



**SANTEC**

## USER MANUAL

**SANTEC IP Camera**

**Model:**  
**SNC-331DLNN**



Lens not included in the delivery.

Dear customer,

Thank you for purchasing a high quality SANTEC device.

We recommend that you read this manual thoroughly before operating your new system for the first time. Please follow all instructions and observe the warnings contained in this manual.

Please contact your local dealer or SANTEC directly if you have any questions or if you wish to claim for a service or warranty.

You will find further information on our website:

[www.santec-video.com](http://www.santec-video.com)

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An der Strusbek 31  
22926 Ahrensburg  
Germany  
[www.santec-video.com](http://www.santec-video.com)

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## Safety precautions

### Caution



### Description of symbols



**Danger:** This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to a person.



**Warning:** This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

### CE compliance

This appliance complies with the CE guidelines.

If you require an EC Declaration of Conformity for this device, please send a request to: [CE@santec-video.com](mailto:CE@santec-video.com)

#### Attention:

Any changes or modifications to this appliance which have not been explicitly approved of by the respective regulatory authority, may lead to a prohibition of usage of this appliance.

### Important: Legal note



Monitoring, recording and storage of video surveillance data (images, sound), is subject to strict legal regulations. Please respect the Data Privacy Act which applies to your country.

## Safety instructions

- Before operating the appliance, please read this manual carefully and retain it for further reference.
- Before cleaning the appliance, it has to be switched off and unplugged from the power outlet. Wipe the appliance with a soft damp cloth.  
Do not use harsh cleansers or aerosols for cleaning. The type label may not be replaced.
- Do not use attachments unless recommended by the manufacturer as they may affect the functionality of the appliance and result in the risk of fire, electric shock or injury.
- Never install the appliance in areas exposed to water or other liquids.
- The appliance has to be installed in a safe and stable location according to the instructions of the manufacturer. Care should be used when moving heavy equipment. Quick stops, excessive force, and uneven surfaces may cause the appliance to fall causing serious injury to persons and damage to objects.
- Openings in the appliance, if any, are provided for ventilation to ensure reliable operation of the appliance and to protect it from overheating. These openings must not be covered or blocked. Please make sure that the appliance does not overheat.
- The appliance should only be operated from the type of power source indicated on the marking label. If you are not sure of the type of power supplied at the installation location, please contact your local dealer.
- An appliance which is powered through a polarized plug (a plug with one blade wider than the other) will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug into the outlet, try reversing the plug. Do not defeat the safety purpose of the polarized plug.
- If the appliance is powered through a grounding-type plug, the plug will only fit into a grounding-type power outlet. This is a safety feature. If your outlet does not have the grounding plug receptacle, contact your local electrician.
- Route power cords and cables in a manner to protect them from damage by being walked on or pinched by items placed upon or against them.
- For protection of the appliance during a lightning storm or when it is left unattended and unused for a longer period, unplug the appliance from the wall outlet. Disconnect any antennas or cable systems that may be connected to the appliance. This will prevent damage to the appliance due to lightning or power-line surges.
- Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
- Never insert items into the openings of the appliance. They may touch parts under electric current which may cause an electric shock.
- Never pour any liquids over the appliance.
- In case of any operating interruption or a complete operating failure please switch off the appliance and disconnect it from the wall outlet. Never attempt to service or repair the appliance yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- When replacement parts are required, be sure that the service technician uses replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

- Upon completion of any service or repairs to the appliance, ask the service technician to perform safety checks to verify that the appliance is in proper operating condition.
- The appliance should only be installed by qualified service personnel and has to comply with local specifications and regulations.
- Never point the camera at an object with a high degree of luminance. Bright vertical or horizontal lines can result in a distortion (outshine) of the entire image on the monitor. This artifact is not an error but a particularity of semiconductor CCDs when they are directly exposed to a powerful light source.
- If the camera is operated in locations with extremely differing light conditions, the aperture has to be adapted.
- Please respect the local legal regulations on waste if you need to dispose of discarded appliances.



This symbol means that electrical appliances need to be disposed of properly and not simply with unsorted household refuse. Please respect local regulations on waste disposal.

## About this user manual

This manual aims at assisting the user on how to operate the described cameras.

This manual is subject to rigid quality control. However, no guarantee can be given that mistakes are not present. We reserve the right to make changes to the manual without prior notice.

Before operating the appliance, please read this manual carefully and retain it for further reference.

Verify that all appliance items are included in the delivery. Should items be missing, do not operate the appliance and contact your local dealer.

Never attempt to repair the appliance yourself. This should only be done by qualified service personnel.

Improper handling of the appliance will invalidate the warranty.

Subject to technical changes without prior notice. Errors excepted

## Items included in the delivery

1x IP camera (without lens)

1x CD (ConfigTool)

1x Quick installation guide



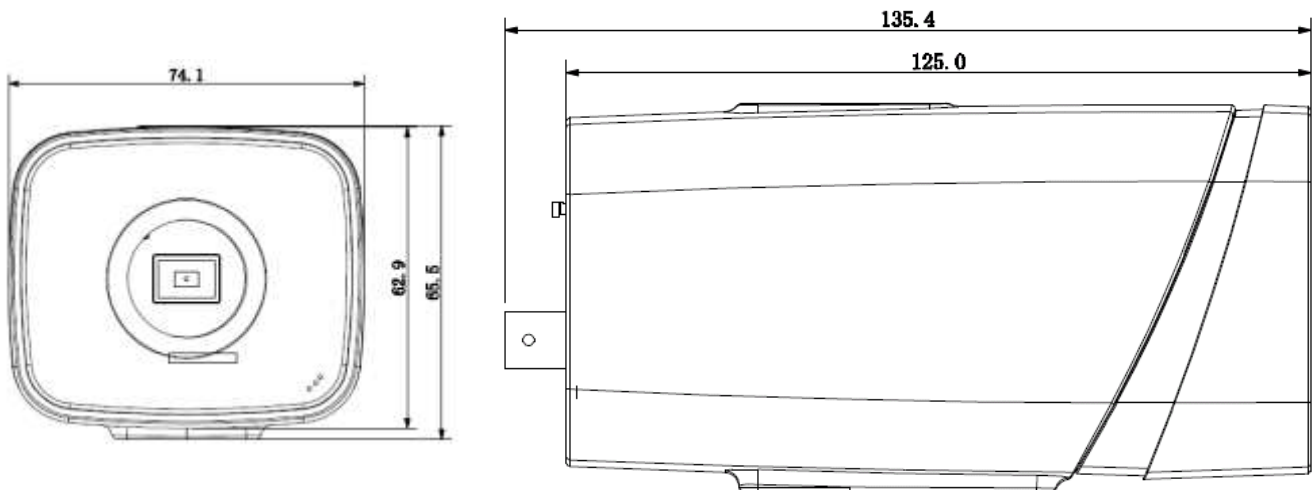
## Part I: Camera description, technical specifications, installation

### 1. Special features

- IP day/night box camera
- Excellent image quality, even under poor light conditions
- Easy to use thanks to intuitive user interface
- 3x streaming, dual streaming, multicast
- Wide Dynamic Range (True WDR), 120 dB
- OnePush lens setting
- P2P App capable
- 1/3" Progressive Scan CMOS Sensor
- 25 fps at 3 MP (PAL)
- 12 V DC, 24 V AC, PoE power supply
- OnBoard Video Analytics function (IVS)
- 4 privacy zones
- Micro SD card slot
- Audio input/output



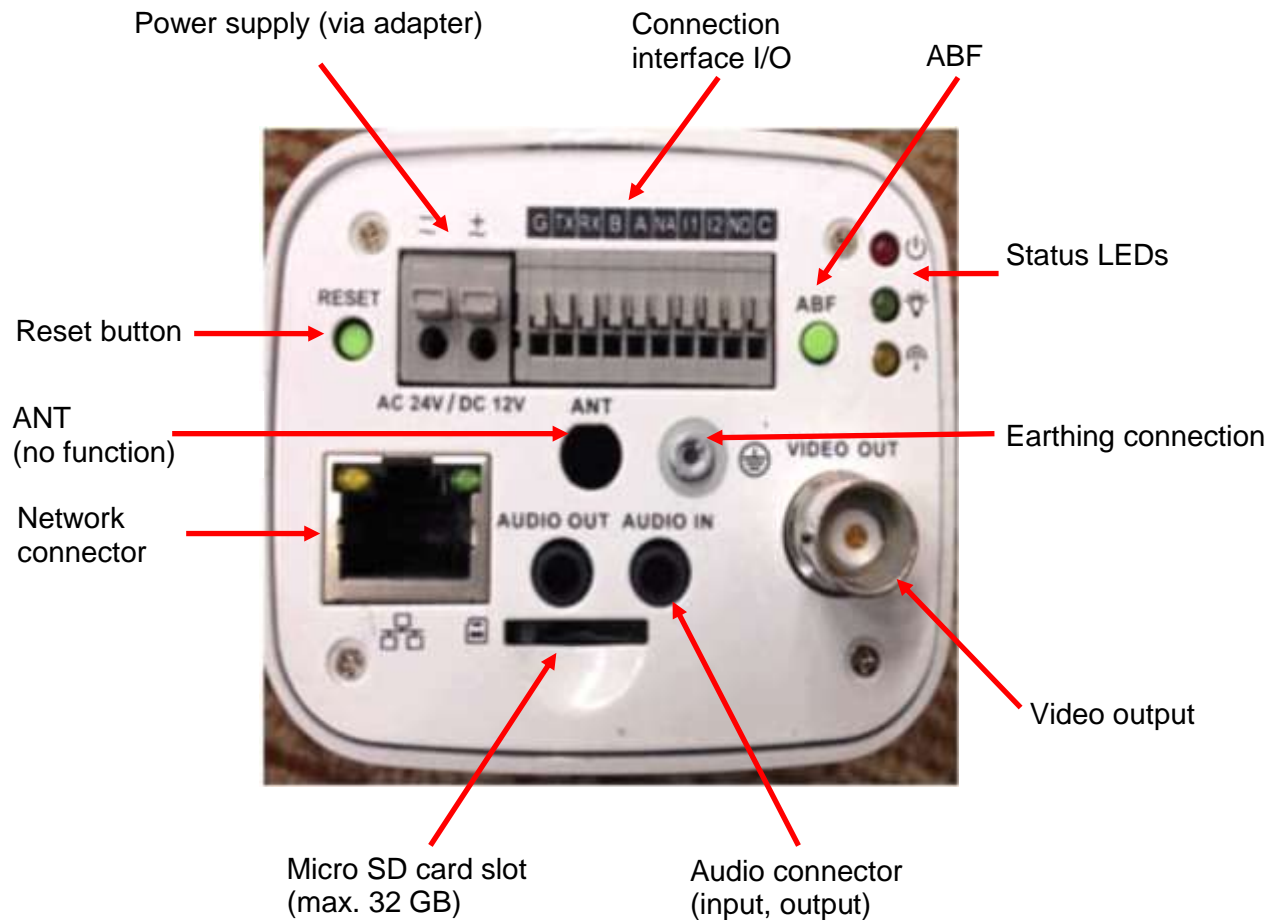
### 2. Technical drawing



All dimensions in mm. Drawings not true to scale.  
Subject to technical changes. Errors excepted.

### 3. Connectors and access

On the camera rear, you will find the following connectors:



#### LED status indicators:

Red = Power  
Green (blinking) = Recording  
Yellow = no function (WLAN)



#### ABF (Auto Back Focus):

If you press and hold this button when installing the camera, the picture automatically goes into focus.

You can also set the focus via the web. See chapter 1, item 6.

#### Connection interface I/O:

G = GND (Ground for alarm inputs)  
TX = RS-485 input  
RX = RS-485 input  
B = RS-485 (D-) output to connect a PTZ camera  
A = RS-485 (D+) output to connect a PTZ camera  
NA = Not Available  
I1 = Alarm input 1  
I2 = Alarm input 2  
NO = Normally Open, relay output  
C = Common, common relay connection



## 4 Technical specifications

<b>Model</b>	<b>SNC-331DLNN</b>
Camera type	3 MP IP day/night box camera
Installation	Indoor applications
Video norm	PAL / NTSC
Image sensor	1/3" Progressive Scan CMOS
Resolution	3 MP (2048 x 1536)
Video codec (compression)	H.264 / MJPEG
Max. frame rate	3 MP: 25 fps (PAL) / 30 fps (NTSC)
Number of video streams	3 (individually configurable)
Lens	Not included; C/CS mount
Angle of view (horizontal)	-/-
Sensitivity	0.1 (colour), 0.01 (black/white)
IR cut filter	Mechanical
IR LEDs	No
Digital Noise Reduction (DNR)	Ultra 3DNR
Digital Wide Dynamic Range (DWDR)	120 dB (True WDR)
Motion detection	See OnBoard Video Analytics (IVS)
Privacy zones	Yes, 4 zones
Switch contacts I/O	2/1
Audio input/output	2/1
Supported protocols	UPNP, BONJOUR, DHCP, FTP, HTTP, HTTPS, SMTP, RTSP, SSL, ONVIF
Classification	-/-
Vandal-proof	No
Voltage	12 V DC, 24 V AC, PoE (802.3af)
Power consumption	10 watt
Operating temperature	-10° to +50° C
Dimensions (D x H)	71.4 x 65.5 x 135.4 mm
Weight	300 g
Certification	CE
Specials OnBoard Video Analytics (IVS)	<ul style="list-style-type: none"> <li>• Tripwire</li> <li>• Detection of unauthorized intrusion</li> <li>• Detection of lost/missing objects</li> <li>• Face detection</li> </ul>
Internal storage(slot for micro SD card)	Yes (micro SD card not included)
Recommended lenses	<ul style="list-style-type: none"> <li>• SANTEC 17131DN</li> <li>• SANTEC 17140DN</li> <li>• Theia SL940A</li> <li>• Theia SY110A</li> </ul>
Recommended network recorders	<ul style="list-style-type: none"> <li>• SANTEC SNVR-1412P (4-channel)</li> <li>• SANTEC SNVR-1812P (8-channel)</li> </ul>
Recommended accessories	<ul style="list-style-type: none"> <li>• Sanpower-MS01: 1-channel PoE power supply</li> <li>• VCA-12V-1.5ASA: Power adapter with plug</li> <li>• VA-13WIK: Wall bracket</li> <li>• HEL-62D: Weather-proof housing</li> <li>• HEL-IR65D: IR weather-proof housing</li> <li>• HPV42K2A700: Videotec weather-proof housing</li> </ul>

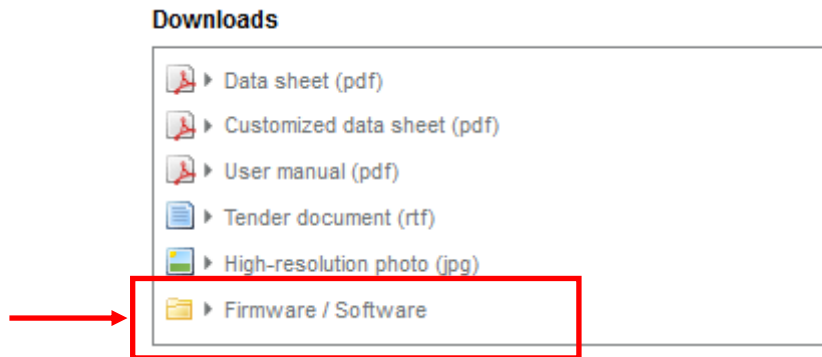
Subject to technical changes without notice. Errors excepted.

## 5. Installation

### 1. Firmware update:

On our website, we post the most up-to-date firmware version for this camera. Therefore we recommend to always update the camera with the latest firmware version. You will find the firmware here:

[www.santec-video.com](http://www.santec-video.com) → Products & Shop → Camera part number → Downloads → Firmware/Software



### 2. Insert SD card:

It is recommended to insert a micro SD card prior to the camera installation.

### 3. Installation:

The camera housing must not be opened. All connections are accessible from outside. Improper handling will invalidate the warranty!

- Mount a suitable lens to the camera.
- Install the camera in the desired location.  
Mount the camera on a solid surface which is capable of carrying the camera weight. Please only use suitable screws to ensure a safe camera mounting
- Connect the camera via a network cable directly to your computer or a switch/router. Then connect the camera to power using a suitable power adapter
- Adjust the focus using the lens. Use the ABF button on the camera rear to adjust the setting.

When unmounting the camera, please proceed in the reverse order, i.e. disconnect the camera first from power and then from the network.

#### Connection via a network recorder:

As mentioned above, you can access the camera directly via the web by connecting it to a router or your computer.

It is also possible to connect the camera to a network recorder and then access it via the web. In this case, however, you are accessing the recorder interface and not the camera interface. Depending on the type of connected recorder, you can make some camera settings here, too. The scope of available camera settings may vary depending on the used recorder.

#### Note:

Due to the various camera setting options available at different recorder models, the focus of this user manual is to describe the web access to the camera directly and not via a recorder. Please refer to the respective recorder user manual to learn more about its camera setting options.

## 6. Web access via ConfigTool

Once you have connected the camera to your computer/router, please install the „BW IP ConfigTool“ (configuration tool) on your computer which you will find on the supplied CD.


### Notes:

- When you use the ConfigTool for the first time, you will be prompted to install the plugin. Please accept the plugin installation.
- The latest version of the ConfigTools can be downloaded in the SANTEC webshop in the product section of the respective camera model ([www.santec-video.com](http://www.santec-video.com)).

Start the ConfigTool and click on „Refresh“.

All IP devices in this network will be found automatically and listed here with their IP address.



Click the Explorer symbol . Your standard web browser (e.g. Internet Explorer) will be opened automatically.

Alternatively, you may also enter the camera's IP address manually in the address field of your web browser, e.g. <http://10.1.1.52>

The web login window is displayed:



Factory default login:

**Username: admin**  
**Password: 9999**

You are now logged in and you will be able to see the live view of the camera.

### Note:

It is highly recommended to change the default user name and password here (see chapter 4.7.2):

Setup → System → Account

## Part II: Camera configuration and control via the web

Once you have connected the camera and accessed it using the web browser (ConfigTool), the live view of the camera along with the configuration menu and some setting options are displayed.

### 1. Live-view



#### 1. Language setting:

You can set the language to German or English. Click on the flag to switch languages immediately.

Alternatively, you may also change the language here (see chapter 4.7.1):

Setup → System → General

#### 2. Question mark (help):

If you click on the questions mark, a help window pops up giving you further explanations about the current site. I.e. when you are on the live site, the help window gives explanations about this site. If you are on the setup site, the help window gives explanations about the setup, and so on.

#### 3. Encoding / streaming settings:

Here you can set the Main Stream, Sub-Stream1 and Sub-Stream2. As protocol, you can select TCP, UDP or Multicast.



4. Configuration menu:





- Live
- PTZ
- Playback
- Setup
- Alarm
- Setup Assistance
- Logout






Each menu topic will be further explained in the following chapters.

5. Function fields:

Note:











Depending on the used camera model, the following function fields may vary and may not be available for all camera models.



Symbol	Description
	<p>Relay output: Click on this symbol and it turns red (you may hear a slight clicking noise in the camera). Red = Alarm contact is activated. Click again on this symbol and it will turn grey (you may hear a slight clicking noise in the camera). Grey = Alarm contact deactivated.</p>
	<p>Digital zoom: Click on this symbol. It turns blue when activated. Click again to deactivate it (will turn white). Alternatively, you may right-click with the mouse to deactivate the zoom.</p> <p>Zoom options:</p> <ul style="list-style-type: none"> <li>• Click the zoom symbol. Move the mouse into the live image and use the mouse wheel to zoom in and out.</li> <li>• Click the zoom symbol. Left-click and hold to draw an area in the live image (red frame) which you wish to zoom. Use Drag &amp; Drop to move the selected area. Use the mouse wheel to further zoom in/out.</li> </ul>
	<p>Snapshot: Click this symbol to make a snapshot of the current image. This snapshot will be stored at the path which you have defined here (see chapter 4.2.5): Setup → Camera → Video → Path</p>
	<p>Triple snapshot: Click this symbol to make 3 snapshots at 1 fps of the current image. These snapshots will be stored at the path which you have defined here (see chapter 4.2.5): Setup → Camera → Video → Path</p>

Symbol	Description
	<p><b>Record:</b> Click on the record symbol. It will turn blue and the recording of the live image starts. Click again to stop the recording (turns white). The recordings will be stored at the path which you have defined here (see chapter 4.2.5): Setup → Camera → Video → Path</p>
	<p><b>Easy Focus:</b> Click this symbol and 2 parameters (autofocus) will be displayed in the live image: AF Peak and AF Max. You cannot set the zoom and focus here but you can make settings using the  symbol (see item 6 below).</p>
	<p><b>Audio:</b> Click this symbol to activate the sound (audio) during the live image (symbol turns blue). Click again to turn the audio off (symbol turns grey).</p> <p>Setting options for audio can be made here (see chapter 4.3): Setup → Camera → Audio</p> <p>Audio (sound) is only available if:</p> <ul style="list-style-type: none"> <li>• A microphone (not included in the delivery) is connected to the audio input of the camera</li> <li>• Audio function is enabled on your computer (sound card, speaker)</li> <li>• You have been granted audio permission by your administrator</li> </ul>
	<p><b>Talk::</b> By clicking the talk function you can turn it on and off, e.g. if you need to make announcements.</p> <p>Setting options for the microphone can be made here (see chapter 4.3): Setup → Camera → Audio</p> <p>Audio (sound) is only available if:</p> <ul style="list-style-type: none"> <li>• A speaker (not included in the delivery) is connected to the audio output of the camera</li> <li>• Audio function is enabled on your computer (microphone)</li> <li>• You have been granted talk permission by your administrator</li> </ul>



## 6. Display settings:

Symbol	Description
	<p>Image adjustment: Click this symbol to display a small panel for image adjustment options.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  Brightness   Hue         </div> <div style="text-align: center;">  Brightness   Hue         </div> </div> <p>Use the slide ruler to adjust the video image. Click „Reset“ to reset all items to default values (50). Click again to hide the small display. Further image adjustment options can be found here (see chapter 4.1.1): Setup → Camera → Conditions → Conditions</p>
	<p>Original size: Click this symbol to display the video image in its actual resolution and original width-to-height ratio. Depending on the resolution of your monitor, the video image might be displayed smaller or larger. Click this symbol again to return to the previous view.</p>
	<p>Full screen: Click this symbol to display the video image as full screen. Double-click into the video image or press the ESC key to return to the normal view. <b>Note:</b> Depending on the used monitor, the image might appear distorted.</p>
	<p>Width-to-height ratio: Click this symbol. Left to it, you can choose between „Original“ and „Adaptiv“ (lights-up in yellow). The video image might appear distorted.</p>
	<p>Fluency: Here you can select from „Realtime“, „Normal“ and „Fluency“ (lights-up in yellow). <b>Realtime:</b> The image is displayed in realtime, the latency is as low as possible. The required bandwidth is increased because of low compression. <b>Normal:</b> Default. High compression requires less storage and produces good image quality. It might happen that fast movements are not clearly visible. <b>Fluency:</b> Optimized for fast movement display.</p>
	<p>Rules info: Can be enabled or disabled. This function is only working with regards to the IVS analysis and face detection. If you have defined a detection area for IVS analysis or face detection, you can enable this icon here to display the function in the live image.</p> <p>Please also see: Chapter 4.5.2 Setup → Event → IVS Analyse Chapter 4.5.3 Setup → Event → Face detect</p>

	<p><b>Focus:</b> Click this symbol to call-up a small panel with setting options for focus adjustments.</p> <ul style="list-style-type: none"><li>• <b>Zoom and focus:</b> Use the slide ruler to adjust the focus (sharpness) and their level of speed. If, in addition to this, you click on the  symbol in the function bar, values for AF Peak and AF Max are displayed in the video image.</li><li>• <b>Auto focus:</b> Automatic adjustment.</li><li>• <b>Reset:</b> All settings for focus are reset to default values.</li><li>• <b>Refresh:</b> Refresh the video image.</li></ul>
---	--

## 2. PTZ

### 2.1 PTZ control

There is a small panel for PTZ control.



#### **PTZ directions:**

For PTZ control, please use the 8 directions arrows by clicking on them.

In the middle of the direction arrows, you will find a 3D quick positioning button. By clicking on this button, the camera image will be displayed as full screen. Press and hold the mouse to draw a box into the image. This area can now be displayed at max. 16x speed. The smaller the area, the higher the speed.

#### **Speed:**

PTZ rotation speed (values 1-8; default = 5).

#### **Zoom, Focus, Iris:**

Use the plus/minus buttons to adjust the zoom, focus (sharpness) and iris.

## 2.2 Calling-up the PTZ functions

Using a small extra panel you can call-up the PTZ functions. If you wish to setup/define the PTZ functions, this needs to be done here:

Setup => PTZ => Function (see chapter 4.7.3)

### Scan:



Click on „Start“ to start the scan function.

### Preset:



Up to 255 presets are available.

### Tour:



Up to 255 tours are available.

### Pattern:



Up to 5 patterns are available.

Assistant:



Up to 8 assistants are available.

Light wiper:



Light and wiper function can be enabled here (provided the camera has been installed in a camera housing which is equipped with a light and wiper function).

## 3. Playback

### 3.1 Preparations

It is recommended to adjust and correct (if necessary) the date and time setting for the camera. Otherwise the search for recorded data will be difficult. Date and time are to be adjusted here (see chapter 4.7.1):

Setup → System → General → Date & Time

Before making video recordings or snapshots, you have to define the path where to store these data. Here you can differentiate between manual recordings/snapshots and alarm-triggered resp. schedule-triggered recordings/snapshots.

#### 3.1.1 Manual recording/snapshots

Recordings (videos) and snapshots of the live image can be made manually. In the live view, you can use the following items for manual recordings/snapshots:



Single snapshot



Triple snapshot



Video

These manually created videos/snapshots cannot be stored on the SD card in the camera but only on your computer and the path which you need to define here (see chapter 4.2.5):

Setup → Camera → Video → Path

By default, all recordings are stored on your C: drive.

By clicking on „Browse“ you can change the path.



Videos/snapshots will be stored on your computer under the here defined path, ready for you to be viewed and played back.

### 3.1.2 Alarm-based and schedule-based recordings/snapshots

Recordings (videos) resp. snapshots which are triggered by an alarm/event or by schedule, are not automatically stored to your computer (in contrast to manual recordings/snapshot) but there are several storage paths available (see chapter 4.6.2):

Setup → Storage → Destination

### 3.2 Playback of videos and snapshots

Using the playback menu, you cannot playback manually recorded videos/snapshots because they are stored locally on your computer.

This means that the playback menu of the camera only displays videos/snapshots which have been triggered by an alarm or by schedule.

In the playback menu you can select:

- File type:  
Video (file will be saved as MP4 or AVI) or snapshot (file will be saved as JPG or BMP).
- Data Source:  
Default: SD card

The **calendar** highlights those days in colour where recordings (video or snapshot) are available. Click on the coloured day.



In the **time bar**, recordings for this day are colour-coded at the respective time or duration:

- Red: Schedule-based recording
- Yellow: Motion
- Green: Alarm
- Blue: Manual



#### Only for video playback:

You can adjust the time back to have a more detailed division into hours or minutes:

- 24 hr: 24 hour display
- 2 hr: 2 hour display
- 1 hr: 1 hour display
- 30 min: 30 minute display



Use this button to move from the calendar view to the **list view**. All recordings of this day are listed here.



For longer lists, use the arrows to go to the next page.

Double-click on a recording's start time to display information such as start and end time of the recording as well as file size. Moreover, the colours indicate the type of recording (in the example on the left: yellow = motion recording).

You may also search for recordings/snapshots based on the recording time. In the time field, enter the time (start and end time) and click on the search icon (magnifying glass). In the list, only recordings/snapshots in this time frame are listed.

If you click on the arrow next to a recording, you can download it and store it on your computer. The storage path can be set here (see chapter 4.2.5):

Setup → Camera → Video → Path










Use this button to exit the list view and to return to the calendar view.

### Playback of videos:

Use the playback bar on the bottom of the screen to playback a video:

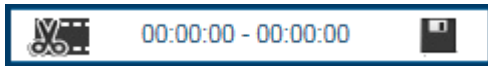


Symbol	Description
	Playback video (regular speed)
	Stop video
	Next frame: Playback frame by frame
	Slow playback: Shows video at slow speed.
	Quick playback: Shows video at high speed.
	Turn the sound on/off.
	Adjustment of volume level.

### Playback of snapshots:



Click this symbol to playback a snapshot.

**Video cut (clip):**

You may cut out sections of interest of the recorded video (video clips).

1. Click on the start time and then on the cut icon. Then enter a start time and click again on the cut symbol.
2. Click on the end time and then on the cut icon. Then enter an end time and click again on the cut symbol.
3. Click on the save icon to store the video clip.

Define the storage path here (see chapter 4.2.5):

Setup → Camera → Video → Path

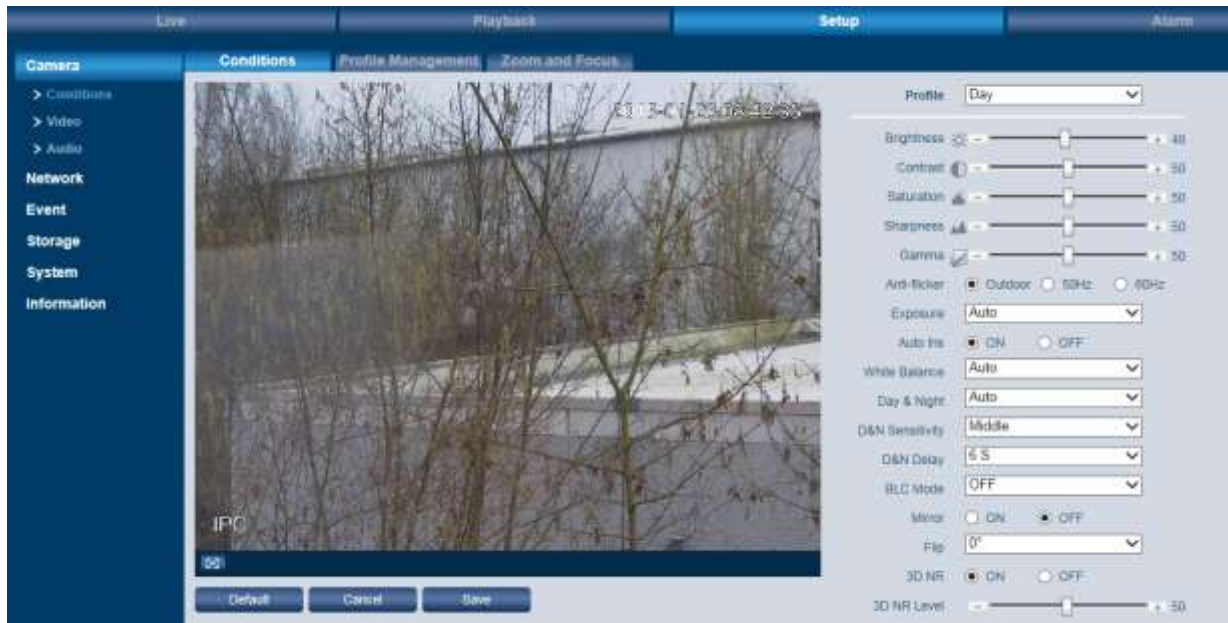


## 4. Setup

### 4.1 Setup → Camera → Condition

#### 4.1.1 Setup → Camera → Condition → Condition

Here you can define various settings for the video image. The settings are effective in the image immediately as soon as they are set.



#### **Profile:**

You can choose between time profiles „Day“, „Night“ and „Normal“. Each of these profiles can be defined individually.

#### **Brightness, contrast, saturation, sharpness, gamma:**

Use the slide ruler to adjust the image. Use the “Default” button to reset all settings to default value (50).

#### **Anti-flicker:**

For Germany, Austria and Switzerland, 50 Hz is commonly used.

60 Hz is mainly used in the USA.

Select the „Outdoor“ (daylight) mode if no artificial light source is available in the surveillance area.

#### **Exposure:**

- Auto: The optimum exposure is set automatically.
- Low noise: The camera automatically sets the exposure for minimum noise. The higher the gain value, the lower the noise. The noise level is lower in this mode than in auto mode.
- Low motion blur: The camera sets the exposure for the least possible motion blur. The motion is clearer than in auto mode.
- Manual: You can set the shutter and the gain value manually.

**White balance:**

- Auto: The camera automatically activates the white balance function.
- Sunny: For sunny (bright light) days.
- Night: For dark days and nights.
- Outdoor: For outdoor applications.
- Customized: Here you can manually set the red and blue gain values.

**Day & night:**

- Colour: The camera is permanently using the colour mode (day mode), even at night or when it is dark.
- Black & white: The camera is permanently using the black & white mode (night mode), even during the day or when it is bright.
- Auto: The camera automatically switches between colour mode (day mode) and black & white mode (night mode).

**D & N sensitivity, D & N delay:**

These two functions are only available if you have selected „Auto“ as day & night mode. The sensitivity indicates the level of reaction to changes in brightness (low, middle, high). The longer the delay time, the higher the probability that the camera does not switch several times between colour and black & white mode.

**BLC mode:**

- Backlight compensation. Here you can select from „Default“ (= automatically) and „Customized“ (= define your own area in the video image).
- WDR: Wide Dynamic Range: Dark areas are brightened up and bright areas are darkened.
- HLC: Highlight compensation. Particularly bright light spots (e.g. caused by car lights) will be reduced in brightness, thus overexposure is reduced. Hence more details become visible. HLC might cause the overall picture to become a bit darker than usual.

**Mirror:**

If enabled, the video image is mirrored. Wenn Sie diese Funktion aktivieren, wird das Videobild gespiegelt.

**Flip:**

You can flip (rotate) the video image by 90°, 180° or 270°. If you select 0°, the normal view is restored.

**3DNR level:**

Here you can reduce the noise level.



Once you have made your setting, please click „Save“. Use „Default“ to reset all settings to default values.

#### 4.1.2 Setup → Camera → Conditions → Profile Management

Switching between profiles can be schedule-based or sensor-based.

- Normal
- Full time: Day or night
- Schedule: Use the ruler to define the duration resp. the time.



#### 4.1.3 Setup → Camera → Conditions → Zoom and focus

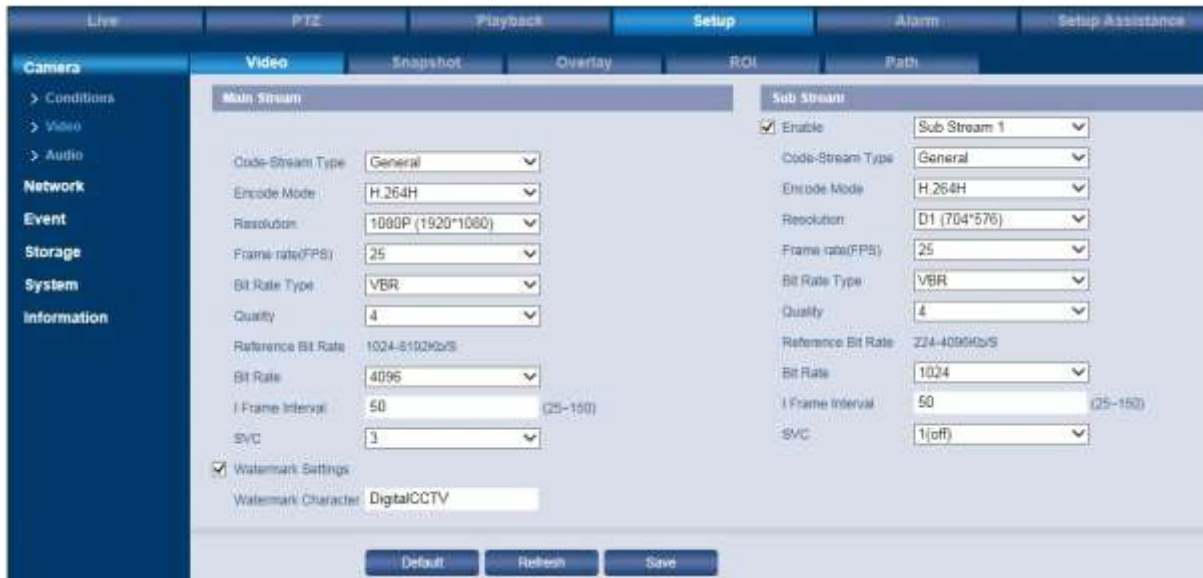


Here you can adjust the sharpness (focus). Use the slide ruler or the plus/minus buttons. You can also set the adjustment speed (1, 5, 20, 100). Use „Auto Focus“ to automatically adjust the picture sharpness.

## 4.2 Setup → Camera → Video

### 4.2.1 Setup → Camera → Video → Video

Here you can adjust the settings for the main stream and the sub stream



The screenshot shows a web interface for video settings. The 'Setup' tab is active, and the 'Video' sub-tab is selected. The interface is divided into two main sections: 'Main Stream' and 'Sub Stream'.

Parameter	Main Stream	Sub Stream
Code-Stream Type	General	General
Encode Mode	H.264H	H.264H
Resolution	1080P (1920*1080)	D1 (704*576)
Frame rate(FPS)	25	25
Bit Rate Type	VBR	VBR
Quality	4	4
Reference Bit Rate	1024-8102Kb/s	224-4096Kb/s
Bit Rate	4096	1024
I-Frame Interval	50 (25-150)	50 (25-150)
SVC	1	1(off)
Watermark Settings	<input checked="" type="checkbox"/>	
Watermark Character	DigitalCCTV	

Buttons at the bottom: Default, Refresh, Save.

#### Code stream type:

The camera supports the active control of frame rates, i.e. it allows you to record in different frame rates. You can choose from “General”, “Alarm” and “Motion”. During normal operations (General), you record at low frame rates and during events („Motion“) you record at higher frame rates.

#### Encode mode:

Here you can select from H.264, H.264H and MJPEG.

#### Resolution:

Select the resolution which is most appropriate for you.

#### Frame rate (FPS):

Select the frame rate which is most appropriate for you.

#### Bit rate type:

Select between CBR and VBR. If you chose MJPEG as encode mode, only CBR is available. For CBR, the bit rate is constant whereas it is variable for VBR (1-6).

#### I-frame interval:

Here you can set the P frame amount between two I-frames. It is recommended to chose a value which is twice as high as the general frame rate.

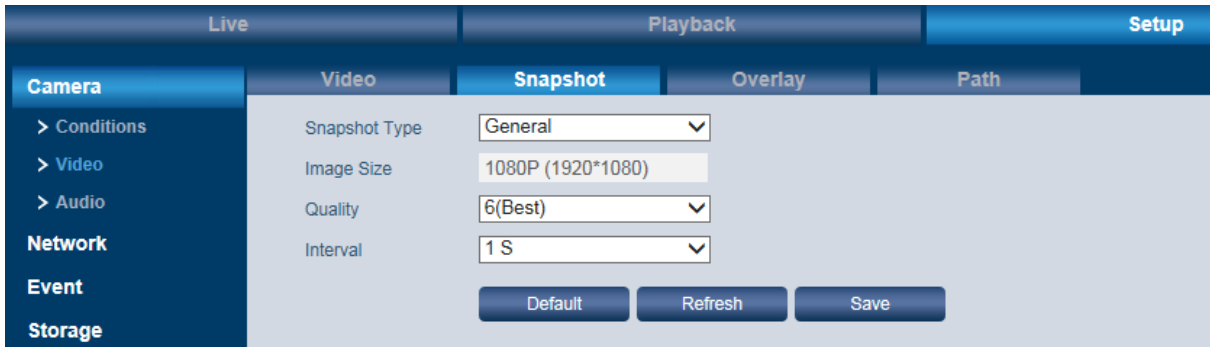
### Watermark:

If enabled, a watermark is stored in the video image. By including a watermark you can verify if the video has been tempered or not. Max. watermark text length is 128 characters.

### SVC (Scalable Video Coding):

You may select the SVC function, i.e. if there is no motion in the video image only 1/2/3/f frames will be transmitted. By reducing the frame rate for the recording in this way, a higher level of compression is achieved hence less storage capacity is required.

## 4.2.2 Setup → Camera → Video → Snapshot



The screenshot shows a web-based configuration interface. At the top, there are three tabs: 'Live', 'Playback', and 'Setup'. The 'Setup' tab is active. Below it, there are sub-tabs: 'Camera', 'Video', 'Snapshot', 'Overlay', and 'Path'. The 'Snapshot' sub-tab is selected. On the left side, there is a vertical navigation menu with options: '> Conditions', '> Video', '> Audio', 'Network', 'Event', and 'Storage'. The main content area shows the following settings:

Snapshot Type	General
Image Size	1080P (1920*1080)
Quality	6(Best)
Interval	1 S

At the bottom of the settings area, there are three buttons: 'Default', 'Refresh', and 'Save'.

Here you can define the settings for snapshots.

### Snapshot Type:

Here you can select from „General“ and „Event“.

### Image Size:

The file size/resolution is identical to the main stream (see chapter 3.2.1).

### Quality:

You can choose from 6 quality levels. The higher the value, the more storage capacity is required.

### Interval:

Define the interval for the snapshot frequency (1-7 seconds or customized up to 50,000 seconds).

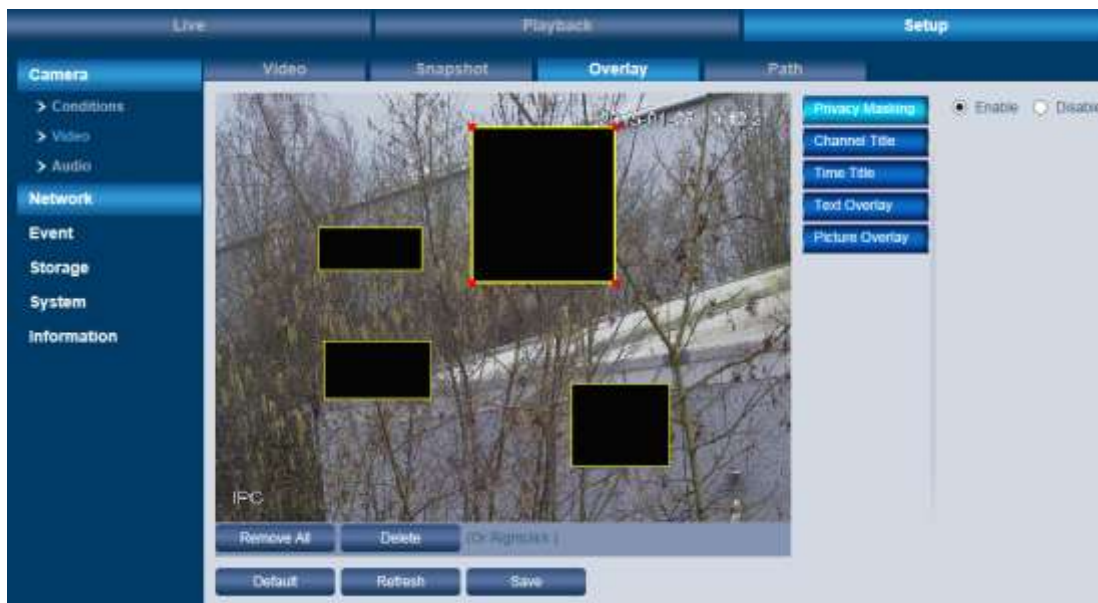


### 4.2.3 Setup → Camera → Video → Overlay

Here you can define different elements to be displayed or hidden in the video image.

#### Privacy masking:

Enable the privacy masking function. Use the mouse to draw up to 4 privacy zones into the video image (size and position), i.e. these areas will be covered. Use “Delete” to delete the selected privacy zone or right-click. Use “Remove all” to delete all privacy zones.



#### Channel title:

Enable this function and move the yellow „channel title“ box to the desired position in the video image. Then enter a name as „Input channel title“ (max. 15 characters/digits). Click on “Save” to save the channel title.

#### Note:

If you want to edit the position or text, this is done via the yellow box. The displayed title image cannot be edited directly in the video.



### **Time title:**

Enable this function and move the yellow „time title“ box to the desired position in the video image. If needed, you may also add the day of the week. Finally click on „Save“.

### Notes:

- Date and time cannot be edited here, only their position in the video image. Date/time can be edited here (see chapter 4.7.1)  
Setup → System → General → Date & Time
- If you wish to edit the position of the date/time, please use the yellow box.

### **Text overlay:**

Here you can enter a text which should be displayed in the video image. Enable this function and move the yellow text box to the desired position. Enter your text in the „Input text“ field. Finally, click on „Save“.

### Notes:

- Picture overlay and text overlay cannot be enabled at the same time.
- If you want to edit the position or text, this is done via the yellow box. The displayed text cannot be edited directly in the video image.

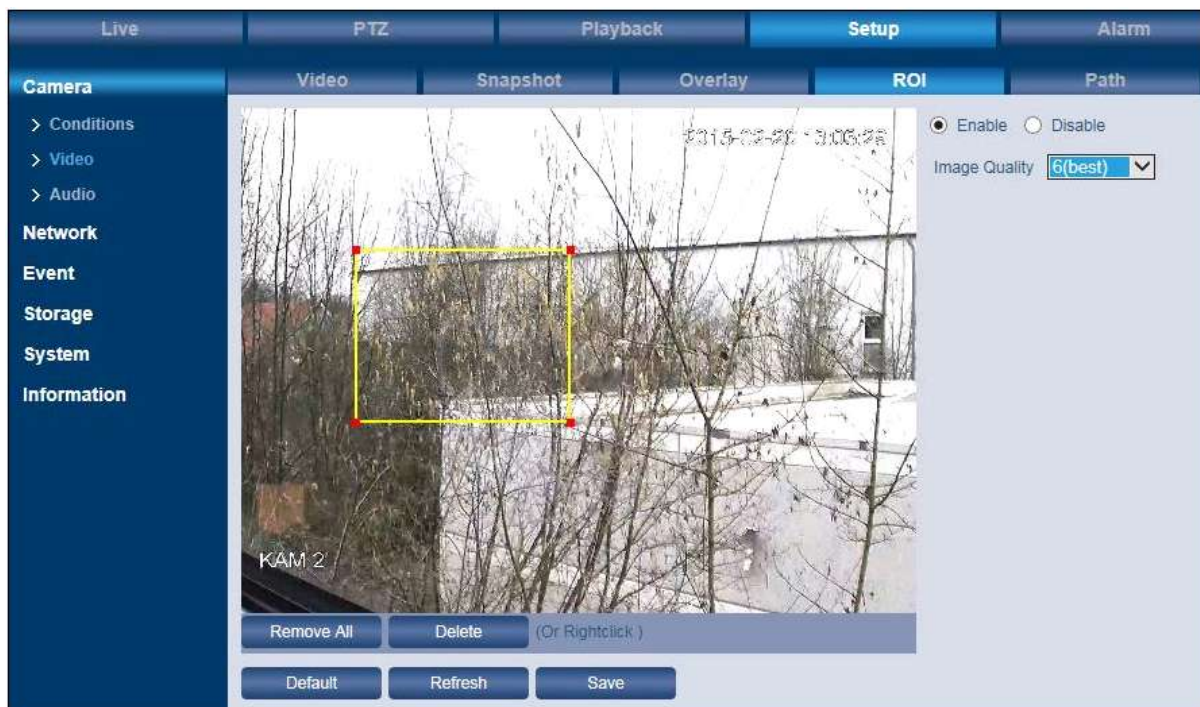
### **Picture overlay:**

You can display one of your own pictures in the video image. Click on “Enable” and move the yellow box to the desired position. Click on “Upload picture” and select the image you wish to upload. Then click on “Save”.

### Notes:

- Picture overlay and text overlay cannot be enabled at the same time.
- If you want to edit the picture, this is done via the yellow box.

#### 4.2.4 Setup → Camera → Video → ROI

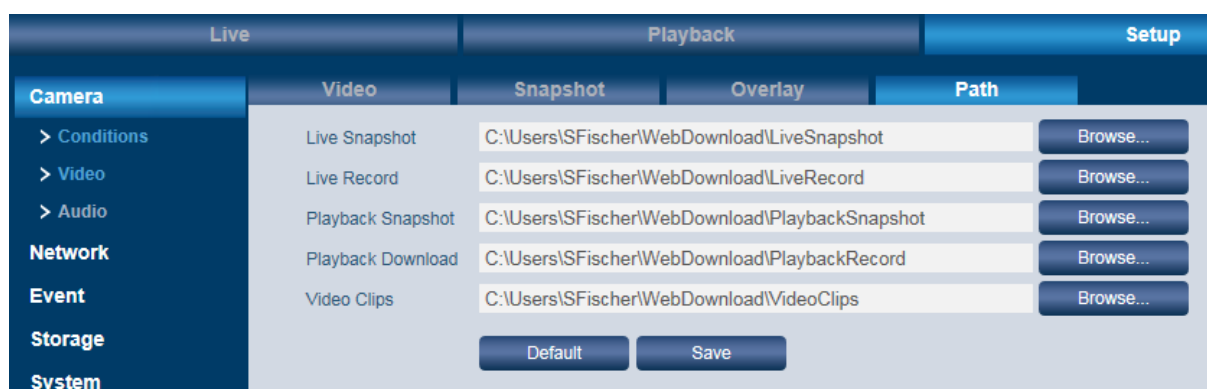


ROI = Region of Interest

In case of multiple streamings, you can select an area which – instead of the complete picture – is displayed in the selected stream.  
 Max. 4 areas can be defined. Only these areas will be transmitted in a higher resolution.  
 Hence the network load and the required storage capacity will be reduced.

#### 4.2.5 Setup → Camera → Video → Path

Here you can define the paths for storing snapshots and recordings.



By default, videos/snapshots are stored on your C: drive. Click on „Browse“ to change the storage path.



### 4.3 Setup → Camera → Audio

Preconditions for audio streaming and bi-directional communication (sound, talk) are:

- A microphone/speaker (not included in the delivery) is connected to the audio input/output of the camera.
- Your computer has enabled audio functionality (sound card, speaker, microphone).
- You have been granted audio/talk permission by your administrator.

#### Encode:



As „Encode mode“, select G.711A or G.711Mu for both main stream and sub stream.

#### Attribute:



- Audio In type:  
Line In (input channel), Mic (microphone)
- Noise filter:  
Enable or disable.
- Microphone/speaker volume:  
Use the plus/minus buttons or the slide ruler to adjust the volume for the microphone and speaker.

#### Important: Legal note

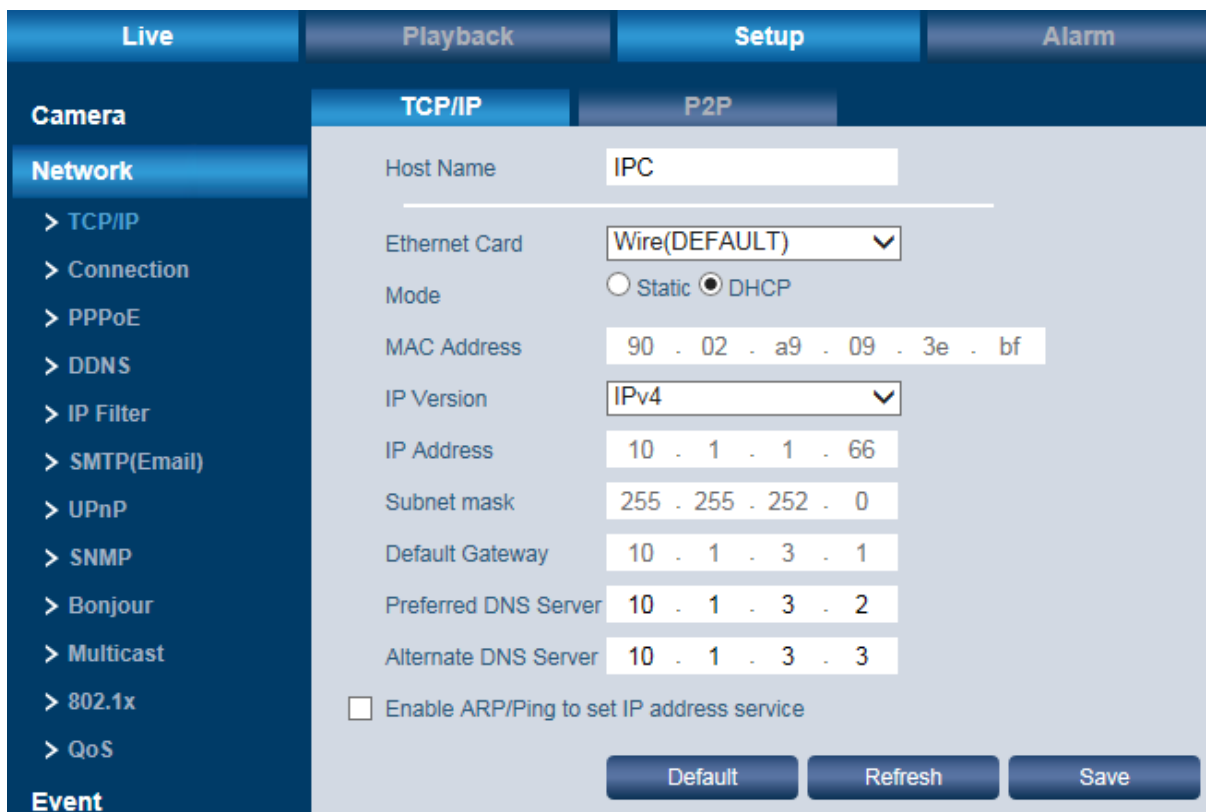


Monitoring, recording and storage of video surveillance data (images, sound), is subject to strict legal regulations. Please respect the Data Privacy Act which applies to your country.

## 4.4 Setup → Network

### 4.4.1 Setup → Network → TCP/IP

TCP/IP:



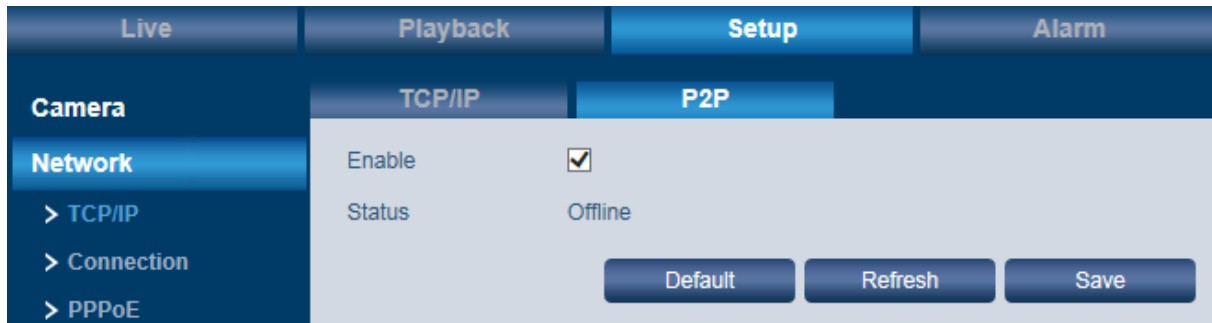
Host Name	IPC
Ethernet Card	Wire(DEFAULT)
Mode	<input type="radio"/> Static <input checked="" type="radio"/> DHCP
MAC Address	90 . 02 . a9 . 09 . 3e . bf
IP Version	IPv4
IP Address	10 . 1 . 1 . 66
Subnet mask	255 . 255 . 252 . 0
Default Gateway	10 . 1 . 3 . 1
Preferred DNS Server	10 . 1 . 3 . 2
Alternate DNS Server	10 . 1 . 3 . 3
<input type="checkbox"/> Enable ARP/Ping to set IP address service	

Default Refresh Save

Here you can define the following settings:

- Host name: Max. 15 digits
- Ethernet card
- Mode: Static or DHCP. For IPV4, DHCP can be used. IPV6 only supports static addresses.
- MAC address of camera
- IP version: IPv4 or IPv6
- IP address of camera (an IP address must only be used once within the same network)
- Subnet mask
- Default gateway
- Preferred DNS server
- Alternate DNS server
- Enable ARP/ping to set IP address service (can be used to verify the connection to a device)

## P2P:



To access the camera via an App, the camera needs to be integrated into a network with Internet access.

If you now enable the P2P function, the camera establishes a connection to the SANTEC BW P2P server. Once the connection has been established successfully, the status changes to „Online“ within one minute. You can then access the camera via your App.

The P2P QR-code for App integration can be found here:

- Setup → Information → Version (see chapter 4.8.1)
- Setup Assistance (see chapter 6)

#### 4.4.2 Setup → Network → Connection

##### Connection:



Live	Playback	Setup	Alarm
Camera	Connection	ONVIF	
Network	Max Connection	10	(1~20)
> TCP/IP	TCP Port	37777	(1025~65534)
> Connection	UDP Port	37778	(1025~65534)
> PPPoE	HTTP Port	80	
> DDNS	RTSP Port	554	
> IP Filter	<input type="checkbox"/> HTTPs		
> SMTP(Email)	HTTPs Port	443	
> UPnP			
> SNMP			
		Default	Refresh
			Save

Here you can define the following settings:

- Max. connection: Indicates how many users can access the camera at the same time (max. 20).
- TCP port: Range: 1025 to 65534. Default port is 37777.
- UDP port: Range: 1025 to 65534. Default port is 37777.
- HTTP port: Default port is 80.
- RTSP port: Default port is 554.
- HTTPS port: Default port is 443.

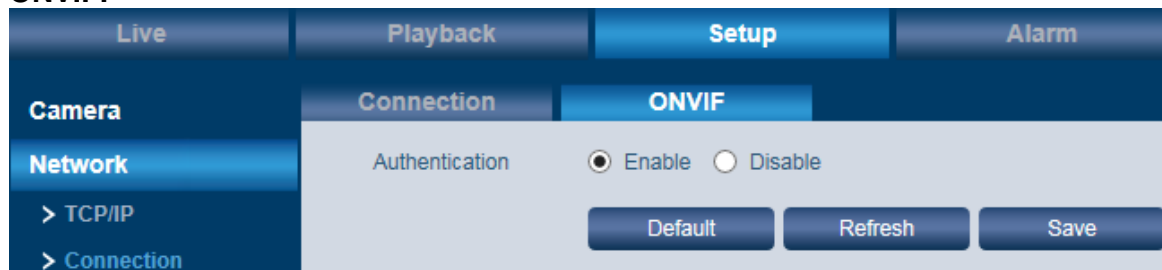
##### Important:

If you change the ports, the following ports must not be used because they are reserved for other purposes.

0-1024, 37780-37880, 1900, 3800, 5000, 5050, 9999, 37776, 39999, 42323

Please don't use any ports which are default ports for other services.

##### ONVIF:

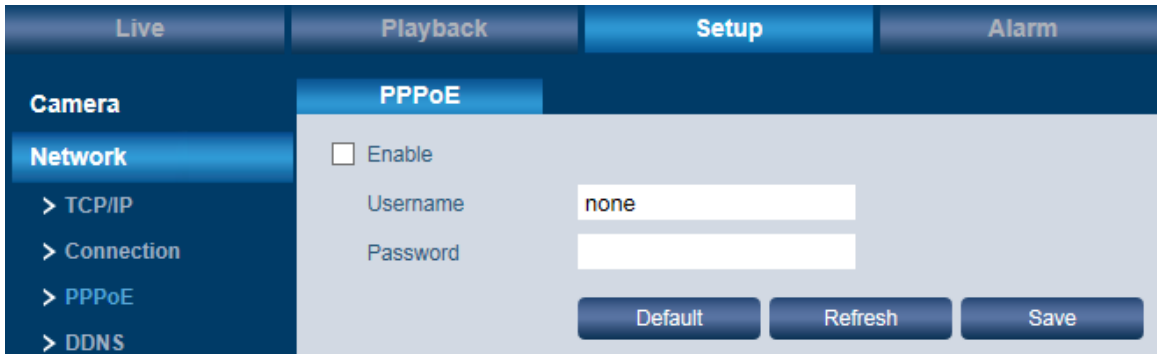


Live	Playback	Setup	Alarm
Camera	Connection	ONVIF	
Network	Authentication	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
> TCP/IP			
> Connection			
		Default	Refresh
			Save

ONVIF = Open Network Video Interface Forum)

All SNC cameras are ONVIF compatible which enables the configuration and integration of a SANTEC camera into most video management solutions know on the market.

#### 4.4.3 Setup → Network → PPPoE



The screenshot shows the 'Setup' tab of the web interface. The left sidebar is expanded to 'Network' and then 'PPPoE'. The main content area has a sub-tab 'PPPoE' and contains the following fields: an 'Enable' checkbox (unchecked), a 'Username' text box with 'none' entered, and a 'Password' text box. At the bottom are three buttons: 'Default', 'Refresh', and 'Save'.

PPPoE can be used to establish an Internet connection. You need the registration data (user name, password) from your provider. Once you have saved your entries, you have to re-boot the camera so that is able to connect via PPPoE.

Note:

If you connect via PPPoE, you have to disable UPnP to avoid a conflict.

#### 3.4.4 Setup → Network → DDNS



The screenshot shows the 'Setup' tab of the web interface. The left sidebar is expanded to 'Network' and then 'DDNS'. The main content area has a sub-tab 'DDNS' and contains the following fields: an unchecked 'Server Type' checkbox with a dropdown menu set to 'NO-IP DDNS', a 'Server Address' text box with 'dynupdate.no-ip.com', a 'Domain Name' text box with 'none', a 'Username' text box with 'none', a 'Password' text box with four dots, and an 'Update Period' text box with '10' and the label 'Minute (1~500)'. At the bottom are three buttons: 'Default', 'Refresh', and 'Save'.

DDNS can be used to access the system from outside your network. In order to do this, an external server is required.

**Server type:**

Select the DDNS protocol from the list.

**Server address:**

This is the IP address of the DDNS server. Depending on the selected server, it will be set automatically.

**Domain name:**

- For server type „No-IP DDNS“ and “Dyndns DDNS“: You can self-define the domain name.
- For server type „Quick DDNS“: Depending on the selected mode („Auto“ or „Manual“) The domain name will be set automatically or you enter your self-defined domain name (the latter can be tested by using the „Test“ button).

**User name, password:**

- Not required for „Quick DDNS“
- User name and password which you use to login to the server

**Update period:**

Here you can set the interval (1-500 minutes; default = 10 minutes) for automatically transmitting the (new) camera IP-address.

**Quick DDNS:**

Using DDNS, you can access the device via a registered domain name.

Basically, Quick DDNS has the same functions as other DDNS clients. Quick DDNS connects the domain name with the IP address. The DDNS server is intended for your device only. You have to update the connection between domain name and IP address at regular intervals. The server does not require a user name, password or ID registration.

Each device as a standard domain name which is generated by the MAC address. You may also use a customized domain name.

Before using Quick DDNS, you have to enable this service and set it up as follows:

- Server address: [www.quickddns.com](http://www.quickddns.com)
- Port number: 80
- Domain name: Either the standard domain name or a customized domain name.
- User name: Is optional. You may use e.g. your e-mail address.

**Note:**

Domain names which have not been used for more than one year, will be deleted by the system. Before this happens, however, you will receive an E-Mail notification.

#### 4.4.5 Setup → Network → IP filter



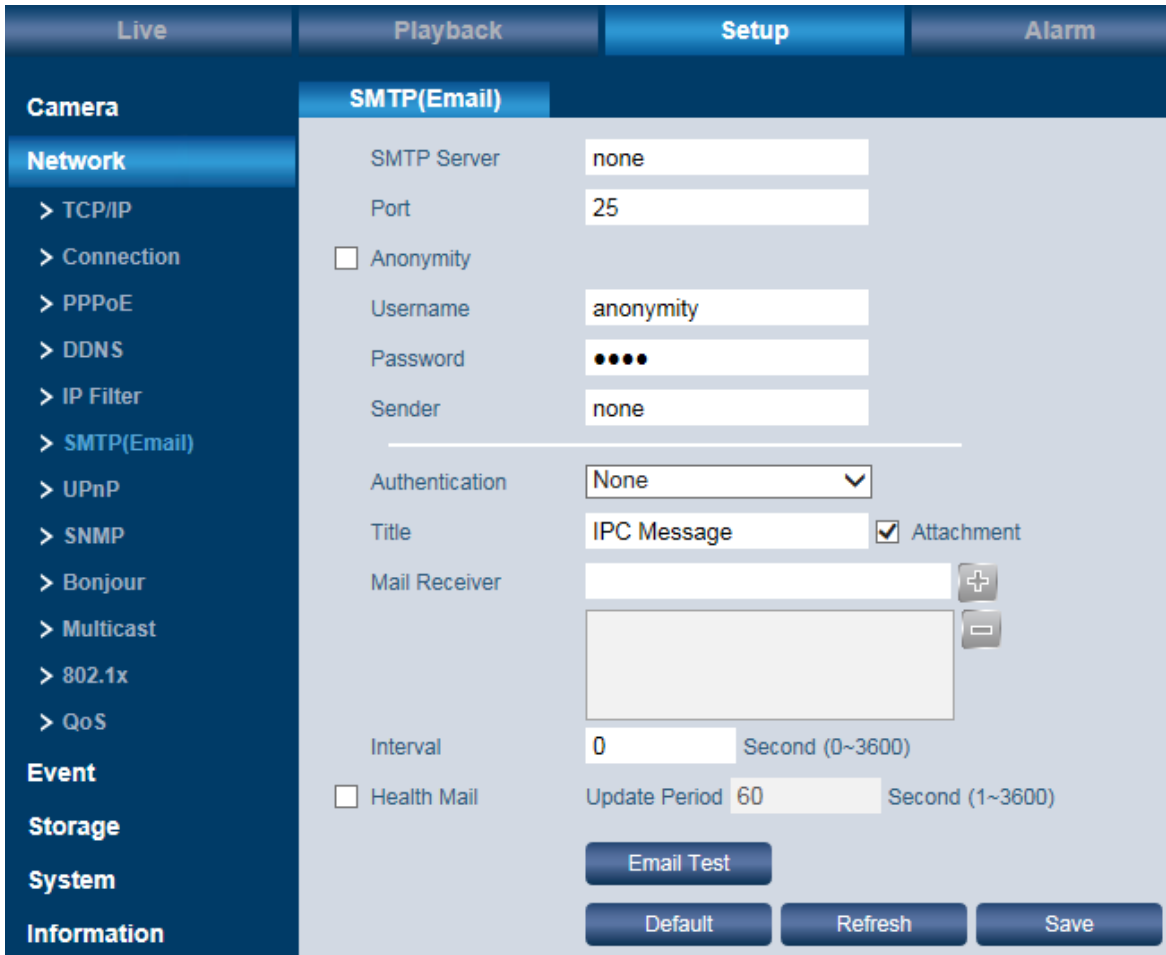
Here you can set up trusted sites (IP or MAC addresses), i.e. these addresses are granted access to the camera.

- Enable the function „Trusted sites“. If you don't tick this box, the camera can be accessed from any computer.
- Click on „Add IP/MAC“. You can then enter an IP or MAC address or an IP range (segment).
- Enter the address.
- Click on „Save“.
- The listed trusted IP/MAC addresses can be modified or deleted at any time. Click on the respective icon behind the listed address.

#### Notes:

- You cannot add your own IP address to this list.
- A MAC verification can only be done if the computer and the camera are linked to the same network.
- If you click on „Default“, all trusted sites in this list will be deleted and the list is empty.

#### 4.4.6 Setup → Network → SMTP (E-Mail)



Here you can define, if, when and how an e-mail notification is sent in case of an event.

#### **SMTP server, port:**

Please enter the IP of your e-mail SMTP server and its port (default = 25).

#### **Anonymity:**

You can use this option to enable sending anonymous e-mails. In this case, user name, password and sender name are not required.

#### **User name, password, sender:**

Please enter your login details for your e-mail account.

#### **Authentication:**

Select „None“, SSL or TLS.

#### **Title:**

Here you can enter a subject line for the e-mail notification.

#### **Attachment:**

You can attach items (e.g. a snapshot) to the e-mail notification.



### Mail receiver:

Enter the e-mail address to receive e-mail notifications and click on the plus icon. The e-mail address will be added to the list.

You may add up to 3 e-mail recipients.

If an e-mail notification is to be sent to this recipient in case of a detected motion, please enable the box „Send e-mail“ here:

Setup → Event → Video detect → Motion detect (see chapter 4.7.1)

### Health mail:

Enable this function so that the camera regularly sends a notification to the defined e-mail address(es) to confirm that the system is still running properly.

### Interval:

Enter the interval (0 to 3600 seconds) for the camera to send health e-mails. If you enter zero, there is no interval.

Sie können die hier festgelegten Einstellungen über den E-Mail Versand testen, indem Sie auf „E-Mail Test“ klicken.

## 4.4.7 Setup → Network → UPnP



Use UPnP to remotely access your system. In order to use UPnP it is necessary to set Port-Forwarding in your router. You can then access your device using the external address of your router (forwarded port).

### Note:

Tick the „Enable“ box to activate this function. The device now supports the UPnP protocol. If you use Windows, please add and enable the UPnP protocol in the network settings. The camera can now be identified.

#### 4.4.8 Setup → Network → SNMP



Live	Playback	Setup	Alarm
<b>Camera</b>			
<b>SNMP</b>			
SNMP Version <input type="checkbox"/> SNMP v1 <input type="checkbox"/> SNMP v2 <input type="checkbox"/> SNMP v3			
SNMP Port <input type="text" value="161"/> (1~65535)			
Read Community <input type="text" value="public"/>			
Write Community <input type="text" value="private"/>			
Trap Address <input type="text"/>			
Trap Port <input type="text" value="162"/>			
<input type="button" value="Default"/> <input type="button" value="Refresh"/> <input type="button" value="Save"/>			

**SNMP version:**

Select either SNMP v1, SNMP v2 or SNMP v3. Only one SNMP version can be selected at a time. For SNMP v3, additional authorisations and encryptions can be defined.

**SNMP port:**

Range: 1 to 65535. Default port = 161.

**Read/write community:**

Default settings are „Public“ or „Private“.

Valid characters/digits: Numbers, letters, \_ and –

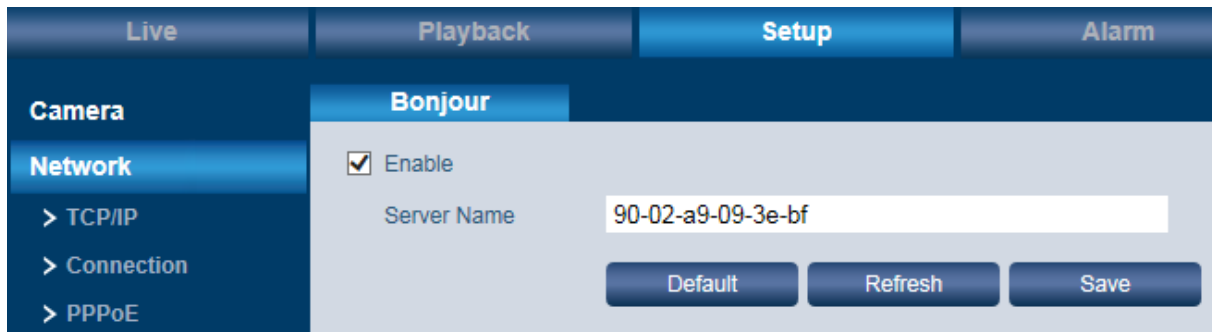
**Trap address:**

Address to send trap addresses.

**Trap port:**

Range: 1 to 65535 liegen. Default port = 162.

#### 4.4.9 Setup → Network → Bonjour



If Bonjour is enabled and the Bonjour protocol is supported, this device is automatically identified in the network as an IP camera.

In the network, the IPC server name connects to the Bonjour protocol.

The system displays the server name e.g. in the network explorer to all users which operate in the same address range.

#### 4.4.10 Setup → Network → Multicast



Multicast describes the transmission of data from one point to a group (multi-point connection). When there are multiple hosts to receive the same data packet, multiple cast is the best option to reduce the broad width and the CPU load. Hence data packets can efficiently be sent to several recipients at the same time. This is done by using special multicast IP addresses.

Please note that specific hardware might be required. Not all switches or routers support this function.

##### **Multicast address:**

- Valid IPs for multicast groups: 224.0.0.0 to 239.255.255.255.
- Reserved IPs: 224.0.0.0 to 224.0.0.225
- Administrative addresses: 239.0.0.0 to 239.255.255.255: Cannot be used for Internet transmissions.

**Port:**

Valid ports: 1025 to 65534.

Default port for main stream: 40000

Default port for sub stream: 40002

If you change the multicast address or the port, please re-boot the camera.

**4.4.11 Setup → Network → 802.1x**

The screenshot shows the camera's web interface with the 'Setup' tab selected. The left sidebar contains a 'Camera' menu with 'Network' expanded, showing options for TCP/IP, Connection, PPPoE, DDNS, and IP Filter. The main content area is titled '802.1x' and includes an 'Enable' checkbox (unchecked), an 'Authentication' dropdown menu set to 'PEAP', a 'Username' text field containing 'none', and a 'Password' text field with four dots. At the bottom of the configuration area are three buttons: 'Default', 'Refresh', and 'Save'.

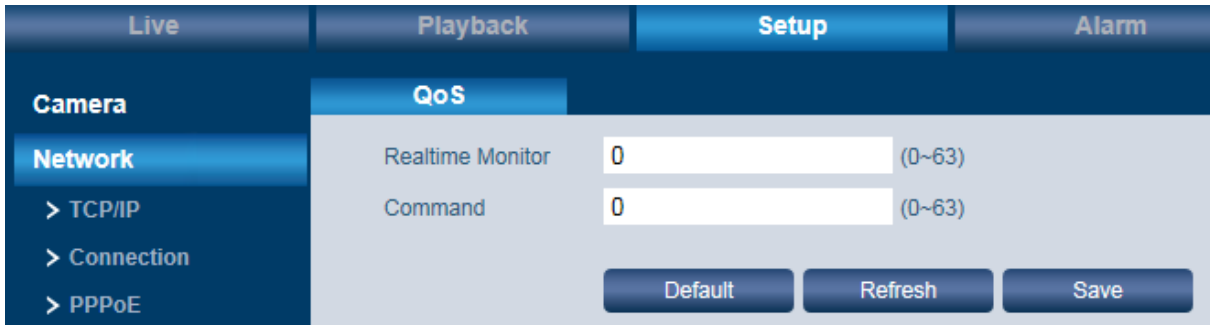
**Authentication:**

PEAP (Protected EAP Protocol)

**User name, password:**

User name and password which the camera uses to login to the server.

#### 4.4.12 Setup → Network → QoS



Live	Playback	Setup	Alarm
<b>Camera</b>			
<b>QoS</b>			
<b>Network</b>			
Realtime Monitor <input type="text" value="0"/> (0-63)			
Command <input type="text" value="0"/> (0-63)			
<input type="button" value="Default"/> <input type="button" value="Refresh"/> <input type="button" value="Save"/>			

QoS (Quality of Service) allows to transmit packets in the network traffic based on priority. This is particularly important when network congestion occurs. According to the DSCP (Differentiated Services Code Point) model, traffic flows are classified and marked with DSCP values and thus receive the corresponding forwarding treatment from DSCP capable routers.

64 levels (0-63) are supported as priority for sending data packets.

Level 0 = lowest priority

Level 63 = highest priority

**Realtime monitor:**

Data packets for realtime monitors.

**Command:**

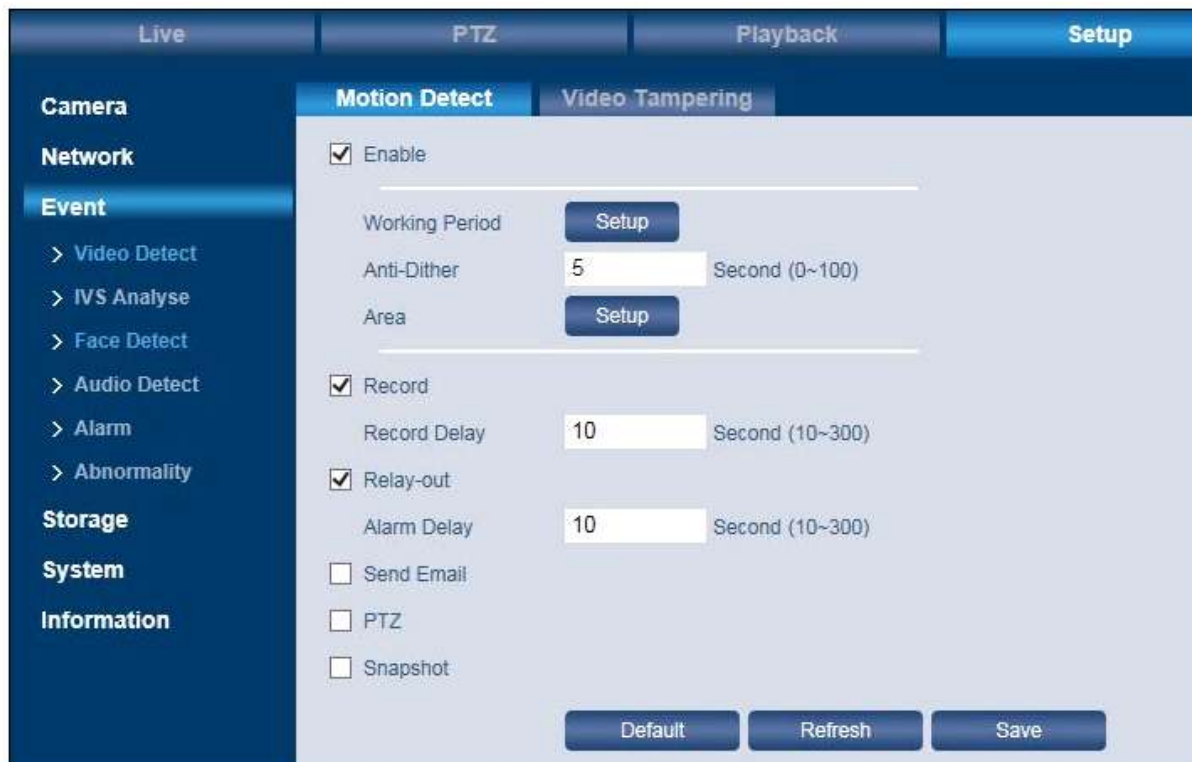
Data packets for other devices with lower priority.

## 4.5 Setup → Event

### 4.5.1 Setup → Event → Video detect

Here you can define settings for motion detection and tampering detection.

#### Motion detect:



Enable this function.

#### Working period:

- Click on „Setup“. For each day of the week, up to 6 periods can be defined.
- Click on the little wheel for each day.
- Enable each period 1-6 and enter the desired time frame. Alternatively, you can press and hold the left mouse key to highlight the time in the time bar.
- Finally click on „Save“.



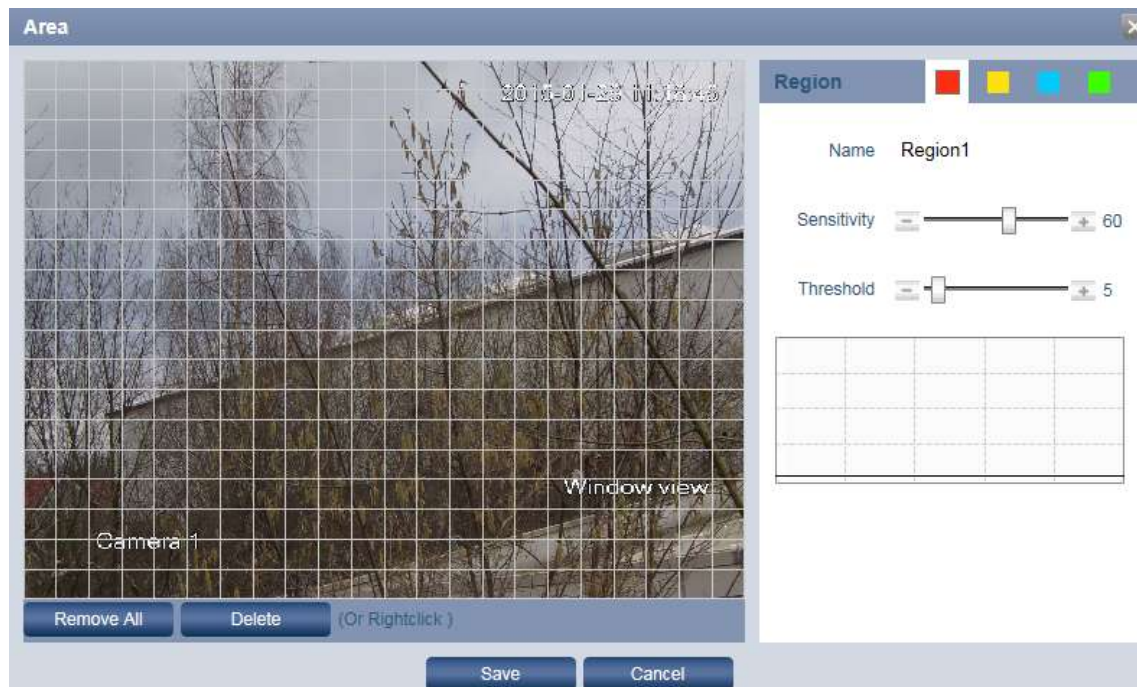
### Anti-Dither:

The camera can only process one event/alarm at the same time. Here you can define the interval (0-100 seconds) between two events/alarms.

### Area:

You can define up to 4 areas for motion detection. By default, the whole area is activated. If you wish to select only a few areas in the grid, empty the grid by clicking „Remove all“ or right-click. Drag the mouse into the desired fields in the grid. Proceed in the same way for the other area definition.

For each area, the sensitivity and threshold for motion detection can be defined.



### Manual control excluded (only available for camera model SNC-211RSIA):

If enabled, the manual PTZ control of the camera will be deactivated as long as the alarm lasts.

### Record:

Enable the alarm recording function. If enabled, the system makes event-triggered recordings. If y continuous recording is active, it will not be deactivated. In the recording there will be a hint regarding the time of this event.

### Record delay:

Define the interval between 2 recordings. This interval may range from 10 to 300 seconds. Default is 10 seconds.

### Send e-mail:

If enabled, an e-mail notification is sent to the defined e-mail address(es) in case of a detected motion (see chapter 4.4.6).



**PTZ:**

In case of a detected motion, the PTZ control is activated.

**Snapshot:**

If enabled, a snapshot is made in case of a detected motion.

**Video tamper:**

The screenshot shows the 'Video Tampering' configuration page. The interface has a top navigation bar with 'Live', 'PTZ', 'Playback', and 'Setup'. The left sidebar contains categories: 'Camera', 'Network', 'Event' (with sub-items: Video Detect, IVS Analyse, Face Detect, Audio Detect, Alarm, Abnormality), 'Storage', 'System', and 'Information'. The main content area is titled 'Video Tampering' and contains the following settings:

- Enable Video Tamper  Enable Defocus Detect
- Working Period: [ ] [Setup]
- Record
- Record Delay: 10 [ ] Second (10~300)
- Relay-out
- Alarm Delay: 10 [ ] Second (10~300)
- Send Email
- PTZ
- Snapshot

At the bottom of the configuration area are three buttons: 'Default', 'Refresh', and 'Save'.

Here you can define the actions to be taken in case of a detected video tampering, e.g. caused by moving the camera or covering it.

Basically, the setting options are the same as describe in the previous section on motion detection.




## 4.5.2 Setup → Event → IVS Analyse

IVS = Intelligent Video Surveillance

IVS is an intelligent video analysis tool which allows you to track, classify and analyse the behaviour of people or objects.

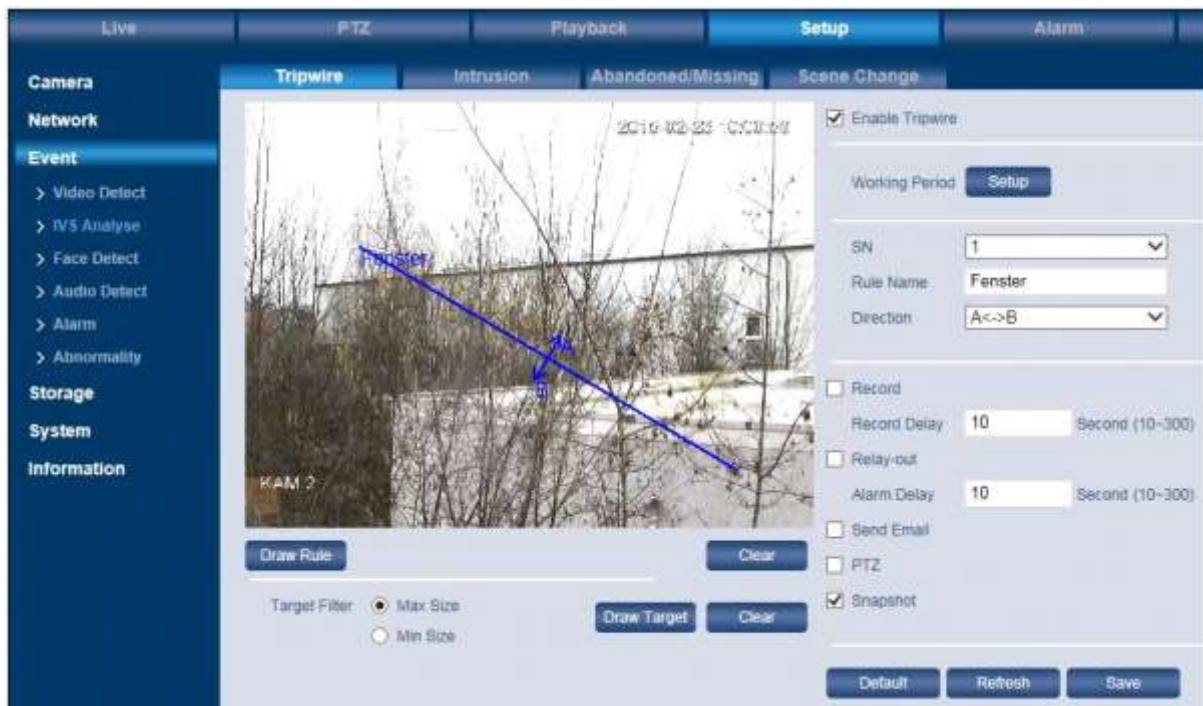
IVS functions include a virtual tripwire, the detection of unauthorized intrusion and the detection of changed scenes and missing objects.

If you enable IVS functions (e.g. the virtual tripwire), you may display these lines in the live view. To do so, please select from the bar on the live screen the “Rule info” icon  and „Enable“ it, so that you can see the tripwire in the live view.

### 4.5.2.1 Setup → Event → IVS Analyse → Tripwire

You can create a „virtual tripwire“ in the video picture, e.g. to monitor an entrance area or the protect a precious piece of art. If a person crosses this virtual line (tripwire), the tripwire alarm is triggered. In this case, a recording may be initiated, an e-mail notification can be sent, PTZ may be activated or a snapshot may be taken.

Max. 4 virtual tripwires can be created.



### Creating tripwires:

- Tick the box „Enable tripwire“.
- Click on „Working period => Setup“. For each day of the week, up to 6 periods can be defined.
- Click on the little wheel for each day.
- Enable each period 1-6 and enter the desired time frame. Alternatively, you can press and hold the left mouse key to highlight the time in the time bar.
- Finally click on „Save“.

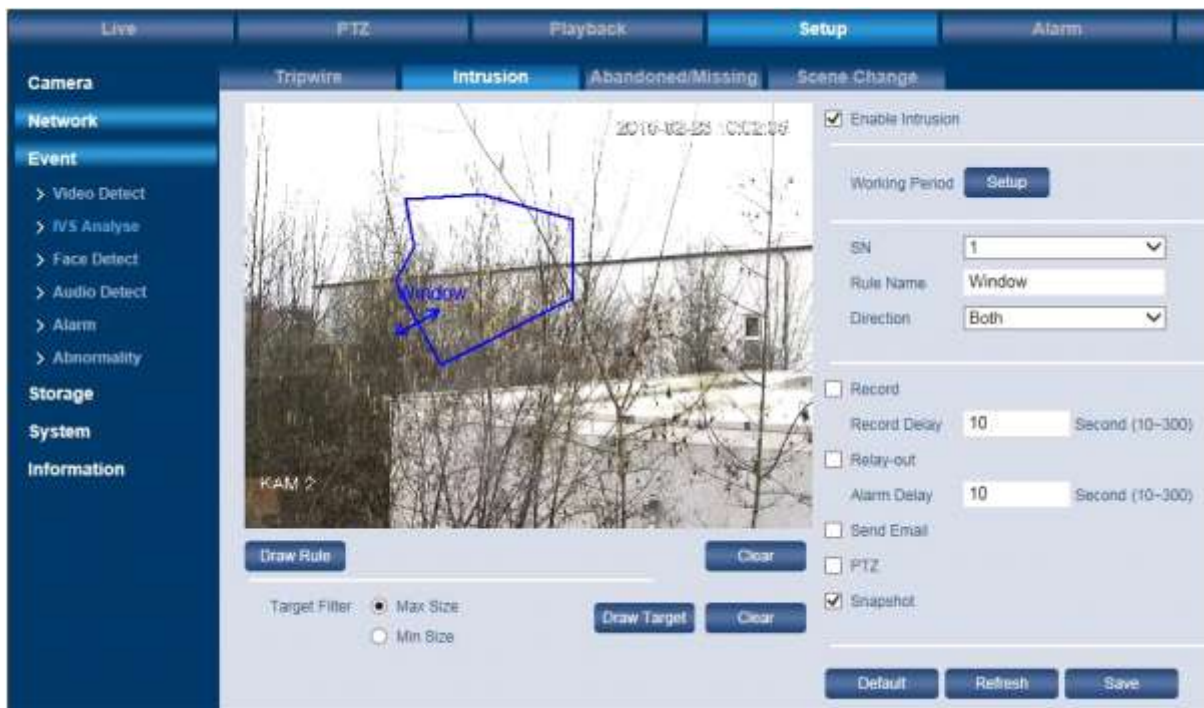


- SN:  
Please select the number of the tripwire (max. 4 tripwires can be created).
- Rule name:  
You can assign a name to each of the 4 tripwires.
- Direction:  
Please assign the direction in which to cross the tripwire to trigger an alarm.
  - A => B: From A to B (hence only in one direction)
  - B => A: From B to A (hence only in one direction)
  - A <=> B: In both directions
- Define the action to be taken if someone crosses the tripwire, e.g. start a recording or take a snapshot, send an e-mail notification, etc.
- Click on „Draw target“. 2 blue squares are displayed in the video image. You can change the size and position of each of the squares by grabbing the corners. The outer (larger) square defines the maximum detection area and the inner (smaller) square defines the minimum detection area.
- Click on „Draw rule“. You can now draw the tripwire. Click and hold the left mouse key and draw a line. Once you are finished, release the left mouse key and click on the right mouse key. The line is marked in yellow including the A=>B direction. You may edit the line. Once you are finished, click on „Save“. The line now becomes blue and cannot be edited anymore. However, the name and the direction (A/B) can still be edited even for a blue line.  
By clicking on „Clear“ you can delete the line (tripwire).

#### 4.5.2.2 Setup → Event → IVS Analyse → Intrusion

In the video image, you can define an intrusion area. This function is similar to the virtual tripwire: The tripwire is activated when crossing a line; the intrusion function is activated when entering into an area. If a person or an object (e.g. a vehicle) enters or exits this area, an action can be triggered, e.g. a recording may be initiated, an e-mail notification can be sent, PTZ may be activated or a snapshot may be taken.

Max. 4 intrusion areas can be created.



#### Creating intrusion areas:

- Tick the box „Enable intrusion“.
- Click on „Working period => Setup“. For each day of the week, up to 6 periods can be defined.
- Click on the little wheel for each day.
- Enable each period 1-6 and enter the desired time frame. Alternatively, you can press and hold the left mouse key to highlight the time in the time bar.
- Finally click on „Save“.



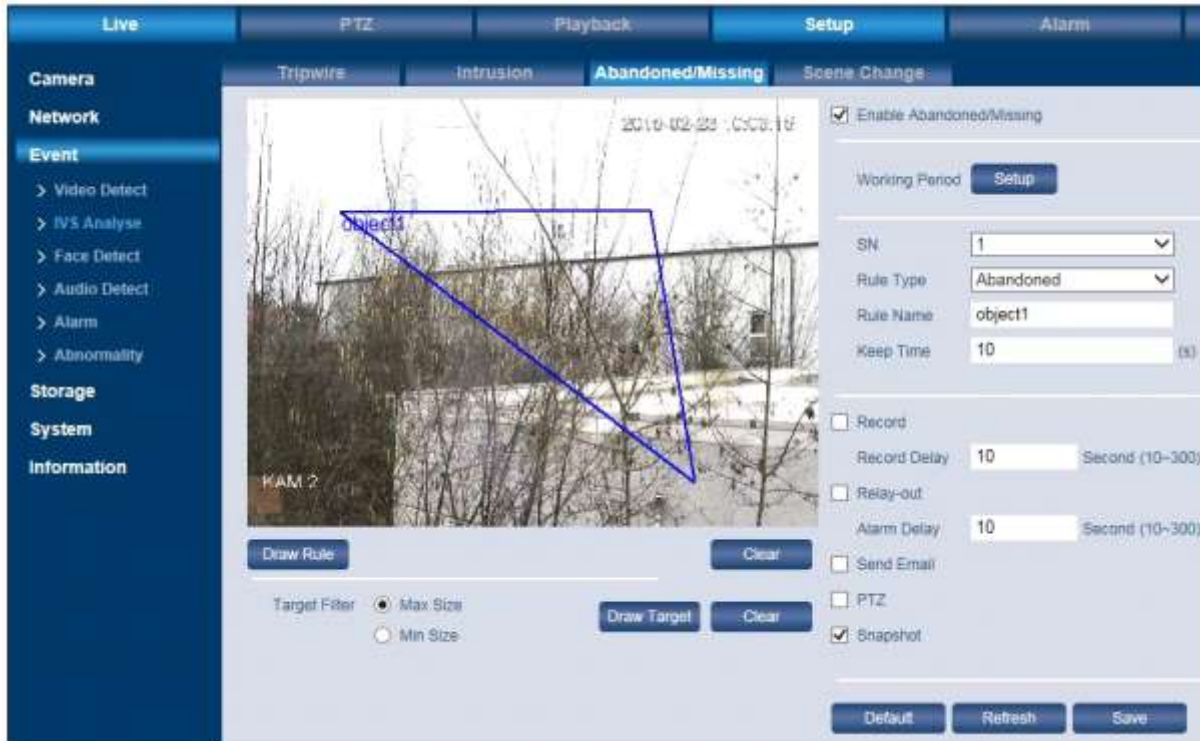
- SN:  
Please select the number of the intrusion area (max. 4 areas can be created).
- Rule name:  
You can assign a name to each of the 4 areas.
- Direction:  
Please assign the direction in which to enter the intrusion area to trigger an alarm.
  - Enter (i.e. entering the area)
  - Leave (i.e. leaving the area)
  - Both (both directions, i.e. entering and leaving)
- Define the action to be taken if someone enters the area, e.g. start a recording or take a snapshot, send an e-mail notification, etc.  
Click on „Draw target“. 2 blue squares are displayed in the video image. You can change the size and position of each of the squares by grabbing the corners. The outer (larger) square defines the maximum detection area and the inner (smaller) square defines the minimum detection area.
- Click on „Draw rule“. You can now draw the intrusion area. Click and hold the left mouse key and draw a line. To change the direction and to set a corner, left-click with the mouse. In this way, you can create the area according to your needs (thus the area is not restricted to a square). The end point of your area has to meet the starting point so that a closed area is created. Right-click with the mouse. A message saying “Drawing is completed” is displayed. You can move the whole area or grab the corners to edit it.
- Once you are finished, click on „Save“. The line now becomes blue and cannot be edited anymore. However, the name and the direction (enter, leave, both) can still be edited even for a blue area.  
By clicking on “Clear“ you can delete the intrusion area.

Note:

The function „Intrusion“ and „Abandoned/Missing“ cannot be activated at the same time.

### 4.5.2.3 Setup → Event → IVS Analyse → Abandoned/Missing

In the video image, you can create areas to detect abandoned or missing objects. If an object is detected as lost or missing, and action can be triggered, e.g. a recording may be initiated, an e-mail notification can be sent, PTZ may be activated or a snapshot may be taken. Max. 4 intrusion areas can be created.



#### Creating areas:

- Tick the box „Enable abandoned/missing“.
- Click on „Working period => Setup“. For each day of the week, up to 6 periods can be defined.
- Click on the little wheel for each day.
- Enable each period 1-6 and enter the desired time frame. Alternatively, you can press and hold the left mouse key to highlight the time in the time bar.
- Finally click on „Save“.





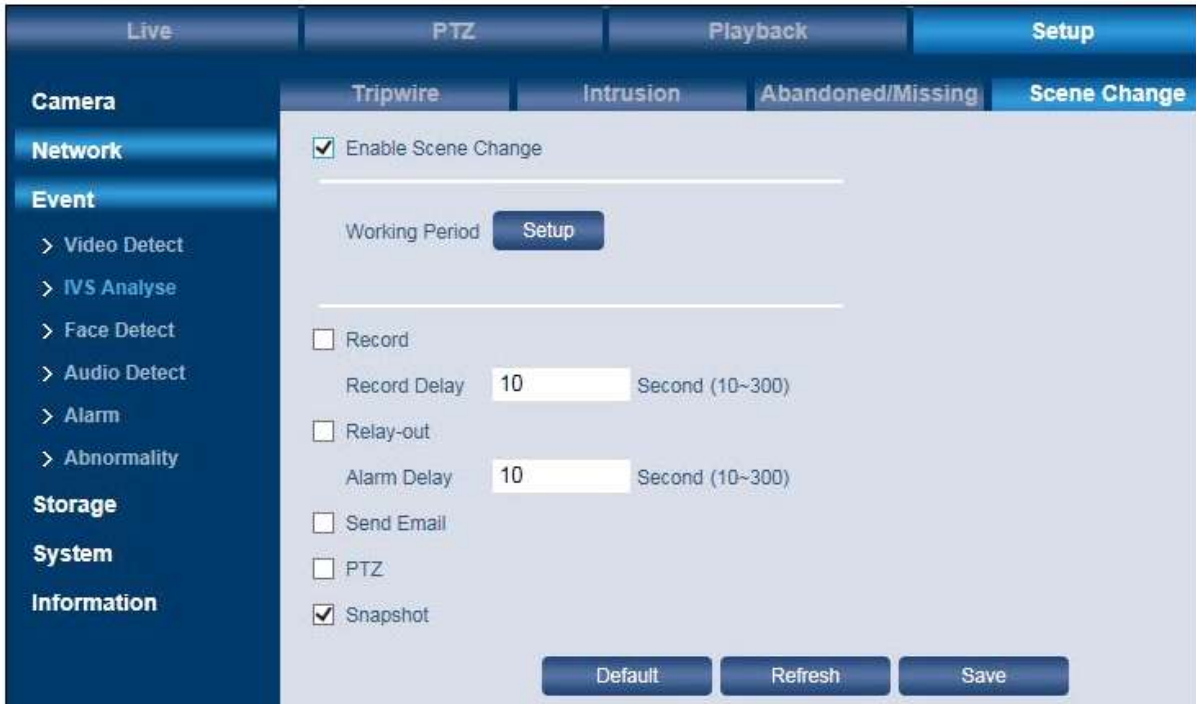
- SN:  
Please select the number of the area (max. 4 areas can be created).
- Rule name:  
You can assign a name to each of the 4 areas.
- Direction:  
Please assign the direction in which to enter the area to trigger an alarm.
  - Abandoned
  - Missing
- Define the action to be taken if someone enters the area, e.g. start a recording or take a snapshot, send an e-mail notification, etc.
- Click on „Draw target“. 2 blue squares are displayed in the video image. You can change the size and position of each of the squares by grabbing the corners. The outer (larger) square defines the maximum detection area and the inner (smaller) square defines the minimum detection area.
- Click on „Draw rule“. You can now draw the intrusion area. Click and hold the left mouse key and draw a line. To change the direction and to set a corner, left-click with the mouse. In this way, you can create the area according to your needs (thus the area is not restricted to a square). The end point of your area has to meet the starting point so that a closed area is created. Right-click with the mouse. A message saying “Drawing is completed” is displayed. You can move the whole area or grab the corners to edit it.
- Once you are finished, click on „Save“. The line now becomes blue and cannot be edited anymore. However, the name and the direction (enter, leave, both) can still be edited even for a blue area.  
By clicking on “Clear“ you can delete the intrusion area.

Note:

The function „Intrusion“ and „Abandoned/Missing“ cannot be activated at the same time.

#### 4.5.2.4 Setup → Event → IVS Analyse → Scene change

You can use this function to trigger an action if the camera image (hence the scene) changes, e.g. by camera manipulation.



The screenshot shows a web interface with a navigation menu on the left and a main content area. The navigation menu includes sections for Camera, Network, Event, Storage, System, and Information. Under the Event section, 'IVS Analyse' is selected. The main content area has tabs for Tripwire, Intrusion, Abandoned/Missing, and Scene Change. The Scene Change tab is active, showing the following settings:

- Enable Scene Change
- Working Period: [Setup]
- Record
- Record Delay: 10 [Second (10-300)]
- Relay-out
- Alarm Delay: 10 [Second (10-300)]
- Send Email
- PTZ
- Snapshot

At the bottom of the settings area are three buttons: Default, Refresh, and Save.

Enable this function and define the action (e.g. start recording, send e-mail notification, etc).

### 4.5.3 Setup → Event → IVS Analyse → Face detect

The camera is able to detect faces in the video image. Please enable the function “Enable face detect”. However, face detection is only possible if the face is in full front view and the eyes, nose and mouth are visible, i.e. the person is looking into the camera direction.

Up to 35 faces can be detected.




#### Creating face detection:

- Tick the box „Enable face detect“.
- Click on „Working period => Setup“. For each day of the week, up to 6 periods can be defined.
- Click on the little wheel for each day.
- Enable each period 1-6 and enter the desired time frame. Alternatively, you can press and hold the left mouse key to highlight the time in the time bar.
- Finally click on „Save“.



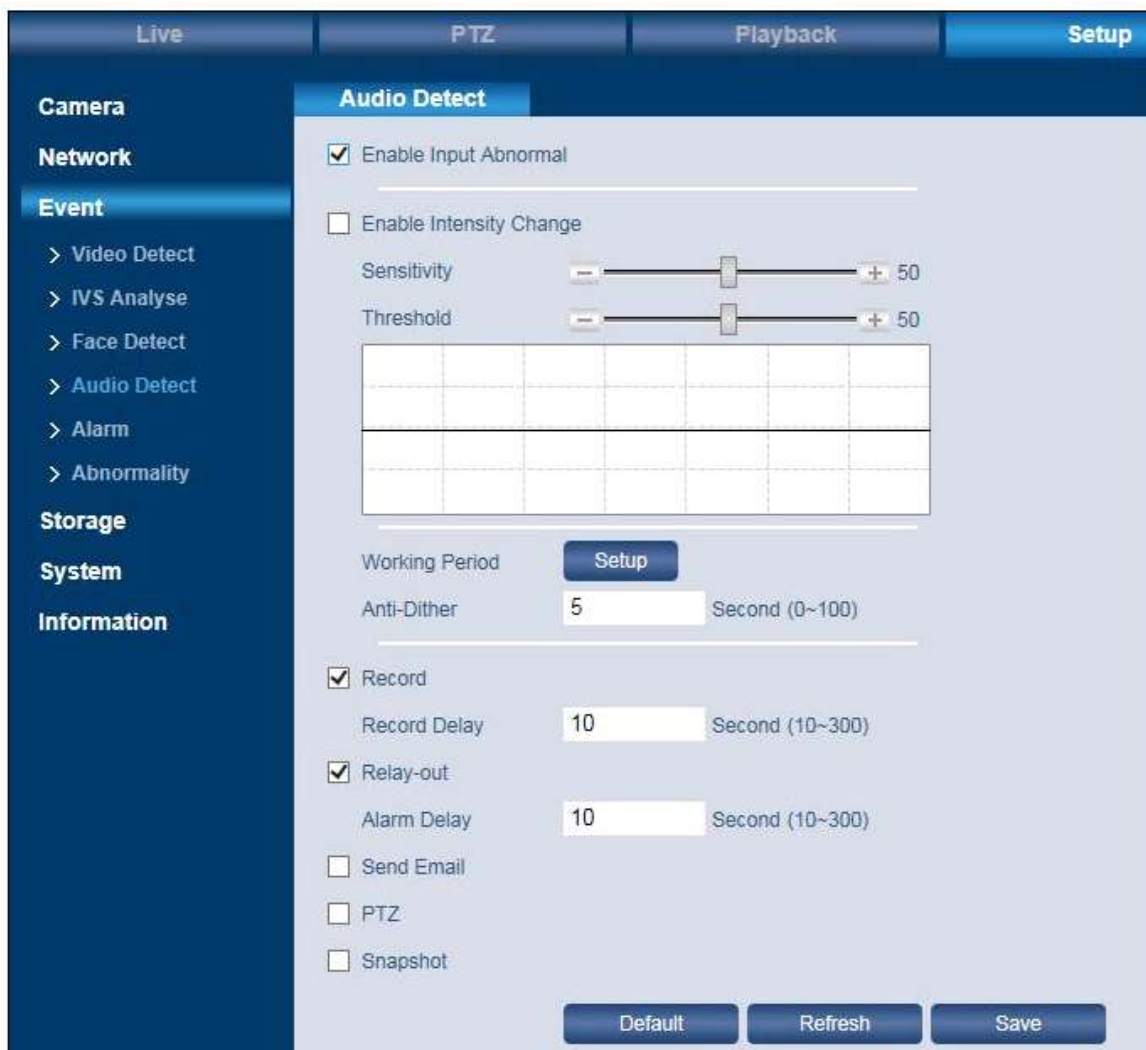


- Select the number of faces to be detected (max. 35).
- Click on „Draw target“. 2 blue squares are displayed in the video image. You can change the size and position of each of the squares by grabbing the corners. The outer (larger) square defines the maximum detection area and the inner (smaller) square defines the minimum detection area.

If you enable the face detection function, you may display it in the live view. To do so, please select from the bar on the live screen the “Rule info” icon  and „Enable“ it, so that you can see the detected faces in the live view.

#### 4.5.4 Setup → Event → Audio detect

The camera is able to detect audio volume (sound), provided a microphone is connected to the camera.



Tick the box „Enable input abnormal“. This means that only unusual sound (e.g. screams) are captured.

Use „Sensitivity“ and „Threshold“ to set the parameter for the sound so that ordinary sound or birds singing are not detected and hence not recorded.


In case of a detected unusual sound, an action can be triggered, e.g. start a recording or create a snapshot, send an e-mail notification, etc.

#### Important: Legal note



Monitoring, recording and storage of video surveillance data (images, sound), is subject to strict legal regulations. Please respect the Data Privacy Act which applies to your country.

### 4.5.5 Setup → Event → Alarm



The screenshot shows the 'Relay Activation' configuration page. The left sidebar contains a menu with categories: Camera, Network, Event, Storage, System, and Information. Under 'Event', there are sub-items: Video Detect, IVS Analyse, Face Detect, Audio Detect, Alarm, and Abnormality. The main content area is titled 'Relay Activation' and contains the following settings:

- Enable
- Relay-in: Alarm1 (dropdown menu)
- Working Period: Setup (button)
- Anti-Dither: 0 (input field) Second (0~100) | Sensor Type: NO (dropdown menu)
- Record
- Record Delay: 10 (input field) Second (10~300)
- Relay-out
- Alarm Delay: 10 (input field) Second (10~300)
- Send Email
- PTZ
- Snapshot

At the bottom of the page, there are three buttons: Default, Refresh, and Save.

Here you can define the settings for an alarm.

The settings are done as described in chapter 4.5.1 for motion detection.

#### 4.5.6 Setup → Event → Abnormality

Here you can define alarms for abnormal events.

##### **SD card:**

Possible events are:

- No SD card inserted
- SD card error
- Capacity warning

Select the desired action and click on „Save“.

##### **Network:**

Possible events are:

- Disconnected
- IP conflict

Select the desired action and click on „Save“.

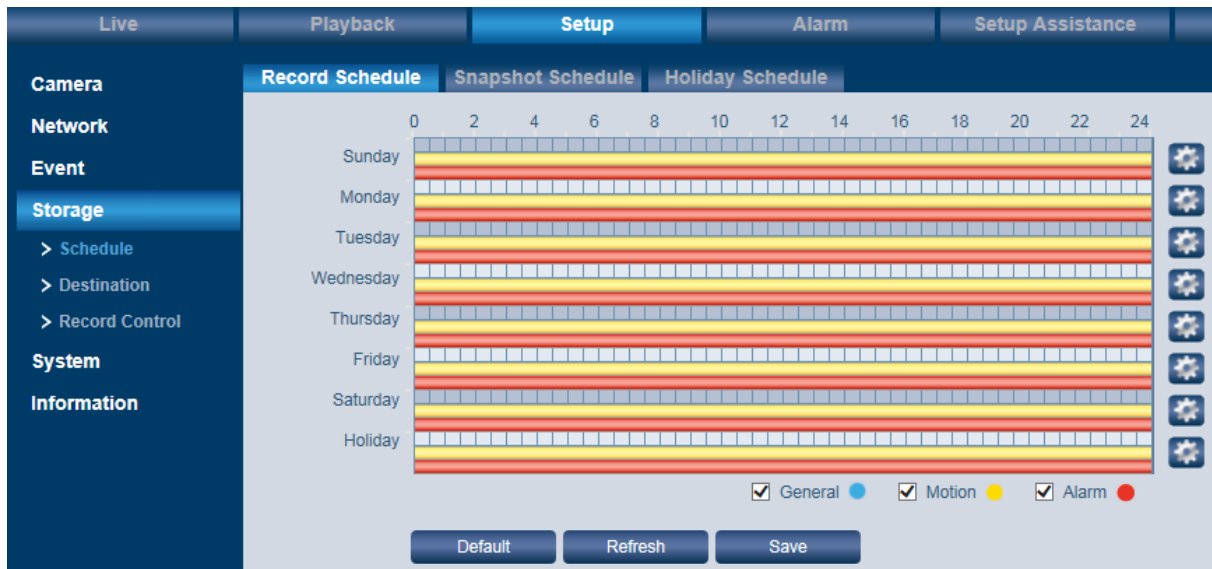
##### **Illegal access:**

If within the defined time (3-10 minutes) wrong login data has been entered several times, the system sends an alarm and the user will be locked.

To send an e-mail notification, please enable the respective box.

## 4.6 Setup → Storage

### 4.6.1 Setup → Storage → Schedule



Here you can define the schedule for recordings, snapshots and holidays (i.e. the period where you are absent).

#### Record and snapshot schedule:

- Click on „Setup“. For each day of the week, up to 6 periods can be defined.
- Click on the little wheel for each day.
- Enable each period 1-6 and enter the desired time frame. Alternatively, you can press and hold the left mouse key to highlight the time in the time bar.
- You can differentiate between
  - Blue: General (normal) recording
  - Yellow: Motion recording
  - Red: Alarm recording
- Click on „Save“.

#### Holiday schedule:

Here you can define the days you will be absent (e.g. on holidays) but videos or snapshots should be made.



## 4.6.2 Setup → Storage → Destination

### Note:

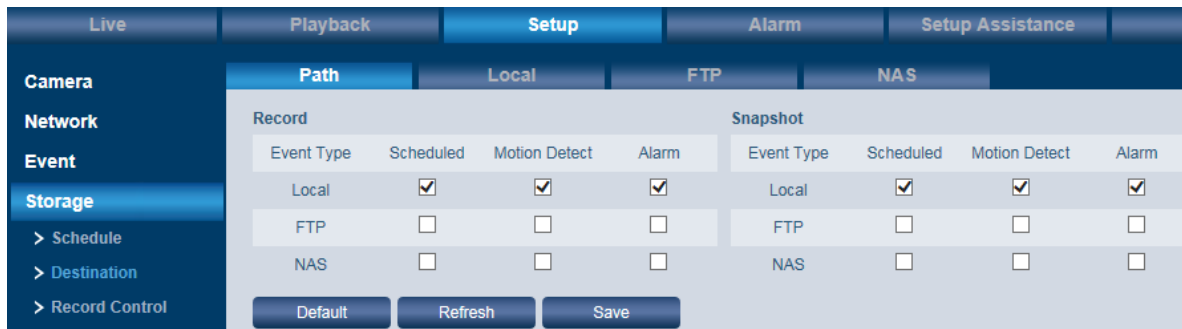
The definition of storage paths on this page only applies to recordings/snapshots which are generated by an event or schedule.

Settings on this page do not apply to manual recordings/snapshots.

Storage paths for manual recordings/snapshots can be defined here (see chapter 4.2.4):

Setup → Camera → Video → Path

### Path:



		Record			Snapshot				
		Event Type	Scheduled	Motion Detect	Alarm	Event Type	Scheduled	Motion Detect	Alarm
Path	Local		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Local	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	FTP		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	FTP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	NAS		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NAS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Here you can define the path to store recordings (videos) as well as snapshots.

For each of the 3 event types „schedule“, „motion detect“ and „alarm“, the following storage paths are available:

Local (=SD card in camera), FTP or NAS.

Please note that for these 3 event types only one identical storage path can be selected. It is for example not possible to store scheduled recordings locally and motion recordings on FTP.

## Local:



To store recordings/snapshots on the camera's SD card, make sure that a micro SD card is inserted in the camera.

As a next step, it is important to format the SD card. Click on "Format".

### Attention:

When formatting the SD card, all other data stored so far on the card, will be deleted.

## FTP:

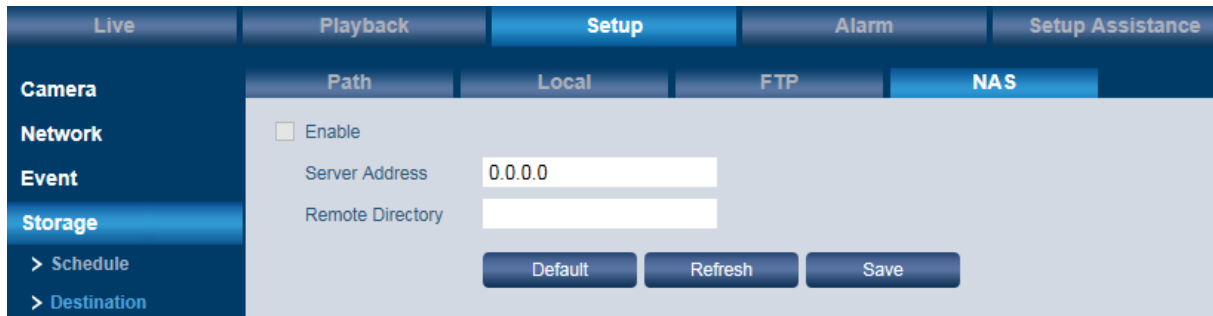


In order to store data on the FTP server, please tick „Enable“.

Enter the parameter of the FTP server. Make sure that the FTP server and the camera are in the same network.

### Note:

The box „Enable“ can only be checked if you have selected FTP as storage path on the previous page.

**NAS:**

The screenshot shows the SANTEC web interface with the following elements:

- Top navigation: Live, Playback, **Setup**, Alarm, Setup Assistance
- Left sidebar: Camera, Network, Event, **Storage**, > Schedule, > Destination
- Storage sub-tabs: Path, Local, FTP, **NAS**
- Configuration options:
  - Enable
  - Server Address: 0.0.0.0
  - Remote Directory: (empty)
- Buttons: Default, Refresh, Save

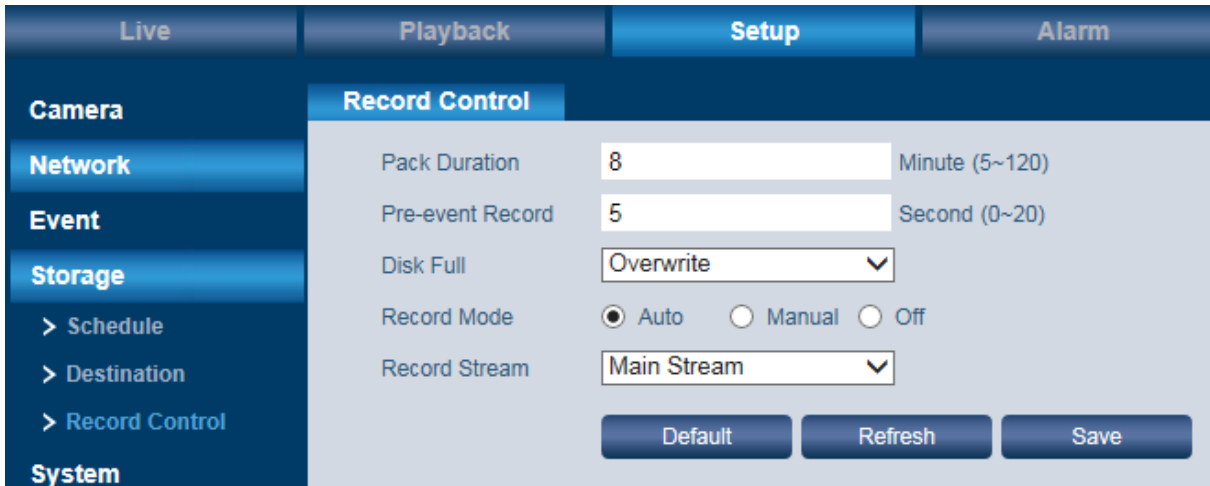
In order to store data on the NAS server, please tick „Enable“.  
Enter the parameter of the NAS server

**Note:**

The box „Enable“ can only be checked if you have selected NAS as storage path on the previous page.



### 4.6.3 Setup → Storage → Record control



The screenshot shows the 'Record Control' configuration page. The top navigation bar has tabs for 'Live', 'Playback', 'Setup', and 'Alarm'. The left sidebar has categories: 'Camera', 'Network', 'Event', 'Storage', and 'System'. Under 'Storage', there are sub-items: '> Schedule', '> Destination', and '> Record Control'. The main content area is titled 'Record Control' and contains the following settings:

Pack Duration	<input type="text" value="8"/>	Minute (5~120)
Pre-event Record	<input type="text" value="5"/>	Second (0~20)
Disk Full	<input type="text" value="Overwrite"/>	
Record Mode	<input checked="" type="radio"/> Auto <input type="radio"/> Manual <input type="radio"/> Off	
Record Stream	<input type="text" value="Main Stream"/>	

At the bottom of the configuration area are three buttons: 'Default', 'Refresh', and 'Save'.

**Pack duration:**

Define the maximum file size on the storage path (5-120 minutes; default = 8 minutes).

**Pre-event record:**

The time you have defined here (0-20 seconds; default = 5 seconds) will be the pre-event recording time, thus prior to the event. For example: You set the time to 5 seconds, then the video will be stored already 5 seconds prior to the triggered alarm

**Disk full:**

If the storage disk is full, you have 2 options: Either to stop the recording or to overwrite older data.

## 4.7 Setup → System

### 4.7.1 Setup → System → General

#### General:

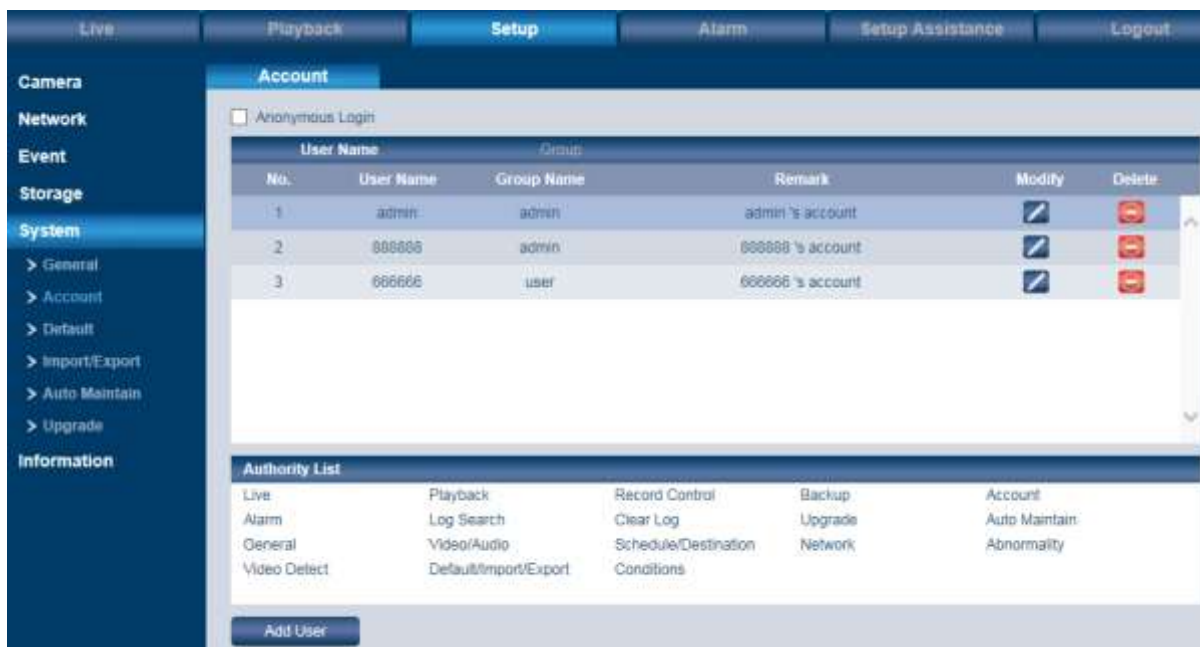
- You can define a device name, i.e. a camera name.
- You can select the language (English or German). Alternatively, click on the German/English flag on the top of the screen.
- Select your video standard (PAL or NTSC).

#### Date & time:

Here you can set the date and time for the camera. The correct date/time is important, especially when you time-search for recorded events.

You may also set the DST (Daylight Savings Time) as well as the time synchronization with the NTP server.

### 4.7.2 Setup → System → Account



You can login anonymously, i.e. user name and password are not required.

In the account list, you can manage users and user groups.

- In the list, users and groups are listed.
- Use the pencil icon next to a user/user group, e.g. to change the password.
- Use the delete icon next to a user/user group to delete it.
- Click on „Add user“ to add a user or a user group to the list and to grant him permissions.
- Max. 64 users and up to 20 groups can be defined.

### 4.7.3 Setup → System → PTZ setting



The screenshot shows a web-based configuration interface. At the top, there are four tabs: 'Live', 'PTZ', 'Playback', and 'Setup'. The 'Setup' tab is active. On the left side, there is a vertical navigation menu with categories: 'Camera', 'Network', 'Event', 'Storage', 'System', and sub-items under 'System' including '> General', '> Account', '> PTZ Settings', and '> Default'. The 'PTZ Settings' sub-item is selected. The main content area is titled 'PTZ Settings' and contains the following configuration fields:

Protocol	PELCOD
Address	1
Baudrate	9600
Data Bit	8
Stop Bit	1
Parity	None

At the bottom of the settings area, there are three buttons: 'Default', 'Refresh', and 'Save'.

Here you can make PTZ settings such as protocol, Baud rate, etc.

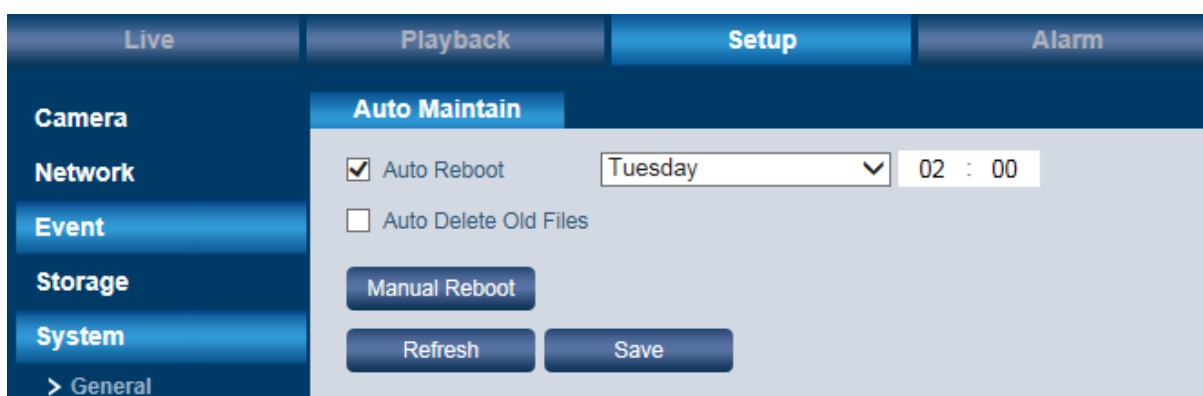
#### 4.7.4 Setup → System → Default

If you click here, all settings will be restored to default values.

#### 4.7.5 Setup → System → Import/Export

Click on „Import“ to save settings on the camera (e.g. from your computer).  
Click on „Export“ to save setting from your camera to your computer.

#### 4.7.6 Setup → System → Auto Maintain



The screenshot shows the 'Auto Maintain' settings page. The interface has a top navigation bar with 'Live', 'Playback', 'Setup', and 'Alarm'. The left sidebar has 'Camera', 'Network', 'Event', 'Storage', 'System', and '> General'. The 'Auto Maintain' section is active, showing a checked 'Auto Reboot' checkbox with a dropdown menu set to 'Tuesday' and a time field set to '02 : 00'. There is an unchecked 'Auto Delete Old Files' checkbox. Below these are three buttons: 'Manual Reboot', 'Refresh', and 'Save'.

##### **Auto reboot:**

If enabled, you can set the date and the time when to automatically reboot the camera.

##### **Auto delete old files:**

If enabled, you can define after how many days data will be automatically deleted (1-31 days old).

##### **Manual reboot:**

Click here to manually reboot the camera.

#### 4.7.7 Setup → System → Upgrade

Here you can select the path (“Browse”) from which you wish to upload a new firmware to the camera. Then click on “Upgrade”.

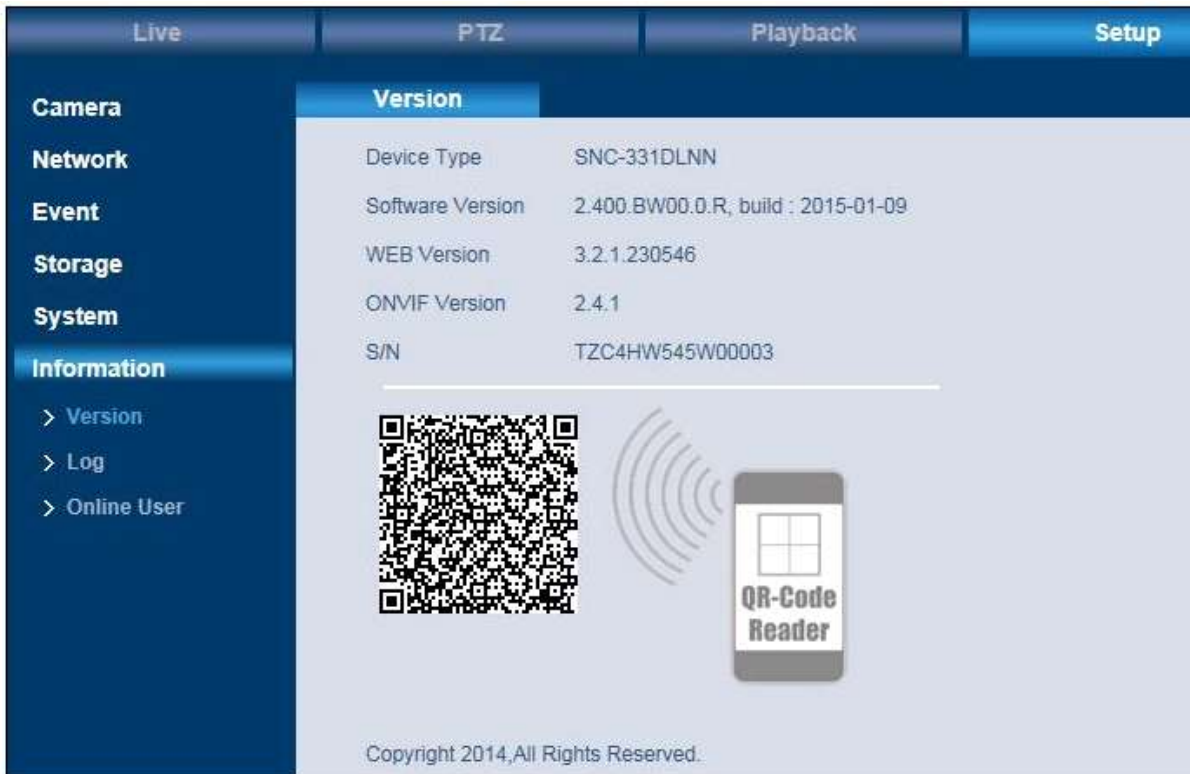
File format of upgrade file: „.bin“

##### Note:

If an upgrade is not properly or not fully done, the camera may malfunction.

## 4.8 Setup → Information

### 4.8.1 Setup → Information → Version



Device Type	SNC-331DLNN
Software Version	2.400.BW00.0.R; build : 2015-01-09
WEB Version	3.2.1.230546
ONVIF Version	2.4.1
S/N	TZC4HW545W00003

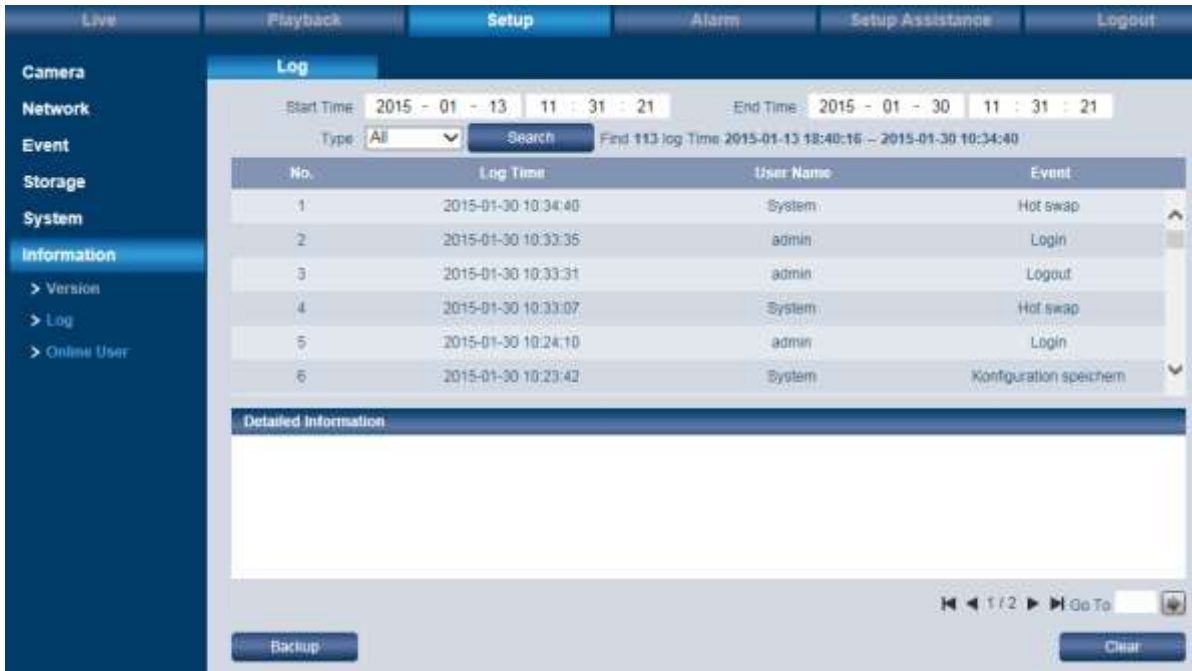
Copyright 2014, All Rights Reserved.

Here you find various version numbers. This is for reference only and can not be edited.

Here you also find the P2P code which you can scan with your mobile device to access the camera via the App.

The P2P code is also available under „Setup Assistance“ (see chapter 6).

## 4.8.2 Setup → Information → Log



No.	Log Time	User Name	Event
1	2015-01-30 10:34:40	System	Hot swap
2	2015-01-30 10:33:35	admin	Login
3	2015-01-30 10:33:31	admin	Logout
4	2015-01-30 10:33:07	System	Hot swap
5	2015-01-30 10:24:10	admin	Login
6	2015-01-30 10:23:42	System	Konfiguration speichern

The log (history) shows all information regarding users, events, alarms, settings, etc.

Select a type you wish to search for:

All, system, setting, data, event, recording, account, clear log.

Enter a time frame (start time, end time) and click on „Search“.

Use the arrows to navigate through the log list.

Click on “Clear” to empty the entire log list.

Click on „Backup“ to save the log file of the camera to your computer.

## 4.8.3 Setup → Information → Online user

All users currently logged in at the camera are listed here.

## 5. Alarm

Here you can define the parameters for an alarm.




The screenshot shows a configuration window for an alarm. It is divided into three sections: 'Alarm Type', 'Operation', and 'Alarm Tone'. Under 'Alarm Type', there are eight checkboxes: Motion Detect, Disk Full, Disk Error, Video Tampering, External Alarm, Illegal Access, Audio Detect, and IVS. Under 'Operation', there is one checkbox: Prompt. Under 'Alarm Tone', there is one checkbox: Play Alarm Tone. At the bottom, there is a 'Tone Path' text box and a 'Browse...' button.

### Alarm type:

Here you can select for which types of events an alarm should be triggered, e.g. motion detection, tampering, illegal access, usw.

You may select several or all options.

### Operation:

If you enable „Prompt“, an alarm icon is displayed in the video image. 

### Alarm tone:

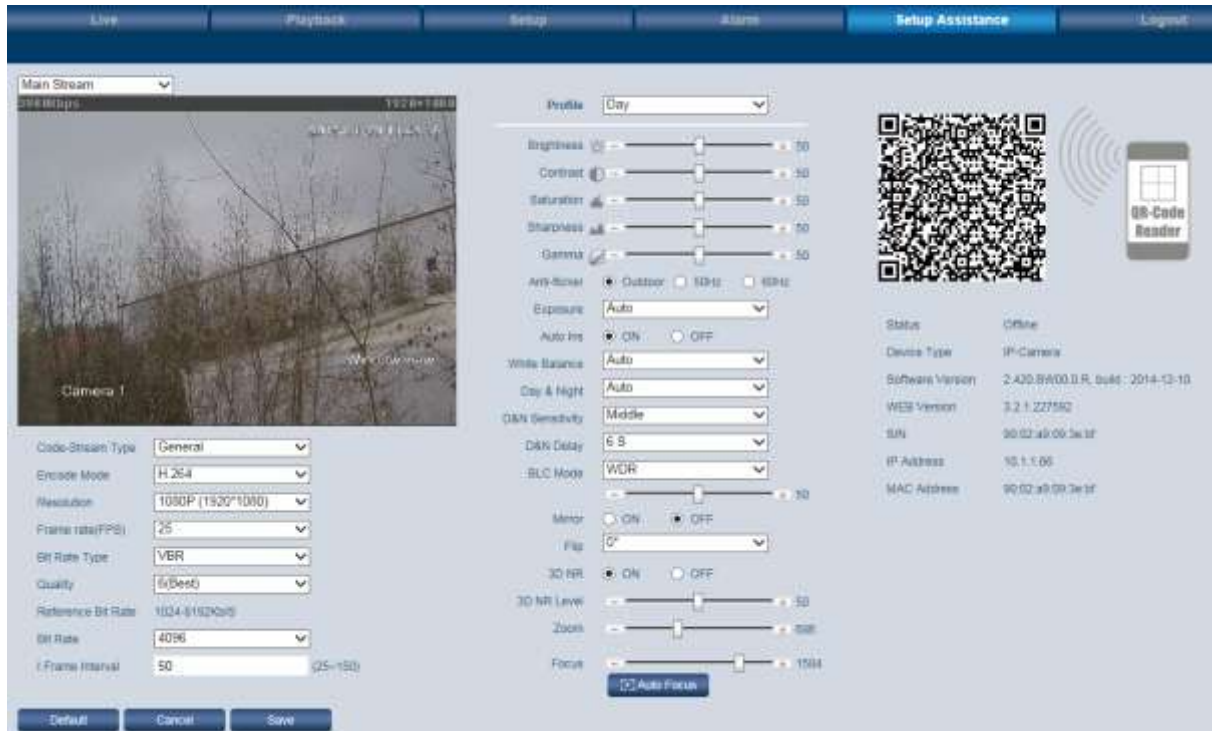
If enabled, an alarm sound is sent if an alarm occurs.

If you wish to have a customised alarm sound, please select a path („Browse“) and then select your file. Only WAV files are supported.



## 6. Setup Assistance

The Setup Assistance helps you to adjust camera settings quickly and in a convenient way.

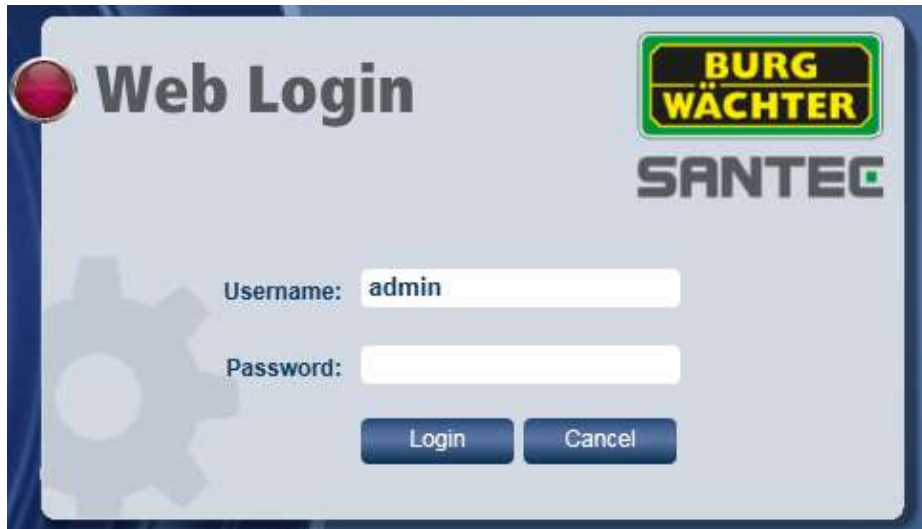


Here you can adjust the major settings for Main Stream, Sub Stream 1 and Sub Stream 2. Camera information are listed for service purposes.

Moreover, you can scan the P2P code with your mobile device to access the camera via the App.

## 7. Logout

If you want to logoff from the camera, click on „Logout“ and you will be immediately logged off without further prompting. The login page appears and you may logon again if you wish, e.g. using a different user name.



It is recommended to always logoff from the camera if you stop working with it to prevent unauthorized access to the camera using your login data.

To safely turn off the camera, disconnect it from power and then from the network.



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**Notes:**

**Notes:**

Your local distributor:



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