DS-CAM-640c & 1100m

DEWESoft®

TECHNICAL REFERENCE MANUAL

DS-CAM-640c & 1100m V23-2

1 Table of contents

2 About this document

2.1 Legend

The following symbols and formats will be used throughout the document.

Important
It gives you important information about the subject.
Please read carefully!

Hint
It gives you a hint or provides additional information about a subject.

Example
It gives you an example of a specific subject.

3 Key features

The DS-CAM-640c is a high-speed 10 Gigabit-Ethernet camera with the following key data:

- Up to 640 FPS @ VGA (640x480) & 8Bpp or 115 FPS @ 2048x1536 & 12Bpp
- Real-time data streaming with full resolution
- Color camera
- Real-time JPEG compression
- Adjustable & automatic shutter time
- Adjustable & automatic gain
- Auto-white balance
- PTP Synchronization
- Standard C-mount lens mounting
- Small form factor
- Rugged aluminum housing (high shock and vibration resistance)

The camera supports the high-performance industrial standard “GigE Vision 2.0”.

The benefits of the GigE Vision protocol are

- High-speed data transfer rates up to 10 GBit/s,
- Connectible to every standard GigE Ethernet port, switch with PTP support required if PTP Synchronization is used.
- Cable lengths up to 100m.

DewesoftX® uses OptoStream SDK for communication with cameras that support the GigE Vision standard.

3.1 System Requirements

3.1.1 Basic configuration

- 1x Gigabit-Ethernet port
- High-performance PC (Core i5 CPU or better recommended, 8 GB RAM and high-performance SSD storage disc)
- DewesoftX® 2022.1 or newer
- GigE plugin V7.7 or newer
- The latest OptoStream SDK
- Dewesoft GigE driver (cdv)

3.1.2 Optimal configuration

- 1x 10 Gigabit-Ethernet port
- High-performance PC (Core i7 CPU, 16 GB RAM, and high-performance M.2 SSD storage disc)
- Latest DewesoftX®
- The latest OptoStream SDK provided with a fresh installation of DewesoftX®
- Dewesoft GigE driver (cdv)

4 Technical data

4.1 Specifications

System	DS-CAM-640c	DS-CAM-1100m
Computer requirements		
Processor	Intel® Core™ i5; 4x 3.4 GHz; 8 threads (Intel® Core™ i7; 8x 4.5 GHz; 16 threads)	Intel® Core™ i5; 4x 3.4 GHz; 8 threads (Intel® Core™ i7; 8x 4.5 GHz; 16 threads)
Memory	8 GB (Reccommended 16 GB)	8 GB (Reccommended 16 GB)
Storage	High-performance SSD (M.2 SSD)	High-performance SSD (M.2 SSD)
Ethernet port	1x 10Gbit	1x 10Gbit
Software	DewesoftX® 2022.1 or newer GigE plugin V7.7 or newer The latest OptoStream SDK	DewesoftX® 2022.1 or newer GigE plugin V7.7 or newer The latest OptoStream SDK
Interfaces and options		
Lens mount	C-mount	C-mount
Data Connector	M12 / 12 pins (SACC-CI-M12FS-8CON-L180-10G) to RJ45	M12 / 12 pins (SACC-CI-M12FS-8CON-L180-10G) to RJ45
Power Connector	M12 / 12 pins (SACC-CI-M12MS-12CON-L180) to L1B2m	M12 / 12 pins (SACC-CI-M12MS-12CON-L180) to L1B2m
Synchronisation	SoftSync [2ms], PTP Ready	SoftSync [2ms], PTP Ready
Optical specifications		
Type	Color	Monochrome
Image sensor	Sony IMX252	Sony IMX421 Gen3
Sensor type	CMOS	CMOS
Resolution	Up to 2048 px x 1536 px	Up to 1920 px x 1464 px
FPS (Max interface speed 10Gbit)	200 FPS @ 2048x1536 300 FPS @ 1920x1080 520 FPS @ 800x600 640 FPS @ 640x480	400 FPS @ 1920x1464 540 FPS @ 1920x1080 900 FPS @ 800x600 1100 FPS @ 640x480
Sensor size	1/1.8'''	2/3'''
Scan Area	7,06 mm x 5,29 mm	8,71 mm x 6,59 mm
Pixel size (in µm)	3,45 µm (H) × 3,45 µm (V)	4,5 µm (H) × 4,5 µm (V)
Dynamic range	71 dB typical	71,5 dB typical
Shutter	Global Shutter	Global Shutter
Auto Functions	ExposureAuto GainAuto with BrightnessAutoPriority based on BrightnessAuto ROI	ExposureAuto GainAuto with BrightnessAutoPriority based on BrightnessAuto ROI
Picture compression	Baseline JPEG (ISO/IEC 10918-1)	Baseline JPEG (ISO/IEC 10918-1)
Power		
Power supply	19,2 ... 28,8 V DC	19,2 ... 28,8 V DC
Power consumption	approx. 10,0 W @ 24 VDC and 216 fps	approx. 11.6 W @ 24 VDC and 411 fps
Environmental		

Operating Temperature	0 °C ... +65 °C @ T = Measurement Point	0 °C ... +60 °C @ T = Measurement Point
Storage Temperature	-10 °C ... + 70 °C	-10 °C ... + 70 °C
Humidity	10 % ... 90 % non-condensing	10 % ... 90 % non-condensing
IP rating	IP40 (with mounted lens and 10 GigE cable) IP65/67 (with mounted tube and cable)	IP40 (with mounted lens and 10 GigE cable) IP65/67 (with mounted tube and cable)
Physical		
Dimensions	119 x 60 x 60 mm 4.68 x 2.36 x 2.36 in	119 x 60 x 60 mm 4.68 x 2.36 x 2.36 in
Weight	485 g	485 g
Rev: 1552392000		

4.2 DS-CAM-640c & DS-CAM-1100m Dimensions

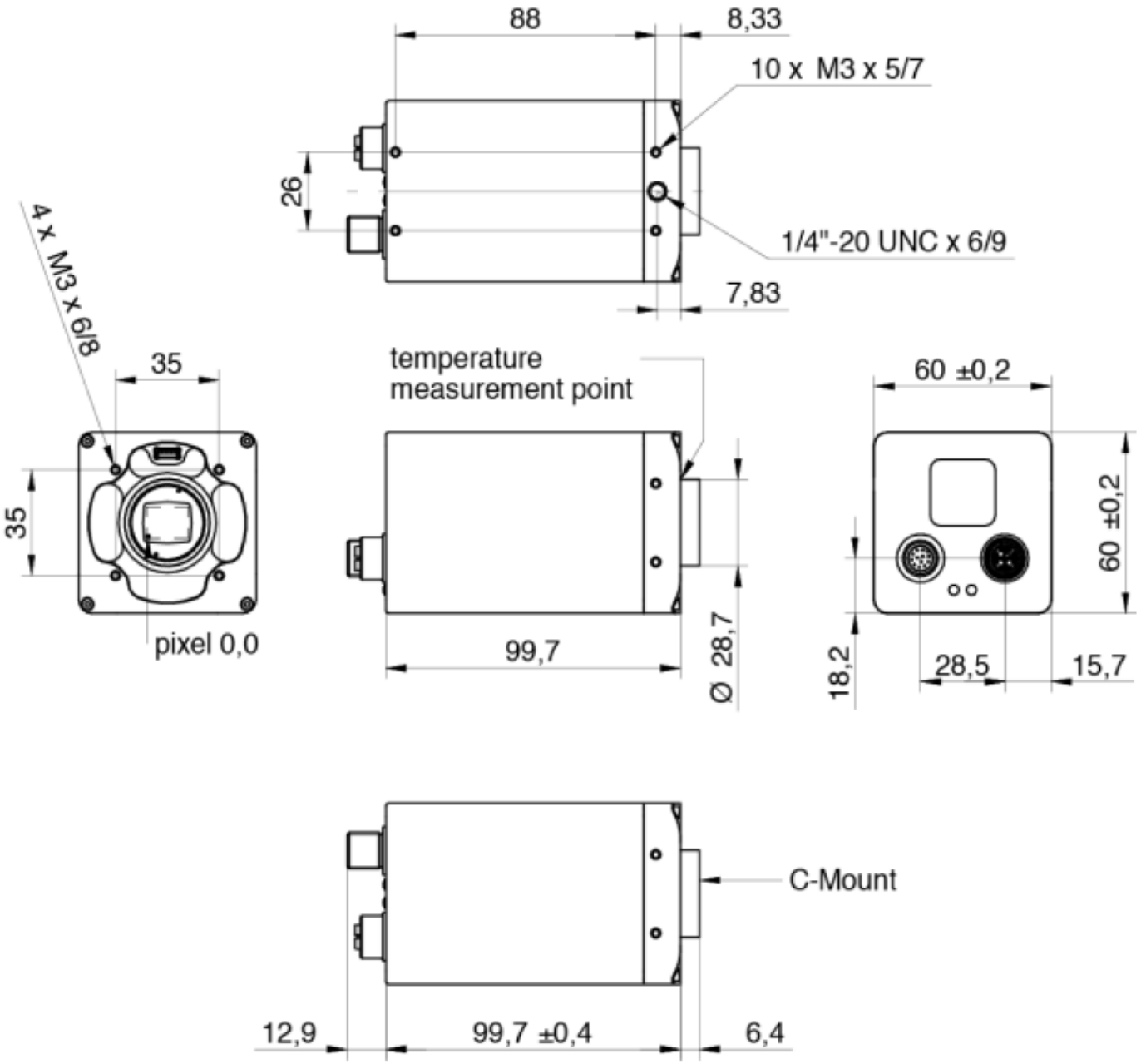

Image 1. Technical drawing of DS-CAM-640c & DS-CAM-1100m

4.3 Scope of supply

4.3.1 DS-CAM-640c & DS-CAM-1100m Scope of supply

Type	Name	Description
Optics	LENS-AZURE-1614MM	Azure 1614MM C-MOUNT lens
Cooling	HEAT-SINK-TYPE-A	Required for ambient temperatures above 30°C
Signal transfer	CABLE-GigE-M12X/RJ45-5.0m	5m M12X to RJ45 CAT6A signal cable
Power transfer	L1B2m-M1212-5m	5m M1212 to L1B2m power cable compatible with SIRIUS, PS-120W-L1B2f-PHG power supply or POWER-SPLITTER-1xL1B2m-5xL1B2f
Packaging	Carrying bag	Carrying bag with foam insert for transportation and storing

Image 2. Scope of supply for DS-CAM-640c & DS-CAM-1100m.

4.3.2 DS-CAM-640c & DS-CAM-1100m Accessories

Type	Name	Description
IP Protection	DS-CAM-IP65-COVER	Camera IP65 lens cover consisting of Adapter and Tube for mounting on DS-CAM-640c & 1100m Combined length of 60mm
Power supply	PS-120W-L1B2f-PHG	AC/DC power supply adapter Connectors: Lemo L1B2f-PHG, Country wall socket Power: 120 W (24 V @ 5 A) Fits DS-CAM-640c, DS-CAM-1100m Cable length: 3 m (1.5 m to adapter, 1.5 m from adapter)
Multi-camera power splitter	POWER-SPLITTER-1xL1B2m-5xL1B2f	Power distribution box Input connector: L1B2m Output connector: 5x L1B2f Maximum input current: 15 A

4.4 Camera pinouts

On the backside of the camera, there are two connectors. One for the Power cable and the second one for the data transfer.

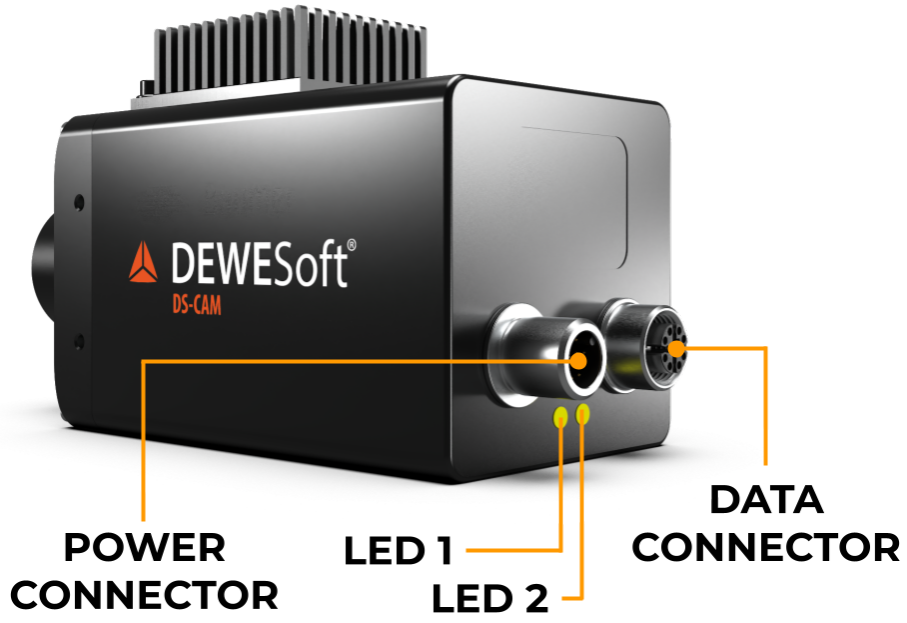

Image 3. Connectors on DS-CAM-640c & DS-CAM-1100m

4.4.1 DATA CONNECTOR PINOUT

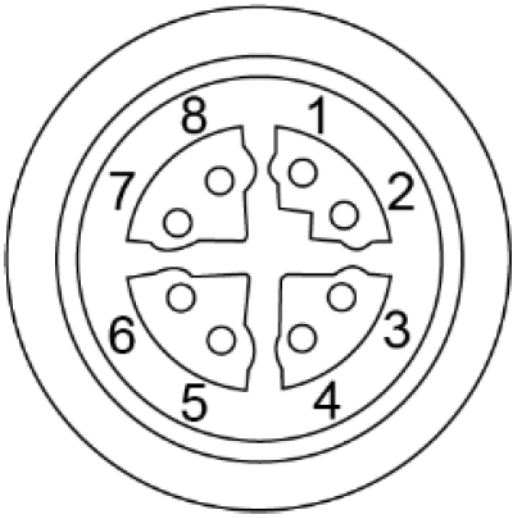

Image 4. IO connector pin-out (M12/12-pin a-coded)

Pin	Name
1	MX1+
2	MX1-
3	MX2+
4	MX2-
5	MX4+
6	MX4-
7	MX3-
8	MX3+

Camera connector: SACC-CI-M12FS-8CON-L180-10G

Camera connector: SACC-CI-M12MS-12CON-L180

4.4.2 POWER CONNECTOR PINOUT

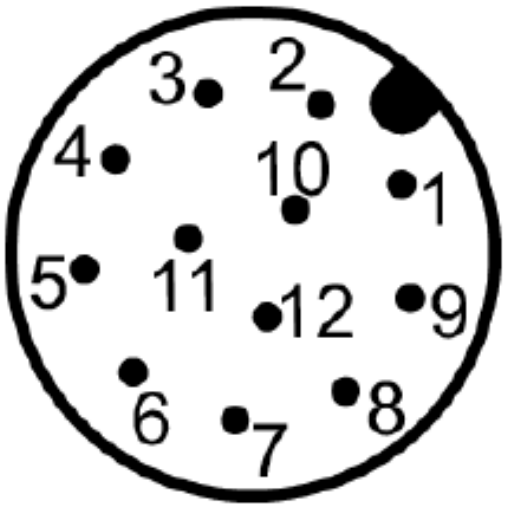

Image 5. IO connector pin-out (M12/12-pin a-coded)

Pin	Name
1	Power Vcc
2	GND (Power)
3	IN1 (Line0)
4	OUT1 (Line4)
5	IN2 (Line1)
6	OUT2 (Line5)
7	OUT3 (Line6)
8	RS232 TxD (Line2)
9	OUT4 (Line7)
10	RS232 RxD (Line3)
11	GND (IO)
12	Power (IO)

4.5 Connection examples

Examples below will show typical configurations for DS-CAM-640c & DS-CAM-1100m. Keep in mind that the synchronization between other devices is done by SoftSync with a precision of 2 ms.

4.5.1 Stand-alone DS-CAM

The most basic of configurations is a single camera or multiple cameras connected to a PC.

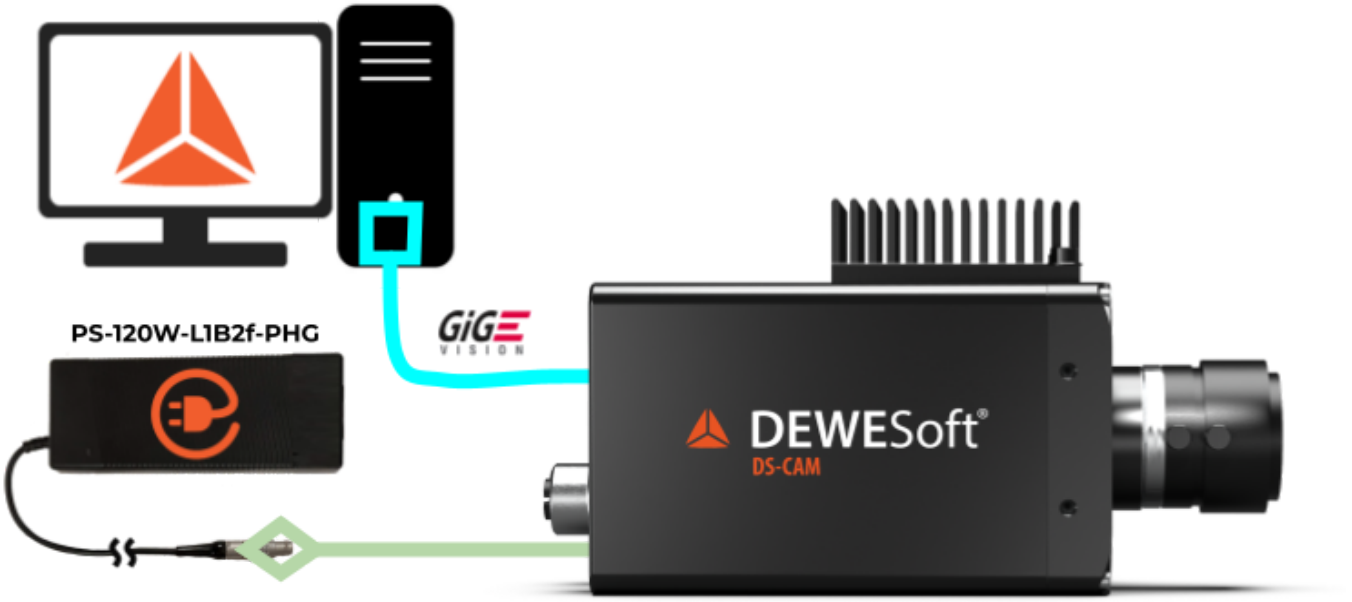

Image 6. Single-camera connected to PC

4.5.2 SIRIUS with DS-CAM

A simple SIRIUS-based measurement system coupled with DS-CAM video acquisition

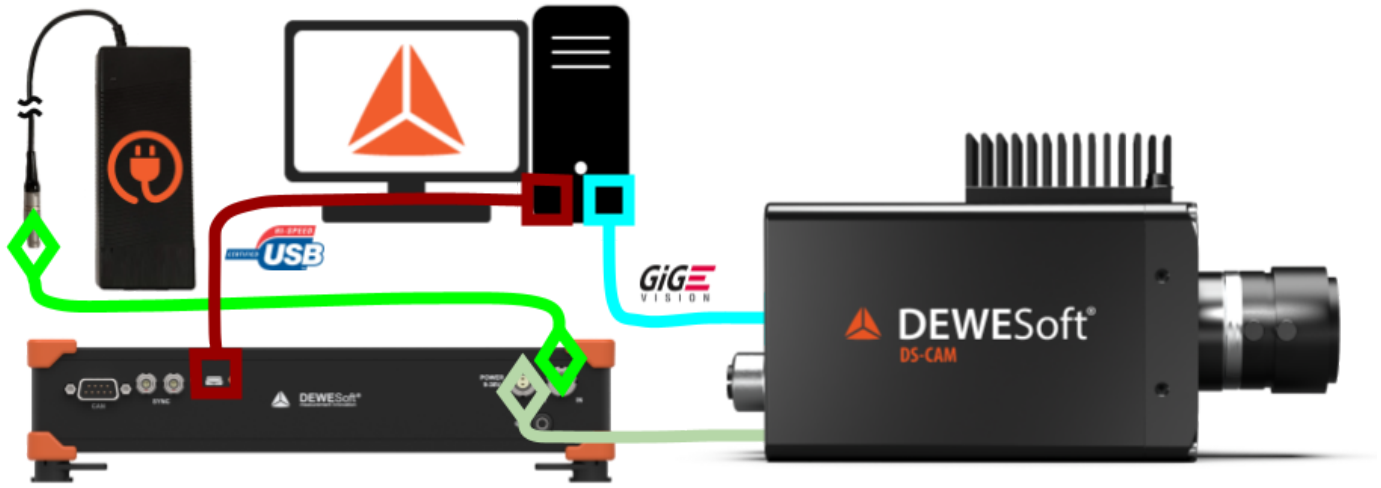

Image 7. A basic system with a camera SIRIUS and PC

4.5.3 SBOX, SIRIUS with DS-CAM

In this configuration, a SIRIUS Data Acquisition Device is used connected to an SBOX. The DS-CAM is connected to the SBOX over one of its two LAN ports. In such configuration, power can be provided either from SIRIUS PWR Out, as then the camera is the last device in the daisy chain, or from SBOX PWR Out, if you supply the SIRIUS from a different source.

Image 8. SBOX based system with SIRIUS and DS-CAM

4.5.4 KRYPTON® connection example

The KRYPTON rugged configuration is not much different from a typical SIRIUS configuration, but in this case, we recommend also using DS-CAM-IP65-COVER for added protection.

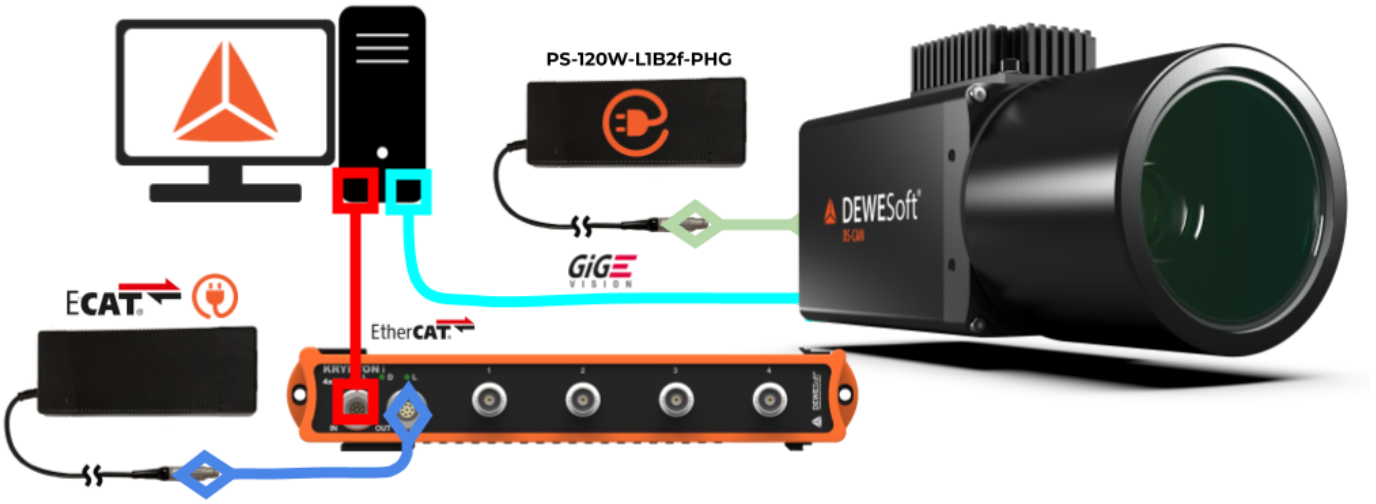

Image 9. KRYPTON-based system

4.5.5 Multi-camera solution

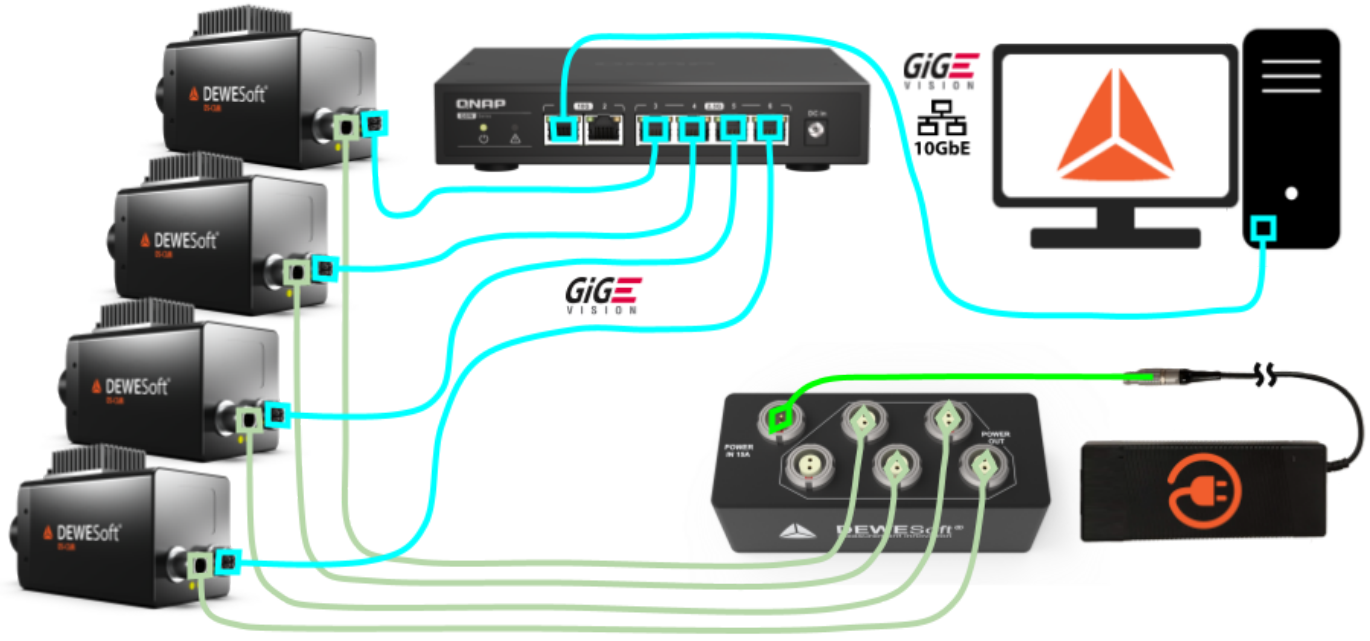

Image 10. Configuration with multiple cameras over a switched network

4.6 Resolutions / Framerates

MODEL	DS-CAM-640c	DS-CAM-1100m
Sensor type	Sony IMX252	Sony IMX421 Gen3
Active pixels	2048 x 1536	1920 x 1464
Max-Frame rate	200 FPS	400 FPS

LIST OF STANDARD RESOLUTIONS AND FRAMERATES WITH 1Gbit LAN

CAMERA Model		DS-CAM-640c	DS-CAM-1100m
Resolution	Active pixels	MAX. FRAME RATE	
QXGA	2048 x 1536	138 FPS	/
	1920 x 1464	200 FPS	150 FPS
Full HD	1920 x 1080	200 FPS	195 FPS
HD ready	1280 x 720	330 FPS	380 FPS
XGA	1024 x 768	415 FPS	490 FPS
SVGA	800 x 600	520 FPS	690 FPS
VGA	640 x 480	640 FPS	1100 FPS
QVGA	320 x 240	1150 FPS	1900 FPS

Hint

Maximum Frame rate measurements were done @8bit resolution with 85% JPEG compression on a 1Gbit LAN connection. Bigger values could be reached with either more JPEG compression or >1 Gbit Lan.

Important

Results (FPS) should be considered only as approximate MAX values. It depends on the system performance (CPU, JPEG compression, hard disk). We recommend testing cameras with your setup at about 0.8*max_FPS and higher to find where corrupted image, frame loss, or buffer overrun will occur.

5 Installation and start-up

Hint

If you encounter any issues refer to the GigE Camera's Recommended Ethernet Settings in the DewesoftX online manual. Disabling unneeded options and filters and adjusting Jumbo packets & Receive Buffer size might solve your issues.

5.1 DewesoftX® full installer

If you run a fresh full installation of DewesoftX® all the drivers come preinstalled. In this situation, you can skip to chapter 5.4. Step-by-step procedure for a first start-up.

5.2 DewesoftX® partial installation

If you already have a version of DewesoftX® check if the drivers are installed by running **DewesoftX®** and going to **Options** → **Installed extensions**. Check if the "**GigE**" Extension is present and if the version is 7.6 or more.

If not, update DewesoftX® on **Options** → **Check for updates...** or execute the full installer again. When the installer starts up choose the **Modify** option and proceed to the next step.

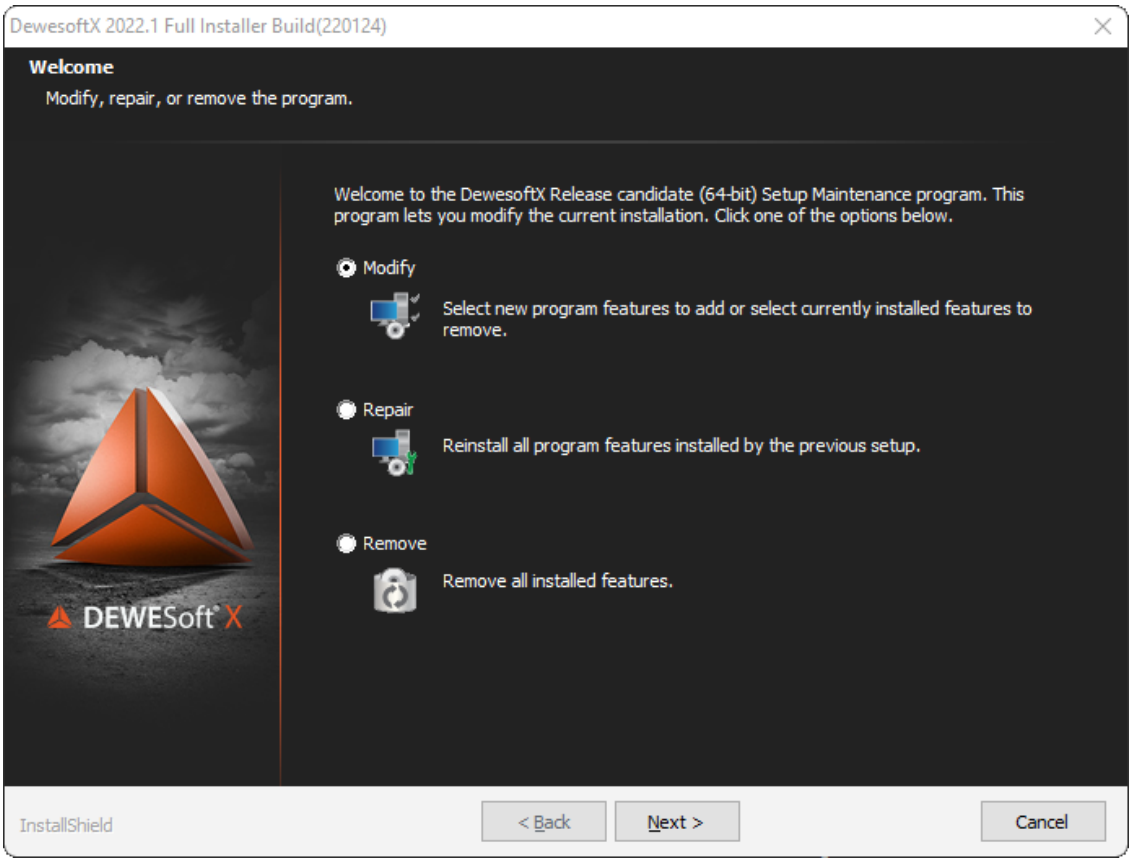

Image 11. Modification of installation

When the setup prompts to select features, enable the checkbox for the GigE camera and at this point also check the state of the OptoStream GEV Filter. Select it for installation if not previously installed.

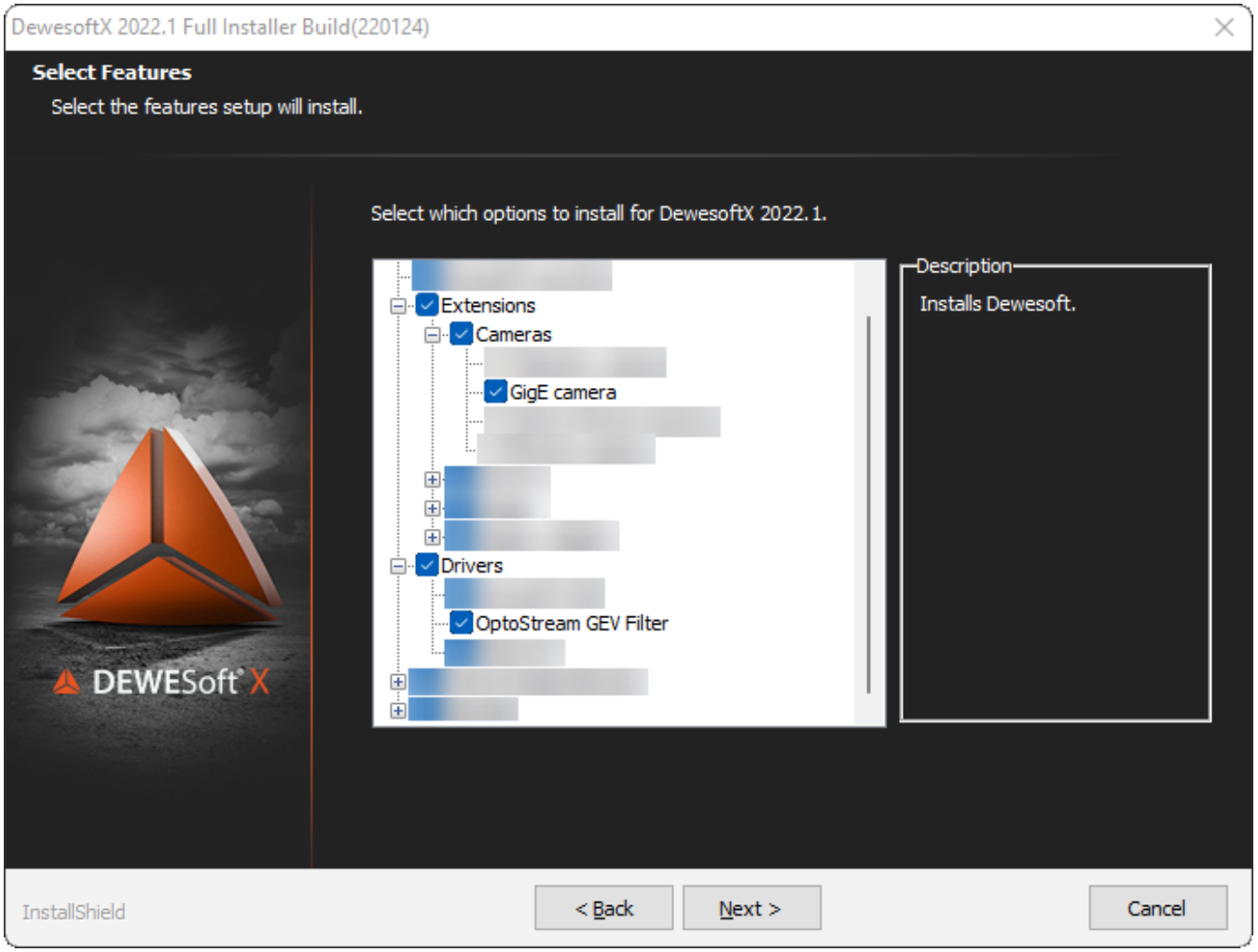

Image 12. Installing GigE camera driver and OptoStream GEV Filter

The last DewesoftX® full installer can be downloaded here:
https://download.dewesoft.com/list/dewesoftx

5.3 Manual installation

5.3.1 Required files

OptoStream SDK for GigE Vision

- Go to https://download.dewesoft.com/list/plugins/ and download the GigE package
- It includes the latest OptoStream SDK and Dewesoft driver for GigE Vision.
- When manually installing OptoStream SDK, Note that you must be an **administrator**, not just a user with admin rights!

DewesoftX®

- Available from https://download.dewesoft.com/list/dewesoftx

Hint

You need to be logged into the Dewesoft website to download the latest development versions of DewesoftX®.

5.3.2 Adding GigE Addon

To enable the camera in DewesoftX® copy the file “GigECamera.cdv” into the Dewesoft Addons folder, usually located in “C:\DewesoftX\Bin64\Addons64\GigeCam”.

5.3.3 Installing GigE Addon

Run the "Dewesoft DCOM Registration” to register the plugin.

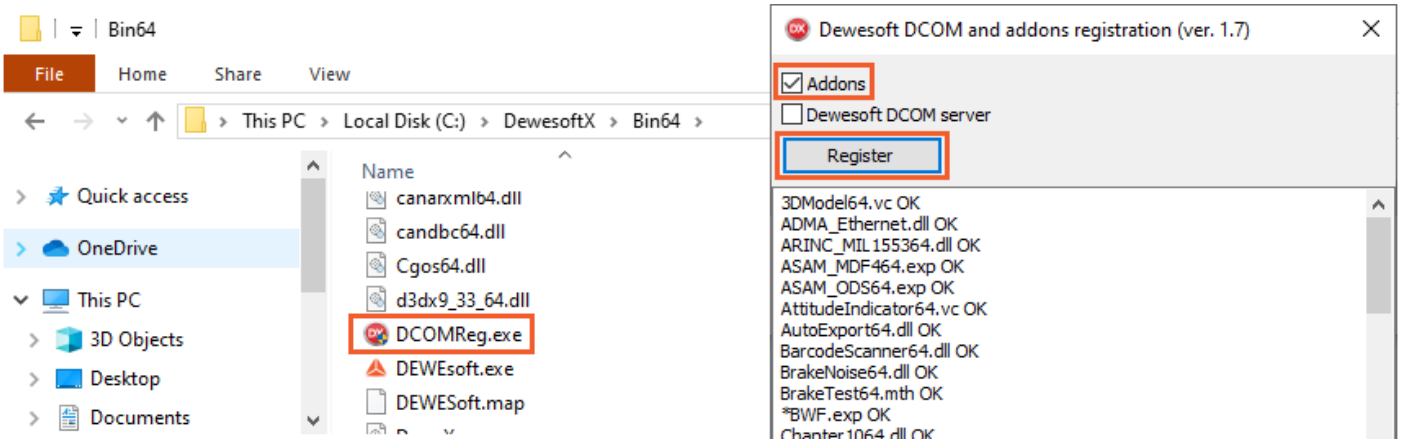

Image 13. Example of DCOM Addons Registration

OK, cameras can be used, close the OptoStreamViewer and start DewesoftX®

5.4 Step-by-step procedure for a first start-up

5.4.1 Install OptoMotive_OptoStreamSDK

Restart the PC after the installation is complete. After the reboot, be sure that "**OptoStream GEV Filter Driver**" is installed under **Windows 11 Settings** → **Network & internet** → **Advanced network settings** → "**Used Ethernet card**" → **Properties**.

Hint

Note that "Filter Driver" filters out all packets that are not GigE on the hardware level, so the camera will work much faster than without the filter.

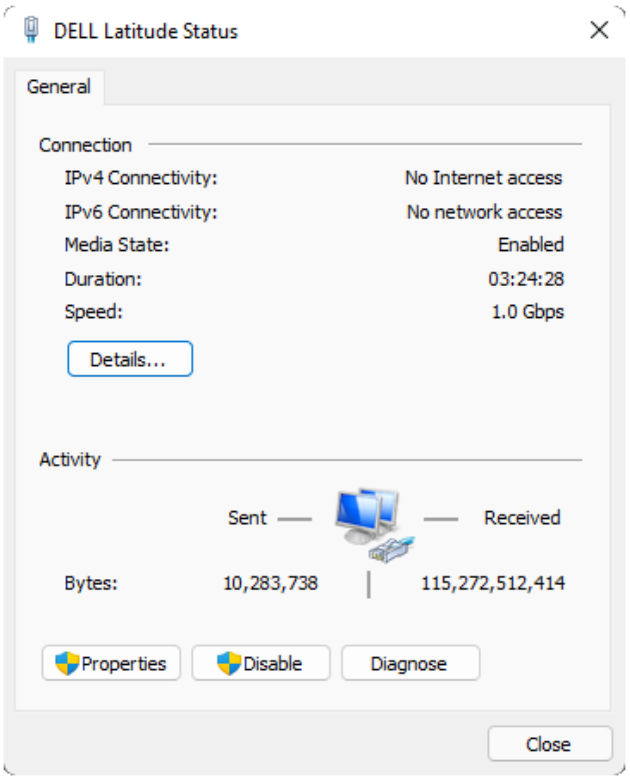

Image 14. "Used Ethernet card"

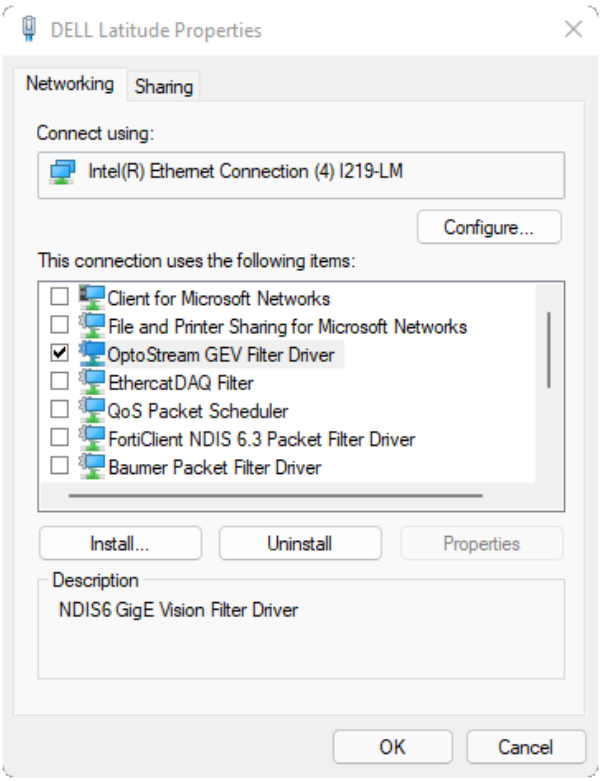

Image 15. Installed OptoStreamViewer GEV Filter Driver

Important

If you intend to use this Local Area Network card solely for video acquisition, we recommend also disabling all items except **OptoStream GEV Filter Driver** & **Internet protocol IPv4 (TCP/IPv4)**

5.4.2 Connect and power up

Connect the camera to the PC via Ethernet cable and power it up.

Important

DS-CAM-640c & DS-CAM-1100m require a power supply with **24VDC ± 20%** capable of providing at least 0,5A / 12W or more.

5.4.3 Assigning IP address to camera

The DS-CAM-640c & DS-CAM-1100m support DHCP, so connecting them to a managed network should be a straightforward procedure. Open the OptoStreamViewer to check if all of the connected cameras are recognized and working by selecting the **Control** tab and running the **Find devices** command.

When cameras are recognized you can change their IP with **Control → Set Ip To Device**

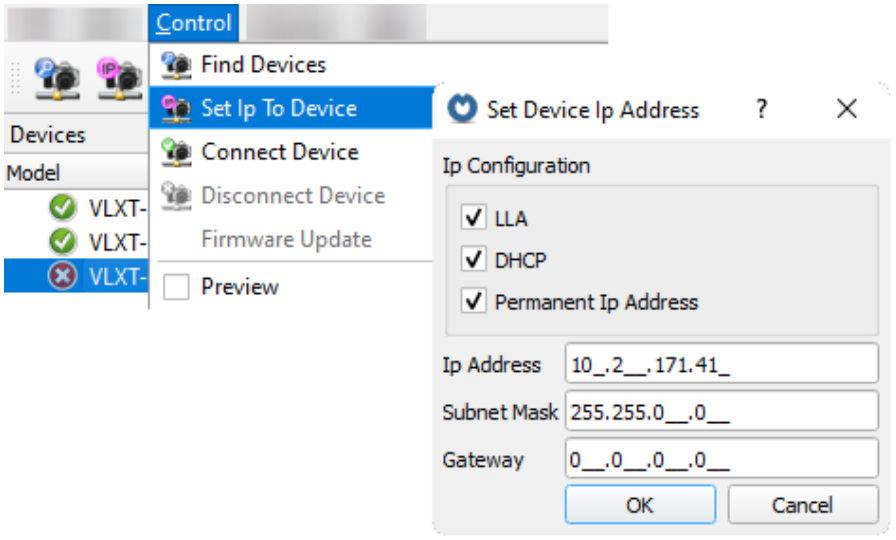

Image 16. Set Ip To Device procedure.

or connect for adjustment and preview with **Control → Connect device.**

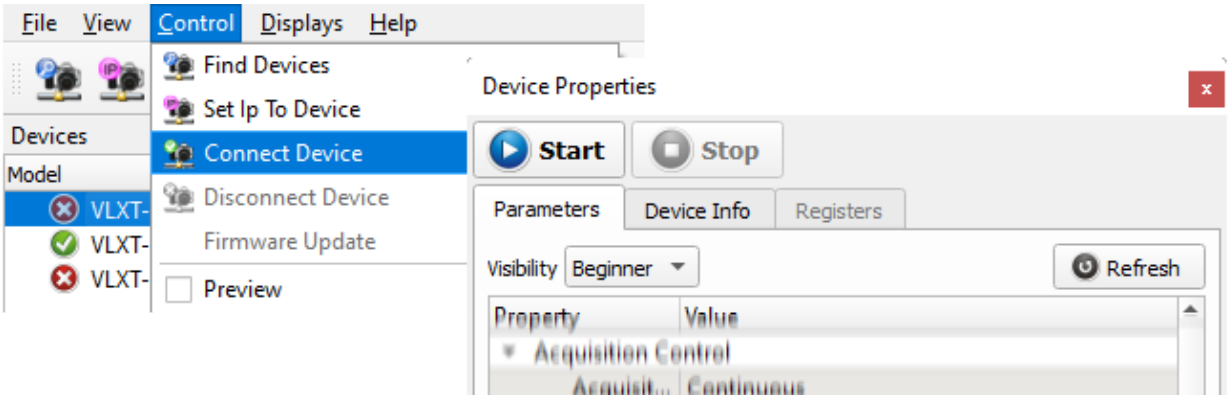

Image 17. Connecting devices to OptoStreamViewer.

Hint

Although the DS-CAM-640c & DS-CAM-1100m come configured in DHCP mode, at the first startup we recommend defining a fixed IP for each camera separately before connecting them to a switch or a network. If you are having issues with camera recognition use the IP Config Tool on the below link for discovery and configuration.

https://drive.google.com/file/d/1ydFkvtvzKP6TUmuXw382toHSYIQkI6_Z/view?usp=sharing

Important

Avoid using OptoStreamViewer and DewesoftX® in parallel.

5.4.4 Enable video

To enable the video channel go to **Video**, click the Video tab, and switch from **Unused** to **Used**.

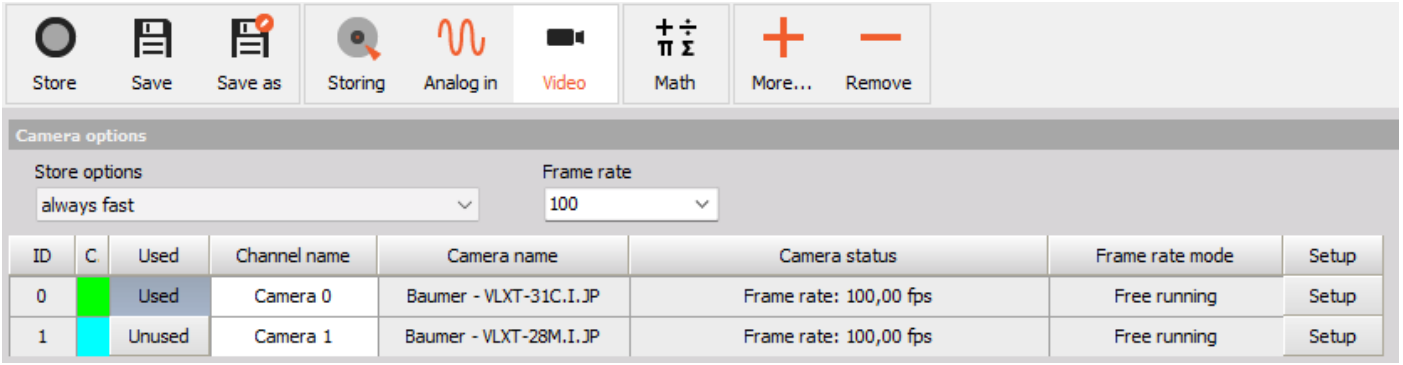

Image 18. DewesoftX® Channel setup → add Video

5.4.5 Preview and settings

Enter the channel by pressing the **setup** button of the desired camera for picture preview and settings.

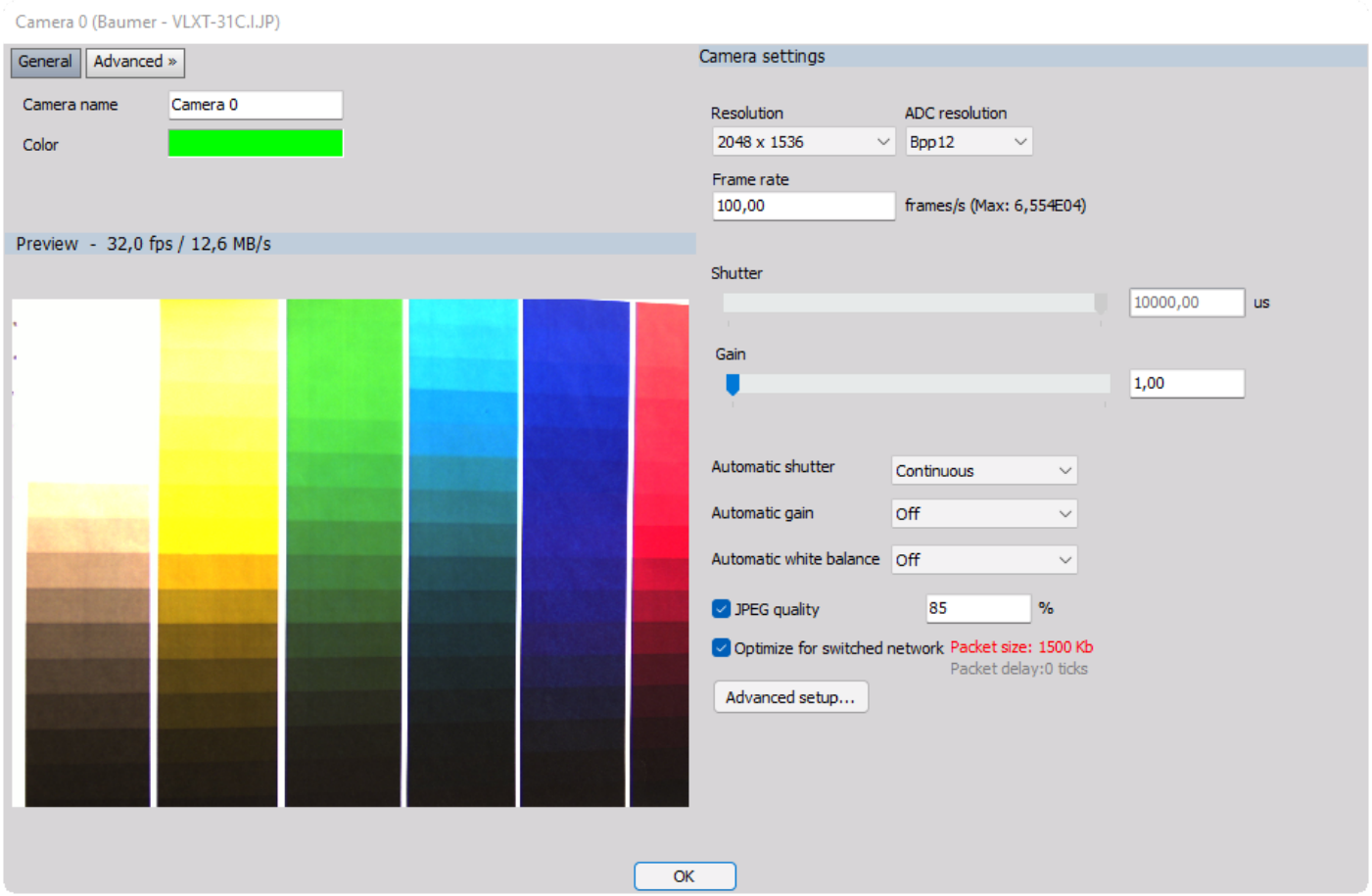

Image 19. DewesoftX® video channel setup

- **Camera name** defines the "channel" name that will be stored and used for measurement
- **Color** of the camera "channel" data displayed in measure & analysis can be changed
- **Resolution** drop-down menu offers some predefined standard sizes or a *Custom* option where Width and height in pixels can be defined.
- **ADC resolution** changes the Bits per pixel sensor acquisition quality.
- **Frame rate** defines the number of pictures acquired per second.
- The **Shutter** bar determines the light exposure duration (brightness).
- If the light is too dark, use the **Gain** bar to increase brightness by software.
- **White balance** is used for color source correction.
- The **JPEG quality** is inverse to the compression. 80% means good quality, low compression.
- To improve the performance if using the camera on an Ethernet switch, use "**Optimize for switched network**"
- Use the "**Advanced Setup**", if you want to change specific parameters of the camera, such as the custom resolution and AOI, area of interest, for instance.

Hint

If you change the frame rate, after typing the value, the input field gets a yellow color; confirm the value by pressing the Enter key.

Important

Changes in Frame rate will take a global effect. All cameras connected to the system will run at set FPS if they are able and their shutter time permits it.

6 Troubleshooting guide

6.1 No data in DewesoftX® camera setup

Due to a delayed startup of the camera, loss of connection, or improper detection DewesoftX can return a “No data” message instead of a video feed. In this case, navigate to Options → Settings → Devices → and refresh the devices list. This will re-establish the connection to all devices.

6.2 The GigE checkbox in Settings is missing

Go to My Computer and click System properties → Advanced system settings → Advanced tab → Environment Variables → System variables → select Path → Edit.

Make the following changes:

- %OPTOSTREAM_SDK_PATH%\bin
- %GENICAM_ROOT_V2_4_ARCH%\bin\Windows
- %GENICAM_ROOT_V2_4_ARCH%\bin\Windows \GenApi\Generic

Save and reset Windows. Path correctness can be checked by GetEnvironmentVariable('PATH');

6.3 No picture shown, “No frames received” error

If you receive the error “NO FRAMES RECEIVED”, check:

- Try decreasing the Shutter value
- Check under Settings if the DewesoftUSB device is set to Clock/Trigger or Automatic (Standalone)
- Disable Trigger in hardware setup and check if it’s working in free-run mode (This could potentially be a cable problem. Swap in new cables and try again)

6.4 Camera not found (not in OptoStreamViewer, not in DewesoftX®)

- Check if the status LED on the camera is green, booting takes ABOUT 1 MINUTE!
- If using a GigE-Switch with PoE ports, ensure output power is sufficient, check status LED during operation
- Check Windows Firewall settings

6.5 Camera “not found”

(not found in DewesoftX®; yellow mark in OptoStreamViewer)

Not able to use the cameras. Please wait a little bit (until IP is assigned). If that does not help, ensure the computer's network IP is set to automatic, as the camera supports DHCP.

Further troubleshooting, most probably the computer and the camera are not in the same subnet.

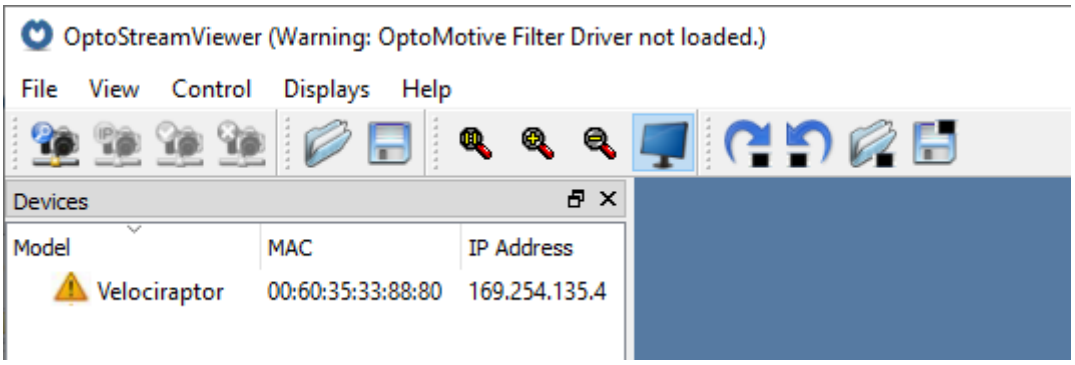

Image 20. IP address problem

Important
You should avoid using OptoStreamViewer and DewesoftX® in parallel. If the cameras are not found in DewesoftX® close it and start OptoStreamViewer for troubleshooting.

6.6 Change the IP address of the camera with OptoStreamViewer

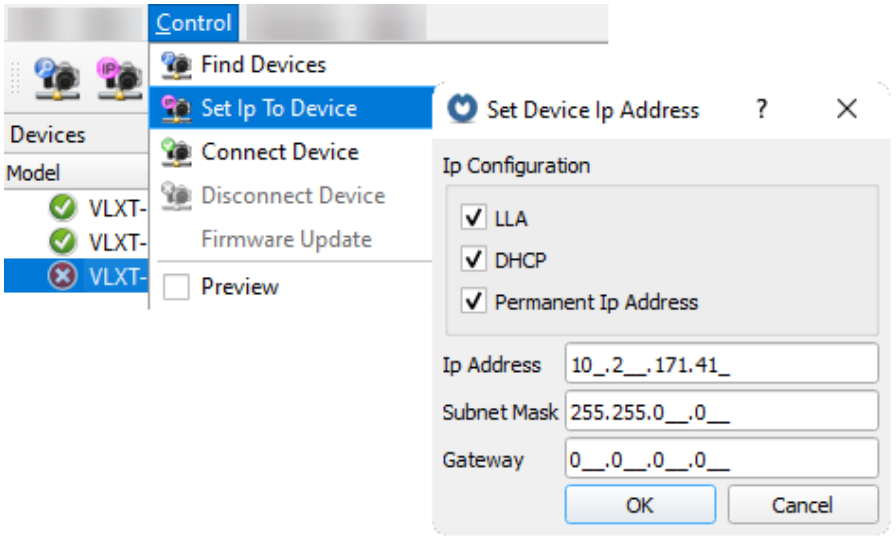

Image 21. Change the IP address of the camera

If you manually change the IP address, please use the same subnet as the computer, for example,

PC: 169.254.135.5, **Subnet 255.255.255.0**

Camera: 169.254.135.4, **Subnet 255.255.255.0**

The IP is ok, if the cameras are found with a red mark (see Illustration above), close OptoStreamViewer and start DewesoftX®.

6.7 Change the IP address of the camera with Baimer IpConfig tool

A) Proceed to Baumer web page > Product Overview > Industrial cameras / image processing > Software > Baumer Camera Explorer and download the latest Software packages for your OS.

B) Install the software with customized settings as Baumer Filter Driver is not required if you don't intend to use Camera Explorer.

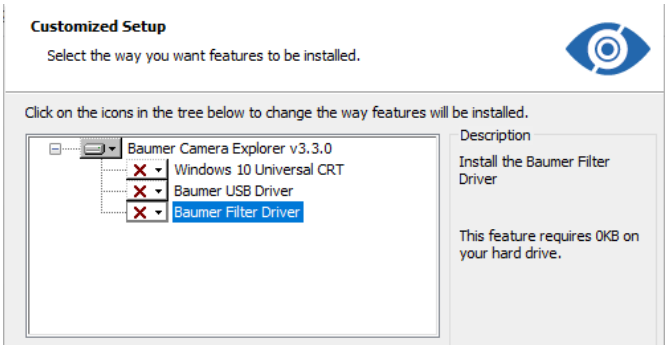

Image 22. Camera Explorer custom installation options

Important

If you decide to install the full package don't forget to disable Baumer Filter Driver it in LAN card settings, if you encounter any issues with video acquisition in DewesoftX.

C) Run IpConfig-Tool from Start menu and proceed with the following steps.

1. **Rescan** the network for all cameras
2. **Select** the desired **camera** you want to edit
3. Enable **Presistant IP**
4. Define **IP address** and **Subnet mask**
5. Press the **Set** button to save the settings
6. Clisk the **Rescan** button to refresh and confirm the change
7. **Power cycle the camera!**

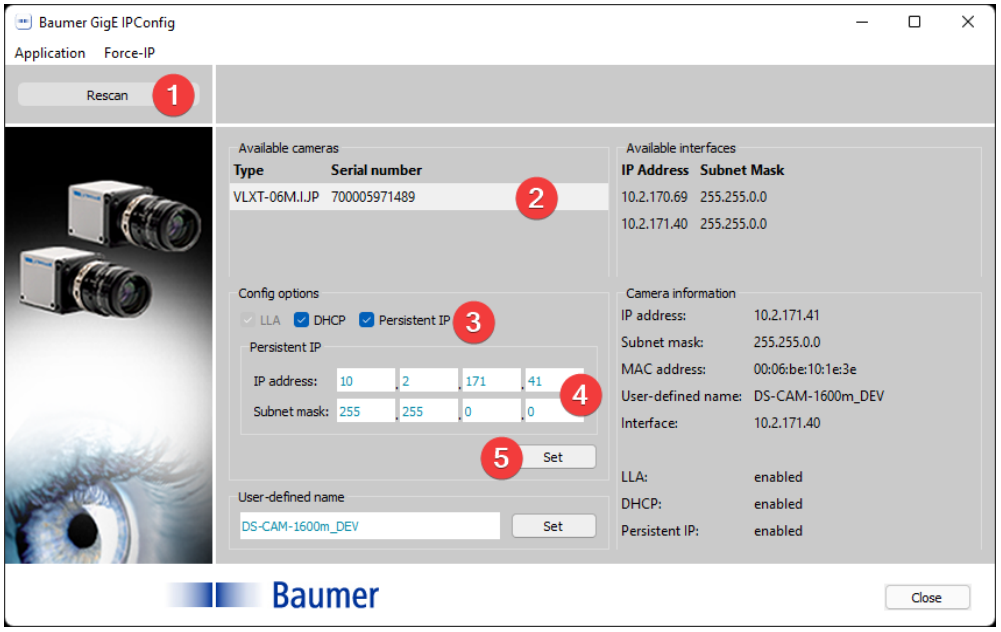

Image 23. Persistent IP definition procedure

6.8 GigE Vision client does not start, error message when starting

Troubleshoot this using the following steps: Check if the operating system of your computer is 32bit or 64bit.

Copy the 64-bit dlls (otherwise take the ones from the 32bit directories) from

C:\Program Files\OptoMotive\OptoStreamSDK\bin\Win64 and

C:\Program Files\OptoMotive\OptoStreamSDK\GenICam_v2_4\bin\Win64_x64 to

\Windows\system32 (respectively \Windows\SysWOW64)

Then start the OptoStreamViewer from C:\Program Files\OptoMotive\OptoStreamSDK\bin\Win64

6.9 Cameras not working in DewesoftX®

If you followed the step-by-step installation procedure, but still the camera is not working in DewesoftX®, you can try to copy the used DLLs manually:

Example of Copying the 32-bit DLLs from
C:\Program Files\OptoMotive\OptoStreamSDKbin\Win32
and
C:\Program Files\OptoMotive\OptoStreamSDK\GenICam_v2_4\bin\Win32_i86
to
Dewesoft's Addons folder.
Then restart DewesoftX®.

6.10 Manual driver Uninstall/Install

a. Open **Network Connections** Dialog

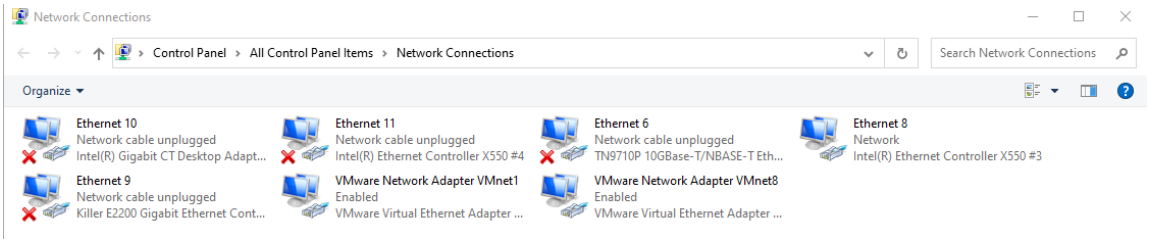

Image 24. Network Connections

b. Right-click and **properties** to one of the Network Adapters

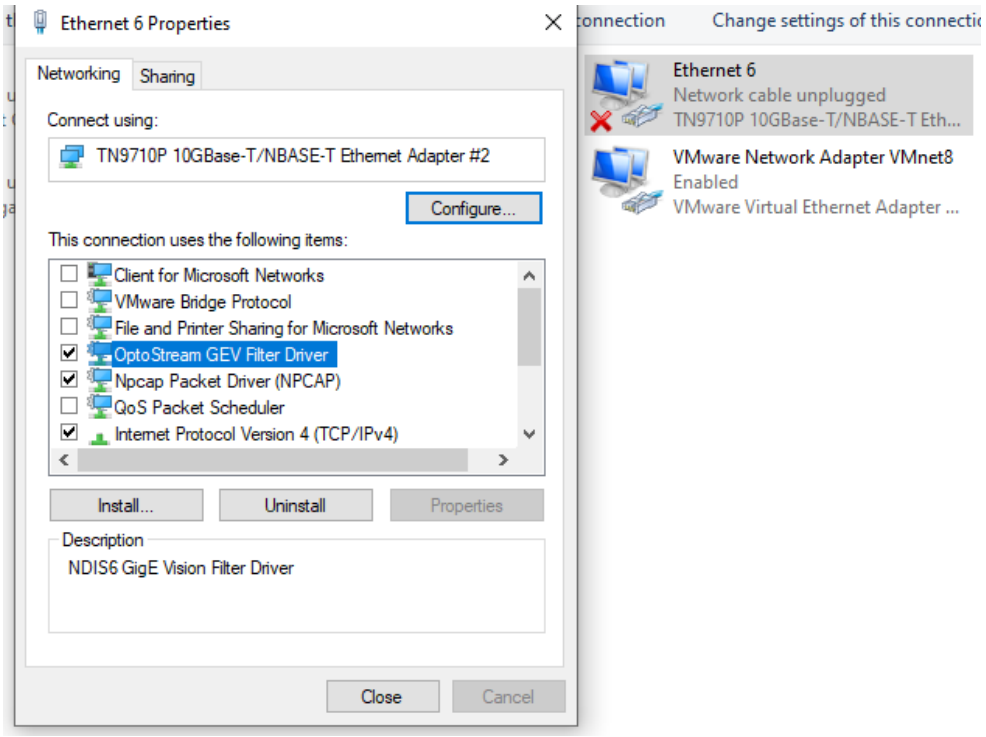

Image 25. Network Adapter properties

c. Mark the Optostream GEV Filter Driver and Click Uninstall and Yes

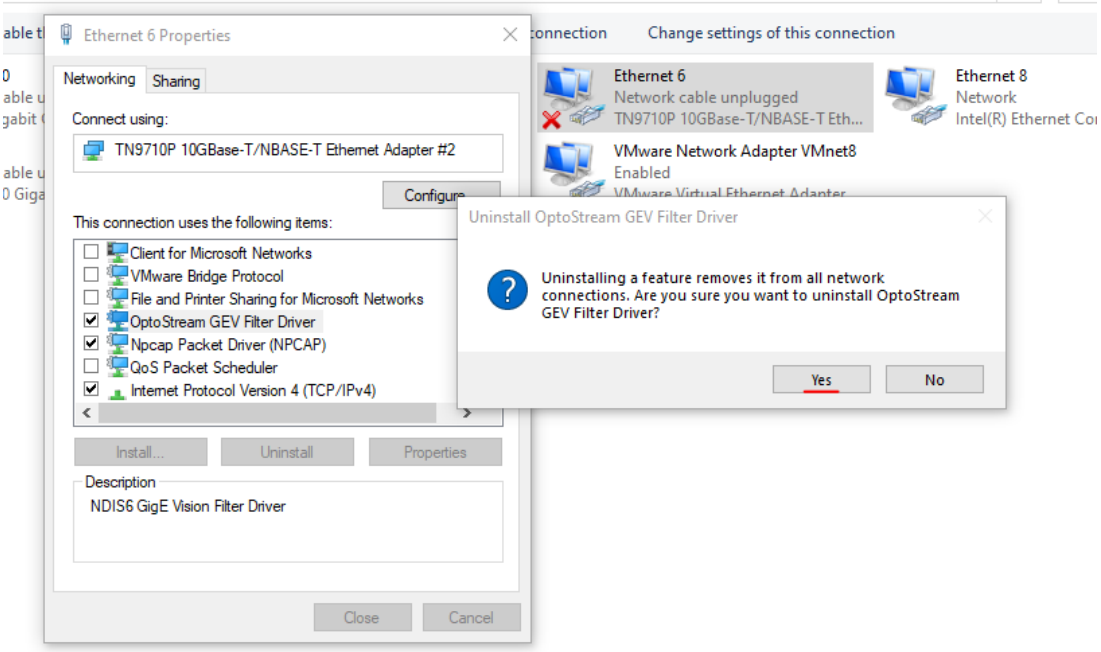

Image 26. Uninstall GEV Filter driver

č. Now after the Uninstall Gevfilter Driver is no longer in the list

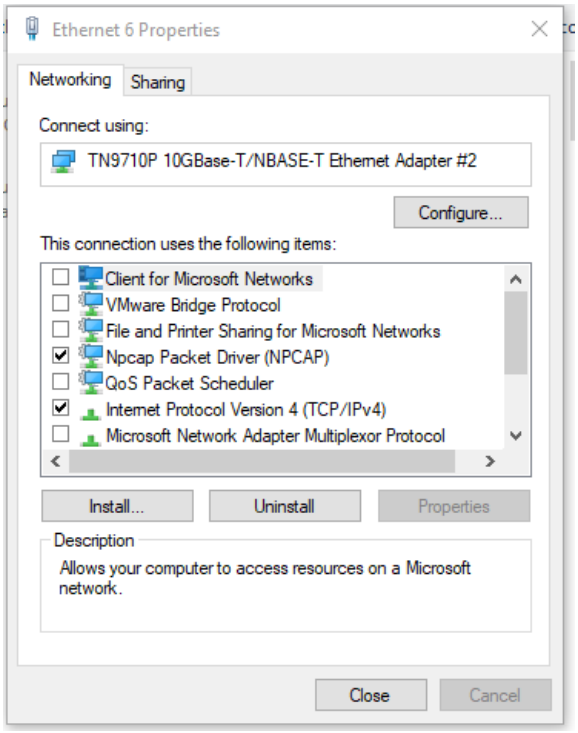

Image 27. Empty Network Adapter properties

d. After the existing Driver is uninstalled, we install a new GevFilterDriver by clicking on Install, Select Service, and Add.

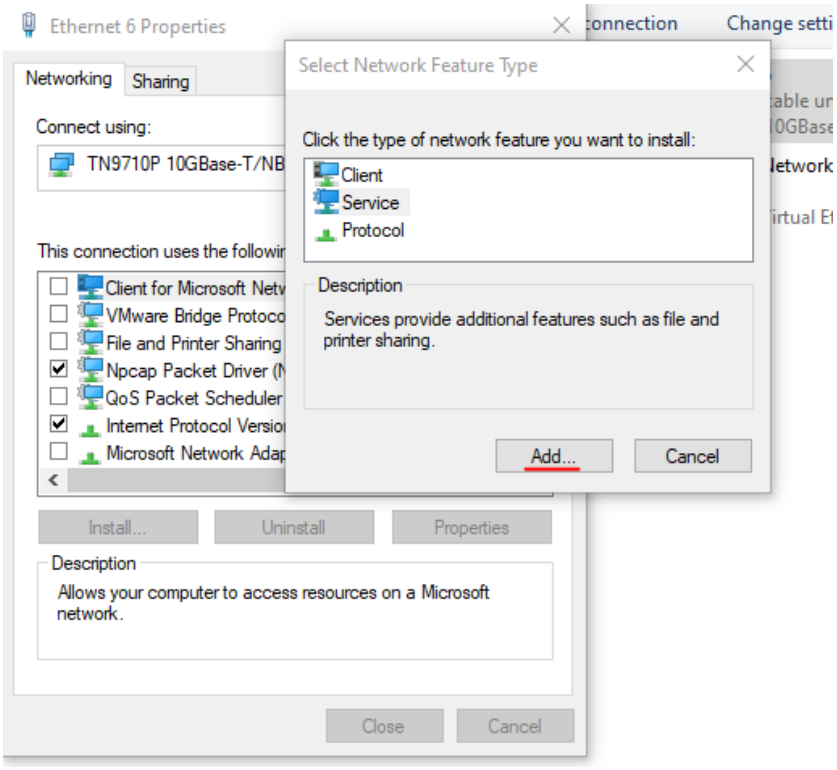

Image 28. Select feature Type

e. Select Have Disk.

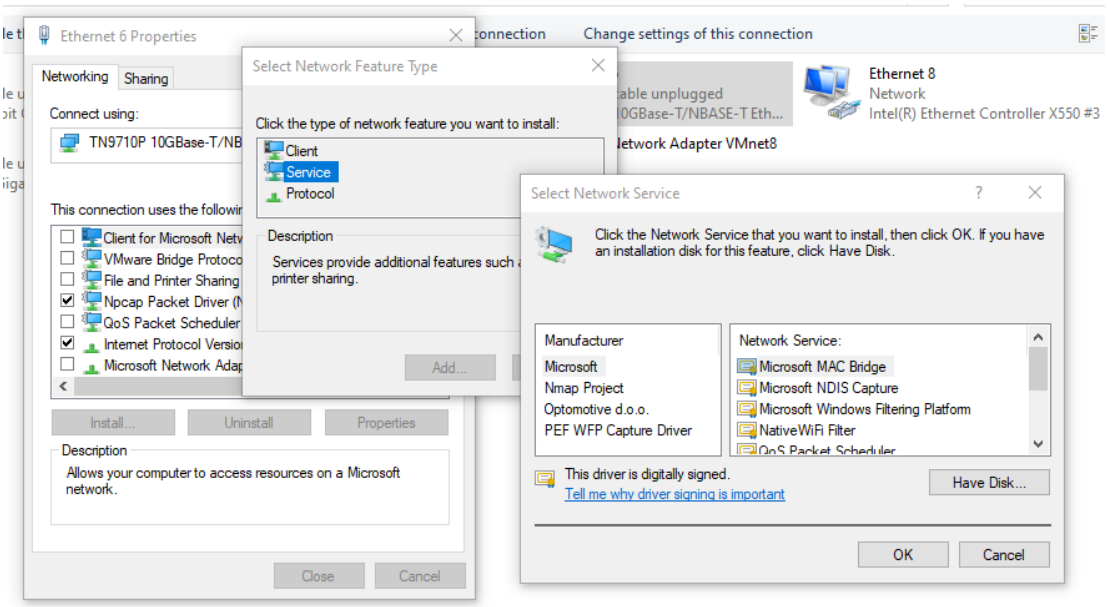

Image 29. Driver path selection Have Disk

f. Select Browse and choose Path to a new GevFilterDrivera and click Open

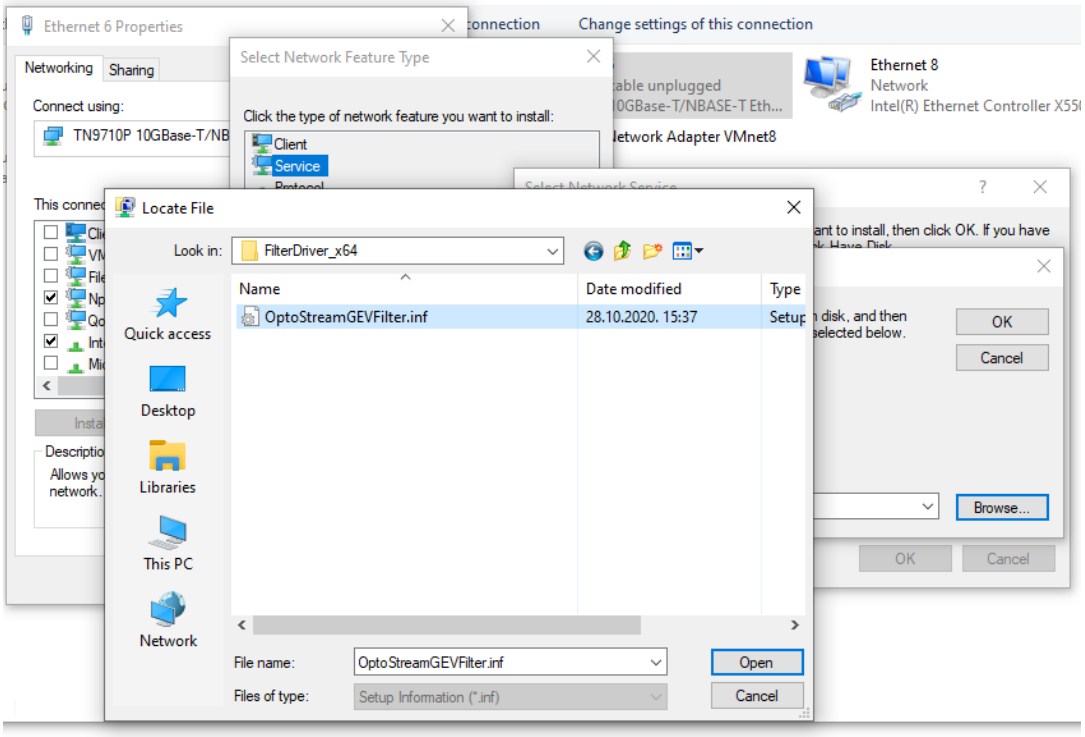

Image 30. Driver location file select

g. In the Install from Disk Dialog Click OK

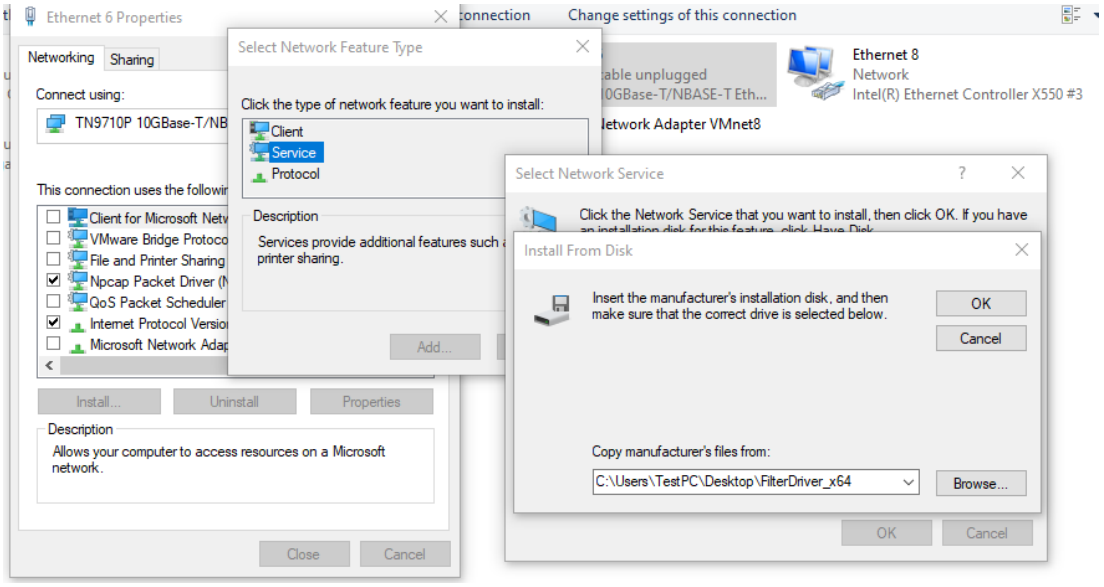

Image 31. Installation file confirmation

h. Then to SelectNetwork Service Click OK

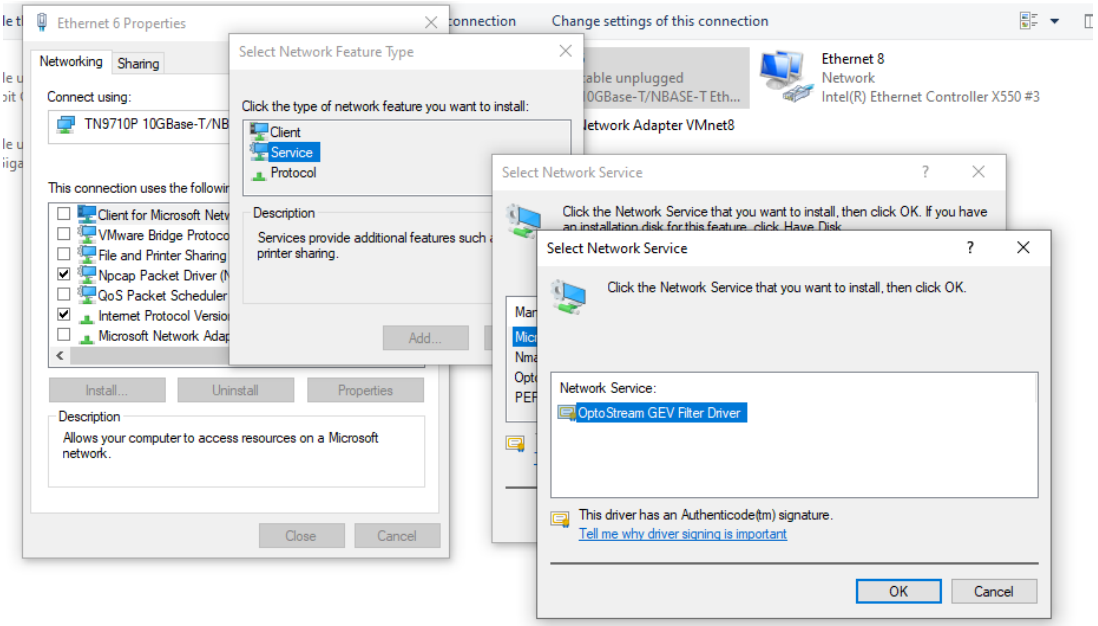

Image 32. Network Service selection

i. That list would have a new Optostream GEV Filter driver

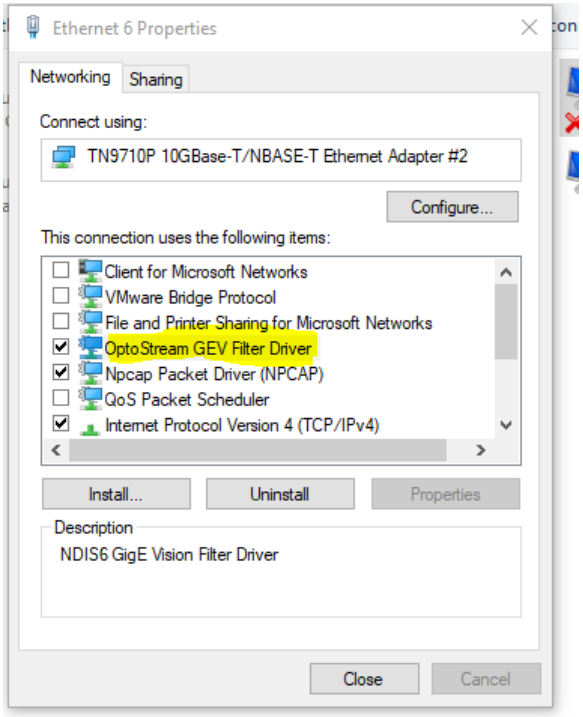

Image 33. Installation confirmation

This completes the manual installation of the GEV Filter Driver

6.11 Performance improvements

(e.g. in case of frames lost or buffer overrun)

A loss of a few frames during a measurement is normal, due to collisions on the Ethernet network.

Here are some useful hints to improve the performance:

- Do not operate the camera in a fully-loaded network (e.g. office computers). Just use a direct connection or one switch (with no additional participants).
- Disable all anti-virus, firewall, indexing, and synchronization programs running in the background.
- Verify that the PC has a Gigabit-Ethernet network card, not only 100Mbit/s.
    - Check this in Device Manager tools
- Verify that the LAN cable used between the camera and the PC is at least CAT5 quality. For longer cable lengths CAT6 cable should be used for optimal performance.
- For this camera, the best quality can be achieved by using a powerful CPU.
- Try to decrease the JPEG compression (e.g. from 80 down to 50%)
- Use the Windows resource monitor (can be found in Task manager) to check for bottlenecks.
    - Check CPU and RAM
- For optimal performance, we recommend enabling “Jumbo” frames on your PC network card. “Jumbo” frames are Ethernet packets larger than 1500 bytes. This way less CPU time is spent for data reception, therefore, increasing performance and minimizing data loss.

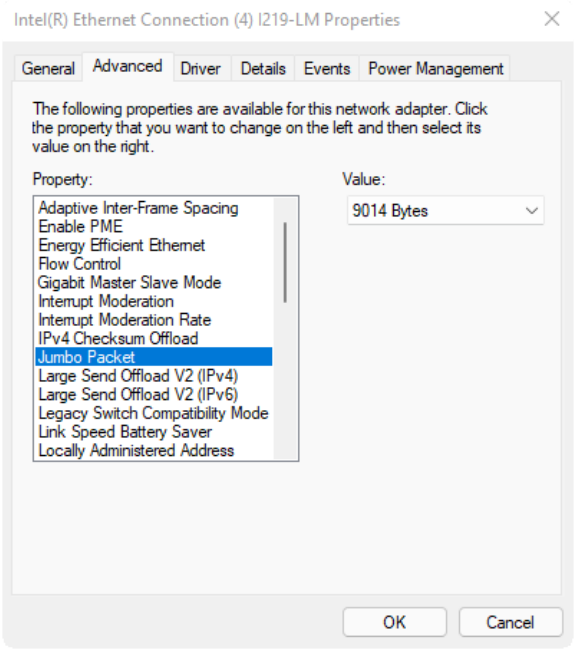

Image 34. Jumbo packet settings

Windows 11 Settings → **Network & internet** → **Advanced network settings** → “**Used Ethernet card**” → **Properties** → **Configure** → **Advanced** → **Jumbo Packet** → Set to highest value (e.g. 9kB MTU)

Windows 10 Control panel → network and internet → view network status and tasks (network and sharing center) → change adapter settings → right-mouse-click on LAN connection → Properties → Configure → Advanced → Jumbo Frame → set to highest value (e.g. 9kB MTU))

- Also, an overloaded DewesoftX® setup (many displays, e.g. high-resolution FFT instruments) will take system power. Try at first only with camera video instruments.
- Press <Ctrl>+<Shift>+<P> in DewesoftX® Measure mode. On the right side, the performance monitor will appear. Watch the Cam video buffer. It should stay stable at low values.

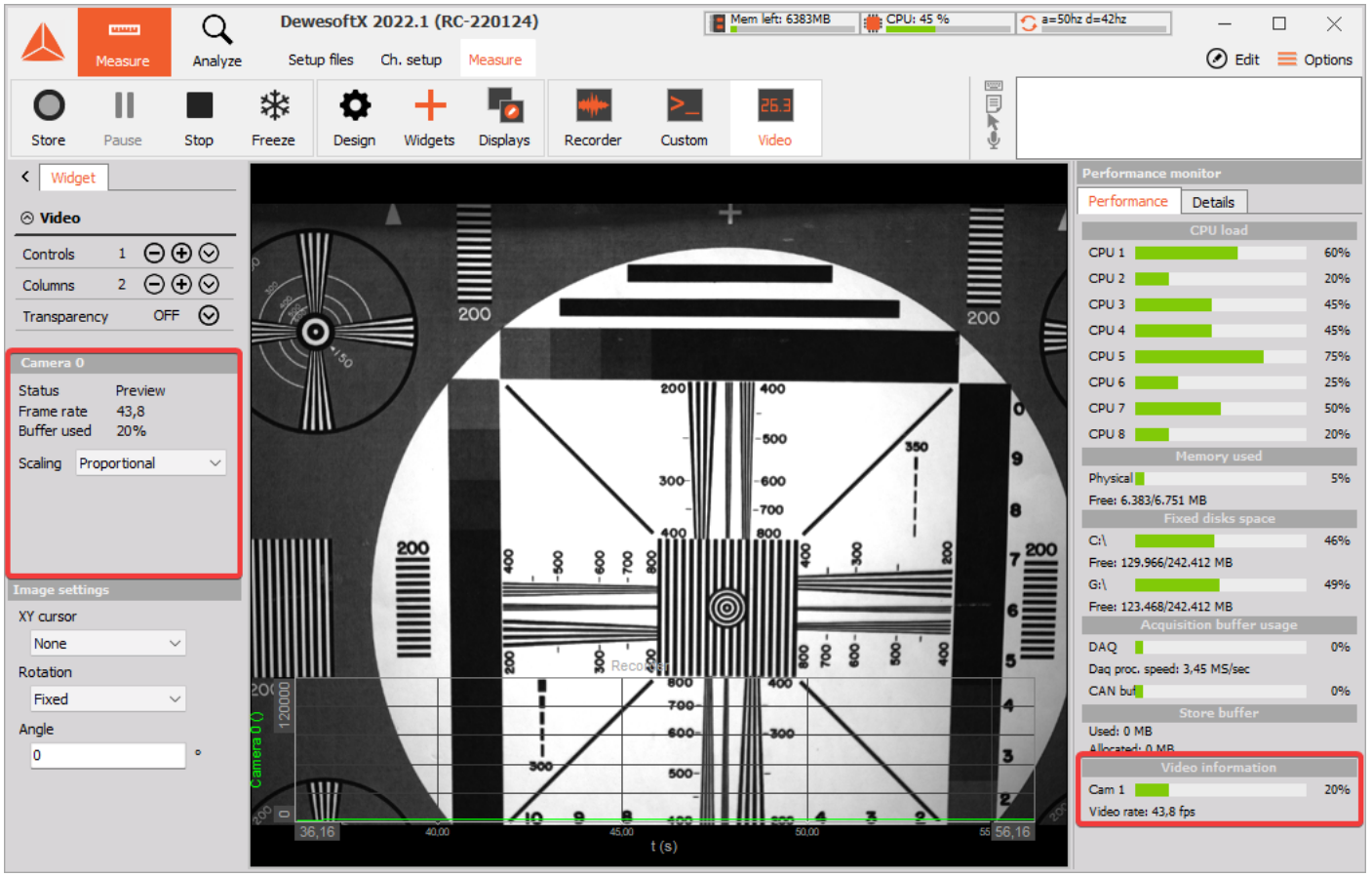

Image 35. DewesoftX® Performance monitor

7 Warranty information

Notice
The information contained in this document is subject to change without notice.

Note:
Dewesoft d.o.o. shall not be liable for any errors contained in this document. Dewesoft MAKES NO WARRANTIES OF ANY KIND WITH REGARD TO THIS DOCUMENT, WHETHER EXPRESS OR IMPLIED. DEWESOFT SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Dewesoft shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory, in connection with the furnishing of this document or the use of the information in this document.

The copy of the specific warranty terms applicable to your Dewesoft product and replacement parts can be obtained from your local sales and service office. To find a local dealer for your country, please visit https://dewesoft.com/support/distributors.

7.1 Calibration

Every instrument needs to be calibrated at regular intervals. The standard norm across nearly every industry is annual calibration. Before your Dewesoft data acquisition system is delivered, it is calibrated. Detailed calibration reports for your Dewesoft system can be requested. We retain them for at least one year, after system delivery.

7.2 Support

Dewesoft has a team of people ready to assist you if you have any questions or any technical difficulties regarding the system. For any support please contact your local distributor first or Dewesoft directly.

Dewesoft d.o.o.
Gabrsko 11a
1420 Trbovlje Slovenia

Europe Tel.: +386 356 25 300
Web: http://www.dewesoft.com
The telephone hotline is available Monday to Friday from 07:00 to 16:00 CET (GMT +1:00)

7.3 Service/repair

The team of Dewesoft also performs any kinds of repairs to your system to assure a safe and proper operation in the future. For information regarding service and repairs please contact your local distributor first or Dewesoft directly on https://dewesoft.com/support/rma-service.

7.4 Restricted Rights

Use Slovenian law for duplication or disclosure. Dewesoft d.o.o. Gabrsko 11a, 1420 Trbovlje, Slovenia / Europe.

7.5 Printing History

Check chapter 9. Documentation Version for History and change log.

7.6 Copyright

7.7 Trademarks

We take pride in our products and we take care that all key products and technologies are registered as trademarks all over the world. The Dewesoft name is a registered trademark. Product families (KRYPTON, SIRIUS, DSI, DS-NET) and technologies (DualCoreADC, SuperCounter, GrandView) are registered trademarks as well. When used as the logo or as part of any graphic material, the registered trademark sign is used as a part of the logo. When used in text representing the company, product or technology name, the ® sign is not used. The Dewesoft triangle logo is a registered trademark but the ® sign is not used in the visual representation of the triangle logo.

8 Safety instructions

Your safety is our primary concern! Please be safe!

8.1 Safety symbols in the manual

Warning
Calls attention to a procedure, practice, or condition that could cause the body injury or death

Caution
Calls attention to a procedure, practice, or condition that could possibly cause damage to equipment or permanent loss of data.

8.2 General Safety Instructions

Warning

The following general safety precautions must be observed during all phases of operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. Dewesoft d.o.o. assumes no liability for the customer's failure to comply with these requirements.

All accessories shown in this document are available as an option and will not be shipped as standard parts.

8.2.1 Environmental Considerations

Information about the environmental impact of the product.

8.2.2 Product End-of-Life Handling

Observe the following guidelines when recycling a Dewesoft system:

8.2.3 System and Components Recycling

Production of these components required the extraction and use of natural resources. The substances contained in the system could be harmful to your health and to the environment if the system is improperly handled at its end of life! Please recycle this product in an appropriate way to avoid unnecessary pollution of the environment and to keep natural resources.

This symbol indicates that this system complies with the European Union's requirements according to Directive 2002/96/EC on waste electrical and electronic equipment (WEEE). Please find further information about recycling on the Dewesoft website www.dewesoft.com

Restriction of Hazardous Substances

This product has been classified as Monitoring and Control equipment and is outside the scope of the 2002/95/EC RoHS Directive. However, we take care of our environment and the product is lead-free.

8.2.4 General safety and hazard warnings for all Dewesoft systems

Safety of the operator and the unit depend on following these rules.

- Use this system under the terms of the specifications only to avoid any possible danger.
- Read your manual before operating the system.
- Observe local laws when using the instrument.
- DO NOT touch internal wiring!
- DO NOT use higher supply voltage than specified!
- Use only original plugs and cables for harnessing.
- You may not connect higher voltages than rated to any connectors.
- The power cable and connector serve as Power-Breaker. The cable must not exceed 3 meters, the disconnect function must be possible without tools.
- Maintenance must be executed by qualified staff only.
- During the use of the system, it might be possible to access other parts of a more comprehensive system. Please read and follow the safety instructions provided in the manuals of all other components regarding warning and security advice for using the system.
- With this product, only use the power cable delivered or defined for the host country.
- DO NOT connect or disconnect sensors, probes or test leads, as these parts are connected to a voltage supply unit.
- Ground the equipment: For Safety Class 1 equipment (equipment having a protective earth terminal), a non-interruptible safety earth ground must be provided from the mains power source to the product input wiring terminals.
- Please note the characteristics and indicators on the system to avoid fire or electric shocks. Before connecting the system, please read the corresponding specifications in the product manual carefully.
- The inputs must not, unless otherwise noted (CATx identification), be connected to the main circuit of category II, III and IV.
- The power cord separates the system from the power supply. Do not block the power cord, since it has to be accessible for the users.
- DO NOT use the system if equipment covers or shields are removed.
- If you assume the system is damaged, get it examined by authorized personnel only.
- Adverse environmental conditions are Moisture or high humidity Dust, flammable gases, fumes or dissolver Thunderstorm or thunderstorm conditions (except assembly PNA) Electrostatic fields, etc.
- The measurement category can be adjusted depending on module configuration.
- Any other use than described above may damage your system and is attended with dangers like short-circuiting, fire or electric shocks.
- The whole system must not be changed, rebuilt or opened.
- DO NOT operate damaged equipment: Whenever it is possible that the safety protection features built into this product have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the product until the safe operation can be verified by service-trained personnel. If necessary, return the product to Dewesoft sales and service office for service and repair to ensure that safety features are maintained.
- If you assume a more riskless use is not provided anymore, the system has to be rendered inoperative and should be protected against inadvertent operation. It is assumed that a more riskless operation is not possible anymore if the system is damaged obviously or causes strange

noises. the system does not work anymore. The system has been exposed to long storage in adverse environments. the system has been exposed to heavy shipment strain.

- Warranty void if damages caused by disregarding this manual. For consequential damages, NO liability will be assumed!
- Warranty void if damage to property or persons caused by improper use or disregarding the safety instructions.
- Unauthorized changing or rebuilding the system is prohibited due to safety and permission reasons (CE).
- Be careful with voltages >25 VAC or >35 VDC! These voltages are already high enough in order to get a perilous electric shock by touching the wiring.
- The product heats during operation. Make sure there is adequate ventilation. Ventilation slots must not be covered!
- Only fuses of the specified type and nominal current may be used. The use of patched fuses is prohibited.
- Prevent using metal bare wires! Risk of short circuit and fire hazard!
- DO NOT use the system before, during or shortly after a thunderstorm (risk of lightning and high energy over-voltage). An advanced range of application under certain conditions is allowed with therefore designed products only. For details please refer to the specifications.
- Make sure that your hands, shoes, clothes, the floor, the system or measuring leads, integrated circuits and so on, are dry.
- DO NOT use the system in rooms with flammable gases, fumes or dust or in adverse environmental conditions.
- Avoid operation in the immediate vicinity of high magnetic or electromagnetic fields, transmitting antennas or high-frequency generators, for exact values please refer to enclosed specifications.
- Use measurement leads or measurement accessories aligned with the specification of the system only. Fire hazard in case of overload!
- Do not switch on the system after transporting it from a cold into a warm room and vice versa. The thereby created condensation may damage your system. Acclimatise the system unpowered to room temperature.
- Do not disassemble the system! There is a high risk of getting a perilous electric shock. Capacitors still might be charged, even if the system has been removed from the power supply.
- The electrical installations and equipment in industrial facilities must be observed by the security regulations and insurance institutions.
- The use of the measuring system in schools and other training facilities must be observed by skilled personnel.
- The measuring systems are not designed for use in humans and animals.
- Please contact a professional if you have doubts about the method of operation, safety or the connection of the system.
- Please be careful with the product. Shocks, hits and dropping it from already- lower level may damage your system.
- Please also consider the detailed technical reference manual as well as the security advice of the connected systems.
- This product has left the factory in safety-related flawlessness and in proper condition. In order to maintain this condition and guarantee safety use, the user has to consider the security advice and warnings in this manual.

EN 61326-3-1:2008
IEC 61326-1 applies to this part of IEC 61326 but is limited to systems and equipment for industrial applications intended to perform safety functions as defined in IEC 61508 with SIL 1-3.

The electromagnetic environments encompassed by this product family standard are industrial, both indoor and outdoor, as described for industrial locations in IEC 61000-6-2 or defined in 3.7 of IEC 61326-1.

Equipment and systems intended for use in other electromagnetic environments, for example, in the process industry or in environments with potentially explosive atmospheres, are excluded from the scope of this product family standard, IEC 61326-3-1.

Devices and systems according to IEC 61508 or IEC 61511 which are considered as “operationally well-tried”, are excluded from the scope of IEC 61326-3-1.

Fire-alarm and safety-alarm systems, intended for the protection of buildings, are excluded from the scope of IEC 61326-3-1.

9 Documentation Version

Doc-Version	Date [dd.mm.yyyy]	Notes
V22-0	1.03.2022	Draft
V22-1	14.3.2022	Initial release
V22-2	5.5.2022	Minor changes to pictures, data table correction, SoftSinc value update, IpConfigTool instructions.
V23-1	17.02.2023	Preview and settings chapter update with longer descriptions
V23-2	2023-03-01	Troubleshooting manual driver install

10 List of Images

11 NOTES

A table for data entry when you are setting up larger systems.

No	CAM Type	IP	MAC	Notes
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				


DEWESoft®
DS-CAM