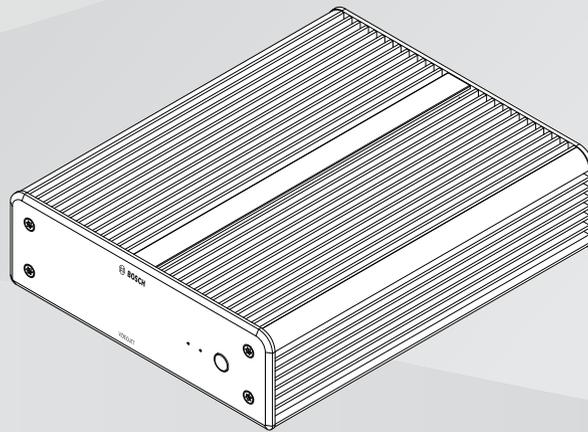




BOSCH

VIDEOJET decoder 7000

VJD-7513



en

Installation manual

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1 Safety

Read, follow, and retain for future reference all of the following safety instructions. Follow all warnings before operating the device.



Notice!

Do not connect the decoder to the power supply until all other connections have been made. Otherwise the automatic assignment of the IP address will fail and a faulty monitor resolution will be set. This may lead to serious damage of the unit.

1.1 Electric shock hazard

- Never attempt to connect the unit to any power network other than the type for which it is intended.
- Use only the power supply unit that is included.
- Connect the unit to an earthed mains socket-outlet.
- Never open the housing.
- Never open the housing of the power supply unit.
- If a fault occurs, disconnect the power supply unit from the power supply and from all other units.
- Install the power supply and the unit only in a dry, weather-protected location.
- If safe operation of the unit cannot be ensured, remove it from service and secure it to prevent unauthorized operation. In such cases, have the unit checked by Bosch Security Systems.

Safe operation is no longer possible if one or more of the following cases occur:

- The unit or power cables show visible damage.
- The unit operates incorrectly.
- The unit has been exposed to rain or moisture.
- Foreign bodies have penetrated the unit.
- The unit was stored under adverse conditions.
- The unit was exposed to extreme stress in transit.

1.2 Installation and operation

- The relevant electrical engineering regulations and guidelines must be complied with at all times during installation.
- Relevant knowledge of network technology is required to install the unit.
- Pluggable devices must have an easily accessible socket-outlet installed near the equipment.
- Before installing or operating the unit, make sure you have read and understood the relevant documentation. The documentation contains important safety instructions and information about permitted uses.
- Perform only the installation and operation steps described in this manual. Any other actions may lead to personal injury, damage to property or damage to the equipment.

1.3 Maintenance and repair

- Never open the housing of the unit. The unit does not contain any user-serviceable parts.
- Never open the housing of the power supply unit. The power supply unit does not contain any user-serviceable parts.
- Ensure that all maintenance or repair work is carried out only by qualified personnel (electrical engineers or network technology specialists). In case of doubt, contact your dealer's technical service center.

2 Short information

2.1 About this manual

This manual is intended for persons responsible for the installation and operation of a decoder unit. International, national and any regional electrical engineering regulations must be followed at all times. Relevant knowledge of network technology is required. The manual describes the installation of the unit.

2.2 Conventions in this manual

In this manual, the following symbols and notations are used to draw attention to special situations:

**Warning!**

Use of this signal word and symbol indicates that failure to follow the safety instructions described may endanger persons. It indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**Caution!**

Use of this signal word and symbol indicates that failure to follow the safety instructions described may endanger persons. It indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**Notice!**

Use of this signal word and symbol indicates that failure to follow the safety instructions described may cause damage to the unit or other equipment or may lead to data loss.

2.3 Intended use

The video decoder receives and decodes video and audio signals over data networks (Ethernet LAN, Internet). It displays video from Standard Definition (SD), High Definition (HD), 4K Ultra High Definition (UHD), Megapixel (MP) cameras, and encoders using H.265, H.264, or MPEG-4 encoding at up to 60 frames per second. The unit is intended for use within IP video surveillance systems (VSS).

No other applications are permitted.

In the event of questions concerning the use of the unit which are not answered in this manual, please contact your sales partner or:

Bosch Sicherheitssysteme GmbH

Robert-Bosch-Ring 5

85630 Grasbrunn

Germany

www.boschsecurity.com

2.4 EU Directives

The decoder complies with the requirements of the following directives and standards:

- 73/23/EEC, amended by 93/68/EEC (Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits)
- 89/336/EEC (Council Directive of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility)

- EN 50121-3-2:2006 (Railway applications - Electromagnetic compatibility - Part 3-2: Rolling stock - Apparatus)
- EN 50130-4:2011 (Alarm systems - Part 4: Electromagnetic compatibility - Product family standard - Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems)

Note:

To meet the requirements of the EN 50130-4 Alarm systems, an ancillary uninterruptable power (UPS) supply is necessary.

2.5

Rating plate

For exact identification, the model name and serial number are inscribed on the bottom of the housing. Please make a note of this information before installation, if necessary, so as to have it to hand in case of questions or when ordering spare parts.

3 System overview

3.1 Parts included

- 1 VIDEOJET decoder 7000
- 1 international power supply unit
- 1 EU power cord
- 1 US power cord
- 1 CN power cord
- 2 monitor mounting brackets
- 4 type A screws
- 4 type B screws
- 1 Quick Installation Guide
- 1 Safety Hints
- 1 EAC document
- 1 RoHS sheet
- 2 MAC address labels

3.2 Overview of functions

Video decoder

VIDEOJET decoder 7000 displays video from Standard Definition (SD), High Definition (HD), 4K Ultra High Definition (UHD), and Megapixel (MP) cameras and encoders using H.264, H.265 or MPEG-4 encoding at up to 60 frames per second over IP networks.

Its scalable decoding technology and performance management architecture makes it easy for operators to simply connect cameras, regardless of resolution, bitrate, or frame rate. It automatically scales resources, distributing them over the connected streams to produce the best possible performance.

VIDEOJET decoder 7000 can drive two HD or 4K UHD displays directly, each with an independently configurable screen layout, making it ideally suited for applications with flat-screen monitor walls at a moderate cost-per-monitor.

Decoding performance

The table below shows the maximum values which provide a guideline for performance design. There are dependencies that impact the overall performance, especially when combining various streams and resolutions (for example, upscaling to monitor resolution and frame rate). In an overload situation, VIDEOJET decoder 7000 may drop frames to display overall video as smoothly as possible.

Note that the upscaling of video, for example SD or HD video to be displayed on a 4K UHD monitor, draws performance that reduces the decoding capabilities.

Display output modes

Mode	Display resolution	Number of displays	Screen refresh rate (Hz)	Max. decoded output frame rate
A	HD (1920 x 1080)	1	60	60
A	HD (1920 x 1080)	2	60	60
B	UHD (3840 x 2160)	1	30	30
C	UHD (3840 x 2160)	2	30	15

Stream performance H.264

Stream parameters	Bit rate	Display output mode		
Resolution @ frame rate	Mbps	A	B	C
3840x2160@30	32	5	3	4
2992x1690@30	16	7	5	6
1920x1080@60	12	7	5	6
1920x1080@30	8	14	10	12
1280x720@60	6	12	10	12
1280x720@30	4	22	16	20
768@432@30	2	24	20	24
512x288@30	1	28	20	24

Stream performance H.265

Stream parameters	Bit rate	Display output mode		
Resolution @ frame rate	Mbps	A	B	C
3840x2160@25	32	5	3	4
1920x1080@60	12	7	5	6
1920x1080@30	8	14	10	12
1280x720@60	6	12	10	12
1280x720@30	4	22	16	20

Remote control

Control the viewing mode remotely and establish the video connections using comprehensive Bosch video management systems.

Operating system

The system runs a tailored and Bosch-branded Microsoft Windows 10 IoT Enterprise operating system and Monitor Wall software based on UHD-capable VideoSDK 6. Making use of Intel's hardware decoding accelerators, the software is fine-tuned for HD, 4K UHD and MP video decoding support.

Also note that screen refresh rate at 4K UHD displays is limited to 30Hz, and that the decoded output frame rate is reduced to 15 frames per second when using dual 4K UHD displays.

3.3 Connections, controls and displays

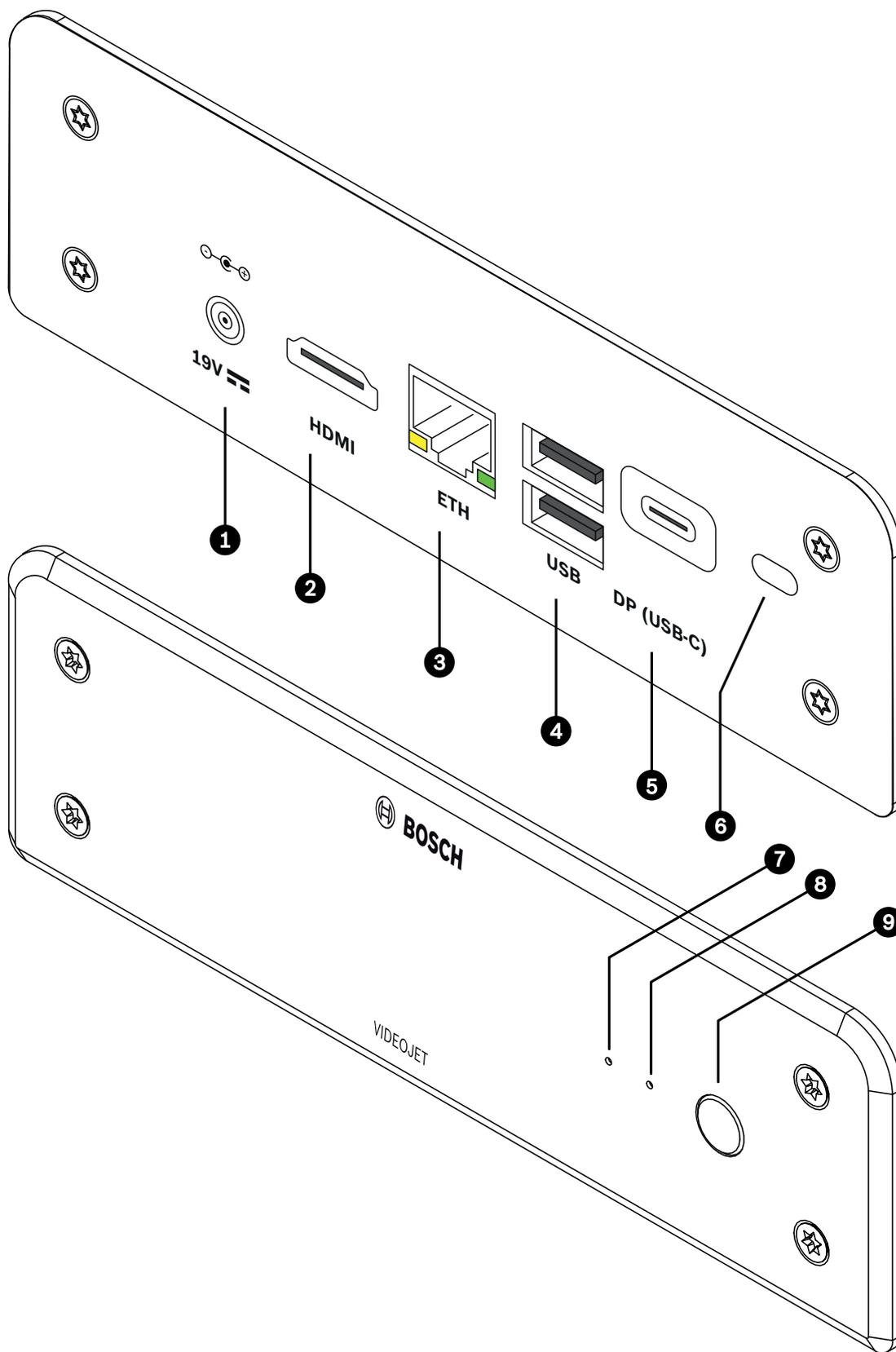


Figure 3.1: Connections, controls and displays

- 1 DC power connector
for connecting the power supply unit that is included
- 2 1 port **HDMI**
for connecting a monitor, also for audio transmission
- 3 RJ45 socket **ETH**
for connecting to an Ethernet LAN (local area network), 10/100/1000 MBit Base-T
- 4 2 ports **USB**
two dual USB 3.0
- 5 DisplayPort DP (USB-C)
Mini Display Port
- 6 Kensington lock
- 7 SSD LED
lights orange on SSD activity
- 8 Power LED
lights blue when the unit is switched on
- 9 Power switch
to turn the unit on or off

4 Installation

4.1 Preparations

The decoder and the power supply unit are both intended for use indoors only. Select a suitable location for installation that guarantees to meet the environmental conditions.



Notice!

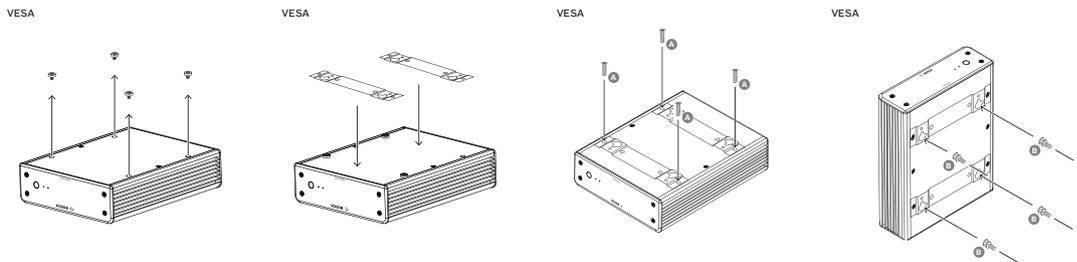
The ambient temperature for the unit must be between 0 and +40 °C (+32 and +104 °F). The relative humidity must not exceed 90%.

The unit and the power supply unit generate heat during operation, so you should ensure that there is adequate ventilation and enough clearance between both units and heat-sensitive objects or equipment. Please note the maximum heat value of 460 BTU/h per unit without the power supply.

Please ensure the following installation conditions:

- Do not install the unit or the power supply unit close to heaters or other heat sources. Avoid locations exposed to direct sunlight.
- All ventilation openings must be kept free from blockings. Do not stack several units one on top of each other.
- Allow sufficient space for running cables.
- Ensure that both the unit and the power supply unit have adequate ventilation. Bear the total heat output in mind, particularly when installing multiple units in a switch cabinet.
- When making connections, use only the cables supplied or use appropriate cables immune to electromagnetic interference.
- Position and run all cables so that they are protected from damage, and provide adequate cable strain relief where needed.
- Avoid impacts, blows, and severe vibrations that exceed the specification limits, as these can irreparably damage the unit.

4.2 Mounting



The decoder comes with four stands. Place the unit upon an appropriate flat surface from which it cannot fall down.

As an alternative, you can mount the decoder to an approved monitor using the supplied mounting kit.



Caution!

Injuries by falling equipment

The mounting location must be able to reliably hold the unit. The load-bearing capacity must be adequate for four times the weight of the unit.

If mounting the unit to the back of a monitor, use only monitors with standard VESA mount.

When mounting the unit on the rear side of a monitor, ensure that there is adequate ventilation and enough clearance between both units and walls or other monitors, especially with several monitors mounted side by side on a wall.

1. Remove the four stands on the bottom of the decoder. Retain the stands and the screws for future usage.
2. Place the mounting brackets supplied as shown in the picture. Make sure that the keyholes point in the same direction.
3. Fasten the mounting brackets with the screws (marked 'A' in the above figure).
4. Fasten the VESA mounting screws (marked 'B' in the above figure) to the monitor.
5. Hook the keyholes onto the VESA screw heads and slide the decoder down to secure.

Preferably, mount the decoder with connections facing downwards to ensure best ventilation.

5 Connection

5.1 Sequence of connections

**Notice!**

Do not connect the decoder to the power supply until all other connections have been made. Otherwise the automatic assignment of the IP address will fail and a faulty monitor resolution will be set. This may lead to serious damage of the unit.

5.2 Connecting monitors

You must connect a suitable monitor to the decoder. If mounting the unit to the back of a monitor, use only monitors with standard VESA mount.

The unit provides one DisplayPort (USB-C) and one HDMI port as monitor outputs. Both can be used at the same time.

**Notice!**

VGA connections are not supported. For connection to the LED monitors (listed as accessories: UML-274-90, UML-324-90, UML-434-90, UML-554-90), make sure to use native connections without converters. Connect the HDMI output via an HDMI cable to the HDMI port on the monitor. Connect the DP (USB-C) output via a USB-C-to-DP cable to the DP port on the monitor.

5.3 Establishing the network connection

You must connect the decoder to a 10/100/1000 Base-T network using a standard UTP category 5 cable with RJ45 plugs.

- ▶ Connect the unit to the network via the RJ45 socket.

When the decoder is powered after finalizing all connections, the LEDs on the RJ45 socket light up to indicate that the network connection has been set up correctly. Flashing green, the left LED signals that data packages are being transmitted over the network.

5.4 Connecting audio

The decoder has no dedicated audio port. Audio is transmitted digitally via monitor output **HDMI**.

5.5 Connecting the power supply

Power is supplied via a separate power supply unit that is part of the delivery. It offers 3 different power cords, one for use in the EU, one for China, and one for the USA.

**Notice!**

Use of improper power supply may lead to serious damage of the unit.

Use only the power supply unit that is included, together with the suitable power cord.

Connect the unit to an earthed mains socket-outlet.

Do not connect the decoder to the power supply until all other connections have been made.

1. Connect the decoder to the power supply unit.
2. Select the suitable power cord and plug this into the power supply unit and then into the mains.

The unit is now ready to use.

5.6 Power on/power off

The decoder is equipped with a power switch on its front panel.

The decoder automatically starts up when connected to mains power. The blue LED on the front next to the switch lights up. During the boot process, the orange LED flashes.

- ▶ Switch on the monitor in order to see the user interface after the boot-up procedure.

After initial power-up you may use the power switch to turn the unit on or off.

All information regarding the functions and the operation can be found in the relevant documentation of Monitor Wall, Bosch Video Management System, or Video Client.

6 Configuration

This chapter is intended for the administrator of the video management system. The setup process depends on the video management system in use. Refer to the corresponding documentation for details. In this manual, the setup with the Bosch Video Client system is explained as example.

6.1 Setting up the decoder with Configuration Manager

Before you can operate the unit within your network, it must have a valid IP address for your network and a compatible subnet mask.

**Notice!**

As a default DHCP is enabled in the unit's network settings.

With an active DHCP server in the network you must know the IP address assigned by the DHCP server to operate the unit.

The following default address is preset at the factory: 192.168.0.1

For the latest version of the Configuration Manager, go to <http://www.boschsecurity.com> and download it from the Software tab of the corresponding product page.

In Configuration Manager, the decoder currently is detected in the same way as other hardware, various information is displayed, and further configuration options are provided. In the following, the configuration pages found in the Configuration Manager for the decoder are listed, and the different settings explained.

**Notice!**

Changes do not become effective until you click  in the toolbar.

Find more information in the documentation for the Configuration Manager.

6.1.1 Unit Access Tab

Identification

In this group, assign a unique name and ID for the decoder in order to make administering of multiple units easier in larger installations.

Device access

This group controls access from the Configuration Manager to the decoder. Here, you can configure settings to determine which protocol and which HTTP port are used for communication between the Configuration Manager and the decoder.

If the decoder is password-protected, the correct user name and password must be entered here.

The decoder works with two password levels:

- The **service** level is the highest level of authorization. It grants users access to all functions of the decoder and change all configuration settings.
- The **user** level enables users to make and break connections or switch layouts, but does not provide access to configuration.

Version information

In this group, you can view the hardware and firmware versions, and the serial number of the decoder.

6.1.2 Advanced Tab



Notice!

The settings in this area apply to all cameos. You cannot configure settings here for individual cameos.

Video windows

In the **Video windows** group, you edit the default display of the cameos. Cameos are the viewlets which show the video stream in your video management system.

Ignore video aspect ratio

With this parameter you define the handling if the cameo and the video stream aspect ratio are not matching. Choose **Off** to display the original video stream aspect ratio; unused cameo space is blackened. Choose **On** to use the complete cameo; overhanging video is cut off.

Aspect ratio

Select the default aspect ratio for cameos. Choose the ratio that is appropriate for most of your video sources.

Metadata

Define if you want to display metadata overlays in the video. Metadata overlays will only be shown if provided with the connected video stream.

Video smoothing

Due to network jitter decoded videos might be jerky. You can improve the smoothness with the disadvantage that the video display is delayed. The higher the selected value, the smoother the video but the greater the time delay. Select **0** (zero) to disable video smoothing.

Distance between cameos

Set your preferred distance between the cameos.

Reconnect on restart

If you enable this parameter the previous session is restored anytime you restart the decoder. If **Reconnect on restart** is disabled connections must be manually reestablished after restarting the decoder.

Number of decoders

Define the maximum number of cameos limiting the number of possible connections, for example to match the licensed channels of your video management system.

Freeze detection [ms]

Detects if no video packets are received from the camera, then displays **FREEZE** text as overlay.

Alarm frame

Defines a frame around the video window in case of an alarm from a camera starts. The alarm frame can be set to Off, On or Blinking.

Destination

Set the password to restrict connections between decoders and video sources. Only video sources which have that password entered as **Destination password**, can setup a connection to the decoder.

It can be used as a general password. Find more information in the documentation for the video sources.

Display resolution

By default, **Resolution adaptation** is set to automatic mode. Thus, on start the optimum resolution for the display device is selected.

The manual mode should only be used for project-specific adaptations by personnel qualified by Bosch.

Display stamping

The **Camera name stamping** field sets the position of the camera name overlay. It is, by default, set to **Off** for no overlay information.

You can set it at the **Top**, at the **Bottom**, or at a position of your choice that you can specify using the **Custom** option.

Additional fields are displayed if you select the custom option where you can specify the exact position.

The **Time stamping** field sets the position of the time overlay. It is, by default, set to **Off** for no overlay information.

You can set it at the **Top**, at the **Bottom**, or at a position of your choice that you can specify using the **Custom** option.

Additional fields are displayed if you select the custom option where you can specify the exact position.

The **Alarm mode stamping** field sets the position of the text message overlay in the event of an alarm. It is, by default, set to **Off** for no overlay information.

You can set it at the **Top**, at the **Bottom**, or at a position of your choice that you can specify using the **Custom** option.

Additional fields are displayed if you select the custom option where you can specify the exact position.

The **Alarm text height [%]** field sets the height of the alarm message overlay in the image.

The **Alarm text color** field sets the color of the text of the alarm message overlay.

The **Alarm text background color** field sets the background color of the alarm message overlay.

The **Alarm message** field sets the text of the message to be displayed in the image in the event of an alarm. The maximum text length is 31 characters.

6.1.3 Network Access Tab

In this area, you define the network settings for the decoder.

Device IP address

In this box, enter an IP address that is valid in the network.

Subnet mask

Enter an appropriate subnet mask for the IP address.

Gateway address

If required, enter an appropriate gateway address.



Notice!

A new IP address, or a new subnet mask or gateway address, does not become valid until the decoder is restarted.

After entering all required addresses, it is necessary to restart the decoder:

1. In the toolbar, click .
2. Confirm the restart.
3. After restart, the software is available for use under the new addresses.

6.2 Integrating the decoder into the video system

In order to integrate the decoder into a video management system which only operates the decoder, relevant settings can be made with the Configuration Manager.

1. Start the decoder.
2. Start Configuration Manager on a separate PC.
3. Configuration Manager automatically scans the network for compatible devices. The software detects the decoder and lists it in the main tab **Devices**.
4. In the list of identified devices, right-click the decoder, and then click **Add to System...**. The **Add Device to System** dialog box is displayed.
5. You can select an existing group into which you want to integrate the decoder. To create a new group, enter a name for the group. You can also continue without selecting or creating a group.
6. Click **OK**.
7. Switch to the main tab **My Devices**. The decoder appears in the list of devices assigned to the system.

6.3 Configuring the decoder with Video Client

For a detailed description to integrate the software in the Video Client application, see the Video Client documentation.

Monitor wall tab

You can only set up a monitor wall if you have added decoders to your system. The available decoders are listed in the **Decoders** box. Decoders that belong to a site are only listed if the site is connected.

Note that this tab is not available if you have used direct logon.

1. Drag a decoder from the **Decoders** box to a free position on the monitor wall grid.

Alternatively, select a decoder and a free position and click .

2. Drag a decoder in the grid to a new position to rearrange the grid.

- 3. To free a position, select it and click . The decoder is removed from the grid and listed in the **Decoders** box.

6.4 Configuring the decoder with Configuration client

For detailed information on the Configuration Client, refer to the BVMS Professional documentation.

To configure a decoder:



See the Online Help for the  pages for details.



Notice!

IP devices can be connected that do not have all configuration pages that are described here.

- Click  to save the settings.
- Click  to undo the last setting.
- Click  to activate the configuration.

Most of the settings on the decoder pages are active immediately after you click . If you click another tab without clicking  and changes have occurred, two corresponding message boxes are displayed. Confirm them both if you want to save. To display the device in a Web browser right-click the device icon and click **Show webpage in browser**.

7 Troubleshooting

7.1 Contact

If you are unable to resolve a malfunction, please contact your supplier or systems integrator, or go directly to Bosch Security Systems Customer Service.

The following tables are intended to help you identify the causes of malfunctions and correct them where possible.

7.2 General malfunctions

Malfunction	Possible causes	Recommended solution
No image on the monitor.	Monitor settings.	Check the input selection at the monitor.
	Faulty cable connections.	Check all cables, plugs and connections.
	Monitor fault.	Connect another monitor to the unit or use another monitor connection.
No audio.	Hardware fault.	Check that all connected audio units are operating correctly.
	Faulty cable connections.	Check all cables, plugs and connections.
	Wrong port used.	Check that connection uses HDMI ; DP (USB-C) does not support audio.
The unit is not operational after a firmware upload.	Power failure during programming by firmware file.	Have the unit checked by Customer Service and replace it, if necessary.
	Incorrect firmware file.	Have the unit checked by Customer Service and replace it, if necessary.
The power light is not lit.	Unit not switched on.	Press the main switch on the front panel.
	Unit not connected to the power supply unit.	Check all cables, plugs and connections.
	Power supply unit not connected to the mains outlet.	Check all cables, plugs and connections.

7.3 LEDs

The unit has LEDs on its front and rear panels that show the operating status and can give indications of possible malfunctions:

Find the following LEDs on the front panel:

Power LED

Off: The unit is switched off or not connected to the power supply.

Lights up blue: The unit is switched on.

SSD LED

Off: The unit's SSD is not accessed.

Flashes orange: The unit's SSD is accessed.

Find the following LEDs on the rear panel:

RJ45 socket LEDs

Left LED: Off: LAN connection not established.
Green: LAN connection established.
Blinking green: LAN activity occurring.

Right LED: Off: 10 Mbps data rate.
Green: 100 Mbps data rate.
Yellow: 1000 Mbps data rate.

8 Maintenance

8.1 Updates

Firmware and software updates are carried out via the Configuration Manager application or other management systems in use. Please refer to the relevant documentation.

8.2 Service

- Never open the housing of the unit. The unit does not contain any user-serviceable parts.
- Never open the housing of the power supply unit. The power supply unit does not contain any user-serviceable parts.
- Ensure that all maintenance or repair work is carried out only by qualified personnel (electrical engineers or network technology specialists). In case of doubt, contact your dealer's technical service center.

9 Decommissioning

9.1 Transfer

The decoder should only be passed on together with this installation manual.

9.2 Disposal

Your Bosch product is designed and manufactured with high-quality materials and components which can be recycled and reused.



This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste.

In the European Union, there are separate collection systems for used electrical and electronic products. Please dispose of this equipment at your local community waste collection/recycling center.

10 Technical data

Electrical / PSU	
Power supply	Wide-range, external, included in the box
Input voltage	100 to 240 VAC 1.2 A 50/60 Hz Class I
Output	19 VDC 3.16 A
Efficiency	Energy Star EPS2.0/ ErP Lot 7 Energy Efficiency DOE Level VI
Electrical / System	
Input	19 VDC 3.16 A
Video	
Video outputs	2 simultaneously
– connector	1x HDMI 2.0a 1x DisplayPort 1.2 (via USB-C)
Standards	H.265 / HEVC (ISO/IEC 23008-2) H.264 (ISO/IEC 14496-10) MPEG-4
Data rates	
– MP	up to 32 Mbps
– 4K UHD	up to 32 Mbps
– HD	up to 20 Mbps
– SD	up to 6 Mbps per stream
GOP structure	I, IP, IBBP
Monitor resolutions	1920 x 1280 (HD) at 60 Hz 3840 x 2160 (UHD) at 30 Hz
Audio	
G.711	
– Frequency range	300 Hz to 3.4 kHz
– Data rate	80 kbps at 8 kHz sampling rate
L16 (reception only)	
– Frequency range	300 Hz to 6.4 kHz
– Data rate	640 kbps at 16 kHz sampling rate
AAC-LC	

Audio	
– Data rate	48 kbps at 16 kHz sampling rate 80 kbps at 16 kHz sampling rate
Signal-to-noise ratio	> 50 dB

Network	
Ethernet	10/100/1000 Base-T, auto-sensing, half/full duplex, RJ45
Protocols	IPv4, UDP, TCP, HTTP, HTTPS, RTP, RTSP, IGMP V2/V3, ICMP, ARP, DHCP, digest authentication
Encryption	TLS (v1.0, v1.1, v1.2), AES (128 bit, 256 bit)

Control	
Software update	remotely programmable
Configuration	Configuration Manager
Operation	BVMS, Video Client, stand-alone

Mechanical	
Dimensions w/o stands (H x W x D)	47.3 x 150.6 x 186 mm (1.862 x 5.929 x 7.323 in)
Weight	Approx. 1.9 kg (4.2 lb)
VESA mount	100 x 100 mm (3.937 x 3.937 in)

Environmental	
Operating temperature	0 °C to +50 °C (+32 °F to +122 °F) ambient temperature, with airflow 0 °C to +40 °F (+32 °F to +104 °F) ambient temperature, still air
Relative humidity	0 to 90% atmospheric humidity, non-condensing
Thermal value	Approx. 152 BTU/h, 205 BTU/h max

10.1 Certifications and approvals

Safety

Region	Number
	IEC 60950
EU	EN 60950
US	UL 60950

Electromagnetic compatibility

Region	Number
EU	EN 55032: 2015 /AC:2016-07 Emissions CISPR 32: 2012

Region	Number
	EN 55024: 2010 - Immunity (CISPR 24:2010) EN 61000-3-2: 2014 - harmonic current emissions EN 61000-3-3: 2013 - Voltage fluctuations EN 62368-1:2014+A11:2017 - Low voltage directive
US	FCC 47 CFR Chapter 1 Part 15

Approvals

Region	Regulatory compliance/quality marks
EU	EN 60950 - CE Declaration of Conformity
US	UL 60950 - cTUVus label, certified by TÜV Rheinland

10.2

Licenses



Covered by one or more claims of the patents listed at patentlist.hevcadvance.com.



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