

# MEGApix® 3MP PTZ IP Camera DWC-MPTZ336XW



## ***User's Manual*** Ver. 04/20

Before installing and using the camera, please read this manual carefully.  
Be sure to keep it handy for future reference.

# Safety Information



## CAUTION

RISK OF ELECTRIC SHOCK.  
DO NOT OPEN.



## CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



### Warning

This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.



### Precaution

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

## WARNING

To prevent damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.

## WARNING

1. Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product
2. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.
3. Do not connect multiple cameras to a single adapter. Exceeding the capacity may cause excessive heat generation or fire
4. Securely plug the power cord into the power receptacle. Insecure connection may cause fire
5. When installing the camera, fasten it securely and firmly. A falling camera may cause personal injury.
6. Do not place conductive objects (e.g. screw drivers, coins, metal items, etc.) or containers filled with water on top of the camera. Doing so may cause personal injury due to fire electric shock, or falling objects.
7. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock
8. If any unusual smells or smoke come from the unit, stop using the product. Immediately disconnect the power source and contact the service center. Continued use in such a condition may cause fire or electric shock
9. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way.
10. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock

## Precaution

### Operating

- Before using, make sure power supply and all other parts are properly connected.
- While operating, if any abnormal condition or malfunction is observed, stop using the camera immediately and contact your dealer.

### Handling

- Do not disassemble or tamper with parts inside the camera.
- Do not drop the camera or subject it to shock or vibration as this can damage the camera.
- Clean the clear dome cover with extra care. Scratches and dust can ruin the quality of the camera image.

### Installation and Storage

- Do not install the camera in areas of extreme temperature, exceeding the allowed range.
- Avoid installing in humid or dusty environments.
- Avoid installing in places where radiation is present.
- Avoid installing in places where there are strong magnetic fields and electric signals.
- Avoid installing in places where the camera would be subject to strong vibrations.
- Never expose the camera to rain or water.

# Important Safety Instructions

1. **Read these instructions.** - All safety and operating instructions should be read before installation or operation.
2. **Keep these instructions.** - The safety, operating and use instructions should be retained for future reference.
3. **Heed all warnings.** - All warnings on the product and in the operating instructions should be adhered to.
4. **Follow all instructions.** - All operating and use instructions should be followed.
5. **Do not use this device near water.** - For example: near a bathtub, wash bowl, kitchen sink, laundry tub, in a wet basement; near a swimming pool; etc.
6. **Clean only with dry cloth.** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners.
7. **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.** - Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the product, and to protect it from over-heating. The openings should never be blocked by placing the product on bed, sofa, rug or other similar surfaces. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhere to.
8. **Do not install near any heat sources such as radiators, heat registers, or other apparatus (including amplifiers) that produce heat.**
9. **Do not defeat the safety purpose of the polarized or grounding-type plug.** A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement.
10. **Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.**
11. **Only use attachments/accessories specified by the manufacturer.**
12. **Use only with cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.**
13. **Unplug the apparatus during lightning storms or when unused for long periods of time.**
14. **Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.**



## Disposal of Old Appliances



1. When this crossed-out wheel bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream in accordance to laws designated by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# Contents

1	Introduction.....	5
1.1	Components.....	5
2	Installation .....	6
2.1	Preparing the camera.....	6
2.1.1	Mounting the camera.....	7
2.2	Cabling the camera .....	8
2.3	Connections .....	10
2.4	Resetting the camera to default settings.....	10
3	Web viewer.....	12
3.1	Access from a browser.....	12
3.2	Access from the Internet .....	13
3.3	Setting the admin password over a secure connection.....	13
3.4	Live View Page.....	14
3.5	Playback.....	16
3.6	Camera Setup.....	18
3.6.1	Basic Configuration.....	18
3.6.2	Video and Image .....	23
3.6.3	Audio.....	34
3.6.4	Event.....	35
3.6.5	Dome Configuration .....	51
3.6.6	System.....	58
3.7	Help.....	76
	Appendix.....	77
A.1	Troubleshooting .....	77
A.2	Alarm Connection .....	78
A.3	Preventive Maintenance .....	78
A.4	System Requirement for Web Browser .....	78
A.5	General Performance Considerations .....	78
A.6	Product Specification.....	79
	Warranty .....	81
	Limits and Exclusions .....	82

# 1 Introduction

The camera supports the network service for a sensor image with a progressive scan, which can be monitored on a real-time screen regardless of distances and locations. By using its dedicated program, many users can have access to the camera at once or a single user can monitor various cameras at the same time. It also enables users to play, store and retrieve a monitoring image by using a PC. All the settings and real-time monitoring screens are also provided through access to the web.

The camera is fully featured for security surveillance and remote monitoring needs. It is based on the DSP compression chip and makes it available on the network as real-time, full frame rate Motion H.265, H.264 and JPEG video streams.

The alarm input and alarm output can be used to connect various third-party devices, such as door sensors and alarm bells.

## 1.1 Components

This system comes with the following components;

- PTZ dome camera ..... 1
- Quick setup and download guides ..... 1
- 2P screw type connector ..... 1
- 5P screw type connector ..... 1
- 12VDC adaptor ..... 1
- PoE injector ..... 1
- RJ-45 waterproof cover ..... 1
- Installation adaptor ..... 1

**NOTE:** Check your package to make sure that you received the complete system, including all components listed above.

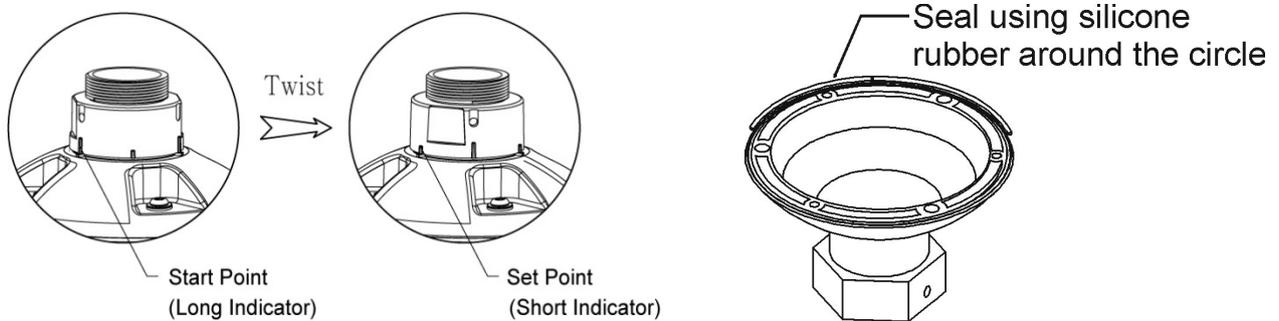
## 2 Installation

### 2.1 Preparing the camera

A mounting accessory is required to complete the installation and is sold separately.

The wall or ceiling mount must be attached to a structural object such as hardwood, concrete that will support the weight of the mount and dome camera.

1. The use of a solid backboard is recommended when attaching to gypsum walls. The mounting surface must withstand five times the camera weight.
2. Do not let the cables get caught in improper places or the electric line cover can be damaged. This may cause a short or fire.
3. For the installation process, remove the protection film and the tape from attached the dome camera.
4. A silicone rubber sealant must be applied to seal the housing to secure waterproofing.

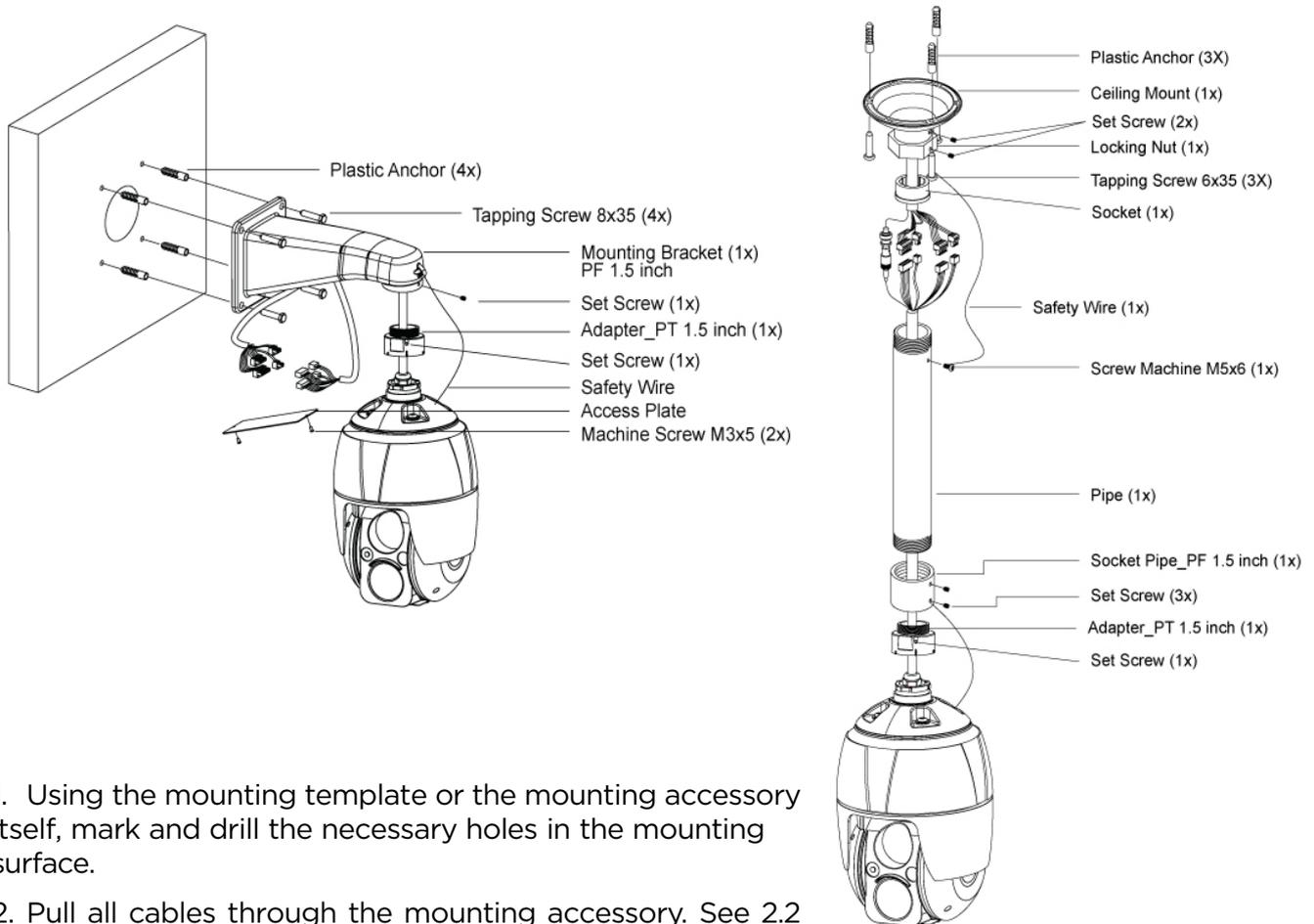


**CAUTION 1:** A silicone rubber sealant must be applied to seal the housing to secure waterproofing.

**CAUTION 2:** When installing the camera in an environment colder than 14°F (-10°C), reset the camera 30 ~ 60 minutes after the installation.

## 2.1.1 Mounting the camera

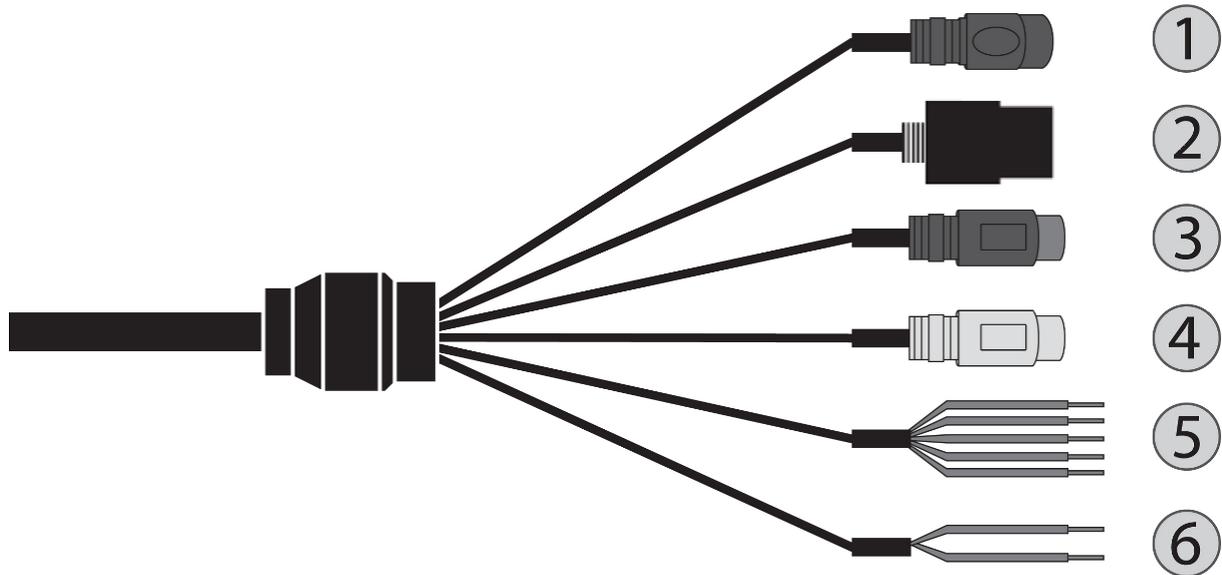
The wall mounting plate must be attached to a structural object such as concrete that will support the weight of the mount and dome camera.



1. Using the mounting template or the mounting accessory itself, mark and drill the necessary holes in the mounting surface.
2. Pull all cables through the mounting accessory. See 2.2 Cabling the camera for more information.
3. Attach the wall mounting bracket to the mounting surface using plastic anchors and M8x35 screws. For a ceiling mounting bracket installation, use the plastic anchors to secure it to the mounting surface.
4. Wind both of the pipe ends thread with Teflon tape about 20 times for sealing. Use a silicone rubber sealant to seal the area where the mounting bracket and the pipe meet.
5. Place a bead of silicone sealant around the mounting bracket's mounting flange, press it to the surface and line up the flange hole with drilled holes.
6. Open the access plate on the mounting accessory and pull out the cables through the rectangular access hole.
7. Attach the 1.5" adapter to the mounting bracket and fix it using the set screw.
8. Attach the camera's safety wire to the mounting bracket and organize the cables.
9. Connect all the cables to the camera. See 2.2 Cabling the camera. Close the access plate off the mounting bracket.
10. Connect the camera to the mounting bracket by turning it clockwise into the adapter, and fix it using the set screw of the adapter.

## 2.2 Cabling the camera

Follow the table and diagram below to connect your camera to all external devices.



No.	Connector	Wire Color	Description
1	Power jack	Black	Camera power (12vdc)
2	RJ-45	Black	Ethernet
3	RCA jack	Black	Audio input
4	RCA jack	Gray	Audio output
5	5-pin cable	Yellow	Alarm input 1
		White	Alarm input 2
		Violet	Alarm input 3
		Brown	Alarm input 4
		Gray	GND
6	2-pin cable	Red	Alarm output
		Black	GND

The camera must be installed by qualified service personnel following all local and federal electrical and building codes.

- **Connecting to the RJ-45**

Connect a standard RJ-45 cable to the network port of the camera. Generally, a crossover cable is used for direct connection to PC, while a direct cable is used for connection to a hub.

- **Connecting alarms A1, A2, A3, A4 (alarm input 1, 2, 3, 4)**

You can use external devices to signal the camera to react to events. Mechanical or electrical switches can be wired to the A1, A2, A3, A4 (Alarm Input 1, 2, 3, 4) and G (Ground) connectors.

NOTE: All the connectors marked G or GND is common.

Connect the ground side of the alarm input and/or alarm output to the G (Ground) connector.

- **AO (alarm output)**

The camera can activate external devices such as buzzers or lights. Connect the device to the AO (alarm output) and G (ground) connectors.

- **Connecting audio**

Connect the speaker to the audio output line and external mic to the audio input line.

- **Connecting the power**

- 12VDC

- Connect the power of 12VDC for the camera. Connect the positive (+) pole to the '+' position and the negative (-) pole to the '-' position.

- NOTE: Be careful not to reverse the polarity when you connect the power cable.

- PoE and 12VDC

- Connect the power of 12VDC for the camera. Connect the positive (+) pole to the '+' position and the negative (-) pole to the '-' position.

- NOTE: Be careful not to reverse the polarity when you connect the power cable.

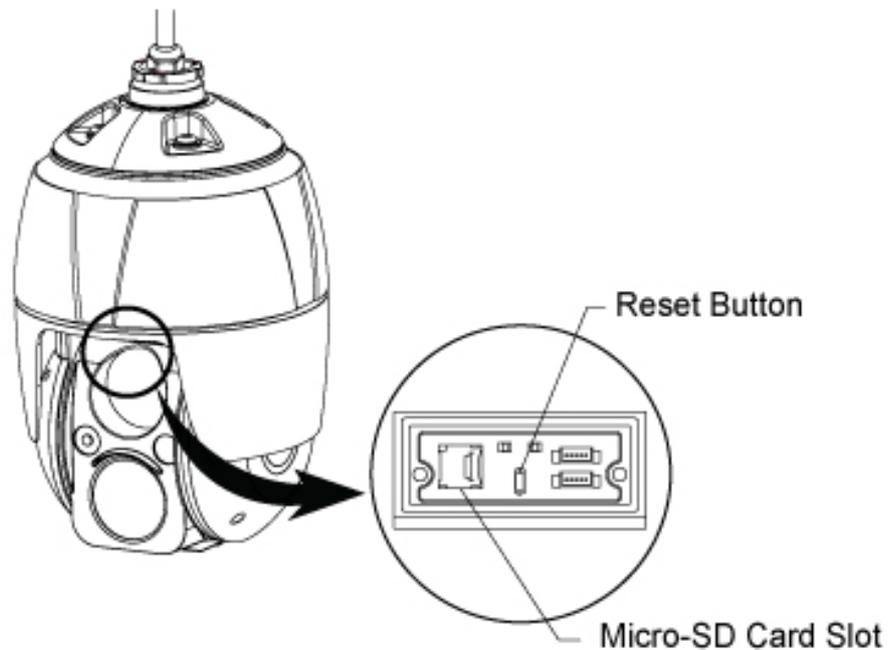
- NOTE: If you use PoE to supply power to the camera, you must use a PoE injector or switch greater than 30W.

## 2.3 Connections

### SD card insertion

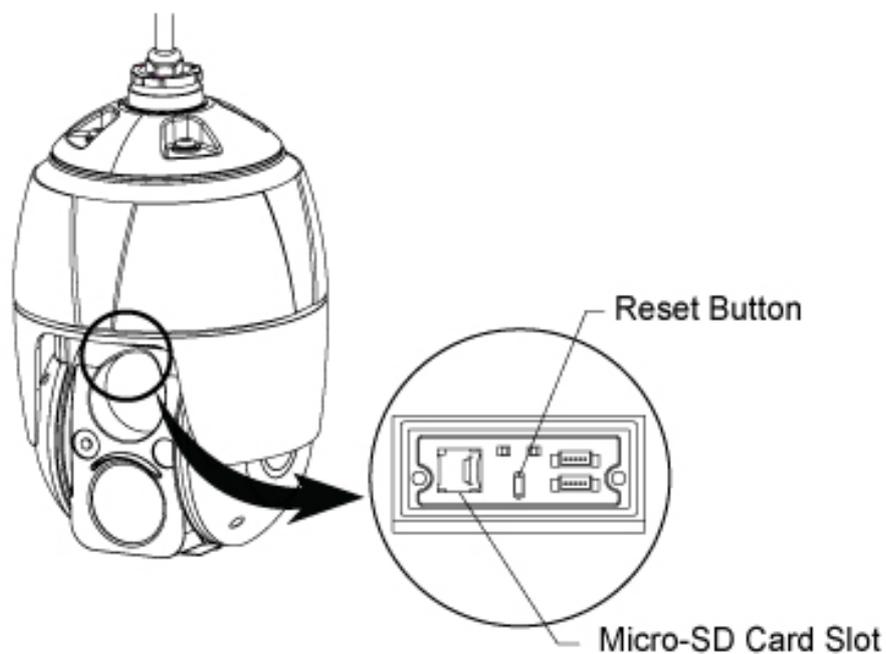
Users can insert and remove an SD card as shown in the following picture.

1. Open the SD card cover under the camera's lens.
2. Insert or remove the SD card as needed.
3. Tightly close the SD card cover to ensure it is waterproof.



## 2.4 Resetting the camera to default settings

To reset the camera to its original factory settings, open the camera's web viewer and go to the Setup > System > Maintenance. You can also use the **Reset** button on the camera, as described below:



### Using the reset button:

Follow the instructions below to reset the camera to the factory default settings using the Reset button.

1. Switch off the camera by disconnecting the power adapter.
2. Open the SD card cover.
3. Press and hold the reset button on the board with your finger while reconnecting the power.
4. Hold the reset button down for about 2 seconds.
5. Release the reset button.
6. The camera resets to factory defaults and restarts after completing the factory reset.
7. Close the SD card cover tightly to ensure waterproofing.

**CAUTION:** When performing a factory reset, you will lose all settings (Default IP 192.168.30.220)

### 3 Web viewer

The camera can be used with the Windows® operating system and browsers. The recommended browsers are Internet Explorer, Safari, Firefox, Opera and Google Chrome with Windows.

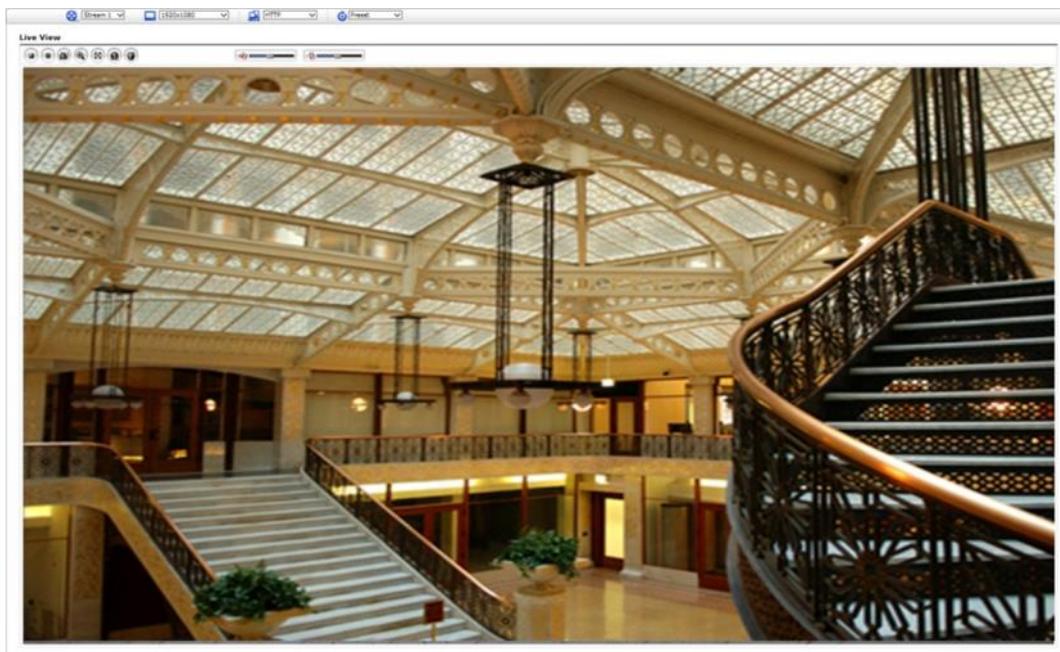
**NOTE:** To view streaming video in Microsoft Internet Explorer, set your browser to allow ActiveX controls.

#### 3.1 Access from a browser

1. Start a browser (Internet Explorer).
2. Enter the IP address or hostname of the camera in the Location/Address field of your browser.
3. You can see a starting page. Click Live View, Playback, or Setup to enter the web page.



4. The camera's Live View page appears in your browser.



### 3.2 Access from the Internet

Once connected, the camera is accessible on your local network (LAN). To access the camera from the Internet you must configure your broadband router to allow incoming data traffic to the camera. To do this, enable the NAT traversal feature, which will attempt to automatically configure the router to allow access to the camera. This is enabled from Setup > System > Network > NAT. For more information, please see “System > Network > NAT” of User Manual.

### 3.3 Setting the admin password over a secure connection

To gain access to the product, the password for the default administrator user must be set. This is done in the Admin Password dialog, which is displayed when the camera is accessed for the setup for the first time. Enter your admin name and password, set by the administrator.



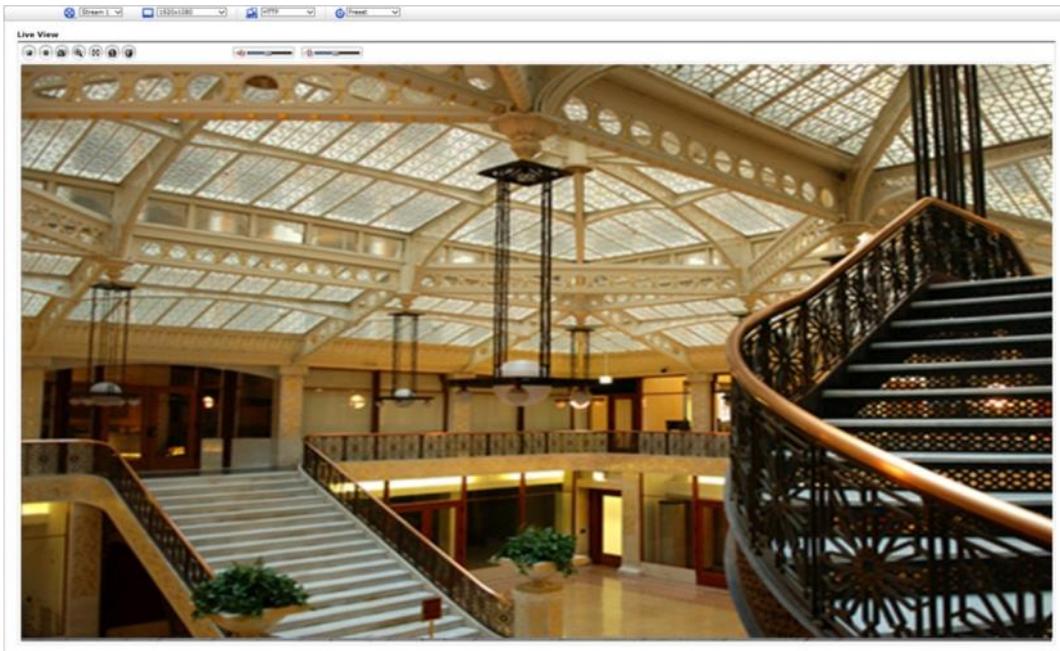
**NOTE:** The default administrator user name and password is “admin”. If the password is lost, the camera must be reset to the factory default settings. Please see “Resetting to the factory default settings”.

To prevent network eavesdropping when setting the admin password, this can be done via an encrypted HTTPS connection, which requires an HTTPS certificate (see NOTE below). To set the password via a standard HTTP connection, enter it directly in the first dialog shown above. To set the password via an encrypted HTTPS connection, please see “System > Security > HTTPS” of User Manual.

**NOTE:** HTTPS (Hypertext Transfer Protocol over SSL) is a protocol used to encrypt the traffic between web browsers and servers. The HTTPS certificate controls the encrypted exchange of information.

### 3.4 Live View Page

The Live View page comes in several screen modes. Users are allowed to select the most suitable one out of those modes. Adjust the mode following your PC specifications and monitoring purposes.



#### 1. General controls

 Live View Page     Playback Page     Setup Page     Help Page

 Stream 1    The video drop-down-list allows you to select a customized or preprogrammed video stream on the Live View page. Stream profiles are configured under Setup > Basic Configuration > Video and Image. For more information, please see “Basic Configuration > Video and Image” of the User Manual.

 1920x1080    The resolution drop-down-list allows you to select the most suitable one out of video resolutions to be displayed on the Live View page.

 HTTP    The protocol drop-down-list allows you to select which combination of protocols and methods to use depending on your viewing requirements, and the properties of your network.

 Preset    The preset drop-down-list allows you to select the preset number for the PTZ camera being used. This icon is inactivated if the PTZ settings are not set.

## 2. Control toolbar

The live viewer toolbar is available in the web browser page only. It displays the following buttons:

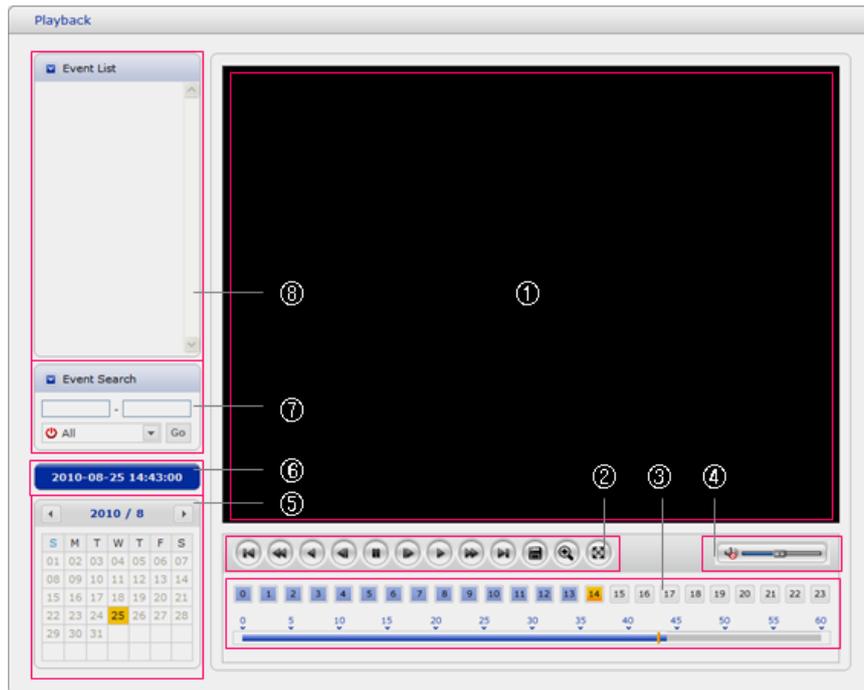
-  The **Stop** button stops the video stream being played. Pressing the key again toggles the play and stop.
-  The **Play** button connects to the camera or starts playing a video stream.
-  The **Pause** button pauses the video stream being played.
-  The **Snapshot** button takes a snapshot of the current image. The location where the image is saved can be specified.
-  The **Digital Zoom** button activates a zoom-in or zoom-out function for a video image on the live screen.
-  The **Full-Screen** button causes the video image to fill the entire screen area. No other windows will be visible. Press the 'Esc' button on the computer keyboard to cancel the full-screen view.
-  The **Manual Trigger** button activates a pop-up window to manually start or stop the event.
-  The **PTZ** button activates a pop-up window for Pan, Tilt and Zoom control.
-  The **Screen Move** button moves to the desired position on the screen. Move the clicked point to the center of the screen. When dragging, it moves to the center of the box and zooms in.
-  The **Relay Output** button manually triggers relay out. (This icon appears only if "Enable alarm out" is selected in "Event > Event Out > Alarm Out".)
-  The **Speaker** button activates/deactivates external speakers.
-  The **Mic** button activates/deactivates microphone input.
-  Use this scale to control the volume of the speakers and microphones.

## 3. Video Streams

The camera provides several images and video stream formats. Your requirements and the properties of your network will determine the type you use.

The Live View page in the camera provides access to H.264, H.265 and Motion JPEG video streams, and to the list of available video streams. Other applications and clients can also access these video streams/images directly, without going via the Live View page.

## 3.5 Playback



The Playback window contains a list of recordings made to the memory card. It shows each recording's start time, length, the event type used to start the recording, calendar and time-slice bar indicates if the recording exists or not.

The description of the playback window follows.

### 1. Video Screen

You can see the video screen when playing the video clip in the SD memory.

### 2. Playback Buttons

To view a recording data in the SD local storage, select it from the list and click the Playback buttons.

-  Go to the first: go to the beginning of the video clip.
-  Fast backward play: fast play backward of the video clip.
-  Backward play: play backward of the video clip.
-  Step backward play: go back one frame of the video clip.
-  Pause: pause playback of the video clip.
-  Step forward play: go forward one frame of the video clip.
-  Forward Play: play forward the video clip.
-  Fast forward play: play fast forward of the video clip.
-  Go to the last: go to the end of the video clip.
-  Clip copy: copy the video clip.
-  Zoom In: zoom in the video clip.
-  Full Screen: display a full screen of the video.

### 3. Time Chart

Display an hour-based search screen for the chosen date. If there is recording data, a blue section will be displayed on a 24-hour basis. If you select a specific hour in the chart, a yellow square on the hour will be displayed.

4. Speaker Control Bar

Use this scale to control the volume of the speakers.

5. Search Calendar

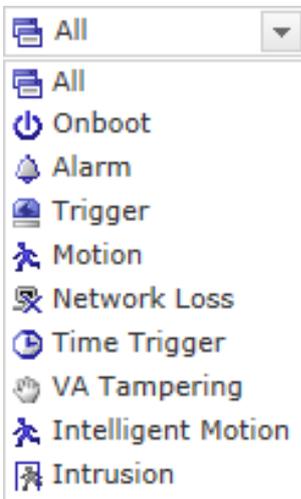
Search results from the SD local storage in the camera connected are displayed monthly. If there is a recorded data for a specific date, a blue square on the date will be displayed. If you select a specific date in the calendar, a yellow square on the date will be displayed.

6. Play Time

Displays the time of the video playing.

7. Event Search Window

Select a search option in the drop-down list and click the GO button. You can also enter the period for searching. If you click Start Date or End Date zone, displays Search Calendar.



8. Event List Window

Event List displays the event(s) that were recorded in the SD local storage. Select a list and click the play button. The video clip will be played.

## 3.6 Camera Setup

This section describes how to configure the camera.

The administrator has unrestricted access to all the Setup tools, whereas Operators have access to the settings of Basic Configuration, which are Live View, Video and Image, Audio, Event, Dome Configuration, and System.

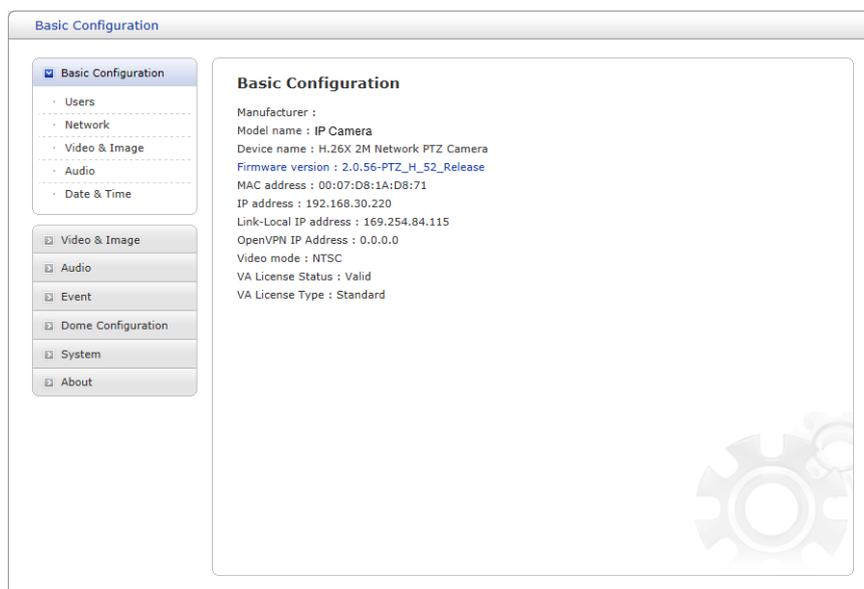
You can configure the camera by clicking Setup either in the first connection page or the top second-right button of the Live View page. Accessing the camera from a computer for the first time opens the Admin Password dialog box. Enter your administrator or operator id and password to get into the setup page.



**NOTE:** If the password is lost, the camera must be reset to the factory default settings. Please see "Resetting to the factory default setting".

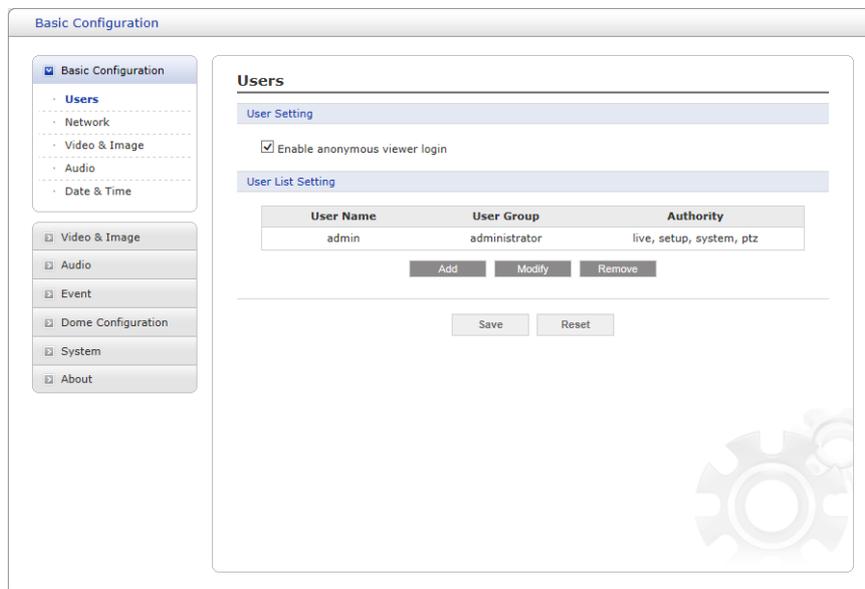
### 3.6.1 Basic Configuration

You can see the device information on this information page.



# Users

User access control is enabled by default. The administrator can set up other users, by giving user names and passwords. It is also possible to allow anonymous viewer login, which means that anybody may access the Live View page, as described below:



The **user list** displays the authorized users and user groups (levels):

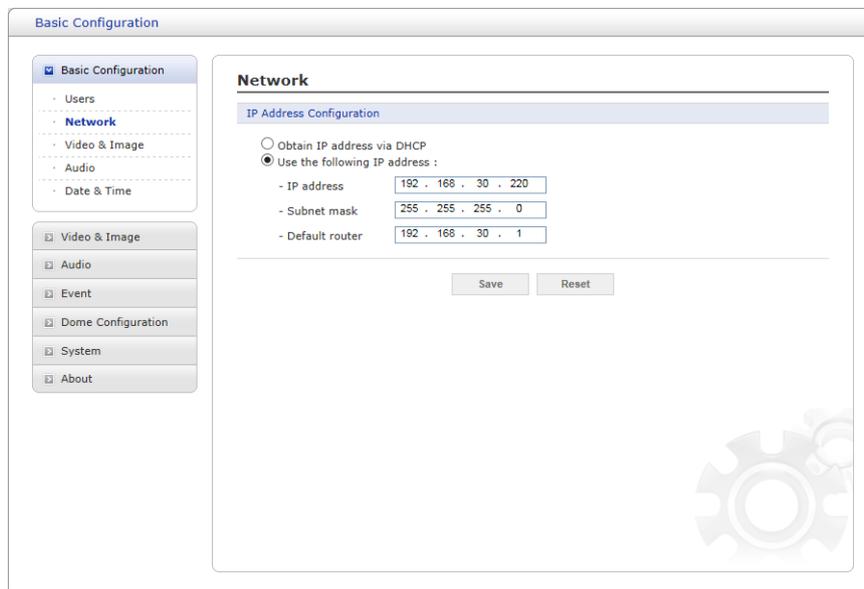
User Group	Authority
Guest	The lowest level of access, which only allows access to the Live View page.
Operator	View the Live View page, create and modify events, and adjust certain other settings. Operators have no access to System Options.
Administrator	An administrator has unrestricted access to the Setup tools and can determine the registration of all other users.

**Enable anonymous viewer login:** Check the box to use the webcasting features. Refer to “Video and Image > Webcasting” for more details.

Please refer to “System > Security > Users” for more details about User setup.

## Network

The camera supports both IP version 4 and IP version 6. Both versions may be enabled simultaneously, and at least one version must always be enabled. When using IPv4, the IP address for the camera can be set automatically via DHCP, or a static IP address can be set manually. If IPv6 is enabled, the camera receives an IP address according to the configuration in the network router. There is also an option of using the Internet Dynamic DNS Service. For more information on setting the network, please see “System > Network > Basic”.



The screenshot shows the 'Basic Configuration' window with the 'Network' tab selected. Under 'IP Address Configuration', the 'Use the following IP address' option is selected. The fields are filled with: IP address: 192.168.30.220, Subnet mask: 255.255.255.0, and Default router: 192.168.30.1. There are 'Save' and 'Reset' buttons at the bottom.

- Obtain IP address via DHCP: Dynamic Host Configuration Protocol (DHCP) is a protocol that lets network administrators centrally manage and automate the assignment of IP addresses on a network. DHCP is enabled by default. Although a DHCP server is mostly used to set an IP address dynamically, it is also possible to use it to set a static, known IP address for a specific MAC address.
  - Use the following IP address: To use a static IP address for the camera, check the radio button and then make the following settings:
    - IP address: Specify a unique IP address for your camera.
    - Subnet mask: Specify the mask for the subnet the camera is located on.
- Default router: Specify the IP address of the default router (gateway) used for connecting devices attached to different networks and network segments.

### NOTES:

1. DHCP should only be enabled if using dynamic IP address notification, or if your DHCP server can update a DNS server, which then allows you to access the camera by name (hostname). If DHCP is enabled and you cannot access the unit, you may have to reset it to the factory default settings and then perform the installation again.
2. The ARP/Ping service is automatically disabled two minutes after the unit is started, or as soon as an IP address is set.
3. Pinging the unit is still possible when this service is disabled.
4. Please refer to “System > Network > Basic” for more details about the Network setup.

# Video and Image

Users can setup and change the setting of an individual video stream on this page.

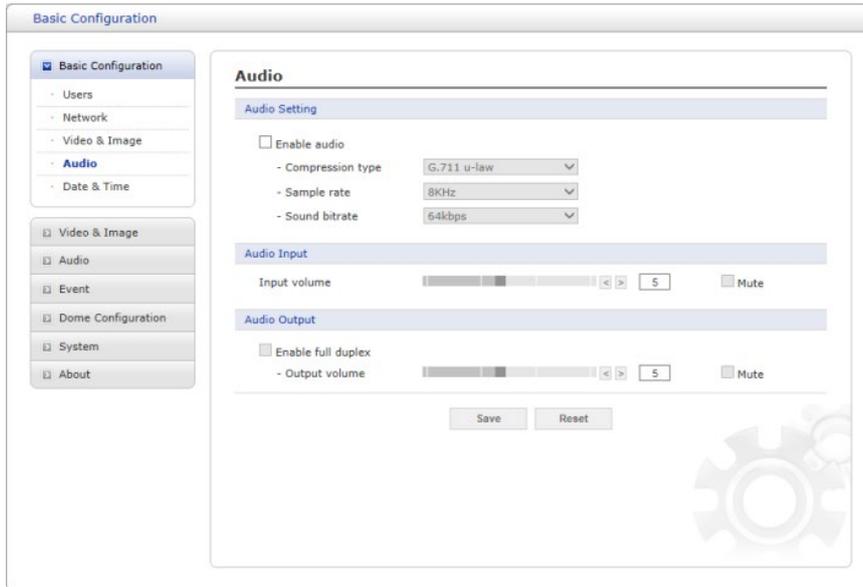
The screenshot displays the 'Basic Configuration' web interface, specifically the 'Video & Image' section. On the left, a navigation menu includes 'Basic Configuration', 'Users', 'Network', 'Video & Image' (selected), 'Audio', 'Date & Time', 'Video & Image', 'Audio', 'Event', 'Dome Configuration', 'System', and 'About'. The main content area is titled 'Video & Image' and contains the following settings:

- Sensor Setting:** Capture mode: 1920x1080,30fps,NTSC
- Stream 1 Setting:** Codec type:  H264  H265; Codec: H.264 Main Profile; Resolution: 1920x1080; Bitrate control:  CBR  CVBR; Bitrate: 4000 [Kbps]; Framerate: 30; GOP size: 30 [1 ...60]
- Stream 2 Setting:** Codec: MJPEG; Resolution: 640x480; Framerate: 15; Quality: 1 (slider from 1 to 100)
- Stream 3 Setting:** Codec type:  H264  H265; Codec: H.264 Baseline Profile; Resolution: 640x480; Bitrate control:  CBR  CVBR; Bitrate: 1000 [Kbps]; Framerate: 30; GOP size: 30 [1 ...60]
- Stream 4 Setting:** Codec type:  H264  H265; Codec: H.264 Baseline Profile; Resolution: 320x240; Bitrate control:  CBR  CVBR; Bitrate: 4000 [Kbps]; Framerate: 15; GOP size: 15 [1 ...30]

At the bottom of the settings area, there are 'Save' and 'Reset' buttons. A gear icon is visible in the bottom right corner of the interface.

Please refer to “Video and Image > Basic” for more details about Video and Image setup.

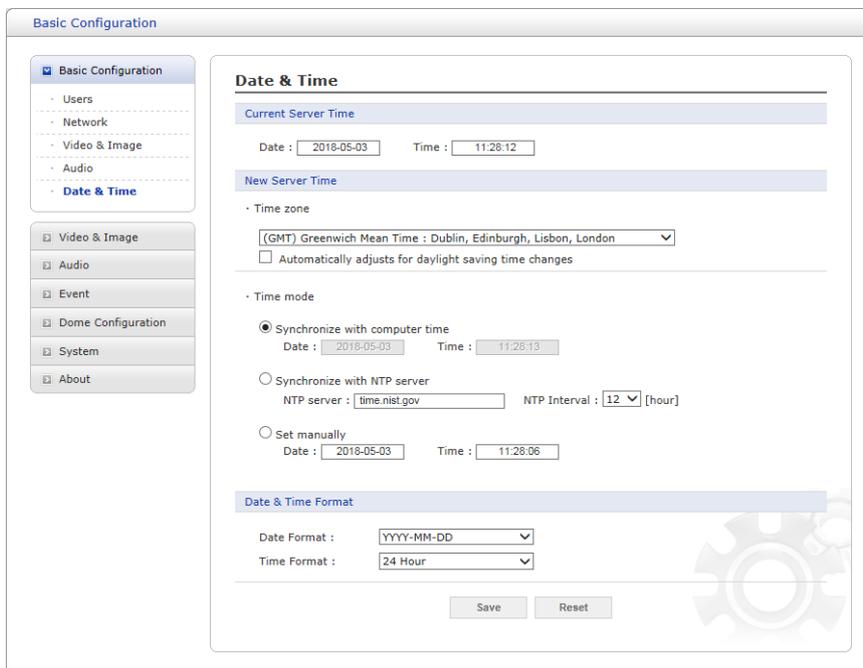
# Audio



The camera can transmit audio to other clients using an external microphone and can play audio received from other clients by attaching a speaker. Users can setup and change the setting of Audio on this page.

Please refer to “Audio” for more details about the Audio setup.

# Date and Time



Users can set time directly or assign a time server to get the current time, as well as determine Date and Time format on this page.

Please refer to “System > Date and Time” for more details about the Date and Time setup.

## 3.6.2 Video and Image

### Basic

The screenshot shows the 'Video & Image - Basic' configuration window. It features a sidebar on the left with tabs for 'Basic Configuration', 'Video & Image', 'Audio', 'Event', 'Dome Configuration', 'System', and 'About'. The 'Video & Image' tab is active, showing a list of sub-options: 'Basic', 'Auto Focus', 'Privacy Masking', 'Hi-Stream', 'Camera Setup', and 'OSD'. The main configuration area is titled 'Video & Image - Basic' and contains the following settings:

- Sensor Setting:** Capture mode is set to '1920x1080,30fps,NTSC'.
- Stream 1 Setting:** Codec type is 'H264', Codec is 'H.264 Main Profile', Resolution is '1920x1080', Bitrate control is 'CVBR', Bitrate is '4000 [Kbps]', Framerate is '30', and GOP size is '30 [1 ...60]'.
- Stream 2 Setting:** Codec is 'MJPEG', Resolution is '640x480', Framerate is '15', and Quality is set to '1' on a slider from 1 to 100.
- Stream 3 Setting:** Codec type is 'H264', Codec is 'H.264 Baseline Profile', Resolution is '640x480', Bitrate control is 'CVBR', Bitrate is '1000 [Kbps]', Framerate is '30', and GOP size is '30 [1 ...60]'.
- Stream 4 Setting:** Codec type is 'H264', Codec is 'H.264 Baseline Profile', Resolution is '320x240', Bitrate control is 'CVBR', Bitrate is '4000 [Kbps]', Framerate is '15', and GOP size is '15 [1 ...30]'.

At the bottom of the configuration area, there are 'Save' and 'Reset' buttons and a decorative film reel icon.

#### Sensor Setting:

- Capture mode: User can select sensor capture mode between NTSC and PAL (Some models are fixed to NTSC or PAL).

#### Stream 1 Setting:

- Codec: The codec supported in Stream 1 is H.264 and H.265. There are 3 pre-programmed stream profiles available for quick set-up. Choose the form of video encoding you wish to use from the drop-down list:
  - H.264 High Profile: Primary profile for broadcast and disc storage applications, particularly for high-definition television applications (for example, this is the profile adopted by the Blu-ray Disc storage format and the DVB HDTV broadcast service).
  - H.264/H.265 Main Profile: Primary profile for low-cost applications that require additional error robustness, this profile is used rarely in videoconferencing and mobile applications; it does add additional error resilience tools to the Constrained Baseline Profile. The importance of this profile is fading after the Constrained Baseline Profile has been defined.
  - H.264 Baseline Profile: Originally intended as the mainstream consumer profile for broadcast and storage applications, the importance of this profile faded

when the High Profile was developed for those applications.

- Resolution: This enables users to determine a basic screen size when having access through the Web Browser or PC program. The screen size control comes in several modes. Users can change the selected screen size anytime while monitoring the screen on a real-time basis.
- Bitrate control: The bit rate can be set as a Constrained Bit Rate (CBR) or Constrained Variable Bit Rate (CVBR). Limiting the maximum bit rate helps control the bandwidth used by the H.264 video stream. Leaving the Maximum bit rate as unlimited maintains consistently good image quality but increases bandwidth usage when there is more activity in the image. Limiting the bit rate to a defined value prevents excessive bandwidth usage, but images are degraded when the limit is exceeded.
  - CBR: Constrained Bit Rate.
  - CVBR: VBR with maximum bitrate which is set in Bitrate.
- Bitrate: Maximum bitrate in the range of 100Kbps ~ 10Mbps.
- Frame rate: Upon the real-time play, users should select a frame refresh rate per second. If the rate is high, the image will become smooth. On the other hand, if the rate is low, the image will not be natural, but it can reduce a network load.
- GOP size: Select the GOP (Group of Picture) size. If users want to have a high quality of fast image one by one, please decrease the value. For general monitoring, please do not change the basic value. Such an act may cause a problem to the system performance. For the details of the GOP setting, please contact the service center.

### **Stream 2 Setting:**

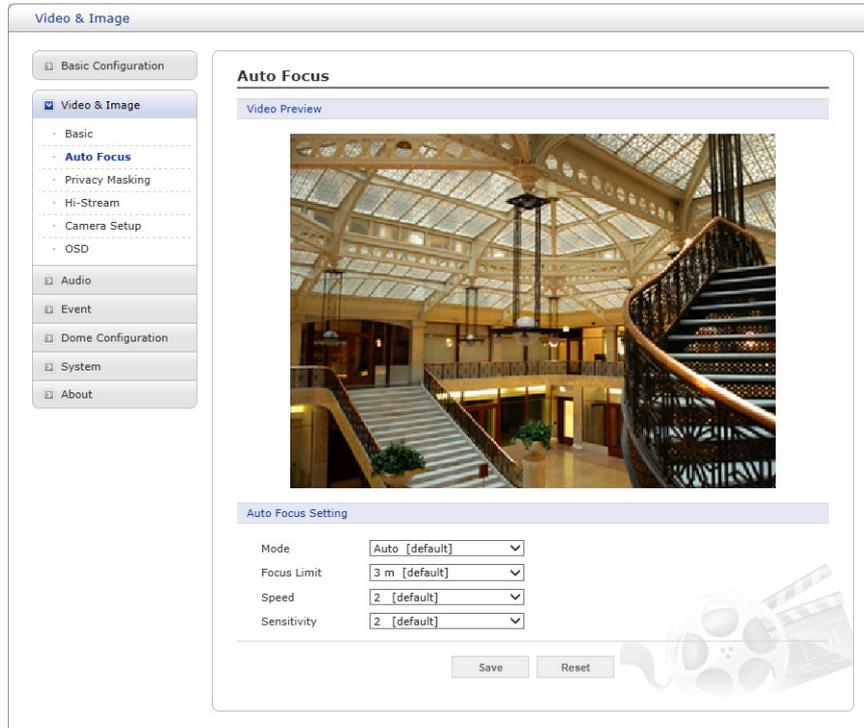
Sometimes the image size is large due to low light or complex scenery. Adjusting the frame rate and quality helps to control the bandwidth and storage used by the Motion JPEG video stream in these situations. Limiting the frame rate and quality optimizes bandwidth and storage usage but may give poor image quality. To prevent increased bandwidth and storage usage, the Resolution, Frame rate, and Frame Quality should be set to an optimal value.

- MJPEG Resolution: Same as the Stream 1 settings.
- MJPEG Frame rate: Same as the Stream 1 settings.
- MJPEG Quality: Select the picture quality. If users want to have a high quality of fast image one by one, please decrease the value. For general monitoring, please do not change the basic value. Such an act may cause a problem to the system performance.

**Stream 3, Stream 4 Setting:** Same as 'Stream 1' settings.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

# Auto Focus



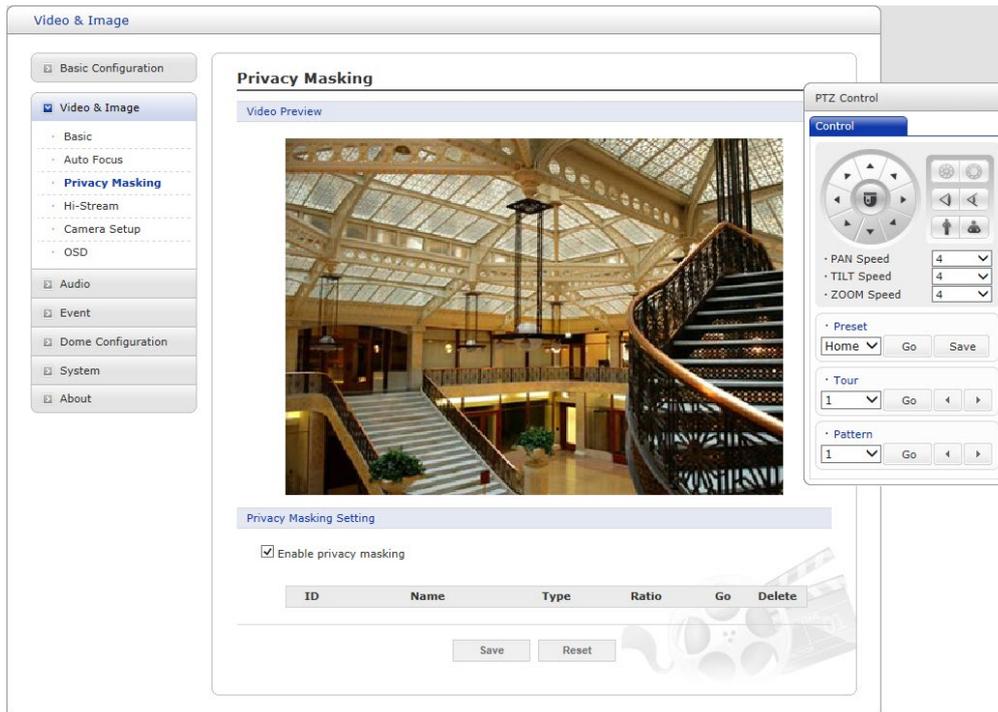
- **Mode:** Determines the focus operation method.
  - **Auto:** Autofocus is always active.
  - **Manual:** Manual focus is always a fixed focus.
  - **One Push:** Manual focus mode except that autofocus is activated only after the camera movement stops and lasts for about 5 seconds.
- **Focus Limit:** Minimum distance for Auto Focus operation. Object nearer than this limit may not be focused.
- **Speed:** Focus speed can be adjusted in the range of 1 ~ 7.
- **Sensitivity:** Focus sensitivity can be adjusted in the range of 0 ~ 4.

## NOTES:

1. Avoid continuous, 24-hour use of the autofocus. This will shorten the lifespan of the lens.
2. The autofocus function might not work properly under the following conditions:
  - a. Bright or flashing lights.
  - b. Low illumination of the target area.
  - c. Slow-shutter action.
  - d. Dark object.
  - e. Excessive illumination of the target area.
  - f. If a short-distance object and a long-distance object are in the target area.
  - g. If there is no contract gap.
  - h. If the camera is taking a picture of a thin horizontal line.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

# Privacy Masking



The privacy masking function allows you to mask parts of the video image to be transmitted. You can set up to sixteen privacy masks. Only up to 8 privacy masks can be displayed on one screen.

The privacy masks are configured by mask windows. Click and drag the mouse to designate a mask window area.

**NOTE:** The masking is displayed only when the “Enable privacy masking” box is selected.

- **Masking List**

- **ID:** Making number, 1-16
- **Name:** Masking name
- **Type:** Masking color
- **Ratio:** Minimum zoom magnification to display the masking, the masking will be displayed only when a set magnification or more.
- **Go:** When you click the **Go** button, move the saved masking to the center of the screen.

ID	Name	Type	Ratio	Go	Delete
1	NewMasking	Black	1	Go	X

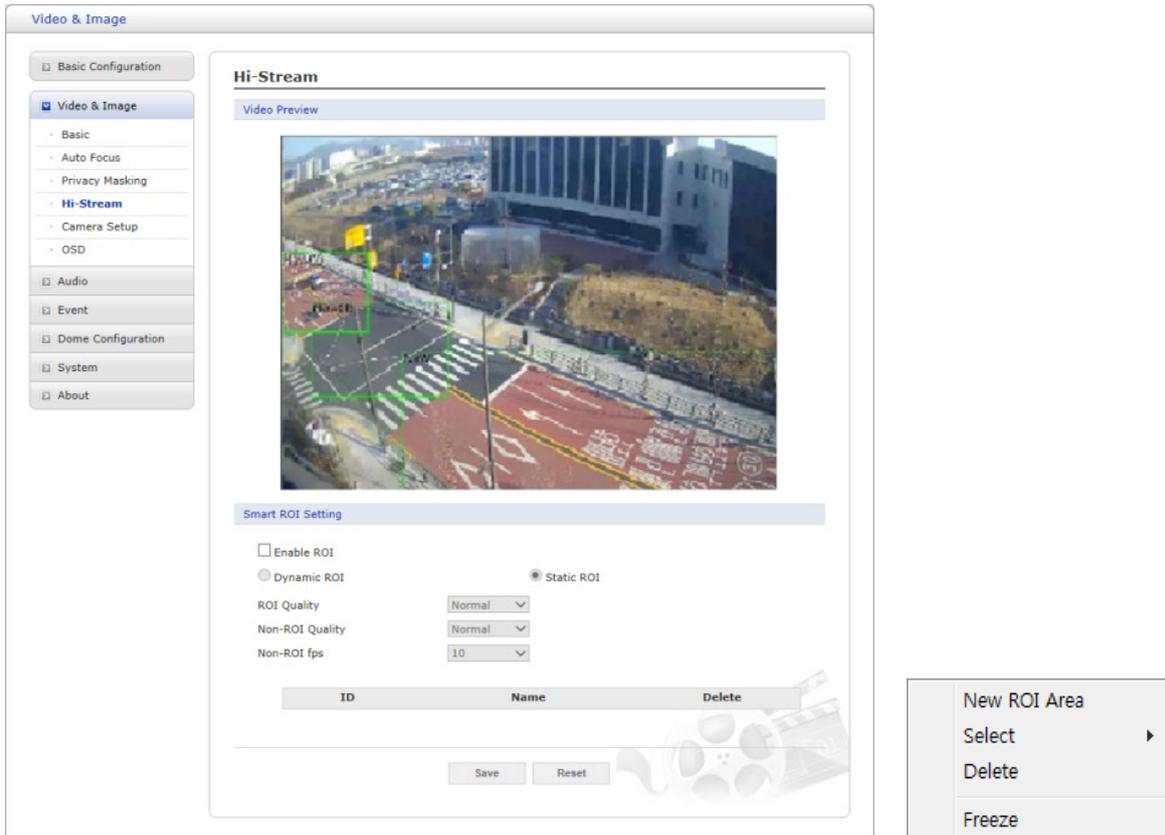
  

- ID	<input type="text" value="1"/>
- NAME	<input type="text" value="NewMasking"/>
- Type	<input type="text" value="Black"/>
- Ratio	<input type="text" value="1"/>

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

# Hi-Stream

The Hi-Stream function allows reducing bandwidth by using compression and frame rate control.



**Create:** Click the right mouse button and select **New ROI Area**. Click the left mouse button and drag it to the mask window.

**Select:** Users can select any box by clicking the name on the preview window or click on the list.

**Delete:** Users can delete selected zone via right mouse click selection for a selected box, or click any one of the **X** buttons in the zone list.

- **Enable ROI:** Select “Enable ROI” to activate Hi-Stream function. Video mode will be fixed to CVBR.
- **Dynamic ROI:** ROI Quality, Non-ROI Quality and Non-ROI fps are controlled based on the entire area.
- **Static ROI:** ROI quality, Non-ROI quality and Non-ROI fps are controlled based on the selected area.
- **ROI Quality:** Set the quality of the selected area.
- **Non-ROI Quality:** Set quality of the non-selected area.
- **Non-ROI fps** Set frame rate of the non-selected area.

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

# Camera Setup

On this page, the user can setup exposure control, image appearance, enhance control, day and night, and IR control.

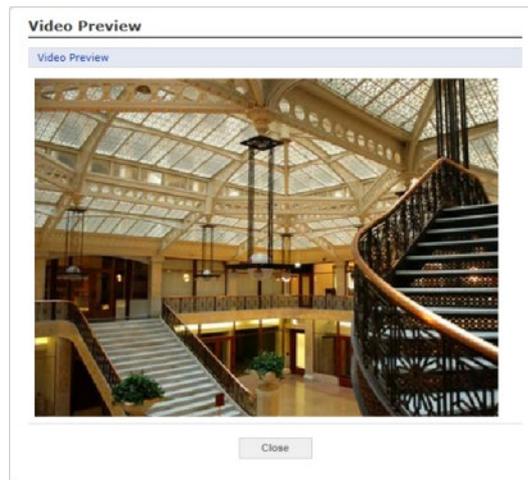
The screenshot displays the 'Camera Setup' configuration page within a 'Video & Image' section. The interface is organized into several functional panels:

- Basic Configuration:** A sidebar menu with options like Basic, Auto Focus, Privacy Masking, Hi-Stream, Camera Setup (selected), OSD, Audio, Event, Dome Configuration, System, and About.
- Profile 1:** The active configuration profile.
- Video Preview:** A placeholder for a live video feed.
- Exposure Control:** Includes radio buttons for Mode (Automatic, Flicker-free 50Hz, Flicker-free 60Hz), a Value slider (set to 5), Max. gain (Low, Middle, High), Shutter (Automatic, Fixed), Max. shutter (1/10 [s]), Min. shutter (1/10000 [s]), and IRIS (Automatic, Fixed).
- Image Appearance:** Features sliders for Brightness, Contrast, Saturation, Hue, and Sharpness (all set to 5), and White Balance Mode (Automatic, Manual).
- Enhance Control:** Contains checkboxes for 'Enable wide dynamic range', 'Enable flip horizontally', 'Enable noise reduction' (checked), and 'Enable defog'. It also includes radio buttons for Level (Low, Middle, High) and Metering Mode (Spot, Center, Average).
- Day & Night Control:** Includes radio buttons for Mode (Automatic, Day, Night) and Threshold (Low, Middle, High).
- IR Control:** Features a checked 'Enable IR' box, Mode (Sensor, Always), and multiple sliders for On Level, Off Level, Fixed IR Bright, Moving IR Bright, Delay, Fixed IR Level, and Moving IR Level. It also includes radio buttons for Moving IR Mode (Low, Middle, High).

At the bottom of the configuration area, there are 'Save' and 'Reset' buttons.

## Video review:

View's live preview of the camera's video based on changes to the settings below.



## Exposure Control:

Exposure Control

Mode  Automatic  Flicker-free 50Hz  Flicker-free 60Hz

Value

Max. gain  Low  Middle  High

Shutter  Automatic  Fixed

Max. shutter  [s]

Min. shutter  [s]

IRIS  Automatic  Fixed

- **Mode:** Determines exposure mode between automatic and Flicker-free modes.
  - **Automatic mode:** Use the full shutter speed.
  - **Flicker-free mode:** Due to flicker protection, a limited range of shutter is used.
- **Value:** Sets exposure target.
- **Max. gain:** Sets maximum gain threshold.
- **Shutter:** Determines shutter mode between automatic and fixed.
  - **Max. shutter:** Allows you to set the threshold for slow shutter speeds used in dark environments.
  - **Min. shutter:** Allows you to set the threshold for fast shutter speeds used in bright environments.
    - In automatic mode, Max. and Min. shutter speed can be selected. If you are monitoring a fast object such as a car, please change Max. shutter to a faster value (ex. 1/10 -> 1/120).
    - In fixed mode, you can manually select the shutter speed.

**NOTE:** When the shutter speed is manually selected, the screen may be saturated or dark.

- **IRIS:** Determines Iris mode between automatic and fixed.
- **IRIS F-number:** Select Iris F-number if Iris is in fixed mode.

## Image Appearance:

This provides access to the advanced image settings for the camera.

The screenshot shows the 'Image Appearance' settings panel. It contains five sliders: Brightness, Contrast, Saturation, Hue, and Sharpness. Each slider is set to a value of 5, and there is a 'Default' button next to each. Below the sliders is the 'White Balance Mode' section, which has two radio buttons: 'Automatic' (selected) and 'Manual'.

- **Brightness:** The image's brightness can be adjusted in the range 1 ~ 10, where a higher value produces a brighter image.
- **Contrast:** Adjust the image's contrast by raising or lowering the value in this field in the range 1 ~ 10.
- **Saturation:** Set an appropriate value in the range of 1 ~ 10. Lower values mean less color saturation.
- **Hue:** Set an appropriate value in the range of 1 ~ 10. The value distinguishes color, such as red, yellow, green, or violet.
- **Sharpness:** Set the amount of sharpening applied to the image. A sharper image might increase image noise, especially in low light conditions. A lower setting reduces image noise, but the image would be less sharp.
- **White Balance Mode:** Select white balance mode which fits camera installation environment. In the case of Manual mode, the user can set R, G, B gain manually.

## Enhance Control:

The screenshot shows the 'Enhance Control' settings panel. It contains four checkboxes: 'Enable wide dynamic range', 'Enable flip horizontally', 'Enable noise reduction' (checked), and 'Enable defog'. Below these are two sets of radio buttons: 'Level' with options 'Low', 'Middle' (selected), and 'High'; and 'Metering Mode' with options 'Spot', 'Center' (selected), and 'Average'.

- **Enable wide dynamic range:** Activates WDR which cannot be used with Defog function. If WDR is activated, shutter mode becomes automatic mode only.
- **Enable flip horizontal:** Check this box to flip the image.
- **Enable noise reduction:** Check this box to activate the noise reduction. Once enabled, you can select the noise reduction level.
- **Enable defog:** Check this box to activate the defog function.
- **Metering Mode:** Users can change the metering mode. This is a method of measuring the intensity of the light hitting and reflected by a subject to determine the exposure required.

## Day and Night Control:

Users can setup Day and Night operation mode among Automatic, Day, and Night.



- **Mode:**
  - **Automatic:** Normally displays color image, and switches automatically to black and white image after the ambient light level reaches a pre-defined threshold.
  - **Day:** Always displays a color image.
  - **Night:** Always displays black and white image.
- **DN Threshold:** Adjusts the level of light in which the camera automatically switches between color and black and white image.

## IR Control:

This camera is equipped with fixed and moving IR illuminators. The moving IR illuminator is synchronized with optical zoom. Users can setup IR illuminator related controls in this part.



- **Enable IR:** If the box is unchecked, the IR illuminators are off, otherwise, the following controls are applied.
- **Mode:**
  - **Sensor:** It will be synchronized with the built-in brightness sensor of the camera. The IR mode will be controlled according to the illumination.
  - **Always:** Activates the IR illuminators. Always displays a black and white image.
- **On level:** Specify the illumination level that activates the IR mode. If the illumination is below the specified level, the indicator will turn on. (1 ~ 20)
- **Off level:** Specify the illumination level that deactivates the IR mode. If the illumination is above the specified level, the indicator will turn off. (1 ~ 20)

- **Fixed IR Bright:** Specify the brightness of the Fixed IR illuminator. (1 ~ 5)
- **Moving IR Bright:** Specify the brightness of the Moving IR illuminator. (1 ~ 5)
- **Delay:** The time duration for both of the lighting conditions can be customized to let the IR illuminators divert between activation and deactivation. (1 ~ 60)
- **Fixed IR Level:** Fixed IR illuminator automatically turns off at a specified level in zoom-in operation. This specifies the Fixed IR illuminator off level. (1 ~ 12)
- **Moving IR Level:** Moving IR illuminator automatically turns off at a specified level in zoom-out operation. This specifies the Moving IR illuminator off level. (1 ~ 9)
- **Moving IR Mode:** This decides the moving IR illuminator size in the image. If the size is small, the illumination is focused and bright in the center, but the edge area becomes dark.

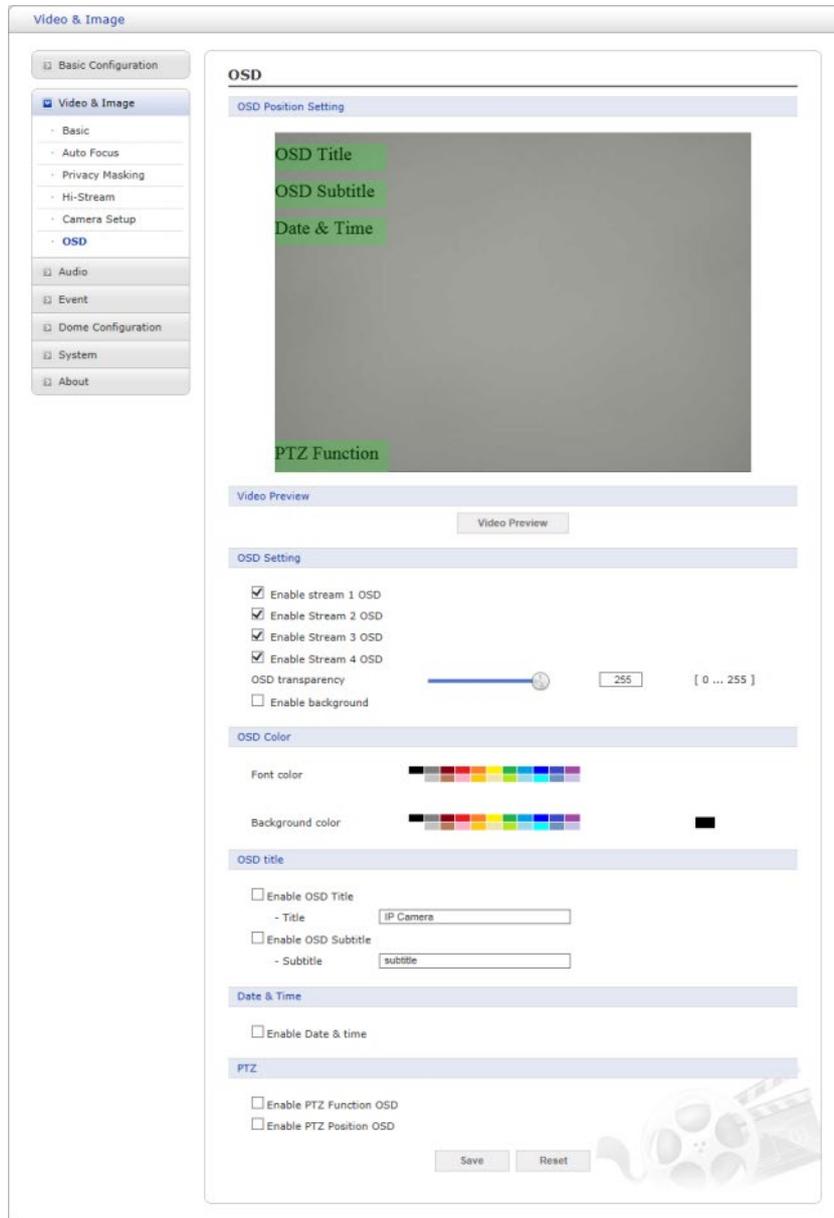
**NOTE 1:** On level, Off level, and Delay are activated at Sensor Mode only.

**NOTE 2:** Users can either use slide bar or type in the number for items in any controls.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

# OSD

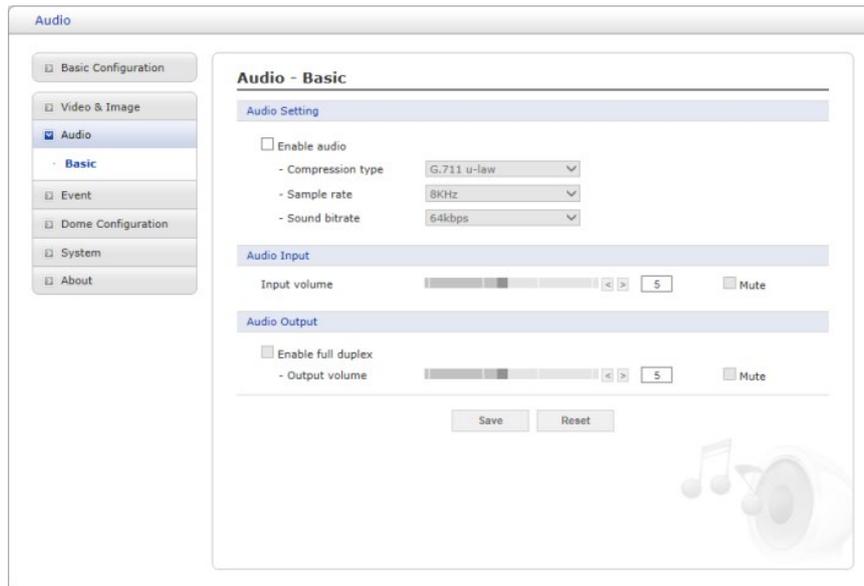
This camera provides four OSD's (on-screen display) on each stream. Users can drag "OSD Title", "OSD Subtitle", "Date and Time" and "PTZ Function" to the desired position and check at the preview window.



- **Video Preview:** Users can check the position of OSD on actual video via the preview popup window.
- **OSD Setting:** Users can select show or hide OSD for each stream. Also, the user can set the transparency level of OSD by slide bar or type in a number.
- **OSD Color:** User can change OSD color by type in.
- **OSD Title:** User can show or hide OSD Title/Subtitle, and can change OSD Title/Subtitle by type in. The default of OSD Title is the model name of the camera
- **Date and Time:** User can show or hide date and time on OSD.
- **PTZ:** User can show or hide the PTZ Function/Position on OSD.

**NOTE:** The change in this page immediately affects the video stream.

### 3.6.3 Audio



The camera can transmit audio to other clients using an external microphone and can play audio received from other clients by attaching a speaker. The Setup page has an additional menu item called Audio, which allows different audio configurations, such as full-duplex and simplex.

- **Audio Setting:**
  - **Enable audio:** Check the box to enable audio in the video stream.
  - **Compression type:** G.711  $\mu$ -law
  - **Sample rate:** 8KHz
  - **Sound bit rate:** 64kps
- **Audio Input:** Audio from an external line source can be connected to the cable of the camera.
  - **Input volume:** If there are problems with the sound input being too low or high, it is possible to adjust the input gain for the microphone attached to the camera.
  - **Mute:** Users can disable the input audio transmission by checking the box.
- **Audio Output:**
  - **Enable full-duplex:** Check the box to enable full-duplex mode. This means that you can transmit and receive audio (talk and listen) at the same time, without having to use any of the controls. This is just like having a telephone conversation. This mode requires that the client PC has a sound card with support for full-duplex audio.
  - Uncheck the box enable Simplex mode. The simplex mode only transmits audio from the camera to any web client. It does not receive audio from other web clients.
  - **Output volume:** If the sound from the speaker is too low or too high, it is possible to adjust the output gain for the active speaker attached to the camera.
  - **Mute:** Users can disable the output audio transmission by checking the box.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## 3.6.4 Event

### Event In

#### ▽ On Boot

The screenshot shows the 'Event In - On Boot' configuration page. The left sidebar has a tree view with 'Event In' expanded to 'On Boot'. The main area is titled 'Event In - On Boot' and contains 'On Boot Setting' with a checked 'Enable on boot' checkbox and a 'Dwell time' input field set to '3' seconds. 'Save' and 'Reset' buttons are at the bottom right.

Trigger an event every time the camera is started. Select “Enable on boot” to activate. Enter the dwell time the event lasts from the point of detection, 1 ~ 180 seconds. Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

#### ▽ Alarm In

The screenshot shows the 'Event In - Alarm In' configuration page. The left sidebar has a tree view with 'Event In' expanded to 'Alarm In'. The main area is titled 'Event In - Alarm In' and contains four sections: 'Alarm In Port 1 Setting', 'Alarm In Port 2 Setting', 'Alarm In Port 3 Setting', and 'Alarm In Port 4 Setting'. Each section has a checked 'Enable alarm in port #' checkbox, a 'Type' dropdown menu (all set to 'NO'), and a 'Dwell time' input field set to '3' seconds. 'Save' and 'Reset' buttons are at the bottom right.

The camera has 4 alarm inputs. To use an alarm port, check the “Enable alarm port #” first.

- **Type:** Choose the type of alarm , NO (Normally Open) or NC (Normally Closed).
- **Dwell Time:** Set the dwell time an event lasts from the point of detection of an alarm input.

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

## ▽ Manual Trigger

The screenshot displays the 'Event In - Manual Trigger' configuration interface. On the left, a sidebar lists various configuration categories, with 'Event In' and 'Manual Trigger' selected. The main panel is titled 'Event In - Manual Trigger' and contains four distinct settings sections, each for a manual trigger (1 through 4). Each section includes a checked checkbox for 'Enable manual trigger' and a 'Dwell time' input field with the value '3' and a range of '[1... 180] sec'. At the bottom of the main panel, there are 'Save' and 'Reset' buttons, and a small icon of a dome camera.

This option makes use of the manual trigger button provided on the Live View page, which is used to start or stop the event type manually. Alternatively, the event can be triggered via the product's API (Application Programming Interface).

Select "Enable manual trigger" to activate the manual trigger (for up to 4 manual triggers).

Set the dwell time the trigger lasts.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ Motion

**Event In - Motion**

Video Preview

Video Motion Detection Setting

Enable video motion detection

ID	Name	Type	Threshold	Sensitivity	Dwell	Delete
1	Motion 1	Include	2	55	3	X
2	Motion 2	Include	2	55	3	X

Save Reset

New Motion  
New Mask  
Select  
Delete  
Freeze

This option makes use of the motion detection function with 16 programmable areas, 8 **Include** and **Exclude** zones each.

Click the right mouse button on the preview window shows selection pop-up of **New Motion, New Mask, Select, Delete, and Freeze**.

Select **New Motion** and click-and-drag to generate an **Include** box of green color.

Select **New Mask** and click-and-drag to generate an **Exclude** box of orange color.

Drag corner or line resizes and drag inside moves the box.

Select "Enable video motion detection" to activate motion detection.

**NOTE:** VA Motion will be automatically off when activating the Motion Detection.

- **Zone List**

Video Motion Detection Setting

Enable video motion detection

ID	Name	Type	Threshold	Sensitivity	Dwell	Delete
1	Motion 1	Include	2	55	3	X
2	Motion 2	Include	2	55	3	X

Show Histogram

- ID:  [1... 16]

- Name:

- Type:  [Include]

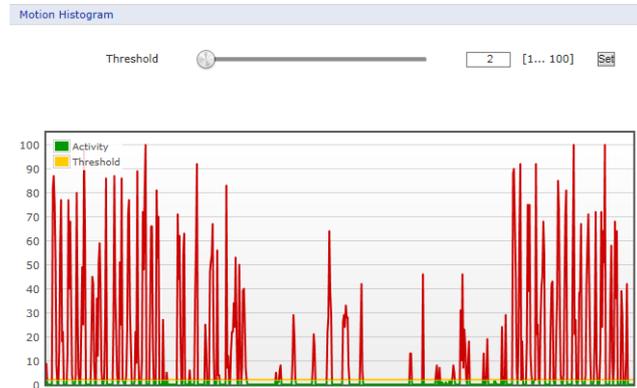
- Threshold:  [1... 100]

- Sensitivity:  [1... 100]

- Dwell time:  [1... 180] sec

- **ID:** Order of generation, **Include** 1 ~ 8, **Exclude** 9 ~ 16.
- **Name** User-definable zone name.
- **Type:** Shows zone type and cannot be changed.
- **Threshold:** Determines how large the motion in the zone can trigger events in percentage.
- **Sensitivity:** Users can change the sensitivity of this function, where large value sets more sensitive detection.

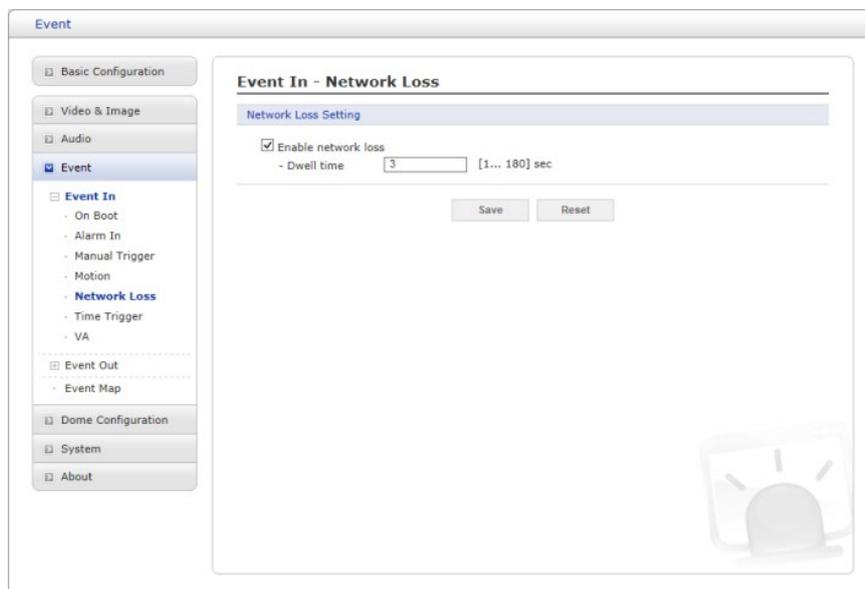
- **Dwell time:** Determines how long the triggered event holds from the last triggering.
- **Show Histogram:** This camera provides a live histogram for easy setup of the threshold level in the motion window. The pop-up window shows activity strength and threshold level, and the user can determine the threshold level for triggering motion events by slide bar or type in a number.



- Users can select any box by clicking the name on the preview window or click on the list. Users can delete selected zone via right mouse click selection for a selected box, or click any one of the X buttons in the zone list.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

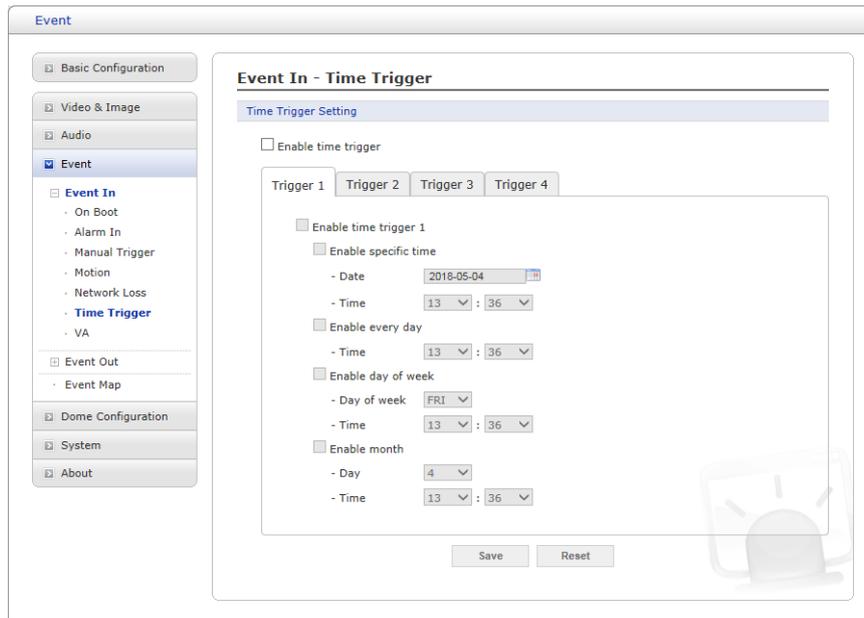
## ▽ Network Loss



This is used to trigger an event every time the network connection is failed. Select “Enable network loss” to activate the Network Loss event. Select a dwell time for how long the event will last from the point of detection.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ Time Trigger



Time Trigger is to set alarms at a specific time. Users can setup up to four time-triggers and each time trigger can be set to a specific date in the calendar, every day, day of the week, or date of every month.

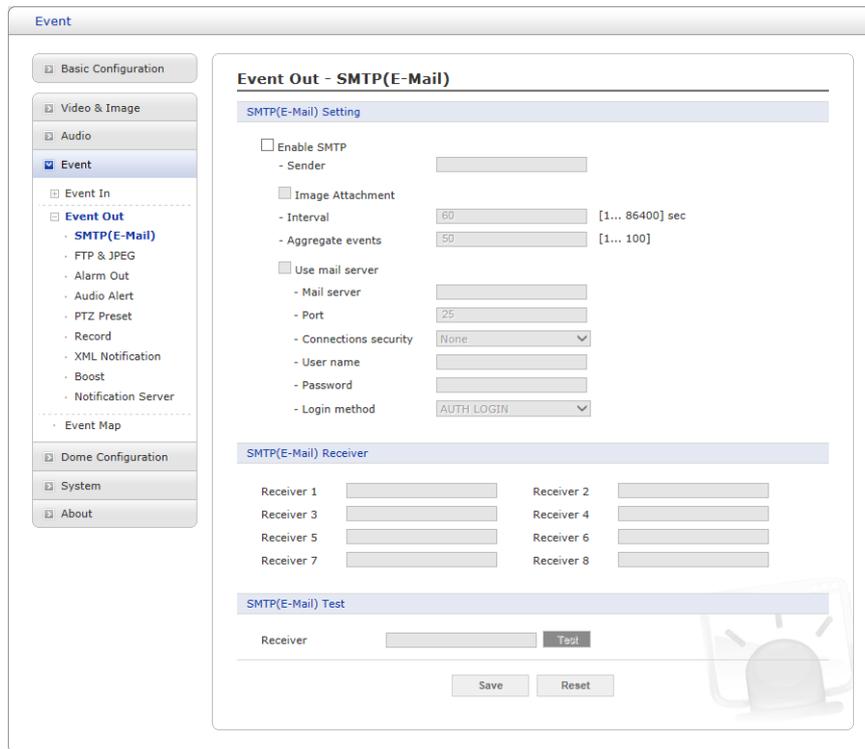
Select “Enable time trigger” to activate the Time Trigger function.

- **Enable specific time:** User can select a date in the calendar or type in date, and specify a time for event trigger.
- **Enable every day:** Trigger event every day at the specified time.
- **Enable day of the week:** Trigger event on the day of every week at the specified time.
- **Enable month:** Trigger event at the date of every month at the specified time.

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

# Event Out

## ▽ SMTP(E-Mail)



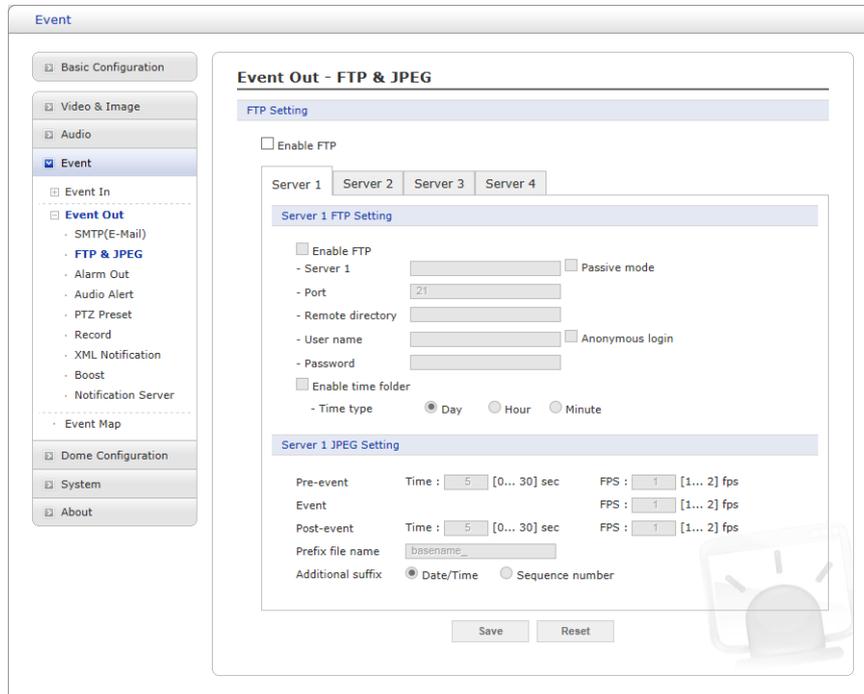
The camera can be configured to send event and error email messages via SMTP (Simple Mail Transfer Protocol).

- **SMTP (E-Mail) Setting:** Select “Enable” to activate the SMTP operation.
  - **Sender:** Enter an email address to be used as the sender for all messages sent by the camera.
  - **Interval:** Represents the time interval of the email notification when events occur several times.
  - **Aggregate events:** Shows the maximum number of emails sent within each interval.
  - **Use Mail Server:** Check the box if you are using a mail server to receive event notification and image email.
- **Mail Server:** Enter the hostnames (or IP addresses) for your mail server.
- **Port:** Enter the port number for your mail server. Enable the sending of notifications and image email messages from the camera to predefined addresses via SMTP.
- **Connection security:** Select a connection security type in the drop-down list:
  - None / StartTLS / SSL
- **User name/Password:** Enter the User name and Password as provided by your network administrator or ISP (Internet Service Provider).
- **Login method:** Choose a log-in method in the drop-down list:
  - AUTH LOGIN / AUTH PLAIN
- **SMTP (E-Mail) Receiver:** User can assign up to 8 receivers.
  - **Receiver #:** Enter an email address.

- **SMTP (E-Mail) Test:** User can check the SMTP setting via a sample email.
  - **Receiver:** Enter an email address and click the Test button to test that the mail servers are functioning and that the email address is valid.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ FTP and JPEG



When the camera detects an event, it can record and save images to an FTP server. Images can be sent as e-mail attachments. Check the “Enable FTP” box to enable the service. This camera can support multiple FTP servers and the user can configure each server settings separately.

- **FTP Setting:**
  - **Server:** Enter the server’s IP address or hostname. Note that a DNS server must be specified in the TCP/IP network settings if using a hostname.
    - **Passive mode:** Under normal circumstances, the camera simply requests the target FTP server to open the data connection. Checking this box issues a PASV command to the FTP server and establishes a passive FTP connection, whereby the camera actively initiates both the FTP control and data connections to the target server. This is normally desirable if there is a firewall between the camera and the target FTP server.
  - **Port:** Enter the port number used by the FTP server. The default is 21.
  - **Remote directory:** Specify the path to the directory where the uploaded images will be stored. If this directory does not already exist on the FTP server, there will be an error message when uploading.
  - **User name/Password:** Provide your log-in information.
    - **Anonymous login:** Check the box if you want to use the anonymous login method and the server supports it.
  - **Enable time folder:** Create the folder in the FTP Server.
  - **Time type:** User can set the name of the folder where the uploaded image will

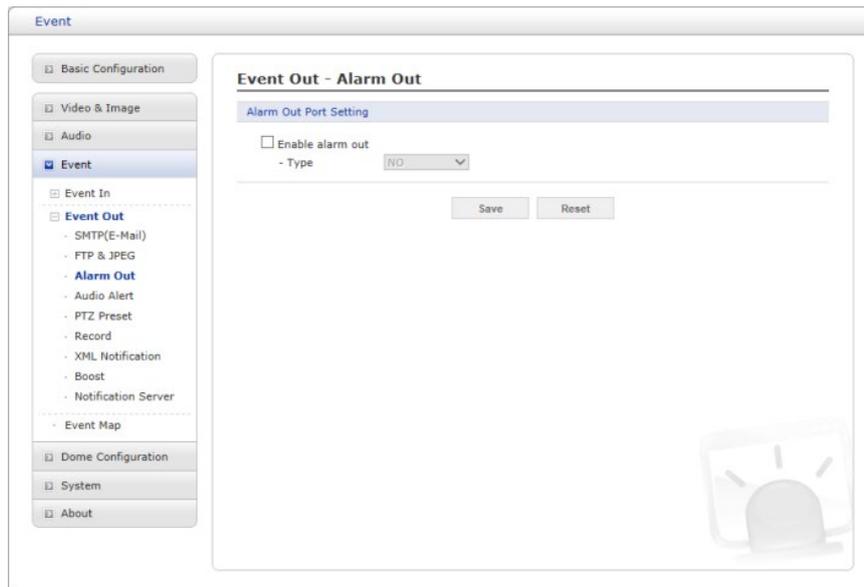
be saved as the date, time and minute the event occurred.

- **JPEG Setting:**

- **Pre-event:** A pre-event buffer contains images from the time immediately preceding the event trigger. These are stored internally on the server. This buffer can be very useful when checking to see what happened to cause the event trigger. Enter the desired total length in seconds, minutes or hours, and specify the required image frequency.
- **Event:** This function can set the required image frequency (1 ~ 2fps) when the event detected.
- **Post-event:** This function is the counterpart to the pre-trigger buffer described above and contains images from the time immediately after the trigger. Configure as for pre-event.
- **Prefix file name:** This name will be used for all the image files saved. If suffixes are also used, the file name will take the form <prefix> <suffix>.<extension>.
- **Additional suffix:** Add either a date/time suffix or a sequence number, with or without a maximum value.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ Alarm Out

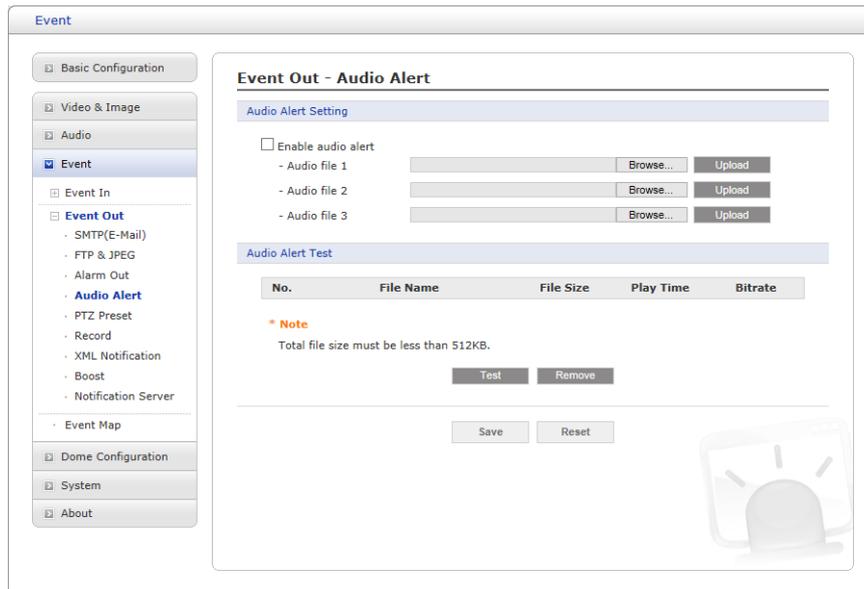


When the camera detects an event, it can control external equipment connected to its alarm output port.

- **Enable alarm out:** If selected, the output becomes activated for as long as the event is active.
- **Type:** Select a type of NO (Normally Open) or NC (Normally Closed).

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ Audio Alert



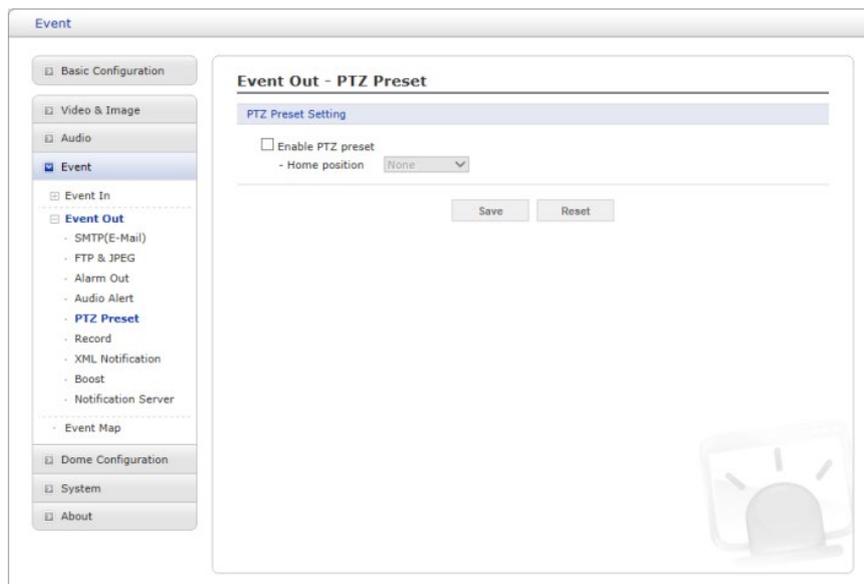
When the camera detects an event, it can output a predefined audio data to an external speaker. Check the “Enable audio alert” box to enable the service.

- **Audio Alert Setting:** To use the audio alert with the camera, an audio data file made by the user must be uploaded from your PC. Provide the path to the file directly, or use the Browse button to locate it. Then click the Upload button. Up to 3 audio files are available. The total file size must be less than 512 KB.
- **Audio Alert Test:** Click on the ‘Test’ button to confirm the audio output settings. To remove an audio file, select the file and click the Remove button.

**NOTE:** For proper operation, full-duplex must be enabled in the audio settings page.

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

## ▽ PTZ Preset



When the camera detects an event, you can move the camera to a predefined preset position. Check the box to enable and return to the Home position once the event has ended.

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

## ▽ Record

**Event Out - Record**

**Record Setting**

Enable Record

Overwrite

Continuous Record

\* Note : Using continuous recording may shorten life time of SD card.

- Stream Type: Stream 1

- Pre-event: 0 [0... 10] sec

- Post-event: 0 [0... 60] sec

Audio Record

**Record schedule**

No Recording  Recording

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SUN																								
MON																								
TUE																								
WED																								
THU																								
FRI																								
SAT																								

All Select All Delete

**Device Setting**

Device Type: SD

**Format**

Device Status : No Storage

**Device Remove**

**Device Information**

Total	Used	Available	Used Percent	Bad Sector
0.00MB	0.00MB	0.00MB	0.00%	0.00%

Save Reset

When the camera detects an event, it can record the video stream onto the SD memory (not supplied) or NAS (Network Attached Device) as a storage device. Check the “Enable Record” box to enable the service.

- **Record-Setting:**
  - **Overwrite:** Click the checkbox to overwrite the storage device; Continuous Record is available when not using an SD card.
  - **Stream Type:** You can select Stream 1, Stream 2, Stream 3, or Stream 4.
- **Stream 1, 3, 4:** H.264 data

**NOTE:** Stream 2: MJPEG data cannot be recorded.

- **Pre-event:** Enter pre-event time value for the storage device pre-recording.
- **Post-event:** Enter post-event time value for the storage device pre-recording.
- **Audio Record:** Check the box if you want to record audio with video.
- **Record Schedule:** You can set the weekly recording schedule for each day. Drag or click area by a box unit at first. Clicking the block toggles the recording between on and off. Click the All Select button to set a schedule for the entire week or a whole day, respectively.
- **Device Setting:** Select the device type to be recorded in the drop-down list. The screen changes according to selection.
  - **SD:** Mounted SD card.

- **CIFS:** A file format for a NAS device.
- **NFS:** A file format for a NAS device.

**NOTE 1:** Common Internet File System (CIFS) is a remote file access protocol that forms the basis for Windows file sharing, network printing, and various other network services. CIFS requires a large number of request/response transactions and its performance degrades significantly over high-latency WAN links such as the Internet.

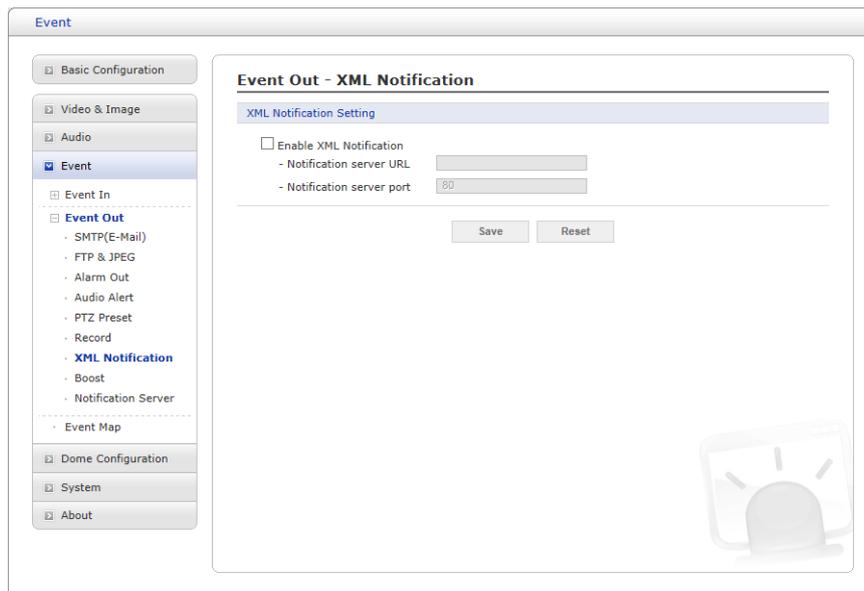
**NOTE 2:** Network File System (NFS) is a network file system protocol, allowing a user on a client computer to access files over a network like how local storage is accessed. NFS, like many other protocols, builds on the Open Network Computing Remote Procedure Call (ONC RPC) system.

The CIFS screen displays as below.

- **Address:** Enter the IP address for the NAS device.
- **Remote Directory:** Enter the directory or folder location to be recorded in the NAS device.
- **Capacity:** Enter the capacity of storage to be used. This must be less than the total storage capacity.
- **ID/Password:** Enter ID and Password. The camera will ask for these whenever you access the NAS device.
- **Check:** Press the Check button to check the validity of Device Setting data.
- **Format:** Click the Format button to format the SD card.
- **Device Remove:** Click the Device Remove button before detaching the SD card for data safety in the SD card.
- **Device Information:** Show current SD card information.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ XML Notification

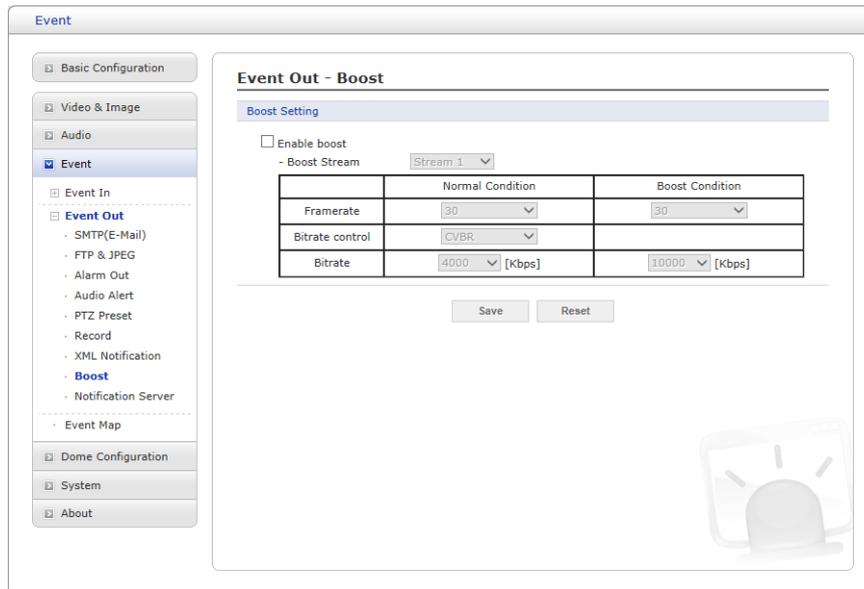


When the camera detects an event, the Notification server is used to receive notification messages as a type of XML data format. Check the box to enable the service.

- **XML Notification Setting:**
  - **Notification server URL:** The network address to the server and the script that will handle the request.
  - **Notification server port:** The port number of the notification server.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ Boost



The Boost feature is used in conjunction with event detection. When this feature is turned ON, the Frame rate and Bit rate in the boost condition can be set to a different value than the ones in the normal condition field. When an event is detected, the camera will boost the Frame rate and Bit rate from the normal condition to this boosted level for the duration of the event.

Check the box to enable the service.

- **Boost Setting:** You can set the condition in Normal and Boost mode.
  - **Boost Stream:** Select a video stream for each condition in the drop-down list.
  - **Frame rate:** Select a frame refresh rate per second for each condition in the drop-down list.
- **Bit rate control:** Select CBR or CVBR in the drop-down list in Normal Condition. You cannot change it in Boost Condition.
- **Bit rate:** Select a value for each condition in the drop-down list.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ Notification Server

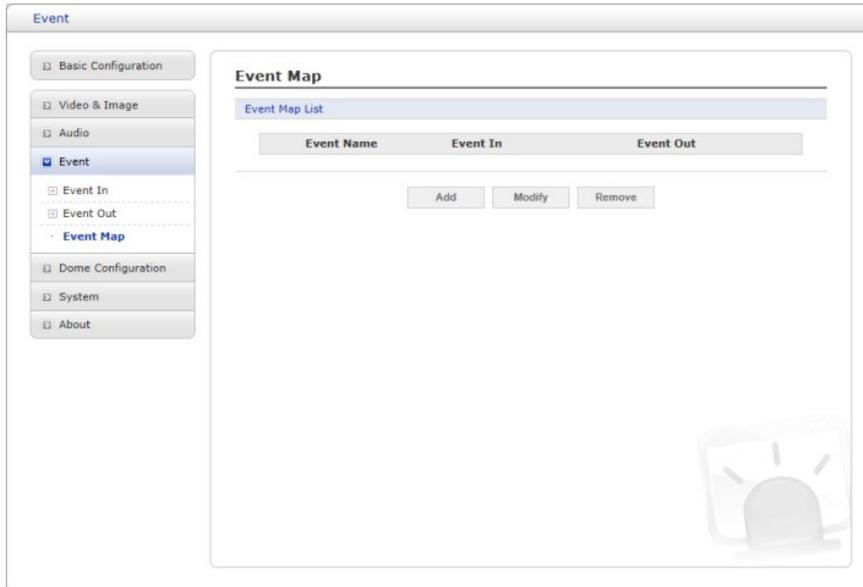
The screenshot shows a web interface for configuring a Notification Server. The main content area is titled "Event Out - Notification Server" and contains a "Notification Server Setting" section. This section includes a checkbox for "Enable Notification Server", a dropdown menu for "Type" (set to HTTP), a dropdown menu for "Method" (set to POST), and input fields for "URL", "Port" (set to 80), "User name", and "Password". Below this is a "Notification Server Test" section with a "Send message" input field and a "Test" button. At the bottom of the main content area are "Save" and "Reset" buttons. A sidebar on the left shows a navigation menu with "Event" selected, and "Notification Server" highlighted under "Event Out". A small alarm bell icon is visible in the bottom right corner of the main content area.

When the camera detects an event, the Notification Server is used to receive uploaded image files and/or notification messages. Check the box to enable the service.

- **Notification Server Setting:**
  - **Type:** User can select message transmission type among HTTP, HTTPS, TCP, and UTP.
  - **URL:** The network address to the server and the script that will handle the request. For example `http://192.168.12.244/cgi-bin/upload.cgi`
  - **Port:** The port number of the server.
  - **User name/Password:** Provide your log-in information.
- **Notification Server Test:** When the setup is complete, the connection can be tested by clicking the Test button using the contents in the "Send Message" box.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

# Event Map



The event map allows you to change the settings and establish a schedule for each event trigger from the camera; up to a max. 15 events can be registered.

Click the **Add** button to make a new event map; a popup window displays as below. To change an existing event, select that event and click the **Modify** button; this same window will display and the information can be changed as required. Selecting an event and clicking **Remove** deletes the event.

- **General:** Enter the name for a new event map.
- **Event In:** Select an event type in the drop-down list.

- **Event Out:**

- **E-mail:** Select the email addresses you want to notify via email that an event has occurred.
- **FTP:** Select a checkbox beside FTP to record and save images to an FTP server when an event has occurred.
- **Alarm out:** Check this box to enable the alarm out.
- **Audio Alert:** Select an Audio Alert file as the Network Transmitter output when the audio alert event triggered. The Audio Alert file must first be configured on the Event On page.
- **XML Notification:** It sends XML messages to a Notification server that listens for these. The destination server must first be configured on the Event On page.
- **Boost:** When an event has occurred, the camera will boost the Frame rate and Bit rate from the normal condition to this boosted level for the duration of the event. Check the box to enable the Function.
- **PTZ preset:** Select the preset position you want to move to the event. If you want to move back to the home position after the event, which is pre-defined in the Alarm Out - PTZ Preset page, check the "Return to the home position after event" box.
- **Record:** Record video stream when an event has occurred. The Record option must first be configured on the Event Out page.

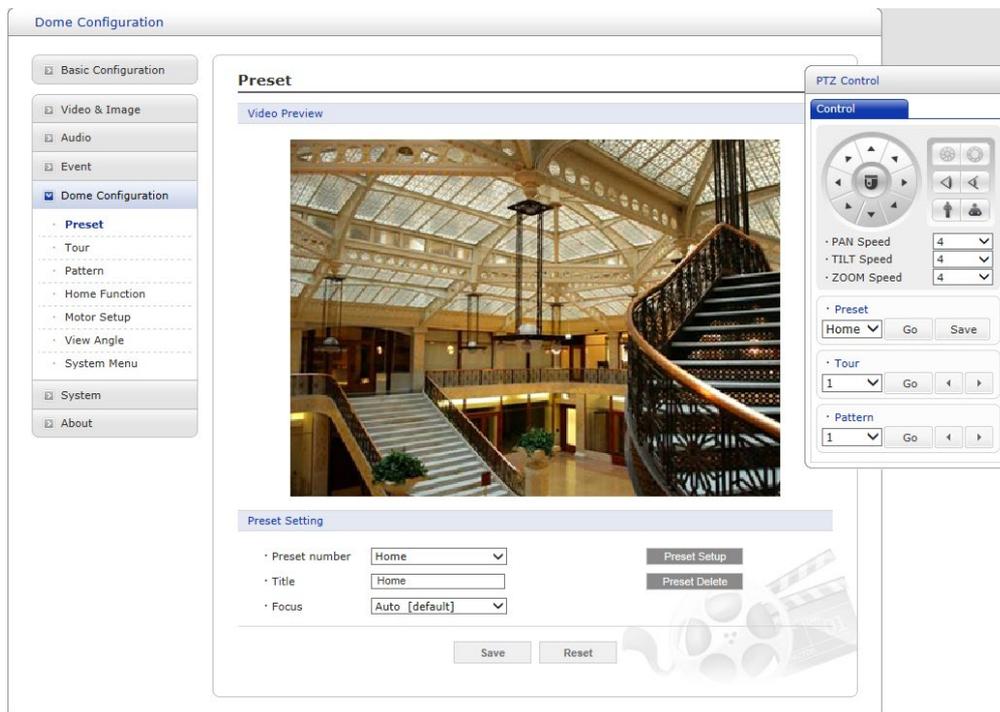
**NOTE:** This button disappears if you select AIHM as an event.

- **Notification Server:** It sends notification messages to the notification server that listens for these. The destination server must first be configured on the Event On page. Enter a message you want to send.

Click the **OK** button to save the settings, or click the **Cancel** button to clear all of the information you entered without saving it.

## 3.6.5 Dome Configuration

### Preset



If you need to view specific places routinely, you should program Presets. A Preset is a programmed video scene with automatic pan, tilt, zoom, and focus settings. Once programmed, clicking the Preset number or clicking the Go button in the PTZ Control Panel calls up that Preset automatically.

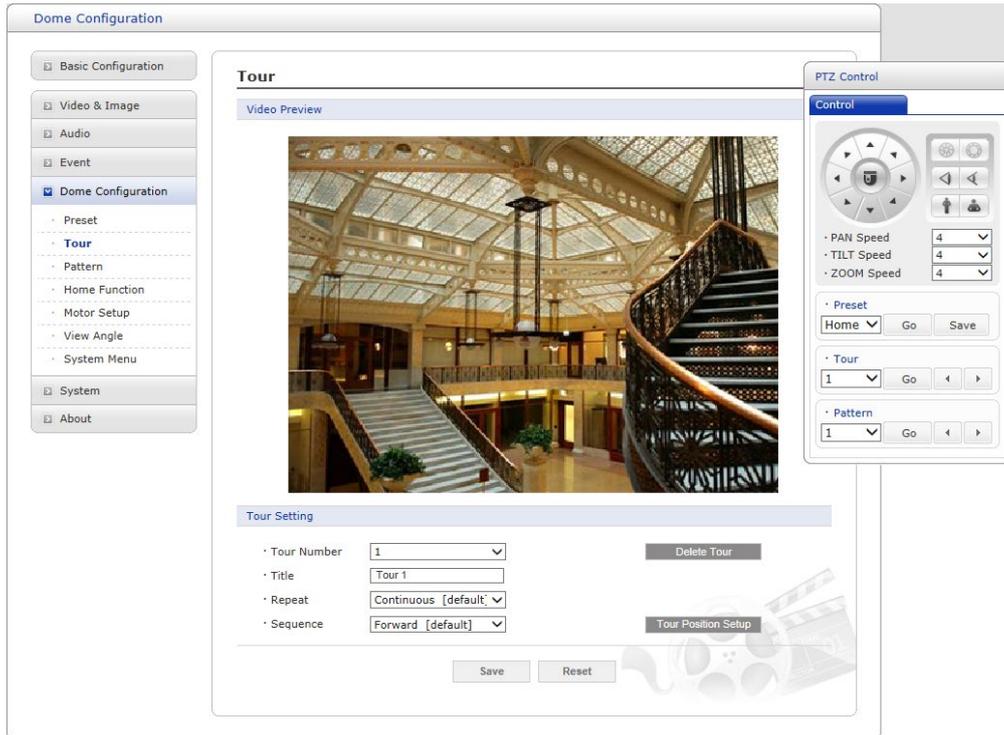
- **Preset Setting:**
  - **Preset number:** The Preset number can be selected in the range 1 ~ 256.
  - **Title:** Up to 12 characters (Alphanumeric characters and space)
  - **Focus:**
    - **Auto:** Auto Focus is always active.
    - **Manual:** Auto Focus is inactive.
  - **Preset Setup:** Activate the PTZ Control Panel.
  - **Preset Delete:** Delete selected Preset number.

Follow steps below to store the Preset positions:

1. Click the **Preset Setup** button, then shows the PTZ Control Panel.
2. Choose the desired Preset number from the Preset drop-down list:
3. After aiming the camera (view direction and lens control) by using the **Arrow** and **Zoom** button in PTZ Control Panel, click the **Save** button.
4. Repeat steps 2 through 3 for each additional Preset position.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

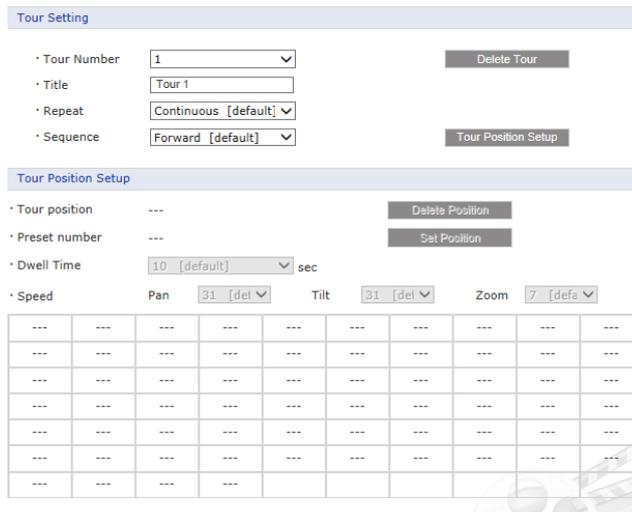
# Tour



There are 8 programmable Tours. Each Tour consists of up to 64 Presets.

- **Tour Setting:**

- **Tour Number:** The Tour number can be selected in the range 1 ~ 8.
- **Title:** Up to 12 characters (Alphanumeric characters and space)
- **Repeat:** Select the number of repetitions from Continuous to 90. The default is Continuous.
- **Sequence:** Select either forward or backward sequence in the Tour position list.
- **Delete Tour:** Delete the stored Tour Position Setup list of Tour number.
- **Tour Position Setup:** Open or close the Tour Position Setup as below.



- **Tour position:** The Tour position can be selected in the range 1 ~ 64.
- **Preset number:** Show the selected Preset number.

- **Dwell Time:** Select the Dwell Time from 0 to 99 seconds. The default is 10 seconds.
- **Speed:** Adjust Pan/Tilt/Zoom Speed if you want to a slow movement. The defaults are maximum Speed.
- **Delete Position:** If you want to remove Tour position from Tour Position Setup list, select the desired Tour Position, and click the Delete Position button.
- **Set Position:** Click the Set Position button, then show the stored Presets on the drop-down list.

Follow steps below to program the Tours:

1. Click the desired Tour position of Tour Position Setup list, and click the Set Position button, then show the saved Presets on the drop-down list. Click a Preset.
2. Repeat step 1 for each desired position.
3. Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

# Pattern

The screenshot displays the 'Dome Configuration' software interface. On the left is a sidebar menu with categories: Basic Configuration, Video & Image, Audio, Event, Dome Configuration (selected), System, and About. The 'Dome Configuration' section is expanded to show 'Pattern' as the active sub-section. The main area is divided into three parts: a 'Video Preview' window showing a live camera feed of a grand interior with a large glass dome and a staircase; a 'PTZ Control' panel on the right with a directional pad, speed settings for PAN, TILT, and ZOOM (all set to 4), and buttons for Preset (Home), Tour (1), and Pattern (1); and a 'Pattern Setting' table below the preview.

No.	Title	Pattern	Sec	%	X
1	Pattern01	Set	0	0.0	X
2	Pattern02	Set	0	0.0	X
3	Pattern03	Set	0	0.0	X
4	Pattern04	Set	0	0.0	X
5	Pattern05	Set	0	0.0	X
6	Pattern06	Set	0	0.0	X
7	Pattern07	Set	0	0.0	X
8	Pattern08	Set	0	0.0	X

'Pattern' is a series of pan, tilt, and zoom movements programmed by an administrator or operator. Up to 8 patterns may be programmed for the dome camera.

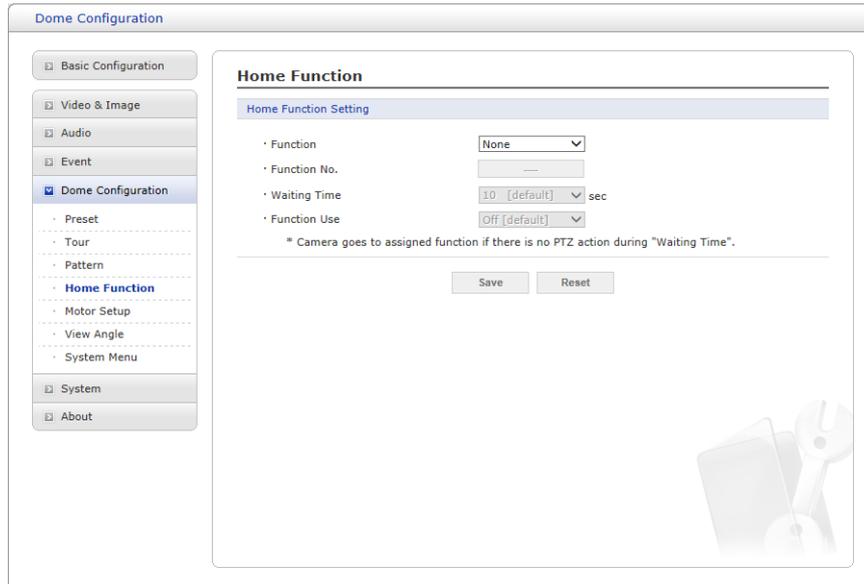
Follow steps below to program the Patterns:

1. Click the **Set** button of desired Pattern number of Pattern Setting list, and move pan, tilt, and zoom using the Control box. The movement history is automatically recorded.
2. Click the **Done** button after you completed the camera movement program.
3. Repeat steps 1 through 2 for each desired Pattern number.
4. If you are not satisfied with the programmed pattern, click the **X** button to clear the pattern.
5. You can edit the title of each pattern number for easier recognition.

**NOTE 1:** Each Pattern can store up to 500 seconds of movements.

**NOTE 2:** The percentage total of 8 Patterns cannot exceed 100.

## Home Function



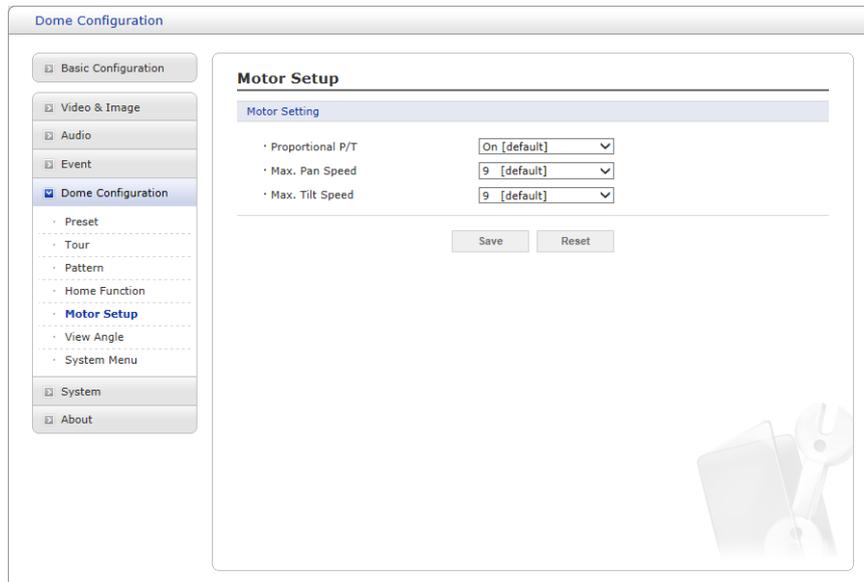
The screenshot shows the 'Dome Configuration' web interface. On the left is a navigation menu with categories: Basic Configuration, Video & Image, Audio, Event, Dome Configuration (selected), System, and About. Under 'Dome Configuration', there are sub-items: Preset, Tour, Pattern, Home Function (selected), Motor Setup, View Angle, and System Menu. The main content area is titled 'Home Function' and contains a 'Home Function Setting' section. It includes four fields: 'Function' (a dropdown menu set to 'None'), 'Function No.' (a text input field with a dash), 'Waiting Time' (a spinner box set to '10 [default]' with 'sec' next to it), and 'Function Use' (a dropdown menu set to 'Off [default]'). A note below these fields states: '\* Camera goes to assigned function if there is no PTZ action during "Waiting Time".' At the bottom of the settings area are 'Save' and 'Reset' buttons. A faint watermark of a camera and tools is visible in the bottom right corner of the interface.

The camera can be set to default to the home position set here during “Waiting Time”.

- **Function:** None / Preset / Tour / Pattern
- **Function No.:** Select Preset, Tour or Pattern number as the Home Function.
- **Waiting Time:** 10 ~ 600 seconds
- **Function Use:** Off / On

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

## Motor Setup

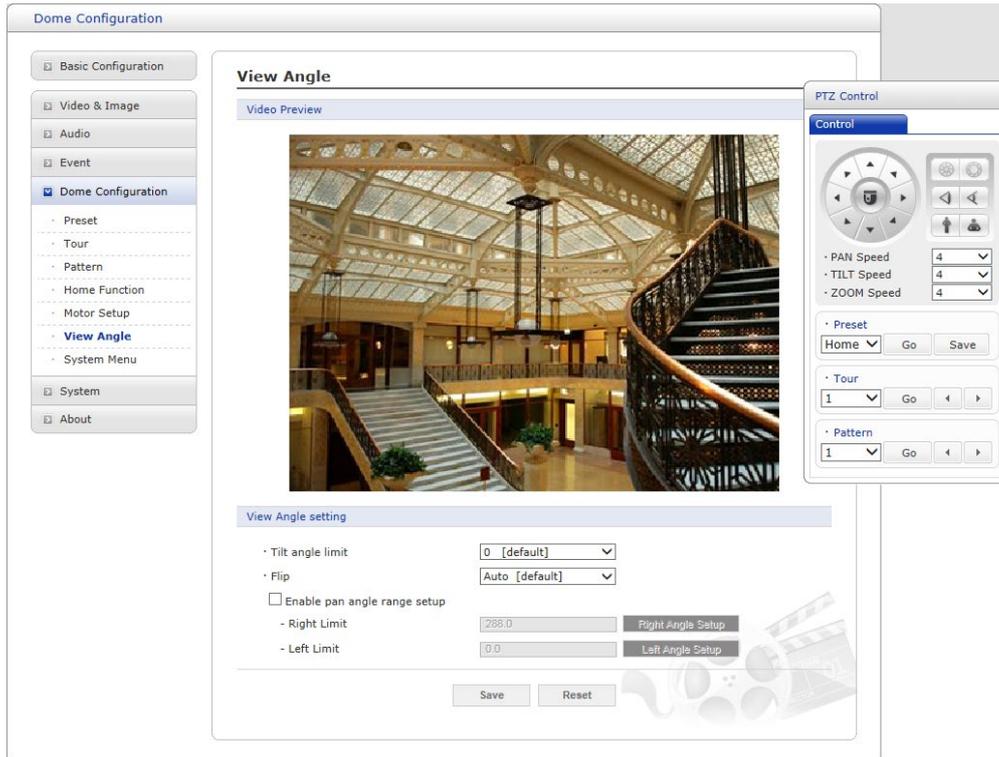


The screenshot shows the 'Dome Configuration' web interface. The navigation menu is the same as in the previous screenshot. Under 'Dome Configuration', 'Motor Setup' is selected. The main content area is titled 'Motor Setup' and contains a 'Motor Setting' section. It includes three fields: 'Proportional P/T' (a dropdown menu set to 'On [default]'), 'Max. Pan Speed' (a spinner box set to '9 [default]'), and 'Max. Tilt Speed' (a spinner box set to '9 [default]'). At the bottom of the settings area are 'Save' and 'Reset' buttons. A faint watermark of a camera and tools is visible in the bottom right corner of the interface.

- **Motor Setting:**
  - **Proportional P/T:** Select On or Off.
  - **Max. Pan Speed:** Adjust the pan speed between 1 ~ 30.
  - **Max. Tilt Speed:** Adjust the tilt speed between 1 ~ 30.

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

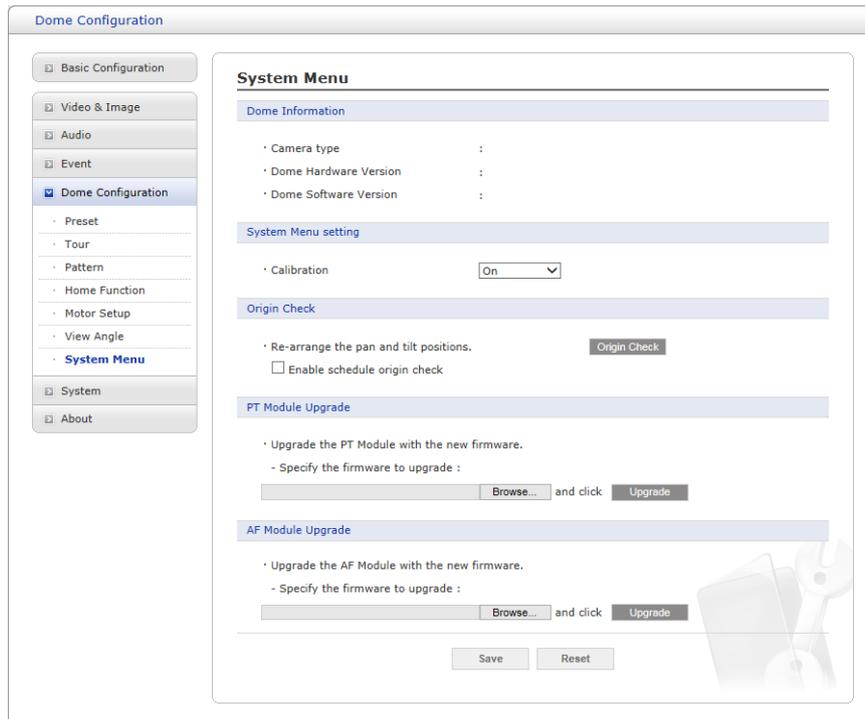
# View Angle



- **View Angle Setting:**
  - **Tilt angle limit:** This option is designed to limit the view angle as there is some obstruction in zooming out on specific areas of the tilt angle.
  - **Flip:**
    - **Off:** The dome camera moves until 90° vertically.
    - **Auto:** When the camera reaches the floor directly above the moving object, it will stop. At that time, release instantly and pull it down again to run the auto-flip function. When you use the panning range, it is recommended to use the flip mode to Auto.
  - **Enable pan angle range setup:** When the dome camera is installed near a wall, the pan angle range can be limited by the user.
    - **Right limit:** Select the right limit of the pan angle range.
    - **Left limit:** Select the left limit of the pan angle range.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

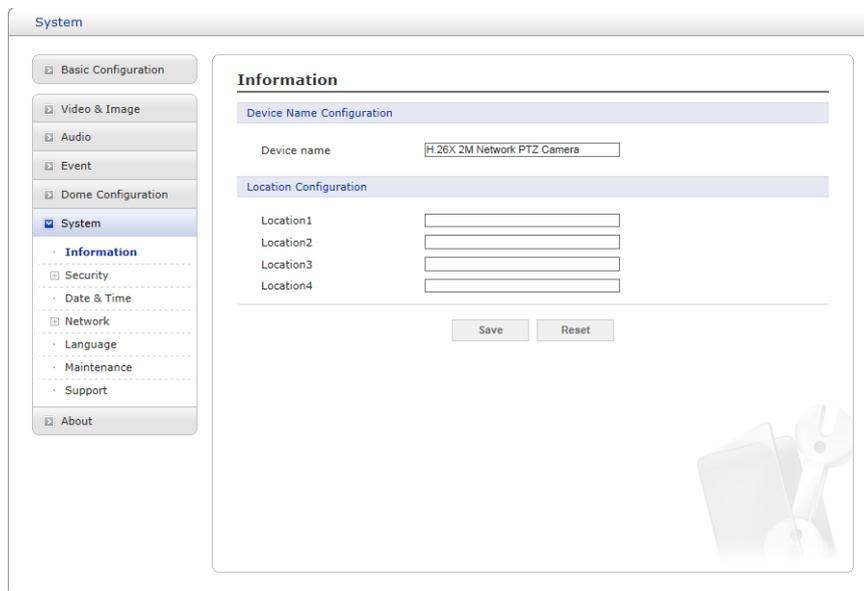
# System Menu



- **Dome Information:** The system information provides essential information about the dome if service is required. The information cannot be modified.
- **System Menu setting:** User can set the camera in auto-calibration mode.
- **Origin Check:** If you find the dome in the wrong position during operation, execute this origin check by clicking the Origin Check button and the dome camera will return to the right position after the origin check operation.
  - **Enable schedule origin check:** If selected, execute origin check function at a scheduled time
    - **Enable monthly:** Set specific day and time.
    - **Enable weekly:** Set specific days of the week and time.
    - **Enable daily:** Set specific time.
- **PT Module Upgrade:** Users can upgrade PT Module firmware remotely.
- **AF Module Upgrade:** Users can upgrade the AF Module firmware remotely.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## 3.6.6 System Information



The screenshot shows a web interface for system configuration. On the left is a sidebar menu with categories: Basic Configuration, Video & Image, Audio, Event, Dome Configuration, System (selected), Security, Date & Time, Network, Language, Maintenance, Support, and About. The main content area is titled 'System' and contains two sections: 'Device Name Configuration' and 'Location Configuration'. The 'Device Name Configuration' section has a single text input field containing 'H.26X 2M Network PTZ Camera'. The 'Location Configuration' section has four text input fields labeled 'Location1', 'Location2', 'Location3', and 'Location4', all of which are currently empty. At the bottom of the main content area are two buttons: 'Save' and 'Reset'. A faint watermark of a laptop and a wrench is visible in the bottom right corner of the main content area.

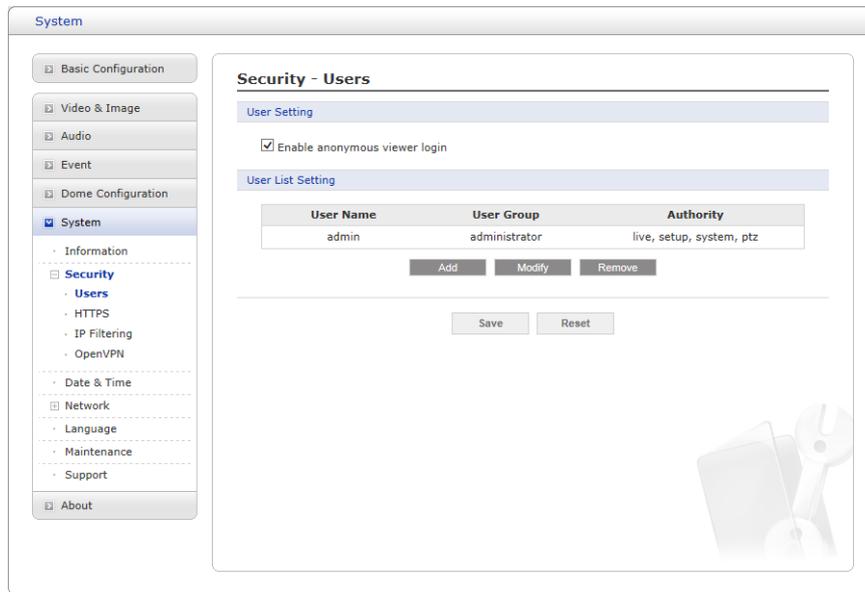
You can enter the system information. This page is very useful when you require device information after installation.

- **Device Name Configuration:** Enter the device name.
- **Location Configuration:** Enter up to four (4) locations information.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

# Security

## ▾ Users

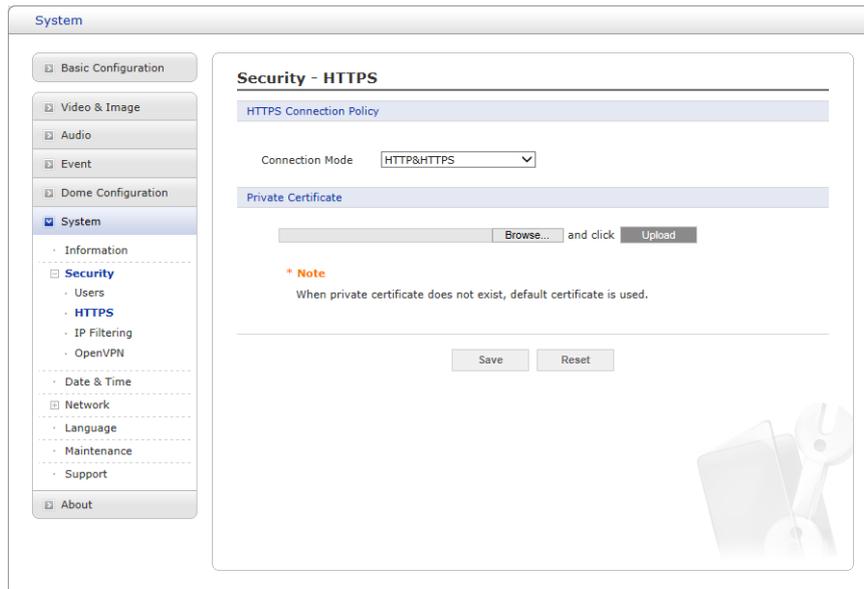


User access control is enabled by default when the administrator sets the root password on first access. New users are authorized with user names and passwords, or the administrator can choose to allow anonymous viewer login to the Live View page, as described below:

- **User Setting:** Check the box to enable anonymous viewers to log in to the camera without a user account. When using the user account, users have to log-in at every access.
- **User List Setting:** This section shows how to register a user account. Enter a user name and password to be added, and register them by pressing the Add button. You will see the pop-up window as below.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ HTTPS



For greater security, the camera can be configured to use HTTPS (Hypertext Transfer Protocol over SSL (Secure Socket Layer)). Then all communication that would otherwise go via HTTP will instead go via an encrypted HTTPS connection.

- **HTTPS Connection Policy:** Choose the form of connection you wish to use from the drop-down list for the administrator, Operator, and Viewer to enable HTTPS connection (set to HTTP by default).
  - HTTP
  - HTTPS
  - HTTP and HTTPS
- **Upload Certificate:** To use HTTPS for communication with the camera, an official certificate issued by a CA (Certificate Authority) must be uploaded from your PC. Provide the path to the certificate directly, or use the **Browse** button to locate it. Then click the **Upload** button.

Please refer to the home page of your preferred CA for information on where to send the request. For more information, please see the online help.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ IP Filtering

On/Off	Priority	Policy	Start IP	End IP
<input type="checkbox"/>	1	ALLOW	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	2	ALLOW	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	3	ALLOW	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	4	ALLOW	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	5	ALLOW	0 . 0 . 0 . 0	0 . 0 . 0 . 0

Checking the “Enable IP filtering” box enables the IP address filtering function.

When the IP address filter is enabled, addresses added to the list are set as allowed or denied addresses. All other IP addresses not in this list will then be allowed or denied access accordingly, that is, if the addresses in the list are allowed, then all others are denied access, and vice versa. Also, see the online help for more information.

**NOTE:** Users from IP addresses that will be allowed must also be registered with the appropriate access rights. This is done from Setup > System > Security > Users.

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

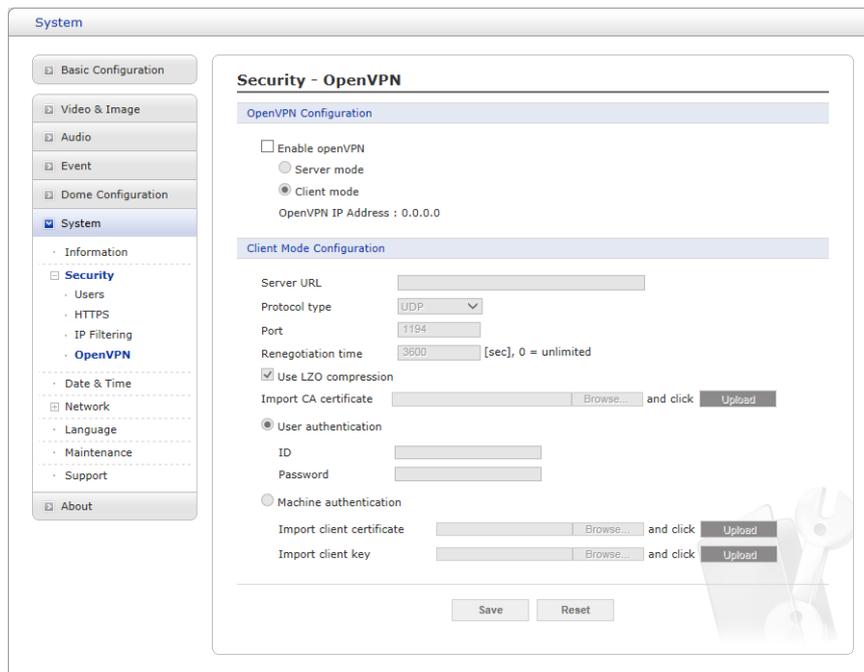
## ▽ OpenVPN

OpenVPN is a Virtual Private Network using OpenSSL authentication. Users can set the camera in either Server mode or Client mode.

The screenshot shows the 'Security - OpenVPN' configuration page. The 'OpenVPN Configuration' section has 'Enable openVPN' checked, 'Server mode' selected, and 'Client mode' unselected. The 'OpenVPN IP Address' is '0.0.0.0'. The 'Server Mode Configuration' section has 'Protocol type' set to 'UDP', 'OpenVPN Internal IP' as '10.8.0.1', 'OpenVPN Subnet Mask' as '255.255.255.0', 'Port' as '1194', and 'Renegotiation time' as '3600' seconds. The 'Use LZO compression' checkbox is checked. There is a 'Download' button for 'Export CA certificate'. At the bottom are 'Save' and 'Reset' buttons.

- **OpenVPN Server Mode**

1. Checking the “Enable OpenVPN” box activates mode selection buttons. Choose Server mode, then Server Mode Configuration appears where you can configure Server Mode Settings.
2. In Server Mode Configuration, you can setup Protocol type, Port number, LZO compression usage, and Renegotiation time, as well as download Server certificate file.
  - Choose Protocol type between UDP and TCP, UDP is preferred. Type in Port number you want to use, default is 1194.
  - Default Renegotiation time is 3600 seconds, and 0 means no verification.
  - “Use LZO compression” determines whether to use cipher compression in connection or not.
  - CA certificate is the certification file issued by Server for Client setup.
3. After finishing setup, click the Save button and then the camera operates as an OpenVPN Server.



- **OpenVPN Client Mode**

1. Checking the “Enable OpenVPN” box activates mode selection buttons. Choose Client mode, then Client Mode Configuration appears where you can configure Client Mode Settings.
2. In Client Mode Configuration, you can setup Server URL, Protocol type, Port number, LZO usage, and Renegotiation time.
  - Server URL sets OpenVPN IP address.
  - Protocol type, Port number, and LZO setting must match the Server setting.
  - Default Renegotiation time is 3600 seconds, and 0 means no verification.
  - Upload CA certificate issued by Server.
3. Select the authentication method between User authentication and Machine authentication.
  - For Machine authentication, upload client certificate and client key provided by Server.
  - For User authentication, type in registered ID and Password.
4. After finishing setup, click the Save button and then the camera operates as an OpenVPN Client.

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

## Date and Time

The screenshot shows a web interface for configuring the system's date and time. On the left is a navigation menu with categories like Basic Configuration, Video & Image, Audio, Event, Dome Configuration, System (selected), Information, Security, Date & Time, Network, Language, Maintenance, Support, and About. The main content area is titled 'Date & Time' and contains three sections: 'Current Server Time' with date and time input fields; 'New Server Time' with a time zone dropdown, a checkbox for daylight saving time, and three radio button options for time synchronization (computer time, NTP server, or manual); and 'Date & Time Format' with dropdown menus for date and time formats. 'Save' and 'Reset' buttons are at the bottom.

- **Current Server Time:** This displays the current date and time (24h clock). The time can be displayed in the 12h clock format (see below).
- **New Server Time:**
  - **Time zone:** Select your time zone from the drop-down list. If you want the server clock to automatically adjust for daylight savings time, check the box “Automatically adjust for daylight saving time changes”.
  - **Time mode:** Select the preferred method to use for setting the time:
    - **Synchronize with computer time:** Sets the time from the clock on your computer.
    - **Synchronize with NTP Server:** The camera will obtain the time from an NTP server every 60 minutes.
    - **Set manually:** Allows you to manually set the time and date.
- **Date and Time Format:** Specify the formats for the date and time (12h or 24h) displayed in the video streams. Select Date and Time format from the drop-down list.
  - **Date Format:** Specify the date format. YYYY: Year, MM: Month, DD: Day
  - **Time Format:** Specify the date format. 24 Hours or 12 Hours

**NOTE:** If using a hostname for the NTP server, a DNS server must be configured under TCP/IP settings.

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

# Network

## ▽ Basic

The screenshot shows the 'Network - Basic' configuration page. The sidebar on the left lists various system settings, with 'Network' expanded to show 'Basic'. The main configuration area includes sections for IP Address Configuration, IPv6 Address Configuration, DNS Configuration, Host Name Configuration, Services, and Link Speed Control. The IP Address Configuration section is currently set to 'Use the following IP address:' with a static IP of 192.168.30.220, a subnet mask of 255.255.255.0, and a default router of 192.168.30.1. The IPv6 Address Configuration section has 'Enable IPv6' unchecked. The DNS Configuration section is set to 'Use the following DNS server address:' with a domain name, primary DNS server of 168.126.63.1, and secondary DNS server of 0.0.0.0. The Host Name Configuration section has the host name 'IPCamera10007D81AD871'. The Services section shows HTTP port 80, HTTPS port 443, and RTSP port 554. The Link Speed Control section has LAN Interface set to 'Auto' and Link Speed set to '100M bit/sec'. 'Save' and 'Reset' buttons are at the bottom.

- **IP Address Configuration:**
  - **Obtain IP address via DHCP:** Dynamic Host Configuration Protocol (DHCP) is a protocol that lets network administrators centrally manage and automate the assignment of IP addresses on a network. DHCP is enabled by default. Although a DHCP server is mostly used to set an IP address dynamically, it is also possible to use it to set a static, known IP address for a specific MAC address. To obtain an IP address via DHCP, check the radio button.
  - **Use the following IP address:** To use a static IP address for the camera, check the radio button and then make the following settings:
    - **IP address:** Specify a unique IP address for your camera.
    - **Subnet mask:** Specify the mask for the subnet the camera is located on.
    - **Default router:** Specify the IP address of the default router (gateway) used for connecting devices attached to different networks and network segments.
- **IPv6 Address Configuration:** Check this “Enable IPv6” box to enable IPv6. Other settings for IPv6 are configured in the network router.
- **DNS Configuration:** DNS (Domain Name Service) provides the translation of hostnames to IP addresses on your network. Check the radio button to obtain the DNS server via DHCP or set the DNS server.
  - **Obtain DNS Server via DHCP:** Automatically use the DNS server settings provided by the DHCP server.

- **Use the following DNS server address** to enter the desired DNS server by specifying the following:
  - **Domain name:** Enter the domain(s) to search for the hostname used by the camera. Multiple domains can be separated by semicolons (;). The hostname is always the first part of a Fully Qualified Domain Name, for example, 'myserver' is the hostname in the Fully Qualified Domain Name myserver.mycompany.com where mycompany.com is the Domain name.
  - **DNS servers:** Enter the IP addresses of the primary and secondary DNS servers.
- **Host Name Configuration:**
  - **Host Name:** Enter the hostname to be used as device information in the client software.
- **Services:**
  - **HTTP port:** Enter a port to receive a service through the HTTP. The default port number is "80".
  - **HTTPS port:** Enter a port to receive a service through the HTTPS. The default port number is "443".
  - **RTSP port:** Enter a port to receive a service through the RTSP. The default port number is "554".
- **Link Speed Control:**
  - **LAN Interface:** Users can select LAN Interface.
  - **Link Speed:** Users can select Link Speed.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ DDNS

System

Basic Configuration

Video & Image

Audio

Event

Dome Configuration

System

Information

Security

Date & Time

Network

Basic

DDNS

RTP

UPnP

QoS

NAT

Zeroconf

Bonjour

Language

Maintenance

Support

About

### Network - DDNS

#### Internet DDNS (Dynamic Domain Name Service)

Enable DDNS

**\* Note**  
Please remember you have to configure at least primary DNS server in DNS configuration settings to use Dynamic DNS.

- DDNS Server: cctv-network.co.kr

- Registered host: [input field]

- User name: [input field]

- Password: [input field]

- Confirm password: [input field]

- Maximum time interval: 1 hour

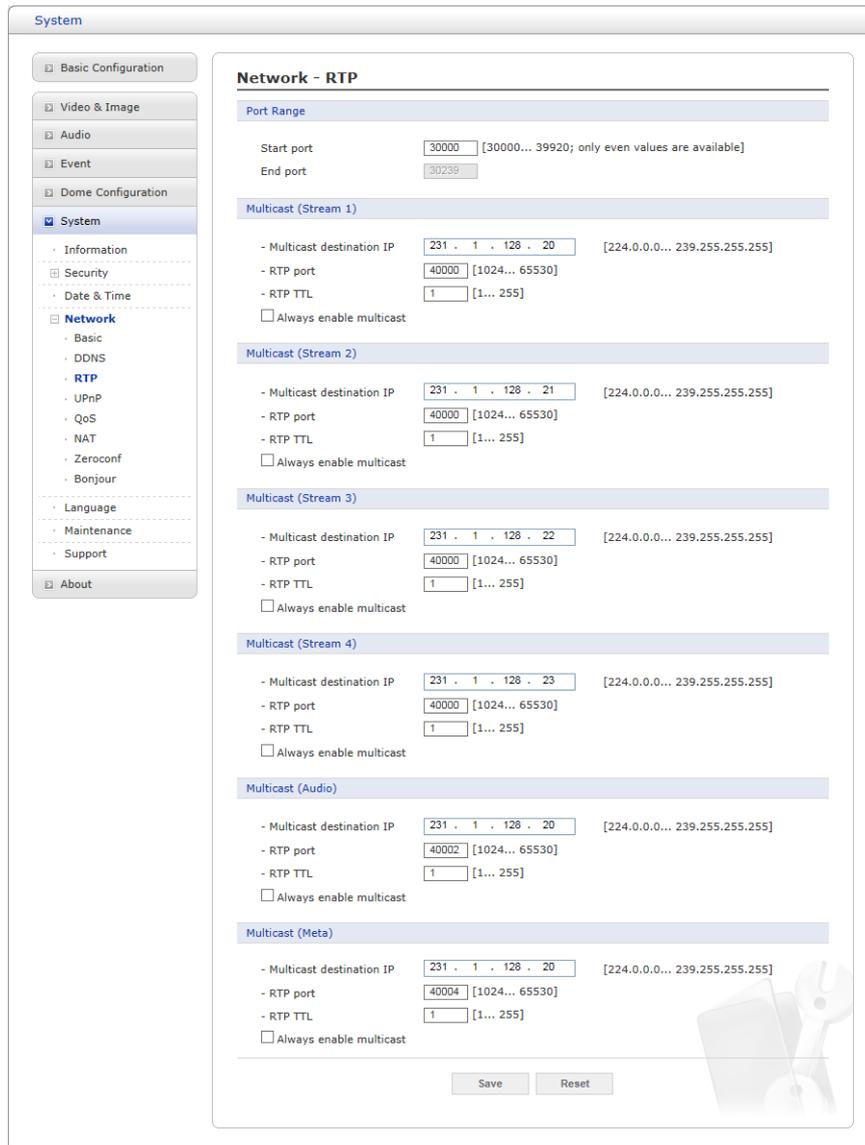
Register local network IP address

Registered IP address :

Save Reset

- **Internet DDNS (Dynamic Domain Name Service):** When using the high-speed Internet with the telephone or cable network, users can operate the camera on the floating IP environment in which IPs are changed at every access. Users should receive an account and password by visiting a DDNS service like <http://www.dyndns.org/>.
  - **Enable DDNS:** Check to have DDNS service available.
    - **DDNS Server:** Select the DDNS server.
    - **Registered host:** Enter an address of the DDNS server.
    - **Username:** Enter an ID to access to the DDNS server.
    - **Password:** Enter a password to be used for accessing the DDNS server.
    - **Confirm:** Enter the password again to confirm it.
    - **Maximum time interval:** Set a time interval to synchronize with the DDNS server. Select the time interval from the drop-down list.
    - **Register local network IP address:** Register a Network Video Server IP address to the DDNS server by checking the box and enter the Registered IP address.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

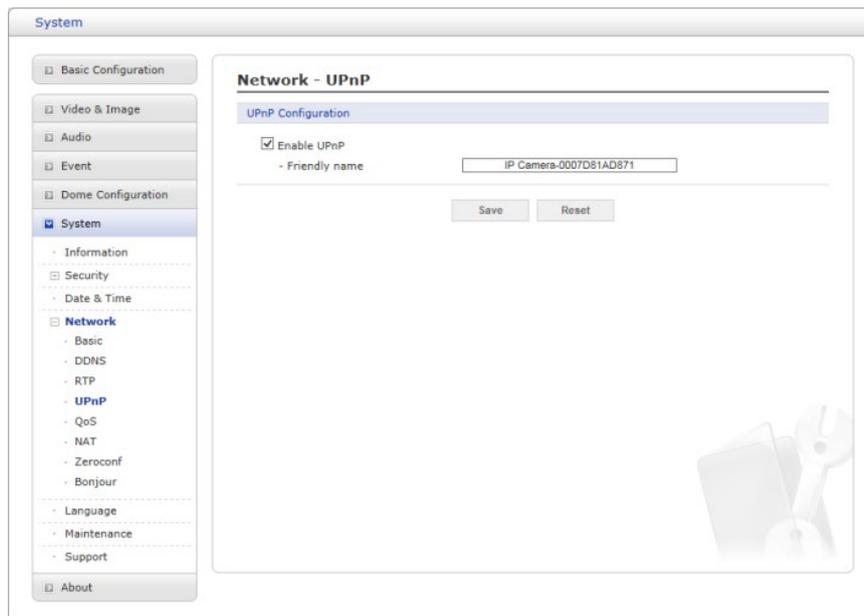


Create a setting for sending and receiving an audio or video on a real-time basis. These settings are the IP address, port number and Time-To-Live value (TTL) to use for media stream(s) in a multicast H.264 format.

- **Port Range:**
  - **Start port:** 30000 ~ 39920: only even values are available.
- **Multicast (Stream 1 / Stream 2 / Stream 3 / Stream 4 / Audio / Meta):** This function is for sending Video, Audio, and Meta Data to the Multicast group.
  - **Multicast destination IP:** Enter an IP between 224.0.0.0 and 239.255.255.255.
  - **RTP port:** Enter a value between 1024 and 65530.
  - **RTP TTL:** Enter a value between 1 and 255. If a network status is smooth, enter a lower value. However, if network status is poor, enter a higher value. When there are many cameras or users, a higher value may cause a heavy load to the network. Consult with a network manager for detailed information.
  - **Always enable multicast:** Check the box to start multicast streaming without opening an RTSP session.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ UPnP

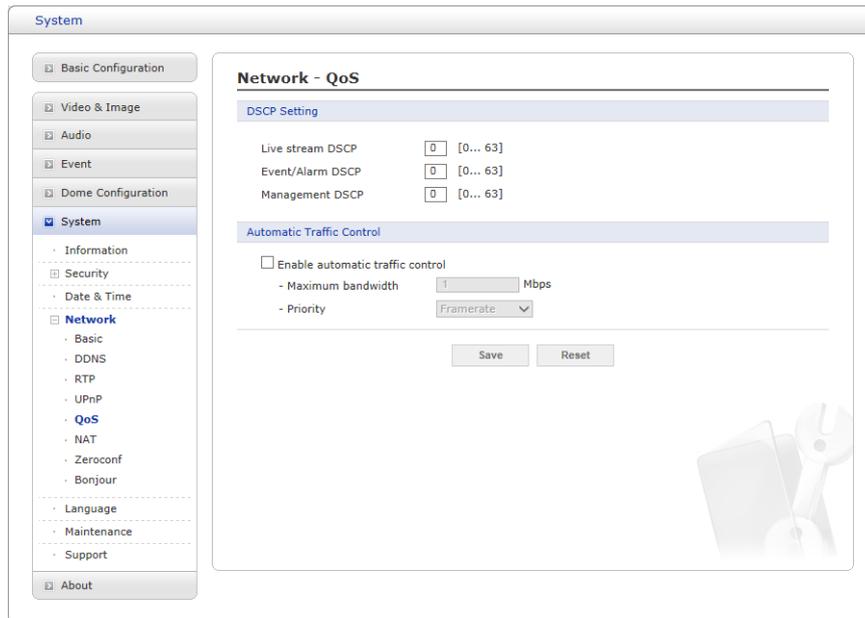


The camera includes support for UPnP. UPnP is enabled by default, so the camera is automatically detected by operating systems and clients that support this protocol.

Enter a name in the Friendly name field.

**NOTE:** UPnP must be installed on your workstation if running Windows XP. To do this, open the Control Panel from the Start Menu and select Add/Remove Programs. Select Add/Remove Windows Components and open the Networking Services section. Click Details and then select UPnP as the service to add.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.



Quality of Service (QoS) provides the means to guarantee a certain level of a specified resource to selected traffic on a network. Quality can be defined as a maintained level of bandwidth, low latency, and no packet losses.

The main benefits of a QoS-aware network are:

1. The ability to prioritize traffic and thus allow critical flows to be served before flows with lesser priority.
  2. Greater reliability in the network, due to the control of the amount of bandwidth an application may use, and thus control over bandwidth races between applications.
- **DSCP Settings:** For each type of network traffic supported by your network video product, enter a DSCP (Differentiated Services Code Point) value. This value is used to mark the traffics IP header. When the marked traffic reaches a network router or switch, the DSCP value in the IP header tells the router or switch which type of treatment to apply to this type of traffic, for example, how much bandwidth to reserve for it.

**NOTE:** DSCP values can be entered in decimal or hex form, but saved values are always shown in decimal.

The following types of traffic are marked; enter a value for each type of traffic used:

- **Live Stream DSCP**
- **Event/Alarm DSCP**
- **Management DSCP**
- **Automatic Traffic Control:** Check the box to enable automatic traffic control. Set a limitation on user network resources by designating the maximum bandwidth. Select either the Maximum bandwidth or Automatic framerate radio button.
  - **Maximum bandwidth:** When sharing other network programs or equipment, it is possible to set a limitation on the maximum bandwidth in the unit of Mbit/s.
  - **Priority:** When the maximum bandwidth is exceeded, the data to be reduced is prioritized.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ NAT (Port Mapping)

The screenshot shows the 'Network - NAT (Port Mapping)' configuration page. The sidebar on the left lists various system settings, with 'System' and 'Network' expanded. The 'Network' section includes 'Basic', 'DDNS', 'RTP', 'UPnP', 'QoS', 'NAT', 'Zeroconf', and 'Bonjour'. The main content area is titled 'Network - NAT (Port Mapping)' and contains a 'Wire NAT traversal Setting' section. It includes a 'Wire NAT traversal Setup' checkbox set to 'Enable', two input fields for 'External http port' (value 10000) and 'External rtsp port' (value 10001), both with ranges [1024... 65535]. A note states: '\* Note: If the Port is 0, the assigned port of network camera will be set automatically.' Below are fields for 'HTTP URL' and 'RTSP URL', and 'Save' and 'Reset' buttons.

- **Wire NAT traversal Setting**

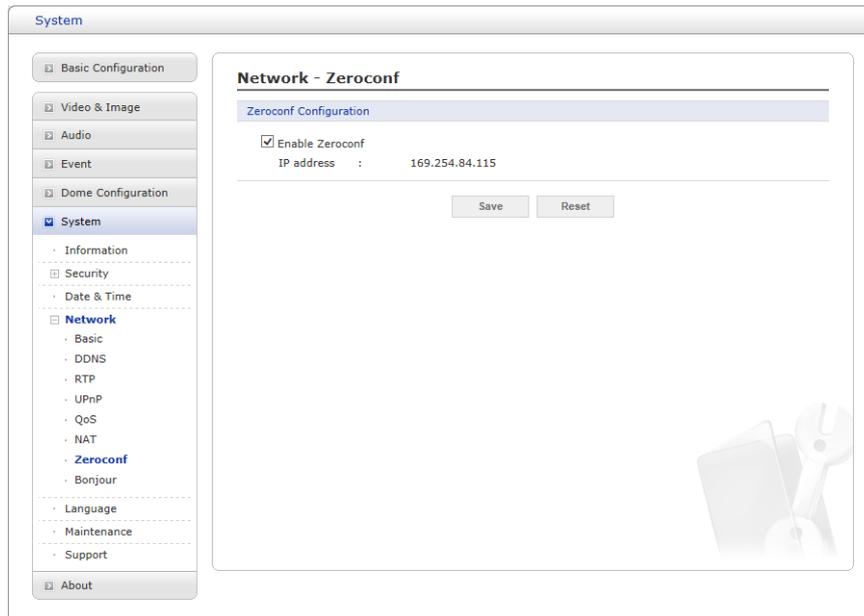
- **Enable:** Check this box to enable NAT traversal. When enabled, the camera attempts to configure port mapping in a NAT router on your network, using UPnP. Note that UPnP must be enabled in the camera (see System > Network > UPnP).
  - **Automatic setting:** When selected, the camera automatically searches for NAT routers on your network.
  - **Manual setting:** Select this option to manually select a NAT router and enter the external port number for the router in the field provided.

### NOTES:

- If you attempt to manually enter a port that is already in use, an alert message will be displayed.
- When the port is selected automatically it is displayed in this field. To change this enter a new port number and click Save.
- For NAT (port mapping) to work, this must be supported by the broadband router.
- The broadband router has many different names: “NAT router”, “Network router”, “Internet Gateway”, “Broadband sharing device” or “Home firewall”, but the essential purpose of the device is the same.

Click ‘Save’ to save the settings, or click ‘Reset’ to clear all the changes.

## ▽ Zeroconf



Zero configuration networking (zeroconf) is a set of techniques that automatically creates a usable Internet Protocol (IP) network without manual operator intervention or special configuration servers.

Zero configuration networking allows devices such as computers and printers to connect to a network automatically. Without zeroconf, a network administrator must set up services, such as Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS), or configure each computer's network settings manually, which may be difficult and time-consuming.

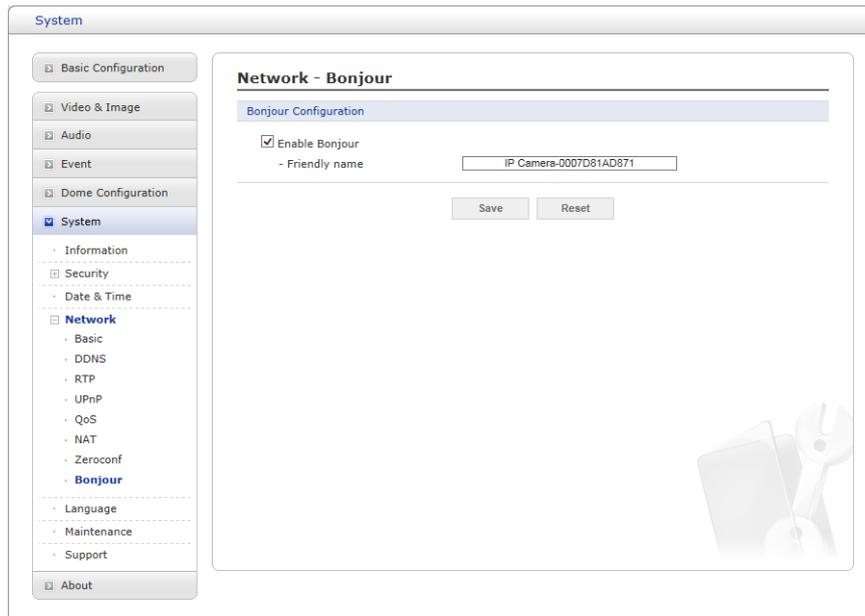
Zeroconf is built on three core technologies:

- Assignment of numeric network addresses for networked devices (link-local address autoconfiguration)
- Automatic resolution and distribution of computer hostnames (multicast DNS)
- Automatic location of network services, such as printing devices through DNS service discovery.

Click the checkbox to enable Zeroconf.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

## ▽ Bonjour



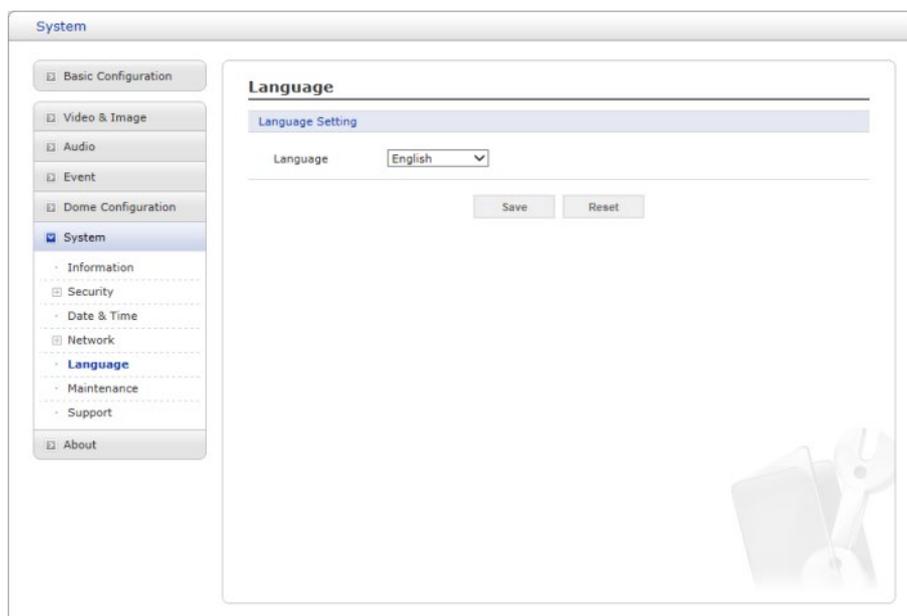
The camera includes support for Bonjour. When enabled, the camera is automatically detected by operating systems and clients that support this protocol.

Click the checkbox to enable Bonjour. Enter a name in the Friendly name field.

**NOTE:** Also known as zero-configuration networking, Bonjour enables devices to automatically discover each other on a network, without having to enter IP addresses or configure DNS servers. (Bonjour is a trademark of Apple Computer, Inc.)

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

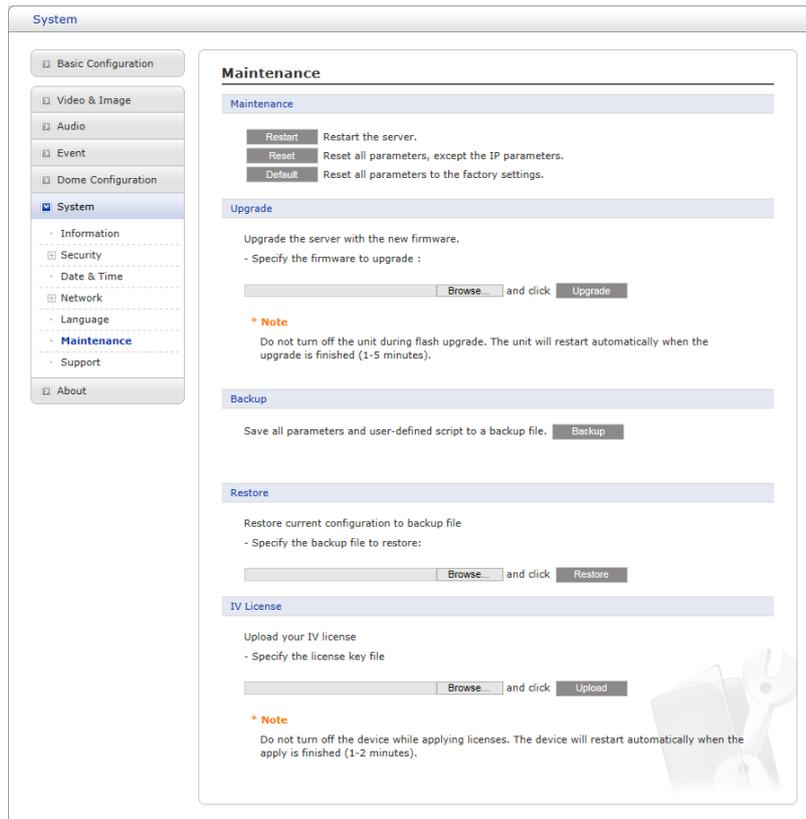
## Language



Select a user language. The language choices are English, Korean, French, German, Russian, Chinese, and Japanese.

Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

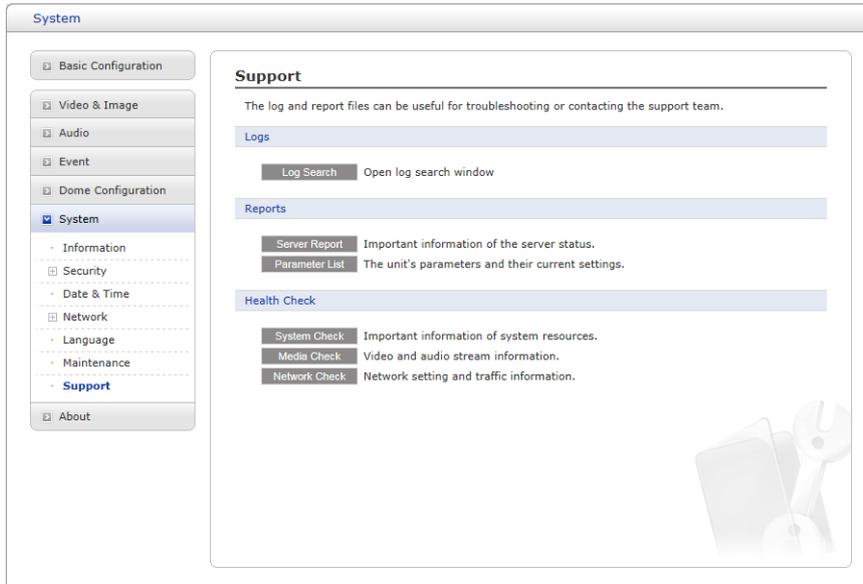
# Maintenance



- **Maintenance:**
  - **Restart:** The unit is restarted without changing any of the settings. Use this method if the unit is not behaving as expected.
  - **Reset:** The unit is restarted and most current settings are reset to factory default values. The settings that are not affected are:
    - the boot protocol (DHCP or static)
    - the static IP address
    - the default router
    - the subnet mask
    - the system time
  - **Default:** The **default** button should be used with caution. Pressing this will return all of the camera's settings to the factory default values (including the IP address).
  - **Upgrade:** Upgrade your camera by importing an upgrade file and pressing the **Upgrade** button. During the upgrade, do not turn off the power of the camera. Wait at least five minutes and then try to access the camera again.
  - **Backup:** Save the setting values that users have entered the camera to a user PC.
  - **Restore:** Import and apply a setting value previously saved to a user PC.
  - **IV License:** Upload your camera by importing an upload file and pressing the **Upload** button. During the upload, do not turn off the power of the camera. Wait at least two minutes and then try to access the camera again.

**NOTE:** Backup and Restore can only be used on the same unit running the same firmware. This feature is not intended for multi-configurations or firmware upgrades.

# Support

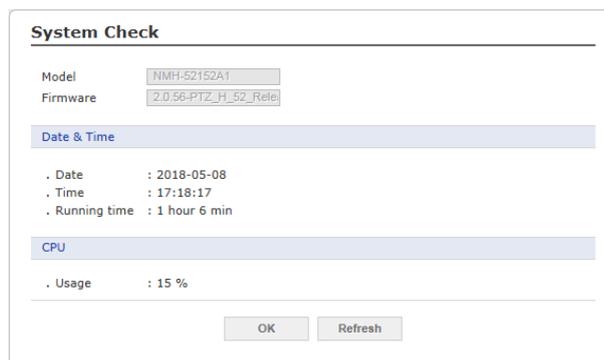


The support page provides valuable information on troubleshooting and contact information, should you require technical assistance.

- **Logs:** The camera supports system and event log information. Click the **Log Search** button to search the Access, Event, Setup or Control log data.

No.	Date & Time	Client IP	User ID	Menu	Message
1	2018 May 04 13:38:10	127.0.0.1	-	event->webtool	webtool event occurred
2	2018 May 04 13:38:11	169.254.30.4	-	access->live	live-view(rtsp) login success
3	2018 May 04 13:38:12	169.254.30.4	-	access->live	index(browser) live-view(rtsp over http) start
4	2018 May 04 13:38:12	169.254.30.4	-	access->live	media live-view(rtsp over http) start
5	2018 May 04 13:42:09	169.254.30.4	-	access->live	index(browser) live-view stop
6	2018 May 04 13:42:09	169.254.30.4	-	access->live	media live-view stop
7	2018 May 04 13:42:09	169.254.30.4	-	access->live	live-view(rtsp) logout
8	2018 May 04 13:42:46	169.254.30.4	-	access->live	live-view(rtsp) login success
9	2018 May 04 13:42:45	169.254.30.4	-	access->live	index(browser) live-view(rtsp over http) start
10	2018 May 04 13:42:45	169.254.30.4	-	access->live	media live-view(rtsp over http) start
11	2018 May 04 13:55:45	169.254.30.4	-	access->live	index(browser) live-view stop
12	2018 May 04 13:55:45	169.254.30.4	-	access->live	media live-view stop
13	2018 May 04 13:55:45	169.254.30.4	-	access->live	live-view(rtsp) logout

- **Reports:**
  - **Server Report:** Click the **Server Report** button to get important information about the server's status; this should always be included when requesting support.
  - **Parameter List:** Click the **Parameter List** button to see the unit's parameters and their current settings.
- **Health Check:**
  - **System Check:** Click the **System Check** button to get important information about the cameras system resources. You can see the pop-up window below.



- **Media Check:** Click the **Media Check** button to get the information about the camera's video and audio stream. You can see the pop-up window below.

Video stream					
Stream	On/Off	Codec	Size	FPS	Bitrate
Stream1	On	H.264 Main Profile	1920x1080	30	666 Kbps
Stream2	On	MJPEG	640x480	15	1835 Kbps
Stream3	On	H.264 Main Profile	640x480	30	104 Kbps
Stream4	On	H.264 Main Profile	320x240	15	31 Kbps

Audio stream					
Type	On/Off	Codec	Sample	Volume	Bitrate
Input	Off	-	-	-	-

- **Network Check:** Click the **Network Check** button to get the information about the camera's network setting and traffic. You can see the pop-up window below.

Network Check	
<b>Wired configuration</b>	
<ul style="list-style-type: none"> <li>Current Status : Connected</li> <li>DHCP : OFF</li> <li>IP address : 192.168.30.220</li> <li>Subnet mask : 255.255.255.0</li> <li>Gateway : 192.168.30.1</li> <li>DNS : 168.126.63.1</li> </ul>	
<b>Wireless configuration</b>	
<ul style="list-style-type: none"> <li>Current Status : Disconnected</li> </ul>	
<b>Traffic</b>	
<ul style="list-style-type: none"> <li>Wired : 0 kbps</li> </ul>	
<b>Streaming service</b>	
<ul style="list-style-type: none"> <li>Number of users currently live : 0</li> <li>Number of users currently playback : 0</li> </ul>	
<b>Server connection</b>	
<ul style="list-style-type: none"> <li>Live Push : Disconnected</li> <li>Event Push : Disconnected</li> </ul>	

## 3.7 Help

**Help**
▲

- View
- Video & Image
- Audio
- Event
- System

### View

Through 'Live View' page, user can watch the display of live video stream from camera (or transmitter).  
 In addition, this page provide 'Basic Setting' and 'Control Toolbar'.  
 \* For access this page, it is necessary that enable anonymous viewer login setting or account having authority.

▶ **Basic Setting**

- **Stream Type**
- The 'Video drop-down list' allows you to select a customized or preprogrammed video stream on the 'Live View' page.  
 \* Stream profiles are configured under 'Setup' > 'Basic Configuration' > 'Video & Image'.
- **View Size**
- The 'Resolution drop-down list' allows you to select the most suitable one out of video resolutions to Live View page.
- **Connect Type**
- The 'Protocol drop-down list' allows you to select which combination of protocols and method to use depending on your viewing requirements, and on the properties of your network.
  - **UDP** (RTP over UDP)  
 UDP uses a simple transmission model, it is not considered a reliable service.
  - **TCP** (RTP over TCP)  
 TCP provides reliable stream, but in lower bandwidth networks, the stream can be delayed.
  - **HTTP** (RTP over TCP over HTTP)  
 HTTP works in a similar way as TCP, it is very useful in the firewall environment.

The Help popup window offers users a description of the setting and Help page so that users can manipulate the camera without a reference to the manual.

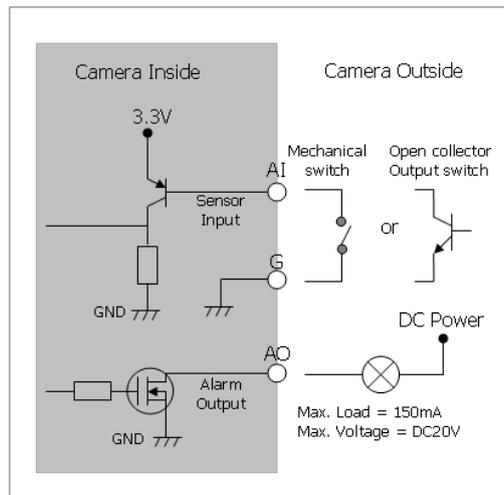
## 4 Appendix

### A.1 Troubleshooting

Problems/symptoms	Possible causes or corrective actions
The camera cannot be accessed by some clients.	If using a proxy server, try disabling the proxy setting in your browser. Check all cabling and connectors.
The camera works locally, but not externally.	Check if there are firewall settings that need to be adjusted. Check if there are router settings that need to be configured.
Poor or intermittent network connection.	If using a network switch, check that the port on that device uses the same setting for the network connection type (speed/duplex).
The camera cannot be accessed via a hostname.	Check that the hostname and DNS server settings are correct.
Not possible to log in.	When HTTPS is enabled, ensure that the correct protocol (HTTP or HTTPS) is used. When attempting to log in, you may need to manually type in HTTP or https in the browser's address bar.
No image using Refresh and/or slow updating of images.	If images are very complex, try limiting the number of clients accessing the camera.
Images only are shown in black and white.	Check the Video and Image setting.
Blurred images.	Refocus the camera.
Poor image quality.	Increased lighting can often improve image quality. Check that there is sufficient lighting at the monitored location. Check all images and lighting settings.
Rolling dark bands or flickering in the image.	Try adjusting the Exposure Control setting under the Camera Setup part.
H.264 not displayed in the client.	Check that the correct network interface is selected in the Video and Image/Stream.
Multicast H.264 not displayed in the client.	Check with your network administrator that the multicast addresses used by the camera are valid for your network. Check that the Enable multicast checkbox is enabled in the System/Network/RTP tab. Checks with your network administrator to see if there is a firewall preventing viewing.
Multicast H.264 is only accessible by local clients.	Check if your router supports multicasting, or if the router settings between the client and the server need to be configured. The TTL value may need to be increased.
Color saturation is different in H.264 and Motion JPEG.	Modify the settings for your graphics adapter. Please see the adapter's documentation for more information.
Video cannot be recorded.	Check that the SD card is inserted properly. Check that the SD card is formatted properly.

## A.2 Alarm Connection

The following connection diagram gives an example of how to connect a camera.



## A.3 Preventive Maintenance

Preventive maintenance allows the detection and correction of minor issues before they become serious and cause equipment failure. Every three-month:

1. Inspect all connection cables for deterioration or other damage.
2. Clean components with a clean damp cloth.
3. Verify that all the mounting hardware is secure.

## A.4 System Requirement for Web Browser

Item	Recommended	Minimum
OS	Microsoft® Windows 10 (Home, Professional)	Microsoft® Windows 7(x86, x64) (Home Premium)
CPU	intel® Core™ i5-6500	intel® Core™ i3-6100
RAM	8GB or Higher	4GB or Higher
VGA	NVIDIA GeForce GTX 960 or AMD Radeon R9 280X	NVIDIA GeForce GTX 670 or Radeon HD 7970
LAN	Gigabit Ethernet	Gigabit Ethernet

## A.5 General Performance Considerations

When setting up your system, it is important to consider how various settings and situations will affect performance. The following factors are among the most important to consider:

- High image resolutions and/or lower compression levels (or high bitrates) result in larger images and will affect Framerate and bandwidth.
- Accessing both MJPEG and H.264 video streams simultaneously will affect Framerate and bandwidth.
- Heavy network usage due to poor infrastructure will affect Framerate and bandwidth.
- Heavy network usage via a wireless router will affect Framerate and bandwidth.
- Poorly performing client PCs lowers perceived performance.

## A.6 Product Specification

	DWC-MPTZ830XW	DWC-MPTZ336XW
<b>IMAGE</b>		
Image sensor	4K 1/1.7" CMOS sensor	3MP 1/2.8" CMOS sensor
Total pixels	4168 x 3062	2065 x 1565
Active pixels	3840 x 2160	2048 x 1536
Scanning system	Progressive Scan	Progressive Scan
Minimum scene illumination	0.75 lux (color), 0 lux (B/W)	0.35 lux (color), 0 lux (B/W)
<b>LENS</b>		
Focal length and lens type	6-180mm motorized zoom PTZ lens	4.6-165.6mm motorized zoom PTZ lens
mIR distance	1148ft (350m) range	1148ft (350m) range
Angle of view	55.4-2.7°	58.1-1.9°
Digital zoom / zoom	30x optical zoom	36x optical zoom
<b>I/O</b>		
Audio input / output	1/1, User-defined 3 audio files	
Audio compression	G.711	
Alarm input/ output	4/1	
Manual triggers	4 Programmable triggers	
<b>OPERATIONAL</b>		
Shutter mode	Auto, flicker-free mode,	
Shutter speed	1/10,000-1sec	
Backlight	Yes	
De-fog	Yes	
Wide dynamic range (WDR)	True WDR, 120dB	
Smart DNR™ 3D digital noise reduction	2DNR, 3DNR	
White balance	Auto, manual	
Day and night	Auto, day (color), night (B/W)	
Mirror / flip	Yes	
Privacy zones	16 programmable privacy masks	
Motion detection	16 programmable motion zones (8 include areas and 8 exclude areas)	
Memory slot	Micro SD / SDHC / SDXC card. (card not included)	
SD card recording mode	Event and continuous recording	
Event buffering - FTP	Pre: 30sec, Post: 30sec	
Event buffering - SD card	Pre: 10sec, Post: 60sec	
Alarm notifications	Notifications via e-mail, FTP server, alarm output, audio output, preset, notification server, XML notifications or SD card recording.	
<b>PTZ FUNCTION</b>		
Pan range	360° endless	
Pan and tilt speed	Max. 380°/sec. (preset)	
Tilt range	-10-190°	
Preset	256	
Tours and patterns	8 each	
Home function	Yes	
<b>NETWORK</b>		
LAN	RJ-45 (10/100Base-T)	
Video compression type	H.265 (main profile), H.264 (baseline, main, high profile), MJPEG	
Resolution	3840x2160, 3072x2048, 2592x1944/1520, 2560x1440, 1920x1080, 1440x1080, 1280x1024/720, 1024x768, 800x600/480, D1, 640x480, 400x240, CIF	2048x1536, 1920x1080, 1440x1080, 1280x1024/720, 1024x768, 800x600/480, D1, 640x480, 400x240, CIF
Video bitrate	100Kbps - 8Mbps, multi-rate for preview and recording	
Smart codec	Hi-stream	
Bitrate control	Multi-streaming CVBR/VBR at H.265, H.264 (controllable frame rate and bandwidth)	
Frame rate	Up to 30fps at all resolutions	

<b>Streaming capability</b>	Quad stream (H.265x3 / H.264, MJPEGx1)
<b>IP</b>	IPv4, IPv6
<b>Protocol</b>	TCP/IP, UDP, HTTP, HTTPS, QoS, FTP, UPnP, RTP, RTSP, RTCP, DHCP, ARP, Zeroconf, Bonjour
<b>Security</b>	Password authentication, multi-user authority, IP filtering, HTTPS (SSL)
<b>Maximum user access</b>	Live: 10 users, playback: 3 users
<b>ONVIF conformance</b>	Yes
<b>Web viewer</b>	OS: Windows®, MAC® OS, Linux®
	Browser: Internet Explorer®
<b>Network time sync</b>	NTP server, synchronized computer, manual
<b>Software reset</b>	Restart, reset, factory default
<b>Remote upgrade</b>	Backup and restore
<b>ENVIRONMENTAL</b>	
<b>Operating temperature</b>	-22°F - 131°F (-30°C - 55°C )
<b>Operating humidity</b>	0-90% RH (non-condensing)
<b>IK rating / IP rating</b>	IK-10 impact-resistant / IP66-rated weather and tamper-resistant
<b>Other certifications</b>	CE, FCC, RoHS
<b>ELECTRICAL</b>	
<b>Power requirement</b>	PoE (UPoE, Class 4), DC 12V
<b>Power consumption</b>	PoE: 28W, 500mA, DC 12V: 28W, 2.3A
<b>MECHANICAL</b>	
<b>Material</b>	Aluminum PTZ, polycarbonate dome
<b>Dimensions</b>	7.94" x 12.51" (201.8 x 317.8 mm)
<b>Weight</b>	Approx. 11.24 lbs (5.1 Kg)

\* Specifications are subject to change without notice.

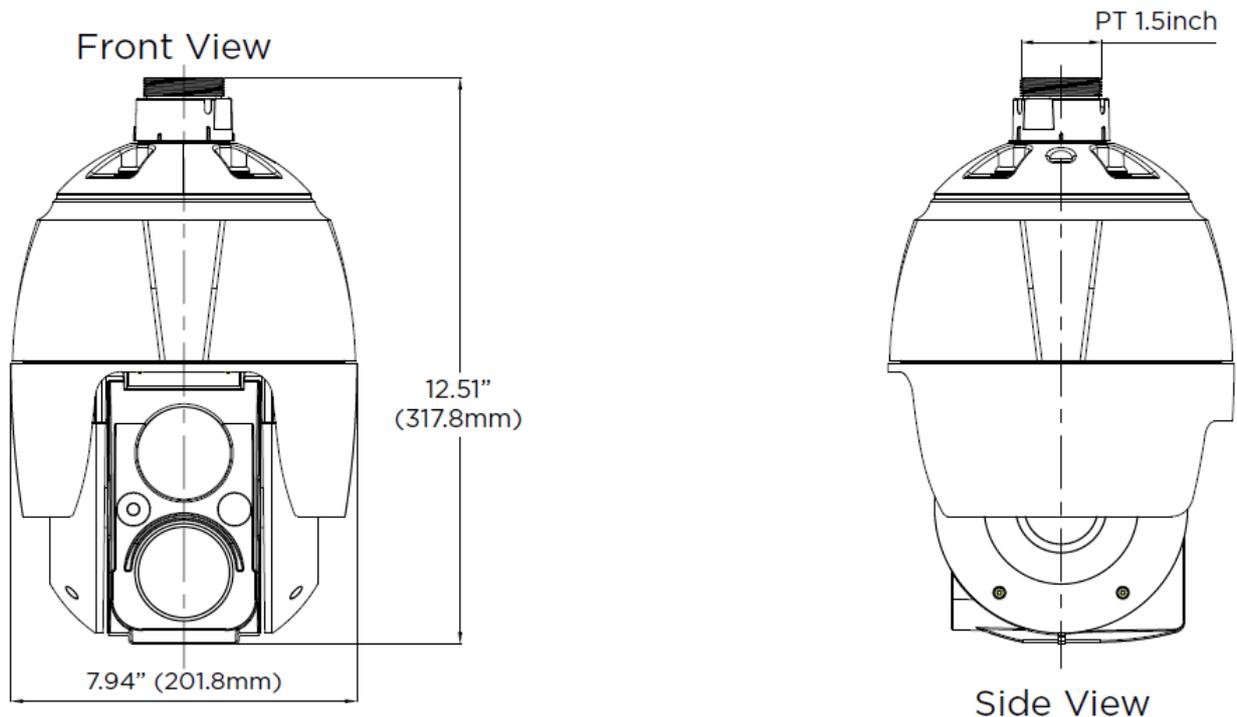


Figure - Dimensions

# Warranty Information

---

**Digital Watchdog** (referred to as “the Warrantor”) warrants the Camera against defects in materials or workmanships as follows:

**Labor:** For the initial two (2) years from the date of original purchase if the camera is determined to be defective, the Warrantor will repair or replace the unit with new or refurbished product at its option, at no charge.

**Parts:** In addition, the Warrantor will supply replacement parts for the initial two (2) years.

To obtain warranty or out of warranty service, please contact a technical support representative at 1+ (866) 446-3595, Monday through Friday from 9:00AM to 8:00PM EST.

A purchase receipt or other proof of the date of the original purchase is required before warranty service is rendered. This warranty only covers failures due to defects in materials and workmanship which arise during normal use. This warranty does not cover damages which occurs in shipment or failures which are caused by products not supplied by the Warrantor or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, setup adjustments, improper antenna, inadequate signal pickup, maladjustments of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, rental use of the product or service by anyone other than an authorized repair facility or damage that is attributable to acts of God.

# Limits & Exclusions

---

There are no express warranties except as listed above. The Warrantor will not be liable for incidental or consequential damages (including, without limitation, damage to recording media) resulting from the use of these products or arising out of any breach of the warranty. All express and implied warranties, including the warranties of merchantability and fitness for particular purpose, are limited to the applicable warranty period set forth above.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights from vary from state to state.

If the problem is not handled to your satisfaction, then write to the following address:

Digital Watchdog, Inc.  
ATTN: RMA Department  
16220 Bloomfield Ave  
Cerritos, CA 90703

Service calls which do not involve defective materials or workmanship as determined by the Warrantor, in its sole discretion, are not covered. Cost of such service calls are the responsibility of the purchaser.



*Complete Surveillance Solutions*

DW® east coast office and warehouse: 5436 W Crenshaw St, Tampa, FL 33634

DW® west coast office and warehouse: 16220 Bloomfield Ave., Cerritos, California, USA 90703

PH: 866-446-3595 | FAX: 813-888-9262

[www.Digital-Watchdog.com](http://www.Digital-Watchdog.com)

[technicalsupport@dwcc.tv](mailto:technicalsupport@dwcc.tv)

Technical Support PH:

USA & Canada 1+ (866) 446-3595

International 1+ (813) 888-9555

French Canadian 1+ (514) 360-1309

Technical Support hours: Monday-Friday 9:00am to 8:00pm Eastern Standard Time