user manual

pco.Silicon Software grabber & driver installation

pco.

PCO asks you to read this manual carefully before using the Silicon Software runtime installation and follow the instructions.

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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pco.Silicon Software driver & grabber installation Manual V1.02

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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)*** Camera Link HS grabber card for Microsoft Windows operating systems.

These cards are required to be able to use a pco.edge with Camera Link interface or Camera Link HS interface.

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

On 64bit systems by default 64Bit and 32Bit Runtime is installed. Optional only the 64bit runtime can be installed.

NOTE

Silicon Software mEIV AD4/VD4 grabber card

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.

1.1 INSTALLATION ORDER

First Step **Runtime**	**Install Silicon software runtime installation** See chapter 2	
Second Step **Grabber Card**	**Install grabber card to your computer** See chapter 4	
Third Step **microDiagnostics**	**Run microDiagnostics Tool** See chapter 5	
Fourth Step **Firmware Upgrade**	**Update the firmware of your grabber card** Follow the instructions:	
	mEIV grabber See chapter 5.1	mEV grabber See chapter 5.2
Fifth Step **Perfomance**	**Apply Board & Performance test** See chapter 5.3	
Final Step	**Start Camware**	

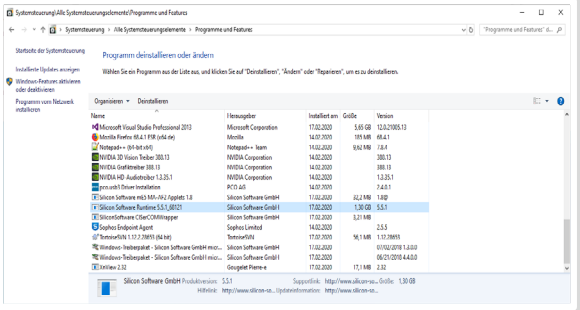
2. INSTALLING RUNTIME

Start PCO SiliconSoftware Grabber Runtime v5.7.0 Installation package DI_PCOSISORT_507_0002.exe and follow the instructions.

The DI_PCOSISORT_507_0002 package includes the installation of the SiliconSoftware Runtime 5.7.0 and all necessary applet packages and files, which are necessary to work with pco.cameras.

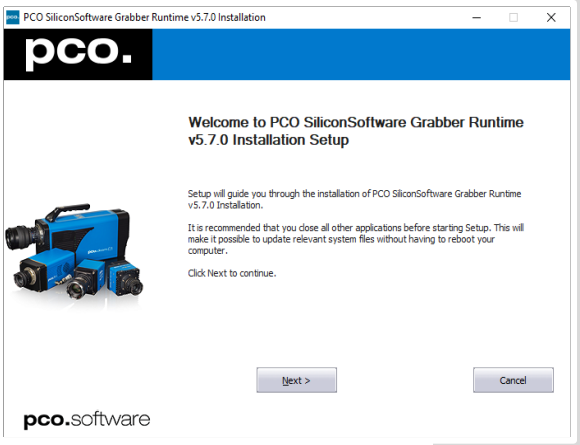
Follow the steps in this order.

1



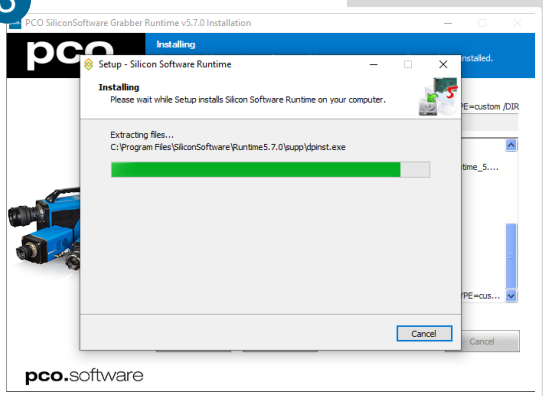
Uninstall former versions of Silicon Software runtime.
e.g. use link from Programs and Features in Control Panel

2



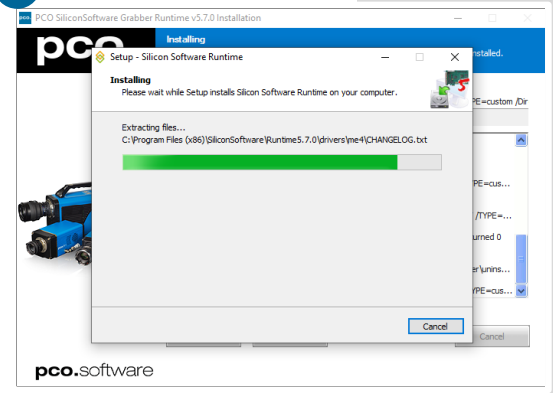
Start Installation

3



Setup Silicon Software Runtime 64Bit is executed.

5



Setup Silicon Software Runtime 32Bit is executed

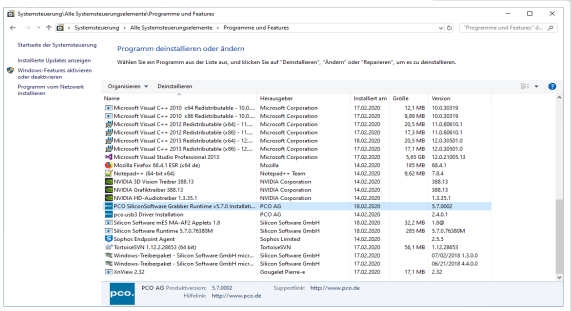
6

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

3. UNINSTALLING RUNTIME

Either use link from from “Programs and Features” in “Control Panel” or start Installation package DI_PCOSISORT_507_0002.exe again and use remove option of maintenance page.

1



Uninstall from Control Panel

2

Uninstall with Installation Package

4. INSTALL GRABBER CARD TO PC

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

WARNING

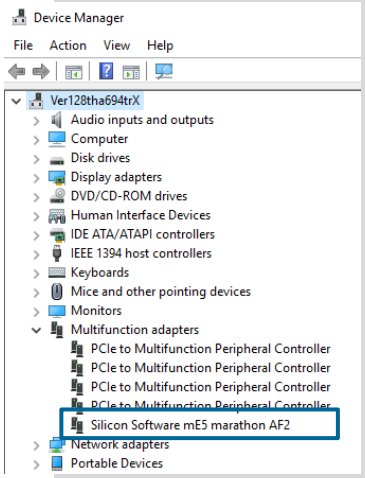
ELECTRIC SHOCK WARNING DUE TO VOLTAGE PARTS INSIDE
Risk of injury due to electric shock.
➔ Always pull mains plug before opening the computer.

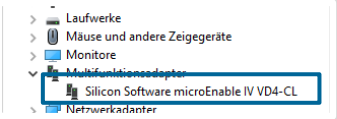
1

2

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

- ***Shutdown*** your computer
- ***Unplug*** it from mains
- ***Open*** the computer case
- ***Install*** the frame grabber card to a proper slot
  1. mEIV: PCI Express x4 (Gen1), DMA900
  2. mEV: PCI Express x4 (Gen 2), DMA1800
- ***Start*** your computer



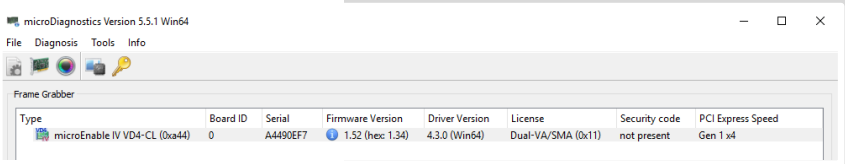


Device manager:

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.

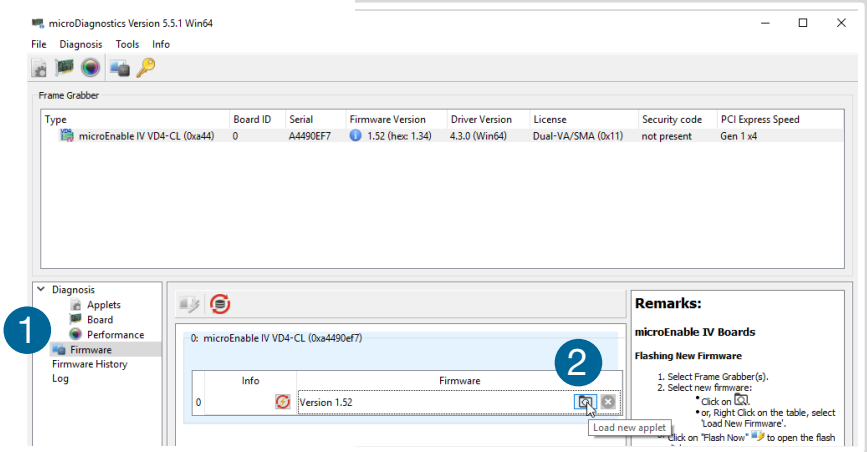
5. MICRO DIAGNOSTICS TOOL



microDiagnostics Tool works with mEIV (AD4 / VD4) and mEV frame grabber cards.

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

5.1 MEIV GRABBER FIRMWARE UPGRADE

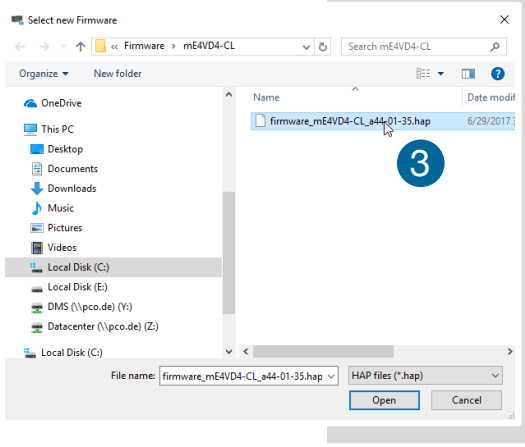


Upgrade to the latest firmware for your Silicon Software ***mEIV*** frame grabber.

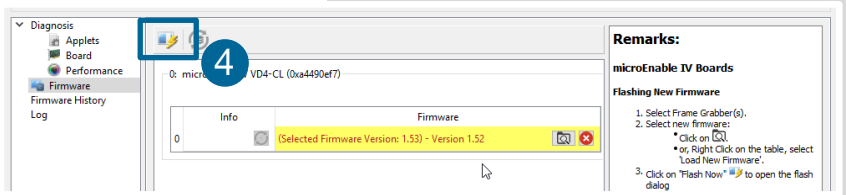
This is only necessary, if the latest firmware is not installed to your frame grabber!

Click ***Firmware.*** 1

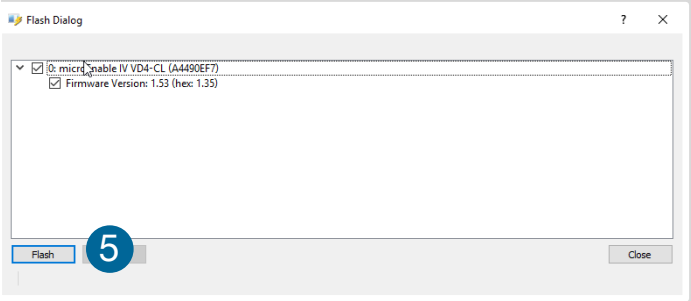
Click ***Load new applet.*** 2



Select the appropriate hap file. 3

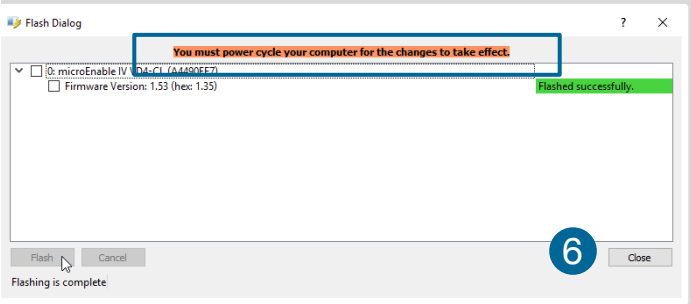


Click ***Flash Now***. 4



Flash Dialog opens.

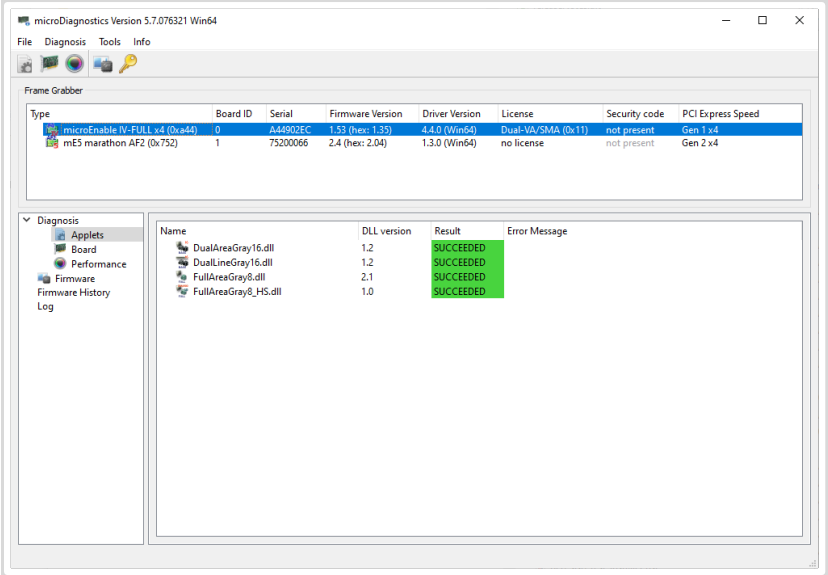
Click ***Flash***.5



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.



Last step:
Select Diagnosis → Applets

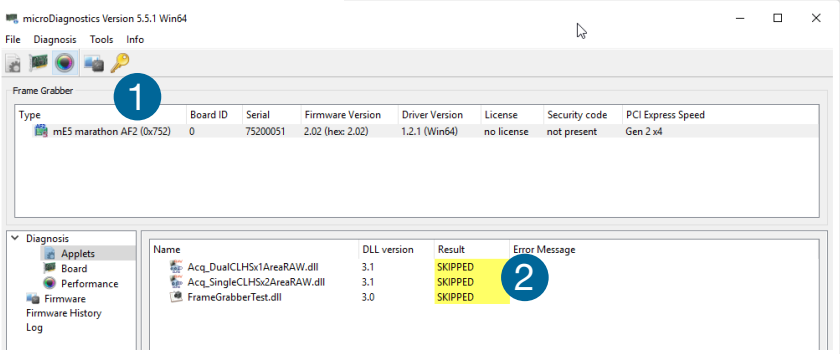
Result must be: ***succeeded***.

5.2 MEV GRABBER FIRMWARE UPGRADE

Preparations

Latest firmware applet for the grabber card is already copied during Installation. Check firmware version on the grabber card using the microDiagnostics software as described below.

Firmware Upgrade

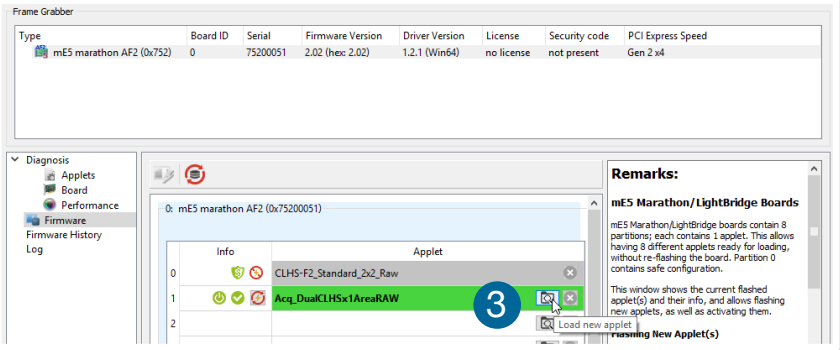


This is only necessary, if the latest firmware is not installed to your frame grabber!

First test, if a proper firmware version is installed.

Select Diagnosis → Applets 1

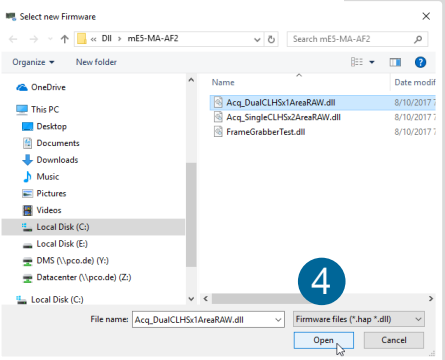
If test result is ***skipped*** an update is required. 2

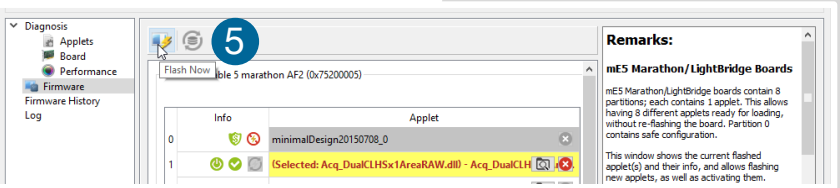


Select Diagnosis → Firmware

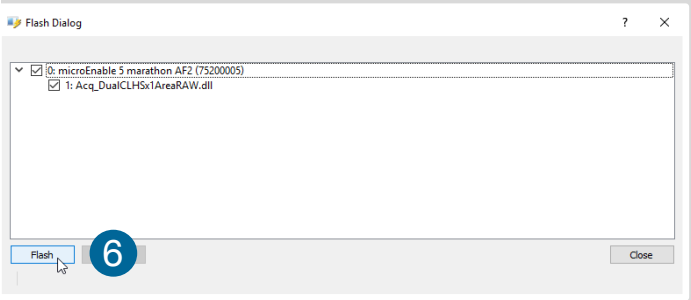
The current ***Applet*** must be updated.
Click 3 ***Load new applet*** and select the new Acq_DualCLHSx1AreaRAW DLL.

Click ***Open***. 4



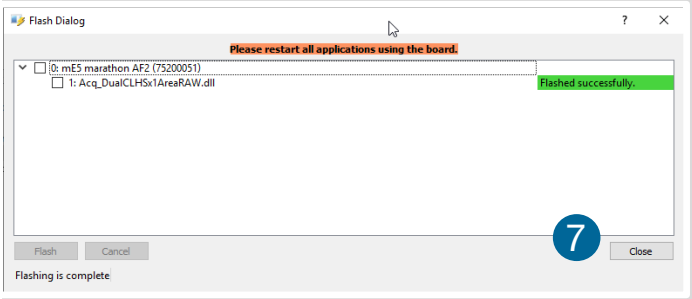


Click ***Flash Now***. 5



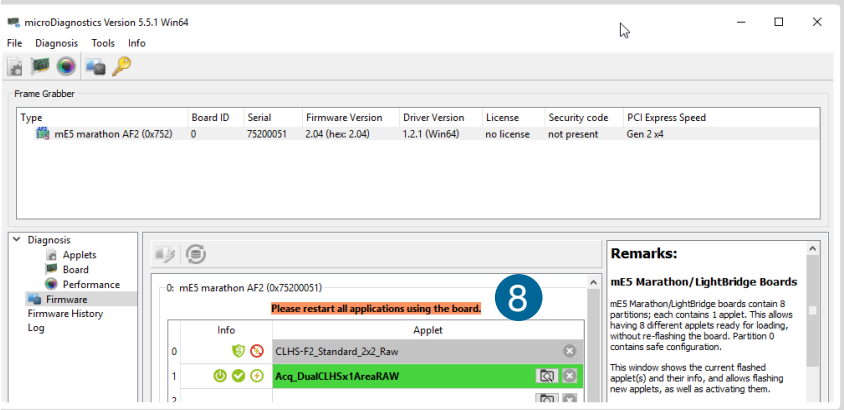
Flash Dialog opens.

Click ***Flash***.6

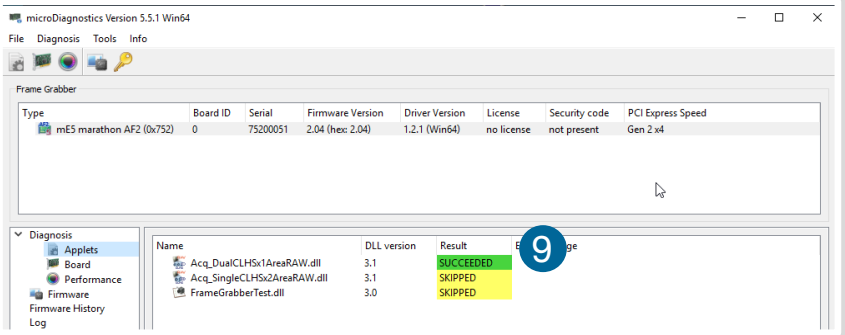


Now it is successfully flashed.

Close this dialog.7

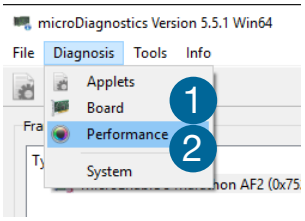


Restart all applications using the board.

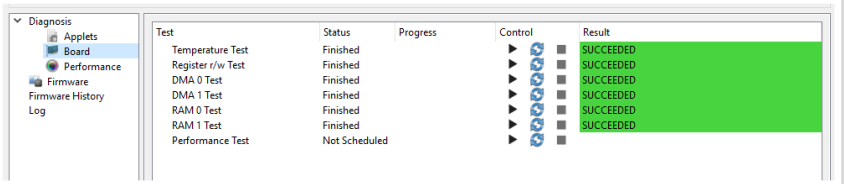


Select Diagnosis → Applets Now the ***Result*** is ***succeeded***. PCO cameras only use the AcqDualCLHS DLL.

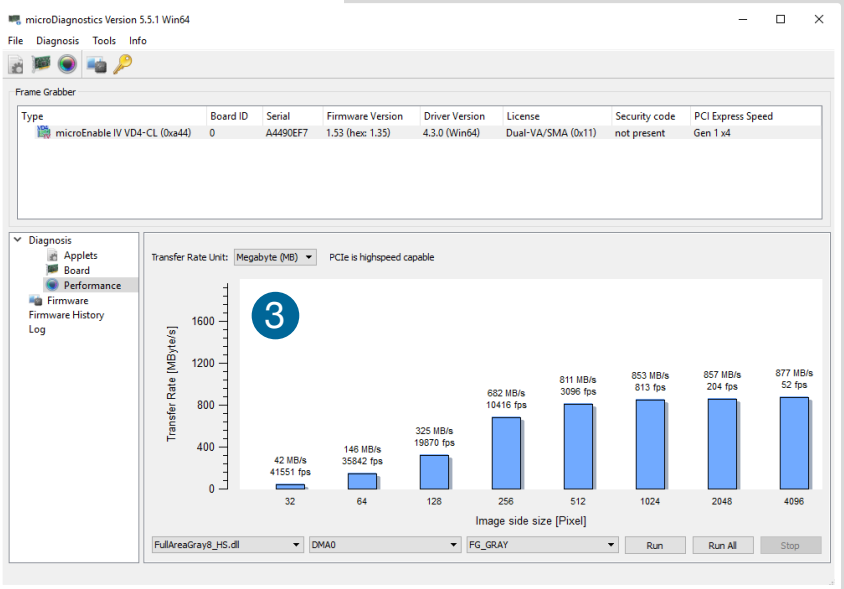
5.3 PERFORMANCE TEST



To test the board, open ***Diagnosis*** menu and click ***Board*** 1 to start the test.



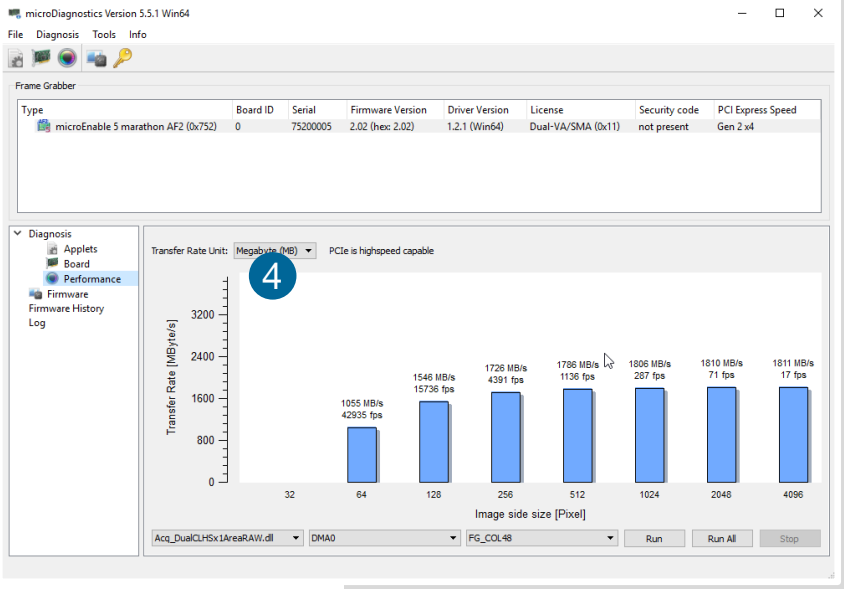
All tests should ***succeed***.



Test the performance: click ***Performance*** 2 to start the test.

It is mandatory that the board ***PCIe is Highspeed Capable***. Otherwise the board is probably not able to transfer the necessary data rate.

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



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

ABOUT PCO

pco.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.

pco.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.

pco.