

pco.[®]

pco.Silicon Software grabber & driver installation

FOR WINDOWS AND LINUX




excelitas[®]

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.

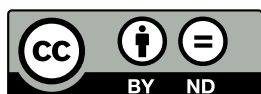


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1 Introduction

Instructions for installing and testing the **Silicon Software microEnable IV (mEIV)** Camera Link grabber card and the **Silicon Software micro Enable V (mEV)** CLHS FOL grabber card for Microsoft Windows and Linux (Ubuntu 20.04) operating systems.

These cards are required to be able to use pco.edge cameras with Camera Link interface or CLHS FOL interface.



Frame grabber installation must be performed by a technician because high voltages can occur on single parts of your computer.

By default, 64bit and 32bit Runtime is installed on 64bit systems. Optionally you may choose to install only 64bit Runtime.

Silicon Software mEIV AD4/VD4 grabber card (for Linux only VD4 grabber card)



Note: Deactivate power saving settings of your computer.
The variables for ambient temperature must be observed and sufficient air flow to the grabber card must be ensured in the computer, see SiSo documentation.

Supported Platforms

This section lists the currently supported operating systems, runtimes, and tools as well as planned support changes.

Operating systems

OS	Minimum supported	Latest supported	Planned
Debian LTS	11 (until 2026)	12	13 (2026)
Ubuntu LTS	20 (until 2026)	22	24 (2026)
Redhat	8 (until 2026)	9	10 (2026)
Windows	10 (until 2027)	11	Not planned

Runtimes/Tools

Name	Minimum supported	Latest supported	Planned
Python	3.8 (until 2026)	3.12	3.13 (2027)
.Net Framework	4.6 (until 2026)	4.8.1	Not planned
cMake	3.20	—	Not planned
GPU CC	5.0 (until 2026)	—	7.0 (2026)

1.1 Installation order

Steps	Description
1 Runtime	Install SiliconSoftware Grabber Runtime See chapter 2
2 Grabber card	Install grabber card to your computer See chapter 4

Continued on next page

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Steps	Description
3 microDiagnostics	Run microDiagnostics tool See chapter 5
4 Firmware upgrade	Update the firmware of your grabber card Follow the instructions for your frame grabber
a Firmware upgrade	mEIV grabber See chapter 5.1
b Firmware upgrade	mEV grabber See chapter 5.2
5 Performance	Apply board & Performance test See chapter 5.3
6 Camera software	Start pco.camware

2 Installing Runtime

2.1 Linux

Install the PCO SiliconSoftware Grabber Runtime debian package using

```
sudo dpkg -i pco.siso-runtime_<version>_amd64.deb
```

or

```
sudo apt-get install ./pco.siso-runtime_<version>_amd64.deb
```

After installation has finished your system needs to be rebooted.

NOTE If you are running on a Debian system and your camera isn't detected after installation, please try the following steps to fix it:

1 Edit the file `/etc/default/grub`:

Find the line with `GRUB_CMDLINE_LINUX=""` and change it to `GRUB_CMDLINE_LINUX="iomem=relaxed"`.¹

2 Update grub by calling `sudo update-grub`

3 Reboot your system

2.2 Windows

Start PCO SiliconSoftware Grabber Runtime Installation Package

`PCO_DI_SILICONSOFTWARERUNTIME_<version>.exe`

and follow the instructions.

The installer package includes the installation of the Silicon Software Runtime and all necessary applet packages and files, which are necessary to work with pco.cameras.

Follow these steps:

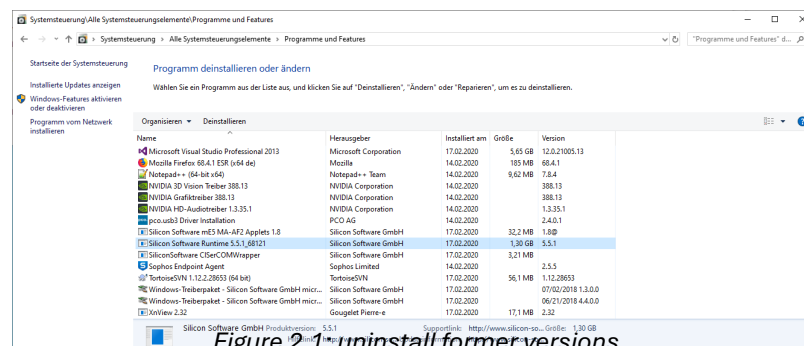


Figure 2.1: uninstall former versions.

¹If the line already has content in, append it with a whitespace `GRUB_CMDLINE_LINUX="<somecontent> iomem=relaxed"`

1 Uninstall former versions of Silicon Software Runtime.

For example, use link from "Programs and Features" in "Control Panel".



Figure 2.2: start.

2 Start installation.

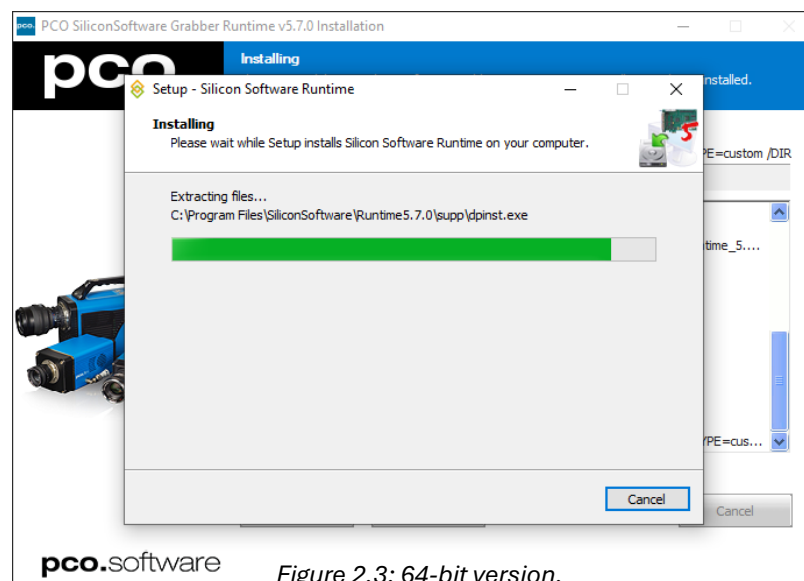
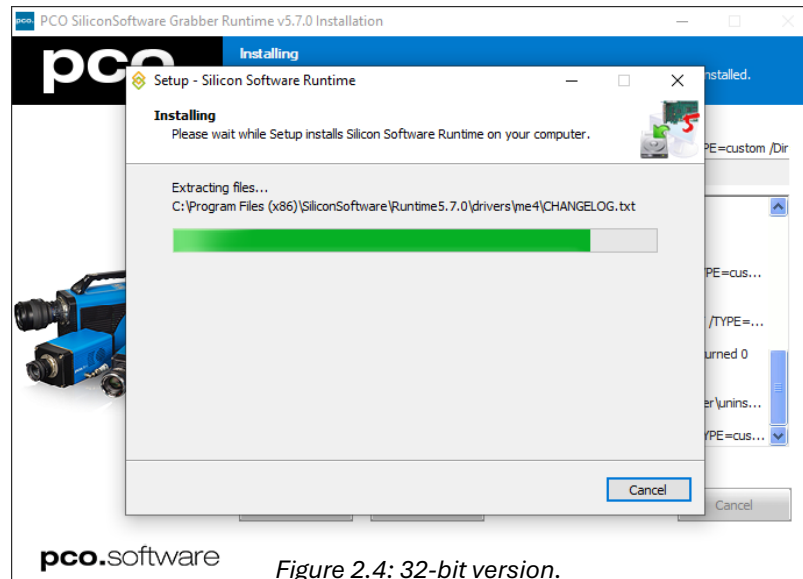
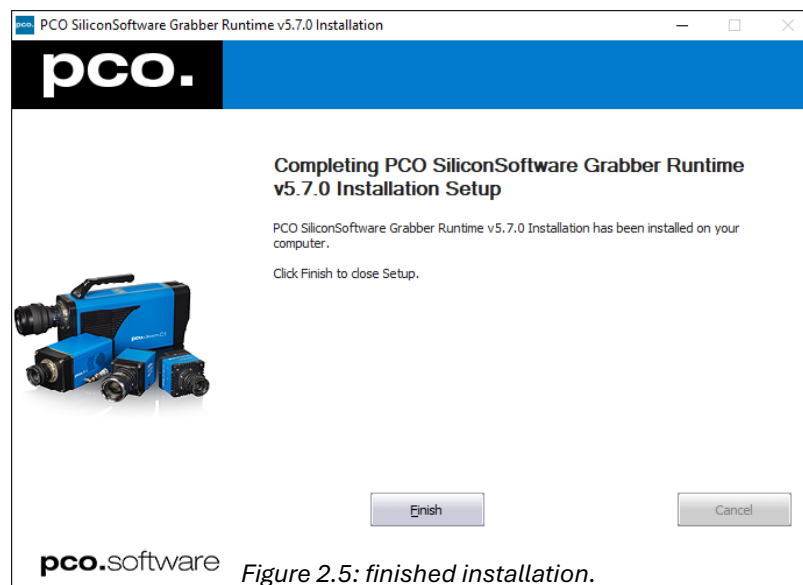


Figure 2.3: 64-bit version.

3 Setup Silicon Software 64Bit is executed automatically.



- 4 **Setup Silicon Software 32Bit** is executed automatically.



- 5 **Installation is finished.**
- 6 **Start microDiagnostics tool** (see chapter 5).

3 Uninstalling Runtime

3.1 Linux

Uninstall the PCO SiliconSoftware Grabber Runtime using

```
sudo dpkg --purge pco.siso-runtime
```

or

```
sudo apt-get purge pco.siso-runtime
```

After uninstallation has finished your system needs to be rebooted.

3.2 Windows

Either use link from "Programs and Features" in "Control Panel" or start Installation Package again and use remove option of maintenance page.

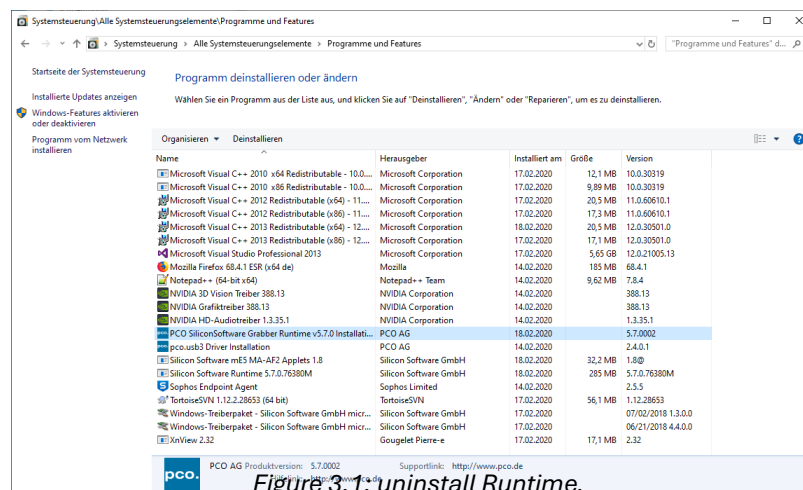


Figure 3.1: uninstall Runtime.

Uninstall from Control Panel.

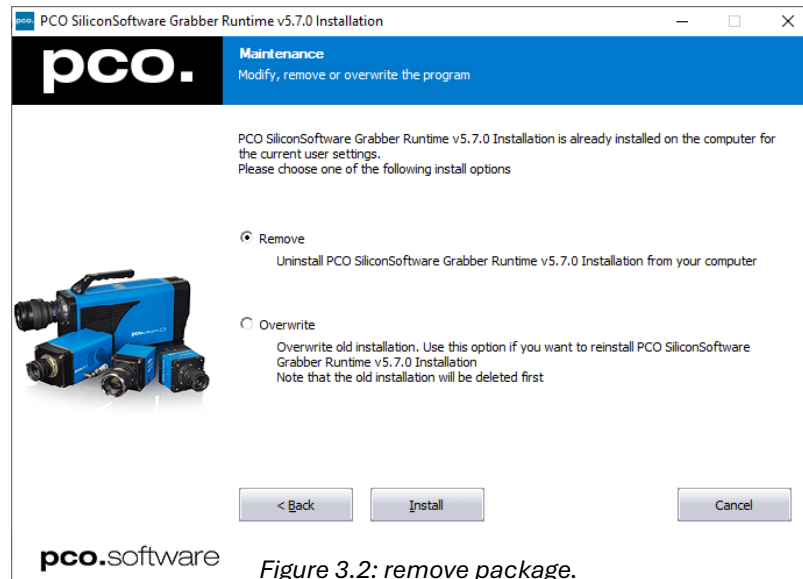


Figure 3.2: remove package.

Uninstall with Installation Package.

4 Install grabber card to PC

The Silicon Software frame grabber card must be installed to your computer.

Electric shock warning due to voltage parts inside.

Risk of injury due to electric shock.

Always pull mains plug before opening the computer.



WARNING

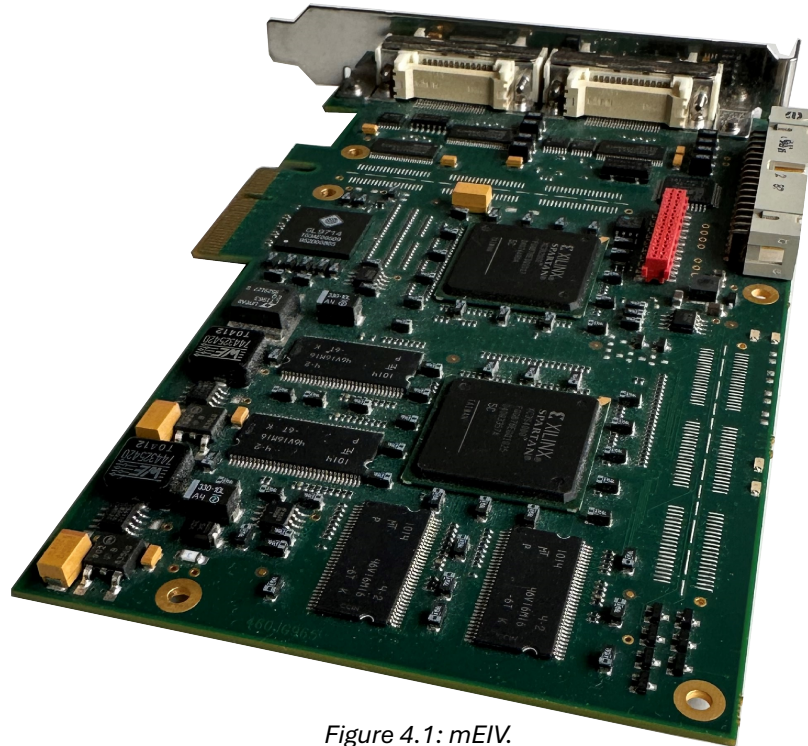


Figure 4.1: mEIV.



Installation of **new components** to a computer should only be performed by a **technician** or **qualified personal**.

Installing mEIV: PCI Express x4 (Gen1), DMA900

- 1 **Shut down** your computer.
- 2 **Unplug** it from mains.
- 3 **Open** the computer case.
- 4 **Install** the frame grabber card to a proper slot.
- 5 **Start** your computer.



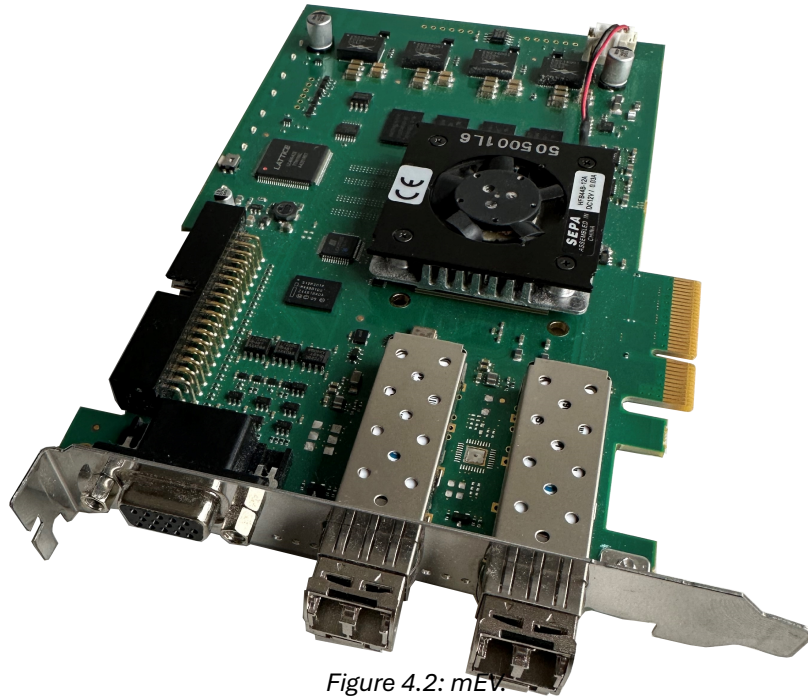


Figure 4.2: mEV.



Installation of **new components** to a computer should only be performed by a **technician** or **qualified personal**.

Installing mEV: PCI Express x4 (Gen2), DMA1800

- 1 **Shut down** your computer.
- 2 **Unplug** it from mains.
- 3 **Open** the computer case.
- 4 **Install** the frame grabber card to a proper slot.
- 5 **Start** your computer.

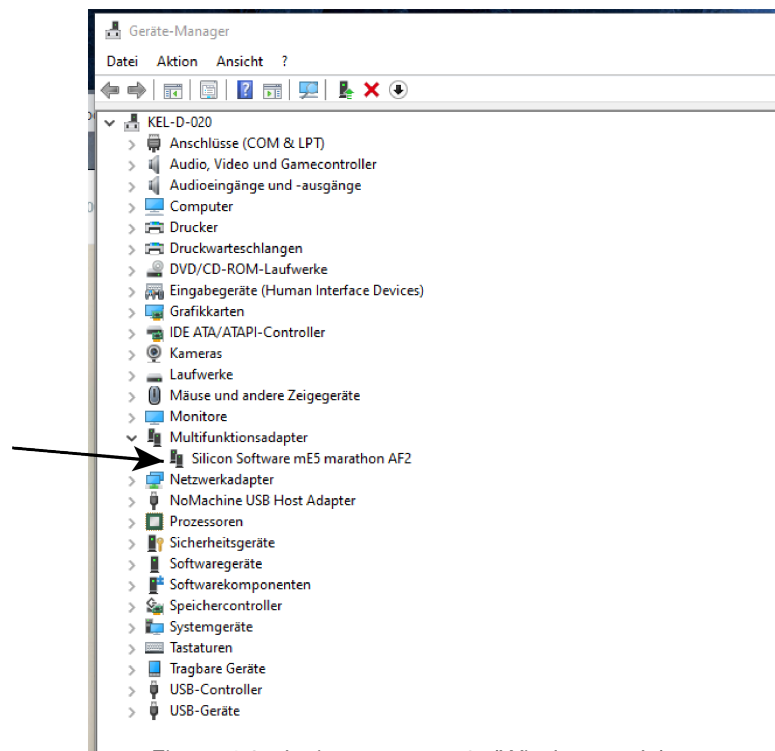


Figure 4.3: device manager 1. (Windows only)

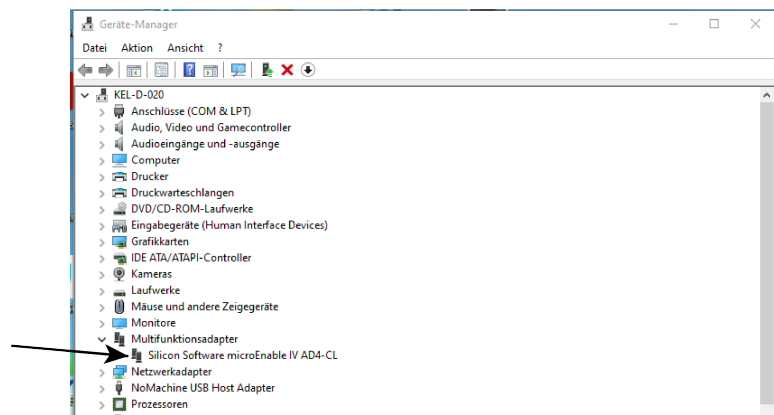


Figure 4.4: device manager 2. (Windows only)

Device manager (Windows only):

The grabber card should be displayed within the device manager. If the device is not shown this way, please reinstall the **Silicon Software device driver**.

Windows short-cut for device manager: press windows + pause/break key.

5 microDiagnostics tool

The **microDiagnostics** tool works with mEIV (AD4 / VD4) and mEV frame grabber cards.

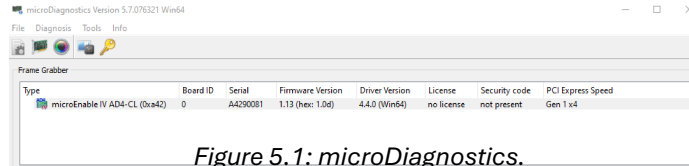


Figure 5.1: microDiagnostics.

Run various diagnostic routines directly on the frame grabber, including **Applets** test, **Board** test, **Performance** test.

Linux On Linux the **microDiagnostics** tool can be started simply by calling `microDiagnostics` in the terminal.

5.1 mEIV grabber firmware upgrade

Upgrading is only necessary if the latest firmware is not installed on your frame grabber!

Upgrade to the latest firmware on your Silicon Software **mEIV** frame grabber by following the instructions.

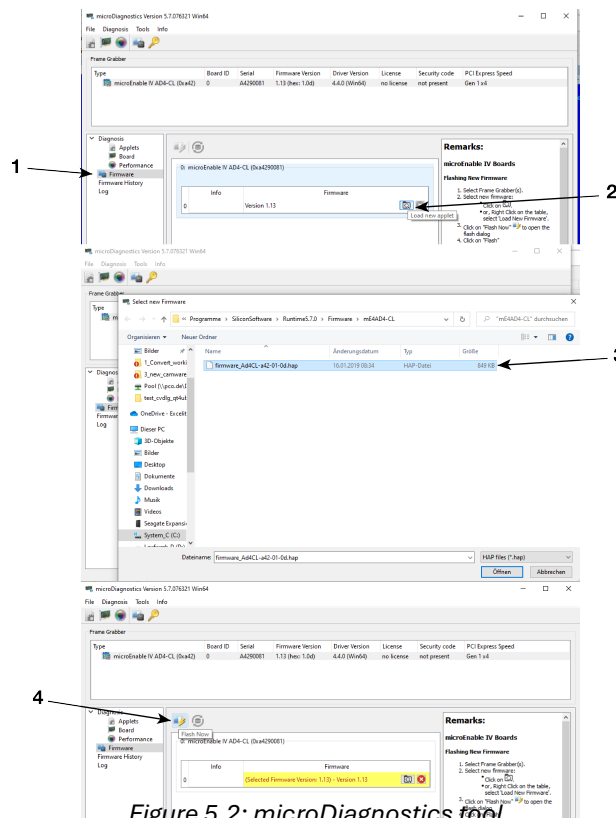


Figure 5.2: microDiagnostics tool.

- Click **Firmware**. (1)
- Click **Load new applet**. (2)
- Select the appropriate hap file. (3)
- Click **Flash Now**. (4)

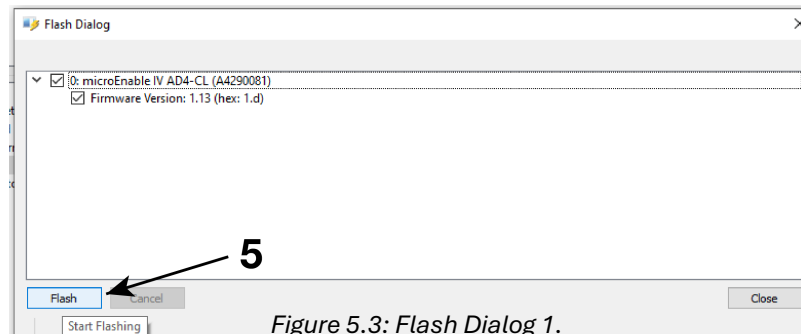


Figure 5.3: Flash Dialog 1.

Flash Dialog opens.

- Click **Flash**. (5)

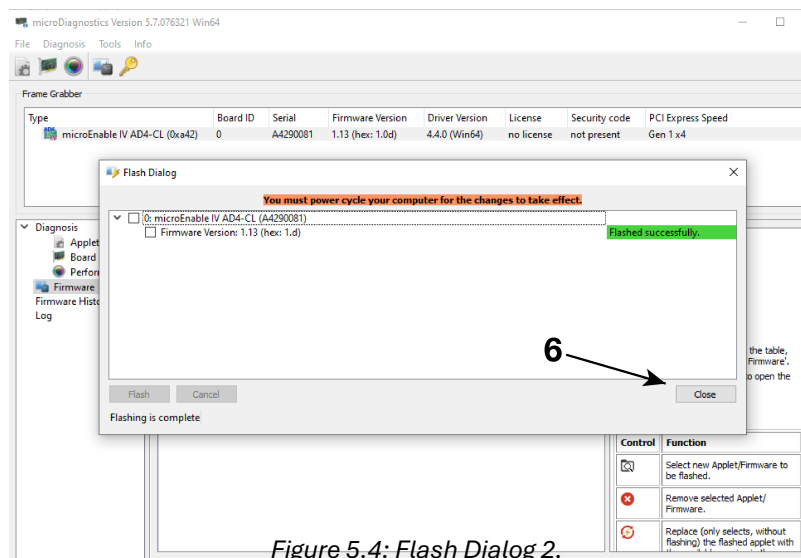


Figure 5.4: Flash Dialog 2.

Now it is successfully flashed.

- **Close** this dialog. (6)

You must **shut down** (a restart is insufficient) your computer **completely** after the firmware upgrade for the changes to take effect.

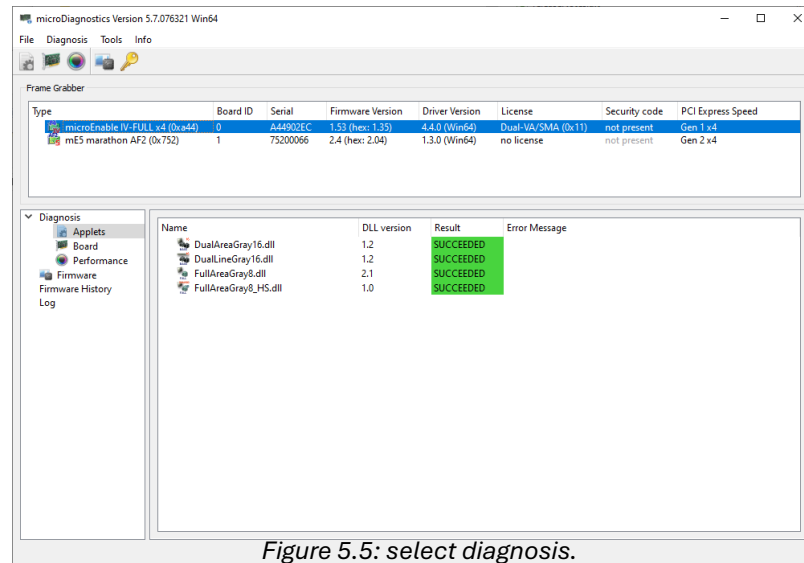


Figure 5.5: select diagnosis.

Last step:

Select Diagnosis -> Applets

Result must be: **succeeded**.

5.2 mEV grabber firmware upgrade

Upgrading is only necessary if the latest firmware is not installed on your frame grabber!

Preparations

All steps described in the following chapter for the mEV marathon AF2 grabber also apply for the mEV VF2 grabber.

The latest firmware applet for the grabber card is already copied during installation. Check firmware version on the grabber card using the microDiagnostics software described below. PCO cameras only use firmware applet Acq_DualCLHSx1AreaRAW.

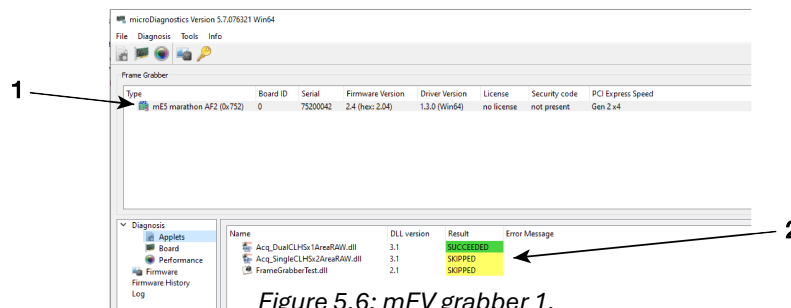
Firmware upgrade

Figure 5.6: mEV grabber 1.

First, test if the proper firmware is installed.

Select Diagnosis -> Applets (1)

If test result for Acq_DualCLHSx1AreaRAW.dll (Windows) or libAcq_DualCLHSx1AreaRAW.so (Linux) is **skipped** an update is required. (2)

Select Diagnosis -> Firmware.

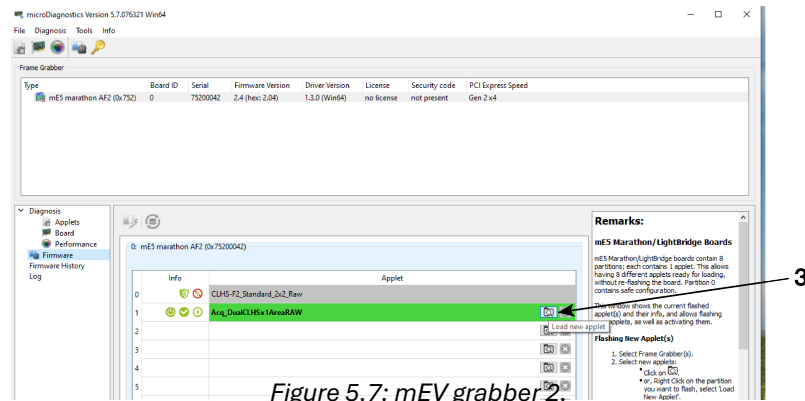


Figure 5.7: mEV grabber 2.

The current **Applet** must be updated.

Click **Load new applet** (3) and select the new Acq_DualCLHSx1AreaRAW.dll.

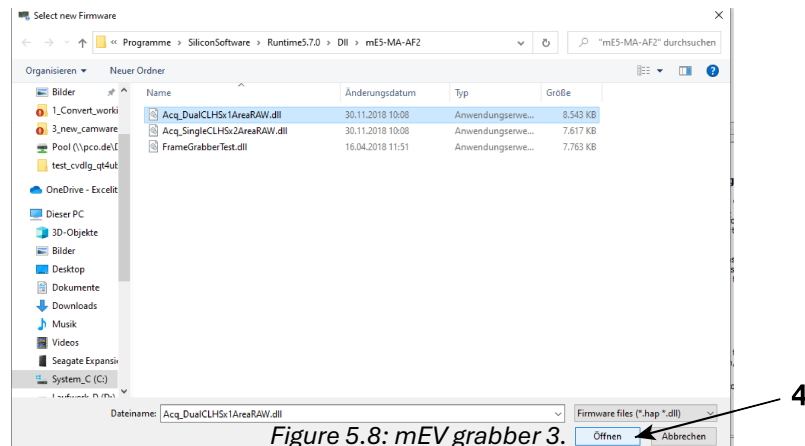


Figure 5.8: mEV grabber 3.

Click **Open**. (4)

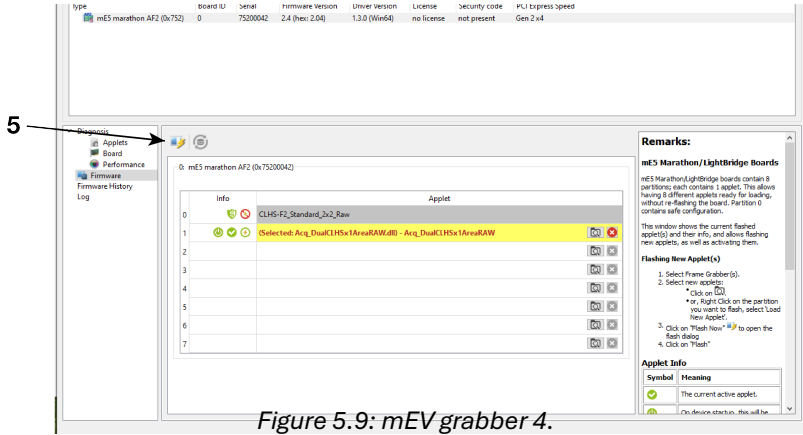


Figure 5.9: mEV grabber 4.

Click **Flash Now**. (5)

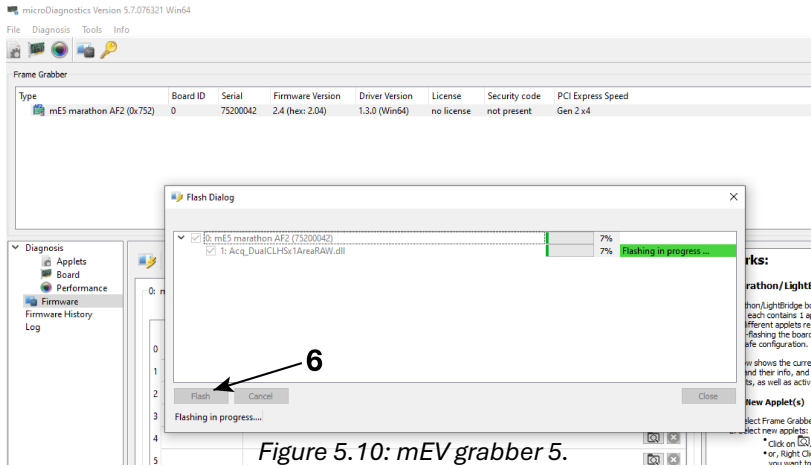


Figure 5.10: mEV grabber 5.

Flash Dialog opens.

Click **Flash**. (6)

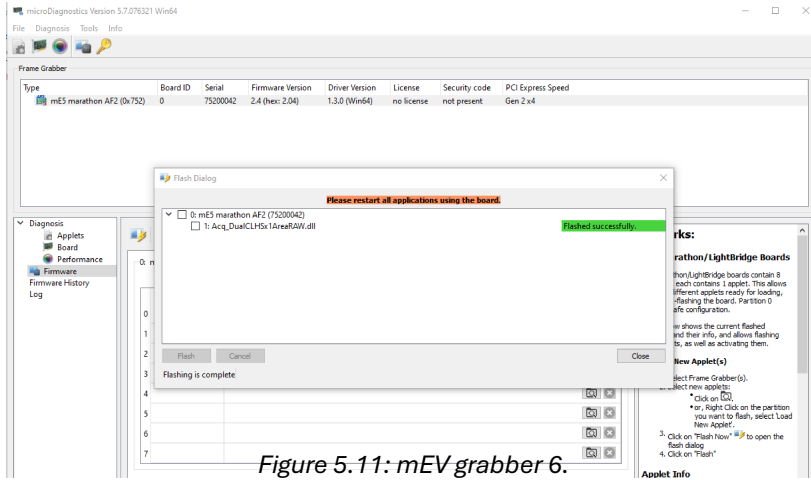


Figure 5.11: mEV grabber 6.



Now it is flashed successfully.

Close this dialog.

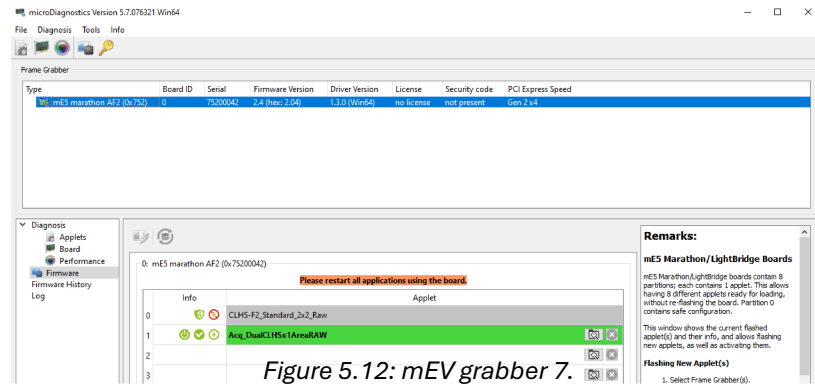


Figure 5.12: mEV grabber 7.

Restart all applications using the board.

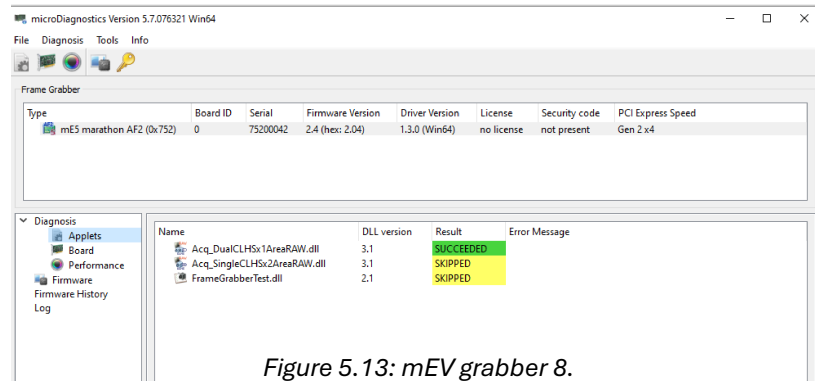


Figure 5.13: mEV grabber 8.

Select Diagnosis -> Applets.

Now the **Result** is **succeeded**.



5.3 Performance test

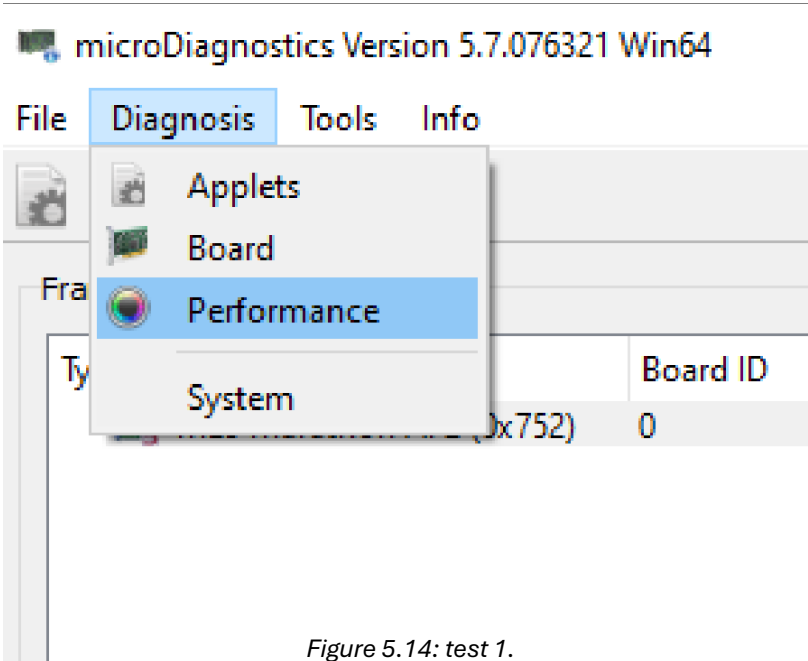


Figure 5.14: test 1.

To test the board, open the **Diagnosis** menu and click **Board** to start the test.

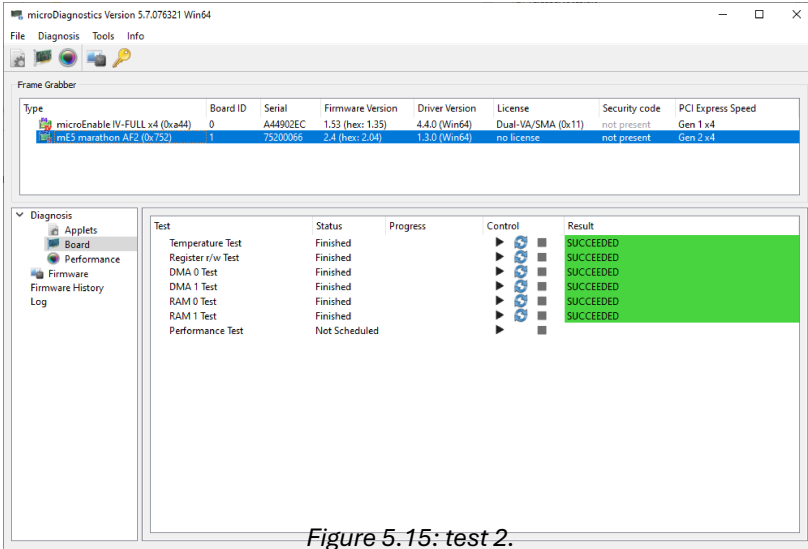


Figure 5.15: test 2.

All test results should show **succeeded**.

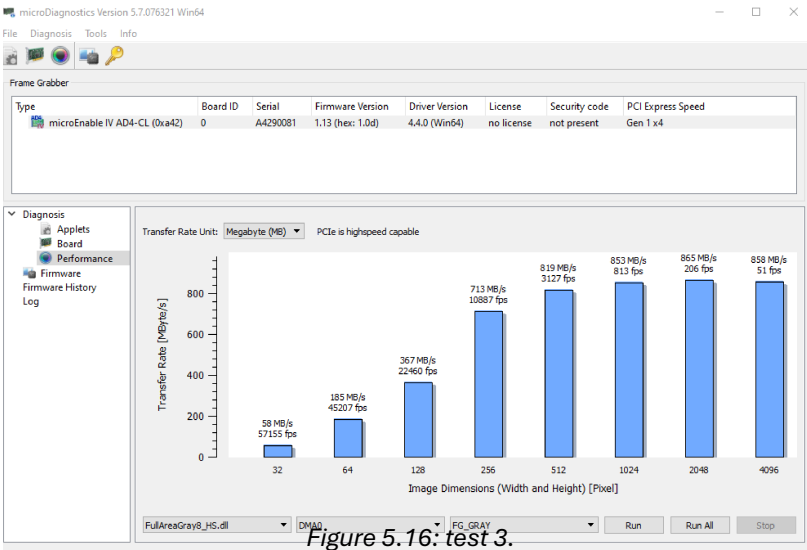


Figure 5.16: test 3.

Test the performance: Click **Performance** to start the test.

It is mandatory that the **PCIe board is high-speed capable**. Otherwise the board will probably not be able to support the necessary data rate.



Figure 5.17: test 4.

These two screenshots show achievable data rates for mEIV (3) and mEV (4) boards.

For further information or problems with mainboards please contact our **support**.



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