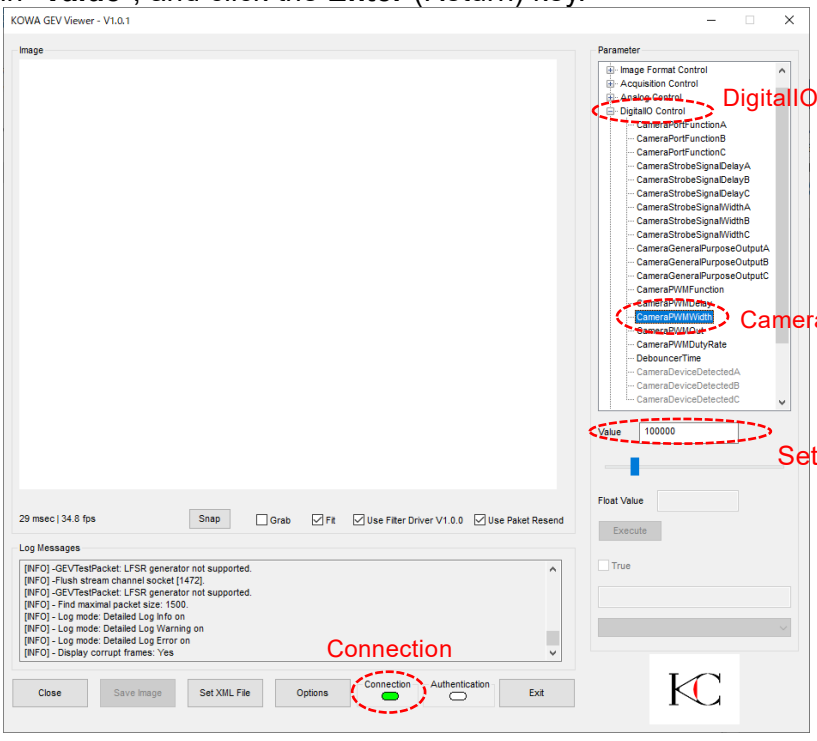
[2] Manual Output of PWM Signal

PWM output is turned ON/OFF when "**CameraPWMFunction**" is "**GPO**" (user mode). Select "**CameraPWMOut**" in "**DigitalIO Control**" of "**Parameters**". If you check "**True**", it will be ON, and if you remove it, it will be OFF.



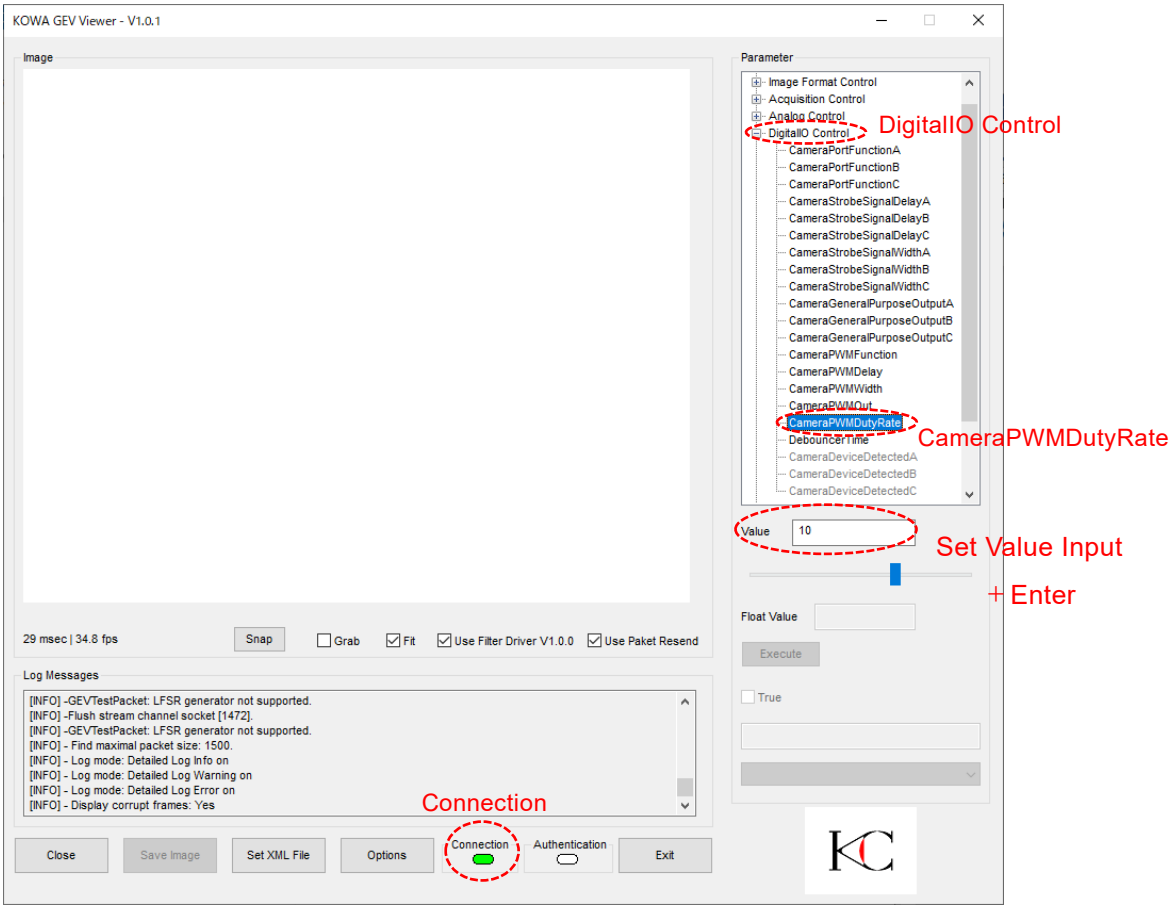
[3] Setting on Lighting Time

When "**CameraPWMFunction**" is "**Strobe**" (strobe mode), specify the time [μs] to output the PWM signal. (0 to 655350)
Select "**CameraPWMWidth**" in "**DigitalIO Control**" of "**Parameters**", **input the set value** in "**Value**", and click the **Enter** (Return) key.



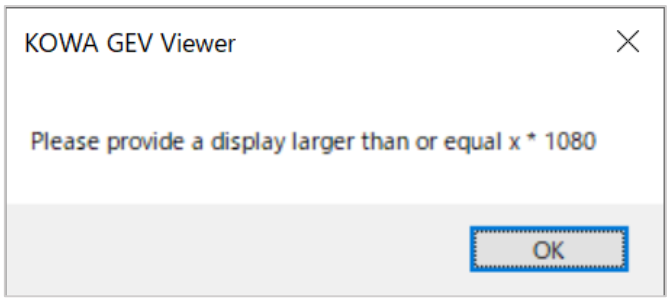
[4] Illuminance Adjustment

Select the duty ratio of the PWM pulse and select the illuminance.
Select "**CameraPWMDutyRate**" in "**DigitalIO Control**" of "**Parameters**", **input the set value** in "**Value**", and click the **Enter** (Return) key.
There are 16 levels of intensity from 0 (weak) to 15 (strong).



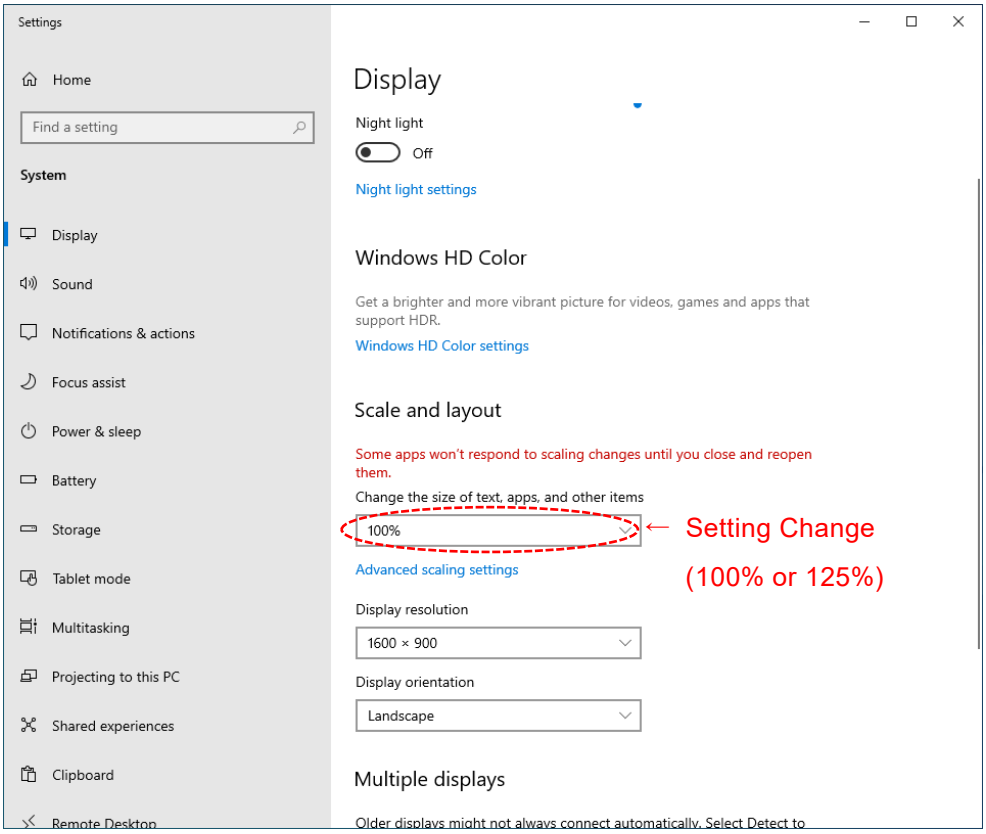
■Troubleshooting (i)

If the message in the figure below is displayed when starting KOWA GEV Viewer, you may be able to avoid the problem by changing the display settings.



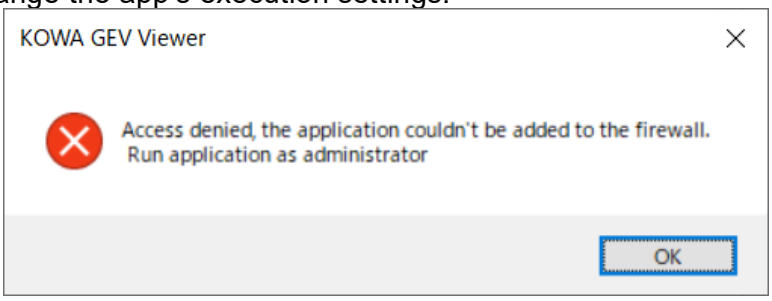
If the PC display settings in "**Scale and Layout**" or "**Change the size of text, apps, and other items**" is set to enlarged, change the setting to **100% or 125%** (depending on the display resolution).

After setting, check if KOWA GEV Viewer starts normally.



■Troubleshooting (ii)

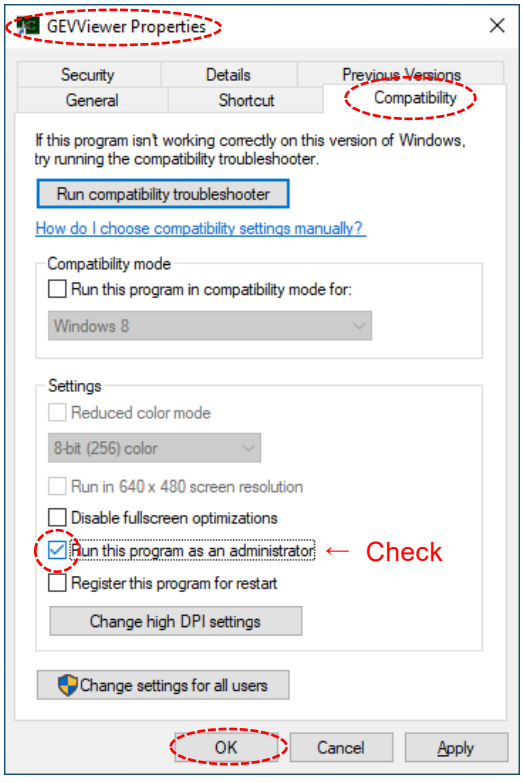
If the message in the figure below is displayed when starting KOWA GEV Viewer, it is necessary to change the app's execution settings.

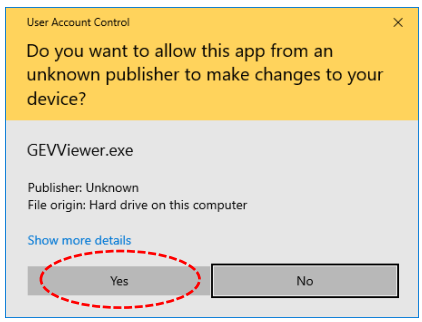


Right-click the "GEVViewer" shortcut on the desktop and open properties.

Select the "**Compatibility**" tab, check "**Run this program as an administrator**" and click "**OK**".

After setting, check if KOWA GEV Viewer starts normally.





If a message asking for permission to change the device appears when you start the app, click "**Yes**".

If you can't solve it, it may be due to your PC's security measures. Please contact the your PC administrator.