

Technical Manual

VoE-Camera-M 1280x1024 (IDS) in CPC Article-No.: 07V0001A

Version: 5.0



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2 General

2.1 Abbreviations

The following section will explain abbreviations used in this document:

- V60 = Image analysis programme by the company VisionTools
- PPE = Personal protective equipment
- I/O = Inputs / outputs
- CPC = Camera protection case
- PoE = Power over Ethernet

2.2 Information on the manual

This technical manual contains important instructions for working with the product named on the cover sheet. The prerequisite for workplace safety is the observance of all safety and handling instructions specified in this manual. The local accident prevention regulations and national health and safety regulations must be observed in addition to the instructions in this manual. All information and instructions are to be carefully read before use. The manual is a product component and must be kept accessible to the plant operator at all times.

2.3 Documents enclosed

• Declaration of Conformity



2.4 Safety information

In this manual, icons (acc. to EN ISO 7010) are used to highlight correct text passages and relevant sections. If the product is sold in a non-EU country, the warning symbols may need to be amended, if necessary.

The signal word describes the severity of the impending risks:

- **<u>Danger!</u>** Imminent dangerous situation which will result in serious bodily injury or death.
- <u>Warning!</u> Potentially dangerous situation which could result in serious bodily injury or death.
- <u>Caution!</u> Potentially dangerous situation which could result in minor bodily injury or death. Also warning of damage to property.
- Note! For application instructions and other important information.





2.5 Limitation of liability

All information and statements in this manual are compiled in consideration of valid standards and regulations, as well as state of the art technological knowledge.

The manufacturer accepts no liability for damages due to:

- Failure to observe this manual
- Inappropriate use
- Using non-trained personnel
- Undertaking unauthorized modifications
- Using impermissible replacement parts

Additionally, the obligations, the General Terms and Conditions and delivery conditions of the manufacturer, and the statutory regulations valid at the time the contract was concluded will apply.

2.6 Copyright law

Copyright law to this operating manual belongs to the company VisionTools Bildanalyse Systeme GmbH. This manual is intended only for the operator and the operator's personnel.

It includes regulations and information that may not be

- duplicated,
- distributed, or
- transmitted in any other manner, either in whole or in part.

Duplicating the manual within a company for the purposes of training by the operator is excepted. Violations may have criminal consequences.

2.7 Guarantee and Liability

Our General Terms and Conditions apply. Claims for a guarantee or for liability in case of personal injury or property damage are excluded if they are due to one or more of the following causes.

- Inappropriate use of the assembly
- Inappropriate installation, commissioning, operation, and maintenance of the device or system
- Failure to follow the information in the manual regarding transportation, storage, installation, commissioning, operation, limit values, maintenance of assemblies
- Unauthorized modifications to the assemblies
- Unauthorized modifications to the programmes
- Lack of monitoring of components subject to wear
- Catastrophic incidents due to foreign objects and force majeure
- Liability for subsequent damages is excluded

3 Safety

3.1 Appropriate use

The cameras are for industrial products only. They will be controlled, measured or archived with the from VisionTools developed image processing software V60.

3.2 Foreseeable misuse

Any other use besides that determined in Appropriate use this chapter or any use extending beyond this is **<u>not</u>** appropriate!

The operator will bear sole responsibility

- for any damages that may result from such use.
- the company VisionTools accepts no liability.

In case of changes or unauthorized modifications to the system, any liability or guarantee from VisionTools Bildanalyse Systeme GmbH will cease to exist.

The electromagnetic behaviour of the system can be impaired by additions or changes of any kind.

Therefore, make <u>no</u> changes or additions to the system without consulting with the company VisionTools Bildanalyse Systeme GmbH and receiving written approval to do so.



Danger!

Dangers may occur following improper use.



4

Technical data

Designation	Тур.	Unit
Sensor	1/1⁄8" CMOS	
Resolution	1280 x 1024	(H) x (V)
Pixel size	5.4 x 5.4	μm
Max. frames	50	Hz
Lens mount	C-Mount	
Digitale inputs 4 (optocoupler)	24	VDC
Digitale outputs 4 (optocoupler)	24	VDC
Power supply (unit)	24 – M12/12pin	VDC
or Power over Ethernet	IEEE802.3af	
Ethernet	1 – M12-X-cross	GBit
Power consumption	24V: 1.7 – 2.4 / PoE (56V): 3.0 – 3.7	W
Weight	approx. 490	g
Operation temperature and humidity	10°C - 45°C / 20 - 90% (none condensation)	
Storage temperature and humidity	-40°C - 70°C / 10 - 95% (none condensation)	
Other		
Type of protection	IP40	

4.1 Dimensions (mm)





4.2 Pin Assignment



M12 Female-Connector 8pin X-Coded

Pin	Signal
1	MX0+
2	MX0-
3	MX1+
4	MX1-
5	MX3+
6	MX3-
7	MX2-
8	MX2+



M12 Male-Connector 12pin A-Coded

Pin	Signal
1	24 VDC VCC ext.
2	GND
3	Opto. In1
4	Opto. In2
5	Opto. In3
6	Opto. In4
7	Opto. GND
8	24VDC VCC Opto. Out
9	Opto. Out1
10	Opto. Out2
11	Opto. Out3
12	Opto. Out4



5 Commissioning

5.1 Initial operation

Specifically, the following points should be noted:

• The specified operating voltage of the camera (The operating voltage can be found in chapter Technical data)

5.2 Return to service

Specifically, the following points should be noted:

- The specified operating voltage of the camera (The operating voltage can be found in chapter Technical data)
- If necessary, the used lens should be cleaned with a dry cloth to eliminate dust and other dirt.



5.3 Assembly

Camera monting with CPC

The FK18 clamp piece is mounted directly to the CPC. To mount an metal-hinge at the CPC, an adapter plate is required.





Article-No.: 10A0008A



Adapter plate for CPC



Article-No.: 07E0001L



5.4 Input / Output

Inputs Opto. IN 1-4

high level	+15V up to +30V
low level	-3V up to +5V
voltage range	30V
disruptive voltage	50V
input current	10mA

Outputs Opto. OUT 1-4

output current short term	500mA
output current permanent	150mA
output voltage	30V
disruptive voltage	50V



5.5 Driver Installation

Driver installation

1. Access the installation menu by double-clicking on the driver file to be installed.



2. Select the desired language.

Eye - InstallShield Wizard	X
Wählen Sie eine Setup-Sprache aus	And and a second second
Wählen Sie die Sprache für die Installation aus der unten aufgeführten Auswahl aus.	
Deutsch	
Englisch	
nstallShield	
< Zurück Weiter	r > Abbrechen

3. Click on the button "Install Driver".

IDS uEye Setup 32-Bit 4.50	
ids	uEve
Willkommen beim Installa	tionsprogramm für die IDS uEve Kamerafamilie.
Bitte wählen Sie eine der	folgenden Optionen.
Treiber installieren	Startet die Treiberinstallation
"WasIstNeu.txt"	Datei mit aktuellen Informationen zu diesem Treiberrelease anzeigen
USB Bus prüfen	Zeigt alle USB Controller an
InstallShield	
	Schließen



4. Complete Installation is set as the default. Keep this setting and click on "Forward >".

Setup-Typ Wählen Sie den Setup-Typ aus, der Ihren Anforderungen am ehesten		
Wählen Sie den gewünschten Setup-Typ aus. 1. Vollständig 2. USB und Gigabit Ethernet 3. USB 4. Benutzerdefiniert	Beschreibung Installation aller uEye USB und Gigabit Ethernet Komponenten, aller 3rd Party Interfaces, aller Handbücher, aller SDK-Dateien und Codebeispiele.	
InstallShield	ick Weiter > Abbrechen	

5. It is recommended to use the set default target directory. Click on "Forward >".

IDS uEye Setu	p 32-Bit 4.50
Zielpfad w Ordner au	ählen Iswählen, in dem die Dateien installiert werden sollen.
	uEye in folgendem Ordner installieren: C:\Program Files\IDS\uEye Ändern
InstallShield —	< Zurück Weiter > Abbrechen



6. Keep the default setting and click on "Forward >".

Programmordner auswählen	
Bitte wählen Sie einen Programmordr	neraus. UEX
Setup fügt dem unten aufgeführten F neuen Ordnernamen eingeben oder (Programmordner neue Symbole hinzu. Sie können einen einen vorhandenen Ordner aus der Liste auswählen.
Programmordner:	
IDS\uEye	
Vorhandene Ordner:	
Accessories	
Administrative Tools	-
AutoSketch	
CL NUL Platform	nt
CodeMeter	
F-Secure Client Security	
Games	
GenlCam_v2_3	-
allShield ————	

7. Click on the "Install" button and restart the computer after the installation.

IDS uEye Setup 32-Bit 4.50	×
Bereit zur Installation des Programms	6
Der Assistent ist zur Installation bereit.	l=ye
Klicken Sie auf 'Installieren', um mit der Installation zu beginnen.	
Wenn Sie die Installationseinstellungen überprüfen oder ändern möchten, klicken Sie a Zurück'. Klicken Sie auf 'Abbrechen', um den Assistenten zu beenden.	uf
InstallShield	rechen



5.6 Set the IP address



To avoid a possible conflict between the network devices, it is recommended to assign fixed IP addresses for the cameras.

Open by double-clicking on the IDS Manager.

NOTE!



Activate Expert Mode.

101	Verf.	Тур	Kam.ID	Ger.ID	Model	SerNr.
36						4102691519
Ja	Ja	ETH	2	1004	UI-524xRE PoE-M	4102690174
- Ja	Ja	ETH	3	1002	UI-524xRE PoE-M	4102691531
"Ja	Ja	ETH	4	1001	UI-524xRE PoE-M	4102691532
trolbe	reich					
	Allgemei	ne Informat	ionen		Kamerainforr	nationen
	Support	t Datei erzei	igen		ETH Netzwe	rkdienst
	Zusi	stzfunktione	n		Automatische ETH	Konfiguration
[2	0		_	iD	5:
_	Deutsch			-	Schließ	en



After the activation, the following setup options will appear.

	-				Lucial.	[c. a.]	_			
Frei	verr.	Тур	Kam.ID	Ger.ID	Modell	SerNr.	Parame	ter	Wert	
1.10	30	CIN	1	1005	UI-524XRE POE-M	4102691519	E Ger	ät		
er er	Ja	EIH	1	1004	UI-524XRE POE-M	4102690174	=	Allgemein		
<u>e</u> 16	Ja	EIH	1	1002	UI-524XRE POE-M	4102691531		Runtime Firmware Version	3.04.0031	
<u>در من</u>	Ja	ETH	1	1001	UI-524xRE POE-M	4102691532		Starter Firmware Version	1.04.0031	
								User EEPROM (8 Zeichen)		
								COM-Port Nummer	99	
								Kameratemperatur	38.5°C (101.3°F)	
								Gerate Statushags	0×00002401	
								Kontrolistatus	0×08001083	
								Hardware		
								Sensor ID	80	
								Grobe des Bildspeichers	32 MB	
							-	Netzwerk		
								MAC Adresse	00-18-A2-18-F8-E7	
								Aktuelle IP Adresse	192.168.0.1	
								Aktuelle IP Subnetzmaske	255.255.255.0	
								Vercici IV adrecce	192 168 11 1	
								Personal Production	172.100.0.1	
								Persist. IP Subnetzmaske	255.255.255.0	
ontrolbere	eich					-		Persist. IP Subnetzmaske Beginn des IP Bereichs	255.255.255.0	
ontrolbere	eich ertenmodus				Automat. Parameter R	Refresh	2.	Persist. IP Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs	255.255.255.0	
Expe	eich ertenmodus			V	Automat. Parameter R	Refresh	2.	Persist. IP Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs MAC Adr. des Paired Host	255.255.255.0 - - 02-18-92-04-7C-81	
Expe	eich ertenmodus Allgemeir	ne Informati	onen		Automat. Parameter R Kamerainforr	Refresh 2	2.	Persist. IP Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs MAC Adr. des Paired Host IP Adr. des Paired Host	255.255.255.0 - - 02-18-92-04-7C-B1 192.168.0.100	
Expe	eich ertenmodus Allgemeir	ne Informati	onen		Automat. Parameter R Kamerainforr	Refresh 2 mationen		Persist. IP Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs MAC Adr. des Paired Host IP Adr. des Paired Host Link	255.255.255.0 - - 02-18-92-04-7C-81 192.168.0.100 1000 Mbit/s	
Expe	eich ertenmodus Allgemeir Support	ne Informati Datei erzeu	onen		Automat. Parameter R Kamerainforr ETH Netzwe	Refresh 2 mationen erkdienst	2.] = Lok	Persist. In Policodo Persist. In Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs MAC Adr. des Paired Host IP Adr. des Paired Host Link Aler Netzwerkadapter	255.255.255.0 - - 02-18-92-04-7C-81 192.168.0.100 1000 Mbit/s	
Expe	eich ertenmodus Allgemeir Support	ne Informati Datei erzeu	onen Igen		Automat. Parameter R Kamerainforr ETH Netzwe	tefresh 2 mationen erkdienst	2.] - Lok	Persist. IP Butter Persist. IP Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs MAC Adr. des Pared Host IP Adr. des Paired Host Link aler Netzwerkadapter Allgemein	255.255.255.0 - - 02-18-92-04-7C-81 192.168.0.100 1000 Mbit/s	
Expe	eich ertenmodus Allgemeir Support Zusa	ne Informati Datei erzeu tzfunktioner	onen Igen		Automat. Parameter R Kamerainforr ETH Netzwe Automatische ETH	tefresh 2 mationen rkdienst I Konfiguration	2.] 	Persist. IP Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs IP Adr. des Paired Host Unk aler Netzwerkadapter Allgemein Bezeichnung	255,255,255,0 - - - - - - - - - - - - - - - - - - -	
Expe	eich ertenmodus Allgemeir Support Zusal	ne Informati Datei erzeu tzfunktioner	onen Igen		Automat. Parameter R Kamerainforr ETH Netzwe Automatische ETH	Refresh 2 mationen rkdienst I Konfiguration		Persist, IP Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs MAC Adr., des Paired Host Unk Jer Netzwerkadapter Allgemein Bezeichnung Treberversion	255,255,255,0 - - - 192,169,2-04-7C-81 192,168,0.100 1000 Mbit/s MAC Bridge Minjoot 6,1,7600,16385	
Expe	eich ertenmodus Allgemeir Support Zusa Starter F	ne Informati Datei erzeu tzfunktioner	onen Igen n		Automat. Parameter R Kamerainforr ETH Netzwe Automatische ETH Manuelle ETH Ko	Refresh 2 mationen rkdienst I Konfiguration onfiguration	2.]] Lok	Persit. IP Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs Ende des Pareichs enerichs IP Adr. des Pareid Host Link aler Netzwerkadapter Allgemein Bezeichnung Treiberversion Treiberversion	255,255,255,0 - - - - - - - - - - - - - - - - - - -	
I▼ Expe	eich ertenmodus Allgemeir Support Zusa Starter F	ne Informati Datei erzeu tzfunktioner	onen igen h		Automat, Parameter R Kamerainforr ETH Netzwe Automatische ETH Manuelle ETH Ko	Refresh 2 mationen Irkdienst I Konfiguration onfiguration	2.] Lok	Persit: IP Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs IP Adr. des Pareid host IP Adr. des Pareid host Link Br Adr. des Pareid host Link Bezeichnung Treberdatum ChCP altwiert	255,255,255,0 - - 192,16-92-04-7C-81 192,168.0.100 1000 Mbit/s MAC Bridge Minjoort 6,1.7600,16385 6-21-2006 Nein	
Expe	eich ertenmodus Allgemeir Support Zusal Starter F	ne Informati Datei erzeu tzfunktioner Firmware Up	onen igen n load		Automat. Parameter R Kamerainforr ETH Netzwe Automatische ETH Manuelle ETH Ko	tefresh 2 mationen rkdienst I Konfiguration onfiguration	2.]]]	Persit. 19 Subnetmathe Beginn des D'Beneiche Ende des IP Bereiche MAC Adr. des Päreich Host LLN. Bereichzwerkadapter Allgemein Bezeichnung Treibendatum CHKP altwiert Griff altwiert	255.255.255.0 - 02-18-92-04-7C-81 192.168.0.100 1000 Miki/s MAC Birdge Mnijeort 6.1.7600.1068 6-21.2068 Nein 4	
ontrolbere	eich ertenmodus Allgemeir Support Zusa Starter F	ne Informati Datei erzeu tzfunktioner	onen igen load		Automat. Parameter R Kamerainforr ETH Netzwe Automatische ETH Manuelle ETH Ko	Refresh 2 mationen rkdienst I Konfiguration onfiguration	2.]]]	Persist, IP Subnetzmaske Beginn des IP Bereichs Ende des IP Bereichs IP Adr. des Pareid host IP Adr. des Pareid host Link B Adr. des Pareid host Link Bezeichnung Treiberdatum DHCP abbrieft Anzahl Geparter Geräte Anzahl geparter Geräte	255,255,255,0 - - - 192,16-92-04-7C-81 192,166.0.100 1000 Mbit/s MAC Bridge Minport 6,1,7600,16385 6-21,2006 Nein 4	
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	eich ertenmodus Allgemeir Support Zusei Starter F	te Informati Datei erzeu tzfunktioner Firmware Up	onen igen load		Automat. Parameter R Kamerainforr ETH Netzwe Automatische ETH Manuelle ETH Ko	Refresh 2 mationen ridenst (Konfiguration onfiguration	2.] 	Persist. 19 Subnetmashe Beginn des 19 Beneichs Ende des 19 Beneichs Ende des 19 Beneichs Unk Ar. des Paired Host Unk aler Netzwerkadapker Alligenetin Treberversion Treberversion Treberversion HVF0 altwiert Anzahl Jeslamter Geräte Anzahl Jeslamter Geräte MaC Adresse 19 Schnatzmache Beschotte	255.255.255.0 - - - - - - - - - - - - -	
Expe	eich ertenmodus Allgemeir Support Zuse Starter F	ne Informati Datei erzeu tzfunktioner Firmware Up	onen igen load		Automat. Parameter R Kamerainforr ETH Netzwe Automatische ETH Manuele ETH Ko	Refresh 2 mationen rkdienst Kronfiguration onfiguration	2.]] 1.	Persist, 19 Subnetzmarkie Beginn des IP Bereichs Ende des IP Bereichs NAC. Adr. des Pareid host IP Adr. des Pareid host Link Bezeichnung Treberdatum OHCP abtwiet Anzah belanter Geräte Anzah Jopanter Geräte Anzah Jopanter Geräte Anzah Jopanter Geräte Anzah Jopanter Geräte Mac Adresse IP Adresse IP Adresse Beginn des IP Bereichs Ende des IP Bereichs	255,255,255,0 - - 02-18-92-04-7C-81 192:168-0.100 1000 Mbit/s MAC Bridge Minjport 6,1,7600.16385 6-21:2006 Nein 4 4 02-18-92-04-7C-81 192:168-0.100 255,255,255,0 192:168-0.10	



NOTE!

If not all buttons are activated, each camera must be configured automatically by clicking the button "Automatische ETH Konfiguration".

1. The IP of the selected camera is set under Manual ETH Configuration.

Manuelle ETH Konfiguration	×
Adaptereinstellungen	
Beginn des IP Bereichs	
192 . 168 . 0 . 1	Vorschlagen
Ende des IP Bereichs	
192 . 168 . 0 . 99	
Ausgewählte Geräte ID 1003 Persistente IP	
192 . 168 . 0 . 1	Vorschlagen
Subnetzmaske	
255 . 255 . 255 . 0	
Status Die Kamera verwendet die persistente I	P Adresse.
Abb	rechen OK





NOTE!

- The camera must be in the same IP range as the network adapter.
- The subnet mask of the camera must correspond to the subnet mask of the network adapter.

2. An ID is assigned for the selected camera under Camera Information. **Camera IP = Camera no.** (e.g. <u>Camera 1</u> = ID $\underline{1}$ = 192.168.0. $\underline{1}$)

Kamerainformationen	×
Geräte ID: 1003	
Hersteller	Datum Endtest
IDS GmbH	18.01.2014
Kamera ID Liser FEPROM	(max, 64 Zeichen)
	· · · · · · · · · · · · · · · · · · ·
	Abbrechen OK

3. For a faster initialisation of the cameras, we recommend activating the *"Boot-Boost"* under the additional functions. This setting must be made for each individual camera.

✓ Thread zur Performanceoptimierung der Bilderfassung zulassen (IPO) ameraparameter bein Öffnen ✓ Standard Parametersatz ✓ Standard ID-uste setzen ✓ Ein ID-uste setzen ✓ Aktuelle Boot-Boost-IDs: 1-99 uk Transfer Size SI2 S12 KB (default) ✓ rtueller COM-Port ✓	ADSCHOLEN (Dol	teriebetrieb)	alten (Netzbetrieb)	
ameraparameter beim Öffnen Standard Parametersatz Kameraparametersatz löss oot-Boost Ein ID-Liste setzen ID-Liste löschen ID hinzufügen ID ent Aktuelle Boot-Boost-IDs: 1 - 99 ulk Transfer Size SI2 KB (default) irtueller COM-Port COM-Port	Thread zur Perf	ormanceoptimierung der Bilderfassung zulassen (I	PO)	
anaret ga and etc. Deam Officient Kameraparametersatz Kameraparametersatz loss cool-Boost ID-Liste setzen ID-Liste löschen ID hinzufügen ID entf Aktuelle Boot-Boost-IDs: 1 - 99 ulk Transfer Size 512 KB (default)	ameran aramater b	eim Öffnen		
Noot-Boost ID-Liste setzen ID-Liste löschen ID hinzufügen ID entf Aktuelle Boot-Boost-IDs: 1 - 99 Aktuelle Boot-Boost-IDs: 1 - 99 Aktuelle Goot-Boost-IDs: 1 - 99 Vilk Transfer Size 512 KB (default) S12 KB (default) Image: Comport Com-Port Image: Comport	 Standard 	Parametersatz	Kameraparame	etersatz löschen
Aktuelle Boot-Boost-IDs: 1 - 99 Aulk Transfer Size 512 KB (defaulk) fitueller COM-Port COM-Port	oot-Boost ▼ Ein	ID-Liste setzen ID-Liste lösche	n ID hinzufügen	ID entfernen
S12 KB (default)	Aktuelle Boot-	Boost-IDs: 1 - 99		
COM-Port	ulk Transfer Size	•		
COM-Port				
	.OM-Port	<u>▼</u>		
Installieren Speichern		Installieren	Speichern	
Löschen Senden / Empfangen				
		Löschen	Senden / Empfang	





5.7 Adjust the network card

Under Windows » "Open Network and Sharing Center" » "LAN Connection" » "Properties" » "Configure"





NOTE!

The naming and appearance of the configuration menus may differ for network cards.

Also the network interface card manufacturers provide driver updates for their cards every now and then. Using the latest drivers is always recommended and might improve the overall performance of the system dramatically.



Network card settings

1. From experience, we recommend setting the value to "9014 bytes" under the "Advanced" tab, in the "Jumbo Packet" settings.

		- Crito	r ower manage	anneann
General	Advanced	Information	Performance	Driver
ne roiowing ne property y Force NDKt Header Data gnore FCS 5 ruferupt Moo PV4 Checks Lange Send 1 Jarge Send 1 Jarge Send 1 Jacally Admum Nu Maximum Nu Ma	in propenses are a vou want to chai is work with Glo s Split errors deration sum Offload et Offload V2 (IPv- Offload V2 (IPv-	available for this i nge on the left, a bal Pai ∧ 4) 6) 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	network adapter. Ui and then select its vi Value: 9014	cĸ alue

When you use "VoE-NETBoxes I", the "Jumbo Packet" must be set to the value "4088 Bytes". Please note the following.



NOTE!

To avoid problems with the connected cameras, please note that when cascading the "VoE-NETBoxes II" and the "VoE-NETBoxes I", always connect the "VoE-NETBoxes I" behind them.

If possible, the "VoE-NETBoxes I" should be exchanged for the "VoE-NETBoxes II".

Folgende Eigenschaften sind für diesen Netzweskadapter verfügbar. Klicken Sie links auf die Eigenschaft, die geändert werden soll, und wählen Sie den Wert auf der rechten Seite aus. Eigenschaft: Wert: Geschwindigket & Duplex Green-Ethemet Interrupt-Moderation IPv4 Prüframmenabladung Aurbio-Richmen Maximale RSS-Warteschlangenanze Netzweikadresse NS-Abladen Priorität & VLAN Puffer einpfangen Puffer übertagen Wert:	Algemein	Erweitert	Treiber	Details	Ereignisse	Energieverwaltur	ng
Egenschaft: Wert: Geschwindigkeit & Duplex Gigabit autom, deaktivieren Green-Ethemet Internuzt-Moderation IPv4 Prüfaummenabladung Aunbörzühnen Maximale RSS-Warteschlangenanzz Netzwerkadresse NS-Abladen Power Saving Mode Priorität & VLAN Puffer inberagen	Folgende Klicken S wählen S	Egenscha ie links auf ie den Wer	ften sind i die Eigen t auf der r	ür diesen schaft, di echten S	Netzwerkac e geändert v eite aus.	lapter verfügbar. verden soll, und	
Geschwindigket & Duplex Green-Ethernet Interrupt-Moderation IPV4 Prüfaummenabladung Maximale RSS-Warteschangenanzz Netzwerkadresse NS-Abladen Power Saving Mode Priorität & VLAN Puffer einpfangen Puffer übertagen	Egensch	aft:			Wert:		
Putter ubertragen	Geschw Gigabt a Green-E Interrupt IPv4 Pri, Maximal Netzwer NS-Abla Power S Priorität	indigkeit & I autom, deak themet -Moderation faurmenak dehmen e RSS-Wart kadresse den iaving Mode & VLAN mplangen	Duplex divieren sladung teschlang	enanza	4088	Bytes	>



2. The following should be set if the driver allows it.

In Settings "Interrupt Moderation" » "Value" » "Enabled".

tel(R) PRO/100	00 GT Desktop	Adapter Propert	ies	2
Teaming	VLANs	Boot Options	Driver	Details
General	Link Speed	Advanced	Power M	lanagement
(intel)	Advanced Ad	apter Settings		
Settings:		V	alue:	
Gigabit Maste	r Slave Mode	^	Enabled	-
Large Send C Locally Admin Log Link Stat Performance Priority & VLA	t ffload (IPv4) istered Address e Event Options N	= •	Use <u>D</u> ef	ault
Interrupt Mod	eration			
Allows the a When a paor allows the o more interru This results Interrupt Mo better syste	adapter to moder ket arrives the a driver to handle ti pts are created, in poor system p deration, the inte em performance. te: Changing this s of compactivity	ate interrupts. dapter generates ne packet. At grea and CPU utilizatio performance. Who rrupt rate is lowe s setting may cau	an interrupt w ater link speeds n also increas en you enable r, and the resu se a momentar	thich s, es. ≡ ult is
			ОК	Cancel



3. Some NICs might also offer to configure the number of "RSS (Receive Side Scaling) Queues". In certain cases this technology might help to improve the performance of the system but in some cases it might even reduce the performance. The feature in general offers the possibility to distribute the CPU load caused by network traffic to different CPU cores instead of handling the full load just on one CPU core.

Configuring more RSS queues than physical cores available in the system might have even a negative impact on the overall performance. So if your system has 6 physical CPUs and your network card allows either 4 or 8 RSS queues then 4 is the better option.

Therefore, we recommend that the number of queues is equal to the number of CPU cores and should not be exceeded.

General Link Speed Advanced Power Management Image: Control of Con	Teaming	VLANs	Boot (Options	D	river	Details	Events
Advanced Adapter Settings Settings: Large Send Offload V2 (IPV6) Locally Administered Address Log Link State Event Maximum Number of RSS Queues Offloading Options Packet Priority & VLAN Parformance Ontione Configures the number of Receive Side Scaling (RSS) queues: I queue is used when low CPU utilization is required. Advanced Adapter Set Secure	General	Link Sp	peed	Advar	nced		Power Ma	nagement
Settings: Value: Large Send Offload V2 (IPv6) Locally Administered Address Log Link State Event Maximum Number of RSS Queues Offloading Options Packet Priority & VLAN Parformance Ontions Configures the number of Receive Side Scaling (RSS) queues: • 1 queue is used when low CPU utilization is required. • 2 queues is used when good throughput and low CPU utilization are required. • 2 queues is used when good throughput and low CPU utilization are required. • Four or more queues are used for applications that demand high transaction rates such as web server based applications. Your CPU utilization may be higher when you use four or more queues.	intel	Advan	ced Adap	oter Settin	gs			
Large Send Offload V2 (IPv6) Locally Administered Address Log Link State Event Maximum Number of RSS Queues Offloading Options Packet Priority & VLAN Parformance Ontione Configures the number of Receive Side Scaling (RSS) queues: 1 queue is used when low CPU utilization is required. 2 queues is used when good throughput and low CPU utilization are required. 5 queues is used when good throughput and low CPU utilization are required. 5 queues are used for applications that demand high transaction rates such as web server based applications. Your CPU utilization may be higher when you use four or more queues.	Settings:					Value		
Vise Default V	Large Send Locally Adm Log Link St Maximum N Offloading (Packet Prio	I Offload V2 ninistered Ac ate Event umber of R Options nity & VLAN	(IPv6) Idress SS Queu	es	^	2 Qu	leues	~
Maximum Number of RSS Queues Configures the number of Receive Side Scaling (RSS) queues: • 1 queue is used when low CPU utilization is required. • 2 queues is used when good throughput and low CPU utilization are required. • Four or more queues are used for applications that demand high transaction rates such as web server based applications. Your CPU utilization may be higher when you use four or more queues.	Performance «	e Ontione		>			Use Defa	dt.
	Maximum N Configure 1 que 2 que utilizat • Four o high tr applica use fo	lumber of R s the number ue is used ion are requir more queu ansaction ra ations. Your ur or more o	SS Queue er of Rec when lov d when g iired. ues are u ates such CPU utili queues.	es ceive Side w CPU uti good throu used for a h as web ization ma	Sca izatio ighpi pplic serv iy be	ling (F on is r ut and ations rer ba highe	ISS) queues equired. low CPU that deman sed r when you	d V
					[(ОК	Cancel



4. In the settings "Transmit Buffers" set the maximum value.



5. In the settings "Receive Buffers" set the maximum value.

The following the property on the right. Property: Interrupt Mo- Interrupt Mo- Interrupt Mo- IPv4 Checki Jumbo Pack Large Send Locally Adm Log Link Sta Maximum Nu Packet Prior Receive Sid Speed & Du TCP Checks	g properties are / you want to cha oderation deration Rate sum Offload ket I Offload V2 (IP-v i offload V2 (IP-v) offload V2 (IP-v i offload V2 (IP-v) offload V2 (4) bueues	vents or this ne e left, an V	twork adapted then select alue: 2048	ar. Click its value	À
Interrupt Mo Interrupt Mo IPv4 Checkk Jumbo Pack Large Send Locally Admi Log Link Sta Maximum Ni Packet Prior Receive Stid Speed & Duj TCP Checks	oderation oderation Rate (sum Offload ket 1 Offload V2 (IPv) 1 offload	4) 6) is Jueues		2048		•
	sum Offload (IPv	(4) 🗸				





NOTE!

In case of problems with image grabbing, check the transmission rate of the network adapter. GigE cameras require a transmission rate of 1.0 Gbps. A lower transmission rate of e.g. 100 MBit/s can lead to black images.

🌵 vEthernet (Clus	ter) Status			×
General				
Connection				
IPv4 Connectiv	ity:	No netv	vork access	
IPv6 Connectiv	ity:	No netv	vork access	
Media State:			Enabled	
Duration:		26 day	/s 05:42:44	
Speed:			1.0 Gbps	
Details				۰.
Activity				
	Sent —	-	Received	
Packets:	89,179		131,271	
Properties	Disable	Diagnose		
			Close	

Under "Speed & Duplex" of a network adapter, the default value is set to "Autom. Negotiation". We recommend changing the value to "1.0 Gbps Full Duplex", so the connection to the camera will be disconnected in case of a defect of the network cable.

For a transmission with 1 GBit/s, eight wires are required. If one of the eight wires is damaged, the transmission rate of the adapter is reduced (to e.g. 100 MBit/s), as only four wires are required for this. At least one "Cat 5e" network cable should be used.

	Events		Power M	lanagement
General	Advanced		About	Driver
The following prop ne property you v in the right.	perties are availab vant to change or	ble for the lef	nis network adap t, and then selec	ter. Click t its value
roperty:			Value:	
Maximum Numbe Network Address NS Offload Priority & VLAN Receive Buffers Receive Side Sc Shutdown Wake Speed & Duplex TCP Checksum TCP Checksum UDP Checksum UDP Checksum	aling -On-Lan Offload (IPv4) Offload (IPv6) Offload (IPv6) Offload (IPv6)			in Duplex ↓



5.8 Lens Settings

Focus

To set the focus, the fit knurled screw must be turned. Close again after adjusting the knurled screw.

Aperture (brightness)

To set the brightness, the fit knurled screw must be turned. Close again after adjusting the knurled screw.

At full aperture (lowest aperture number), the sharpness (depth of field) of the lens is the lowest and also the interference from outside light the highest.





NOTE!

Depending on the lens type the dial of the aperture and focus can be interchanged.



5.9 Disable power saving mode

It is recommended to check the computer's power saving settings to prevent the computer from unintentionally hibernating.

To do this, click on the "Windows key" on the keyboard and press "energ". Now click on "Select Power Options" to access the Windows power options.



Here you can change or set the desired plan settings.

Power management of individual network adapters

In addition to the general power saving settings, the settings of the network cards used to connect the cameras/switches must be deactivated.

- 1. Click Windows button + R on the keyboard.
- 2. Enter mmc devmgmt.msc and confirm with "Enter".
- 3. To find the network adapter you are using, "right click" » "Properties".
- 4. Switch to the tab *"Power Management/Energieverwaltung"* and uncheck the box next to *"Computer can switch off the device to save energy"*.
- 5. Confirm with "OK" and restart the computer.



5.10 Integrate cameras in V60

In V60 setup mode under the "Adjustments" » "V60" » "Adjustments..." menu item, the GigE cameras connected via the network are displayed.

Checking the box will use the camera in the V60 software.

W VisionTools V60 700 VisionTools GmbH					
Project Image Interfaces Operating mode Extras	Adj	ustments ?			
📸 😤 🔤 cir 🗁 🖬 🗲		V60 +	•	Adjustments	
		Frame grabber 🔹 🕨	-	Load settings	
		Multimonitor system		Save settings	
		Hotkeys	Т		
		User management	н		
		Printer Adjustment	н		
		V60-license	н		
	_	Language •	J		

V60-settings						
File						
Company title						
VisionTools GmbH						
Process priority (Depe	nds on project)	Compression	n of th	e PRD		
normal	•	normal				
Frame grabber 1/0-0 Save loaded initial fram Save current initial fram	egrabber settings negrabber-settings	0				
No. use	Туре	Alias	ID	s/N		
1 🖛 🔽	mvBlueCOUGAR-X104fG	mvBlueCOUGAR-X104fG-1	0	GX010159		
•				4		
Add frame grabber emulation CRe-scan for framegrabbers						
No. of memory pages Tool bar in setup mode 16 Image: Setup mode Image: Voltage Image: Setup mode </td						



5.11 Save basic hardware settings

In order to be able to save changed software settings of the hardware in the project file, you must first switch to *"setup mode* in the V60 via *"Operating mode"*.

Project Image Interfaces	Operating mode Extras Adju	istments ?
	✓ Automatic mode	Umsch+Strg+A
	manual mode	Umsch+Strg+H
	setup mode	Umsch+Strg+E
	configure automatic mode	e Umsch+Strg+K

Now you can switch to the V60 settings via the enabled "Settings" » "V60" » "Settings...".

Project Image Interfaces Operating mode Extras	Settings ?	
📸 👺 😂 cir 🅞 🖌 🔲 🚄	V60	> Settings
	Frame grabber	> Load settings
	Multimonitor system	Save settings
	Hotkeys	
	User management	
	Printer settings	
	V60-licence (Laboratory licence: Full package)	
	Language	>

By default, the setting "Save basic hardware settings loaded from PRD" is selected under "Frame grabber". The "Save currently used basic hardware settings" setting must be selected so that the current settings can be applied.



cess (s GmbH priority (De	epends on project)					
cess p	oriority (De	epends on project)					
Fault				Con	npression	of the PRD	
Cache		~		Def	ault		0
J-affin	ity mask	((())					
01,02,	03	~					
ame g	rabber Vo	E Module lights 1/	0-cards Auto bad	ckup			
		, , , ,	0				
Save	basic hardware	e settings loaded from	PRD 🕕				
Save	currently used	basic hardware setting	gs 🥡				
lo.	use	Туре	Alias	ID	S/N	Startup ch	Dri
	te 🗹	Emulation	Emulation-1	1			
							>
1			-				
	Add frame	grabber emulation		÷	Re-scan for	framegrabbers	
	Add frame	grabber emulation		÷	Re-scan for	framegrabbers	

In the last step, the project file (.PRD) must be saved once and then reloaded.





6 Maintenance and repair

6.1 Cleaning of filter glasses and optics

NOTE!



In order to guarantee trouble-free image recording, it is advisable to wipe off unwanted dirt deposits with a dry cloth once a week. The frequency of such tests depends on the cleanliness of the environment.

In general, it is recommended to clean optical surfaces, i.e. lenses, flat optics/filters, with alcohol (e.g. isopropanol) in combination with a microfiber cloth. Apply the liquid to the cloth for better distribution. Alternatively, a mixture of water, alcohol and soap/washing detergent can be used. This also applies to coated surfaces, e.g. AR or bandpass coatings. These coatings are robust against the cleaning agents, but to avoid scratches all particles on the surface should be removed before cleaning, e.g. with dry, compressed air.

6.2 Accessories

Article-no.	Product
09P0011F	VoE data cable M12 10m
09P0011G	VoE data cable M12 15m
09P0011H	VoE data cable M12 20m
07E0001L	Adapter Plate for alu-joints
10A0008A	Flange clamping piece FK 18
10B0006A	Alu Hinge 8 40x40
07E0001V	Front casing I=30mm
07E0001O	Front casing I=41mm
07E0001P	Front casing I=48mm
07E0001Q	Front casing I=54mm
07E0001R	Front casing I=66mm
07E0001S	Front casing I=88mm
07E0004A	Protection glass



NOTE!

Special cables on request.



6.3 Loading camera settings

If frame grabber settings have been made and saved for the cameras used, these must be loaded via "Adjustments" » "Frame grabber" » "Camera" » "Load current settings...". It is also possible to load the saved basic settings.

Project Image Interfaces Operating mode Extras	Adjustments ?					
📸 😫 🔠 dr 🅞 🕇 🗖 🚄	V60	>	1			
	Frame grabber	>	mvBlueCOUGAR-3X120aG-POEI-1 >	Initia	al settings	
	Multimonitor system			Load	d initial settings	
	Hotkeys			Save	initial settings	
	User management			Curr	ent settings	
	Printer Adjustment			Load	d current settings	
	V60-license			Save	current settings	
	Language	>				Π,

6.4 Fault analysis

Black image troubleshooting

Possible errors caused by the hardware

- Check the grey values in the captured image first. Therefore open the grey-value dump in the V60 and move the mouse over the whole picture. If one of the values is bigger than 0, the lighting may be switched off, the exposure time of the camera may be too short or the aperture of the lens may be closed.
- Check the network cable between the cameras and the switch, but also between the switch and the network card. It must be connected with a "Cat 5e" cable. Among other things, this involves 8 wires so that a transmission of 1.0 Gbit/s can be guaranteed.

Possible external influences

- Check if there is a remote maintenance on the PC, which can lead to a high load on the network and thus to black images.
- Check the computer's network load for data transfers in the background. This does not have to affect the same network card to which the cameras are connect. For example, data could be backed up to external drives.
- Check the virus scanner and firewall on the computer. Regularly checking the data can lead to a high network load. We recommend whitelisting V60 and the camera drivers.

Possible cause of error by old programmes

- Check the driver of the network card. This may be too old and should be checked for a newer one on the homepage of the manufacturer of the network card.
- Check the driver and firmware of the cameras. Too old versions can lead to black images and should be replaced with newer ones.



7 Disposal

Dispose special waste and garbage according to company-internal provisions and regulations. These must be brought to the correct collection stations.

Your responsible administrative authority can give you more specific information on where authorized collection stations can be found.



NOTE!

Observe national regulations and internal operational solutions! Dispose of the packaging of production materials (including in the product cycle of the system) appropriately! Ensure appropriate separation and disposal.



8 Notes



9 Attachment

9.1 Declaration of conformity



CE EG-Konformitätserklärung

Original

Hersteller:	Firmenname:	VisionTools
		Bildanalyse Systeme GmbH
	Straße:	Heinrich-Hertz-Straße 7
	Ort:	68753 Waghäusel
	Land:	Deutschland
Bevollmächtigte Person,	Name:	Josef Djulic
für die Zusammenstellung der technischen	Funktion:	Geschäftsführer

Bevo

für di Unterlagen:

"VoE-Kameras"

Produkte:

Artikel-Nr.:

07V0001A, 07V0001B, 07V0001C, 07V0001D, 07V0001E, 07V0001F, 07V0002A, 07V0002B, 07V0002C, 07V0002D, 07V0002E, 07V0002F, 07V0003A, 07V0003B, 07V0003C, 07V0003O, 07V0004A, 07V0004B, 07V0004C, 07V0005A, 07V0005B, 07V0005C, 07V0006C

Hiermit erklären wir, dass die bezeichneten Produkte aufgrund ihrer Konzipierung und Bauart in der von uns in Verkehr gebrachten Ausführung den grundlegenden Sicherheits- und Gesundheitsanforderungen der nachfolgend aufgeführten EG-Richtlinien entsprechen.

Angewandte Richtlinien:

Elektromagnetische Verträglichkeit 2014/30/EU

Angewandte harmonisierte Normen:

- DIN EN 61000-6-2; VDE 0839-6-2:2006-03 Elektromagnetische Verträglichkeit (EMV) - Störfestigkeit für Industriebereiche
- DIN EN 61000-6-4; VDE 0839-6-4:2011-09 Elektromagnetische Verträglichkeit (EMV) - Störaussendung für Industriebereiche

Hinweis:

Die Produkte sind keine Maschinen im Sinne der Maschinenrichtlinie.

Waghäusel, den 18.01.2021

Vorname, Name