installation manual

pco.kaya frame grabber

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Excelitas PCO GmbH asks you to carefully read and follow the instructions in this document.
For any questions or comments, please feel free to contact us at any time.

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pco.kaya frame grabber installation manual 5.0.0

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Contents

1 Introduction

This manual describes the installation of the ***Kaya Komodo CLHS Compatible Frame Grabber***and the ***Kaya Komodo II CLHS Compatible Frame Grabber*** for PCO cameras with CLHS FOL interface.
When installing PCO software, select the CLHS interface driver to access PCO cameras via Kaya frame grabbers.

Requirements Please consider the following system requirements:

- PCIe Slot x8 or x16
- Gen 3 and 8 lanes
- Supported operating systems:
  - Windows 10 or later[1] (64-bit)
  - Linux (64-bit)

Note For detailed information on Kaya frame grabbers and software, refer to the documentation supplied by Kaya.

Support If you encounter any issues, please contact our customer support.

[1] We recommend using only currently supported operating systems.

2 Safety Instructions

CLASS 1 LASER PRODUCT
Risk of injury due to laser beam.

→ Do not look into the laser beam or at direct reflexes.

→ Do not point the laser beam at persons.

→ Manipulations of the laser device are not allowed.

WARNING
VOLTAGE-CARRYING PARTS INSIDE: Risk of electric shock or injury. Always pull the main plug before opening the computer.

3 Frame Grabber Installation

This section includes instructions for installing the frame grabber, including the required compatible PCO driver. The frame grabber is required to connect a PCO camera with CLHS FOL interface to the computer.

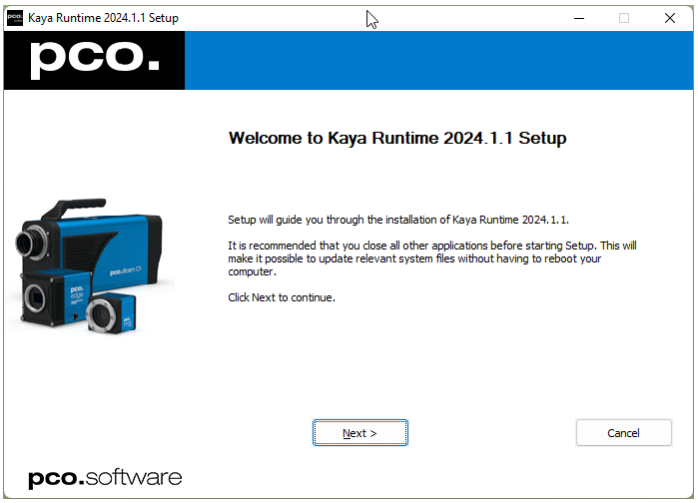
NOTICE: Physical installation of the frame grabber card must be performed by a qualified technician, as high voltages can occur on the device.

WARNING
VOLTAGE-CARRYING PARTS INSIDE: Risk of electric shock or injury. Always pull the main plug before opening the computer.

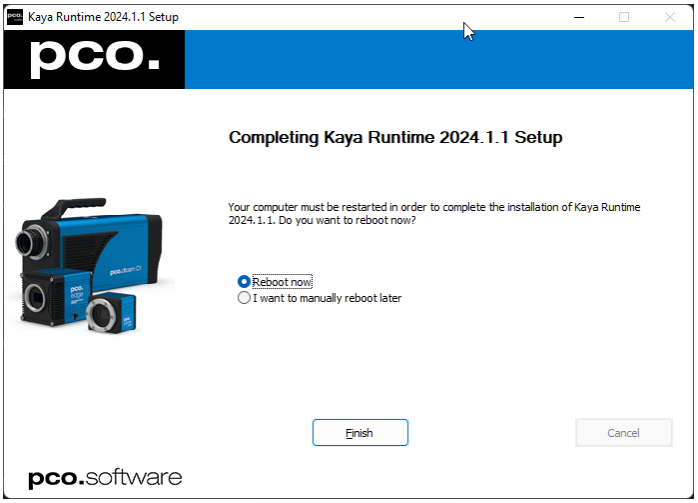
3.1 Windows

Download the latest pco.driver KAYA Windows package from our website.

1. Shut down and unplug your computer.
2. Open the computer case and insert the frame grabber card into an available PCIe slot.
3. Plug your computer back in and turn it on.
4. Start the installation and follow the installation wizard:



5 After the installation has finished, reboot your computer.



6 The frame grabber should now be displayed in the Device Manager. If it is not displayed, reinstall the driver.

7 Check the frame grabber's hardware information (chapter **4**).

3.2 Linux

Download the latest pco.driver KAYA Linux package from our website.

1. Shut down and unplug your computer.
2. Open the computer case and insert the frame grabber card into an available PCIe slot.
3. Plug your computer back in and turn it on.
4. Install the dependencies:

```
sudo apt-get update && apt-get install libdouble-conversion-dev ↩
    build-essential libopencv-dev
```

5. Use dpkg[2] to install the *.deb file:

```
sudo dpkg -i pco.kaya-runtime_*.*.*_amd64.deb
```

(Alternatively, you can also use `sudo apt-get install` to install the package.)

6. Check if the frame grabber is detected. At least 2 devices should be found with this command:

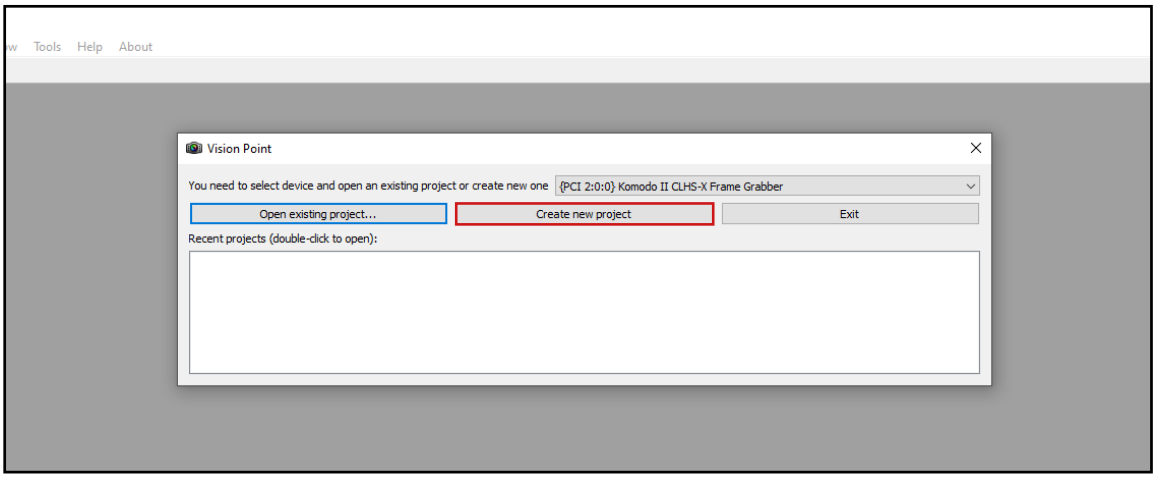
```
ls /dev/predator*
```

[2]The dpkg package needs to be installed for this, this can be done by *sudo apt-get install dpkg*.

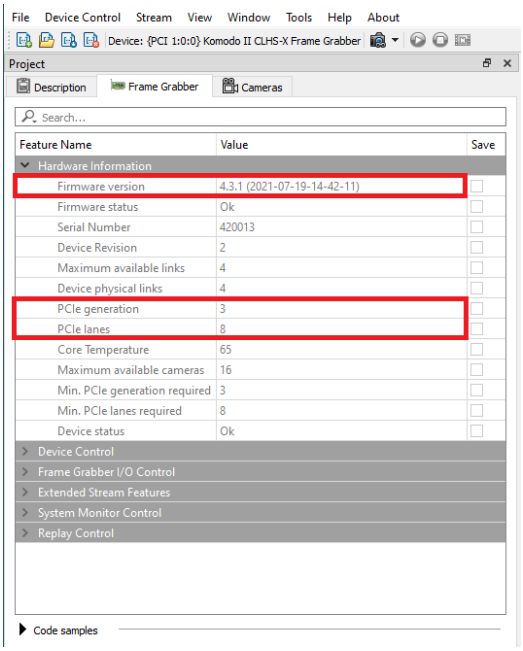
4 Vision Point Software

After installation is finished, start the ***Vision Point*** application to check the hardware information.

1. Click ***Create new project***.



2. In the ***Project*** window, select the ***Frame Grabber*** tab.
3. Expand the ***Hardware Information*** section and check the following values:
   - Firmware version:
     - Komodo II : 5.5.1 or higher
     - Komodo : 4.25.32 recommended
   - PCIe generation: 3
   - PCIe lanes: 8

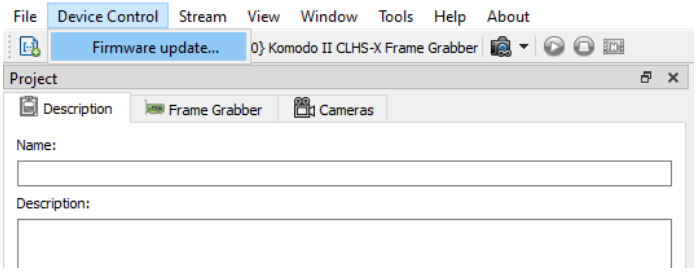


Note For proper operation, update the frame grabber firmware (see chapter **5**) to the versions listed above.

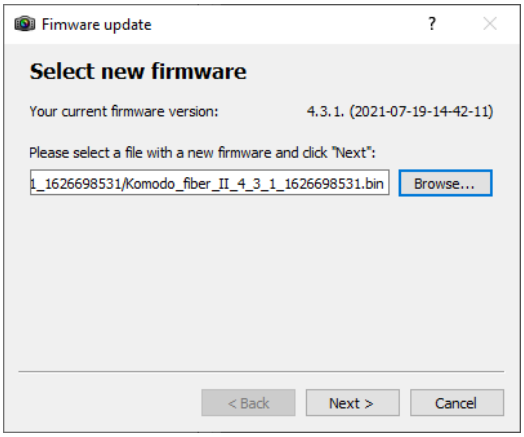
5 Update Frame Grabber Firmware

How to update the firmware of the frame grabber.

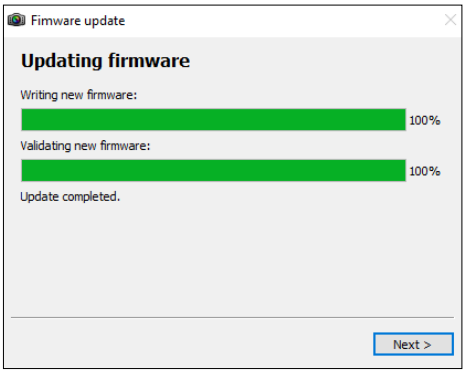
1. Download the firmware package for the specific frame grabber from the Kaya website.
2. In the toolbar click ***Device Control*** and select ***Firmware update...***.



3. Select the correct firmware update file.

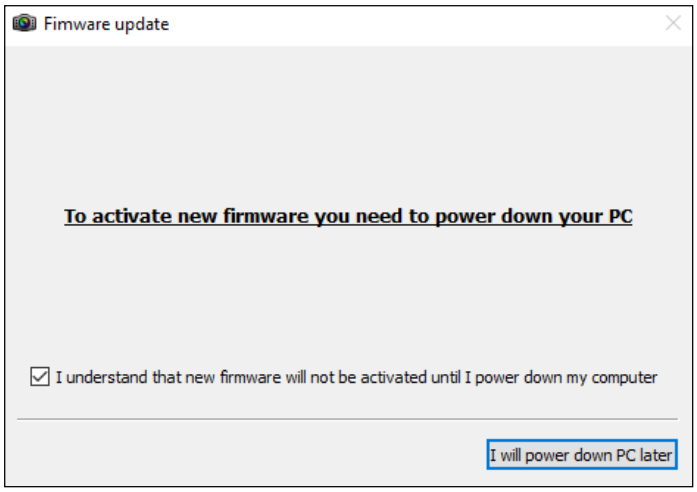


4. Click ***Next*** and wait until the update process is finished.



Do not switch off or unplug your computer during this process.

5 Once the update process is complete, power down your computer (a restart is not sufficient).



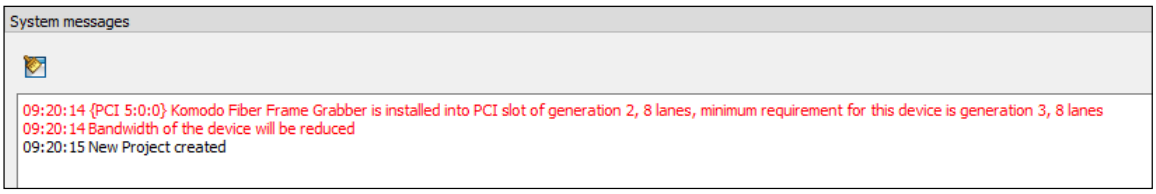
6 Troubleshooting

This section describes potential issues when using the frame grabber.

PCI Express Generation

Gen 2/4 lanes

If the frame grabber card is inserted in a PCIe slot with only Gen 2 capability and/or with only 4 PCIe lanes, memory bandwidth for image transfers is limited and images might be lost.
The Vision Point software will inform you if your system has limitations:



Gen 4 or 5

If your computer has PCIe Gen 4 or 5 slots and uses a Kaya Komodo II frame grabber, the frame grabber will not be recognized when the BIOS ”Data Link Feature Exchange” is set to ”Enabled”.

For more information, refer to our Troubleshooting Guide for KAYA Frame Grabber.

Info

Finding BIOS Settings on Supermicro Systems:

```
Supermicro X12 BIOS

Grabber found as Gen3 x8

Advanced
    Chipset Configuration
      North Bridge
        IIO Configuration
          Intel VT for Directed I/O (VT-d)
            Intel VT for Directed I/O (VT-d) [Disabled]

          CPU 1 Configuration
            CPU SLOT1 PCI-E 4.0 X8
            Link Speed                          [Auto]
            PCI-E Port Link Status
            PCI-E Port Link Max
            PCI-E Port Link Speed
            Data Link Feature Exchange          [Disabled]
            PCI-E Port Max Payload Size         [Auto]


    PCIe/PCI/PnP Configuration
      Above 4G Decoding                         [Enabled]
      SR-IOV Support                            [Enabled]
      ARI Support                               [Enabled]
      Bus Master Enable                         [Enabled]
      ...
```

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