Wireless IP Camera

NBC-255-W

BOSCH

en Installation and Operation Manual

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1 Safety

1.1 Safety precautions

DANGER!
High risk: This symbol indicates an imminently hazardous situation such as "Dangerous Voltage" inside the product.
If not avoided, this will result in an electrical shock, serious bodily injury, or death.

WARNING!
Medium risk: Indicates a potentially hazardous situation.
If not avoided, this could result in minor or moderate bodily injury.

CAUTION!
Low risk: Indicates a potentially hazardous situation.
If not avoided, this could result in property damage or risk of damage to the device.

1.2 Important safety instructions

Read, follow, and retain for future reference all of the following safety instructions. Heed all warnings on the unit and in the operating instructions before operating the unit.

1. **Cleaning -** Generally, using a dry cloth for cleaning is sufficient but a moist, fluff-free cloth or leather shammy may also be used. Do not use liquid cleaners or aerosol cleaners.
2. **Heat Sources -** Do not install the unit near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
3. **Water -** Never spill liquid of any kind on the unit.
4. **Lightning -** Take precautions to protect the unit from power and lightning surges.
5. **Controls adjustment -** Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may cause damage to the unit.
6. **Power sources -** Operate the unit only from the type of power source indicated on the label.
7. **Servicing -** Unless qualified, do not attempt to service this unit yourself. Refer all servicing to qualified service personnel.
8. **Replacement parts -** Use only replacement parts specified by the manufacturer.
9. **Installation -** Install in accordance with the manufacturer's instructions and in accordance with applicable local codes.
10. **Attachments, changes or modifications -** Only use attachments/accessories specified by the manufacturer. Any change or modification of the equipment, not expressly approved by Bosch, could void the warranty or, in the case of an authorization agreement, authority to operate the equipment.

1.3 FCC & ICES compliance

FCC & ICES Information

This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to *part 15* of the *FCC Rules*. These limits are designed to provide reasonable protection against harmful interference in a **residential installation**. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient or relocate the receiving antenna;
- increase the separation between the equipment and receiver;
- connect the equipment into an outlet on a circuit different from that to which the receiver is connected;
- consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

Intentional or unintentional modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such modifications could void the user's authority to operate the equipment. If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action.

The user may find the following booklet, prepared by the Federal Communications Commission, helpful: *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

FCC RF Radiation Exposure Statement

The equipment complies with RF exposure limits set forth for an uncontrolled environment.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

1.4 UL certification

Disclaimer

Underwriter Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested fire, shock and/or casualty hazards as outlined in UL's *Standard(s) for Safety for Closed Circuit Television Equipment, UL 2044*. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product.

UL MAKES NO REPRESENTATIONS, WARRANTIES, OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING RELATED FUNCTIONS OF THIS PRODUCT.

1.5 CE certification

CE0700!

This indicates compliance with the R&TTE Directive 1999/5/EC and meets the relevant parts of following technical specifications:
ETSI EN 300 328 V1.7.1:2006
ETSI EN301489-17 V2.1.1:2009
ETSI EN301489-1 V1.8.1:2008
IEC60950-1:2005+A1:2009
EN60950-1:2006+A11:2009
EN 62311:2008
This equipment complies with CE RF radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

1.6 Bosch notices

Disposal - Your Bosch product was developed and manufactured with high-quality material and components that can be recycled and reused. This symbol means that electronic and electrical appliances, which have reached the end of their working life, must be collected and disposed of separately from household waste material. Separate collecting systems are usually in place for disused electronic and electrical products. Please dispose of these devices at an environmentally compatible recycling facility, per *European Directive 2002/96/EC*

More information

For more information please contact the nearest Bosch Security Systems location or visit *www.boschsecurity.com*

1.7 Copyrights

The firmware 4.1 uses the fonts "Adobe-Helvetica-Bold-R-Normal--24-240-75-75-P-138-ISO10646-1" and "Adobe-Helvetica-Bold-R-Normal--12-120-75-75-P-70-ISO10646-1" under the following copyright:
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Copyright 1988, 1994 Digital Equipment Corporation.
Permission to use, copy, modify, distribute and sell this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notices appear in all copies and that both those copyright notices and this permission notice appear in supporting documentation, and that the names of Adobe Systems and Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

This software is based in part on the work of the Independent JPEG Group.

2 Introduction

2.1 Features

This WLAN IP camera is a ready-to-use, complete network video surveillance system inside a compact camera. The camera offers a cost-effective solution for a broad range of applications. It uses H.264 compression technology to give clear images reducing bandwidth and storage.The camera can be used as a stand-alone video surveillance system with no additional equipment or it can easily integrate with the Bosch DVR 700 Series recorders.

Features include:

- Removable SD/SDHC card offers days of storage inside camera
- Tri-streaming: Two H.264 streams and one M-JPEG stream
- Progressive scan for sharp images of moving objects
- Two-way audio and audio alarm
- Tamper and motion detection
- Conforms to the ONVIF standard for wide compatibility
- Wireless LAN connection

2.2 Unpacking

Unpack carefully and handle the equipment with care.
The packaging contains:

- IP camera with lens
- Universal power supply with US, EU and UK plug
- SD card
- Camera mount kit
- Quick installation guide
- CD ROM
  - Bosch Video Client
  - Documentation
  - Tools
- Wireless antenna

If equipment has been damaged during shipment, repack it in the original packaging and notify the shipping agent or supplier.

WARNING!
Installation should only be performed by qualified service personnel in accordance with the National Electrical Code or applicable local codes.

CAUTION!
The camera module is a sensitive device and must be handled carefully.

3 Installation

3.1 Wireless antenna

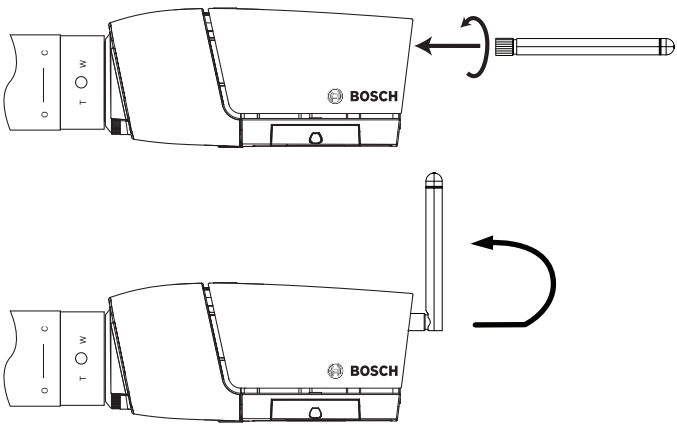

Figure 3.1 Wireless antenna

1. Screw the antenna onto the screw connector on the rear of the camera.
2. Straighten the antenna.

3.2 SD card

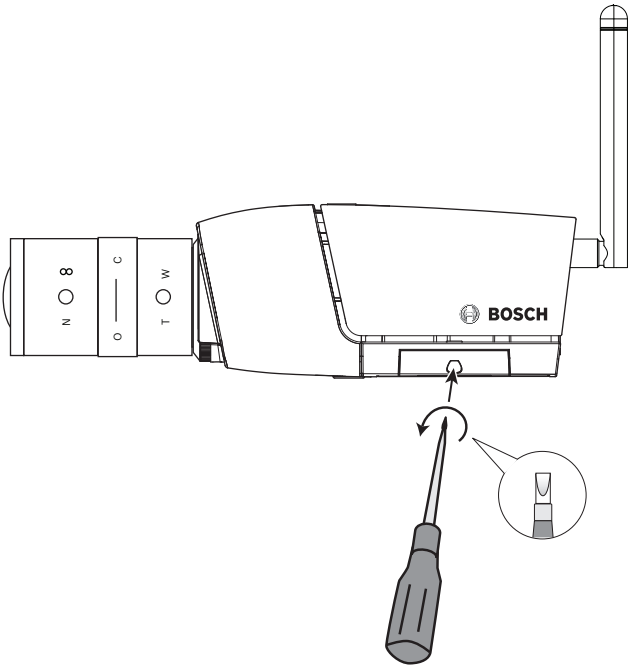

Figure 3.2 SD card

1. Unscrew the cover on the right side of the camera.
2. Slide the SD card into the slot.
3. Close and secure the cover.

The camera supports most SD/SDHC cards.

3.3 Mounting the camera

The camera can be mounted either from the top or from the bottom (1/4"-20 UNC thread). The mounting socket is isolated from ground to prevent ground loops.

CAUTION!
Do not point the camera/lens into direct sunlight as this may damage the sensors.

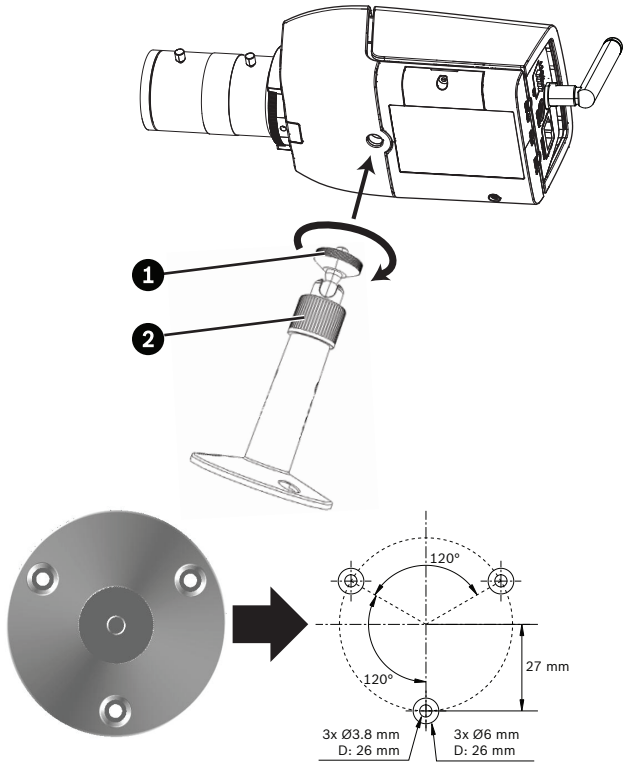

Figure 3.3 Mounting a camera

1. Use three screws to secure the base of the mounting unit to a wood (Ø3.8 mm, 26 mm deep) or concrete (Ø6 mm, 26 mm deep) surface.
2. On the mounting unit, loosen the ball-socket adjustment ring (2).

3. Adjust the ball-socket so that camera mount is correcrly aligned for the required angle.
4. Screw camera onto mount and, when in position, tighten the locking ring (1) securely.
5. Tighten the ball-socket adjustment ring (2) securely.

3.4 Network connector

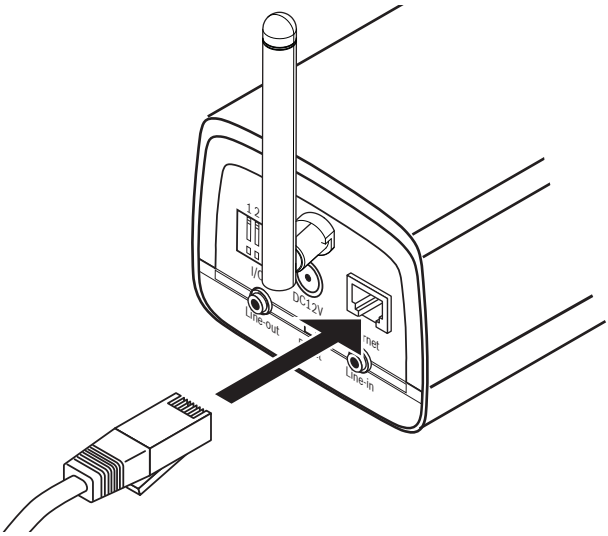

Figure 3.4 Network connection

– Connect the camera to a 10/100 Base-T network.
– Use a shielded UTP Category 5e cable with RJ45 connectors.

3.5 Power connection

3.5.1 DC power connection

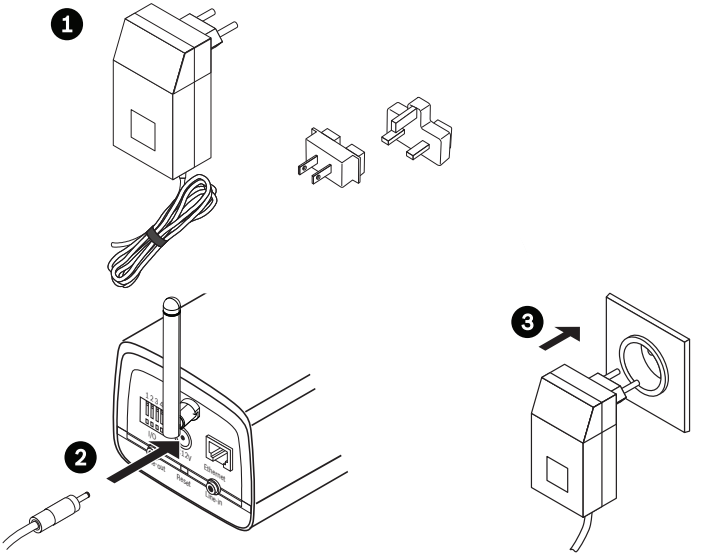

Figure 3.5 DC power connection

1. Slide the plug adapter that matches your outlet socket onto the supplied power supply.
2. Insert the power connector jack from the power supply into the DC12V socket of the camera.
3. Connect the power supply to either a 230 VAC or a 120 VAC power supply outlet.

When power is supplied to the camera the LED on the bottom-front of the camera lights. (This LED can be disabled in the Installer menu.)

Note:
The date/time must be synchronized each time after power on. It is important to ensure that the date/time is correct for recording. An incorrect date/time setting could prevent correct recording.

3.6 I/O connector

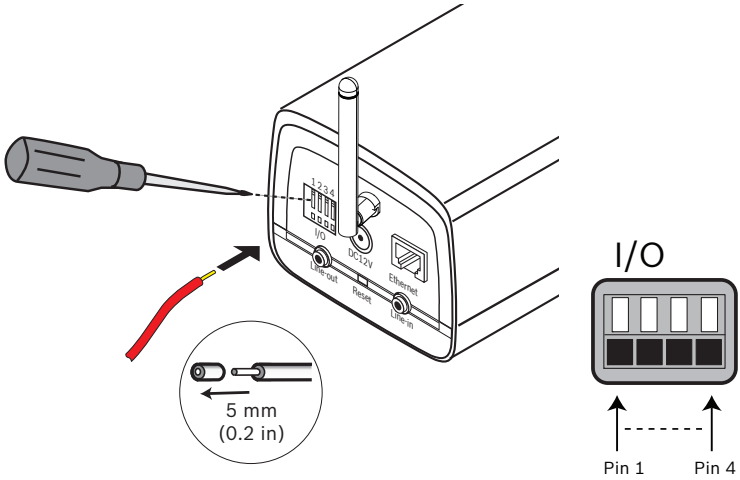

Figure 3.6 I/O connector pins

Function	Pin	I/O socket
Relay	1	Relay out contact 1
	2	Relay out contact 2
Alarm input	3	Relay in Positive
	4	Relay in Negative

- Max. wire diameter AWG 22-28 for both stranded and solid; cut back 5 mm (0.2 in) of insulation.
- Relay output switching capability: Max. voltage 24 VAC or 24 VDC. Max. 1 A continuous, 12 VA.
- Trigger in: +9 VDC minimum; +30 VDC maximum. Reverse polarity connection will be inactive.
- Alarm input configurable as active low or active high.

3.7 Audio connectors

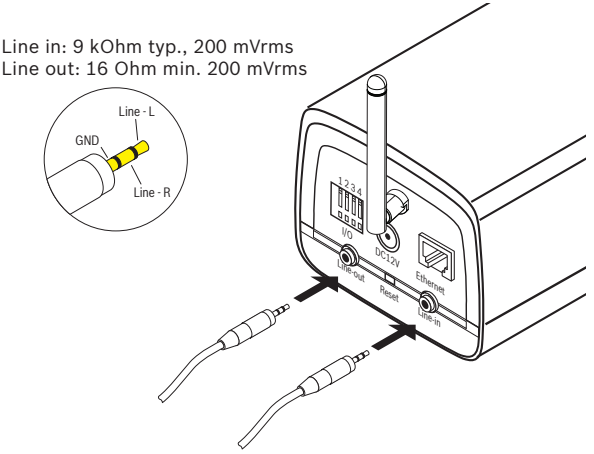

Figure 3.7 Audio connectors

Connect audio devices to the **Line In** and **Line Out** connectors.

3.8 Resetting the camera

If the camera cannot be connected because the IP address has changed, press and hold the reset button (7 seconds approximately) until the LED flashes (red) to recall the factory default values. The factory default IP address is 192.168.0.1

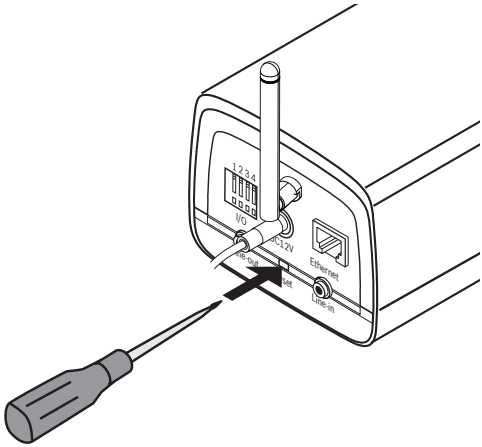

Figure 3.8 Reset button

4 Browser connection

A computer with Microsoft Internet Explorer can be used to receive live images from the camera, control cameras, and replay stored sequences. The camera is configured over the network using a browser or via the Bosch Video Client (supplied with the product).

4.1 System requirements

- Microsoft Internet Explorer version 7.0 or higher
- Monitor: resolution at least 1024 × 768 pixels, 16 or 32 bit color depth
- Intranet or Internet network access

The Web browser must be configured to enable Cookies to be set from the IP address of the unit.
In Windows Vista, deactivate protected mode on the **Security** tab under **Internet Options**.

To play back live video images, an appropriate ActiveX must be installed on the computer. If necessary, the required software and controls can be installed from the product CD provided.

a. Insert the CD into the CD-ROM drive of the computer. If the CD does not start automatically, open the root directory of the CD in Windows Explorer and double click `BVC-installer.exe`
b. Follow the on-screen instructions.

To get full support for recordings and snapshots, install the `MPEG_ActiveX` from the product disk to your computer.

4.2 Establishing the connection

The camera must be assigned a valid IP address to operate on your network. The default address pre-set at the factory is `192.168.0.1`

1. Start the Web browser.
2. Enter the IP address of the camera as the URL.

Note:
If the connection is not established, the maximum number of possible connections may already have been reached. Depending on the device and network configuration, up to 25 web browsers, or 50 Bosch VMS connections are supported.

4.2.1 Password protection in camera

A camera offers the option of limiting access across various authorization levels. If the camera is password-protected, a message to enter the password appears.

1. Enter the user name and the associated password in the appropriate fields.
2. Click **OK**. If the password is correct, the desired page is displayed.

4.3 Protected network

If a RADIUS server is used for network access control (802.1x authentication), the camera must be configured first. To configure the camera for a Radius network, connect it directly to a PC via a crossed network cable and configure the two parameters, **Identity** and **Password**. Only after these have been configured can communication with the camera via the network occur.

4.4 Connection established

When a connection is established, the **LIVEPAGE** is initially displayed. The application title bar displays the type number of the connected camera and three items: **LIVEPAGE**, **RECORDINGS**, **SETTINGS**.

Note:
The **RECORDINGS** link is only visible if a storage medium is available. (Ensure that `MPEG_ActiveX` is installed.)

Figure 4.1 Livepage

4.4.1 LIVEPAGE

The **LIVEPAGE** is used to display and control the video stream. Refer to *Section 7.1 Livepage, page 131* for more information.

4.4.2 RECORDINGS

Click **RECORDINGS** in the application title bar to open the playback page. Refer to *Section 7.2 Recordings page, page 136* for more information.

4.4.3 SETTINGS

Click **SETTINGS** in the application title bar to configure the camera and the application interface. A new page containing

the configuration menu is opened. All settings (except date/time) are stored in the camera memory so that they are retained, even if the power is interrupted.
Changes that influence the fundamental functioning of the unit (for example, firmware updates) can only be made using the configuration menu.
The configuration menu tree allows all parameters of the unit to be configured. The configuration menu is divided into **Basic Mode** and **Advanced Mode**.
Refer to *Section 5 **Basic Mode**, page 63* for more information on basic settings; refer to *Section 6 Advanced Mode, page 68* for more information on advanced settings.

Note:
It is recommended that only expert users or system administrators use the **Advanced Mode**.

5 Basic Mode

5.1 Basic Mode menu tree

The basic mode configuration menu allows a set of basic camera parameters to be configured.

Basic Mode	
>	**Device Access**
>	**Date/Time**
>	**Network**
>	**Encoder**
>	**Audio**
>	**Recording**
>	**System Overview**

To view the current settings:

1. If necessary, click the Basic Mode menu to expand it. The sub-menus are displayed.
2. Click a sub-menu. The corresponding page is opened.

The settings are changed by entering new values or by selecting a pre-defined value in a list field.

Saving changes

After making changes in a window, click **Set** to send the new settings to the device and save them there.
Clicking **Set** saves only the settings in the current window. Changes in any other windows are ignored.

Click **SETTINGS** in the applications title bar to close the window without saving the changes.

Note:

When entering names do not use any special characters, for example **&**. Special characters are not supported by the internal recording management system.

5.2 Device Access

5.2.1 Camera name

The camera can be assigned a name to assist in identifying it. The name simplifies the management of multiple devices in more extensive systems.
The camera name is used for remote identification, for example, in the event of an alarm. Enter a name that makes it as easy as possible to identify the location unambiguously.

5.2.2 Password

A password prevents unauthorized access to the device. The device recognizes three authorization levels: **service**, **user**, and **live**.

- **service** is the highest authorization level. Entering the correct password gives access to all the functions of the camera and allows all configuration settings to be changed.
- **user** is the middle authorization level. This user can operate the device, play back recordings, and also control a camera but cannot change the configuration.
- **live** is the lowest authorization level. It can only be used to view the live video image and switch between the different live image displays.

Use the various authorization levels to limit access. Proper password protection is only guaranteed if all higher authorization levels are also protected with a password. For example, if a **live** password is assigned, a **service** and a **user** password should also be set. When assigning passwords, always start from the highest authorization level, **service**, and use different passwords.

Password

Define and change a separate password for each level while logged in as **service** or if the device is not protected by a password. Enter the password (19 characters maximum) for the selected level.

Confirm password

Re-enter the new password to ensure that there are no typing mistakes.

The new password is only saved after clicking **Set**. Therefore, click **Set** immediately after entering and confirming the password, even if you plan to assign a password at another level.

5.3 Date/Time

Device date, time and zone

If there are multiple devices operating in the system or network, it is important to synchronize their internal clocks. For example, it is only possible to identify and correctly evaluate simultaneous recordings when all devices are operating on the same time.

As the device time is controlled by the internal clock, it is not necessary to enter the day or date of the week. These are set automatically. The time zone in which the system is located is also set automatically.

▶ Click **Sync to PC** to apply the system time from your computer to the device.

Note:

It is important to ensure that the date/time is correct for recording. An incorrect date/time setting could prevent correct recording.

5.4 Network

Use the settings on this page to integrate the device into a network. Some changes only take effect after a reboot. In this case, the **Set** button changes to **Set and Reboot**.

1. Make the desired changes.
2. Click **Set and Reboot**.
   – The device is rebooted and the changed settings are activated. If the IP address, subnet mask, or gateway address is changed, then the device is only available under the new addresses after the reboot.

DHCP
If the network has a DHCP server for dynamic IP address allocation, set this parameter to **On** to activate the automatic acceptance of DHCP-assigned IP addresses.

Note:
Certain applications (for example, Bosch Video Management System) use the IP address for the unique assignment of the device. If using these applications, the DHCP server must support the fixed assignment between IP address and MAC address, and must be appropriately set up so that, once an IP address is assigned, it is retained each time the system is rebooted.

IP address
Enter the desired IP address for the camera. The IP address must be valid for the network.

Subnet mask
Enter the appropriate subnet mask for the set IP address.

Gateway address
Enter the IP address of the gateway to establish a connection to a remote location in a different subnet. Otherwise, this field can remain empty (0.0.0.0).

5.5 Encoder

Select a profile for encoding the video signal. Pre-programmed profiles are available that give priority to different parameters. When a profile is selected, its details are displayed.

Main frequency and Operation environment
Select **50 Hz** or **60 Hz** as the main frequency, and **Indoor** or **Outdoor** for the operation environment.

5.6 Audio

Switch the camera microphone **On** or **Off**.

5.7 Recording

Record the images from the camera to a storage medium. For long-term authoritative images, it is essential to use an NVR or an appropriately sized iSCSI system.

5.7.1 Storage medium

1. Select the required storage medium from the list.
2. Click **Start** to start recording or **Stop** to end recording.

5.8 System Overview

This page provides general information on the hardware and firmware system, including version numbers. No items can be changed on this page but they can be copied for information purposes when troubleshooting.

6 Advanced Mode

6.1 Advanced Mode menu tree

The advanced mode configuration menu contains all camera parameters that can be configured.

Advanced Mode	
>	General
>	Web Interface
>	Camera
>	Recording
>	Alarm
>	Interfaces
>	Network
>	Service

To view the current settings:

1. Click the **Advanced Mode** menu to expand it. The associated menu sub-headings are displayed.
2. Click a menu sub-heading to expand it.
3. Click a sub-menu. The corresponding page is opened.

The settings are changed by entering new values or by selecting a pre-defined value in a list field.

Saving changes

After making changes in a window, click **Set** to send the new settings to the device and save them there.
Clicking **Set** saves only the settings in the current window. Changes in any other windows are ignored.
Click **SETTINGS** in the applications title bar to close the window without saving the changes made.

Note:

When entering names do not use any special characters, for example **&**. Special characters are not supported by the internal recording management system.

6.2 General

General	
>	**Identification**
>	**Password**
>	**Date/Time**
>	**Display Stamping**

6.2.1 Identification

Camera ID
Each camera should be assigned a unique identifier that can be entered here as an additional means of identification.

Camera name
Assign a camera name to assist in identifying it. The name simplifies the management of multiple devices in more extensive systems, for example the VIDOS or Bosch VMS software. The camera name is used for remote identification, for example, in the event of an alarm. Enter a name that makes it as easy as possible to identify the location unambiguously.

Initiator extension
Add text to an initiator name to make identification easier in large iSCSI systems. This text is added to the initiator name, separated from it by a full stop.

6.2.2 Password

A password prevents unauthorized access to the device. The device recognizes three authorization levels: **service**, **user**, and **live**.

– **service** is the highest authorization level. Entering the correct password gives access to all the functions of the camera and allows all configuration settings to be changed.
– **user** is the middle authorization level. This user can operate the device, play back recordings, and also control a camera but cannot change the configuration.

– **live** is the lowest authorization level. It can only be used to view the live video image and switch between the different live image displays.

Use the various authorization levels to limit access. Proper password protection is only guaranteed if all higher authorization levels are also protected with a password. For example, if a **live** password is assigned, a **service** and a **user** password should also be set. When assigning passwords, always start from the highest authorization level, **service**, and use different passwords.

Password
Define and change a separate password for each level while logged in as **service** or if the device is not protected by a password. Enter the password (19 characters maximum) for the selected level.

Confirm password
Re-enter the new password to ensure that there are no typing mistakes.
The new password is only saved after clicking **Set**. Therefore, click **Set** immediately after entering and confirming the password, even if assigning a password at another level.

6.2.3 Date/Time

Date format

Select the required date format.

Device date / Device time

If there are multiple devices operating in your system or network, it is important to synchronize their internal clocks. For example, it is only possible to identify and correctly evaluate simultaneous recordings when all devices are operating on the same time.

1. Enter the current date. Since the device time is controlled by the internal clock, it is not necessary to enter the day of the week – it is added automatically.
2. Enter the current time or click **Sync to PC** to apply the system time from your computer to the device.

Note:

It is important to ensure that the date/time is correct for recording. An incorrect date/time setting could prevent correct recording.

Device time zone

Select the time zone in which the system is located.

Daylight saving time

The internal clock can switch automatically between normal and daylight saving time (DST). The device already contains the data for DST switch-overs up to the year 2015. Use this data or create alternative time saving data, if required.

First, check the time zone setting. If it is not correct, select the appropriate time zone for the system:

1. Click **Set**.
2. Click **Details**. A new window opens showing an empty table.
3. Click **Generate** to fill the table with the preset values from the camera.
4. Select the region or the city which is closest to the system's location from the list box below the table.

5. Click one of the entries in the table to make changes. The entry is highlighted.
6. Click **Delete** to remove the entry from the table.
7. Choose other values from the list boxes under the table, to change the selected entry. Changes are immediate.
8. If there are empty lines at the bottom of the table, for example after deletions, add new data by marking the row and selecting values from the list boxes.
9. When finished, click **OK** to save and activate the table.

Note:
If a table is not created, there is no automatic switching. When editing the table, note that values occur in linked pairs (DST start and end dates).

Time server IP address
The camera can receive the time signal from a time server using various time server protocols and then use it to set the internal clock. The device polls the time signal automatically once every minute. Enter the IP address of a time server.

Time server type
Select the protocol that is supported by the selected time server. It is recommended to select the **SNTP server** protocol. This protocol provides high accuracy and is required for special applications and future function extensions. Select **Time server** if the server uses the RFC 868 protocol.

6.2.4 Display Stamping

Various overlays or stamps in the video image provide important supplementary information. These overlays can be enabled individually and arranged on the image in a clear manner.

Camera name stamping
This field sets the position of the camera name overlay. It can be displayed at the **Top**, at the **Bottom**, or at a position of choice using the **Custom** option, or it can be set to **Off** for no overlay information.

If the **Custom** option is selected, enter values in the X and Y position fields.

Time stamping
This field sets the position of the time and date overlay. It can be displayed at the **Top**, at the **Bottom**, or at a position of choice using the **Custom** option, or it can be set to **Off** for no overlay information.
If the **Custom** option is selected, enter values in the X and Y position fields.

Display milliseconds
If necessary, display milliseconds for **Time stamping**. This information can be useful for recorded video images; however, it does increase the processor's computing time. Select **Off** if displaying milliseconds is not needed.

Alarm mode stamping
Select **On** for a text message to be overlaid in the event of an alarm. It can be displayed at a position of choice using the **Custom** option, or it can be set to **Off** for no overlay information.
If the **Custom** option is selected, enter values in the X and Y position fields.

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

Video watermarking
Select **On** for the transmitted video images to be watermarked. After activation, all images are marked with an icon. The icon indicates if the sequence (live or saved) has been manipulated.

6.3 Web Interface

Web Interface	
>	**Appearance**
>	**LIVEPAGE Functions**
>	**Logging**

6.3.1 Appearance

Adapt the appearance of the web interface and change the website language to meet your requirements. If necessary, replace the company's logo (top right) and the device name (top left) in the top part of the window with individual graphics. Either GIF or JPEG images can be used. The file paths must correspond to the access mode (for example, C:\Images\Logo.gif for access to local files or http://www.myhostname.com/images/logo.gif for access via the Internet/Intranet). For access via the Internet/Intranet, there must be a connection in order to display the image. The image files are not stored on the camera.
To restore the original graphics, delete the entries in the Company logo and Device logo fields.

Website language
Select the language for the user interface here.

Company logo
Enter the path to a suitable image in this field. The image can be stored on a local computer, a local network, or at an Internet address.

Note:
When the image was stored on a local computer, it can only be displayed by this local computer.

Device logo
Enter the path for a suitable image for the device logo in this field. The image can be stored on a local computer, a local network, or at an Internet address.

6.3.2 LIVEPAGE Functions

In this window, adapt the **Livepage** functions to meet your requirements. Choose from a variety of different options for displaying information and controls.

1. Mark the check boxes for the functions to be displayed on the **Livepage**. The selected elements are checked.
2. Check the **Livepage** to see how the desired items are available.

Transmit audio

When selected, the audio from the camera (if on) is sent to the computer.

Show alarm inputs

The alarm inputs are displayed next to the video image as icons along with their assigned names. If an alarm is active, the corresponding icon changes color.

Show relay outputs

The relay output is shown next to the video image as an icon along with its assigned name. If a relay is switched, the icon changes color.

Show VCA metadata

When video content analysis (VCA) is activated, additional information is displayed in the live video stream. For example, in **Motion+** mode, the sensor areas for motion detection are marked.

Show event log

The event messages are displayed with the date and time in a field next to the video image.

Show system log

The system messages are displayed with the date and time in a field next to the video image and provide information about the establishment and termination of connections, etc.

Allow snapshots
Specify whether the icon for saving individual images should be displayed below the live image. Individual images can only be saved if this icon is visible.

Allow local recording
Specify whether the icon for saving video sequences on the local memory should be displayed below the live image. Video sequences can only be saved if this icon is visible.

Path for JPEG and video files
Enter the path for the storage location of individual images and video sequences saved from the **Livepage**. If necessary, click **Browse** to find a suitable folder.

6.3.3 Logging

Save event log
Select this option to save event messages in a text file on the local computer. This file can be viewed, edited, and printed with any text editor or standard office software.

File for event log
Enter the path for saving the event log here. If necessary, click **Browse** to find a suitable folder.

Save system log
Select this option to save system messages in a text file on the local computer. This file can be viewed, edited, and printed with any text editor or standard office software.

File for system log
Enter the path for saving the system log here. If necessary, click **Browse** to find a suitable folder.

6.4 Camera

Camera	
>	**Installer Menu**
>	**Picture Settings**
>	**Encoder Profile**
>	**Encoder Streams**
>	**Audio**

6.4.1 Installer Menu

Camera LED
Disable the **Camera LED** on the camera to switch it off.

Mirror image
Enable **Mirror image** to obtain a vertically flipped image (around the horizontal axis) of the camera picture.

Main frequency and Operation environment
Select **50 Hz** or **60 Hz** as the main frequency, and **Indoor** or **Outdoor** for the operation environment.

Exposure/frame rate

– **Auto exposure/frame rate**: the camera automatically sets the framerate. The camera tries to maintain the selected default shutter speed as long as the light level of the scene permits.
Select a minimum frame rate from 4 to 30 fps.

– **Fixed exposure**: allows a user-defined shutter time.
Select the shutter speed when exposure control is set to fixed (1/25, 1/33, 1/50, 1/100 for 50 Hz) or (1/30, 1/40, 1/60, 1/120 for 60 Hz).

Note:
Shutter time is affected by frame rate in auto framerate mode. For example, if the frame rate is 30 IPS, the longest shutter time available is 1/30s.

6.4.2 Picture Settings

Contrast (0...255)
Adjusts the contrast of the image.

Saturation (0...255)
Adjusts the color saturation; 0 gives a monochrome image.

Brightness (0...255)
Adjusts the brightness of the image.

White balance
- **ATW**: Auto tracking white balance allows the camera to continually adjust for optimal color reproduction.
- In **Manual** mode the Red, Green, and Blue gain can be manually set to a desired position.

Apply white balance: **Hold** puts the ATW on hold and saves the color settings.

R-gain
The red gain adjustment offsets the factory white point alignment (reducing red introduces more cyan).

G-gain
The green gain adjustment offsets the factory white point alignment to optimize the white point.

B-gain
The blue gain adjustment offsets the factory white point alignment (reducing blue introduces more yellow).
It is only necessary to change the white point offset for special scene conditions.

Default
Click **Default** to set all video values to their factory setting.

6.4.3 Encoder Profile

Adapt the video data transmission to the operating environment (network structure, bandwidth, data structures). The camera simultaneously generates two H.264 video streams and an M-JPEG stream. Select the compression settings of these streams individually, for example, one setting for transmissions to the Internet and one for LAN connections. The settings are made individually for each stream.

Define profiles

Eight definable profiles are available. The pre-programmed profiles give priority to different parameters.

- **High resolution 1**
  VGA resolution with low delay
- **High resolution 2**
  VGA resolution with lower data rate
- **Low bandwidth**
  VGA resolution for low bandwidth connections
- **DSL**
  VGA resolution for DSL connections at 500 kbps maximum
- **ISDN (2B)**
  QVGA resolution for ISDN connections at 100 kbps maximum
- **ISDN (1B)**
  QVGA resolution for ISDN connections at 50 kbps maximum
- **MODEM**
  QVGA resolution for analog modem connections at 22 kbps maximum
- **GSM**
  QVGA resolution for GSM connections

Profile Configuration

Profiles can be configured for use with the H.264 settings of encoder streams. Select a profile by clicking the appropriate tab. Change the name of a profile and individual parameter values within a profile.

Profiles are rather complex. They include a number of parameters that interact with one another, so it is generally best to use the default profiles. Only change a profile if completely familiar with all the configuration options.
The parameters as a group constitute a profile and are dependent on one another. If a setting outside the permitted range for a parameter is entered, the nearest valid value is substituted when the settings are saved.

Profile name

Enter a new name for the profile here. (Do not use any special characters, for example &.)

Target bit rate

To optimize utilization of the bandwidth in the network, limit the bit rate. The target bit rate should be set according to the desired picture quality for typical scenes with no excessive motion.
For complex images or frequent changes of image content due to frequent movements, this limit can temporarily be exceeded up to the value entered in the **Maximum bit rate** field.

Maximum bit rate

This maximum bit rate is not exceeded under any circumstances. Depending on the video quality settings for the I-frames and P-frames, this can result in individual images being skipped.
The value entered here must be at least 10% higher than the value entered in the **Target bit rate** field. If the value entered here is too low, it is automatically adjusted.

Encoding interval

The **Encoding interval** slider determines the interval at which images are encoded and transmitted. This can be particularly advantageous with low bandwidths. The image rate in ips (images per second) is displayed next to the slider.

Video resolution

Select here the desired resolution for the video image. **VGA** (640x480) and **QVGA** (320x240) resolutions are available.

Expert Settings

if necessary, use the expert settings to adapt the I-frame quality and the P-frame quality to specific requirements. The setting is based on the H.264 quantization parameter (QP).

GOP structure

Select the structure you require for the Group of Pictures. Depending on whether you place greater priority on having the lowest possible delay (IP frames only) or using as little bandwidth possible, you choose IP, IBP or IBBP.

I-frame distance

Use the slider to set the distance between I-frames to **Auto** or to between **3** and **60**. An entry of **3** means that every third image is an I-frame.The lower the number, the more I-frames are generated.

I-frame quality

This setting adjusts the image quality of the I-frames. The basic setting **Auto** automatically adjusts the quality to the settings for the P-frame video quality. Alternatively, use the slider to set a value between 9 and 51. The value **9** represents the best image quality with, if necessary, a lower frame refresh rate depending on the settings for the maximum data rate. A value of **51** results in a very high refresh rate and lower image quality.

P-frame quality

This setting adjusts the maximum image quality of the P-frames. The basic setting **Auto** automatically adjusts to the optimum combination of movement and image definition (focus).

Alternatively, use the slider to set a value between 9 and 51. The value **9** represents the best image quality with, if necessary, a lower frame refresh rate depending on the settings for the maximum data rate. A value of **51** results in a very high refresh rate and lower image quality.

Default

Click **Default** to return the profile to the factory default values.

6.4.4 Encoder Streams

Select H.264 Settings

1. Select the codec algorithm for streams 1 and 2. The following algorithms are available
   - **H.264 BP+ bit-rate-limited**
   - **H.264 MP SD**
2. Select the default profile for streams 1 and 2 from the eight profiles that have been defined.

The algorithm properties have the following settings:

	H.264 BP+ bit-rate-limited	**H.264 MP SD**
CABAC	off	on
CAVLC	on	off
GOP structure	IP	IP
I-frame distance	15	30
Deblocking filter	on	on
Bit rate	limited to 1.2 Mbps	
Recommended for	Hardware decoders, DVR 700 Series	Software decoders, PTZ and rapid image movements

Preview >>

Previews of streams 1 and 2 can be shown.

1. Click **Preview >>** to display a preview of the video for streams 1 and 2. the current profile is shown above the preview.
2. Click **1:1 Live View** below a preview to open a viewing window for that stream. Various additional items of information are shown across the top of the window.
3. Click **Preview <<** to close the preview displays.

Note:

Deactivate the display of the video images if the performance of the computer is adversely affected by the decoding of the data stream.

JPEG stream

Set the parmeters for the M-JPEG stream.

– Select the **Max. frame rate** in images per second (IPS).
– The **Picture quality** slider allows adjustment of the M-JPEG image quality from **Low** to **High**.

Note:

The M-JPEG resolution follows the highest resolution setting of either stream 1 or stream 2. For example, if stream 1 is VGA and stream 2 is QVGA, the JPEG resolution will be VGA. The M-JPEG frame rate varies depending on system loading.

6.4.5 Audio

Select the microphone or line-in connector as the **Audio input** or switch it off. Adjust the **Input volume** with the slider.
Switch the **Audio output On** or **Off**.
Select **G.711** or **L16** as the audio **Recording format**. The default value is **G.711**. Select **L16** if you want better audio quality with higher sampling rates. This requires approximately eight times the G.711 bandwith.

6.5 Recording

Recording	
>	**Storage Management**
>	**Recording Profiles**
>	**Retention Time**
>	**Recording Scheduler**
>	**Recording Status**

Record the images from the camera to local storage media or to an appropriately configured iSCSI system.
SDHC cards are the ideal solution for shorter storage times and temporary recordings, for example, local buffering in the event of network interruptions.

Continuous Recording Hours				
Profiles	**SDHC card capacity**			
	4 GB	**8 GB**	**16 GB**	**32 GB**
High resolution 1 (VGA, 30F/S, H.264 MP, T:2000Kb, M:4000Kb)	4 h	8 h	16 h	32 h
Low bandwidth (VGA, 30F/S, H.264 MP, T:700Kb, M:1500Kb)	11 h	22 h	44 h	88 h
DSL (VGA, 30F/S, H.264 MP, T:400Kb, M:500Kb)	19 h	38 h	76 h	152h
ISDN (2B) (VGA, 30F/S, H.264 MP, T:80Kb, M:100Kb)	78 h	156 h	312 h	624 h

Note:
The recording hours table is only an indication for reference, an actual situation might be different (because of different scenes or networking status for example).