

# MIC IP starlight 7000 HD, MIC IP dynamic 7000 HD

MIC-71xx, MIC-72xx



**BOSCH**

**en** Operation Manual



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# 1 Configuration Prerequisites

To operate the camera in your network, you must configure the camera properly for your network. You will need the following information:

- Unit IP address: An identifier for the camera on a TCP/IP network.  
Default: 192.168.0.1 (if your network does not have a DHCP server)  
or  
the first available IP address (if your network has a DHCP server)  
**Note:** You will likely need to change the IP address of your camera so that it does not conflict with another device on your network. Refer to the section Network > Network Access for more information.
- Subnet mask: A mask used to determine what subnet an IP address belongs to.  
Default: 255.255.255.0
- Gateway IP address: A node on a network that serves as an entrance to another network.  
Default: 0.0.0.0
- Port: An endpoint to a logical connection in TCP/IP and UDP networks. The port number identifies the use of the port for use through a firewall connection.



## Notice!

Ensure that the network parameters of your camera are available before you begin configuration. Contact your local network administrator for a valid IP address, Subnet mask, and Gateway IP address.

The following sections provide instructions about installing the software necessary to view images over an IP connection, configuring the IP network settings, and accessing the camera images from a Web browser.

The camera has a default IP address of 192.168.0.1. To change the IP address or any network settings, you can use the Configuration Manager software or the built-in Web server.



## Notice!

Contact your local network administrator for a valid IP address, Subnet Mask, and a Gateway IP Address.

### Using the built-in Web Server

1. Set the **IP address** on the network device to *192.168.0.10* to ensure that the network device and the camera are on the same Subnet.
2. Launch your web browser (such as Microsoft Internet Explorer) and navigate to the following URL: <http://192.168.0.1>. The web browser opens the **Live** page for the camera; a security warning message appears.
3. Select the box **Always Trust**, and then click YES.
4. Click **Configuration** at the top right of the page.
5. Select **Network**. The menu expands.
6. Select **Network Access**. The page **Network Access** opens.
7. Configure the settings on this page based on the addresses provided by your local network administrator.
  - ▶ Click **Set and Reboot**. The camera will reset (go through the homing sequence, which usually takes 30 seconds to complete), and then the **Live** page appears, with updated video and the new **IP address**.

## 2 System overview

When a connection is established, the **Live** page is initially displayed. The application bar displays the following items:

-  **Live**,
-  **Playback**,  
This link is only visible if a storage medium has been configured for recording. (With VRM recording this option is not active.)
-  **Configuration**.

### Getting help

To get context sensitive help for a particular page, click the help icon .

### 2.1 Playback

The **PLAYBACK** page is used for playing back recorded sequences.

### 2.2 Configuration

The **Configuration** page is used to configure the unit and the application interface.

#### Making Changes

Each configuration screen shows the current settings. You can change the settings by entering new values or by selecting a predefined value from a list field.

Not every page has a **Set** button. Changes to pages without a **Set** button are set immediately. If a page does show a **Set** button, you must click the **Set** button for a change to take effect.



#### Notice!

Save each change with the associated **Set** button.

Clicking the **Set** button saves the settings only in the current field. Changes in any other fields are ignored.

Some changes only take effect after the unit is rebooted. In this case, the **Set** button changes to **Set and Reboot**.

1. Make the desired changes.
2. Click the **Set and Reboot** button. The camera reboots and the changed settings are activated.

All settings are backed up in camera memory so they are not lost even if the power fails. The exception is the time settings, which are lost after 1 hour without power if no central time server is selected.

### 2.3 Live page

The **LIVE** page is used to display the live video stream and control the unit.

## 3 Configuration

### 3.1 Configuring Audio (Optional)

**Note for MIC7000 cameras only:** These options are available only if you have connected a VIDEOJET connect device (VJC-7000-90) to your camera.

## 4 General

### 4.1 Identification

#### Camera name

The camera name makes it easier to identify the remote camera location, in the event of an alarm for example. It will be displayed in the video screen if configured to do so. The camera name makes the task of administering cameras in larger video monitoring systems easier, for example using the BVC or Bosch Video Management Systems Programs.

Enter a unique, unambiguous name for the camera in this field. You can use both lines for this. Do not use any special characters, for example **&**, in the name. Special characters are not supported by the system's internal management.

You can use the second line for entering additional characters; these can be selected from a table.

1. Click the icon next to the second line. A new window with the character map is opened.
2. Click the required character. The character is inserted into the **Result** field.
3. In the character map, click the **<<** and **>>** icons to move between the different pages of the table, or select a page from the list field.
4. Click the **<** icon to the right of the **Result** field to delete the last character, or click the **X** icon to delete all characters.
5. Now click the **OK** button to apply the selected characters to the second line of the **Camera 1** parameters. The window will close.

#### Camera ID

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

#### 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. (You can see the initiator name in the System Overview page.)

### 4.2 Password

The camera is generally protected by a password to prevent unauthorized access to the unit. You can use different authorization levels to limit access.



#### Notice!

Proper password protection is only guaranteed when all higher authorization levels are also protected with a password. If a **live** password is assigned, for example, a **service** and a **user** password must also be set. When assigning passwords, you should therefore always start from the highest authorization level, **service**, and use different passwords.

#### Password

The camera operates with three authorization levels: **service**, **user** and **live**.

The highest authorization level is **service**. After entering the correct password, you can access all the functions of the camera and change all configuration settings.

With the **user** authorization level, you can operate the unit and also control cameras, for example, but you cannot change the configuration.

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

You can define and change a password for each authorization level if you are logged in as **service** or if the unit is not password protected.

Enter the password for the appropriate authorization level here.

#### Confirm password

In each case, enter the new password a second time to eliminate typing mistakes.



#### Notice!

A new password is only saved when you click the **Set** button. You should therefore click the **Set** button immediately after entering and confirming a password.

## 4.3

### Date/Time

#### Date format

Select your required date format.

#### Device date/Device time



#### Notice!

Ensure that recording is stopped before syncing to the PC.

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 units are operating on the same time.

1. Enter the current date. Since the unit time is controlled by the internal clock, there is no need to enter the day of the week – it is added automatically.
2. Enter the current time or click the **Sync to PC** button to copy your computer's system time to the camera.

**Note:** It is important 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 your system is located.

#### Daylight saving time

The internal clock can switch automatically between normal and daylight saving time (DST). The unit already contains the data for DST switch-overs up to the year 2018. You can use these data or create alternative time saving data if required.



#### Notice!

If you do not create a table, there will be no automatic switching. When changing and clearing individual entries, remember that two entries are usually related to each other and dependent on one another (switching to summer time and back to normal time).

1. First check whether the correct time zone is selected. If it is not correct, select the appropriate time zone for the system, and click the **Set** button.
2. Click the **Details** button. A new window will open and you will see the empty table.
3. Select the region or the city that is closest to the system's location from the list field below the table.
4. Click the **Generate** button to generate data from the database in the unit and enter it into the table.
5. Make changes by clicking an entry in the table. The entry is selected.
6. Clicking the **Delete** button will remove the entry from the table.

7. Select other values from the list fields below the table to change the entry. Changes are made immediately.
8. If there are empty lines at the bottom of the table, for example after deletions, you can add new data by marking the row and selecting required values from the list fields.
9. Now click the **OK** button to save and activate the table.

#### **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 unit polls the time signal automatically once every minute.

Enter the IP address of a time server here.

#### **Time server type**

Select the protocol that is supported by the selected time server. Preferably, you should select the **SNTP server** as the protocol. This supports a high level of accuracy and is required for special applications and subsequent function extensions.

Select **Time server** for a time server that works with the protocol RFC 868.

## 4.4 Display Stamping

Various overlays or “stamps” in the video image provide important supplementary information. These overlays can be enabled individually and are arranged on the image in a clear manner. After you set all necessary parameters, click the **View Control** link to see how the stamping appears on the **LIVE** page.

#### **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 your choice that you can then specify using the **Custom** option. Or it can be set to **Off** for no overlay information.

1. Select the desired option from the list.
2. If you select the **Custom** option, additional fields are displayed where you can specify the exact position (**Position (XY)**).
3. In the **Position (XY)** fields, enter the values for the desired position.

#### **Logo**

Click **Choose File** to select a file. Heed the restrictions for file format, logo size, and color depth. **Click** Upload to load the file to the camera.

If no logo is selected, Configuration displays the message, “No file chosen.”

#### **Logo position**

Select the position for the logo on the OSD: Left or Right.

Select Off (the default value) to disable logo positioning.

#### **Time stamping**

This field sets the position of the time overlay. It can be displayed at the **Top**, at the **Bottom** or at a position of your choice that you can then specify using the **Custom** option. Or it can be set to **Off** for no overlay information.

1. Select the desired option from the list.
2. If you select the **Custom** option, additional fields are displayed where you can specify the exact position (**Position (XY)**).
3. In the **Position (XY)** fields, enter the values for the desired position.

#### **Display milliseconds**

If necessary, you can also display milliseconds. This information can be useful for recorded video images; however, it does increase the processor's computing time. Select **Off** if you do not need to display milliseconds.

**Alarm mode stamping**

Select **On** to display a text message overlay in the image in the event of an alarm. It can be displayed at a position of your choice that you can then specify using the **Custom** option. Or it can be set to **Off** for no overlay information.

1. Select the desired option from the list.
2. If you select the **Custom** option, additional fields are displayed where you can specify the exact position (**Position (XY)**).
3. In the **Position (XY)** fields, enter the values for the desired position.

**Alarm message**

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

**Title OSD**

Select **On** to continuously display sector or shot title overlays in the image. Select **Momentary** to display sector or shot title overlays for a few seconds. OSD titles can be displayed at a position of your choice, or it can be set to **Off** for no overlay information.

1. Select the desired option from the list.
2. Specify the exact position (**Position (XY)**).
3. In the **Position (XY)** fields, enter the values for the desired position.

**Camera OSD**

Select **On** to momentarily display camera response information, such as Digital Zoom, Iris open/close, and Focus near/far overlays in the image. Select **Off** to display no information.

1. Select the desired option from the list.
2. Specify the exact position (**Position (XY)**).
3. In the **Position (XY)** fields, enter the values for the desired position.

**Transparent background**

Check this box to make the stamp on the image transparent.

**Video authentication**

Select a method for verifying the integrity of the video in the **Video authentication** drop-down box.

If you select **Watermarking** all images are marked with an icon. The icon indicates if the sequence (live or saved) has been manipulated.

If you want to add a digital signature to the transmitted video images to ensure their integrity, select one of the cryptographic algorithms for this signature.

Enter the interval (in seconds) between insertions of the digital signature.

**Signature intervals**

Select the interval (in seconds) for the signature.

## 4.5

### GB/T 28181

This page allows you to set the parameters for conformance to the GB/T 28181 national standard "Security and protection video monitoring network system for information transport, switch and control". This standard is specifically for China.

**Enable**

Select this checkbox to enable the system to use the other parameters on this page in accordance with the GB/T 28181 national standard.

**H.264 elementary stream**

Select this checkbox to select or to enable the H.264 elementary stream.

**Registration timeout**

Enter a value (in milliseconds) for the registration timeout. The default is 3600.

**Heartbeat timeout**

Enter the value (in seconds) for the heartbeat timeout. The default is 15.

**Server ID**

Enter the ID of the server.

**Server IP address**

Enter the server IP address.

**Device ID**

Enter the ID of the device.

**Device port**

Enter the number of the device port. The default is 5060.

**Password**

Enter the appropriate password.

**Alarm device ID**

Enter the ID of the alarm device.

## 5 Web Interface

### 5.1 Appearance

On this page you can adapt the appearance of the web interface and change the website language to meet your requirements. If necessary, you can replace the manufacturer's logo (top right) and the product name (top left) in the top part of the window with individual graphics.



#### Notice!

You can use either GIF or JPEG images. The file paths must correspond to the access mode (for example **C:\Images\Logo.gif** for access to local files, or **http://www.mycompany.com/images/logo.gif** for access via the Internet/Intranet).

When accessing via the Internet/Intranet, ensure that a connection is always available to display the image. The image file is not stored in the camera.

#### Website language

Select the language for the user interface here.

#### Company logo

Enter the path to a suitable graphic if you want to replace the manufacturer's logo. The image file can be stored on a local computer, in the local network or at an Internet address.

#### Device logo

Enter the path to a suitable graphic if you want to replace the product name. The image file can be stored on a local computer, in the local network or at an Internet address.



#### Notice!

If you want to use the original graphics again, simply delete the entries in the **Company logo** and **Device logo** fields.

#### 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 VCA trajectories

When video content analysis (VCA) is activated, check this item to show additional information that traces the path of objects.

#### Show overlay icons

Select this checkbox to show overlay icons on the live video image.

#### Latency mode

Options are: Low delay; Smooth video; Unbuffered

#### JPEG size

You can specify the size of the JPEG image on the **LIVE** page. Options are Small, Medium, Large, 720p, 1080p, and "Best possible" (default).

#### JPEG interval

You can specify the interval at which the individual images should be generated for the M-JPEG image on the **LIVE** page.

#### JPEG quality

You can specify the quality at which the JPEG images appear on the **LIVE** page.

## 5.2 LIVE Functions

On this page you can adapt the functions on the **LIVE** page to your requirements. You can choose from a variety of different options for displaying information and controls.

1. Check the box for the items that are to be made available on the **LIVE** page. The selected items are indicated by a check mark.
2. Check whether the required functions are available on the **LIVE** page.

### **Transmit audio**

You can only select this option if audio transmission is actually switched on (see Audio). The audio signals are sent in a separate data stream parallel to the video data, and so increase the network load. The audio data are encoded according to G.711 and require an additional bandwidth of approx. 80 kbps per connection in each direction.

### **Lease time (s)**

The lease time in seconds determines the time beyond which a different user is authorized to control the camera after no further control signals are received from the current user. After this time interval, the camera is automatically enabled.

### **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 alarm outputs**

Alarm outputs are shown next to the video image as icons, along with their assigned names. If the alarm output is active, the corresponding icon changes color.

### **Show event log**

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

### **Show system log**

The system messages are displayed along with the date and time in a field next to the video image and provide information about establishing and ending connections, for example.

### **Allow snapshots**

Here you can specify whether the icon for saving individual images (snapshots) should be displayed below the live image. Individual images can only be saved if this icon is visible.

### **Allow local recording**

Here you can specify whether the icon for saving (recording) video sequences on the local memory should be displayed below the live image. Video sequences can only be saved if this icon is visible.

### **I-frames only stream**

Here you can specify whether the **LIVE** page displays a viewing tab for an I-frame only stream.

### **Show scene list**

Here you can specify whether the View Controls section of the **LIVE** page displays a drop-down box with the list of scenes set in Advanced Mode > Camera > Scenes and Tours of the **SETTINGS** page.

### **Show 'Intelligent Tracking'**

Here you can specify whether the **LIVE** page displays the controls for the Intelligent Tracking feature.

### **Show 'Special Functions'**

Here you can specify whether the **LIVE** page displays the Special Functions section.

### **Path for JPEG and video files**

1. Enter the path for the storage location of individual images and video sequences that you can save from the **LIVE** page.

2. If necessary, click **Browse** to find a suitable directory.

**Video file format**

Select a file format for the live page display. The MP4 format does not include metadata.

## 6 Camera

### 6.1 Installer Menu

#### Application Variant

- If you are connecting to MIC-ALM-WAS-24, select “[camera name] - IO” to allow the camera to recognize additional inputs and outputs from this device.
- If you are connecting to VJC-7000-90, select “[camera name] – VJC-7000” to allow the camera to recognize additional inputs and outputs from this device.
- Otherwise, select “[camera name].”

#### Base frame rate

This option allows you to set the frame rate that the camera uses to transmit video. Select either 25 ips or 30 ips. If you select 25 ips, the camera will stream video at 25 or 50 ips. If you select 30 ips, the camera will stream video at 30 or 60 ips, depending on the option selected in the Encoder Stream.

#### Max. frame rate

This option determines the maximum frame rate that the camera streams video. Select one of the following options: 25/30 fps (up to 1920 x 1080 px), 50/60 fps (up to 1280 x 720 px).

**Note:** This field appears only for dynamic camera models.



#### Notice!

Changing the Base frame rate or Max. frame rate

A change to the Base frame rate or to the Max. frame rate parameter requires approximately 10-20 seconds to complete. During this time, no changes can be made. The cameo image freezes.

#### Coordinate system

Select the appropriation option. Enter the appropriate additional values in the additional input fields that appear depending on the options selected. Refer to the following table.

Option	Additional Input field
Not set	
Cartesian	X [m] Y [m] Z [m] Azimuth [°]
WGS 84	Latitude Longitude Ground level [m] Azimuth [°]

The orientation of the camera. Options: Normal, Inverted, Canted.

#### SC settings

Click the Default button to restore all camera settings to their original defaults.

#### Reboot device

Click the Reboot button to reboot the camera. There is a ten (10) second pause before the camera starts its homing phase. During the homing phase, the camera will complete finding the upper and lower tilt limits.

**Factory defaults**

Click the **Defaults** button to restore the configuration settings defined in the camera's web server to their default values. A confirmation screen appears. Allow 5 seconds for the camera to optimize the picture after a mode reset.

**6.2****Encoder Profile**

For the video signal encoding, you can select a code algorithm and you can change the presets for the profiles.

You can adapt the video data transmission to the operating environment (for example network structure, bandwidth, data load). To this end, the camera simultaneously generates two data streams (Dual Streaming), which compression settings you can select individually, for example one setting for transmissions to the Internet and one for LAN connections.

Pre-programmed profiles are available, each giving priority to different perspectives.

You can change individual parameter values of a profile and you can also change the name.

You can switch between profiles by clicking the appropriate tabs.

**Caution!**

The profiles are rather complex. They include a large number of parameters that interact with one another, so it is generally best to use the default profiles.

Change the profiles only once you are fully familiar with all the configuration options.

**Note:** In the default setting, Stream 1 is transmitted for alarm connections and automatic connections.

**Notice!**

All parameters combine to make up a profile and are dependent on one another. If you enter a setting that is outside the permitted range for a particular parameter, the nearest permitted value will be substituted when the settings are saved.

**Profile name**

Default Profile name	Description
HD Image Optimized	For an HD image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
HD Balanced	For an HD image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
HD Bit Rate Optimized	For an HD image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.
SD Image Optimized	For an SD image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
SD Balanced	For an SD image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
SD Bit Rate Optimized	For an SD image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.

Default Profile name	Description
DSL Optimized	Ideal for encoding on a DSL uplink where bit rate limitations are critical.
3G Optimized	Ideal for encoding on a 3G uplink where bit rate limitations are critical.

If required, enter a new name for the profile.

**Target bit rate**

To optimize use of the bandwidth in the network, limit the data rate for the device. The target data 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- and P-frames, this fact 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 will be adjusted automatically.

**Encoding interval**

This parameter determines the interval at which images are encoded and transmitted. For example, entering or selecting 4 means that only every fourth image is encoded, while the following three are skipped, which can be particularly advantageous for networks with low bandwidths. The image rate in (images per second (ips)) appears next to the text field or slider.

**Video resolution**

Select the desired resolution for the video image.

**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 that 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 as possible.

Options are IP, IBP, and IBBP.

**Averaging period**

Select the appropriate averaging period as a means of stabilizing the long term bit rate.

**I-frame distance**

This parameter allows you to set the intervals in which the I-frames will be coded. Auto means auto mode, whereby the video server inserts I-frames as necessary. Values range from 3 to 60. An entry of 3 indicates that I-frames are continuously generated. An entry of 4 indicates that only every fourth image is an I-frame, and so on; the frames in between are coded as P-frames. Note that the values supported depend on the GOP structure setting. For example, only even values are supported with IBP; if you have selected IBBP, only 3 or multiples of 3 are supported.

**Min. P-frame QP**

This parameter allows you to adjust the image quality of the P-frame and to define the lower limit for the quantization of the P-frames, and thus the maximum achievable quality of the P-frames. In the H.264-protocol, the Quantization Parameter (QP) specifies the degree of compression and thus the image quality for every frame. The lower the quantization of the P-

frame (QP value), the higher the encoding quality (and thus the best image quality) and the lower the frame refresh rate depending on the settings for the maximum data rate under network settings. A higher quantization value results in low image quality and lower network load. Typical QP values are between 18 and 30.

The basic setting Auto automatically adjusts the quality to the settings for the P-frame video quality.

#### **I/P-frame delta QP**

This parameter sets the ratio of the I-frame quantization (QP) to the P-frame quantization (QP). For example, you can set a lower value for I-frames by moving the slide control to a negative value. Thus, the quality of the I-frames relative to the P-frames is improved. The total data load will increase, but only by the portion of I-frames. The basic setting Auto automatically adjusts to the optimum combination of movement and image definition (focus). To obtain the highest quality at the lowest bandwidth, even in the case of increased movement in the picture, configure the quality settings as follows:

1. Observe the coverage area during normal movement in the preview images.
2. Set the value for **Min. P-frame QP** to the highest value at which the image quality still meets your needs.
3. Set the value for **I/P-frame delta QP** to the lowest possible value. This is how to save bandwidth and memory in normal scenes. The image quality is retained even in the case of increased movement since the bandwidth is then filled up to the value that is entered under **Maximum bit rate**.

#### **Background delta QP**

Select the appropriate encoding quality level for a background region defined in Encoder Regions. The lower the QP value, the higher the encoding quality.

#### **Object delta QP**

Select the appropriate encoding quality level for an object region defined in Encoder Regions. The lower the QP value, the higher the encoding quality.

#### **Default**

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

## 6.3 Encoder Streams

Note: If you access this menu while the camera is recording, the following message appears at the top of the page:

Recording is currently active. Therefore, for 'Current profile' the respective stream profile selected for recording is displayed for information.

#### **Property**

Select one of the H.264 standards for each stream.

The table below identifies the options available in the field **Property** for Stream 1 and the available options in the field **Property** for Stream 2, depending on the options selected for Stream 1.

**Note:** In order to select the option "H.264 MP 720p50/60 fixed" here, you must first set the field **Max. frame rate** in Camera > Installer Menu to "50/60 fps (up to 1280 x 720 px)."

When the option in field “Property” for Stream 1 is:	The available options in field “Property” for Stream 2 are:
H.264 MP SD	- H.264 MP SD
H.264 MP 720p fixed	- H.264 MP SD - H.264 MP 720p fixed - H.264 MP 400x720 upright (cropped) - H.264 MP D1 4:3 (cropped) - H.264 MP 1280x960 (cropped)* - H.264 MP 640x480
H.264 MP 1080p fixed*	- Copy Stream 1* - H.264 MP SD* - H.264 MP 720p8/10 fixed* - H.264 MP 1080p4/5 fixed* - H.264 MP 400x720 upright (cropped)* - H.264 MP D1 4:3 (cropped)* - H.264 MP 640x480
H.264 MP 720p50/60 fixed	- Copy Stream 1* - H.264 MP SD* - H.264 MP 720p6/7 fixed* - H.264 MP 400x720 upright (cropped)* - H.264 MP D1 4:3 (cropped)* - H.264 MP 640x480
*This option is available for dynamic (1080p) models only.	

**Non-recording profile**

Select one of the following profiles for each stream:

Default Profile name	Description
HD Image Optimized	For an HD image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
HD Balanced	For an HD image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
HD Bit Rate Optimized	For an HD image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.
SD Image Optimized	For an SD image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
SD Balanced	For an SD image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
SD Bit Rate Optimized	For an SD image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.

Default Profile name	Description
DSL Optimized	Ideal for encoding on a DSL uplink where bit rate limitations are critical.
3G Optimized	Ideal for encoding on a 3G uplink where bit rate limitations are critical.

**Note:** Non-recording profiles (streams) are I-frame only.

#### JPEG stream

Select the resolution, frame rate, and image quality parameters for the M-JPEG stream.

- **Resolution:** Select the appropriate resolution.
- **Max. frame rate:** Select one of the following frame rates to be the maximum: 5, 10, 15, 20, 25, or 30 ips.
- **Picture quality:** This setting allows you to adjust the image quality. Use the slide bar to choose a quality between Low and High.

**Note:** The M-JPEG frame rate can vary depending on system loading.

## 6.4 Encoder Regions

User can configure encoding regions for every configured preset (preposition/scene), to increase or decrease the encoding quality for selectable areas of the video image. These regions give better control of the bit rate. Important parts of the scene (identified as objects in the GUI) are encoded at high resolution and therefore have an enhanced encoding quality. Less important parts (such as the sky and trees in the background, all identified as backgrounds in the GUI) are encoded at lower quality and therefore have a decreased encoding quality.

Eight encoder regions can be defined. To define encoder regions, follow these steps.

1. From the first drop-down box (the unlabeled Regions selection list), select one of the eight available regions. (The drop-down box has the default option of **Region 1**).
2. Click the + box to add an area.
3. Use the mouse to define the area (shape) that the region covers and to position the area (shape) in the preview of the video image.
  - Drag the center, corner points, or sides of the shaded area (shape).
  - Double-click a side to add additional points to the area (shape).
4. From the last drop-down box (the unlabeled Mode selection list), select the encoder quality for the defined area. (The drop-down box has the default option of *Default*).  
For *unimportant* parts of the video image, select **Background**.  
For *important* parts of the video image, select **Object**.  
(The quality levels for **Background** and for **Object** are defined in the **Expert Settings** section of the page **Encoder Profile**.)
5. For PTZ cameras: From the second drop-down box (the unlabeled Prepositions/Scenes selection list), select a Preposition/Scene to which to add the region. (The drop-down list is *blank* by default unless you have defined at least one scene, in which case the default is **Preposition 1** or the custom name for the preposition).  
**Note:** If you have not yet defined any prepositions/scenes, refer to Prepositions and Tours.
6. If required, select another region and repeat the steps.
7. To remove a region, select the area and click the waste bin icon.
8. Click **Set** to apply the region settings.

## 6.5 Privacy Masks

Privacy Masking is used to block out a specific area of a scene from being viewed. Masks can be configured as a gray area with four corners. You may define a total of 24 privacy masks.

### Pattern

Select the color of the mask as it will appear in live video: **Gray**

### Privacy mask

Select the number of the privacy mask. A colored rectangle appears in the unlabeled video preview window above the **Set** button.

3. Navigate to the scene where the privacy mask is required.

4. Use the Zoom controls to zoom in so that the object to be covered is approximately the same size as the Mask Outline.

5. Use the Pan/Tilt controls to center the object inside the Mask Outline.

**Note:** Do not move the mask outline at this time. It should remain in the center of the preview window.

6. If required, place the cursor on a corner or on a vertex of the mask rectangle, and then click and drag to expand or to shrink the Mask Outline.

- To avoid hiding too much of the scene, don't expand the mask outline more than twice the default size.

- To provide the optimum mask performance, don't shrink the mask outline to less than half of the default size.

7. Click the **Enabled** check box to activate the privacy mask.

8. Move the privacy mask if desired. Place the cursor inside the privacy mask area in the preview window and then click and drag to move the privacy mask. **Note:** Keep it as close to the center of the Preview Window as possible.

9. Click SET to save the size and the position of the privacy mask.

10. The mask expands by 10% for a few seconds to illustrate how much the mask size will increase during Pan/Tilt movement.

11. To hide an individual mask, select the mask number and clear the Enabled check box.

12. To hide all masks from an image view, click the Disable Masks check box.

Note: If you choose to hide all masks, you must enable each individual mask to show the mask in the scene.

13. To display IVA behind privacy masks, click the IVA behind masks check box.



### Notice!

Draw the mask 10% larger than the object to ensure that the mask completely covers the object as the camera zooms in and out. Click the check box **Zoom threshold**.

Draw the mask at 50% optical zoom or less for improved masking performance.



### Notice!

The camera disables the Privacy Mask feature if the orientation of the camera is set to Inverted. Refer to Installer Menu for orientation settings.



### Notice!

When MIC is canted, Privacy Masks should not be created for scene objects less than 2 m (6 feet) distance from camera.

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## 6.6 Picture Settings

### Current mode

Select one of the pre-programmed user modes, optimized with the best settings for a variety of typical applications, that best defines the environment in which the camera is installed.

- General – Default mode. Suitable for most applications.
- Motion – Optimized to minimize motion artifacts, such as when monitoring traffic or fast-moving objects.
- Low light – Optimized performance for scenes with low light level.
- Indoor – Optimized for scenes with indoor lighting, and avoids the limitations imposed by the sun or street lighting.
- Vibrant – Provides enhanced contrast, color reproduction, and sharpness.
- Illuminator – Optimized performance when using the MIC illuminator accessory.

Customize the mode, if necessary, for the specific requirements of the site by selecting different values for the fields below.

### White Balance

Adjusts the color settings to maintain the quality of the white areas of the image.

- **ATW:** allows the camera to continuously adjust color reproduction.
- **AWB Hold:** places the ATW on hold and saves the color settings.
- **Extended ATW (default):** allows the camera to constantly adjust for optimal color reproduction.
- **Manual:** Red and Blue gain can be manually set to a desired position.
- **Sodium Lamp Auto:** Automatically adjusts for sodium vapor light to restore objects to their original color.
- **Sodium Lamp:** Optimizes the sodium vapor light to restore objects to their original color.

### Red Gain

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

### Blue 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.

### Sodium red level

Adjust the level of red for sodium vapor lighting with the slider from 0 to 255.

### Sodium blue level

Adjust the level of blue for sodium vapor lighting with the slider from 0 to 255.

Note: The fields **Sodium red level** and **Sodium blue level** appear only when the value in the field **White balance** is “Sodium lamp auto” or “Sodium lamp.”

### Saturation

The percentage of light or color in the video image (HD only). Values range from 60% to 200%; the default is 110%.

### Color hue

The degree of color in the video image (HD only). Values range from -14° to 14°; the default is 8°.

Select **On** to activate intelligent Dynamic Noise Reduction (DNR) which reduces noise based on motion and light levels.

### Gain control

Adjusts the automatic gain control (AGC).

- **AGC** (default): Automatically adjusts the gain to the lowest possible value needed to maintain a good picture.
- **Fixed**: no enhancement. This setting disables the Max. Gain Level option.

#### **Fixed Gain**

Use the slide to select the desired number for fixed gain. The default is 2.

#### **Maximum Gain Level**

Controls the maximum value the gain can have during AGC operation. To set the maximum gain level, choose from:

- **Normal**
- **Medium**
- **High** (default)

#### **AE-response speed**

Select the speed of the response of auto exposure. Options are Super slow, Slow, Medium (default), Fast.

#### **Sharpness**

Adjusts the sharpness of the picture. To set the sharpness, use the slider to select a number. The default is 12.

#### **Shutter Mode**

- **Fixed**: The shutter mode is fixed to a selectable shutter speed.
- **Automatic exposure**: increases camera sensitivity by increasing the integration time on the camera. This is accomplished by integrating the signal from a number of consecutive video frames to reduce signal noise.  
If you select this option, the camera disables **Shutter** automatically.

#### **Shutter**

Adjusts the electronic shutter speed (AES). Controls the time period for which light is gathered by the collecting device. The default setting is 1/60 second for NTSC and 1/50 for PAL cameras. The range of settings is from 1/1 to 1/10000.

#### **Maximum automatic exposure**

This limits the integration time when Frame Integration is active. The default is 1/4. The range of settings is from 1/4 to 1/30.

#### **Top shutter speed**

The camera tries to hold this shutter value as long as sufficient ambient light is available in the scene.

Settings range from 1/60 to 1/10000. The default value is 1/10000 for all modes except 'Motion' (default 1/500).

#### **Backlight compensation**

Optimizes the video level for the selected area of the image. Parts outside this area may be underexposed or overexposed. Select On to optimize the video level for the central area of the image. The default setting is Off.

#### **High Sensitivity**

Adjusts the level of intensity or lux within the image (HD only). Select from Off or On.

#### **Stabilization**

Stabilization reduces camera shake in both the vertical and horizontal axis. The camera compensates for the movement of the image by up to 2% of the image size. This feature is ideal for cameras mounted on a pole or mast, or on another location that shakes frequently.

- **On** - Stabilization is always on.
- **Off** - Stabilization is disabled.
- **Auto** - Stabilization activates automatically when the camera detects vibration greater than the set threshold.

**High dynamic range**

Select On to activate wide dynamic range, which improves image reproduction in extreme high-contrast scenes.

Select Off to deactivate the feature.

**Night mode**

Selects night mode (B/W) to enhance lighting in low light scenes. Select from the following options:

- **Monochrome:** Forces the camera to stay in Night Mode and transmit monochrome images.
- **Color:** The camera does not switch to Night Mode regardless of ambient light conditions.
- **Auto (default):** The camera switches out of Night Mode after the ambient light level reaches a pre-defined threshold.

**Night mode threshold**

Adjusts the level of light at which the camera automatically switches out of night mode (B/W) operation. Select a value between 10 and 55 (in increments of 5; default 30). The lower the value, the earlier the camera will switch to color mode.

**Night mode priority**

Select the option to which the camera should give priority while in night mode:

- Motion
- Color (default)

**Night mode shutter**

Controls the time period for which light is gathered by the collecting device while in night mode. Values are  $\frac{1}{4}$ ,  $\frac{1}{8}$ ,  $\frac{1}{15}$ , and  $\frac{1}{30}$ ; the default is  $\frac{1}{15}$ .

**Noise Reduction**

Turns on the 2D and 3D noise reduction feature.

**Noise Reduction Level**

Adjusts the noise level to the appropriate level for shooting conditions. Select a value between 1 and 5.

**Intelligent Defog**

With the Defog mode feature, visibility can be improved significantly when viewing foggy or other low-contrast scenes.

- **On** - Defog is always active.
- **Off** - Defog is disabled.
- **Auto** - Defog activates automatically as needed.

## 6.7

### Lens Settings

**Autofocus**

Continuously adjusts the lens automatically to the correct focus for the sharpest picture.

- **One Push** (default; commonly called “Spot Focus”): activates the Auto Focus feature after the camera stops moving. Once focused, Auto Focus is inactive until the camera is moved again.
- **Auto Focus:** Auto Focus is always active.
- **Manual:** Auto Focus is inactive.

**Warning!**

For tours, save presets using One Push (“Spot Focus”).

**Focus speed**

Use the slider (from 1 to 8) to control how fast the Auto focus will readjust when the focus becomes blurred.

### IR focus correction

Optimizes the focus for IR lighting. Options are: On, Off (default).

### Auto iris

Automatically adjusts the lens to allow the correct illumination of the camera sensor. This type of lens is recommended for use where there are low light or changing light conditions.

- **Constant** (default): camera constantly adjusts to varying light conditions (default).  
If you select this option, the camera makes the following changes automatically:
  - **Gain Control:** switches to AGC.
  - **Shutter Speed:** switches to default.
- **Manual:** camera must be manually adjusted to compensate for varying light conditions.

### Auto iris level

Increases or decreases brightness according to the amount of light. Type a value between 1 and 15.

### Maximum zoom speed

Controls the zoom speed.

### Zoom limit

Select the appropriate limit for zooming the camera: 20x, 30x.

### Digital zoom

Digital zoom is a method of decreasing (narrowing) the apparent angle of view of a digital video image. It is accomplished electronically, without any adjustment of the camera's optics, and no optical resolution is gained in the process. Select Off to disable or Standard to enable this feature. The default setting is Standard.

## 6.8

## PTZ Settings

### Auto pan speed

Continuously pans the camera at a speed between right and left limit settings. Type a value between 1 and 60 (expressed in degrees), inclusive. The default setting is 30.

### Inactivity

Selects the time period the dome must be not controlled until the inactivity event will be executed.

- **Off** (default): camera remains on a current scene indefinitely.
- **Scene 1:** camera returns to Preset 1.
- **Previous Aux:** camera returns to the previous activity.

### Inactivity period

Determines the behavior of the dome when the control for dome is inactive. Select a time period from the pull-down list (3 sec. - 10 min.). The default setting is 2 minutes.

### Auto pivot

The Auto pivot tilts the camera through the vertical position as the camera is rotated to maintain the correct orientation of the image. Set the Auto Pivot to On (default) to automatically rotate the camera 180° when following a subject traveling directly beneath the camera. To disable this feature, click Off.

### Freeze frame

Select On to freeze the image while the camera moves to a predetermined scene position.

### Max. PT speed [%]

Sets the maximum pan/tilt speed (in percent). Settings range from 1 to 100. The default is 100.

**Tracking zoom-out limit [%]**

This parameter defines the zoom ratio percentage to which the camera zooms out after Tracking idle time [s] stops tracking, or if Intelligent Tracking loses visibility of an object being tracked. This allows the camera to re-acquire the target in a new, wider FoV. Settings range from 0 to 100. The default is 50.

**Tracking idle time [s]**

This parameter allows the camera to stop tracking motion of certain objects, such as a tree or a flag swaying in the wind, in a confined area after the specified number of seconds. Settings range from 5 to 120. The default is 30.

**Auto pan left limit**

Sets the left Auto Pan limit of the camera. Use the preview window to move the camera to the left pan limit and click the button. The camera will not move past this limit when in Auto Pan Between Limits mode (AUX 2 ON).

**Auto pan right limit**

Sets the right Auto Pan limit of the camera. Use the preview window to move the camera to the right pan limit and click the button. The camera will not move past this limit when in Auto Pan Between Limits mode (AUX 2 ON).

**Notice!**

Possible unintended camera operation

When setting hard pan limits, ensure that you set the left limit and the right limit at least 10° apart. Pan limits of less than 10° apart could prevent the camera from operating properly.

**Tilt up limit**

Sets the upper tilt limit of the camera. Use the preview window to move the camera to the tilt limit and click the button.

**Tour A / Tour B**

Starts and stops the recording of a recorded (guard) tour.

The camera can make up to two (2) recorded tours. A recorded tour saves all manual camera movements made during the recording, including its rate of pan, tilt and zoom speeds, and other lens setting changes. The tour does not capture camera video during the recording of the tour.

**Note 1:** You can save a total of 15 minutes of recorded actions between the two tours.

To record a tour:

1. Click the Start Recording button. The system prompts you to overwrite the existing tour.
2. Click Yes to overwrite the existing tour movements.
3. Click the View Control link, under the image cameo, to access the directional and zoom controls.
4. Use the View Control dialog box to make the necessary camera movements.
5. Click the Stop Recording button to save all actions.

You must first calibrate the camera to North before the camera displays accurate compass headings. The camera uses this calibration, usually set to magnetic North, as the zero degree pan position and as the North compass heading. The camera then displays the compass heading based on the number of degrees from the North calibration point.

To set the North calibration point:

1. Determine the North compass heading, then move the camera to that position.
2. Select the radio button **On** for the parameter **Compass**.
3. Click the button next to **North point** to set the calibration point.

**North point**

- Click the **Set** button to overwrite the existing **North point**. A dialog box appears with the message, “Overwrite **North point**?” To confirm, click **OK**. To cancel, click **Cancel**.
- Click the **Clear** button to reset the **North point** to factory defaults. A dialog box appears with the message, “Reset **North point** to factory defaults?” To confirm, click **OK**. To cancel, click **Cancel**.

## 6.9 Prepositions and Tours

The camera can store up to 256 preset scenes. You can define the individual scenes that comprise a **preposition tour**.

You define individual preposition scenes, then use these scenes to define the preposition tour. The tour starts from the lowest scene number in the tour and progresses sequentially to the highest scene number in the tour. The tour displays each scene for a specified dwell time before advancing to the next scene.

By default, all scenes are part of the preposition tour unless removed.

**White light (marked with #)**

Select this checkbox to include white light in the scene.

**To define a preposition tour:**

1. Create the individual prepositions.  
By default, all scenes in the list **Prepositions** are in the preposition tour.
2. To remove a preposition from the tour, select the preposition in the list and uncheck the box **Include in standard tour (marked with \*)**.
3. Select a dwell time from the drop-down list **Standard preposition tour**.
4. To start the preposition tour:  
Return to the **Live** page.  
Click **AUX Control**.  
Type **8** in the input box and click **AUX on**.
5. To stop the tour, type **8** and click **AUX off**.

## 6.10 Preposition mapping

Preposition mapping allows you to map a function to a Show or Set action.

**Action**

Select the appropriate action: Show or Set.

**Preposition**

Enter the number of the preposition to map.

**Function**

Select the appropriate function from the drop-down list.

Function	Description
Start auto pan	
Start auto pan with limit	
Stop auto pan	
Start custom tour	
Stop custom tour	
Start tour	
Stop tour	

Function	Description
Start playback A	
Stop playback A	
Start playback B	
Stop playback B	
Compass on	
Compass off	
Azimuth on	
Azimuth off	
Stabilization auto	
Stabilization on	
Stabilization off	
WDR auto	
WDR on	
WDR off	
Night mode auto	
Night mode on	
Night mode off	
Gamma mode on	
Gamma mode off	
Gamma mode smart 1	
Gamma mode smart 2	
Gamma mode smart 3	
IR focus correction on	
IR focus correction off	
OSD feedback on	
OSD feedback off	
IR mode on	
IR mode off	
IR mode auto	
Visible light on	
Visible light off	
Visible light inhibit on	
Visible light inhibit off	

Function	Description
Auto tracker on	
Auto tracker off	
Privacy mask on	
Privacy mask off	
Acknowledge alarms	
Wiper continuous	
Wiper intermittent	
Wiper on shot	
Wiper off	

## 6.11 Sectors

### Sector

The camera's pan capability is 360° and is divided into 16 equal sectors. This section allows you to apply a title for each sector and to designate any sectors as a Blanked Sector.

#### To define a title for sectors:

1. Place the cursor in the input box to the right of the sector number.
2. Type a title for the sector, up to 20 characters long.
3. To blank the sector, click the check box to the right of the sector title.

### No white light

Specifically for MIC cameras using the IR/White light illuminator:

Select this check box to prevent activation of the White light illuminator in the corresponding sectors, such as those which include highways / roads where White light might create a hazardous situation such as blinding a driver.

When this check box is selected, no White lights will activate for Presets stored in the corresponding sector.

## 6.12 Miscellaneous

### Fast address

This parameter allows the appropriate camera to be operated via the numerical address in the control system. Enter a number between 0000 and 9999, inclusive, to identify the camera.

## 6.13 Illumination/Wiper

The default intensity for illumination (both IR and White light) is 33%.

### IR Illuminators

Controls IR illuminators. When ON, the camera gives a much better image at low light levels. Options are: On, Off, Auto.

### IR intensity

Select the percentage of intensity of the infrared (IR) light.

### No white light

Select On to disable the white light illuminators. The options in the field **White light illuminators** are disabled.

Select Off to enable white light illuminators.

**White light illuminators**

Select On to turn on the White light illuminators.

Select Off to turn off the White light illuminators.

**White light intensity**

Select the degree of intensity of the White light.

**White light timeout**

Select On to enable a timeout for the White light feature.

Select Off to disable the timeout.

The timeout turns OFF the white lights, after they have been ON but idle for some time, to help to retain the life of the LEDs.

**White light timeout [min]**

Select the number of minutes (from 1 to 30) after which the White light will turn off after activation.

**Wiper**

Controls the wiper of the MIC cameras. Options are:

- Off: Turns off the wiper.
- On: Wiper wipes continuously until deactivated manually, or until it has been on for five minutes (after which the camera will stop the wiper automatically).
- Intermittent: Wipes twice, then stops. Every 15 seconds, this cycle repeats until users select another option in this field.
- One shot: Wipes five times, then turns off.

**Wiper/washer**

Click Start to start the wiper/washer. Click Stop to stop the wiper/washer.

## 6.14

### Audio

**Audio**

You can set the gain of the audio signals to suit your specific requirements. The live video image is shown in the window to help you check the audio source. Your changes are effective immediately.

If you connect via Web browser, you must activate the audio transmission on the '**Live' functions** page. For other connections, the transmission depends on the audio settings of the respective system.

The audio signals are sent in a separate data stream parallel to the video data, and so increase the network load. The audio data is encoded according to the selected format and requires additional bandwidth. If you do not want any audio data to be transmitted, select **Off**.

## 6.15

### Pixel Counter

The number of horizontal and vertical pixels covered by the highlighted area is displayed below the picture. With these values you can check whether the requirements for specific functions, for example, identification tasks, are fulfilled.

1. Click **Freeze** to freeze the camera image if the object that you want to measure is moving.
2. To reposition a zone, place the cursor over the zone, hold down the mouse button and drag into position.
3. To change the shape of a zone, place the cursor over the edge of the zone, hold down the mouse button and drag the edge of the zone to the required position.

## 6.16

### Pelco AUX map

Pelco controller keyboards (that support Pelco protocols D and P) support 8 different auxiliaries (AUX On/OFF commands), but do not define what function each AUX should perform.

For MIC7000 cameras controlled by Pelco controller keyboards, users can remap a total of 8 common control commands to Pelco AUX commands. To accomplish this, a third-party serial protocol license is required.

**Scene 99**

Select Scan 360° or Auto pan.

**Pelco AUX number**

Select a Pelco AUX *number* field to map, and then select the appropriate command from the drop-down list.

AUX Command	Description
Wash/wipe	
Wiper one shot	
Wiper continuous	
Wiper intermittent	
IR mode	
BLC	
AGC	
Night mode	
Night mode auto	
Alarm output 1	
Alarm output 2	
Alarm output 3	
Alarm output 4	
White light	
Intelligent defog	
Intelligent tracking	

**Serial mode**

Select Simplex or Full-duplex.

## 7 Recording

### 7.1 Storage Management

You can record the images from the camera on an appropriately configured iSCSI system. It is also possible to let the VRM Video Recording Manager control all recording with accessing an iSCSI system. This is an external program for configuring recording tasks for video servers. For further information please contact your local customer service at Bosch Security Systems Inc.

#### 7.1.1 Device manager

An external Video Recording Manager (VRM) system for the unit is configured via the Configuration Manager. The **Managed by VRM** box is only an indicator; it cannot be changed here.

If the **Managed by VRM** box is checked, you are not able to configure any further recording settings on this page.

#### 7.1.2 Recording media

Select a media tab to connect to the available storage media.

##### iSCSI Media

To use an **iSCSI system** as the storage medium, a connection to the desired iSCSI system is required to set the configuration parameters.

The storage system selected must be available on the network and completely set up. It must have an IP address and be divided into logical drives (LUNs).

1. Enter the IP address of the required iSCSI destination in the **iSCSI IP address** field.
2. If the iSCSI destination is password protected, enter the password into the **Password** field.
3. Click **Read**.
  - The connection to the IP address is established.

The **Storage overview** field displays the logical drives.

##### Local Media

An SD card inserted in the camera can be used for local recording (not available on some cameras).

- ▶ If the SD card is password protected, enter the password into the **Password** field.

The **Storage overview** field displays the local media.

##### Note:

SD card recording performance is highly dependent on the speed (class) and performance of the SD card. An SD card of Class 6 or higher is recommended.

#### 7.1.3 Activating and configuring storage media

Available media or iSCSI drives must be transferred to the **Managed storage media** list, activated, and configured for storage.

##### Note:

A iSCSI target storage device can only be associated with one user. If a target is being used by another user, ensure that the current user no longer needs the target before decoupling that user.

1. In the **Storage overview** section, double-click a storage medium, an iSCSI LUN or one of the other available drives.
  - The medium is added as a target in the **Managed storage media** list.
  - Newly added media is shown as **Not active** in the **Status** column.
2. Click **Set** to activate all media in the **Managed storage media** list.
  - The **Status** column shows all media as **Online**.
3. Check the box in the **Rec. 1** or **Rec. 2** column to specify the recording tracks to be recorded on the target selected.

### 7.1.4 Formatting storage media

All recordings on a storage medium can be deleted at any time. Check the recordings before deleting and back-up important sequences on the computer's hard drive.

1. Click a storage medium in the **Managed storage media** list to select it.
2. Click **Edit** below the list.
3. Click **Format** in the new window to delete all recordings in the storage medium.
4. Click **OK** to close the window.

### 7.1.5 Deactivating storage media

A storage medium in the **Managed storage media** list can be deactivated. It is then no longer used for recordings.

1. Click a storage medium in the **Managed storage media** list to select it.
2. Click **Remove** below the list. The storage medium is deactivated and removed from the list.

## 7.2 Recording Profiles

A recording profile contains the characteristics of the tracks that are used for recording. These characteristics can be defined for ten different profiles. The profiles can then be assigned to days or times of day on the **Recording Scheduler** page.

Each profile is color-coded. The names of the profiles can be changed on the **Recording Scheduler** page.

To configure a profile click its tab to open its settings page.

- To copy the currently visible settings to other profiles, click **Copy Settings**. A window opens to select the target profiles for the copied settings.
- If you change a profile's settings, click **Set** to save.
- If necessary, click **Default** to return all settings to their factory defaults.

#### Stream profile settings

Select the encoder profile setting that is to be used with stream 1 and 2 when recording. This selection is independent of the selection for live stream transmission. (The properties of the encoder profiles are defined on the **Encoder Profile** page.)

#### Recording includes

You can specify whether, in addition to video data and metadata (for example alarms, VCA data and serial data) should also be recorded. Including metadata could make subsequent searches of recordings easier but it requires additional memory capacity.



#### Caution!

Without metadata, it is not possible to include video content analysis in recordings.

**Standard recording**

Here you can select the mode for standard recordings.

If you select **Continuous**, the recording proceeds continuously. If the maximum memory capacity is reached, older recordings will automatically be overwritten. If you select the **Pre-alarm** option, recording will only take place in the pre-alarm time, during the alarm and during the set post-alarm time.

If you select **Off**, no automatic recording takes place.

**Caution!**

You can specify limitations for overwriting older recordings in **Continuous** mode by configuring the retention time (see Retention Time).

**Stream**

Select the stream to be used for standard recordings:

- Stream 1
- Stream 2
- I-frames only

**Alarm recording****Pre-alarm time**

You can select the required pre-alarm time from the list field.

**Post-alarm time**

You can select the required post-alarm time from the list field.

**Alarm stream**

Select the stream to be used for alarm recordings:

- Stream 1
- Stream 2
- I-frames only

**Encoding interval and bit rates from profile**

Select this checkbox and then select an encoder profile to set the associated encoding interval for alarm recording.

**Alarm triggers****Alarm input / Analysis alarm / Video loss**

Here you can select the alarm sensor that is to trigger a recording.

**Virtual alarm**

Here you can select the virtual alarm sensors that are to trigger a recording, via RCP+ commands or alarm scripts, for example.

**Notice!**

For more information, please see the Alarm Task Script Language document and the RCP+ documentation. For the latest version of these documents access your Bosch product catalog on the Internet.

**Export to account**

Select this parameter if you want all alarm recordings to be exported to an FTP server automatically. Make sure to have inserted all relevant data for FTP posting.

**7.3****Maximum Retention Time**

Recordings are overwritten when the retention time entered here has expired.

- ▶ Enter the required retention time in days for each recording track.

Make sure that the retention time does not exceed the available recording capacity.

## 7.4 Recording Scheduler

The recording scheduler allows you to link the created recording profiles with the days and times at which the camera's images are to be recorded in the event of an alarm.

You can link any number of 15-minute intervals with the recording profiles for each day of the week. Moving the mouse cursor over the table displays the time below it. This aids orientation. In addition to the normal weekdays, you can define holidays that are not in the standard weekly schedule on which recordings are to apply. This allows you to apply a schedule for Sundays to other days with dates that fall on varying weekdays.

1. Click the profile you want to link in the **Time periods** field.
2. Click in a field in the table, hold down the mouse button and drag the cursor over all the periods to be assigned to the selected profile.
3. Use the right mouse button to deselect any of the intervals.
4. Click the **Select All** button to link all time intervals to the selected profile.
5. Click the **Clear All** button to deselect all of the intervals.
6. When you are finished, click the **Set** button to save the settings in the unit.

### Holidays

You can define holidays that are not in the standard weekly schedule on which recordings are to apply. This allows you to apply a schedule for Sundays to other days with dates that fall on varying weekdays.

1. Click the **Holidays** tab. Any days that have already been selected will be shown in the table.
2. Click the **Add** button. A new window will open.
3. Select the desired date from the calendar. You can select several consecutive calendar days by holding down the mouse button. These will later be displayed as a single entry in the table.
4. Click **OK** to accept the selection. The window will close.
5. Assign the individual holidays to the recording profiles, as described above.

### Deleting Holidays

You can delete holidays you have defined yourself at any time.

1. Click the **Delete** button. A new window will open.
2. Click the date you wish to delete.
3. Click **OK**. The item will be deleted from the table and the window will close.
4. The process must be repeated for deleting additional days.

### Time periods

You can change the names of the recording profiles.

1. Click a profile and then the **Rename** button.
2. Enter your chosen name and then click the **Rename** button again.

### Activating the Recording

After completing configuration you must activate the recording scheduler and start the recording. Once recording is underway, the **Recording Profiles** and **Recording Scheduler** pages are deactivated and the configuration cannot be modified.

You can stop the recording activity at any time and modify the settings.

1. Click the **Start** button to activate the recording scheduler.
2. Click the **Stop** button to deactivate the recording scheduler. Running recordings are interrupted and the configuration can be changed.

**Recording status**

The graphic indicates the recording activity of the camera. You will see an animated graphic while recording is taking place.

**7.5****Recording Status**

Details of the recording status are displayed here for information. These settings cannot be changed.

## 8 Alarm

### 8.1 Alarm Connections

You can select how the camera responds to an alarm. In the event of an alarm, the unit can automatically connect to a pre-defined IP address. You can enter up to ten IP addresses to which the camera will connect in sequence in the event of an alarm, until a connection is made.

#### Connect on alarm

Select **On** so that the camera automatically connects to a predefined IP address in the event of an alarm.

By setting **Follows input 1** the unit maintains the connection that has been automatically established for as long as an alarm exists on alarm input 1.



#### Notice!

In the default setting, Stream 2 is transmitted for alarm connections. Bear this fact in mind when assigning the profile (see Encoder Profile).

#### Number of destination IP address

Specify the numbers of the IP addresses to be contacted in the event of an alarm. The unit contacts the remote stations one after the other in the numbered sequence until a connection is made.

#### Destination IP address

For each number, enter the corresponding IP address for the desired remote station.

#### Destination password

If the remote station is password protected, enter the password here.

In this page, you can save a maximum of ten destination IP addresses and hence up to ten passwords for connecting to remote stations. If connections to more than ten remote stations are to be possible, for example when initiating connections via higher-ranking systems such as VIDOS or Bosch Video Management System, you can store a general password here. The camera can use this general password to connect to all remote stations protected with the same password. In this case, proceed as follows:

1. Select **10** from the **Number of destination IP address** list field.
2. Enter the address **0.0.0.0** in the **Destination IP address** field.
3. Enter your chosen password in the **Destination password** field.
4. Define this password as the **user** password for all remote stations to which a connection is to be possible.



#### Notice!

If you enter the destination IP address 0.0.0.0 for destination 10, this address will no longer be used for the tenth attempt at automatic connection in the event of an alarm. The parameter is then used only to save the general password.

#### Video transmission

If the unit is operated behind a firewall, select **TCP (HTTP port)** as the transfer protocol. For use in a local network, select **UDP**.

**Caution!**

Please note that in some circumstances, a larger bandwidth must be available on the network for additional video images in the event of an alarm, in case Multicast operation is not possible. To enable Multicast operation, select the **UDP** option for the **Video transmission** parameter here and on Network Access.

**Stream**

Select the number of the stream from the drop-down list.

**Remote port**

Depending on the network configuration, select a browser port here. The ports for HTTPS connections will be available only if the **On** option is selected in the **SSL encryption** parameter.

**Video output**

If you know which unit is being used as the receiver, you can select the analog video output to which the signal should be switched. If the destination unit is unknown, it is advisable to select the **First available** option. In this case, the image is placed on the first free video output. This is an output on which there is no signal. The connected monitor only displays images when an alarm is triggered. If you select a particular video output and a split image is set for this output on the receiver, you can also select from **Decoder** the decoder in the receiver that is to be used to display the alarm image.

**Notice!**

Refer to the destination unit documentation concerning image display options and available video outputs.

**Decoder**

Select a decoder of the receiver to display the alarm image. The decoder selected has an impact on the position of the image in a split screen. For example, you can specify via a VIP XD that the upper-right quadrant should be used to display the alarm image by selecting decoder 2.

**SSL encryption**

The data for the connection, for example the password, can be securely transmitted with SSL encryption. If you have selected the **On** option, only encrypted ports are offered in the **Remote port** parameter.

**Notice!**

Please note that the SSL encryption must be activated and configured at both ends of a connection. This requires the appropriate certificates to be uploaded onto the camera.

You can activate and configure encryption of the media data (video and metadata) on the **Encryption** page (see Encryption).

**Auto-connect**

Select the **On** option to automatically re-establish a connection to one of the previously specified IP addresses after each reboot, after a connection breakdown or after a network failure.

**Notice!**

In the default setting, Stream 2 is transmitted for automatic connections. Bear this fact in mind when assigning the profile (see Encoder Profile).

### Audio

Select On to activate audio alarms.

## 8.2

### VCA

The camera has integrated video content analysis (VCA), which can detect and analyze changes in the signal on the basis of image processing. Such changes can be due to movements in the camera's field of view. You can select various VCA configurations and adapt these to your application as required.

#### Intelligent Dynamic Noise Reduction (IDNR)

IVA / VCA controls the IDNR feature, which reduces noise based on motion activity in the scene. When there is no motion in the preset scene, noise reduction is increased. When there is motion detected in the preset scene, noise reduction is decreased to reduce bandwidth and optimize storage space.

To disable the IDNR feature, select the OFF option in the **VCA configuration** field.

To enable the IDNR feature, select a Profile # (1 – 16) or Silent VCA in the **VCA configuration** field. If you select a specific profile, you must also select MOTION+ in the **Analysis Type** field.

#### VCA Profiles

You can configure two profiles with different VCA configurations. You can save profiles on your computer's hard drive and load saved profiles from there. This can be useful if you want to test a number of different configurations. Save a functioning configuration and test new settings. You can use the saved configuration to restore the original settings at any time.



#### Notice!

If computing power becomes short, the highest priority is always the live images and recordings. This can lead to impairment of the video content analysis. You should therefore observe the processor load and optimize the encoder settings or the video content analysis settings as necessary.

1. Select a VCA profile and enter the required settings.
2. If necessary, click the **Default** button to return all settings to their default values.
3. Click the **Save...** button to save the profile settings to another file. A new window is opened, in which you can specify where you want to save the file and what name you want to save it under.
4. Click the **Load...** button to load a saved profile. A new window opens in which you can select the profile file and specify where to save the file.

#### VCA configuration

Select one of the profiles here to activate it or edit it.

You can rename the profile.

1. To rename the file, click the icon to the right of the list field and enter the new profile name in the field.
2. Click the icon again. The new profile name is saved.

The Silent MOTION+ Configuration is active by default. In this configuration, metadata is created to facilitate searches of recordings; however, no alarm is triggered.

If you select the option Silent VCA, then the system creates metadata to facilitate searches of recordings but no alarm is triggered. You cannot change any parameters for this configuration. If you want to turn off VCA, then select Off.

#### Preset

Select Off or Test.

**Alarm status**

The alarm status is displayed here for information purposes. This means you can check the effects of your settings immediately.

**Aggregation times**

Use the slider (from 0 (zero) to 20 (0 is the default) to select the aggregation times.

Set an aggregation time of between 0 and 20 seconds. The aggregation time always starts when an alarm event occurs. It extends the alarm event by the value set. This prevents alarm events that occur in quick succession from triggering several alarms and successive events in a rapid sequence. No further alarm is triggered during the aggregation time.

The post-alarm time set for alarm recordings only starts once the aggregation time has expired.

**Analysis type**

Select the required analysis algorithm. By default, only **MOTION+** is available – this offers a motion detector and essential recognition of tampering.

**Notice!**

Additional analysis algorithms with comprehensive functions such as IVMD and IVA are available from Bosch Security Systems Inc.

If you select one of these algorithms, you can set the corresponding parameters here directly. You can find information on this in the relevant documents on the product CD supplied.

Metadata is always created for a video content analysis, unless this was explicitly excluded. Depending on the analysis type selected and the relevant configuration, additional information overlays the video image in the preview window next to the parameter settings. Options are: MOTION+, IVA 5.6, IVA 5.6 Flow. With the **MOTION+** analysis type, for example, the sensor fields in which motion is recorded will be marked with rectangles.

**Notice!**

On the **LIVE Functions** page, you can also enable additional information overlays for the **LIVE** page (see *LIVE Functions*, page 15).

**Motion detector (MOTION+ only)**

For the detector to function, the following conditions must be met:

- Analysis must be activated.
- At least one sensor field must be activated.
- The individual parameters must be configured to suit the operating environment and the desired responses.
- The sensitivity must be set to a value greater than zero.

**Caution!**

Reflections of light (off glass surfaces, etc.), switching lights on or off or changes in the light level caused by cloud movement on a sunny day can trigger unintended responses from the motion detector and generate false alarms. Run a series of tests at different times of the day and night to ensure that the video sensor is operating as intended.

For indoor surveillance, ensure constant lighting of the areas during the day and at night.

**Sensitivity (MOTION+ only)**

The basic sensitivity of the motion detector can be adjusted for the environmental conditions to which the camera is subject.

The sensor reacts to variations in the brightness of the video image. The darker the observation area, the higher the value that must be selected.

### Minimum object size (MOTION+ only)

You can specify the number of sensor fields that a moving object must cover to generate an alarm. This is to prevent objects that are too small from triggering an alarm.

A minimum value of **4** is recommended. This value corresponds to four sensor fields.

### Debounce time 1 s (MOTION+ only)

The debounce time is intended to prevent very brief alarm events from triggering individual alarms. If the Debounce time 1 s option is activated, an alarm event must last at least one second to trigger an alarm.

### Select Area (MOTION+ only)

The areas of the image to be monitored by the motion detector can be selected. The video image is subdivided into 858 square fields. Each of these fields can be activated or deactivated individually. If you wish to exclude particular regions of the camera's field of view from monitoring due to continuous movement (by a tree in the wind, etc.), the relevant fields can be deactivated.

- ▶ Click **Select Area** to configure the sensor fields. A new window will open.
- 1. If necessary, click **Clear All** first to clear the current selection (fields marked yellow).
- 2. Left-click the fields to be activated. Activated fields are marked yellow.
- 3. If necessary, click **Select All** to select the entire video frame for monitoring.
- 4. Right-click any fields you wish to deactivate.
- 5. Click **OK** to save the configuration.
- 6. Click the close button **X** in the window title bar to close the window without saving the changes.

### Sensitivity



#### Notice!

This and the following parameter are only accessible if the reference check is activated.

The basic sensitivity of the tamper detection can be adjusted for the environmental conditions to which the camera is subject.

The algorithm reacts to the differences between the reference image and the current video image. The darker the observation area, the higher the value that must be selected.

### Trigger delay (s)

You can set delayed alarm triggering. The alarm is only triggered after a set time interval in seconds has elapsed and then only if the triggering condition still exists. If the original condition has been restored before this time interval elapses, the alarm is not triggered. This allows you to avoid false alarms triggered by short-term changes, for example cleaning activities in the direct field of vision of the camera.

### Global change

You can set how large the global change in the video image must be for an alarm to be triggered. This setting is independent of the sensor fields selected under **Select Area**. Set a high value if fewer sensor fields need to change to trigger an alarm. With a low value, it is necessary for changes to occur simultaneously in a large number of sensor fields to trigger an alarm.

This option allows you to detect, independently of motion alarms, manipulation of the orientation or location of a camera resulting from turning the camera mount bracket, for instance.

### Global change

Activate this function if the global change, as set with the **Global change** slide control, should trigger an alarm.

**Scene too bright**

Activate this function if tampering associated with exposure to extreme light (for instance, shining a flashlight directly on the lens) should trigger an alarm. The average brightness of the scene provides a basis for recognition.

**Scene too dark**

Activate this function if tampering associated with covering the lens (for instance, by spraying paint on it) should trigger an alarm. The average brightness of the scene provides a basis for recognition.

**Scene too noisy**

Activate this function if tampering associated with EMC interference (noisy scene as the result of a strong interference signal in the vicinity of the video lines), as an example, should trigger an alarm.

**Reference Check**

You can save a reference image that is continuously compared with the current video image. If the current video image in the marked areas differs from the reference image, an alarm is triggered. This allows you to detect tampering that would otherwise not be detected, for example if the camera is turned.

1. Click **Reference** to save the currently visible video image as a reference.
2. Click **Select Area** and select the areas in the reference image that are to be monitored.
3. Check the box **Reference check** to activate on-going matching. The stored reference image is displayed in black and white below the current video image, and the selected areas are marked in yellow.
4. Select the **Disappearing edges** or **Appearing edges** option to specify the reference check once again.

**Disappearing edges**

The area selected in the reference image should contain a prominent structure. If this structure is concealed or moved, the reference check triggers an alarm. If the selected area is too homogenous, so that concealing and moving the structure would not trigger an alarm, then an alarm is triggered immediately to indicate the inadequate reference image.

**Appearing edges**

Select this option if the selected area of the reference image includes a largely homogenous surface. If structures appear in this area, then an alarm is triggered.

**Select Area**

You can select the image areas in the reference image that are to be monitored. The video image is subdivided into 858 square fields. Each of these fields can be activated or deactivated individually.

**Notice!**

Select only those areas for reference monitoring in which no movement takes place and that are always evenly lit, as false alarms could otherwise be triggered.

1. Click **Select Area** to configure the sensor fields. A new window will open.
2. If necessary, click **Clear All** first to clear the current selection (fields marked yellow).
3. Left-click the fields to be activated. Activated fields are marked yellow.
4. If necessary, click **Select All** to select the entire video frame for monitoring.
5. Right-click any fields you wish to deactivate.
6. Click **OK** to save the configuration.
7. Click the close button **X** in the window title bar to close the window without saving the changes.

## 8.3 Virtual Masks

Virtual masks allow users to mask parts of the scene which should not be considered for flow analysis to trigger Intelligent Tracking. This allows users to mask background motion in the scene such as moving trees, pulsating lights, busy roads, etc.

To create a virtual mask:

1. Select the number of the Virtual mask. In the video preview window, a dark grey rectangle appears with the text “Mask x,” where ‘x’ is the number of the mask.
2. Select the mask with your mouse. Move the mouse to position the mask over the area of the view that you want to mask, and then click “Set.” The text “VM Configuration active!” appears in the View Control window.
3. Click Enabled to enable the virtual mask. The rectangle that represents the mask in the preview window becomes red. The text “Virtual Masks: ENABLED” appears in the View Control window.

To disable virtual masks:

Click the Disable masks checkbox. The text “Virtual Masks: DISABLED” appears in the View Control window.

## 8.4 Audio Alarm

**Note for MIC7000 cameras only:** These options are available only if you have connected a VIDEOJET connect device (VJC-7000-90) to your camera.

The camera can create alarms on the basis of audio signals. You can configure signal strengths and frequency ranges in such a way that false alarms, for example due to machine noise or background noise, are avoided.



### Notice!

First set up normal audio transmission before you configure the audio alarm here (see Audio).

### Audio alarm

Select **On** if you want the device to generate audio alarms.

Do not use any special characters, for example **&**, in the name. Special characters are not supported by the system's internal management.

### Signal Ranges

You can exclude particular signal ranges in order to avoid false alarms. For this reason the total signal is divided into 13 tonal ranges (mel scale). Check or uncheck the boxes below the graphic to include or exclude individual ranges.

### Threshold

Set up the threshold on the basis of the signal visible in the graphic. You can set the threshold using the slide control or, alternately, you can move the white line directly in the graphic using the mouse.

### Sensitivity

You can use this setting to adapt the sensitivity to the sound environment. You can effectively suppress individual signal peaks. A high value represents a high level of sensitivity.

## 8.5 Alarm E-Mail

As an alternative to automatic connecting, alarm states can also be documented by e-mail. In this way it is possible to notify a recipient who does not have a video receiver. In this case, the camera automatically sends an e-mail to a previously defined e-mail address.

**Send alarm e-mail**

Select **On** if you want the unit to automatically send an alarm e-mail in the event of an alarm.

**Mail server IP address**

Enter the IP address of a mail server that operates on the SMTP standard (Simple Mail Transfer Protocol). Outgoing e-mails are sent to the mail server via the address you entered. Otherwise leave the box blank (**0.0.0.0**).

**SMTP user name**

Enter a registered user name for the chosen mailserver here.

**SMTP password**

Enter the required password for the registered user name here.

**Format**

You can select the data format of the alarm message.

- **Standard (with JPEG)** E-mail with attached JPEG image file.
- **SMS** E-mail in SMS format to an e-mail-to-SMS gateway (for example to send an alarm by cellphone) without an image attachment.

**Caution!**

When a cellphone is used as the receiver, make sure to activate the e-mail or SMS function, depending on the format, so that these messages can be received.

You can obtain information on operating your cellphone from your cellphone provider.

**Image size**

Select the appropriate image size: Small, Medium, Large, 720p, 1080p.

**Attach JPEG from camera**

Click the checkbox to specify that JPEG images are sent from the camera. An enabled video input is indicated by a check mark.

**Destination address**

Enter the e-mail address for alarm e-mails here. The maximum address length is 49 characters.

**Sender address**

Enter a unique name for the e-mail sender, for example the location of the device. This will make it easier to identify the origin of the e-mail.

**Note:** The name must include at least two character groups separated by a blank (for example, Parking Garage) in order for the system to generate an email from that name, as in "From Parking Garage". Text with only one group of characters (for example, Lobby) will not generate an email.

**Test e-mail**

You can test the e-mail function by clicking the **Send Now** button. An alarm e-mail is immediately created and sent.

**8.6****Alarm Task Editor****Caution!**

Editing scripts on this page overwrites all settings and entries on the other alarm pages. This procedure cannot be reversed.

In order to edit this page, you must have programming knowledge and be familiar with the information in the Alarm Task Script Language document.

As an alternative to the alarm settings on the various alarm pages, you can enter your desired alarm functions in script form here. This will overwrite all settings and entries on the other alarm pages.

1. Click the **Examples** link under the Alarm Task Editor field to see some script examples. A new window will open.
2. Enter new scripts in the Alarm Task Editor field or change existing scripts in line with your requirements.
3. When you are finished, click the **Set** button to transmit the scripts to the unit. If the transfer was successful, the message **Script successfully parsed** is displayed over the text field. If it was not successful, an error message will be displayed with further information.

## 8.7 Alarm Rules

An alarm rule can define which input(s) activate which output(s). Basically, an alarm rule allows you to customize the camera to respond automatically to different alarm inputs. To configure an alarm rule, specify one input from a physical connection, from a motion detection trigger, or from a connection to the camera's LIVE page. The physical input connection can be activated by dry contact devices such as pressure pads, door contacts, and similar devices.

Next, specify up to two (2) rule outputs, or the camera's response to the input. Outputs include a physical alarm output, an AUX command, or a preposition scene.

1. Click the check box **Enabled** to activate the alarm.
2. Click Input 1 (a physical alarm connection).
3. Select the appropriate input:
  - Alarm input: If you select this option, then a second Input field (a physical alarm connection) appears to the right, with a list of input options (for example, *1: Input 1*).
  - IVA/MOTION+: If you select this option, then an alarm will begin when IVA or motion detection is activated.
  - Connection: If you select this option, then an alarm will begin when an attempt is made to access the camera's IP address.
  - Time: If you select this option, then an input field appears to the right. In this field, enter the time for the activation of the alarm in hours and minutes. (The default value is 00:00.)
  - Time range: If you select this option, then two input fields appear to the right. In these fields, enter the time range for the activation of the alarm in hours and minutes. (The default values are 00:00 and 00:00.)
  - Manipulation alarm: If you select this option, then an alarm will begin when the camera detects anyone manipulating it (for example, if the housing of the device is opened).
4. Choose one of the following output commands for both Output 1 and Output 2 settings:

Note: Not all options are available for all cameras.

- None: no defined command.
  - Alarm Output: defines a physical connection from the open collector alarm output.
  - AUX On: defines a standard or custom keyboard ON command.
  - AUX Off: defines a standard or custom keyboard OFF command.
  - Scene: defines a preset scene from shot 1-256.
  - Monochrome: switches the camera video to monochrome mode.
5. Click Set to save. The camera's system activates the alarm rules.

### Note for MIC7000 cameras only:

Alarm Output is available only when the field **Application Variant** in the *Application Variant*, page 17 is set to either of the following values: )

- "[camera name] - IO" (for a camera connected to MIC-ALM-WAS-24)
- "[camera name] - VJC-7000" (for a camera connected to VJC-7000-90)

## 9 Interfaces

### 9.1 Alarm Inputs

#### Alarm input

Select **N.O.** if the alarm is to be triggered when the contact closes. Select **N.C.** if the alarm is to be triggered when the contact opens.

#### Name

You can enter a name for each alarm input. If the **Live** functions are configured accordingly, this name is displayed below the icon for the alarm input. You can also use the name in the Forensic Search program function as a filter option for quick search in recordings. Enter a unique and clear name here.



#### Caution!

Do not use any special characters, for example **&**, in the name.

Special characters are not supported by the system's internal management.

---

### 9.2 Alarm Outputs

#### Idle state

Select **Open** if you want the relay to operate as an NO contact, or select **Closed** if the relay is to operate as an NC contact.

#### Operating mode

Select an operating mode for the relay.

For example, if you want an alarm-activated lamp to stay on after the alarm ends, select

**Bistable**. If you wish an alarm-activated siren to sound for ten seconds, for example, select **10 s**.

#### Output name

Enter a name for the alarm output.

#### Toggle

Click the button to test the relay / output connection.

## 10 Network

### 10.1 Network Access

The settings on this page are used to integrate the camera into an existing network.

#### Automatic IP assignment

If a DHCP server is employed in the network for the dynamic assignment of IP addresses, you can activate acceptance of IP addresses automatically assigned to the camera.

Certain applications (Bosch Video Management System, Archive Player, Configuration Manager) use the IP address for the unique assignment of the unit. If you use 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.

#### IPv4

Fill in the 3 fields in this section of the screen.

##### IP address

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

##### Subnet mask

Enter the appropriate subnet mask for the selected IP address here.

##### Gateway address

If you want the unit to establish a connection to a remote location in a different subnet, enter the IP address of the gateway here. Otherwise leave the box blank (**0.0.0.0**).



#### Caution!

If you change the IP address, subnet mask or gateway address, the camera is only available under the new addresses after the reboot.

#### IPv6

Consult with the network administrator before making changes to this section.

##### IP address

Enter the desired IP address for the camera in this field. The IP address must be valid for the network. A typical IPv6 address may resemble the following example:

2001:db8::52:1:1

Consult the network administrator for valid IPv6 address construction.

##### Prefix length

A typical IPv6 node address consists of a prefix and an interface identifier (total 128 bits). The prefix is the part of the address where the bits have fixed values or are the bits that define a subnet.

##### Gateway address

If you want the unit to establish a connection to a remote location in a different subnet, enter the IP address of the gateway here. Otherwise leave the box blank (**0.0.0.0**).

##### DNS server address 1 / DNS server address 2

The camera is easier to access if the unit is listed on a DNS server. If you wish, for example, to establish an Internet connection to the camera, it is sufficient to enter the name given to the unit on the DNS server as a URL in the browser. Enter the IP address of the DNS server here. Servers are supported for secure and dynamic DNS.

##### Video transmission

If the unit is operated behind a firewall, select **TCP (HTTP port)** as the transfer protocol. For use in a local network, select **UDP**.

**Notice!**

Multicast operation is only possible with the UDP protocol. The TCP protocol does not support multicast connections. The MTU value in UDP mode is 1,514 bytes.

**TCP rate control**

Select On to control the rate of transmission control protocol. Select Off if you do not want to control the TCP rate.

**HTTP browser port**

Select a different HTTP browser port from the list if required. The default HTTP port is 80. If you want to allow only secure connections via HTTPS, you must deactivate the HTTP port. In this case, select **Off**.

**HTTPS browser port**

If you wish to allow browser access on the network via a secure connection, select an HTTPS browser port from the list if necessary. The default HTTPS port is 443. Select the **Off** option to deactivate HTTPS ports; only unsecured connections will now be possible.

The camera uses the TLS 1.0 encryption protocol. You may have to activate this protocol via your browser configuration. You must also activate the protocol for the Java applications (via the Java control panel in the Windows control panel).

**Notice!**

If you want to allow only secure connections with SSL encryption, you must select the **Off** option for each of the parameters **HTTP browser port**, **RCP+ port 1756** and **Telnet support**. This deactivates all unsecured connections. Connections will then only be possible via the HTTPS port.

You can activate and configure encryption of the media data (video and metadata) on the **Encryption** page (see Encryption).

**RCP+ port 1756**

To exchange connection data, you can activate the unsecured RCP+ port 1756. If you want connection data to be transmitted only when encrypted, select the **Off** option to deactivate the port.

**Telnet support**

If you want to allow only secure connections with encrypted data transmission, you must select the **Off** option to deactivate Telnet support. The unit will then no longer be accessible using the Telnet protocol.

**Interface mode ETH**

Select the Ethernet link type for the ETH interface.

Options are:

- Auto
- 10 Mbps HD (half duplex)
- 10 Mbps FD (full duplex)
- 100 Mbps HD (half duplex)
- 100 Mbps FD (full duplex)

**Network MSS (Byte)**

You can set the maximum segment size for the IP packet's user data. This gives you the option to adjust the size of the data packets to the network environment and to optimize data transmission. Please comply with the MTU value of 1,514 bytes in UDP mode.

**iSCSI MSS (Byte)**

You can specify a higher MSS value for a connection to the iSCSI system than for the other data traffic via the network. The potential value depends on the network structure. A higher value is only useful if the iSCSI system is located in the same subnet as the camera.

**Network MTU (Byte)**

The value in the field defaults to 1514.

**10.2**

**DynDNS**

**Enable DynDNS**

DynDNS.org is a DNS hosting service that stores IP addresses in a database ready for use. It allows you to select the camera via the Internet using a host name, without having to know the current IP address of the unit. You can enable this service here. To do this, you must have an account with DynDNS.org and you must have registered the required host name for the unit on that site.



**Notice!**

Information about the service, registration process and available host names can be found at DynDNS.org.

**Provider**

The value in this field defaults to dyndns.org. Select another option as necessary.

**Host name**

Enter the host name registered on DynDNS.org for the camera here.

**User name**

Enter the user name you registered at DynDNS.org here.

**Password**

Enter the password you registered at DynDNS.org here.

**Force registration now**

You can force the registration by transferring the IP address to the DynDNS server. Entries that change frequently are not provided in the Domain Name System. It is a good idea to force the registration when you are setting up the device for the first time. Only use this function when necessary and no more than once a day, to avoid the possibility of being blocked by the service provider. To transfer the IP address of the camera, click the **Register** button.

**Status**

The status of the DynDNS function is displayed here for information purposes. You cannot change any of these settings.

**10.3**

**Advanced**

The settings on this page are used to implement advanced settings for the network.

**Operation**

The operation mode determines how the camera communicates with Cloud-based Security and Services.

- Select **Auto** to allow the camera to poll the server a few times; if no contact is made, it stops polling.
- Select **On** to constantly poll the server.
- Select **Off** to block polling.

**RTSP port**

If necessary, select a different port for the exchange of the RTSP data from the list. The standard RTSP port is 554. Select **Off** to deactivate the RTSP function.

**Authentication**

If a RADIUS server is employed in the network for managing access rights, authentication must be activated here to allow communication with the unit. The RADIUS server must also contain the corresponding data.

To configure the unit, you must connect the camera directly to a computer using a network cable. This is because communication via the network is not enabled until the **Identity** and **Password** parameters have been set and successfully authenticated.

**Identity**

Enter the name that the RADIUS server is to use for identifying the camera.

**Password**

Enter the password that is stored in the RADIUS server.

**NTCIP**

Specifies a set of rules and protocols for organizing, describing and exchanging transportation management information between transportation management applications and transportation equipment such that they interoperate with each other.

Select a port for **NTCIP** and the **Address** from the appropriate drop-down lists.

**Note:** The NTCIP section appears only for cameras with an NTCIP license.

**TCP port**

The device can receive data from an external TCP sender, for example an ATM or POS device, and store it as metadata. Select the port for TCP communication. Select Off to deactivate the TCP metadata function.

**Sender IP address**

Enter the IP address of the TCP metadata sender here.

**10.4****Network Management****SNMP**

The camera supports the SNMP V1 (Simple Network Management Protocol) for managing and monitoring network components, and can send SNMP messages (traps) to IP addresses. The unit supports SNMP MIB II in the unified code. If you wish to send SNMP traps, enter the IP addresses of one or two required target devices here.

If you select **On** for the **SNMP** parameter and do not enter an SNMP host address, the camera does not send them automatically, but only replies to SNMP requests. If you enter one or two SNMP host addresses, SNMP traps are sent automatically. Select **Off** to deactivate the SNMP function.

**1. SNMP host address / 2. SNMP host address**

If you wish to send SNMP traps automatically, enter the IP addresses of one or two required target units here.

**SNMP traps**

You can select which traps are to be sent.

1. Click **Select**. A list is opened.
2. Click the checkboxes to select the required traps. All the checked traps will be sent.
3. Click **Set** to accept the selection.

**UPnP**

You can activate the Universal Plug and Play (UPnP) function. If the function is turned on, the unit responds to requests from the network and is automatically registered on the requesting computers as a new network device. For example, access to the unit can then be made using Windows Explorer without knowledge of the IP address of the unit.



**Notice!**

To use the UPnP function on a computer, both the Universal Plug and Play Device Host and SSDP Discovery Service must be active in Windows XP and Windows 7.

**Quality of service**

The camera offers Quality of Service (QoS) configuration options to ensure fast network response to PTZ data and images. Quality of Service (QoS) is the set of techniques to manage network resources. QoS manages the delay, delay variation (jitter), bandwidth, and packet loss parameters to guarantee the ability of a network to deliver predictable results. QoS identifies the type of data in a data packet and divides the packets into traffic classes that can be prioritized for forwarding.

Consult with your network administrator for assistance configuring the **Audio, Video, Control**, and the **Alarm video** settings, and to select the appropriate **Post-alarm time**.

The priority of the different data channels can be set by defining the DiffServ Code Point (DSCP). Enter a number between 0 and 252 as a multiple of four. For alarm video you can set a higher priority than for regular video and you can define a Post Alarm Time over which this priority is maintained.

**10.5**

**Multicast**

In addition to a 1:1 connection between an encoder and a single receiver (unicast), the camera can enable multiple receivers to receive the video signal from an encoder simultaneously. The device either duplicates the data stream itself and then distributes it to multiple receivers (Multi-unicast) or it sends a single data stream to the network, where the data stream is simultaneously distributed to multiple receivers in a defined group (Multicast). You can enter a dedicated multicast address and port for each stream. You can switch between the streams by clicking the appropriate tabs.



**Notice!**

Multicast operation requires a multicast-enabled network that uses the UDP and the Internet Group Management IGMP protocols. Other group management protocols are not supported. The TCP protocol does not support multicast connections.

A special IP address (class D address) must be configured for multicast operation in a multicast-enabled network.

The network must support group IP addresses and the Internet Group Management Protocol (IGMP V2). The address range is from 225.0.0.0 to 239.255.255.255.

The multicast address can be the same for multiple streams. However, it will be necessary to use a different port in each case so that multiple data streams are not sent simultaneously using the same port and multicast address.



**Notice!**

The settings must be made individually for each stream.

**Enable**

To enable simultaneous data reception on several receivers you need to activate the multicast function. To do this, check the box. You can then enter the multicast address.

**Multicast Address**

Enter a valid multicast address for each stream to be operated in multicast mode (duplication of the data streams in the network).

With the setting **0.0.0.0** the encoder for the relevant stream operates in multi-unicast mode (copying of data streams in the unit). The camera supports multi-unicast connections for up to five simultaneously connected receivers.

**Notice!**

Duplication of data places a heavy demand on the unit and can lead to impairment of the image quality under certain circumstances.

**Port**

Assign a different port to each data stream if there are simultaneous data streams at the same multicast address.

Enter the port address of the required stream here.

**Streaming**

Click the checkbox to activate multicast streaming mode for the relevant stream. An enabled stream is indicated by a check mark.

**Multicast packet TTL**

You can enter a value to specify how long the multicast data packets are active on the network. This value must be greater than one if multicast is to be run via a router.

## 10.6

### Image Posting

You can save individual JPEG images on an FTP server at specific intervals. You can then retrieve these images at a later date to reconstruct alarm events if required. In order to configure image posting, and to save and retrieve JPEG images, you must create an Account in which to save and access them. If you have not configured an account, the following error message appears at the top of this page: “No configured account. Configure accounts.” Click the link to access the Accounts page.

**Image size**

Select the size of the images that you want to save:

- Small
- Medium
- Large
- 720p
- 1080p

**File name**

You can select how file names will be created for the individual images that are transmitted.

- **Overwrite** The same file name is always used and any existing file will be overwritten with the current file.
- **Increment** A number from 000 to 255 is added to the file name and automatically incremented by 1. When it reaches 255 it starts again from 000.
- **Date/time suffix** The date and time are automatically added to the file name. When setting this parameter, ensure that the unit's date and time are always correctly set.  
Example: the file snap011005\_114530.jpg was stored on October 1, 2005 at 11:45 and 30 seconds.

**Posting interval**

Enter the interval in seconds at which the images will be sent to an FTP server. Enter 0 (zero) if you do not want any images to be sent.

**Target**

Select the target—the name of the account on the server—to which to save images.

When face recognition is available, selected images of the face can be sent to a target account.

**Enable**

Click this checkbox to enable face detection.

**File format**

Select the file format in which to save images. Options are JPEG (default), YUV420, TIFF.

**Target**

Select the target—the name of the account on the server—to which to save images.

**Timeout [s]**

Enter the number of seconds after which image posting will time out. The default is 0 (no timeout).

**Maximum image width [px]**

Enter a number for the maximum width, in pixels, for the saved images. For automatic width selection, use value “0.”

## 10.7

### Accounts

Four separate accounts can be defined for posting and recording export.

**Type**

Select either FTP or Dropbox for the account type.

Before using a Dropbox account ensure that the time settings of the device have been correctly synchronized.

**Account name**

Enter an account name to be shown as the target name.

**IP address**

Enter the IP address of the server on which you wish to save the JPEG images.

**Login**

Enter the login ID for the server.

**Password**

Enter the password that gives you access to the server. To verify the password, click the Check button to the right.

**Path**

Enter the exact path on which you wish to post the images on the server. To browse for the correct path, click the Browse button to the right.

**Maximum bit rate**

Enter the maximum bit rate for the JPEG images (in kbps).

## 10.8

### IPv4 Filter

Use this setting to configure a filter that allows or blocks network traffic that matches a specified address or protocol.

**IP Address 1 / 2**

Enter the IPv4 address that you want to allow or block

**Mask 1 / 2**

Enter the subnet mask for the appropriate IPv4 address.

# 11 Service

## 11.1 Maintenance

### Update server

The address of the update server appears in the address box.

1. Click Check to make a connection to this server.
2. Select the appropriate version for your camera to download the firmware from the server.

### Firmware

The camera functions and parameters can be updated by uploading new firmware. To do this, the latest firmware package is transferred to the device via the network. The firmware is installed there automatically. Thus, a camera can be serviced and updated remotely without requiring a technician to make changes to the device on site. The latest firmware can be obtained from your customer service center or from the download area.



### Notice!

Before starting a firmware update, make sure to select the correct upload file.

Do not interrupt the firmware installation. Even changing to another page or closing the browser window leads to interruption.

Uploading the wrong files or interrupting the upload can result in the device no longer being addressable, requiring it to be replaced.

### Progress

The progress bar displays the progress of the firmware upload.

**Note:** Once the progress bar reaches 100%, a reset page may appear. If this page appears, allow the reset page to complete its action.

### Upload history

Click **Show** to view the firmware upload history.

### Configuration

Click **Choose File** to navigate to the required firmware file (\*.fw).

**Note:** Ensure that the file to be loaded comes from the same unit type as the unit that you want to configure.

Click **Upload** to begin transferring the file to the unit. Click OK to the warning message to continue the firmware upload, or Cancel to stop the upload.

Click **Download** to save the camera settings to a file to upload to the same camera or to a similar camera in the future.

### Maintenance log

You can download an internal maintenance log from the unit to send it to Customer Service for support purposes. Click **Download** and select a storage location for the file.

## 11.2 Licenses

This window is for the activation of additional functions by entering activation codes. An overview of installed licenses is shown. The installation code of the unit is also displayed here.

## 11.3 Certificates

### Usage list

### HTTPS server

Select the default certificate for the HTTPS server.

#### **EAP-TLS client**

Select the client for Extensible Authentication Protocol-Transport Layer Security (EAP-TLS).

**Note:** The only option may be “None.”

#### **EAP-TLS trusted**

Select the trusted certificate for Extensible Authentication Protocol-Transport Layer Security (EAP-TLS).

To add a certificate, click the plus sign.

To delete a certificate, click the trashcan icon to the right of the certificate. **Note:** You can delete only certificates that you have added; you cannot delete the default certificate.

#### **TLS-DATE trusted**

Select the trusted certificate for TTLS-DATE.

To add a certificate, click the plus sign.

To delete a certificate, click the trashcan icon to the right of the certificate. **Note:** You can delete only certificates that you have added; you cannot delete the default certificate.

#### **ADFS CA trusted**

Select the trusted certificate for Active Directory Federation Services Certification Authority (ADFS CA).

To add a certificate, click the plus sign.

To delete a certificate, click the trashcan icon to the right of the certificate. **Note:** You can delete only certificates that you have added; you cannot delete the default certificate.

#### **File list**

##### **Add a certificate/file to the file list**

1. Click **Add**. The Add certificate window appears.
2. Click **Choose File** to navigate to the required file.
3. Click **Upload**.

##### **Delete a certificate from the file list**

Click the trashcan icon. The Delete Trusted certificate window appears. To confirm deletion, click OK. To cancel deletion, click Cancel.

##### **Download a certificate**

Click the disk icon.

## **11.4**

### **Diagnostics**

Accesses the Built-in Self Test (BIST). The BIST displays a Pass or Fail status on the most recent homing event, not a counter. For the other items, a counter is maintained.

Click the **Start Self test** button to display the number of times the camera:

- performed a homing event.
- failed to home properly.
- restarted.
- lost video.

#### **Logs**

This section updates automatically with the history of the camera and maintains a log of all events such as those listed below. Click the REFRESH button to reload log data.

## **11.5**

### **System Overview**

This window is for information only and cannot be modified. Keep this information at hand when seeking technical support.

Select the text on this page with a mouse and copy it so that it can be pasted into an e-mail if required.

## 12 Operation via the browser

### 12.1 Live page

After the connection is established, the **Live** page is initially displayed. It shows the live video image on the right of the browser window. Depending on the configuration, various text overlays may be visible on the live video image.

Other information may also be shown next to the live video image. The items shown depend on the settings on the '**Live**' **functions** page.

#### 12.1.1 Prepositions

The camera displays Preposition 1 through Preposition 6. Select the appropriate preposition to view the video image for that preposition/scene. In the lower left of the video image, the OSD displays the Camera number (title), the Preposition/Scene number, and the Preposition/Scene number stored.

Below the list of prepositions/scenes is a drop-down list showing the stored prepositions/scenes.

Select the appropriate preposition (1 through 6). Click  to store the preposition.

**Note:** If the preposition is already stored, a dialog box displays the message, "**Overwrite current preposition?**" Click OK to overwrite, or click Cancel to cancel the operation.

Click  to display the selected preposition in the video image.

### 12.1.2 AUX Control

#### Show preposition

Click this button to display a preposition.

#### Set preposition

Click this button to set a preposition.

#### AUX on

Click this button to activate an AUX command.

#### AUX off

Click this button to deactivate an AUX command.

### 12.1.3 Intelligent Tracking

For cameras with the ability to track movement, options for tracking objects within the region of interest are displayed in the **Intelligent tracking** panel.

When on, the tracking icon  is displayed on the image together with the lines that track moving objects.

Select **Off**, **Auto** or **Click**. If **Click** is selected, use the mouse to click on an object to track it.

### 12.1.4 Special Functions

#### Scan 360°

Click this button to start a continuous 360° pan. To stop the continuous pan, click a directional control in the View Control tab.

#### Tour A / Tour B

Click one of these buttons to start the continuous playback of a recorded (guard) tour. A recorded tour saves all manual camera movements made during the recording, including its rate of pan, tilt and zoom speeds, and other lens setting changes.

To stop a tour, click a directional control in the View Control tab.

#### Focus

Click this button to activate the Auto Focus mode on the camera.

The OSD displays the message, “OSD: Camera [number] / Auto Focus: ONE PUSH.”

#### IR light

Click this button to turn on the infrared (IR) light of the illuminator accessory (if available on your camera).

Click this button again to turn off the IR light.

#### White light

Click this button to turn on the White light of the illuminator accessory (if available on your camera).

Click this button again to turn off the White light.

### 12.1.5 Recording status

The hard drive icon  below the live camera image changes during an automatic recording. The icon lights up and displays a moving graphic to indicate a running recording. If no recording is taking place, a static icon is displayed.

### 12.1.6 Saving snapshots

Individual images from the displayed live video stream can be saved locally in JPEG format on the computer's hard drive.



- Click the photo camera icon to save a single image.
- The storage location depends on the configuration of the camera.

### 12.1.7 Recording live video

Video sequences from the displayed live video stream can be saved locally on the computer's hard drive. The sequences are recorded at the resolution specified in the encoder configuration. The storage location depends on the configuration of the camera.



1. Click the recording icon to record video sequences.
  - Saving begins immediately. The red dot on the icon indicates that a recording is in progress.
2. Click the recording icon again to stop recording.

### 12.1.8 Full-screen display



Click the full-screen icon to view the selected stream in full-screen mode; press **Esc** on the keyboard to return to the normal viewing window.

### 12.1.9 Audio communication

Audio can be sent and received via the **Live** page if the unit and the computer support audio.

1. Press and hold the F12 key on the keyboard to send an audio signal to the unit.
2. Release the key to stop sending audio.

All connected users receive audio signals sent from the unit but only the user who first pressed the F12 key can send audio signals; others must wait for the first user to release the key.

### 12.1.10 Storage, CPU and network status

When accessing the unit with a browser, the local storage, processor and network status icons are shown in the upper right of the window.

When a local storage card is available, the memory card icon changes color (green, orange or red) to indicate the local storage activity. If you hover over this icon with the mouse the storage activity is shown as a percentage.

If you hover over the middle icon, the CPU load is shown.

If you hover over the right-hand icon, the network load is shown.

This information can help with problem solving or when fine tuning the unit. For example:

- if the storage activity is too high, change the recording profile,
- if the CPU load is too big, change the VCA settings,
- if the network load is too big, change the encoder profile to reduce bitrate.

### 12.1.11

#### Status icons

Various overlays in the video image provide important status information. The overlays provide the following information:



##### Decoding error

The frame might show artifacts due to decoding errors.



##### Alarm flag

Indicates that an alarm has occurred.



##### Communication error

A communication error, such as a connection failure to the storage medium, a protocol violation or a timeout, is indicated by this icon.



##### Gap

Indicates a gap in the recorded video.



##### Watermark valid

The watermark set on the media item is valid. The color of the check mark changes according to the video authentication method that has been selected.



##### Watermark invalid

Indicates that the watermark is not valid.



##### Motion alarm

Indicates that a motion alarm has occurred.



##### Storage discovery

Indicates that recorded video is being retrieved.

## 12.2

### Playback

#### 12.2.1

##### Selecting the recording stream

On the left side of the browser, expand the **Connection** group if necessary.

To view a recording stream:

1. Click the **Recording** drop-down arrow to see the options.
2. Select recording stream 1 or 2.

#### 12.2.2

##### Searching for recorded video

On the left side of the browser, expand the **Search** group if necessary.

1. To limit the search to a particular time range, enter the start and stop date and times.
2. Select an option from the drop-down box to define a search parameter.
3. Click **Start Search**.
4. The results are shown.
5. Click a result to play it back.
6. Click **Back** to define a new search.

### 12.2.3 Exporting recorded video

On the left side of the browser, expand the **Export** group if necessary.

1. Select a track in the track list or in the search results.
2. The start and stop date and time are filled-in for the selected track. If required, change the times.
3. In the **Time lapse** drop-down box, select the original or a condensed speed.
4. In the **Location** drop-down box, select a target.
5. Click **Export** to save the video track.

**Note:**

The target server address is set on the **Network / Accounts** page.

### 12.2.4 Controlling playback

The time bar below the video image allows quick orientation. The time interval associated with the sequence is displayed in the bar in gray. Arrows indicate the position of the image currently being played back within the sequence.

The time bar offers various options for navigation in and between sequences.

- If required, click in the bar at the point in time at which the playback should begin.
- Change the time interval displayed by clicking the plus or minus icons. The display can span a range from two months to a few seconds.
- Click the alarm jump buttons to go from one alarm event to the next or to the previous one. Red bars indicate the points in time where alarms were triggered.

**Controls**

Control playback by means of the buttons below the video image.

The time code is displayed on the left above the full-screen icon.

The buttons have the following functions:

- Start/Pause playback
- Select the playback speed using the speed regulator
- Jump to start of active sequence or to previous sequence
- Jump to start of the next video sequence in the list

## 13 Operation

### 13.1 Using Intelligent Tracking

#### Configuring Intelligent Tracking

The camera utilizes the built-in Intelligent Video Analytics (IVA) to continuously follow an individual or object even if it passes behind a Privacy Mask or a stationary object. The camera uses objects detected by IVA in a stationary preset position to activate the Intelligent Tracking feature.

The Intelligent Tracking feature allows continuous on-screen following of an individual or an object. This feature operates by recognizing an object in motion and zooms in to approximately 50% (default Tracker zoom threshold) of the field of view for an average target height of six feet. This feature controls the pan/tilt/zoom actions of the camera to keep the selected object in the scene.

To activate the Intelligent Tracking feature, one of the following conditions must be met:

- The Silent IVA option must be selected in the VCA page on the Settings tab. Refer to *VCA, page 41*.
- IVA must be active for at least one preset scene in the VCA page on the Settings tab. If IVA is configured for one scene, then all other scenes have Intelligent Tracking enabled by default. If a scene has Motion+ of IVA Flow activated, however, then Intelligent Tracking is disabled for these scenes.



#### Notice!

The following actions occur if Intelligent Tracking is active:

All other IVA objects are disabled in scenes with Intelligent Tracking.

The camera automatically disables the display of compass headings. Once Intelligent Tracking is set to Off, the camera resumes display of the compass heading. Refer to *PTZ Settings, page 27* for details of the Compass feature.

#### Guidelines for Implementing Intelligent Tracking

Factors such as the viewing angle and unwanted motion (from trees, for example) may interfere with Intelligent Tracking operation. Use the following recommendations to ensure smooth Intelligent Tracking operation:

- **Mount/Mounting Surface Stability**
  - Mount the camera in the most stable position. Avoid locations affected by vibrations, such as those caused by a roof-top air conditioner. These vibrations may cause complications when the camera zooms-in on a target.
  - Use the pendant arm mount, if possible. This mount option provides the most stability for the camera.
  - Use guy wires to protect against strong winds if using the parapet mount.
- **Field of View**
  - Select a location and viewing angle that allows the flow of people to move across the camera's field of view.
  - Avoid motion that moves directly towards the camera.
  - Avoid locations that attract large numbers of people, such as retail stores or intersections. Intelligent Tracking is optimized for scenes with very few moving objects.
- **Unwanted Motion**

- Avoid neon lights, flashing lights, night time lights, and reflected light (from a window or mirror, for example). The flickering of these lights can affect the Intelligent Tracking operation.
- Avoid motion from moving leaves/branches that present a persistent fixed motion.

### Operation of Intelligent Tracking

The Intelligent Tracking feature behaves in one of the following ways:

- **Camera detects an object in motion and automatically tracks the object**  
User actions always take precedence over Intelligent Tracking. If the camera is actively tracking an object and a user takes control, the camera will attempt to track the object after a period of inactivity.
- **An IVA alarm can trigger Intelligent Tracking to track a detected object**  
A rule that triggers an IVA event must be set. The following standard tasks can be set: Object in field, Crossing Line, Loitering, Condition change, Following route, Entering field, and Leaving field. Refer to the *IVA 5.60 Operation Manual* for specific information.
- **A user manually selects an object in the live image area to track**  
The Intelligent Tracking feature allows a user to click a moving object in the live image display inside the **LIVE** page to identify an object to track.
- **Use AUX Command 78 to activate/deactivate Intelligent Tracking**  
Use AUX ON 78 to enable the Intelligent Tracking Auto mode. This command can be used in conjunction with the rules engine.

### Using Intelligent Tracking

Use the following options on the **LIVE** page to control Intelligent Tracking:

**Note:** If you do not see these controls on the **LIVE** page, ensure that the **Show ‘Tracking’** option is enabled on the **LIVE Functions** page. Refer to *LIVE Functions*, page 15.

- **Off:** Disables Intelligent Tracking.
- **Auto:** In this mode, the camera actively analyzes the video to detect any moving object. If it detects movement, the camera begins to track the moving object. This mode is most useful for scenarios where no motion is expected in the scene.
- **Click:** In this mode, users can click an object moving in the live video image to enable the camera to track the movement of the selected object. This mode is most useful for scenarios where normal scene activity is expected.

If the Intelligent Tracking feature is set to Auto or Click, the live video image displays an eye icon with a symbol that conveys the state of Intelligent Tracking activity:

Graphic	Description	Explanation
	White eye, flashing	Intelligent Tracking is actively following a target.
	Gray eye with a red “X”	Intelligent Tracking lost the selected target and will wait for the target to reappear using the last known trajectory. During the IDLE state, the camera will not seek other objects in motion.
	Gray eye without a symbol	Intelligent Tracking is idle, waiting to track a target.
	Gray eye with a “pause” symbol	Intelligent Tracking attempts to track a target passively while a user has camera control.

### Tracking triggered by IVA rules

In this mode, the camera continuously analyzes the scene for IVA alarms or IVA rule violations. If an IVA rule is violated, it triggers the advanced tracking feature of the camera to start following the object / person that triggered the alarm. This allows the camera to track moving objects of interest without getting distracted by other moving objects in the scene.

To activate this mode, you must enable IVA by selecting either IVA 5.6 or IVA 5.6 Flow in the **Analysis type** field of the **VCA** page (from the **SETTINGS** page, select **Advanced Mode > Alarm > VCA**). Refer to the *IVA 5.60 Operation Manual* for specific information.

If the **Show VCA metadata** option is selected in **LIVE Functions** (from the **SETTINGS** page, select **Advanced Mode > Web Interface > LIVE Functions**), the live view will show the following metadata objects in the **LIVE** page view:

- Objects in motion are initially identified in the video.
- Actively tracked object in motion are identified in the video.
- When an object in motion is lost, a diamond appears designating the area where the target was lost.

Several reasons may cause the Intelligent Tracking to stop tracking a target:

- The target has stopped moving while being followed by Intelligent Tracking.
- The target has moved behind a static object in the scene.

In these instances, Intelligent Tracking switches to the IDLE mode (pink eye icon) and waits for the target to reappear in the scene. The camera will restart tracking if a target starts moving in the same area where the initial target stopped moving or if the camera detects an object moving along the last known trajectory.

## 13.2 Recommended Use of Your MIC Camera

Bosch recommends that you consider the following in order to optimize the life of your Bosch camera.

### 1. Guard Tours and Preset Tours

With your camera, you can cover a full 360° view using continuous Guard Tours or Preset Tours. Depending on the type of camera tour selected, your camera might be either in continuous motion (pan, tilt, or both) or moving between selected preset positions.

#### Continuous Guard Tours

Guard Tours are a very effective way of monitoring the entire scene; however, if not configured properly, continuous Guard Tours can reduce the service life of your camera considerably. Continuous Guard Tours should be used in applications where the tours are required to run for a fixed duration during the day (not more than twelve hours/day). Additionally, for best results, the continuous guard tour should be used in scenes with sufficient illumination levels (50 lux or better), should be at least 60 seconds in duration, and should have a smooth pan/tilt path (without erratic stops and starts), with the lens set at a wide angle (infinity focus). The tour should also include at least 10° of tilt movement.

#### Preset Tours

For scenarios that require the camera to be in continuous motion for most of the day, Bosch recommends that you set the camera in Preset Tour mode, moving between a desired set of presets. For best results, always ensure that each preset has a dwell time of at least 5 seconds.

### 2. Scene Illumination and Focus Settings

Your camera uses a high-sensitivity image sensor and a high-quality lens with a precise drive train control to maintain the best focus of the image. The Autofocus mechanism tries continuously to make the image details appear sharp. Under low light and low contrast scenarios, the Autofocus algorithm may not be able to find the correct focus points because of the lack of detail in the scene. In this case, it will keep driving the focus motor to find the best focus. If this state continues for long, the focus mechanism of your camera could be damaged beyond repair.

For best results, maintain the scene illumination (visible light and/or IR illumination) to a level that allows the camera to easily resolve the details in the scene. The illumination requirements are site-specific and should be verified during camera installation and configuration. For best camera performance, the scene should have at least 50 lux of illumination.

For scenes where sufficient lux level cannot be maintained, the camera should be used with One Push (“Spot Focus”), and you should avoid using continuous Guard Tours.

### 3. Power-over-Ethernet (PoE)

Use only approved High PoE devices – those that Bosch recommends, or those that Bosch offers, such as a High PoE Midspan midspan or the VIDEOJET connect power supply - between the camera and your PoE network. Improper network connection can result in intermittent camera reboots. If the camera reboots frequently, test your camera with another power supply.

## 13.3 Using the Wiper/Washer (Bosch Protocol)

The "predefined position" for the wash/wipe function is preset 62. The installer must define preset 62 (preferably where the washer nozzle is located and can direct washer fluid towards the camera window) before using the wiper/washer function.

**To activate the washer/wiper function, press ON-105-ENTER and confirm this sequence:**

1. The wiper moves to a predefined position.
2. The washer turns on for five seconds. Simultaneously, the wiper turns on and wipes five times.
3. The washer turns off. The wiper turns off.
4. The camera returns to its previous PTZ position (and to inactive mode if applicable).

**To activate the wiper manually (or if the corresponding alarm was activated or deactivated):**

Press **ON-102-ENTER**.

**Note:** The wiper will turn off automatically after 5 minutes of use.

**To activate intermittent wipe:**

Press **ON-103-ENTER**. The wiper wipes twice, then returns to parked position, and then turns off 15 seconds later.

**To activate the wiper to wipe five (5) times:**

Press **ON-104-ENTER**. The wiper wipes five times, then returns to parked position and turns off.



### Notice!

If the power fails while the wiper is activated, the wiper will return to parked position, after power is restored, before turning off. The wiper will not stop in front of the camera window.

## 13.4 Using the Wiper/Washer (Pelco Protocol)

To activate the washer/wiper in Pelco protocol, follow these steps:

1. From the **SETTINGS** page > Illumination/Wiper > Wiper/washer, click Start, and then exit the menu.
2. Position the camera so that the nozzle of the washer will spray the camera window.
3. Press 62 and then Preset. Press and hold "Preset" for 2 seconds until the text "Scene 62 Stored" appears on the OSD.

**Note:** If you already have a preset stored at that position, the system prompts you to overwrite the current scene.

4. Activate the wash/wiper function. Press 1 and then press AUX-ON on the keyboard. The camera moves to preset 62. The nozzle sprays cleaner onto the camera window, and then the wiper wipes the window. The camera then returns to where it was positioned previously, or it continues to perform the tour that it was performing when you activated the wash/wipe function.



### Notice!

Depending on your camera settings, your monitor may display a freeze frame image of the wiper during or at the end of the wipe cycle. If you prefer not to see this freeze frame, you can turn off the Freeze Frame on Preposition in the PTZ Setup menu.

## 13.5 Configuring Settings for IR Illumination

The following table provides the valid combinations of settings for activating IR illumination. To activate IR illumination, set the menus Night Mode, IR Illuminator, and IR Focus Correction to the values identified in the table below, depending on your desired results.

				RESULTS	Notes
Menu	Night Mode	IR Illuminator	IR Focus Correction		
Model: MIC camera <i>with</i> IR					
Setting	Auto	Auto	Auto (or ON if Auto not available)	Within 10 seconds of switching to Night Mode, the IR lamps turn on.	This is the recommended configuration.
	Auto	Off	Auto (or ON if Auto not available)	IR lamps turn on with Aux 54 or alarms.	Use this for manual control of the IR lamps.
	Off	Auto	Auto (or ON if Auto not available)	Camera enters Night Mode with Aux 57 or alarms.	Use this for manual control of Night Mode.
Model: MIC camera <i>without</i> IR					
Setting	Auto	--	On	When using external IR lamps, user must control the IR Focus Correction using Aux 67 or alarms.	For control of IR Focus Correction with a MIC camera (non-IR).

There are no other valid combinations. Any other combination can cause the camera to have problems focusing ("focus issues"). An example of an invalid combination is:

- Night Mode = Auto
- IR Illuminator = Auto
- IR Focus Correction = Off

This combination of settings causes a blurred view at *wide angle*. (When zoomed in (at TELE angle), the view is focused.)

## 13.6 Uploading a User Logo

Customers have the option to upload custom logos that display on the web browser of the device.

All user logo images must comply with the following requirements:

- The file format must be a bitmap (.bmp).
- Height and width must not exceed 128 pixels.
- Color depth must be 8 bit (256 color bitmap).

### Upload the Logo File

1. If necessary, open the browser. Click **Configuration**.

2. Click **General**. Select **Display Stamping**.
3. Select the field **Camera name stamping**. Select the position of the logo: *Bottom*, *Top*, or *Custom*.  
**Note:** If you select *Custom*, then additional fields (**Position (XY)**) appear where you can specify the exact position of the logo. In the fields **Position (XY)**, enter the values for the desired position (0 - 255).
4. Click **Logo Browse** to open a file-search dialog. Select the image file (.bmp).
5. Click **Upload** to transfer the file to the camera.  
The message "Upload successful" should appear.  
The new logo, if applicable, replaces the previous one.
6. Select the field **Logo position**. Select the position of the logo on either side of the camera name: *Left*, *Right*, or *Logo only*. (The default value is *Off*.)
7. Click Set to save.

#### Set Logo Transparency (Optional)

1. Click the check box **Transparent background**.
2. Click Set to save.
3. Note that the color of the entire first line of the logo is the color that will be changed to transparent in the remainder of the logo. For example, if the first line is white, then all of the identical white colors of the logo image will become transparent.

#### Change the Camera Title

1. Click **General**. Select **Identification**.
2. Delete all of the text in the field **Camera name**.
3. Rename the camera if desired.
4. Click Set to save.

## 13.7

### Two-line and Three-line Camera Titles

There are two options to display camera titles, but these should not be used together. Choose one of the following modes.

- Mode 1: Azimuth/Elevation/Compass/Zoom Options
- Mode 2: Camera Title combined with Compass

#### Mode 1: Azimuth/Elevation/Compass/Zoom Options

Select one of the following options:

- Display Azimuth/Elevation and ZOOM value (Optical/Digital) at the bottom of the screen. Use the command AUX ON-95-ENTER.
- Display Azimuth/Elevation/Compass at the bottom of the screen. Use the command AUX ON-96-ENTER.

#### Mode 2: Camera Title combined with Compass

Select one of the following options. Users can toggle between the two options.

- Display two (2) lines of text at the top of the video. Use the command AUX ON-75-ENTER.
- Display three (3) lines of text at the top of the video. Use the command AUX ON-76-ENTER.

#### About Fonts for Camera Titles

- The default font style is white text with a clear background. The font size cannot be changed.
- Using the command AUX ON-77-ENTER, users can change the font color manually when the camera is in Day Mode. Toggle the text colors in the following sequence: White->Yellow->Violet->Red->Cyan->Green->Blue->White.
- Using the command AUX OFF-77-ENTER, users can set the color again to the default white.

- The font color changes automatically to white when the camera enters Night Mode.
- When the camera returns to Day Mode, the camera will use the selected font color automatically.

#### **Available Character Set**

Characters permitted:

- A-Z (upper case only)
- 0-9
- Miscellaneous characters such as - [SPACE]! " \$ & ' , . / : ?

Characters not permitted:

- Lower case characters (a-z)
- Underscores (\_)
- Save these settings so that, in case of a power failure, the system will recover and then restore the user values.

#### **Two-line Camera Title**

At the top of the video, there are two lines of text.

Line 1 displays the first 20 characters of the Camera Name/ID. Users can edit this text to enter a highway name, camera location, etc.

Line 2 displays the text, "LOOKING: X" or "LOOKING: XX" (without quotation marks), where "X" or "XX" is the compass direction. This line cannot be edited by the end user.

- LOOKING will always appear in English and will be at a fixed location on the OSD.
- The X or XX designates the compass direction that updates automatically as the camera pans. A identifies "North," "South," "East," or "West." AA identifies "Northeast," "Northwest," "Southeast," or "Southwest."

#### **Three-line Camera Title**

Lines 1 and 2 display the first 20 characters of both lines of the Camera Name/ID. Users can edit both of these lines to enter a highway name, camera location, etc.

Line 3 displays the text, "LOOKING: X" or "LOOKING: XX" (without quotation marks), where "X" or "XX" is the compass direction. This line cannot be edited by the end user.

- LOOKING will always appear in English and will be at a fixed location on the OSD.
- The X or XX designates the compass direction that updates automatically as the camera pans. A identifies "North," "South," "East," or "West." AA identifies "Northeast," "Northwest," "Southeast," or "Southwest."

## 13.8 Azimuth, Elevation, and Compass Directions

The camera can display the following data in the lower-right corner of the image display:

- **Azimuth** - The pan angle from zero to 359 degrees in one-degree increments. An azimuth of zero degrees corresponds to North.
- **Elevation** - The tilt position from zero (horizon) to –90 degrees (camera pointing straight down) in one-degree increments.
- **Compass** - The cardinal or intercardinal (N, NE, E, SE, S, SW, W, NW) heading in which the camera is pointing.

The camera allows users to display only the azimuth/elevation readings or only the compass reading, or both readings at the same time. The camera displays the azimuth/ elevation readings and the compass heading in a format such as “180 / –45 S,” where:

- 180 is the Azimuth or the pan location in degrees.
- –45 is the Elevation or the tilt location in degrees.
- S is the compass direction (cardinal or intercardinal).

The camera uses the azimuth to determine the compass direction. The following table shows the azimuth range and its corresponding compass heading:

Azimuth Range	Compass Direction
21° to 65° NE (Northeast)	66° to 110° E (East)
111° to 155° SE (Southeast)	156° to 200° S (South)
201° to 245° SW (Southwest)	246° to 290° W (West)
291° to 335° NW (Northwest)	336° to 20° N (North)
21° to 65° NE (Northeast)	66° to 110° E (East)
111° to 155° SE (Southeast)	156° to 200° S (South)
201° to 245° SW (Southwest)	246° to 290° W (West)
291° to 335° NW (Northwest)	336° to 20° N (North)

The camera uses the Azimuth Zero point, usually set to magnetic North, as the zero degree pan position and as the North compass heading. The camera then displays the azimuth reading and the compass heading based on the number of degrees from the Azimuth Zero point.



### Notice!

Bosch recommends that only the installer calibrate the Azimuth Zero point. A recalibration to the Azimuth Zero point may cause inaccurate compass headings.

### Set the Azimuth Zero point:

1. Determine the North compass heading, then move the camera to that position.
2. Use the command AUX OFF-90-ENTER to turn off the command lock (if active).
3. Use the command AUX ON-94-ENTER to set the Azimuth Zero point.

### Display/hide the azimuth/elevation reading:

- Use the command AUX ON-95-ENTER to display the azimuth/elevation reading.
- Use the command AUX OFF-95-ENTER to hide the azimuth/elevation reading.

### Display/hide the compass heading:

- Use the command AUX ON-96-ENTER to display the compass heading.
- Use the command AUX OFF-96-ENTER to hide the compass heading.



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