

installation manual

# pco.kaya frame grabber



**Target Audience:** This software is designed for use by technicians, engineers, and scientists.

**In case of any questions or comments, please contact us at PCO.**



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The cover photo shows an exemplary PCO camera system.  
The lens is sold separately.

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Released November 2018 © PCO AG

By Thomas Hartmann

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# KAYA FRAME GRABBER INSTALLATION

## 1.1 INTRODUCTION

This manual describes the installation of a dual or quad port **Kaya Komodo** frame grabber for PCO cameras with Camera Link HS interface.

## 1.2 AVAILABILITY

Available for these camera models:

- pco.edge with Camera Link HS interface
- pco.dicam C1
- pco.dicam C4 (4x Camera Link HS interface)

## 1.3 SUPPORT

In case of errors please contact us at PCO:

- [support@pco.de](mailto:support@pco.de)
- tel +49 9441 2005 0

## 1.4 SYSTEM REQUIREMENTS

- PCIe Slot x8 or x16
- Recommended: Gen 3 and 8 lanes (see chapter 1.7)

## 1.5 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**

### ELECTRIC SHOCK WARNING DUE TO VOLTAGE PARTS INSIDE

Risk of injury due to electric shock.

- ➔ Always pull the main plug before opening the computer.

## 1.6 FRAME GRABBER INSTALLATION

Instructions for installing and testing the **Kaya Komodo Camera Link HS** grabber card. This card is required to be able to use a PCO camera with Camera Link HS interface. Installation must be performed by a technician, because high voltages can occur on the device.



**WARNING**

**ELECTRIC SHOCK WARNING DUE TO VOLTAGE PARTS INSIDE**  
Risk of injury due to electric shock.

→ Always pull the main plug before opening the computer.

Install the latest Kaya Komodo package. (Download approved version from: <http://www.pco.de/support/>)

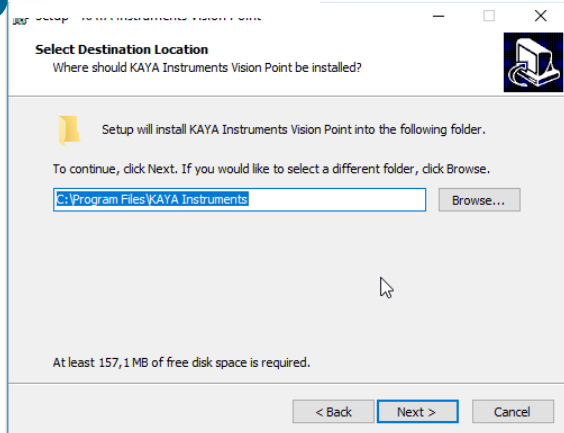
Only 64-bit computer systems are supported.

- 1 Shutdown your computer, open the computer case and install the frame grabber card
- 2 Select proper folder at your computer
- 3 Deselect **Virtual COM port for serial communication**
- 4 The frame grabber card should be displayed within the device manager. If the device is not shown this way, reinstall the driver.
- 5 Start **Vision Point** application (see chapter 1.7)

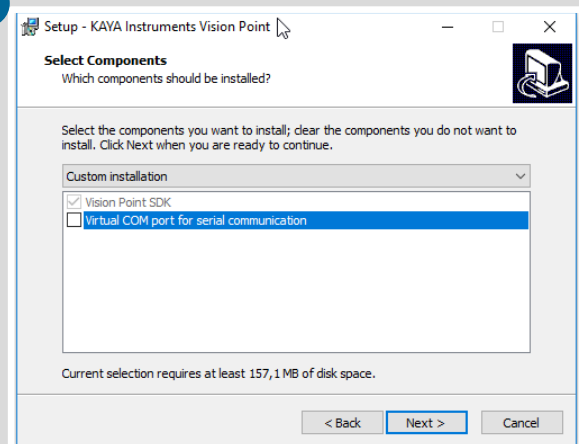
1



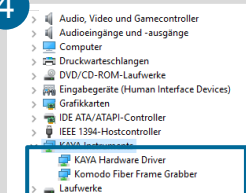
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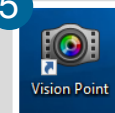
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4



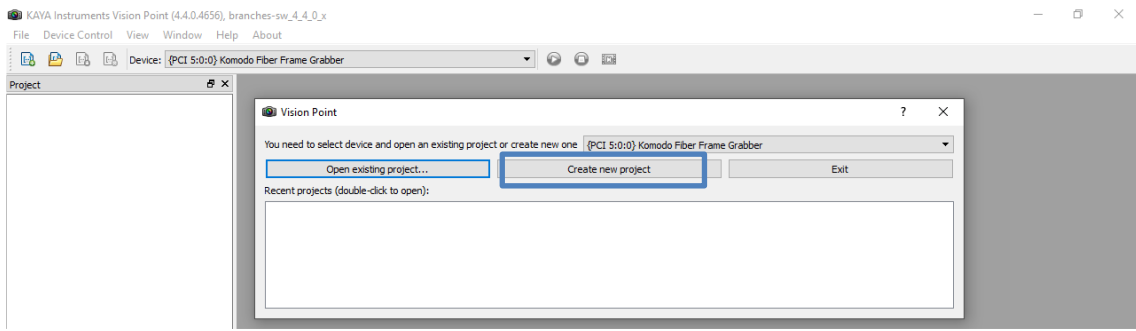
5



## 1.7 VISION POINT SOFTWARE

After the installation is finished, open the Vision Point software and check the hardware information.

First click **Create new project**



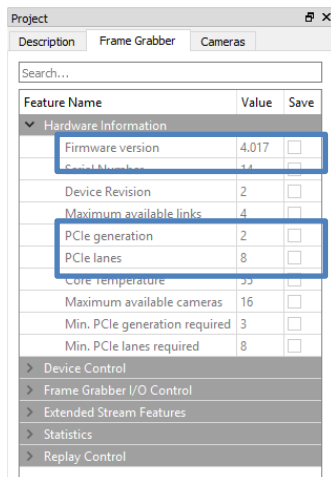
Take a look at the **Project** tab.

Click **Frame Grabber** → **Hardware Information**

Check the following values:

- Firmware version:  $\geq 4.017$
- PCIe generation: 3 (see **Note**)
- PCIe lanes: 8

Grabber firmware must be updated if version is smaller than 4.017, see chapter 1.8.

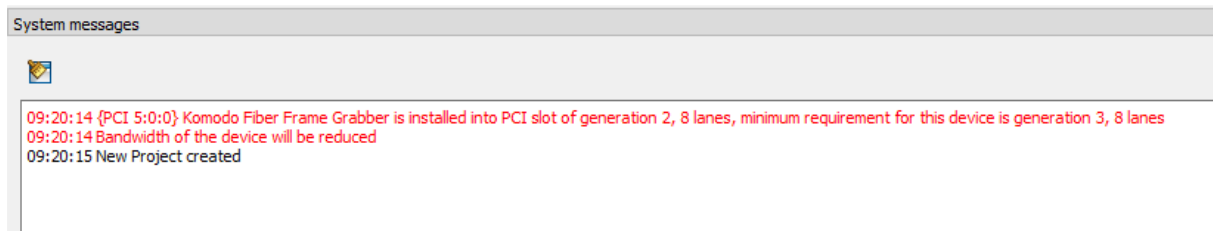


**NOTE**

### PCI Express Generation 2 / 3

If the grabber is installed in a PCIe Slot with only Gen2 capability and/or with only 4 PCIe lanes, memory bandwidth for image transfers is limited and images might be lost.

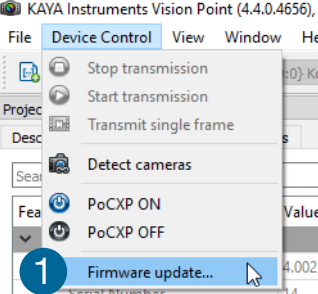
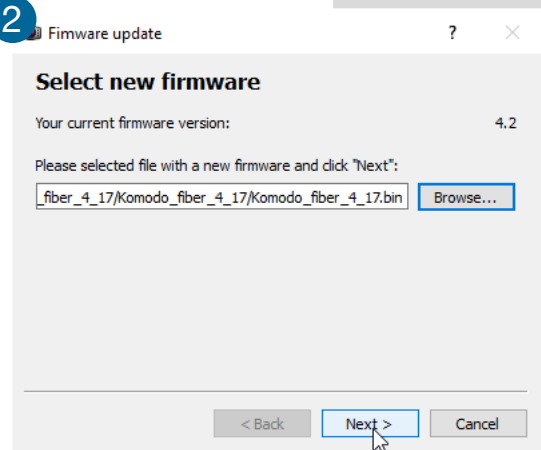
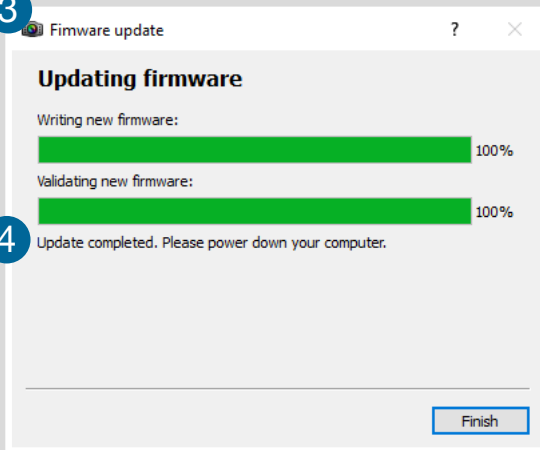
Vision Point software will give you a hint, if your system has limitations:



## 1.8 UPDATE FIRMWARE OF THE GRABBER

How to update the firmware of a Kaya frame grabber card.

- 1 Select **Device Control** → **Firmware update...**
- 2 Select proper firmware update file
- 3 Click next and wait till the update process is finished
- 4 Power down your computer, a restart is not sufficient.

### NOTE

**Do not unplug**  
Do not unplug and/or switch off your computer during the update.

## ABOUT PCO



pcoco.

### ***pcoco.history***

“PCO” stands for what we are: a Pioneer in Cameras and Optoelectronics. With 30 years of expert knowledge and experience PCO has forged ahead to becoming a leading specialist and innovator in digital imaging used in scientific and industrial applications such as life and physical science, high-speed imaging and machine vision. However, the beginning of PCO’s story of success dates back to the 1980s and a research project of the founder, Dr. Emil Ott, who was working at the Technical University Munich for the Chair of Technical Electrophysics. While performing measurements with intensified slow scan cameras, Dr. Ott realized that the existing standard did not meet the sophisticated requirements of scientific applications – and so PCO came to life in 1987. With a small team of engineers Dr. Ott began to develop his first image intensified camera followed by several variations on the original model, geared to overcoming all the existing flaws and surpassing standards of the day. During these early years PCO developed a now well established core of advance technologies used as the foundation to develop cutting edge products.

In the early 1990s PCO expanded its business activities to the global market by successfully establishing an international network of highly trained sales partners and customers. We entered additional fields beyond traditional scientific research expanding the potential for our cameras’ applications in life science, automotive testing and even broadcasting. This step paved the way for a wide range of innovative highlights:

As of 2017, PCO has three decades of technical know-how and expert knowledge in the development and manufacturing of high-performing camera systems. In-house competence of all significant technical disciplines and partnering with leading image sensors manufactures ensures cutting edge sCMOS, CMOS and CCD technology for all PCO cameras.

### ***pcoco.prospect***

“If you want to do something special, particularly in the high end fields, you have to develop your own image sensors. So we work with partner companies who develop tailored sensors made especially for us. This is something we are doing continuously, so we’re already working on the next generation of cameras that we will introduce in the coming years” – Dr. Emil Ott.

In PCO’s first 30 years, Dr. Emil Ott took a company that he started right after finishing university and has built it into a major player in scientific and industrial cameras – and there’s plenty more to come.

**pcó.**