

***Surveon***<sup>®</sup>

CAM6160/6180

D1 Speed Dome IP66

Outdoor Network Camera

User Manual

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# Chapter 1. Overview

## 1.1. Network Camera Introduction

CAM6160/6180 are professional IP network speed-dome cameras capable of making 360 degree continuous rotations at 0.15 to 360 degrees per second, ensuring direct and accurate target positioning. Fully IP66 Certified, CAM6160/6180 use Internet Protocol (IP) to transmit video streams and control signals over networks, and is capable of operating over both LANs and WANs. CAM6160/6180 provide a complete budget-conscious remote surveillance solution that is ultra clear and highly integrated. CAM6160/6180 combine a user-friendly interface and simplified installation with a powerful feature set, including Motion Detection and Tampering Detection to provide users an easy upgrade path to new digital surveillance system in a virtual environment. These highlights make CAM6160/6180 ideal choices for outdoor environments that require remote surveillance or video transmission.

## 1.2. Network Camera Features

- Supports up to 10 simultaneous users
- Built-in web server to allow real-time remote surveillance and control using standard web browsers
- Supports dynamic IP, LAN, and the Internet (ADSL, Cable modem)
- Supports most network protocols including: HTTP, TCP/IP, SMTP, DDNS, DNS, DHCP, FTP, RTSP, CIFS, PPPoE
- Automatically adapts image compression rate to available bandwidth
- Provides Signal loss and motion-detection alerts (adjustable area and sensitivity level)
- Supports image recording and still image capture

## 1.3. Network Camera Specifications

	CAM6160	CAM6180
<b>Image sensor</b>	SONY 1/4" EXview HAD CCD	
<b>Lens</b>	3.43 - 85.7 mm varifocal lens, F1.6 (wide) - F3.7 (telephoto), 25X	3.43 - 120 mm varifocal lens, F1.6 (wide) - F4.5 (telephoto), 35X
<b>Viewing Angle</b>	Diagonal: 68.6°~3.12° Horizontal: 57.8°~2.53° Vertical: 43.7°~1.83°	Diagonal: 68.6°~2.23° Horizontal: 57.8°~1.70° Vertical: 43.7°~1.30°
<b>Day/Night</b>	Yes	
<b>IR LED</b>	No	
<b>Min illumination</b>	0.01 Lux@F1.6 (Monochrome) 0.1Lux@F1.6 (Color)	
<b>Iris control</b>	Automatic / Manual Iris control	
<b>Shutter time</b>	1/5 ~ 1/15,000 s	
<b>Pan/Tilt/Zoom</b>	Pan: 360° endless, 1° - 255°/s Tilt: -6° ~ +96°, 1° - 255°/s 25x optical zoom and 16x digital zoom, Total 400x zoom	Pan: 360° endless, 1° - 255°/s Tilt: -6° ~ +96°, 1° - 255°/s 35x optical zoom and 16x digital zoom, Total 560x zoom
<b>Video compression</b>	H.264 / MPEG-4 / MJPEG	
<b>Resolution</b>	Up to 720 x 480	
<b>Video control</b>	Auto Gain Control, Auto White Balance, Back Light Compensation, Image adjustment, Privacy zone: On/Off (8 zones)	
<b>Frame rate</b>	30 fps at D1 (720 x 480), 30 fps at VGA (640 x 480), 30 fps at QVGA (320 x 240), 30 fps at QQVGA (160 x 120)	
<b>Video stream</b>	2 simultaneous streams at H.264, MPEG-4, and MJPEG	
<b>Bit rate</b>	32K ~ 10Mbps, VBR, CBR	
<b>Video Jack</b>	BNC	

<b>Intelligent video</b>	Motion detection, tempering detection (blocked, redirected, defocused, or spray-painted)
<b>Built-in MIC</b>	N/A
<b>Audio compression</b>	N/A
<b>Audio input</b>	N/A
<b>Audio output</b>	N/A
<b>Alarm in</b>	6, terminal block
<b>Alarm out</b>	1, terminal block
<b>AUX Power Output</b>	12VDC 400mA
<b>Video buffer</b>	2 second pre-alarm 30 second post-alarm
<b>Event action</b>	Send snapshot or video clip by FTP or email, record to remote storage, record to local storage, trigger DO
<b>Supported protocols</b>	IPv4, ARP, TCP, UDP, ICMP, DHCP, NTP, DDNS, SMTP, FTP, HTTP, CIFS, PPPoE, UPnP, RTP, RTSP, RTCP, 3GPP
<b>Ethernet</b>	10/100 Base-T / RJ45
<b>RS-485</b>	1 (2 pin on terminal block)
<b>SDK</b>	Surveon SDK 2.0
<b>OS</b>	Microsoft Windows XP/Vista/7
<b>Browser</b>	Microsoft IE 6.0 or above
<b>Software</b>	Surveon VMS 2.0
<b>Temperature</b>	Operation: -10 ~ 50 °C (14 ~ 122°F) Storage: -20 ~ 80 °C (4 ~ 176°F)
<b>Humidity</b>	0% ~ 90%
<b>Power</b>	24VAC
<b>Power consumption</b>	Max. 15.8W
<b>Dimension</b>	ø210mm x 326mm (H) ø8.26" x 12.83" (H)
<b>Weight</b>	Net: 3.8kg Gross: 4.0kg
<b>Certification</b>	Safety: LVD EMC: FCC, CE IP66



## Network Camera Hardware Installation

Before the network camera is configured:

1. Install the camera in a suitable spot. The camera should have an unobstructed view of the area to be surveyed.
2. Connect the camera to a power source.
3. Connect the camera to a switch using an Ethernet cable. The Ethernet port is located on the rear of the camera.

## Chapter 2. Connecting to the Network Camera

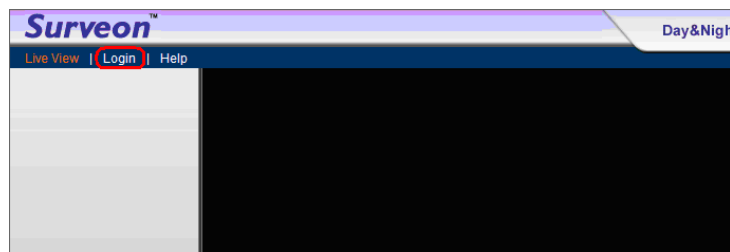
This section demonstrates how to connect to the network camera through two methods:

- Web Browser - A simple web-based interface. Internet Explorer is the recommended web browser for use with Surveon network cameras, and our examples will be from this browser. Usage on other browsers will be similar.
- RTSP Player - These include common streaming media players, such as *RealPlayer* or *Quicktime Player*. These players can provide live view of the camera using the Real-Time Streaming Protocol (RTSP).

## 2.1. Connecting with a Web Browser

To connect to the Network Camera with a web browser:

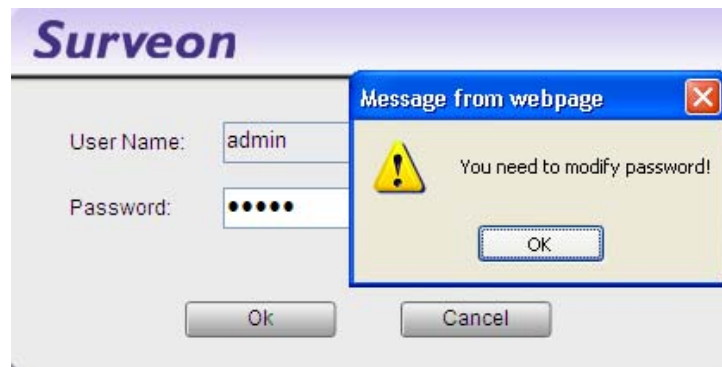
1. Launch the web browser (Microsoft® Internet Explorer 6.0 or higher is recommended).
2. Enter the IP address of the network camera in the address bar of your browser and press enter. The IP address can be obtained using the Surveon IP Utility, or if your network does not have DHCP service, the default IP address is **192.168.88.10**.
3. The camera will start the web interface with a live-view page. Click the Login button at the top of this page.



4. The camera will prompt for a user name and password. The default user name and password is **admin/admin**. Enter your user name and password, and click **OK** to login. If this is your first time accessing the camera, please read the subsections to set up a new password and/or install ActiveX, otherwise the live feed from the network camera will be displayed in your web browser.

## Logging into the System for the First Time

If this is the first time that the network camera is being accessed, the camera will prompt you to change the administrator password after your first login. Click Okay



1. Click OK when informed of the need to change your password. This will cause a *Configure Admin Password* popup to display.

The image shows the 'Configure Admin password' dialog box. The 'User Name' field is pre-filled with 'admin'. Below it are three empty text input fields labeled 'Old password:', 'New password:', and 'Confirm password:'. At the bottom of the dialog, there are 'OK' and 'Cancel' buttons.

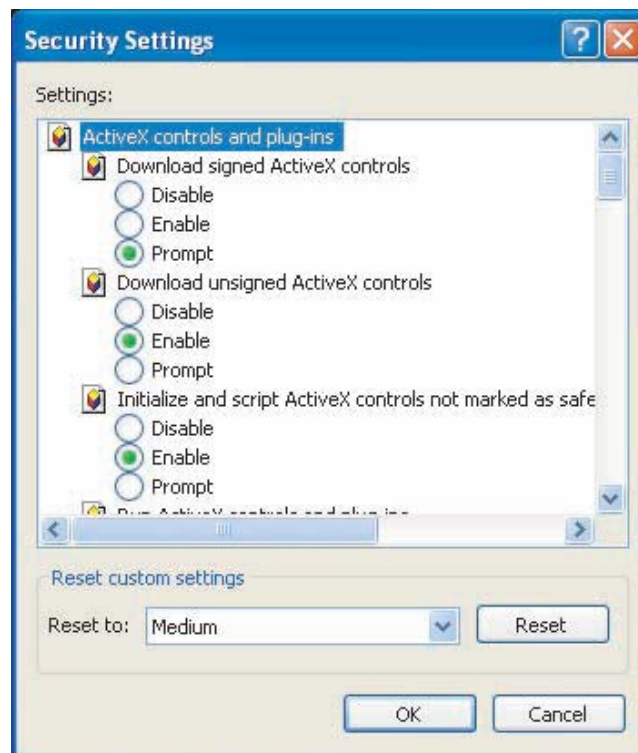
2. In the *Old password field*, fill in the old password (default is *admin*).
3. In the *New password* and *Confirm new password* field, fill in the new password.
4. Click OK to change the password. If at any time you lose this password, performing a hard reset of the camera will restore the password back to *admin*.

## Installing Active X Components in Internet Explorer

You may be prompted to install ActiveX® components when accessing the network camera's Live View page; click Yes when prompted. You will be able to access the camera after installation is completed. Under Windows, this action may require administrator privileges.

If the dialog box suggests that you are not allowed to install ActiveX components, try resolving the problem using the following steps:

1. In Internet Explorer, open Tools> Internet Options> Security. Click the Custom level button.
2. Search for *Download signed ActiveX controls*. Under this heading select **Prompt** and then click OK.

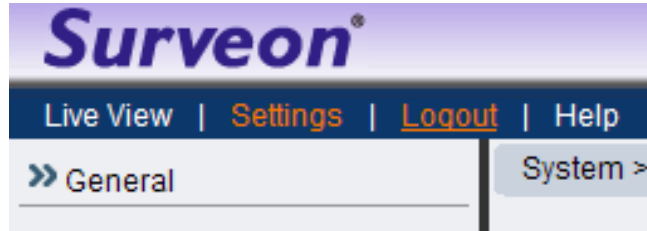


3. Continue installing the Active X components.
4. After installing ActiveX, go to Tools> Internet Options> Trusted Websites> Sites and add the IP Address of the camera.

## Logging Out of the System

Logging off of the camera can be performed by closing the browser window.

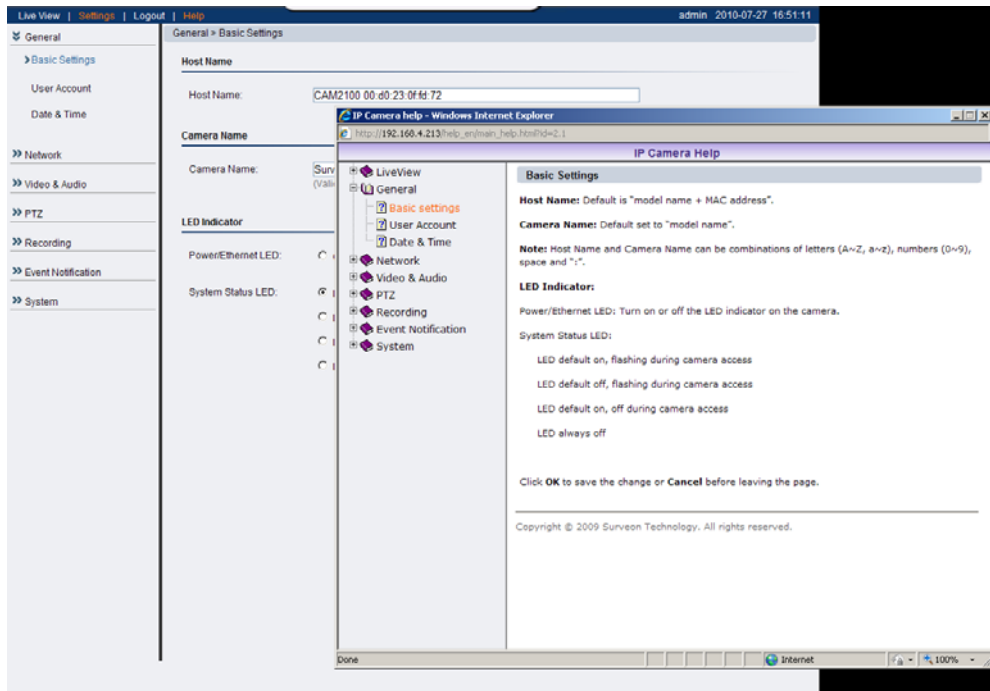
Users can also choose to click the **Logout** link located at the top of the screen.



## Using the Help Interface

While using the web interface, you may click on the **Help** link located under the title bar. This will bring up a pop-up containing the IP Camera Help manual. This provides simple explanation of the camera settings, and will automatically open to the page relevant to your current screen.

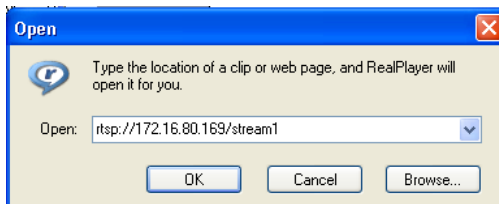
The help manual is organized so that it matches the system menus, with sections corresponding to each settings menu and the Live-view window.



## 2.2. Connecting with an RTSP Player

Surveon cameras support connections through RTSP Media Players such as *Real Player* and *QuickTime Player*.

1. Launch Real Player or QuickTime Player ;
2. Select **File> Open URL**, to open a URL dialog box.
3. Enter the camera URL in the address bar.



**Note:** The format for RTSP is: `rtsp://<IP Address>/<Access>`, where `<Access>` can be found at **Settings> Network> Port Settings> RTSP Setting**. By default the `<Access>` value should be `stream1` and `stream2`.

4. Click **OK**, the stream should begin playing.

### Connecting with a Mobile Device RTSP Player

In order to access streaming video on 3GPP mobile devices, please make sure the network camera is already online and connected to the Internet. In the IP field under the *IP Address* section of the window, enter the IP address of the IP camera.

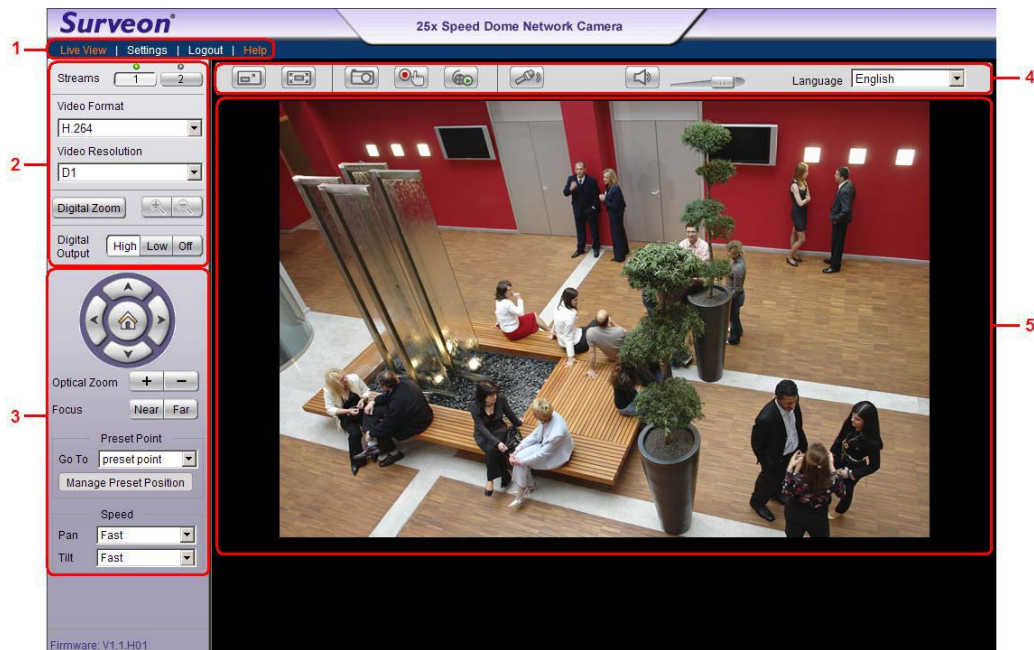
1. Change the settings under **Settings> Video & Audio> Stream2 Setting** to 3GPP Mode
2. Launch the RTSP Player on the 3GPP mobile device and enter the URL address for the camera. The video should start playing.

**Note:** The format for RTSP is: `rtsp://<IP Address>/<Access>`, where `<Access>` can be found at **Settings> Network> Port Settings> RTSP Setting**. By default the `<Access>` value should be `stream1` and `stream2`.

## Chapter 3. Web Interface

### 3.1. Interface Layout









This section demonstrates the layout of the network camera's main interface. The 5 main areas on the interface are:

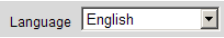
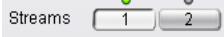
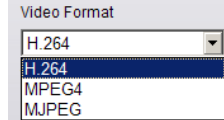
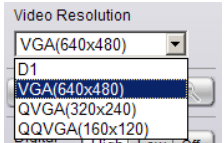
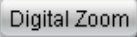




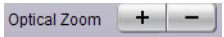




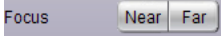


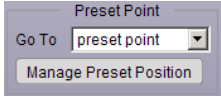
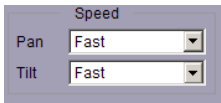
1. **Menu Bar** - The links on this bar allow users to toggle between live-view and settings screens, as well as logout and pull up the help menu.
2. **Live View Controls** - These controls allow users to configure the live view streams and camera live view functionality.
3. **PTZ Controls** - These controls allow users to control the camera's pan/tilt/zoom functions.
4. **Button Bar** - These controls allow the user to quickly access common features such as live view window resizing, video and still frame capture, interface language, and audio controls.
5. **Live View Window** - This portion of the screen displays the stream selected in the Live View Control section of the web interface.



## Control Descriptions

Control	Description
	<p><b>Adjust Window Size:</b> When clicked, the display window size can be adjusted manually to fit the screen. The screen size changes back to the actual image size (resolution).</p>
	<p><b>Full-Screen:</b> Goes to full-screen when clicked; press "ESC" to return to windowed view.</p>
	<p><b>Image Capture:</b> When clicked, captures the current screen as an image in a new pop-up window and saves it in <i>C:\Surveon\Record</i>. This location can be changed under <a href="#">Settings&gt; Recording&gt; Recording Basic Settings</a>. The file name is set to "Camera Name"+yyyymmdd_hhmmss (the Camera Name can be changed under <a href="#">Settings&gt; General&gt; Basic Settings</a>).</p>
	<p><b>Manual Record:</b> When clicked, records the current live video. Stops recording when clicked again. The default location for storing the recording is <i>C:\Surveon\Record</i>. This location can be changed under <a href="#">Settings&gt; Recording&gt; Recording Basic Settings</a>.</p>
	<p><b>Play Back:</b> Enables video playback by linking to the to the <i>Record File Management</i> page when clicked.</p>
	<p><b>Audio-In:</b> Turned off by default; clicking once allows audio to be transmitted from a local microphone to the camera. Clicking again stops audio transmission. Multiple users may access the live view page and receive audio from the camera, but only one user at once is allowed to send audio to the camera.</p>
	<p><b>Mute:</b> Mutes the audio captured by the camera when clicked, un-mutes the audio when clicked again.</p>
	<p><b>Volume:</b> Sets to the current computer volume; Dragging the slider adjusts the volume.</p>

Control	Description
	<p><b>Language:</b> Sets the UI language. Available languages include English, Simplified Chinese, and Traditional Chinese.</p>
	<p><b>Streams:</b> Allows users to choose which camera stream to view. The indicator above the stream will turn light green when the stream is selected.</p>
	<p><b>Video Format:</b> Sets the compression format for the current stream. Available formats are H.264, MPEG4, and MJPEG.</p>
	<p><b>Video Resolution:</b> Sets the resolution of the stream currently selected. 3 options are available for each stream: D1 (720 x 480), VGA (640 x 480), QVGA (320 x 240), QQVGA (160 x 120) for stream 1 and VGA (640 x 480), QVGA (320 x 240), QQVGA (160 x 120) for stream 2.</p>
	<p><b>Digital Zoom:</b> When clicked, activates digital zoom in the current live-view stream. 2 options are available when clicked:</p> <ul style="list-style-type: none"> <li> Zoom In</li> <li> Zoom Out</li> </ul>
	<p><b>Digital Output:</b> Sets the Digital Output to High, Low, or Off. Default is Off.</p>
	<p><b>Pan/Tilt Control:</b> The four directional buttons pan and tilt the camera view in the direction pressed. The home button at the center returns the camera to the default startup position when clicked.</p>
	<p><b>Optical Zoom:</b> Adjusts the camera zoom distance.</p> <ul style="list-style-type: none"> <li> Zoom In</li> <li> Zoom Out</li> </ul>

	<p><b>Focus:</b> Adjust the focal distance.</p> <p> Moves the focus point nearer to the camera.</p> <p> Moves the focus point further from the camera.</p>
	<p><b>Preset Point Management:</b> The <b>Go To</b> dropdown contains all the presets configured in this camera. Selecting a preset from the dropdown will cause the camera to move to the preset position.</p> <p><b>Manage Preset Position:</b> This button will open the preset management menu.</p>
	<p><b>Pan/Tilt Speed:</b> The <b>Pan</b> and <b>Tilt</b> dropdowns define the amount which the camera will pan or tilt when one of the directional buttons is clicked in the <b>Pan/Tilt Control</b>. There are 3 options: Slow, Normal and Fast.</p>

## 3.2. Settings

Camera settings may be changed by clicking on the **Settings** link located in the title bar. This will bring up a menu list of configuration menus for all major camera settings.

### General

General setting menus are found under **Settings > General**.

#### Basic Settings

Basic settings may be accessed under **General > Basic Settings**. The following settings can be made:

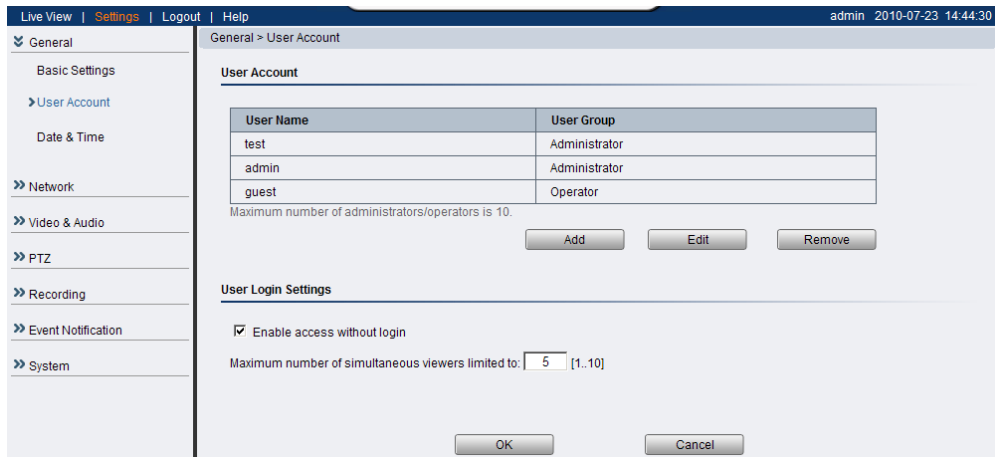
- **Host Name:** by default set to "model name + MAC address"; displays on the center of the main page. Users may replace the default name with a new name consisting of alphanumeric characters, spaces and the ":" character.
- **Camera Name:** by default set to "Surveon + model name"; after selecting Camera Name" from **Settings > Video & Audio > Basic Settings**, the Camera Name will show on the display. Users may replace the default name with a new name consisting of alphanumeric characters, spaces and the ":" character.
- **Power/Ethernet LED:** turns on or off the power and Ethernet LEDs indicator on the rear of the camera.

- **System Status LED:** changes the behavior of the status LED on the front of the camera. There are four possible behaviors:
  - **LED on when camera is on** - LED default on, flashing during camera access.
  - **LED on during camera access** - LED default off, flashing during camera access
  - **LED off during camera access** - LED default on, off during camera access
  - **LED always off** - LED always off

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## User Account

The User Account section, found under **General > User Account**, controls the user account information and privileges.



There are two pre-configured accounts:

- **admin** - This is the default administration account, and cannot be deleted.
- **guest** - This is an account with only live view capability.

There are also two basic settings under user account settings:

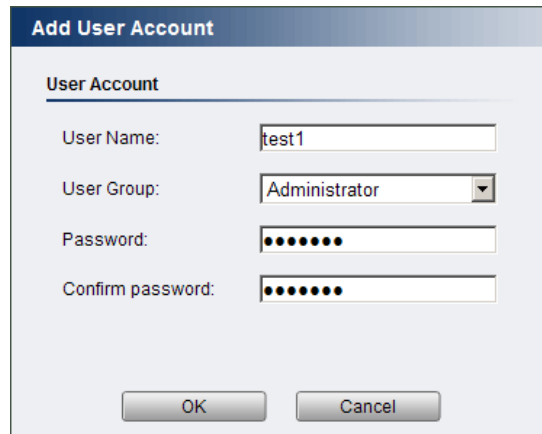
- **Enable access without login** - Checking the checkbox will allow users to view the camera stream without having to login. This option is enabled by default.
- **Maximum number of simultaneous viewers limited to** - Enter a number from 1 to 10 in this field to limit the number of users that can view the live view stream for this camera. This option will only be displayed once you add an account.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## Adding Accounts

In **General**> **User Account** under the **User Account** heading, click on "Add".

Up to 10 accounts can be added to the system.



The screenshot shows a dialog box titled "Add User Account". Inside, there is a section titled "User Account" with four input fields: "User Name" (containing "test1"), "User Group" (a dropdown menu with "Administrator" selected), "Password" (masked with dots), and "Confirm password" (masked with dots). At the bottom of the dialog are "OK" and "Cancel" buttons.

All User Names and Passwords must be combinations of alphanumeric characters, ":", "-", "\_" between 4 and 20 characters in length, and must begin with an alphabet letter. Fill out the following fields:

- **User Name** - The identifier name used to login to the system.
- **User Group** - The system allows for 2 types of users.
  - **Administrator** - Administrators have full access privileges.
  - **Operator** - Operators can only access the live view page.
- **Password** - a passkey used to control user access. This password should be retyped in the **Confirm password** field, to ensure that the correct key is saved.

Click **OK** when finished to add the user to the system.

## Editing Accounts

In **General**> **User Account** under the **User Account** heading, select an existing account by clicking on the account entry. The entry will be highlighted in yellow. Clicking **Edit** will allow you to change the following fields:

- **User Group** - The system allows for 2 types of users.
  - **Administrator** - Administrators have full access privileges.
  - **Operator** - Operators can only access the live view page.
- **Password** - Aar passkey used to control user access. The password must be a combination of alphanumeric characters, ":", "-", "\_" between 4 and 20 characters in length, and must begin with an alphabet letter. This password should be retyped in the **Confirm password** field to ensure that the correct key is saved.

Click **OK** when finished to save any changes.

**Note:** Only accounts that are not currently logged-in can be edited.

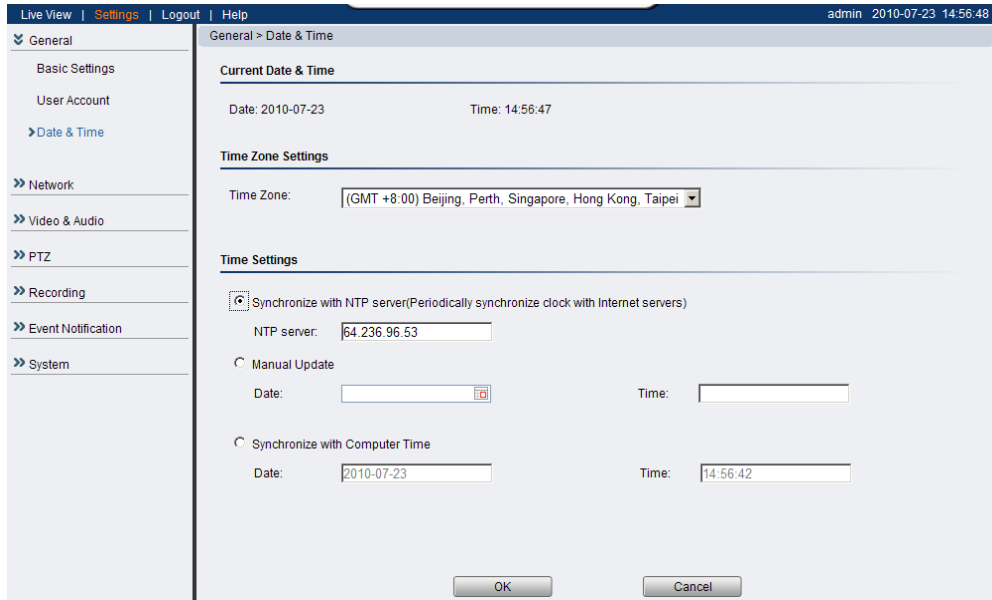
## Deleting Accounts

In **General**> **User Account** under the **User Account** heading, select an existing account by clicking on the account entry. The entry will be highlighted in yellow. Click **Remove** and, when prompted to confirm deletion, click **OK** to remove the account.



## Date & Time

Date and time settings can be accessed at **General > Date & Time**.



The screenshot shows the 'Date & Time' settings page in the Surveon web interface. The page is titled 'General > Date & Time' and displays the current system date and time as 2010-07-23 14:56:47. Under 'Time Zone Settings', the 'Time Zone' is set to '(GMT +8:00) Beijing, Perth, Singapore, Hong Kong, Taipei'. Under 'Time Settings', the 'Synchronize with NTP server' option is selected, with the NTP server IP address set to 64.236.96.53. The 'Manual Update' and 'Synchronize with Computer Time' options are also visible, each with fields for Date and Time. The page includes 'OK' and 'Cancel' buttons at the bottom.

*Current Date & Time* displays the current system date and time.

### Time Zone Settings

The time zone can be set using the dropdown menu. This menu is only applicable when selectable when **Synchronize with NTP Server** is chosen under **Time Settings**.

### Time Settings

There are 3 ways to set the system time:

- **Synchronize with NTP server** - NTP is a protocol for synchronizing the system clock to an external server. If this option is chosen, enter the IP address of a known NTP server in the **NTP Server** field. You must also choose the appropriate time zone under **Time Zone Settings**.
- **Manual update** - Updates the time manually. Choose the appropriate date and enter a time for the system.
- **Synchronize with computer time** - Synchronizes the time with the computer's internal clock.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## Network

The network settings, including network configuration, port configuration, and universal plug and play (UPnP) settings are used to configure camera connectivity. These settings are found under the **Settings > Network** context.

**Surveon** Day&Night Megapixel Network Camera

Live View | **Settings** | Logout | Help admin 2009-12-18 10:30:38

Network > Network Configuration

**IP & DNS Settings**

Get IP address automatically  
 Use fixed IP address

IP address:   
 Subnet mask:   
 Default gateway:   
 Primary DNS:   
 Secondary DNS:

**PPPoE Settings**

Enable PPPoE  
 User name:   
 Password:   
 Confirm password:

**DDNS Settings**

Enable DDNS  
 DDNS service:   
 Host name:   
 User name:   
 Password:

## Network Configuration

These settings are used to configure basic network access for the camera. They are found under **Network > Network Configuration**.

Most of these settings vary with your specific hardware setup; therefore the defaults are set for common SOHO level usage. If you are using the camera in an enterprise environment, please check with your IT department to determine the correct settings for this section.

### IP & DNS Settings

These settings are used determine the IP address of the network camera.

- **Get IP address automatically** - Automatically acquires IP address from a DHCP service. This is the default setting
- **Use fixed IP address** - Sets a fixed IP address. You must also manually fill in IP address, Subnet mask, Default gateway, Primary DNS, and Secondary DNS fields. The network camera can be connected to the network upon completion.

### PPPoE Settings

This feature is disabled by default. Connecting to the network using PPPoE requires a user name and password from your ISP. Select **Enable PPPoE** and fill in valid user name and password to connect the camera to the Internet.

### DDNS Settings

DDNS (Dynamic Domain Name Server) is a protocol that enables the camera to maintain a static connection address, even when its IP changes. Access using this feature is disabled by default.

Connecting using DDNS requires registration on third-party websites for DDNS services. Select desired DDNS service website, check the **Enable DDNS** option, and fill in valid user name and password. You can then access the camera through the registered domain name.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## Port Settings

Ports are a software construct used to multiplex the transmission information to and from the camera. They act as separate endpoints within an IP address where software "listens" for incoming information. This section, which can be accessed under **Network > Port Settings**, includes *HTTP Port Settings* and *RTSP Settings*.

**Note:** The default port numbers in this section are, for the most part, well-known or commonly known values. We recommend that they not be changed unless there is a specific reason to do so.

### HTTP Port Settings

The **HTTP** port number is used access the camera via the HTTP protocol.

The **LiveView Port** number is used to transmit live-view information.

### RTSP Settings

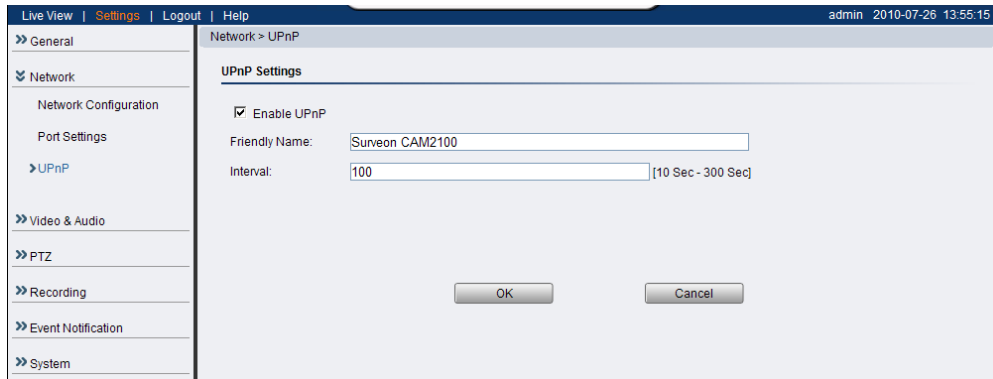
Real-Time Streaming Protocol (RTSP) is a protocol used to establish and control media sessions between end points.

You may change the access name for stream 1, stream 2, the RTSP port number, the RTP port for video, the RTCP port for video, RTP port for audio, and RTCP port for audio.

**Note:** The RTP port number must be an even number. After entering the RTP port number, the RTCP port number will automatically be set to the RTP port number + 1.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## UPnP



Universal plug and play (UPnP) is a protocol that simplifies the implementation of networks by allowing new hardware to connect seamlessly to a network. The settings for this feature can be found under **Network>UPnP**.

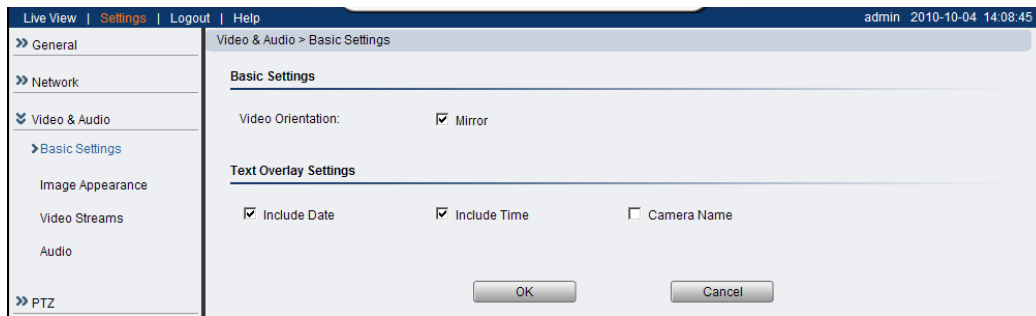
To enable UPnP, first check the **Enable UPnP** box. If you wish to change the default values, there are two fields that can be edited.

- **Friendly Name** - An identifier for the camera on the network.
- **Interval** - The time between camera-sent UPnP updates.

Click **OK** to activate UPnP or **Cancel** to abort the changes before you leave the page. Once activated, the camera will be visible to other devices on the network.

**Note:** If the computer does not have UPnP installed, you can add it by going to **Start> Control Panel> Add or Remove Programs**. In the **Add or Remove Programs** page, select **Add/Remove Windows Components>Networking Services** and click **Details**. Select **UPnP** from the popup window, and **OK** out to install UPnP services.

## Video & Audio Settings



Video and audio are the heart of a network camera's functionality. The settings for video and audio can be found under **Settings > Video & Audio**. Under this section, you can access basic video and audio settings, video appearance parameters, video stream settings, as well as audio parameters.

### Basic Settings

Basic settings pertain to simple live-view tweaks. These parameters can be found under **Video & Audio > Basic Settings**.

### Video Orientation

In certain mounting situations, the default video output may not be oriented correctly. This setting allows you to change the orientation of the output video.

- **Mirror** - flips the image horizontally.

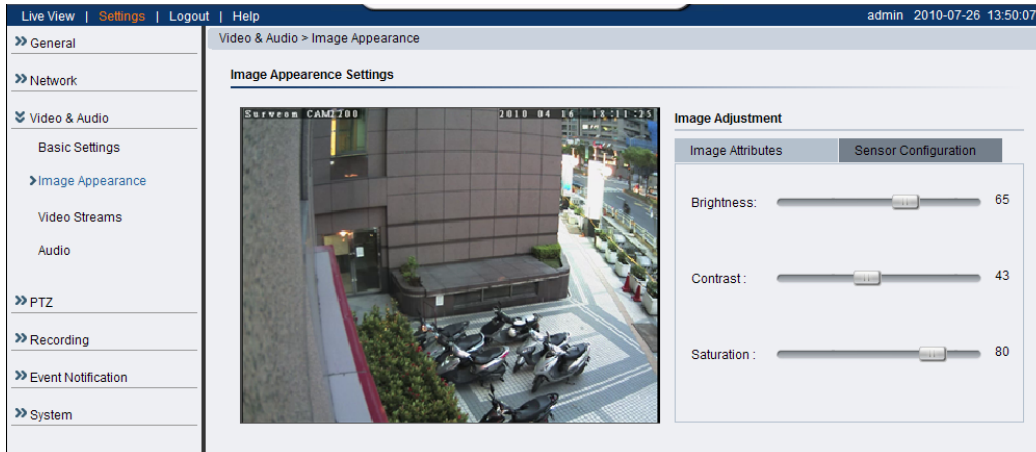
### Text Overlay Setting

The text overlay involves is the text displayed in the black bar at the top of the output screen. You can display multiple text messages at the same time. (Only the camera name will display if the resolution is 160 x 120).

- **Include Date** - Displays the current date.
- **Include Time** - Displays the current time.
- **Camera Name** - Displays the name of the camera.

## Image Appearance

These settings, found under **Video & Audio > Image Appearance**, deal with the video output of the camera. There are two tabs, *Image Attributes* and *Sensor Configuration*, as well as *Advanced Settings*.



### Image Attributes

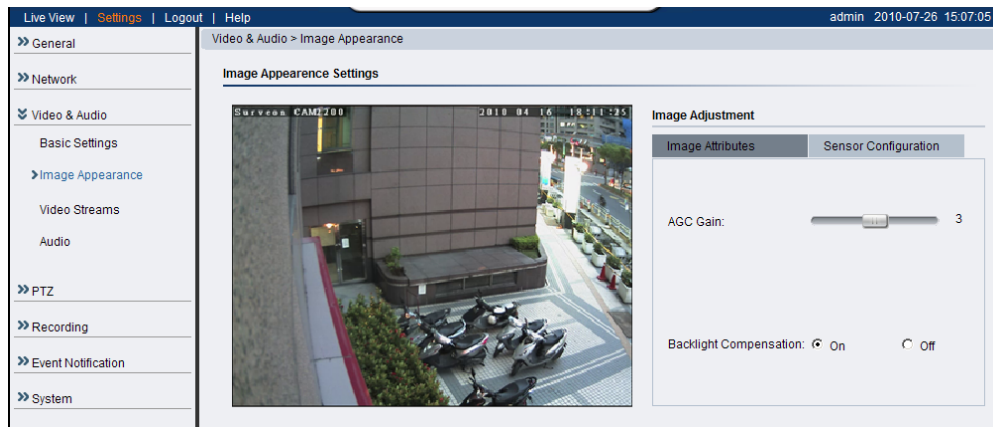
These parameters deal with the image lighting and color. All parameters are values ranging from (0) to (100). Dragging the slider to the right increases the value, while dragging to the left lowers the value. The adjustments will be displayed in real-time in the window to the left of the sliders.

- **Brightness** - Adjusts the brightness of the image.

**Note:** In certain situations the sensor may experience banding. In these cases, please turn on the Flickerless option and raise the brightness.

- **Saturation** - Adjusts the saturation of the image.
- **Contrast** - Adjusts the contrast of the image.

## Sensor Configuration



The *Sensor Configuration* can be accessed by clicking on the tab to the right of the *Image Attributes* tab. The following parameters can be changed:

- **AGC Gain** - Automatic gain control (AGC) adjusts the video gain level to a variety of inputs. This setting provides a baseline value for the AGC. Values higher than this will be darkened, and values that are lower will be brightened. AGC should be adjusted so that the area of interest is best lit.
- **Backlight compensation** - Backlight compensation adjusts video gain to automatically correct the exposure of objects that are strongly backlit. This brightens the image, at the cost of overexposing areas of high illumination.



## Advanced Settings

The *Advanced Settings* allow changes to the following parameters:

The screenshot shows a dialog box titled "Advanced Settings" with a light blue header. Below the header are four rows of settings, each with a label and a dropdown menu:

- Flickerless: Off
- Shutter mode: Auto
- Max Shutter Speed: Slowest
- Day/Night Mode: Day mode

At the bottom of the dialog box are two buttons: "OK" and "Default".

- **Flickerless** - Reduces flickering caused by the difference in frequency of the system and the environment lighting.

**Note:** In certain situations, the sensor may experience banding. In these cases, please turn on the flickerless feature, and raise brightness.

- **Shutter Mode** - Sets the camera shutter mode. Longer shutter times allow more light into the sensor, resulting in a cleaner picture, however longer shutter times can result in motion blur.
  - **Auto** - The camera will automatically change the shutter speed to adjust to the lighting conditions.
    - **Max Shutter Speed** - Used in conjunction with **Auto** shutter mode, determines the maximum shutter speed allowed. Options are: Slowest, Slow, Normal, Fast.
  - **Manual** - This setting allows users to specify a shutter speed.
    - **Shutter Speed** - The user may choose the following shutter speeds: 1/60s, 1/120s, 1/250s, 1/500s, 1/1000s, 1/2000s, 1/5000s, and 1/10000s.
- **Day/Night Mode** - Sets the day (color) and night (black and white, IR cut filter off where applicable.) Night mode sacrifices color information to produce a clear picture with less light.
  - **Day mode** - Forces day mode.
  - **Night mode** - Forces night mode.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## Video Streams

The configuration for video streams, including resolution, framerate and image quality parameters can be found under **Video & Audio > Video Streams**.

The page is split into settings for 2 streams. Common settings are:

- **Video format** - The compression format for the video stream.
  - **H.264** - Provides the best compression, and clear picture, but is processor intensive.
  - **MPEG4** - Provides more compression than MJPEG, but loses picture quality.
  - **MJPEG** - (Stream 1 only) Provides minimal compression, with superior picture quality. Each frame is stored as a discrete JPEG image.
- **Video Resolution** - Sets the resolution of the video output. 4 options are available: D1 (720x480, Stream 1 only), VGA(640x480), QVGA(320x240), QQQVGA(160x120, MPEG4, MJPEG only).
- **Video Frames per Second** - Sets the number of frames per second. 1, 3, 5, 10, 15, 20, 25, 30 FPS are possible values.

- **Key Frame Interval** - Sets the period between minimally compressed recovery frames that don't require other video frames to decode. 1/4s, 1/2s, 1s, 2s, 3s, and 4s are possible values.
- **Video Quality Settings** - Sets the quality of the video image.
  - **Constant Bit Rate** - In this mode, the camera will maintain a constant bit rate output, regardless of video quality. Bit rates available are dependent on the video resolution chosen, and range from 32 kbps to 6 Mbps.
  - **Fixed quality** - In this mode, the camera will attempt to maintain a constant quality output, up to a maximum bandwidth of 6 Mbps.

There are 2 modes in the *Video Stream 2 Settings*:

- **Normal Mode** - All parameters may be changed.
- **3GPP Mode** - All parameters will default to settings that are compatible with mobile viewing. The default in this case is 5fps QQVGA video, with MPEG4 compression at 128kbps and 2 seconds between key frames. None of the parameters can be changed.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## Audio Settings

The audio settings, under **Video & Audio > Audio Settings**, contain parameters dealing with audio coming from the cameras built in mic, or an external microphone.



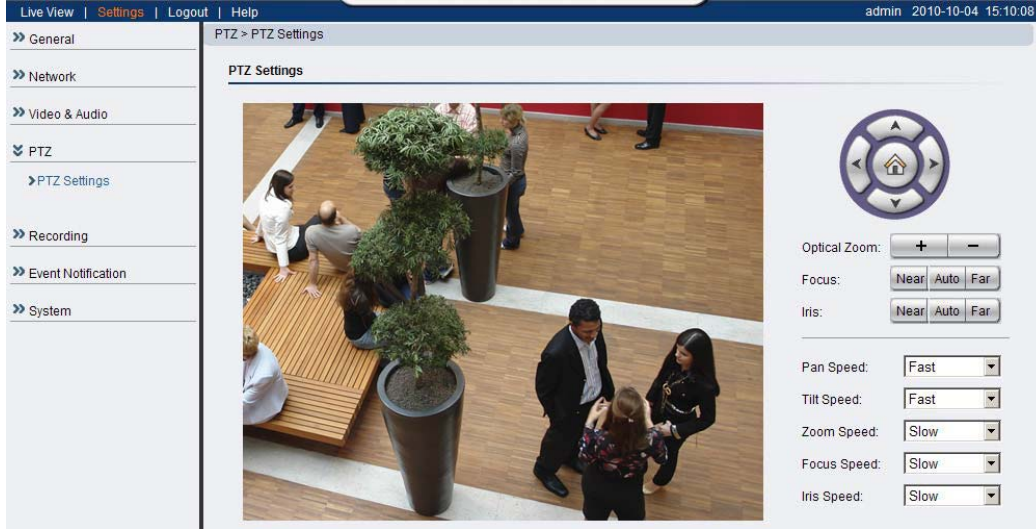
- **Mute** - Selects whether or not to mute the incoming audio from the camera.
- **Audio In** - Selects the source for the camera audio feed. **Line In** specifies an external source connected to the camera's line-in port, while **Microphone** is the camera's internal microphone.
- **ADPCM Bit Rate** - Adaptive differential pulse-code modulation (ADPCM) is a method for digitally encoding audio signals. Only one bit rate, 32 Kbps, is currently supported. Audio will be encoded at this bit rate.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.


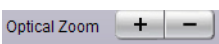


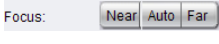



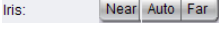



**Note:** Only Stream 1 supports audio.

## PTZ

The CAM6160/6180 Speed Dome has built in pan-tilt-zoom (PTZ) functionality, and is able to quickly change the camera's viewing angle to pursue action. The PTZ menu **Settings > PTZ > PTZ Settings** allows configuration of PTZ



functionality.

	<p><b>Pan/Tilt Control:</b> The four directional buttons pan and tilt the camera view in the direction pressed. The home button at the center returns the camera to the default startup position when clicked.</p>
	<p><b>Optical Zoom:</b> Adjusts the camera zoom distance.</p> <p> Zoom In</p> <p> Zoom Out</p>
	<p><b>Focus:</b> Adjust the focal distance.</p> <p> Moves the focus point nearer to the camera.</p> <p> Automatically adjusts the focal distance.</p> <p> Moves the focus point further from the camera.</p>
	<p><b>Iris:</b> Adjust the iris size.</p> <p> Opens the iris.</p> <p> Automatically adjusts the iris size.</p> <p> Closes the iris.</p>

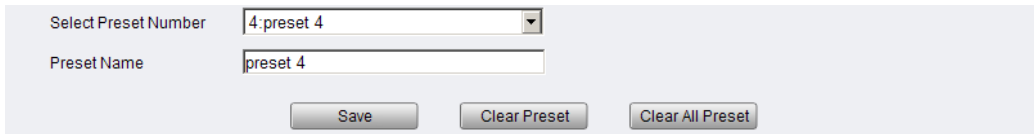
### Speed Adjustments:

Under the PTZ Settings menu, each of the following speeds can be set. There are 3 options for each item: **Fast**, **Slow**, and **Normal**.

- **Pan Speed:** Determines the amount the camera will pan with each press of the Pan/Tilt Control.
- **Tilt Speed:** Determines the amount the camera will tilt with each press of the Pan/Tilt Control.
- **Zoom Speed:** Determines the amount the camera will zoom in and out when the Optical Zoom buttons are pressed.
- **Focus Speed:** Determines the amount the camera will focus forward and backward when the Focus **Near** and **Far** buttons are pressed.
- **Iris Speed:** Determines the amount the camera will open or close the iris when the Iris **Near** and **Far** buttons are pressed.

## PTZ Presets:

Up to 127 presets can be saved in the camera's memory.



The screenshot displays a web interface for configuring PTZ presets. It features a dropdown menu labeled 'Select Preset Number' with the value '4.preset 4' selected. Below it is a text input field labeled 'Preset Name' containing the text 'preset 4'. At the bottom of the form are three buttons: 'Save', 'Clear Preset', and 'Clear All Preset'.

### Adding a Preset

To add a preset:

1. Set the camera to the desired preset location using the PTZ, focus and iris controls.
2. Select an unused preset number from the **Select Preset Number** dropdown.
3. Enter a name for the preset in the **Preset Name** field.
4. Click **Save** to save the preset.

### Editing a Preset

To edit a preset:

1. Select an existing preset from the **Select Preset Number** dropdown.
2. **(Optional)** Set the camera to the new desired preset location using the PTZ, focus and iris controls.
3. **(Optional)** Enter a new name in the **Preset Name** field.
4. Click **Save** to save the preset edits.

### Deleting a Preset

To edit a preset:

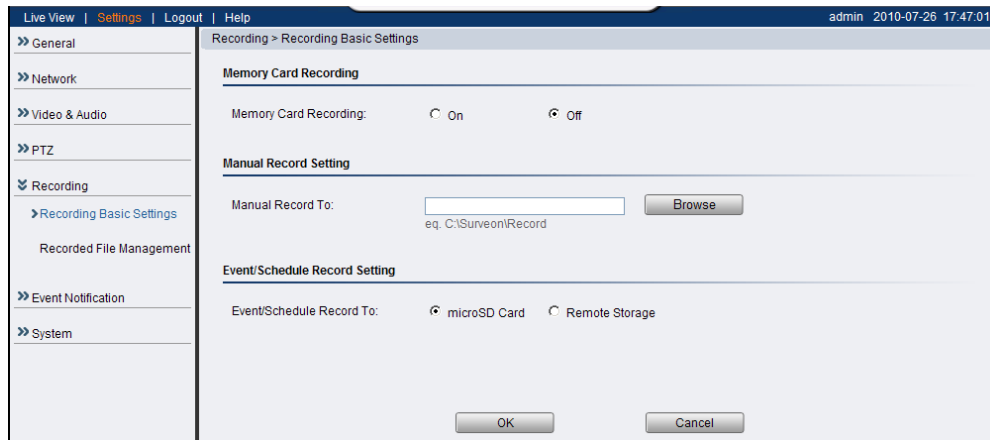
1. Select an existing preset from the **Select Preset Number** dropdown.
2. Click **Clear Preset** to clear the preset settings.
3. Optionally, you may click **Clear All Preset** to delete all saved presets.

## Recording

The Recording menu, **Settings> Recording**, deals with recording settings and managing recorded video files.

### Recording Basic Settings

Recording basic settings, **Recording> Recording Basic Settings** are parameters which deal with the recording location and scheduling.



The following parameters can be configured within this menu:

- **Memory Card Recording** - When turned on, video will automatically be recorded onto the microSD card if the network connection is lost. When a network connection is re-established, recording will switch back to the remote destination. If this feature is turned off, there will be no recording at all when if network connection is lost.
- **Manual Record To:** - Defines the path for manual recording. Screenshots and user recordings will be saved in this location.
- **Event/Schedule Record To:** - Allows the user to set the destination for event or scheduled recording. Event and scheduled recording settings are found under **Settings> Event Notification**.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.



## Recorded File Management

This section, located at **Recording > Recorded File Management** allows users to manage videos recorded on the microSD cards.

The screenshot shows the 'Recorded File Management' interface. At the top, there is a navigation bar with 'Live View', 'Settings', 'Logout', and 'Help'. The main content area is titled 'Recorded File Management' and includes a search filter for 'From:' and 'To:' (format: YYYY-MM-DD hh:mm:ss), a 'Search' button, and a table of recorded files. The table has columns for checkboxes, Time, Media Type, Trigger Type, Locked, Play, and Download. Two files are listed: '2010\_03\_12\_19\_28\_10.avi' and '2010\_03\_12\_19\_34\_38.avi', both H264, Alarm triggered, and not locked. Below the table are navigation buttons for page control and 'Lock/Unlock' and 'Remove' buttons.

### Locating Video Files

To locate video files from a specific time frame, enter a begin and end time in the **From:** and **To:** fields below, and click **Search**.

Each video file will have an entry containing:

- **Time** - The time the video was recorded, also the filename of the entry: YYYY\_MM\_DD\_HH\_MM\_SS.avi
- **Media Type** - The encoding/compression method
- **Trigger Type** - What type of action triggered this recording eg. if it was alarm recording or scheduled recording.
- **Locked** - The lock state of the alarm.

The video records located will be split into pages. The information on these

- << - Click to go to the first page of the recorded files list.
- < - Click to go to the previous page of the recorded files list.
- > - Click to go to the next page of the recorded files list.
- >> - Click to go to the last page of the recorded files list.
- **Forward To:** - This dropdown can be used to skip to a page number.

You may also narrow the entries displayed by clicking on the **Media Type** column. This will give you the option of choosing *All*, *H264*, *MPEG4*, or *MJPEG* types. The system will only show video files of the format selected.

### Managing Video Files

Once you have located the video files of interest you may select them by checking the box in the leftmost column of the entry. You can also select all displayed entries by checking the box in the header row.

There will be two buttons in each entry:

- **Play** - Plays the video file in local helper application.
- **Download** - Downloads video files. Select one or more video files and click **Download**; Choose location to save the video file(s) onto your local PC.

Other actions that you can perform:

- **Lock/Unlock** - Locks/Unlocks video files. Locked files cannot be removed. Select one or multiple video files and click Lock/Unlock. When a file is locked, the Locked status will display yes.
- **Remove** - Manually deletes stored video files. Select one or more video files and click **Remove** to delete the file(s).

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

**Note:** The video files shown in Recorded File Management are files stored in the microSD card. You can also record live video by clicking the record button in the Live View screen, which will be stored directly into your local computer, and are not managed by this function. Please refer to the section on [Manual Record](#) for more information on this functionality.

## Event Notification

Event Notification settings, found under **Settings > Event Notification**, deal with the event detection, scheduled recording, and notification abilities of the camera.

### Event Server

The event server, which can be configured under **Event Notification > Event Server**, is the communications center of the camera. This section deals with the configuration of E-mail and FTP notifications, as well as remote recording.

The screenshot shows the configuration interface for the Event Server. The left sidebar contains a navigation menu with categories like General, Network, Video & Audio, PTZ, Recording, Event Notification (expanded), and System. The main content area is titled 'Event Notification > Event Server' and contains three sections of settings:

- Email Settings:** Includes fields for Sender Email Address (notify@surveon.com), Recipient Email Address (admin@surveon.com), Server Address (smtp.surveon.com), User Name (CAMxNotify), Password (masked), and SMTP Server Port (25). A 'Test' button is located to the right of the SMTP Server Port field.
- FTP Settings:** Includes fields for Server Address (ftpserv1.surveon.com), FTP Server Port (21), User Name (CAMxNotify), Password (masked), and FTP Folder Name (Notifications).
- NAS Settings:** Includes fields for Server Address (maximus.fs1.surveon.com), User Name (CAMxNotify), Password (masked), and Folder Name (Notifications).

### Email Settings

Email settings are used to configure e-mail notifications.

- **Sender Email Address** - The return e-mail address for notifications. This should be your notification address.
- **Recipient email address** - The e-mail address notification emails will be sent to. Only one email address can be entered.
- **Server address** - The IP or address of the e-mail server.
- **User Name** - The user name of the notifications e-mail account.
- **Password** - The password of the e-mail account.
- **SMTP Server Port** - the SMTP port of the email server; Default 25.
- **Test** - Click this button to send a test email. E-mails will only be sent if all parameters are entered correctly.

### FTP Settings

FTP settings are used to configure recording to a remote location via the file transfer protocol.

- **Server Address** - The address of the FTP server.
- **FTP Server Port** - The port number of the FTP server; Default 21.
- **User Name** - The user name of the FTP account.
- **Password** - The password of the FTP account.
- **FTP Folder Name** - The name of the folder on the FTP site which video files will be stored in.

### NAS Settings

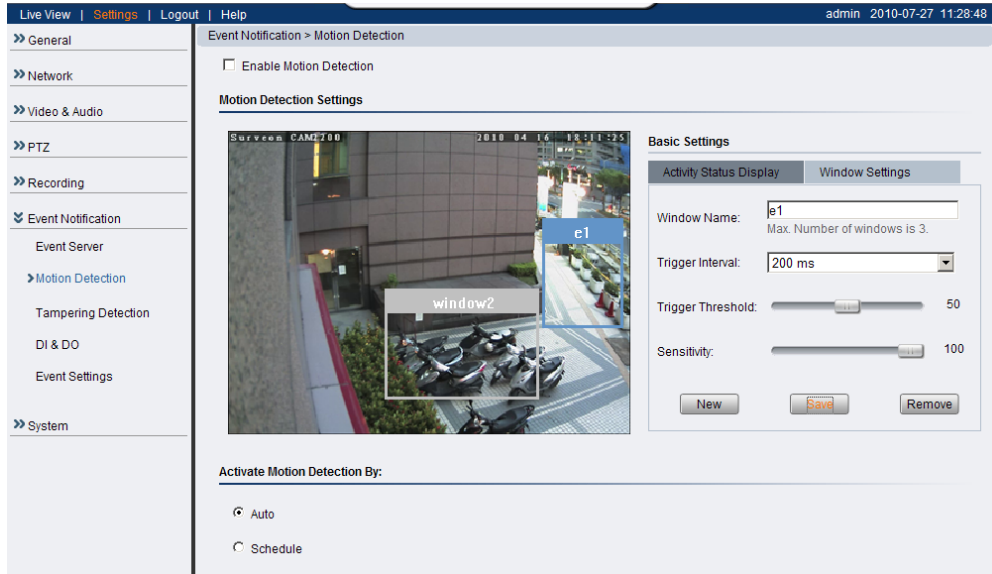
NAS settings are used to configure recording to network attached storage.

- **Server Address** - The address of the NAS server.
- **User Name** - The user name of the NAS account.
- **Password** - The password of the NAS account.
- **Folder Name** - The name of the CIFS account folder on the server.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## Motion Detection

The motion detection functionality of the camera can be found under **Event Notification > Motion Detection**.



### Motion Detection Window Management

To detect motion, first a detection window must be created. First click the *Window Settings* tab to enter the window configuration, and click **New** to add a new detection window. A maximum of 3 motion detection windows can be added. Each new window will be created with a default name *Window N*, where *N* is the number of the window. After creating the window, clicking it will select the window. You can drag and resize the window using your mouse. You can also change the following parameters:

- **Window Name** - The name of the motion detection window.
- **Trigger Interval** - The time interval between motion triggers. Options available are: 200 ms , 400 ms, 800 ms, and 1000 ms.
- **Trigger Threshold** - The percentage change in the window before a motion alarm is triggered.
- **Sensitivity** - The sensitivity of the motion box.

Click **Save** to save all settings. Settings of existing windows can also be changed by selecting the window and changing the settings. To delete a window, select a window in and click **Remove**.

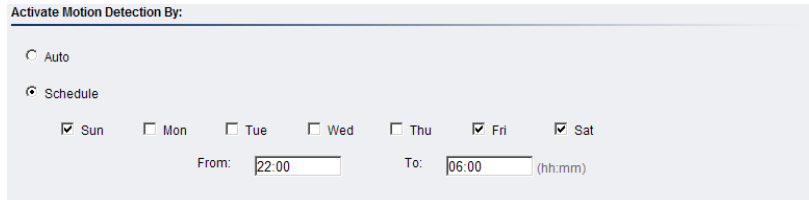
After windows are set, you can activate motion detection by checking the **Enable Motion Detection** box.

### Activating and Scheduling Motion Detection

Motion detection is activated by checking the **Enable Motion Detection** box.

**Activate Motion Detection By:** denotes when motion detection will be triggered as an event.

- **Auto** - As long as **Enable Motion Detection** is checked, an event is triggered.
- **Schedule** - Selecting this option allows to manually schedule the

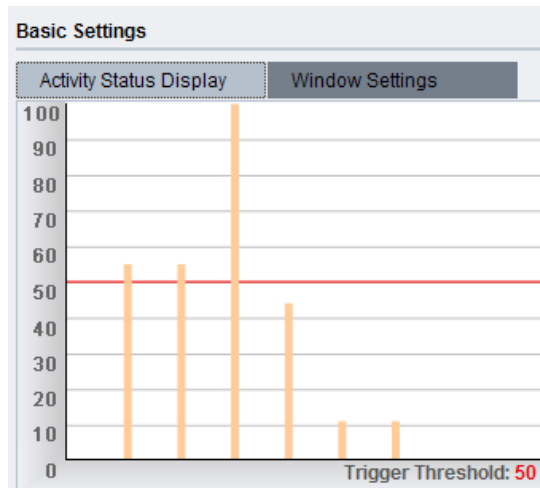


times motion detection will be active. Select the days of the week that Motion Detection is active by checking the corresponding boxes, and fill in a start time and end time for motion detection in the **From:** and **To:** boxes.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

### Triggering a Motion Event

The video displaying on the window is the live streaming video. The *Activity Status Display* tab displays the amount of motion detected in a selected window. By raising the **Sensitivity** of the window the motion values for a given motion, which are in shown in yellow, will be higher. When the motion value reaches or crosses the **Trigger Threshold**, denoted by the red line, a motion event will be triggered. Motion alarm handling and notifications can be configured under [Event Settings](#).



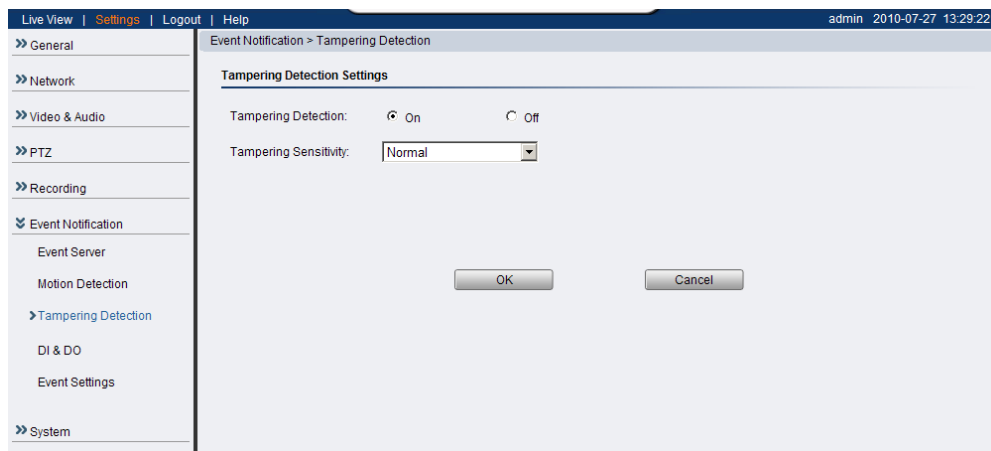
## Tampering Detection

Tampering detection is similar to motion detection in that it detects where there is a sudden unexpected change in the whole camera view. Parameters for this feature are found under **Event Notification > Tampering Detection**.

Tampering alarm handling and notifications can be configured under [Event Settings](#).

The tampering detection parameters include:

- **Tampering Detection** - Turns tampering detection on or off.
- **Tampering Sensitivity** - Sets the sensitivity of Tampering Detection.

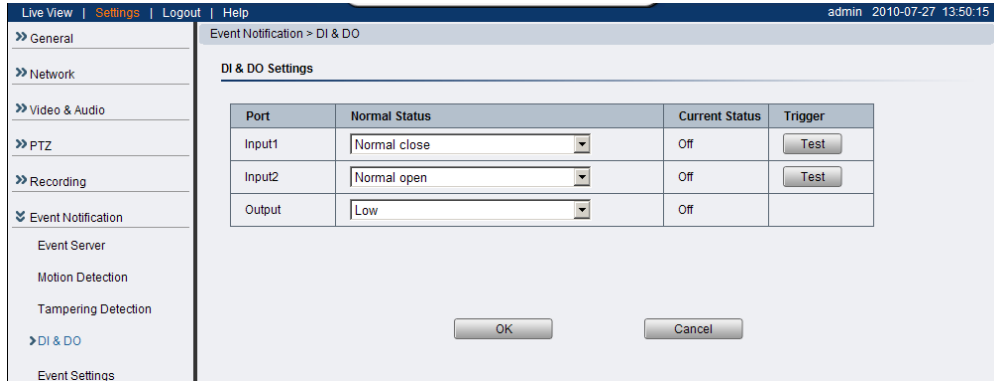


Options are *Very Low, Low, Normal, High, and Very High*. Higher sensitivities can detect more tampering attempts, but also increase the chances that the camera will produce a false alarm.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## DI & DO

Digital Input (DI) and Digital Output (DO) stand are used for event triggering. The camera has 1 DO and 2 DI ports. Settings for these ports can be found under **Event Notification > DI & DO**. Conditions for DI and DO triggering, as well as notifications for can be set under [Event Settings](#).

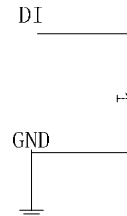


## Digital Input

The two inputs are listed as Input1 and Input2 and connect to external circuits such as window break detectors. These inputs can be tested by clicking the **Test** button in the input entry.

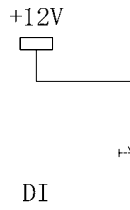
Each input has a **Normal Status**:

- **Normal Open** - the DI requires a low voltage input, with the following configuration.



It is triggered when it does not receive this input.

- **Normal Close** - the DI requires a high voltage input (+12V), with the following configuration.



It is triggered when it does not receive this input.

- **Off** - DI inputs are closed at all times. The camera will not respond to any signals on this DI.

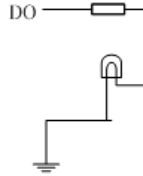


## Digital Output

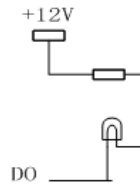
The camera can also be configured to send signals through the digital output.

Each output has a **Normal Status**:

- **High** - DO outputs a high voltage when triggered, and is connected to the output circuit in the following manner:



- **Low** - DO acts as a ground when triggered, and is connected to the output circuit in the following manner:



- **Off** - Closes DO output; no signals will be sent.

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## Event Settings

Event settings deal with alarm handling and notification, as well as feature scheduling. These settings can be found under the **Event Notification > Event Settings** menu.

The screenshot shows the 'Event Notification > Event Settings' page. On the left is a navigation menu with 'Event Notification' expanded to 'Event Settings'. The main area contains two tables:

Name	Enable	Type	Actions
test1	Enable	DI, Motion Detection, On Boot, Video Loss &...	Email, FTP, Record, Trigger DO

Below the Event List table are buttons for Add, Edit, and Remove.

Name	Enable	Condition	Actions
schedule1	Disable	Never	FTP

Below the Schedule List table are buttons for Add, Edit, and Remove.

The event handler is rule based. There are lists for both two types of rules:

- Event List - Contains rules based on triggered events such as motion detection or DI triggers.
- Schedule List - Contains time-based rules.

Each rule has an action list. When the conditions for rule are met, the actions specified by the rule are carried out. Users may perform the following actions in both Event and Schedule lists:

- Add - Clicking on the Add button adds a new rule to a list.
- Select - Clicking on an existing rule selects the rule, highlighting it in yellow.
  - Edit - A selected rule may be edited by clicking on the Edit button.
  - Delete - A selected rule may be deleted by clicking on the Delete button.

## Adding/Editing an Event Rule

The Add and Edit screens contain the following triggering actions:

The screenshot displays the configuration interface for an event rule, divided into three main sections:

- General:** Contains a text input for the rule name, currently set to "TriggeredEvent". Below it is a field for "Set Time Interval Between Triggers (min)" with the value "01:01:01" and a note "(max hh:mm:ss)".
- Enable Triggering By:** Features three radio button options: "Always", "Recurrence Pattern" (which is selected), and "Never". Under "Recurrence Pattern", there are checkboxes for days of the week: Sun, Mon, Tue, Wed (checked), Thu, Fri, and Sat. Below these are two time input fields: "From:" with the value "01:00" and "To:" with the value "03:00", followed by the unit "(hh:mm)".
- Triggered By:** Contains a checked checkbox for "Motion Detection". Below it is a dropdown menu labeled "In Window:" with the selected value "Window 1-e1". Other unchecked options include "On Boot", "Video Loss & Tampering Detection", "Disk Full", and "DI".

**Note:** If editing a rule that has not been triggered, the rule will not be triggered after until after editing is complete. If the rule is triggered, any changes will not be applied until the current trigger is resolved.

## General

The following general fields should be filled in:

- **Name** - Specifies the name of the Event.
- **Minimum time interval between triggers** - The time frame in which a subsequent trigger of the same event will be ignored (maximum 23:59:59).

## Enable Triggering By

The next step is to specify the frequency of trigger response. 3 options are available:

- **Always** - The default setting; Triggers event when conditions are met.
- **Recurrence Pattern** - Enables triggering only if conditions are met during a specified time period. To specify the period, select the days of the week that the trigger is active by checking the corresponding boxes, and fill in a start time and end time for motion detection in the **From:** and **To:** boxes.

- **Never** - The event is never triggered.

## Enable Triggering By

After the frequency is selected, triggering conditions can be set. Multiple conditions can be set at once. Available options include:

- **Motion Detection** - Trigger when motion is detected.
  - **In Window** - Specifies the detection window that will trigger the event.

Please refer to the section on [Motion Detection](#) for details.

- **On Boot** - Trigger when camera reboots.
- **Video Loss & Tampering Detection** - Trigger when video signal is lost or tampering is detected. Please refer to the section on [Tampering Detection](#) for more detail.
- **Disk Full** - Trigger when the SD disk installed in the camera is full.
- **DI** - Trigger when a DI trigger occurs. For more information please refer to the section on [DI & DO](#).

## When Triggered

The actions to take when trigger conditions are met are configured here.

The following options are available:

- **Streams** - Selects the stream from which the snapshot or recording will be obtained.
- **Email** - E-mails notifications to the email address specified in the [Event Server](#) settings. If this option is chosen, fill in the following:
  - **Subject** - The subject line of the notification e-mail.
  - **Additional Information** - Contents of the notification e-mail.
  - **Snapshot/Video Clip** - Choose to send a snapshot or video attachment from 5s before to 30s after the trigger.
- **FTP** - uploads a snapshot or video clip to a FTP location specified in the [Event Server](#) settings.
  - **Snapshot/Video Clip** - Choose to upload a snapshot or video file from 5 seconds before to 30 seconds after the trigger. Files are sent as attachments.
- **Record** - Records video to the server specified in the [Event Server](#) settings and the microSD card when triggered. The video clip stored on both remote storage server and local storage is a video file 35 seconds in length (5 seconds before and 30 seconds after the trigger)
- **Trigger DO** - A Digital output signal is sent when triggered.
  - **Trigger Duration** - The length of time that the DO signal is sent. Options are 1, 2, 5, 10, 20 or 30 seconds. For more information please refer to the section on [DI & DO](#).

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## Adding/Editing a Scheduled Rule

The Add and Edit screens contain the following actions:

**Note:** If editing a rule that has not been triggered, the rule will not be triggered after until after editing is complete. If the rule is triggered, any changes will not be applied until the current trigger is resolved.

### General

The following general fields should be filled in:

- **Name** - Specifies the name of the Event.
- **Set Time Interval (When Activated)** - The trigger time of the event (00:00 to 23:59).

### Enable Triggering By

The next step is to specify the frequency of trigger response. 3 options are available:

- **Always** - The default setting; Triggers event when conditions are met.
- **Recurrence Pattern** - Enables triggering only if conditions are met during a specified time period. To specify the period, select the days of the week that the trigger is active by checking the corresponding boxes, and fill in a start time and end time for motion detection in the **From:** and **To:** boxes.

- **Never** - The event is never triggered.

## When Triggered

The actions to take when trigger conditions are met are configured here.

The following options are available:

- **Streams** - Selects the stream from which the snapshot or recording will be obtained.
- **Email** - E-mails notifications to the email address specified in the [Event Server](#) settings. If this option is chosen, fill in the following:
  - **Subject** - The subject line of the notification e-mail.
  - **Additional Information** - Contents of the notification e-mail.
  - **Snapshot/Video Clip** - Choose to send a snapshot or video attachment from 5s before to 30s after the trigger.
- **FTP** - uploads a snapshot or video clip to a FTP location specified in the [Event Server](#) settings.
  - **Snapshot/Video Clip** - Choose to upload a snapshot or video file from 5 seconds before to 30 seconds after the trigger. Files are sent as attachments.
- **Record** - Records video to the server specified in the [Event Server](#) settings when triggered. The video clip stored on both remote storage server and local storage is a video file 35 seconds in length (5 seconds before and 30 seconds after the trigger)
- **Trigger DO** - A Digital output signal is sent when triggered.
  - **Trigger Duration** - The length of time that the DO signal is sent. Options are 1, 2, 5, 10, 20 or 30 seconds. For more information please refer to the section on [DI & DO](#).

Click **OK** to save or **Cancel** to abort the changes before you leave the page.

## System

The system settings, which deal with hardware and firmware parameters, logs, and configuration lists, can be found under **Settings > System**.

### System Status

The camera status can be found under **System > System Status**.

The screenshot displays the 'System > System Status' page. The left sidebar contains a navigation menu with options: General, Network, Video & Audio, PTZ, Recording, Event Notification, System (expanded), microSD Card Management, System Log, Firmware Upgrade, Reset To Factory Default, and Export/Import & Reboot. The main content area shows the following system status information:

IP Address:	192.168.4.213
MAC Address:	00:D0:23:0F:FD:72
Subnet Mask:	255.255.0.0
Default Router:	255.255.255.127
microSD Card Capacity Status:	0MB
Boot Loader:	V1.0.A05
Firmware Version:	V1.1.F02

At the bottom, there is a text label 'Send system status to technical support.' and an 'Email' button.

This section displays useful system information including:

- [Network Configuration](#) defined manually or obtained from DHCP
  - IP Address
  - MAC Address
  - Subnet Mask
  - Default Router address
- Camera System Information
  - Boot Loader Version
  - Firmware Version

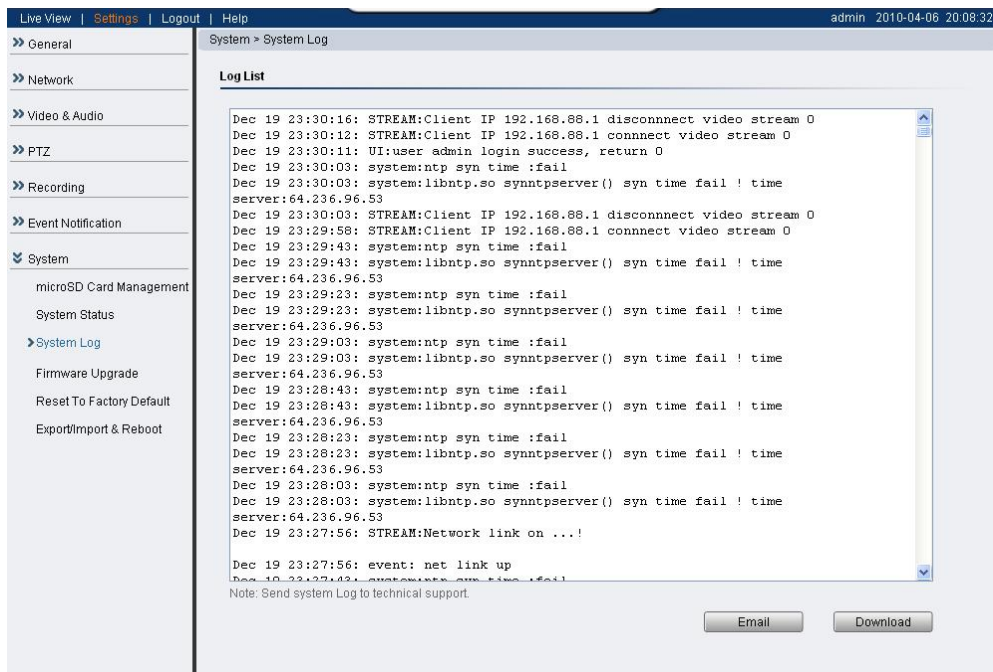
Clicking on the **Email** button will send the system status information out to the notification e-mail address specified in [Event Server](#) for troubleshooting or reference purposes.



## System log

The system log, **System > System Log**, provides a log for system messages and events. The log lists important information such as login information, changes to camera settings (both successful and unsuccessful), triggered events, and error messages.

This information can be very useful in the event of a camera failure or unauthorized entry.



Clicking **Email** will send the log out as an email the notification e-mail address specified in [Event Server](#); Clicking **Download** will begin the browser download process to download the log to the local PC.

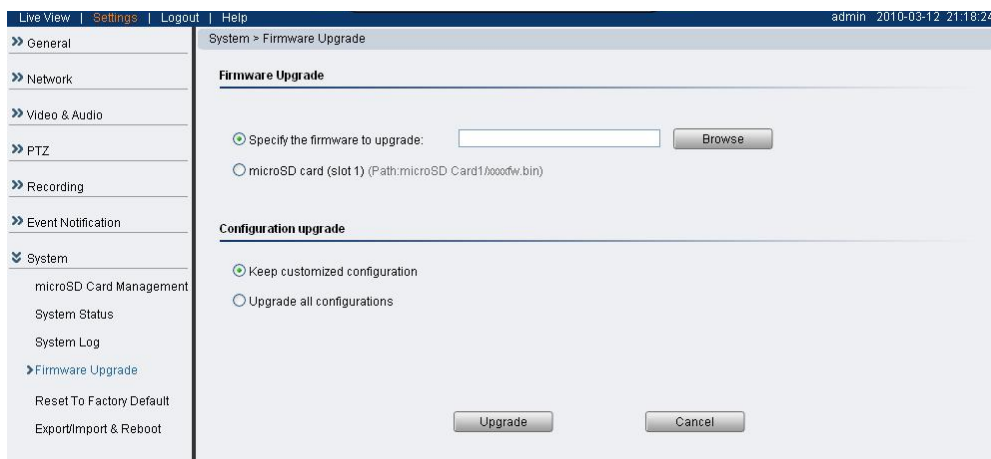
## Firmware Upgrade

In certain cases, improvements to the camera firmware will be made to improve the image quality or enhance the usability of the camera. These upgrades will be made available via Surveon support or our website [www.surveon.com](http://www.surveon.com). Once you have obtained a new firmware file, firmware upgrades can be performed under **System > Firmware Upgrade**.

There are 2 ways to upgrade the firmware:

- Upgrading through firmware stored locally on a PC
- Upgrading through firmware stored in a microSD card

If upgrading through firmware stored locally, enter the path of the file in the provided field or click **Browse** to find the file.



Select **Keep customized configuration** to keep current configuration settings, or **Upgrade all configurations** to clear all settings back to factory defaults.

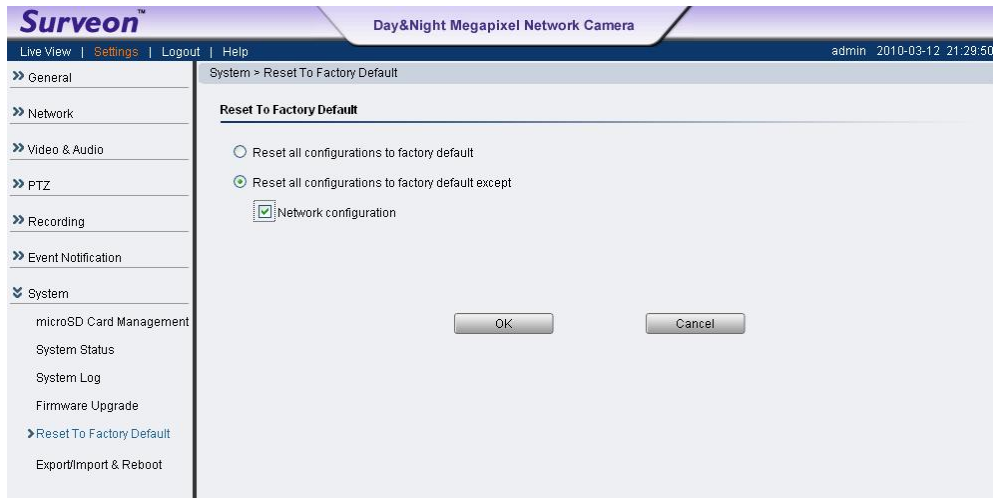
Click **Upgrade** to start the upgrade. Upon completion of firmware upgrade, the camera will reboot (you will be logged off). During the firmware upgrade, the LED indicator in front of the camera will show steady amber. When the LED indicator turns green, the firmware upgrade is complete.

Click **Cancel** to exit without upgrading.

To perform a firmware upgrade from the MicroSD card, copy the new firmware onto the MicroSD card, and reboot (cycle camera power) or reset the camera. The camera will automatically detect the firmware and perform the upgrade. Remove the MicroSD card and delete the firmware when the upgrade is complete.

## Reset to Factory Default

Camera resets can be performed under **System > Reset To Factory Default**.



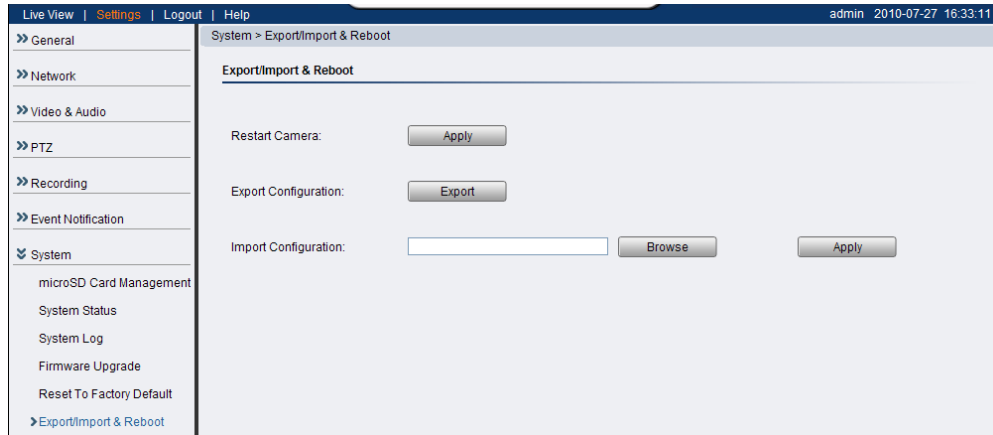
There are 2 types of reset. You can either reset all settings and configurations, or you can choose to keep the Network configuration, and reset all other settings and configurations.

Click **OK** after choosing a reset option to perform a reset.

Alternately, you may press the "Reset" button on the bottom of the camera to perform a complete reset of the camera (no configurations retained). To reset the camera by pressing the "Reset" button on the bottom of the camera, press and hold the "Reset" button for 3 seconds. During this time, the LED indicator in front of the camera will blink in red.

## Export/Import & Reboot

In certain situations it may be necessary to restart your network camera (network settings changed, DHCP added, etc). The settings under **System > Export/Import & Reboot** allow you to restart the camera.



This menu also contains options to export configuration details (for backup or replication purposes), as well as import configuration details. The following options are available:

- **Restart Camera** - Resets the camera when **Apply** is clicked.
- **Export Configuration** - Export the camera's settings and configurations by clicking **Export**, this will start a browser dialogue to download the configuration.
- **Import Configuration** - Imports previously exported camera settings. The field should contain the path for the camera configuration file. Click **Browse:** to browse your PC for the configuration file. Click **Apply** to import the settings.