

IDS NXT vegas

Setup



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1 Preface

1.1 Introduction

IDS Imaging Development Systems GmbH has taken every possible care in preparing this manual. We however assume no liability for the content, completeness or quality of the information contained therein. The content of this manual is regularly updated and adapted to reflect the current status of the software. We furthermore do not guarantee that this product will function without errors, even if the stated specifications are adhered to. Under no circumstances can we guarantee that a particular objective can be achieved with the purchase of this product.

Insofar as permitted under statutory regulations, we assume no liability for direct damage, indirect damage or damages suffered by third parties resulting from the purchase of this product. In no event shall any liability exceed the purchase price of the product.

Please note that the content of this manual is neither part of any previous or existing agreement, promise, representation or legal relationship, nor an alteration or amendment thereof. All obligations of IDS Imaging Development Systems GmbH result from the respective contract of sale, which also includes the complete and exclusively applicable warranty regulations. These contractual warranty regulations are neither extended nor limited by the information contained in this manual. Should you require further information on this product, or encounter specific problems that are not discussed in sufficient detail in the manual, please contact your local dealer or system installer.

1.2 Trademarks

Microsoft and Windows are trademarks or registered trademarks of Microsoft Corporation. All other products or company names mentioned in this manual are used solely for purposes of identification or description and may be trademarks or registered trademarks of the respective owners.

1.3 Copyright

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1.4 Contact

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2 Standards and directives

IDS Imaging Development Systems GmbH hereby confirms that this product has been developed, designed and manufactured in compliance with the EC Directive 2014/30/EU (Electromagnetic Compatibility).

Compliance with the directives is demonstrated by meeting the following standards:

- RoHS 2011/65/EC
- REACh 1907/2006/EC

Product type	EMC immunity	EMC emission
IDS NXT vegas	EN 61000-6-2:2005	EN 61000-6-4:2007 + A1:2011

We, IDS Imaging Development Systems GmbH as manufacturer, hereby declare that the equipment with the product name and model number specified above was tested conforming to the applicable FCC rules under the most accurate measurement standards possible, and that all the necessary steps have been taken and are in force to assure that production units of the same equipment will continue to comply with the Commissions requirements.

3 Safety instructions

Read carefully the information in this chapter before installing and using the product. The producer is not responsible for damages and injury, which can occur due to false handling of the product and ignoring the safety instructions. All warranty will be spoiled in this case.

3.1 Intended use

IDS NXT vision app-based sensors are to be used to capture images for visualization and image processing tasks. The devices are designed for use in industrial environments.

Please comply with the requirements for the proper use of this product. Failure to do so will render the warranty void.

- The product is not authorized for use in security relevant applications. If it used in security relevant applications, the customer is responsible for the necessary approvals.
- This product is not a toy and should be kept and operated out of reach of children.
- If the product is modified or changed CE, FCC, and/or UL approval becomes invalid. In this case the customer is responsible for ensuring product conformity.
- Unauthorized opening of the camera housing voids the warranty. IDS Imaging Development Systems GmbH assume no liability for defects if the product was improperly disassembled, reworked, or repaired by the customer or a third party.

3.2 Installation, operation, and maintenance

The product must be connected, taken into operation and maintained only by appropriately qualified personnel. The error-free and safe operation of this product can only be ensured if it is properly transported, stored, set up and assembled, and operated and maintained with due care. The installation, inspection, maintenance, extension, and repair may only be done by authorized personnel.

- The IDS NXT vision app-based sensor must be installed in such way that the specifications are met which are described in the manual.
- Only operate the product under ambient conditions described in manual for the product. Carefully observe the

IP protection class for your product. The use under ambient conditions different from those specified in this manual may result in damage of the product.

- Do not subject this product to direct sunlight, moisture or shock.
- Lay cables in such way that no one can step on or they do not represent a trip hazard.
- Before starting up, check if the electrical wiring corresponds to the specifications in this manual. Faulty wiring (overvoltage, undervoltage) can result in a damage in the electronics.

3.3 Operation and power supply

WARNING! Non-approved power supplies for product operation may cause painful or dangerous electric shock. Serious injury or death may occur. Use a power supply that meet the safety extra-low voltage (SELV) and limited power source (LPS) requirements.

• In order to ensure electrical safety, we recommend using a shielded network cable or connecting the housing to ground so that the housing is connected via the proper installation to ground.

CAUTION! Class 1 laser

The accessible laser radiation is harmless under reasonably predictable conditions. Observe the legal regulations for laser protection.

NOTICE! The housing may get hot depending on the operating conditions. Provide sufficient heat dissipation.

3.4 Transport

- To avoid any damage to the connectors, only mount or remove the product with the cables disconnected.
- Keep packing materials like films away from children. In case of abuse there is a risk of suffocation.

3.5 Correct disposal

To prevent possible harm to the environment, separate the product and accessory items from other types of waste. Dispose professionally the product and accessory items to encourage the recycling of reusable material.

According to the EC Directive 2012/19/EU (WEEE) we are obliged to take back this product, distributed by us after August 13, 2005, free of charge at the end of its useful life and to ensure it correct disposal. As this product is exclusively for commercial use (B2B), it must not be handed over to a public disposal facility. The product can be disposed of by specifying the date of purchase and the serial number at the following address:

IDS Imaging Development Systems GmbH Dimbacher Str. 6-8 D-74182 Obersulm

4 IDS NXT vegas

4.1 Items supplied

- IDS NXT vegas
- 4x slot nut M4, galvanized
- · Insert with information on further instructions



More documents and manuals for operating IDS NXT vegas can be found at www.ids-nxt.com.

4.2 Ambient conditions

Ambient temperature during operation	0 °C +45 °C +32 °F +113 °F
Ambient temperature during storage	-20 °C +70 °C -4 °F +158 °F
Relative Humidity*	20 % < 100 %, non-condensing
Vibration and shock resistance	Complies with DIN EN 60068-2-6 and DIN EN 60068-2-27

* Only if IP65 cables cables are used. Not used electrical connections must be closed with tightly screwed covering caps.

5 Mounting and alignment

Mount the IDS NXT vegas in the slot profiles on the rear of the device using the slot nuts supplied and appropriate M4 screws. To ensure optimum heat dissipation, the IDS NXT vegas should be fitted on a mount with good thermal conductivity.



Remove the protective foil from IDS NXT vegas. The device should be mounted with a slight tilt from the perpendicular to the object surface to avoid any light reflection that may occur. The optimum tilt angle depends on the reflection properties of the objects used.



Mounting with tilt angle

When mounting the IDS NXT vegas observe the working distances specified in the data sheet. You can use the IDS NXT field of view calculator to determine the optimum working distance for your application: <u>http://www.ids-nxt.com/nxt-fieldofview.html</u>

Information on operating and ambient conditions can be found under Ambient conditions.

6 Installing IDS NXT Cockpit

The installation package for the IDS NXT software is available for download from <u>www.ids-nxt.com</u>. To install, follow the instructions in the installation wizard.



IDS NXT Cockpit is currently available for Windows 64-bit. You should have an up-to-date graphics card driver installed for an optimum display.

7 Connecting and switching on the device



- <u>1: I/O connector pin assignment (M12, 12-pin)</u>
- 2: Ethernet connector pin assignment (M12, 8-pin)

After connecting the power supply, a progress bar for the boot process can be seen in the display. If the IDS NXT vegas has been booted successfully, the display shows a screen with status information (temperature, CPU utilization, and device date).

7.1 Pin assignment I/O connector

12-pin M12 connector (Attend 216A-12MSR)

Pin	Signal	Description
1	VBUS	Power supply, 12-24 V DC +20 %
2	VBUS GND	Reference level (ground) for power supply and RS-232
3	Opto IN (0)	Trigger input with optocoupler
4	Opto IN (1)	Input 1 with optocoupler
5	Opto IN (COM)	Reference level for all Opto IN
6	Opto OUT (COM)	Reference level for all Opto OUT
7	Opto OUT (1)	Output 1 with optocoupler
8	Opto OUT (2)	Output 2 with optocoupler
9	RS232 (RX)	Serial interface
10	RS232 (TX)	Serial interface
11	Opto IN (2)	Input 2 with optocoupler
12	Opto OUT (0)	Flash output with optocoupler
Shield	Shield	Shield



I/O connector, camera view

7.2 Pin assignment Ethernet connector

8-pin M12 connector (MMT361A315)

Pin	Description	Designation 1000BASE-	Designation 100BASE-
		т	т
1	MDX0+	BI_DA+	TX+
2	MDX0-	BI_DA-	TX-
3	MDX1+	BI_DB+	RX+
4	MDX1-	BI_DB-	RX-
5	MDX3+	BI_DD+	
6	MDX3-	BI_DD-	
7	MDX2+	BI_DC-	
8	MDX2-	BI_DC+	



Ethernet connector, camera view

8 IDS NXT vegas display

You can use the display to obtain various status information for the IDS NXT vegas. In normal operation, the display is switched off after 10 seconds. Briefly press the button to activate the display and to move through the subsequent screens.



1x brief press to activate the display, and a brief press to move to the subsequent screens

- General info
- Device name and version
- Network info

1x long press opens a second menu after the text "Release button for menu" is displayed. The following menu options are available (1x brief press to scroll):

- Close menu
- Reset network
- Restore factory settings



NOTICE! The menu options are automatically performed when the bar below the text has progressed from left to right.

1x press without releasing

If the button is held down after the "Release button for menu" text, the text "Device reset in a few seconds" appears. At this point, the reset can still be canceled by releasing the button ("Close menu" is displayed). If the button is held down, an electric reset is performed. The device reboots.

9 Initial setup in network

A network connection must be established for initial commissioning of the IDS NXT vision app-based sensor. As supplied, the IDS NXT vision app-based sensor attempts to get an IP address from a DHCP server in the network. On the display, you can immediately check whether a valid IP address has been assigned. For details of how to operate the display, refer to IDS NXT vegas display.

9.1 Getting an IP address

During the initial network setup, the following situations can occur: (1) Valid IP via DHCP, (2) Valid IP via Zeroconf, (3) No connection/link

rin.	rfn.
Mode:	DHCP
IP:	Getting IP
MAC: 5C	:67:76:00:00:08
IDS NXT is	waiting for a DHCP
	address
гћ.	đ.
Mode:	DHCP(*)
IP:	169.254.159.129
MAC: 5C	:67:76:00:00:08
(2) IDS NX	T in Zaracanf moda

rfn.	កា
Mode:	DHCP
IP:	192.168.2.100
MAC: 5C:	67:76:00:00:08
(1) IDS NXT	has a valid IP via a
DH	CP server
rta.	đ.
ф No	Å
nn No connecti	بہ ٥n
nt No connecti MAC: 5C:	on 67:76:00:00:08
Mo connecti MAC: 5C: (3) <%PR	0N 67:76:00:00:08 20UCT%> has no

In an IPv4 network with no DHCP server, in DHCP mode the device uses the <u>Zeroconf</u> method to independently acquire a valid IP address from the reserved link-local address range. Zeroconf mode is indicated by "DHCP(*)" in the display. If your client PC is also in the link-local address range for this IPv4 network, you can establish a network connection to the IDS NXT vision app-based sensor for the initial setup. If there is no network cable connection or no compatible remote station, "No connection" appears in the display.



You can also use the IDS NXT Cockpit to assign the IDS NXT vision app-based sensor a static IP address. You can only do this if there is already a valid network connection (DHCP, Zeroconf). See <u>Network configuration in IDS NXT Cockpit</u>.

IDS NXT vision app-based sensor with static IP address

If the display shows "Manual" mode, a static IP address has been assigned to the device during a previous setup. If you cannot access this IP address or want to reset the device to DHCP, you can reset the network settings on the device directly.



9.2 Editing network settings

To set the network parameters for a IDS NXT vision app-based sensor, use the IDS NXT Cockpit. It enables complete setup and configuration of IDS NXT vision app-based sensors, including the IDS NXT vision apps (see IDS NXT Cockpit installation). The IDS NXT Cockpit is described in the manual "IDS NXT – Operation".

9.3 Establishing a connection

Start the IDS NXT Cockpit.

• Windows: either via the icon on the desktop or under "Start > All prgrams > IDS > NXT > IDS NXT Cockpit".

After launching, you will be in the "Device overview". IDS NXT Cockpit scans the network for IDS NXT vision appbased sensors and lists them in this overview. A log-on to IDS NXT vision app-based sensors is possible by direct entry of an IP address.



Automatic finding of IDS NXT vision app-based sensors only works if the following parameters are possible in the network:

- UDP broadcasts via Port 5055 ("Finder" queries from IDS NXT Cockpit)
- TCP response from devices via Port 5055

More detailed information on the sensors found can be displayed by clicking on them.



Display of IDS NXT vision app-based sensors with device information

If you have connected multiple sensors, the "Find me" button is useful. The corresponding IDS NXT vision appbased sensor then emits a brief acoustic and visual signal (device display flashes) to identify itself. The logon button takes you to the relevant device logon.

IDS NXT Cockpit - Finder

9.4 Logging on to IDS NXT vision app-based sensor

Several access profiles

Via the selection, select the user class that you want to use to log on to the device. There are three basic user classes that are used.

Administrator	The administrator profile allows full access to the IDS NXT vision app-based sensor configuration. Everything is possible, from firmware updates to installation and adjustment of IDS NXT vision apps.
Service	This user profile can be used to perform service activities. Specified settings can be changed, for example to respond to changed production specifications. These include camera settings (brightness, focus, etc.) and settings for the IDS NXT vision apps.
User	This user profile provides shop floor employees, for example, with status information for a IDS NXT vision app-based sensor so that they can directly find information about fault conditions.



The passwords for the "admin" and "service" user classes are "ids" when delivered. They can be changed using the administrator profile. No password is necessary for the "user" user class. How to change passwords is described in the manual "IDS NXT – Operation".

9.5 Network configuration in IDS NXT Cockpit

After logging onto a IDS NXT vision app-based sensor you will see the "Dashboard", which displays a range of device information. To set the network parameters select the network settings dialog ("Network") under "Configuration".

IDS NXT Cockpi	t		
< IDS	S NXT Cockpit - V	(EGAS	:
DA	SHBOARD	CONFIGURATION	LOGBOOK
0	Network configuration	1	
Camera settings	Obtain IP address automatic	cally (DHCP)	
General settings	IPv4 address		
	Address	192.168.2.100	
Eirmware undate	Subnet mask	255.255.255.0	
	Standard gateway	192.168.2.11	
Network			DISCARD APPLY

IDS NXT Cockpit network configuration

- Activate the "DHCP" switch to get an IP address (IPv4) for the device from a DHCP server.
- Without DHCP you can assign the device static IP settings.

iDS

- A -

Ambient conditions 6 Authorization admin 12 service 12 user 12

- C -

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- D -

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- | -

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Mounting 6

- N -

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- T -

Tilt angle6Transport5

- U -

Use intended 4