

# DS-CAM-88c / DS-CAM-120c

**Gigabit-Ethernet Camera** 

# **Technical Reference Manual**

v 1.1.0



www.dewesoft.com

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### **Table of Contents**

1Key features	
1.1System Requirements	1
2Technical data	2
2.1Specifications	2
2.1.10ptical	2
2.1.2Electrical	2
2.1.3Mechanical	3
2.2Connections	4
2.2.1Power/Trigger connector pinout	4
2.2.2SIRIUS connection example	5
2.2.3Connecting to existing DEWETRON systems	6
2.2.4Connecting multiple cameras	7
2.2.5Connections Overview	9
2.3Benchmarks	
3Installation	
3.1DEWESoft Fullinstaller	
3.2Manual update (camera driver and DEWESoft)	11
3.2.1Step-by-step instruction	11
4FAQ	17
5Documentation Version	21

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# 1 Key features

The DS-CAM-88c/DS-CAM-120c are a high-speed Gigabit-Ethernet cameras with following key data:

- 🙏 DS-CAM-120c: 120 fps @ VGA (640x480)
- 🙏 DS-CAM-88c: 88 fps @ VGA (640x480)
- 실 Color
- 📥 Auto-gain
- Auto-shutter (also fixed shutter possible)
- 🙏 Auto-white balance
- 🙏 Triggered and free-run mode
- 🙏 Standard C-Mount
- 🙏 Small compact form factor
- 🙏 Low power consumption
- 🙏 Ruggedized (high-shock and vibration resistant, aluminium housing)
- 🙏 Real-time data streaming with full resolution

The camera supports the high-performance industrial standard "GigE Vision". The standard introduced in 2006 provides a framework for transmitting high-speed video and related control over Ethernet networks.

The benefits are: high speed data transfer rates up to 1GBit/s (based on 1000Base-T) connectible to every standard GigE Ethernet port and cable lengths up to 100m.

Dewesoft uses Smartek GigE SDK for communication with cameras that support GigE Vision standard.

### IMPORTANT



For best performance we recommended using a SSD for storing data.

A disk write rate of 100 MByte/s should be established, especially if using more than 1 camera!

### **1.1 System Requirements**

- 🙏 1 Gigabit-Ethernet port
- 🙏 Good PC performance (Core i5 CPU or better recommended, 4 GB RAM)
- 🙏 DEWESoft X or 7.1
- A Smartek GigE Vision SDK 2.7.0.1
- 🙏 DEWESoft GigE driver (cdv) 3.5

# 2 Technical data

### 2.1 Specifications

# 2.1.1 Optical

	DS-CAM-88c	DS-CAM-120c
Image sensor	Sony IT ICX414AL/AQ with HAD microlens, progressive scan	Sony IT ICX618AL/AQ with Exview HAD CCD II microlens
Sensor type	CCD	CCD
Optical size	1/2 "	1/4 "
Effective chip size	6.5 x 4.9 mm	4.46 x 3.80 mm
Cell size	9.9 x 9.9 μm	5.6 x 5.6 μm
Picture size (max)	656 x 492 pixel	646 x 492 pixel
ADC	14 bit	14 bit
Gain control	0 – 35 dB; auto-gain	0 – 32 dB; auto-gain
Exposure Time	26 μs – 60 s; auto-shutter	58 μs – 60 s; auto-shutter
Smart functions	Auto-white-balance, color correction, edge filter (sharpness), hue, sat.	Auto-white-balance, color correction, edge filter (sharpness), hue, sat.
Max. frame rate (at full resolution)	88 fps	120 fps

# 2.1.2 Electrical

### Power

Supply voltage	8 to 30 V DC	8 to 30 V DC
Power consumption	<3.6 W (@ 12 V DC)	<3.7 W (@ 12 V DC)
Power-over-Ethernet	optional	optional

### **Trigger input**

Voltage level representing logical 0	0.0 1.0 V DC
Undefined state between 0 and 1	1.0 3.0 V DC
Voltage level representing logical 1	3.0 24.0 V DC
Absolute maximum voltage (above → damage!)	36 V (only with external resistor of 3.3 kOhm in series)

### **Digital output**

Maximum current source for output	20 mA, open emitter

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### 2.1.3 Mechanical

External dimensions (H x W x L)	86.4 x 44.0 x 29.0 [mm] (3.40 x 1.73 x 1.14 [in])
Housing	aluminum case
Weight	< 200 g (without lens)
Storage temperature	-10 °C +70 °C (14 °F +158 °F)
Operating temperature	5 °C +45 °C (+41 °F +113 °F)
Operating humidity	25% 80% (no condensation)
Storage humidity	25% 95% (no condensation)
Lens mount	C-mount (CS-mount optional)
Connectors	Screw mount Ethernet RJ45; EIAJ (Hirose) 12 pin (matching part: Hirose HR10A-10P-12S(73))
Conformity	CE, FCC Class B, RoHS, GigE Vision, GenICam



Illustration 1: Dimensions

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### 2.2 Connections

On the rear side of the camera there are two connectors. The 12pin HIROSE connector (matching part: Hirose HR10A-10P-12S(73)) contains the power, trigger and other digital pins. Ethernet connector pinout according to the standard.





### 2.2.1 Power/Trigger connector pinout



Illustration 3: 12pin Hirose connector (matching part: Hirose HR10A-10P-12S(73)) on camera rear side

Pin #	Signal
1	GND (for Power and RS232)
2	Power (+8+30 V DC)
3	-
4	Camera In 1 (TRIGGER)
5	-
6	Camera Out 1 (open emiter, max. 20 mA)
7	Camera In GND
8	RxD (RS232)
9	TxD (RS232)
10	Camera Out Power (for digital outputs)
11	Camera In 2
12	Camera Out 2

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### 2.2.2 SIRIUS connection example

In this picture you see a typical SIRIUS measurement instrument, consisting of one SBOX unit (integrated PC) on bottom and one SIRIUS slice on top (from rear side).

The camera is directly connected to the Gigabit-LAN port. The second cable to the camera contains the power (from SBOX Power out) and the trigger, connected to the SYNC port of the SIRIUS slice. The camera frames are now in perfect sync with the analog data acquired by DEWESoft<sup>™</sup>.

Note: Even if the camera is connected, synching to other SIRIUS devices is still possible, because there are different pins used on the SYNC port for triggering/synching.



Illustration 4: SIRIUS SBOX with 1 SIRIUS slice connected to the DS-CAM-88c (or DS-CAM-120c) (per cable H12f-L1B7m-L00B4m-3M)

### 2.2.3 Connecting to existing DEWETRON systems

The DS-CAM-120c is also compatible to existing DEWETRON systems.

Please consider the system requirements:

- 🙏 see 1.1. System requirements
- DEWETRON instrument must not have DI-ISO option (isolated inputs/outputs)! In this case clocking is not possible, only free-run (the CLK pin is not available on the connector).

Free-run operation (without clocking, for low framerates) is easy, just connect the camera to the GigE LAN port.

If you want to trigger the camera, you have to use a special cable for the trigger/clock line. Usually every DEWETRON instrument is equipped with a 37pin DSUB connector, please see DEWETRON manual for pinout, here for **example** is the pinout for the **Orion-1622-100** (see Reference List (b)).

- 🙏 Connect EXT\_CLK1 (pin 17) to CLK of the Lemo 00 connector of the camera (pin 3, see 2.2.1).
- 🙏 Connect DGND (pin 37) to GND of the Lemo 00 connector (pin 4, see 2.2.1)

Set the pin EXT\_CLK1 to "Video" in DEWESoft hardware setup



37-pin SUB-D connector

Illustration 5: DEWETRON Orion-1622-100 DSUB 37 pinout



Illustration 6: Clockout setup of EXT\_CLK1 pin in DEWESoft

### 2.2.4 Connecting multiple cameras

![](_page_8_Picture_3.jpeg)

Illustration 7: CAM-BOX2

If you need to connect more than one camera, there is a special "CAM-BOX2" available, which consists of

- 🙏 wide-range voltage input (9-36V)
- 🙏 an industrial Gigabit-Ethernet-Switch (without Power-over-Ethernet! No supply for DS-CAM-600!)
- A Power and Sync distribution for up to 4 cameras.
- 🙏 Small dimensions: 115 x 62 mm (front) and 135 mm deep

Camerabox connector (mating cable connector: FGG.1B.307CLAD52)

![](_page_8_Figure_11.jpeg)

Illustration 8: CAM-BOX2 pinout

Power supply (mating cable connector: FGJ.1B.302CLLD42Z)

![](_page_9_Picture_3.jpeg)

Pin Assignment 1: +9...36V in 2: GND

Sync connector (mating cable connector: FGG.00.304CLAD27Z)

![](_page_9_Picture_6.jpeg)

Pin Assignment 1: n.c. 2: n.c. 3: CLK 4: GND

LEMO EGG.00.304.CLL

Illustration 9: CAM-BOX2 pinout

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### 2.2.5 Connections Overview

![](_page_10_Figure_3.jpeg)

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Technical data

### 2.3 Benchmarks

The following tests were done with SIRIUS SBOX and 1 to 4 cameras connected to the CAM-BOX2. Setup:

1 to 4 cameras connected over CAM-BOX2 SBOX: 128GB SSD -> max 190 MByte/s write rate CPU: Intel Core i7 QM57; 2.0GHz; 4GB RAM camera(s) clocked by SIRIUS DEWESoft X1 SP7 b358 GigEVisionSDK Version 2.7.0.1 GigE Camera driver v3.5 (Plugin) storing data to file, video buffer stable around 0..1% with checked "optimize for switched network"

#### Achieved framerates (fps)

1 camera			
x res	y res	DS-CAM-88c	DS-CAM-120c
640	480	88	120
320	240	165	195
320	120	280	300
2 cameras			
x res	y res	DS-CAM-88c	DS-CAM-120c
640	480	88	120
320	240	165	195
320	120	280	210
3 cameras			
x res	y res	DS-CAM-88c	DS-CAM-120c
640	480	88	90
320	240	165	195
320	120	280	210
4 cameras			
x res	y res	DS-CAM-88c	DS-CAM-120c
640	480	88	60
320	240	165	195
320	120	280	210

#### HINT

![](_page_11_Picture_8.jpeg)

Results (FPS) should be considered only as approximate MAX values. Writing speed of disk may be limiting factor (we used SSD!). We recommend to test cameras with your setup at about 0.8\*max\_FPS and higher to find where corrupted image, frame lost or buffer overrun will occur.

### 3 Installation

# 3.1 DEWESoft Fullinstaller

Usually all the drivers come with the DEWESoft Fullinstaller, if you select the option "GigE camera driver" during installation. To check if the drivers are installed, go to Settings  $\rightarrow$  Hardware setup  $\rightarrow$  Video and see if the checkbox "GigE" is visible. If not, execute the fullinstaller again, select Modify and reinstall the option.

The last DEWESoft X Fullinstaller can be downloaded here: http://www.dewesoft.com/download

DEWESoftX Full Installer Build(130202)	<b>X</b>
Select Features Select the features setup will install.	
Select which options to install for DEWESoftX.	Description
Plugins     OVisual controls     DEWESoft Option NET addons	
InstallShield ————————————————————————————————————	ck Next > Cancel

Illustration 10: DEWESoft X – installing GigE camera driver

### 3.2 Manual update (camera driver and DEWESoft)

Go to http://www.dewesoft.com/download and download

📥 GigE Camera drivers.

(Zip file includes Smartek GigE SDK 2.7.0.1 and DEWESoft GigECamera driver 3.5)

A latest DEWESoftX version

### 3.2.1 Step-by-step instruction

Install Smartek\_GigEVisionSDK Note that you must be administrator, not just user with admin rights! After installation be sure that "Smartek GigE Vision Filter Driver" is installed (picture 1) under Local area Connection Properties.

![](_page_13_Picture_2.jpeg)

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

🃮 Local Area Connection Properties 🛛 💌
Networking Sharing
Connect using:
💇 Broadcom NetLink (TM) Gigabit Ethernet
Configure
This connection uses the following items:
<ul> <li>Elient for Microsoft Networks</li> <li>Smartek GigE Vision Filter Driver</li> <li>QoS Packet Scheduler</li> <li>File and Printer Sharing for Microsoft Networks</li> <li>Internet Protocol Version 6 (TCP/IPv6)</li> <li>Internet Protocol Version 4 (TCP/IPv4)</li> <li>Link-Layer Topology Discovery Mapper I/0 Driver</li> <li>Link-Layer Topology Discovery Responder</li> </ul>
I <u>n</u> stall <u>U</u> ninstall P <u>r</u> operties
Description Smartek GigE Vision Filter Driver
OK Cancel

Illustration 11: Installed Smartek GigE Vision Filter Driver.

Connect the camera to the PC via Ethernet cable and Power/Trigger-cable. See connection example shown in 2.2.2.

The DS-CAM-88c/120c supports DHCP, so just set your computer's IP address to automatic and wait until the IP is assigned. To test if the camera is working you can run Smartek GigEVisionClient. By right-click on the camera you can also set IP to fix, if you prefer.

GigEVisionClier	nt								• X
<u>File View C</u> or	ntrol <u>H</u> elp								
🏆 🐏 😫	2 💁 🗭	<b>F</b>	0 0						
****************************	Contractor Devices Contra	ana	a a cara en en x						
Model 🗸	MAC	IP Address							
🛛 🕄 Manta	00:0F:31:4C:70:94	192.168.1.170							
🛛 🕴 Manta	00:0F:31:4C:70:98	192.168.1.239							
🖸 🕄 Manta	00:0F:31:4C:89:5C	192.168.1.30							
	Device properties								
Illustration	12: Examp	le: OK, car	neras (	can be	used,	close t	he GigEV	/isionClie	nt an

start DEWESoft.

To enable camera in Dewesoft, copy the file GigECamera.cdv into Dewesoft Addons folder, usually

located in Dewesoft7\Bin\V7\_1\Addons

Copy and replace your existing DEWESoftX.exe with the one downloaded.

Start DEWESoft and go to Settings > Hardware setup > Analog. For triggered mode (DEWESoft is clocking the camera), check if your device (such as SIRIUS for example) is set to Standalone or Master:

	are setu	p									1	
Analog	CAN	GPS	Video	Math	Timing	Alarms & Events	Analog out	NET	Plugins	Registration		
Analog d	evice				<u>,</u>	Amplifiers						
DEWESo	't USB			• ?	J	Dewe-USB o	onboard		•			
Card FOU	ND up Gro	uping				☑ Onboard ☑ MSI adap	l amplifier oters/TEDS ser	isors				
						Dewesoft	USB hardwa	re				
Index	Name	DOAS	SN B4EC	FW Ver	. Sam	Dewesoft ple rate AI Ch	USB hardwa	re 5.	DI Ch.	CNT Ch.	Sync	Set Card
Index A D	Name S-SIRIUS	DOAS	SN 984EC	FW Ver	. Sam 5 200	Dewesoft ple rate AI Ch kHz 8	USB hardwa AI Re 24 bits	re s. 12	DI Ch.	CNT Ch.	Sync Master	Setup Set Card Standalone
Index A D	Name S-SIRIUS	DOAS	SN 184EC	FW Ver 3.0.11.1	. Sam 5 200	Dewesoft ple rate AI Ch kHz 8	USB hardwa AI Re 24 bits	re 5. 12	DI Ch.	CNT Ch.	Sync Master	Setup Set Card Standalone Master
Index A D	Name S-SIRIUS	DOAS	SN 984EC	FW Ver 3.0.11.1	. Sam 5 200	Dewesoft ple rate AI Ch kHz 8	USB hardwa AI Re 24 bits	re 5. 12	DI Ch.	CNT Ch.	Sync Master	Setup Standalone Master Slave
Index A D	Name S-SIRIUS	DOAS	SN 184EC	FW Ver 3.0.11.1	. Sam 5 200	Dewesoft ple rate AI Ch KHz 8	USB hardwa n. AI Re 24 bits	re s. 12	DI Ch.	CNT Ch. 4	Sync Master	Set Card Standalone Master Slave Digital Out

Illustration 13: Dewesoft > Settings > Hardware setup > Analog: Set device to Master Sync.

Go to the Video tab and check »GigE Vision« and »Use trigger«, then click OK.

	💧 Haro	dware setup				×		
	Analog	CAN GPS Video	Math Timing Alarms 8	Events Analog ou	It NET Plugins Registration			
	Dire	ctX						
	Photron FastCam							
	Custom cameras (Driver version: 3.5)							
	Found	3 camera(s)						
	No.	Alliad Vision Technologies M	lame	Enabled	Use trigger			
	1	Allied Vision Technologies - Ma	anta_G-033C (E0020013)	Yes				
	2	Allied Vision Technologies - Ma	anta_G-033C (E0020013)	Yes				
	Video	options						
	File t	ypes for storing	AVI file type for comp	ression				
	O DV	I >2GB	Uncompressed	_				
	O AV	I <2GB		Sat	annranriata			
online				Set	appropriate			
compression	-		<	cod	ec for			
(CPU intensive)	Registr	ation status		com	pression			
	PRO	F		afte	r (	OK Cancel		
					1			
				mea	isurement			

Illustration 14: Dewesoft: Hardware setup > Video: finds GigE camera(s).

For the "File types for storing" you can chose between:

- "DVI", which is uncompressed DEWESoft video format (takes a lot of disk space, ~35 Mbyte / s / camera @ 640x480 and 120fps, but no video size limit) – or
- "AVI", the live compression will take CPU power, performance depends on the used computer; but we have experienced good results with the Xvid codec (uses multiple cores); consider that AVI will stop recording after video file size reaches 2 GB!
- "compress after measurement": if you have a triggered measurement, you can use the pause times to automatically compress a recorded video file after storing

For manual compression after the measurement set the appropriate compressor in "AVI file type for compression". We recommend the XVID codec. In Analysis mode you can then manually select your datafile and click "AVI compress".

![](_page_15_Picture_7.jpeg)

Illustration 15: AVI compress after measurement

Go to Ch. Setup, click the Video button, click the Unused button to enable the video channel.

	Acquisiti	on Analysis	DEV	/ESoft ) up files	<b>K1 SP7</b> Ch. seti	<b>b358</b> p №	leasure				SIRIUS	🕜 Help	- 🗆 🗙
Store	Save	Save as	File deta	ils Stor	ing	Analog	Counter	CAN	Video	O G O G Math	1		
CAME	RA OPTION	S					_	_	_			_	
Store	options					Frame ra	ate						
alwa	iys fast					30	•						
SL	ON/OFF	NAM	E			VAL	UES		SET				
0	Used	Camera 0	, ,	Allied Visior Frame rate:	Technolog 29,99 fps	ies - Mar	nta_G-033C (E00	20013)	Setup				
1	Used	Camera 1	1	Allied Vision Frame rate:	Technolog 29,99 fps	ies - Mar	nta_G-033C (E00	20013)	Setup				
2	Unused	Camera 2	,	Allied Visior Frame rate:	Technolog 29,99 fps	ies - Mar	nta_G-033C (E00	20013)	Setup				

Illustration 16: Dewesoft > Ch. Setup > Video: setup camera(s).

#### DS-CAM-88c / DS-CAM-120c

HINT	Ensure the firmware version of SIRIUS hardware is at least 3.1.0.16, otherwise						
	update the firmware. This is done with the "USB Firmware Upgrade Utility"						
	from <u>http://www.dewesoft.com/download</u> . Also the Firmware File can be						
	downloaded there. Close DEWESoft, start the Upgrade Tool, select "DEWESoft						
	USB" interface and firmware file and Start. After finished, it is very important						
	to unplug power AND USB cable and reboot the SIRIUS device.						

Enter the channel setup. By now, already a picture should be shown.

Please look up "FAQ" section, if you get e.g. a NO FRAMES RECEIVED error.

#### HINT

![](_page_16_Picture_6.jpeg)

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.

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![](_page_17_Picture_2.jpeg)

Illustration 17: Camera settings in DEWESoft.

Use the "Advanced Settings", if you want to change specific parameters of the camera, such as the custom resolution (AOI, area of interest) for instance.

Camera 0 (DS-CAM - GC651C)				
Basic settings	Camera settings			
Camera name Camera 0	Camera options			
	OeviceControl     ImageEormatControl	Height		
PREVIEW - 100,0 fps	SensorWidth SensorHeight High Max	Height of the image provided by the device (in pixels)		
		Value: 100 Apply		
	<ul> <li>Setsof raps</li> <li>AcquisitonControl</li> <li>DigitalIOControl</li> <li>AnalogControl</li> <li>TransportLayerControl</li> <li>UserSetControl</li> </ul>	L≥		
		Camera controls: Camera controls: Camera controls: Camera controls: Camera controls: Camera control camera camera control came		
		Close		

Illustration 18: Advanced settings

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# 4 FAQ

#### GigE checkbox in hardware setup missing / Support for 64 bit Windows:

For 64-bit Windows all three Smartek GigE paths needs to be set to Win32\_i86 in Environment variable PATH. Go to My Computer and click System properties > Advanced system settings > Advanced tab > Environment Variables > System variables > select Path > Edit.

Make the folloving changes: %GIGE VISION SDK PATH%\bin\Win32

%GENICAM\_ROOT\_V2\_0%\bin\Win32\_i86

%GENICAM\_ROOT\_V2\_0%\bin\Win32\_i86\GenApi\Generic

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

### GigE plugin is not found in Dewesoft

Issue: In 2.7.0.0 driver Smartek does not run file hardlink to GigEVisionSDK\_32bit\_dll.bat during installation. Solution: So it needs to be done manually; run CMD as Admin and run the file from the folder \Program files\Smartek\GigeVisionSDK\bin\

When this is done, Dewesoft normally recognizes the GigE plugin.

Issue affects Win7&8 64 bit and will be fixed by Smartek driver 2.7.1.0

### No picture shown, "No frames received" error:

If you receive the error "NO FRAMES RECEIVED", check:

- ls the Trigger cable connected?
- 🙏 Try decreasing the Shutter value
- 🙏 Check in hardware setup if the DEWESoft USB device is set to Master or Standalone
- A Disable Trigger in hardware setup and check if it's working in free-run mode (cable problem?)

### Camera not found (not in GigEVisionClient, not in DEWESoft)

🙏 Check Windows Firewall settings

#### Cameras not found in DEWESoft (yellow mark in GigEVisionClient):

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

🚊 GigE	🤹 GigEVisionClient						
<u>F</u> ile	<u>V</u> iew <u>C</u> or	ntrol <u>H</u> elp					
1	🐲 🕦 👾 😥 🕞 🖶 🔍 🍳 🔍 🛒						
na n		Devices 100					
Model	$\nabla$	MAC	P Address				
···· 🚹	Manta	00:0F:31:4C:70:98	92.168.1.239				
<u> </u>	Manta	00:0F:31:4C:70:94	92.168.1.170				
L 🕰	Manta	00:0F:31:4C:89:5C	92.168.1.30				
		Device properties	BX				

Illustration 19: IP address problem

See also Illustration 11 for a working example.

If the cameras are found, close GigEVisionClient and start DEWESoft.

#### Change IP address of the camera

If you manually change the IP address, please close DEWESoft, start the GigEVisionClient, right-click on the camera and select "Set IP to device"; use the same subnet as the computer, example:

PC: 192.168.1.100, Subnet 255.255.255.0

Camera: 192.168.1.101, Subnet 255.255.255.0

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

#### GigEVision client does not start, error message when starting

You can get it working by doing the following: Check if the operating system of your computer is 32bit or 64bit.

Copy the 64-bit dll's (otherwise take the onces from the 32bit directories) from

C:\Program Files\Smartek\GigEVisionSDK\bin\Win64

and

C:\Program Files\Smartek\GigEVisionSDK\GenICam\bin\Win64\_x64

to

\Windows\system32 (respectively \Windows\SysWOW64)

Then start the GigEVisionClient from C:\Program Files\Smartek\GigEVisionSDK\bin\Win64

#### **Cameras not working in DEWESoft**

If you followed the step-by-step installation procedure, but still the camera is not working in DEWESoft, you can try to copy the used dll's manually:

Copy the 32-bit dll's from

C:\Program Files\Smartek\GigEVisionSDK\bin\Win32 and C:\Program Files\Smartek\GigEVisionSDK\GenICam\bin\Win32\_i86 to

DEWESoft's Addons folder.

Then restart DEWESoft.

### Maximum framerate @ VGA resolution only 36 fps

When you adjust the framerate higher than 36 fps, and it is always reset to 36 fps, the Ethernet card in your computer is most probably only 100 Mbit/s. Please check control panel  $\rightarrow$  network card properties. Gigabit-Ethernet (1000 Mbit/s) is required!

#### Performance improvements (e.g. in case of frames lost, CPU overload or buffer overrun)

A loss of a few frames during a measurement is normal, due to collissions 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 direct connection or one switch (with no additional participants).
- A Disable all anti-virus, firewall, indexing and synchronization programs running in background.
- Also check if you really have a Gigabit-Ethernet network card, not only 100Mbit/s.
- A Check if the LAN cable is at least of CAT5 quality, if you have longer cable lenghts it should be even better.
- For this camera, the main improvement can be done by using a SSD (disk writing speed about 100...150 Mbyte/s. One camera at 640x480 @ 120fps takes about 35MByte/s, multiply the value with the number of cameras used)
- ▲ Disable any "live compression" in Hardware setup → Video. Codec may take CPU load.
- 🙏 Try to decrease the framerate / resolution
- A Use the Windows ressource monitor (can be found in Task manager) to check for bottlenecks.
- For optimal performance we recommend to enable "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. (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 DEWESoft 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 DEWESoft Measure mode. On the right side the performance monitor will appear. Watch the Cam video buffer. It should stay stable at low values.

![](_page_21_Figure_3.jpeg)

Illustration 20: IP address problem

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# **5** Documentation Version

Revision number: 101

Last modified: Tue 23 Dec 2014, 16:45

Doc-Version	Date [dd.mm.yy]	Notes
1.0.0	13.08.12	initial revision
1.0.1	24.09.12	Changed benchmarks because of improvements in GigE Cam driver 1.7
1.0.2	24.09.12	More detailed path in "Support for 64 bit Windows"
1.0.3	04.10.12	Added secton 2.2.4 "Connections Overview"
1.0.4	02.11.12	Cable changed from camera to DEWE-43 in section 2.2.4
1.0.5	27.11.12	Changed first FAQ to "GigE checkbox in hardware setup missing /"
1.0.6	26.02.13	General update, CAM box pinout, more FAQs, small corrections
1.0.7	02.07.13	Changed name to "DS-CAM-120c"; minor hints and corrections, dimensions added
1.0.8	16.10.13	Added FAQ "GigE plugin is not found in DEWESoft"
1.0.9	26.11.13	Added FAQ "Maximum framerate @ VGA resolution only 36 fps"
1.1.0	22.12.14	Merge of DS-CAM-88c and DS-CAM-120c into one manual added new benchmarks for DS-CAM-88c

For support please contact support at dewesoft com.