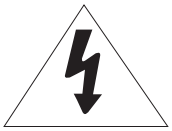
MEGApix® 3MP PTZ IP Camera
DWC-MPTZ336XW

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 shoc hazard, do not expose this appliance to rain or moisture.

WARNING

1. Be sure to use only the standard adapter that is specified i the specification sheet. Using any other adapter could caus 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 th 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 o 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 sorce 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 form 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.

FC CE

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 interferenece at his own expense.

Contents

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

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

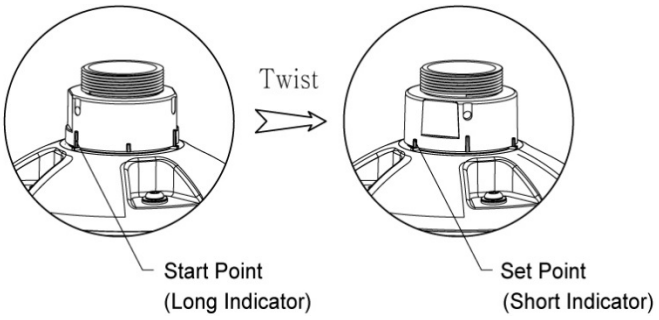
2 Installation

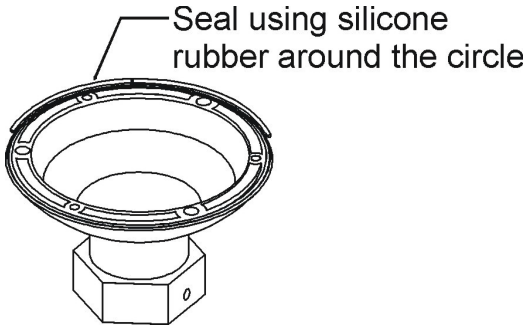
2.1 Preparing the camera

An additional mounting accessory (sold separately) is required to complete the installation.

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

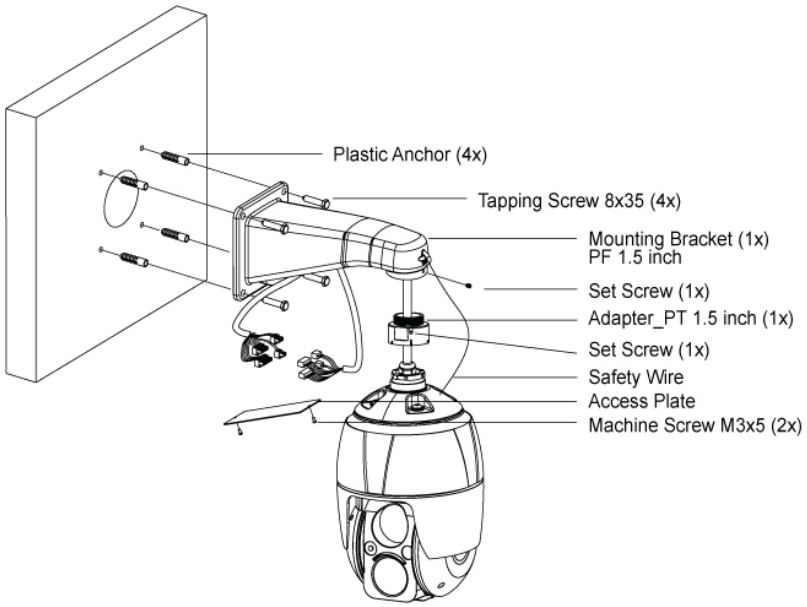


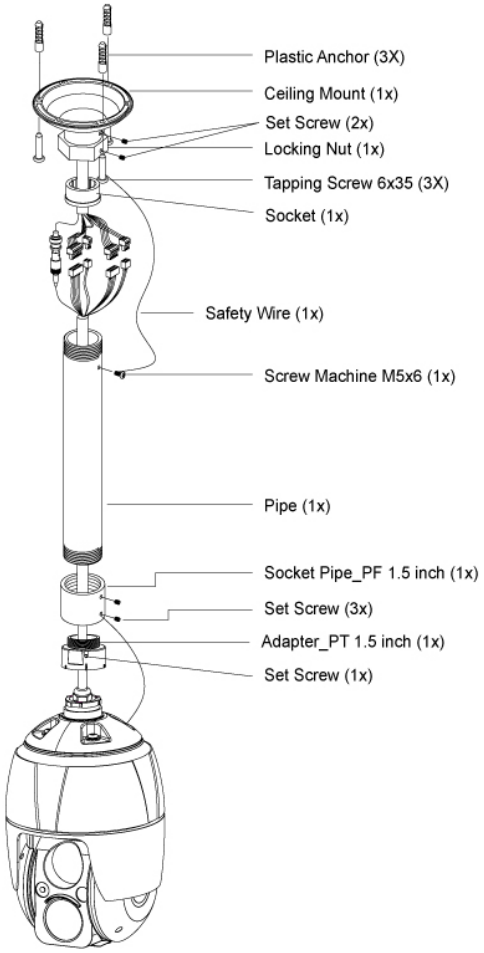


CAUTION 2: When installing the camera in an environment colder than 14°F (-10°C), reset the camera 30 ~ 60 minutes after the installation.

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 the PTZ camera.

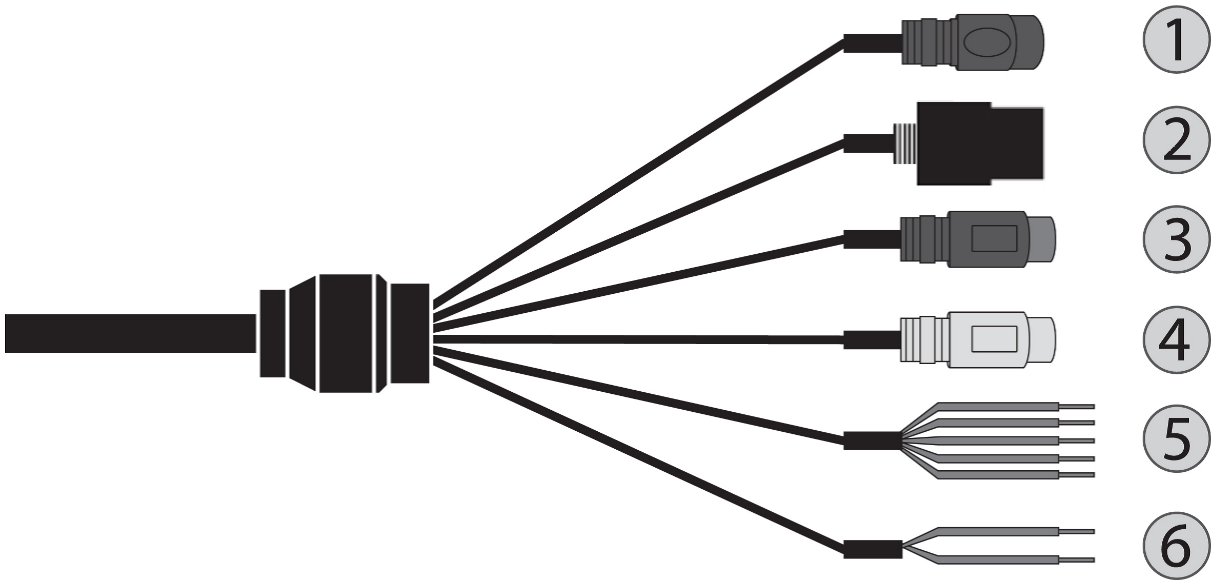




1. Using the mounting template or the mounting accessory itself, mark and drill the necessary holes in the mounting surface.
2. Pull all cables through the mounting accessory. See 2.2 Cabling the camera for more information.
3. Attach the wall mounting bracket to the mounting surface using plastic anchors and M8x35 screws. For a ceiling mounting bracket installation, use the plastic anchors to secure it to the mounting surface.
4. Wind both ends of the pipe threading 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, then pull the cables through the rectangular access hole.
7. Attach the 1.5" adapter to the mounting bracket and affix 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 of the mounting bracket.
10. Connect the camera to the mounting bracket by turning it clockwise into the adapter, then affix 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 and follow all local and federal electrical codes 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 the external mic to the audio input line.

- Connecting Power

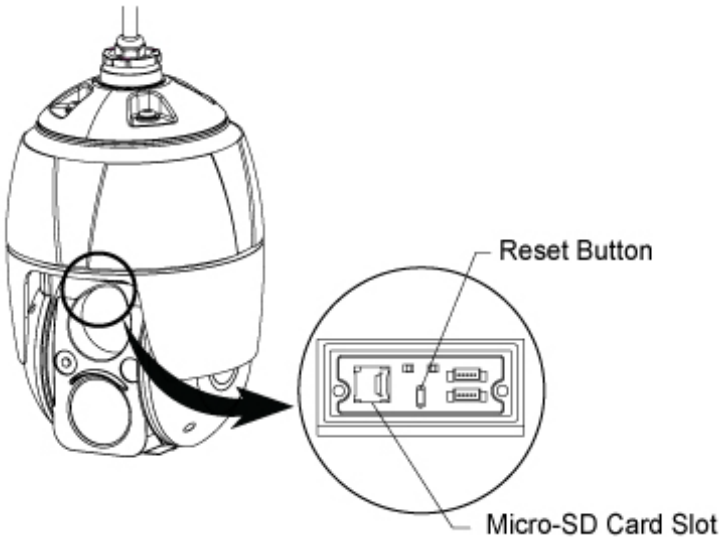
  - 12VDC
    Connect the power (12VDC) for the camera. Connect the positive (+) pole to the '+' position and the negative (-) pole to the '-' position.
    NOTE: Be careful not to reverse the polarity when you connect the power cable.
  - PoE
    If you use PoE to supply power to the camera, use the PoE injector included with the PTZ camera, or a switch greater than 30W.
    NOTE: Be careful not to reverse the polarity when you connect the power cable.

2.3 Connections

SD card insertion

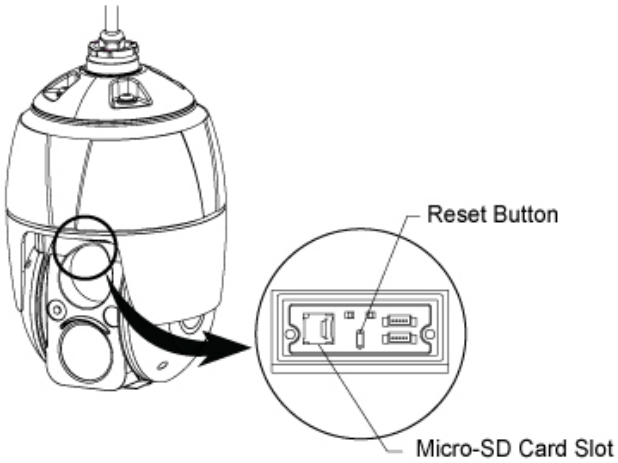
Users can insert and remove an SD card as shown in the following picture.

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 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 2-3 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 factory resetting the camera, all settings are lost (Default IP: 192.168.30.220).

3 Web viewer

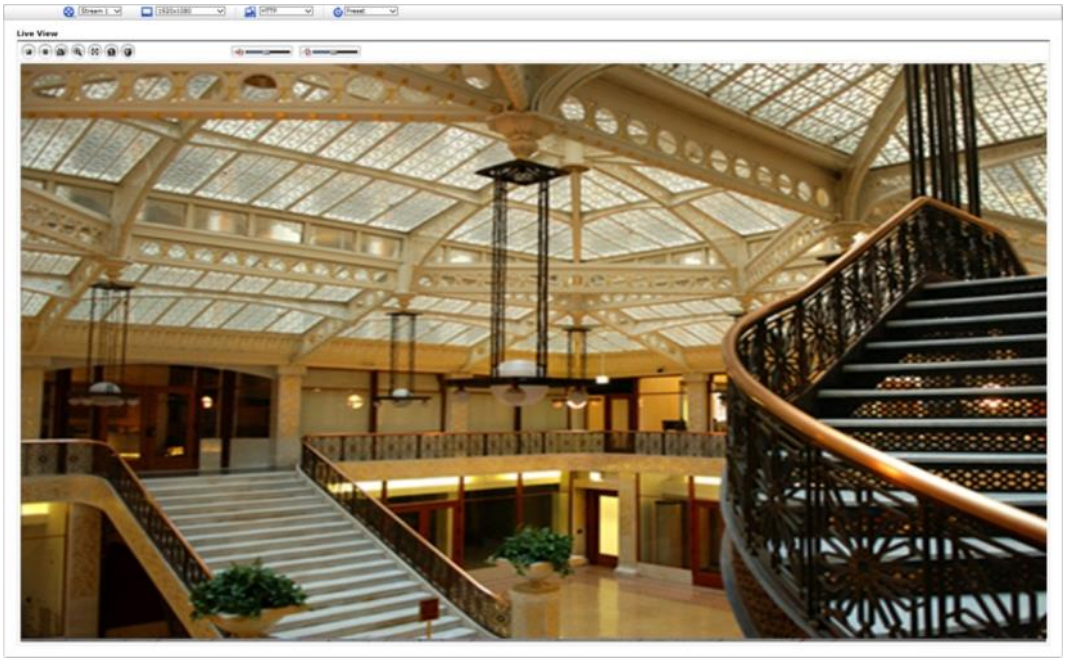
The camera can be used with the Windows® operating system and browsers. The recommended browsers are Internet Explorer, Safari, Firefox, Opera and Google Chrome.

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. A starting page will display. Click Live View, Playback, or Setup to enter that web page.

Example: The camera's Live View page as it appears in a 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 of the camera, 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.

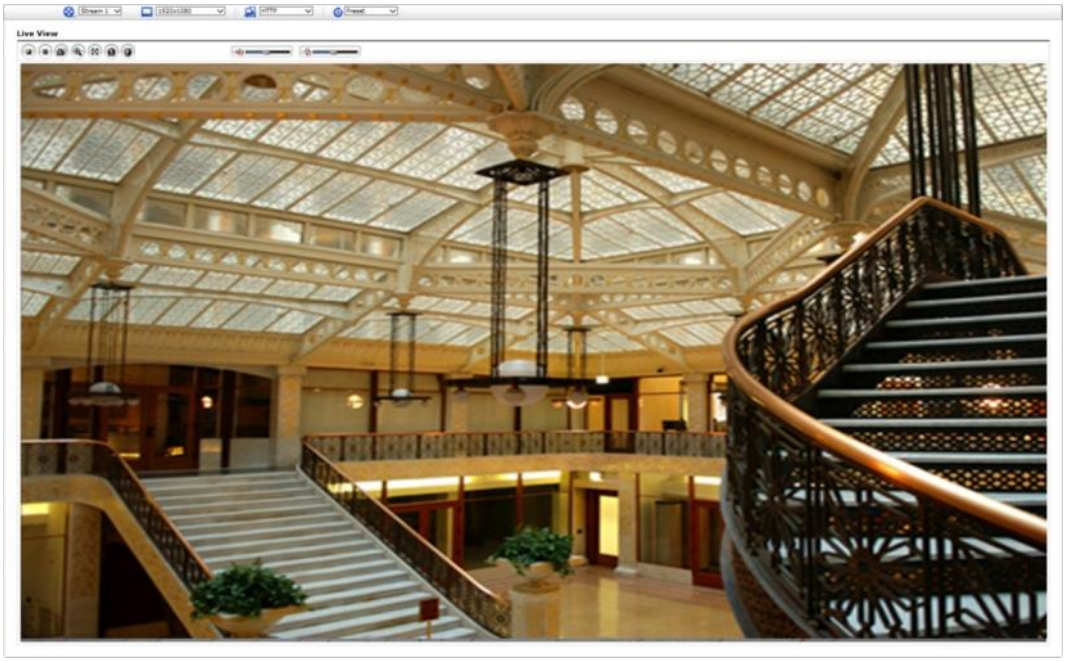
NOTE: The default administrator user name and password is “admin”. If the password is lost, the camera must be reset to the factory default settings. Please see “Resetting to the factory default settings”.

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.

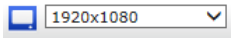
NOTE: HTTPS (Hypertext Transfer Protocol over SSL) is a protocol used to encrypt the traffic between web browsers and servers. The HTTPS certificate controls the encrypted exchange of information.

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



2. Control toolbar

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

The **Speaker** button activates/deactivates external speakers.

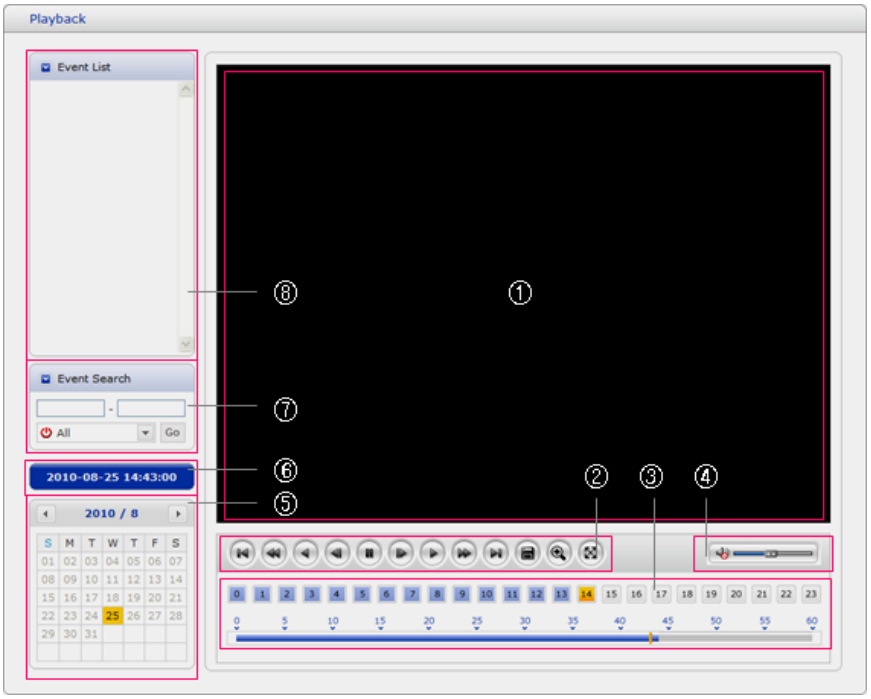
The **Mic** button activates/deactivates microphone input.

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.












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

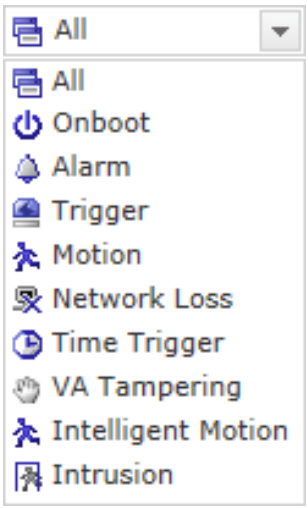
   Search results from the SD local storage in the camera connected are displayed monthly. If there is a recorded data for a specific date, a blue square on the date will be displayed. If you select a specific date in the calendar, a yellow square on the date will be displayed.

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.

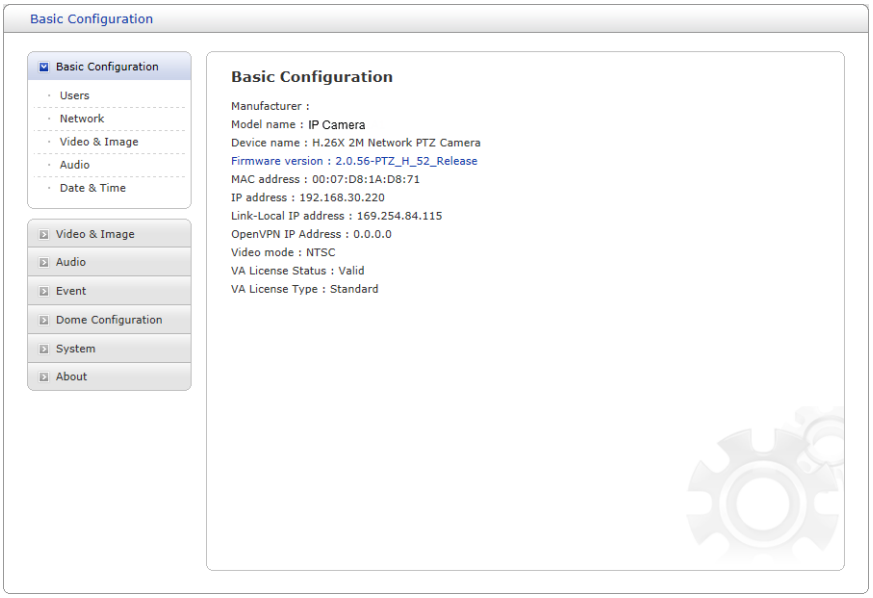
The administrator has unrestricted access to all the Setup tools, whereas Operators have access to the settings of Basic Configuration, which are Live View, Video and Image, Audio, Event, Dome Configuration*, and System.

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

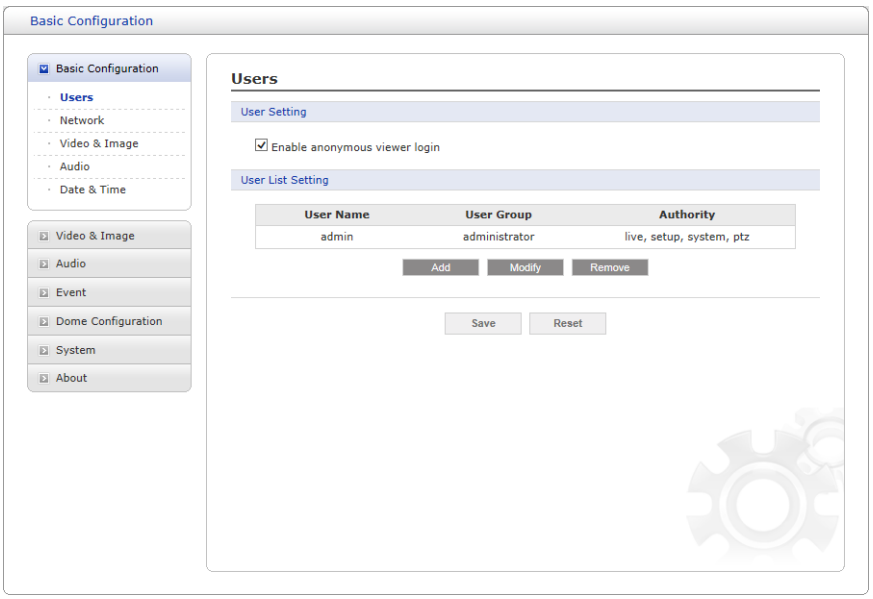
You can see the device information on this information page.



NOTE: Dome Configuration is available only through Internet Exploerer.

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):

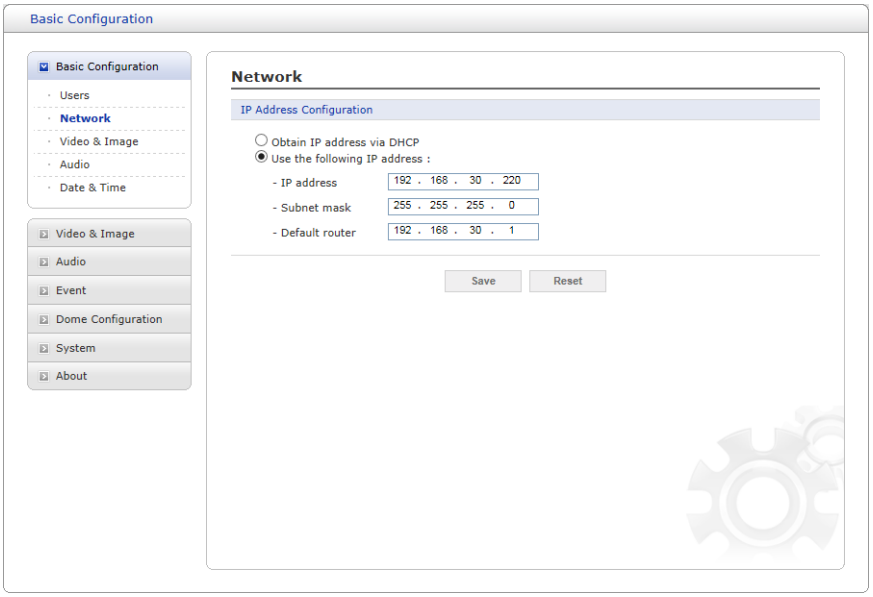
User Group	Authority
Guest	The lowest level of access, which only allows access to the Live View page.
Operator	View the Live View page, create and modify events, and adjust certain other settings. Operators have no access to System Options.
Administrator	An administrator has unrestricted access to the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



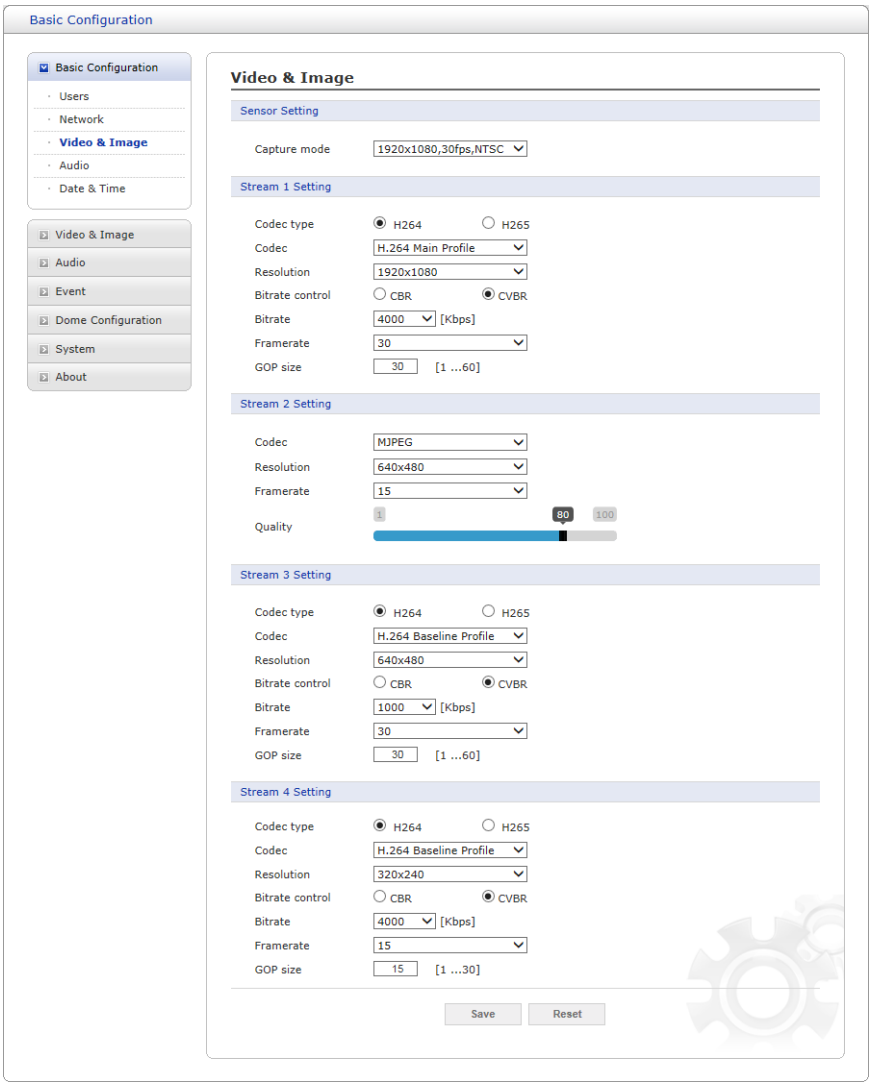
- Obtain IP address via DHCP: Dynamic Host Configuration Protocol (DHCP) is a protocol that lets network administrators centrally manage and automate the assignment of IP addresses on a network. DHCP is enabled by default. Although a DHCP server is mostly used to set an IP address dynamically, it is 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.

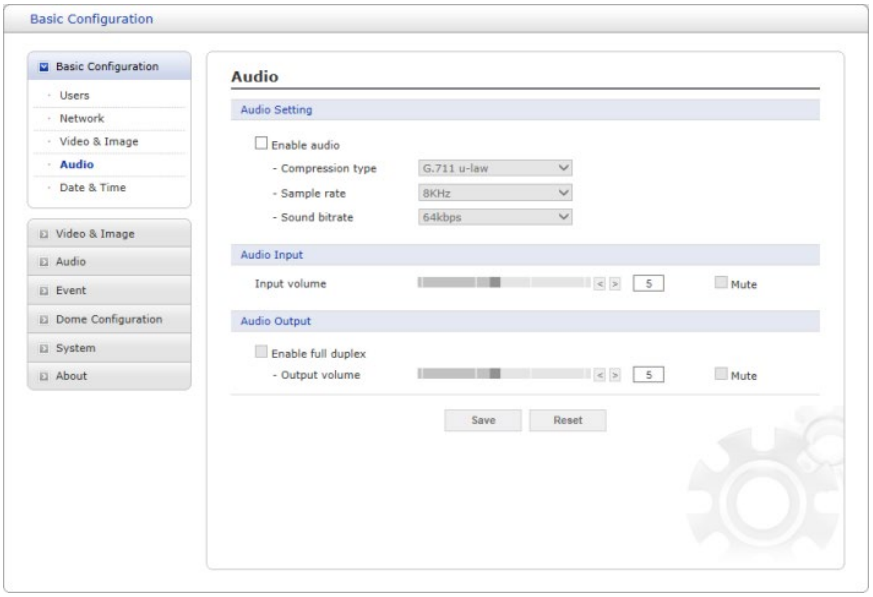
Video and Image

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



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

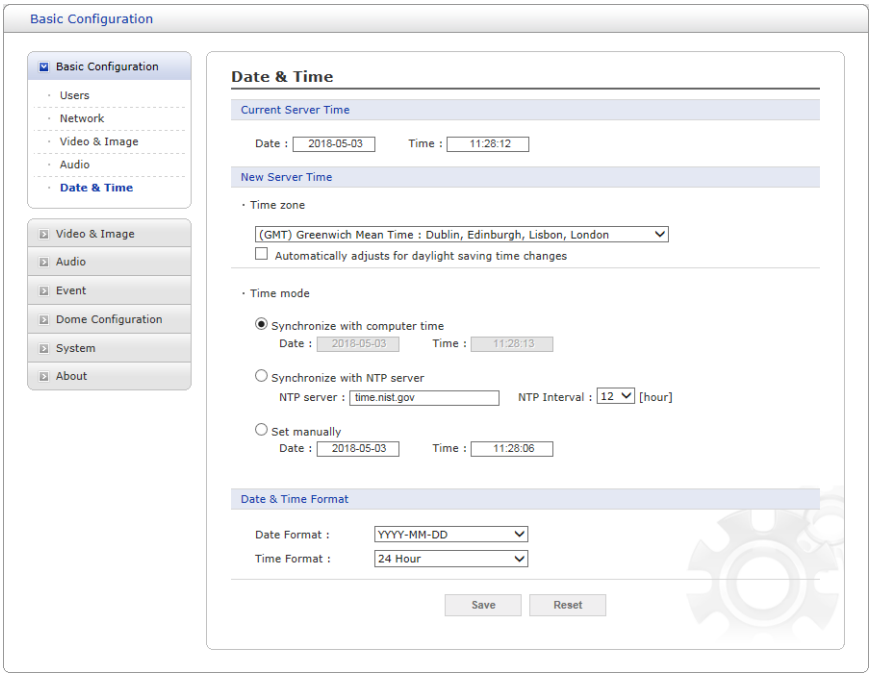
Audio



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

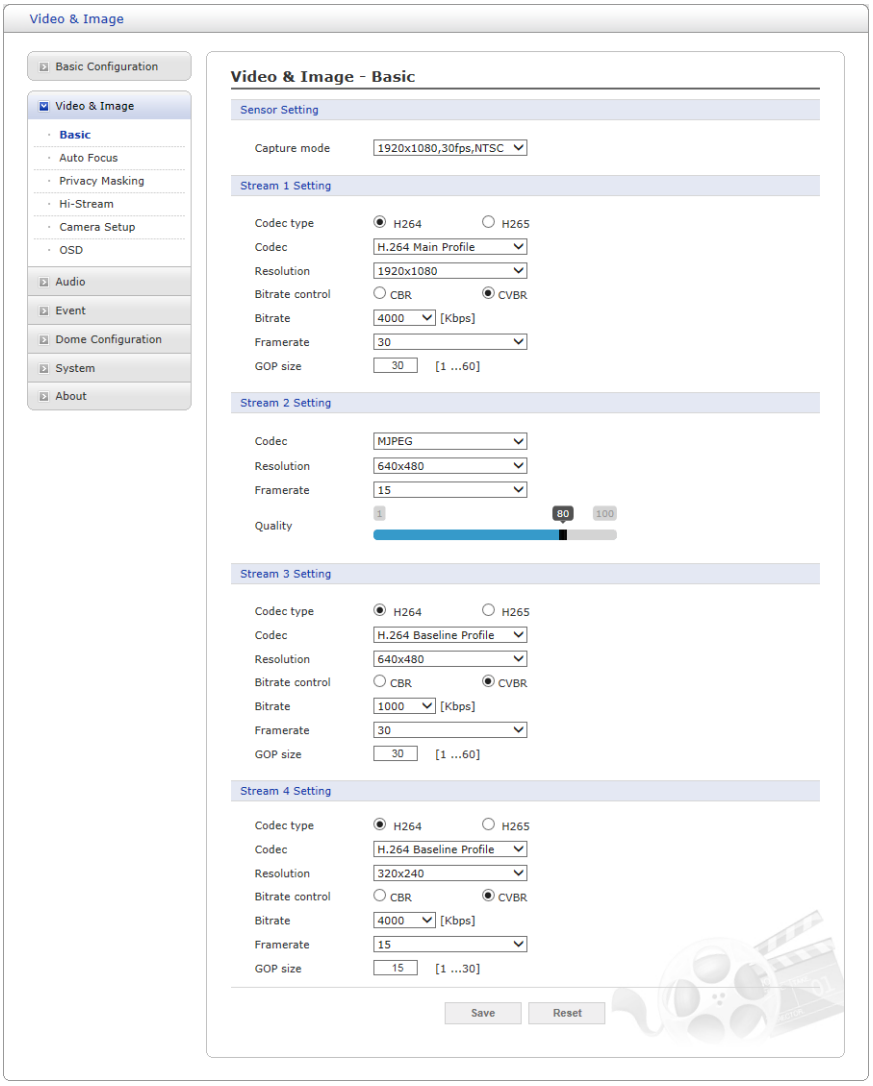


Users can set time directly or assign a time server to get the current time, as well as determine Date and Time format on this page.

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

3.6.2 Video and Image

Basic



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:

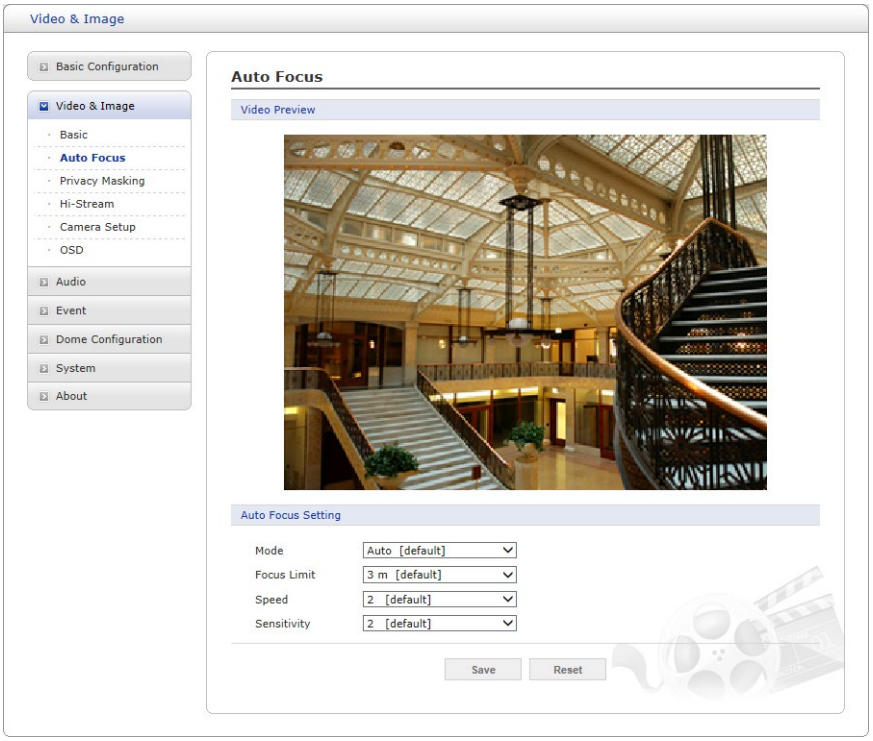
Sometimes the image size is large due to low light or complex scenery. Adjusting the frame rate and quality helps to control the bandwidth and storage used by the Motion JPEG video stream in these situations. Limiting the frame rate and quality optimizes bandwidth and storage usage but may give poor 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



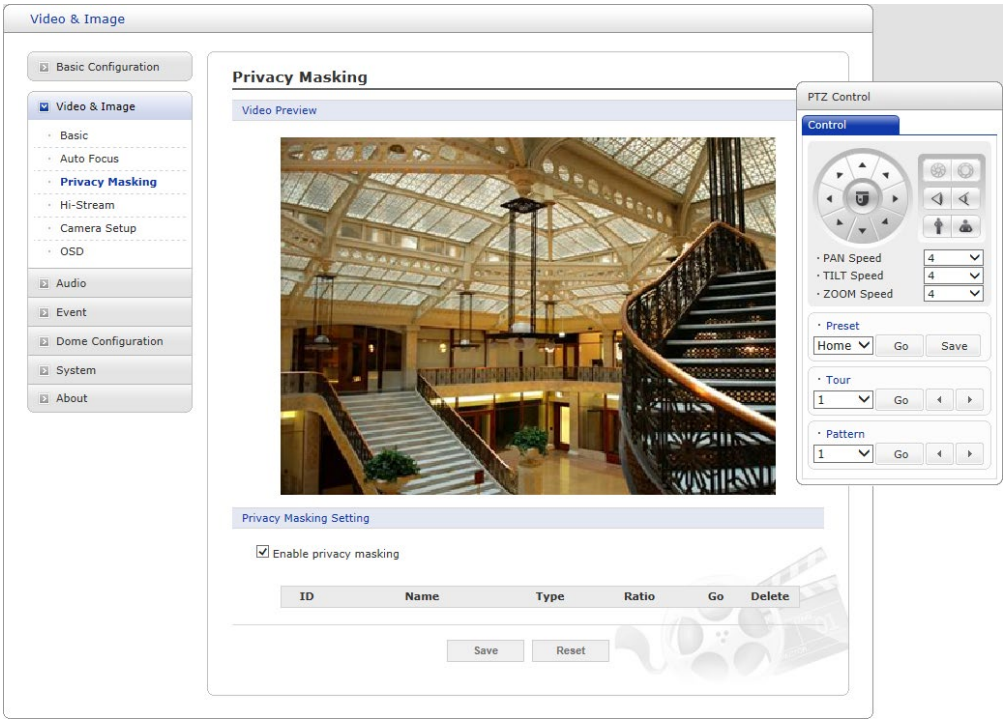
- **Mode:** Determines the focus operation method.
    - **Auto:** Autofocus is always active.
    - **Manual:** Manual focus is always a fixed focus.
    - **One Push:** Manual focus mode except that autofocus is activated only after the camera movement stops and lasts for about 5 seconds.
- **Focus 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 function. 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

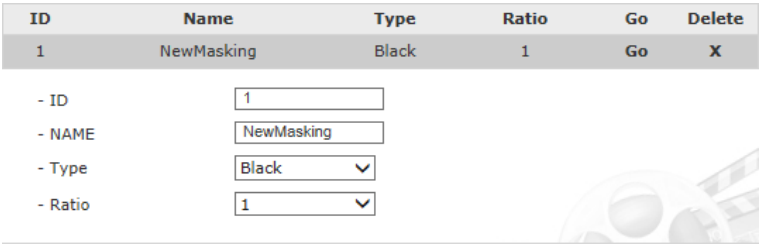


The privacy masking function allows you to mask parts of the video image to be transmitted. You can set up to sixteen privacy masks. Only up to 8 privacy masks can be displayed on one screen.

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

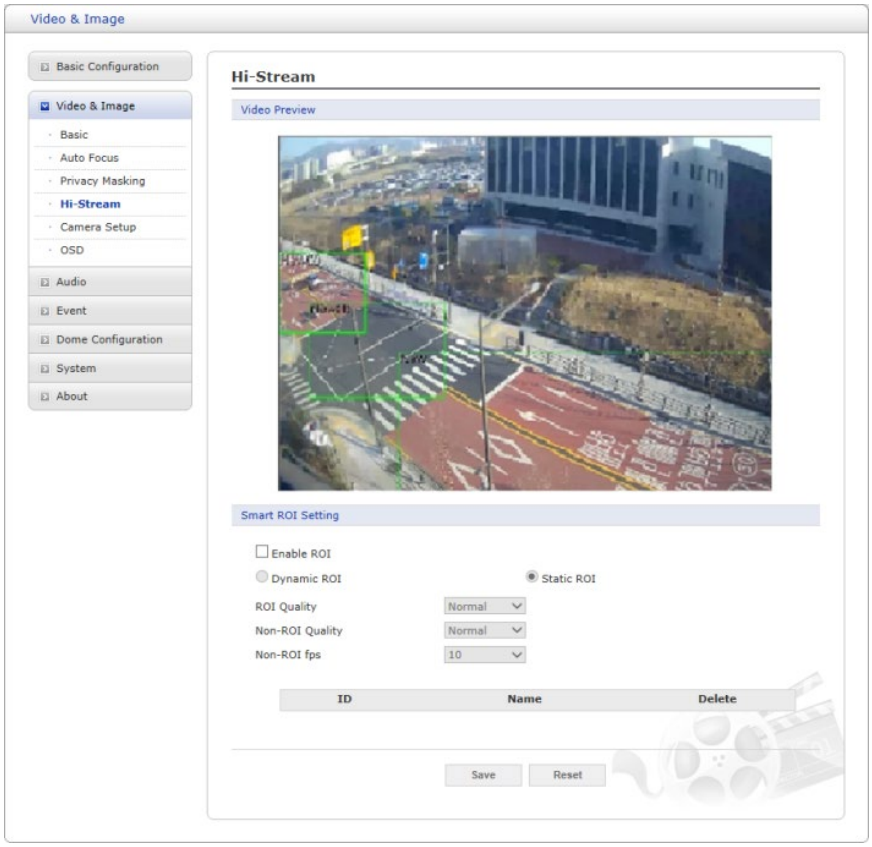


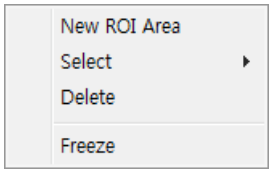
  - ID: Masking number, 1~16
  - Name: Masking name
  - Type: Masking color
  - Ratio: Minimum zoom magnification to display the masking, the masking will be displayed only when the set magnification meets the ratio setting.
  - Go: When you click the Go button, the saved masking is moved to the center of the screen.

Click 'Save' to save the settings, or click 'Reset' to clear all of the masking 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 in the preview window or in the list.

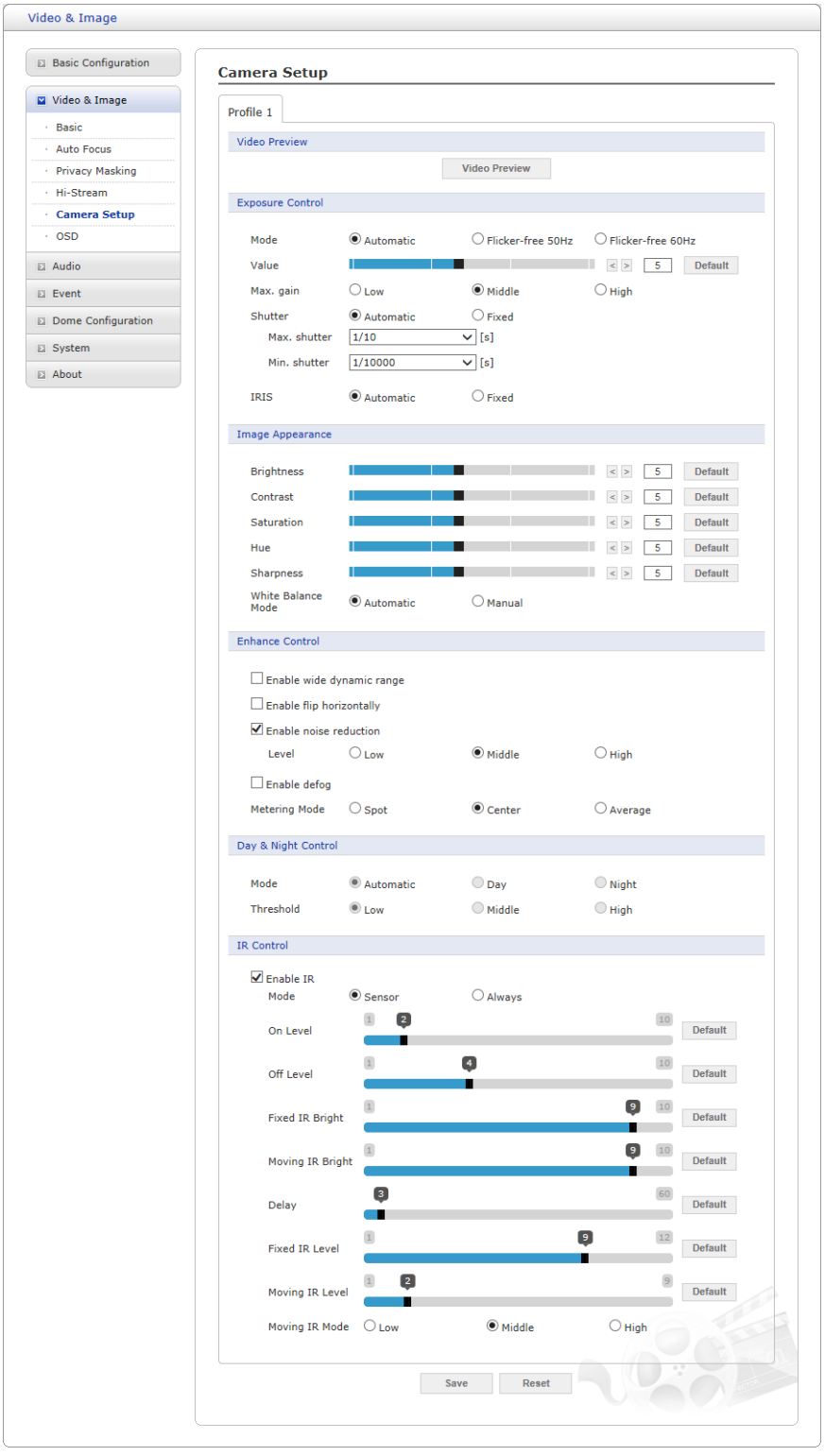
Delete: Users can delete selected zone via right mouse click selection for a selected box, or click any one of the **X** buttons in the zone list.

- **Enable ROI:** Select "Enable ROI" to active 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.

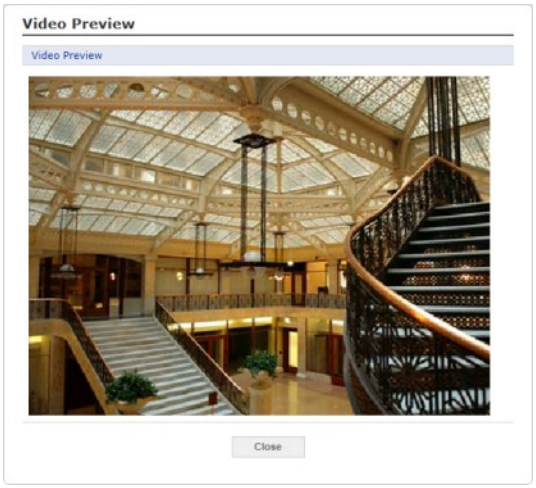
Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

Camera Setup

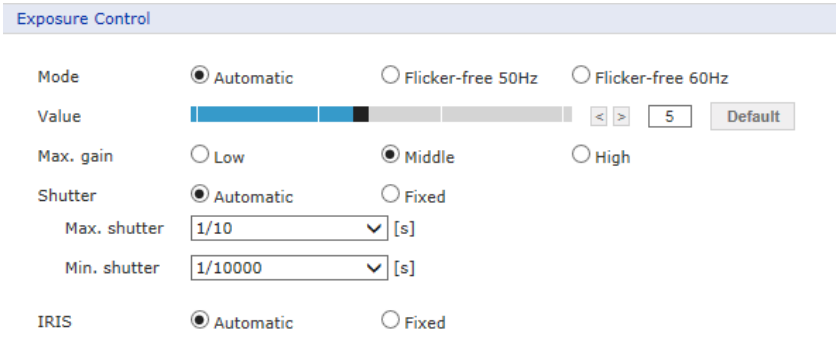
On this page, the user can adjust the exposure control, image appearance, enhance control, day and night, and IR control of the camera.



Video Preview:
View a live preview of the camera's video, based on changes to the settings.



Exposure Control:



- **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 threshold.
- **Max. gain:** Sets maximum gain threshold.
- **Shutter:** Determines shutter mode, between an automatic or fixed option.
    - **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 moving 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.

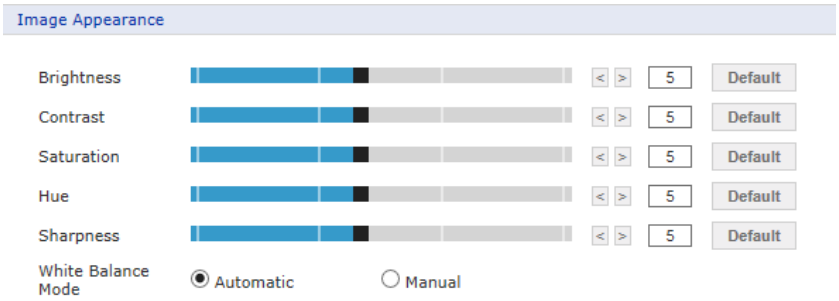
NOTE: When the shutter speed is manually selected, the screen may appear to be saturated or dark, depending on the settings.

- **IRIS:** Determines Iris mode between an automatic or a fixed setting.

IRIS F-number: Select Iris F-number if Iris is in Fixed mode.

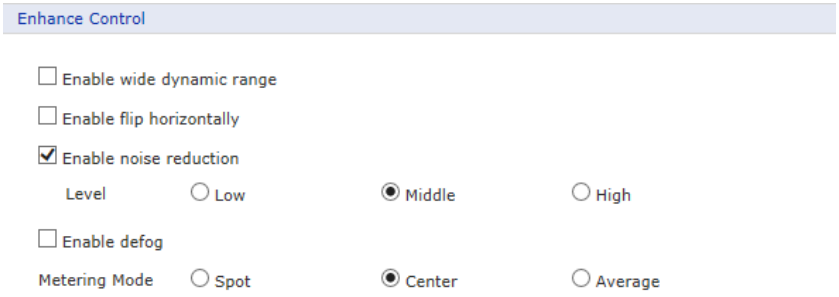
Image Appearance:

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



- **Brightness:** The image's brightness can be adjusted, ranging from 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, ranging from 1 ~ 10.
- **Saturation:** Set an appropriate value ranging from 1 ~ 10. Lower values mean less color saturation.
- **Hue:** Set an appropriate value ranging from 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 the white balance mode that fits the camera installation environment. In the case of Manual mode, the user can set R, G, B gain manually.

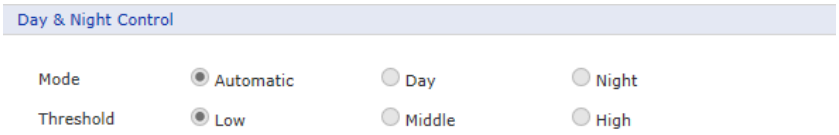
Enhance Control:



- **Enable wide dynamic range:** Activates WDR, which cannot be used with the Defog function enabled. If WDR is activated, shutter mode switches to automatic mode.
- **Enable flip horizontal:** Check this box to flip the image.
- **Enable noise reduction:** Check this box to activate the Noise Reduction function. 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 reflected off of a subject to determine the required exposure setting.

Day and Night Control:

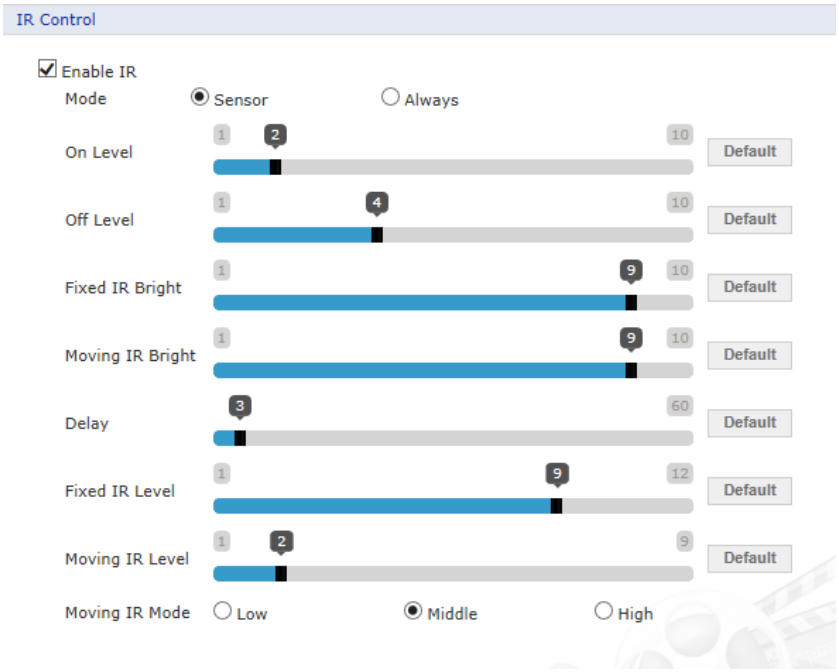
Users can set up the Day and Night operation mode from an Automatic, Day, or Night option.



- Mode:
  - Automatic: Normally displays color image, then switches automatically to a black and white image after the ambient light level falls below the pre-defined DN 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 the Day and Night modes.

IR Control:

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



- Enable IR: If this box is unchecked, the IR illuminators are disabled. When checked, the IR illuminators are enabled and 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 adjusted according to the ambient illumination of the camera's environment.
  - Always: Activates the IR illuminators. Video will always display 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 before the IR illuminators divert between activation and deactivation. (1 ~ 60)
- **Fixed IR Level:** Fixed IR illuminator automatically turns off at a specified level during 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 during 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. The smaller the size, the more focused and brighter the illumination will be in the center of the image. However, the edge area becomes darker as well.

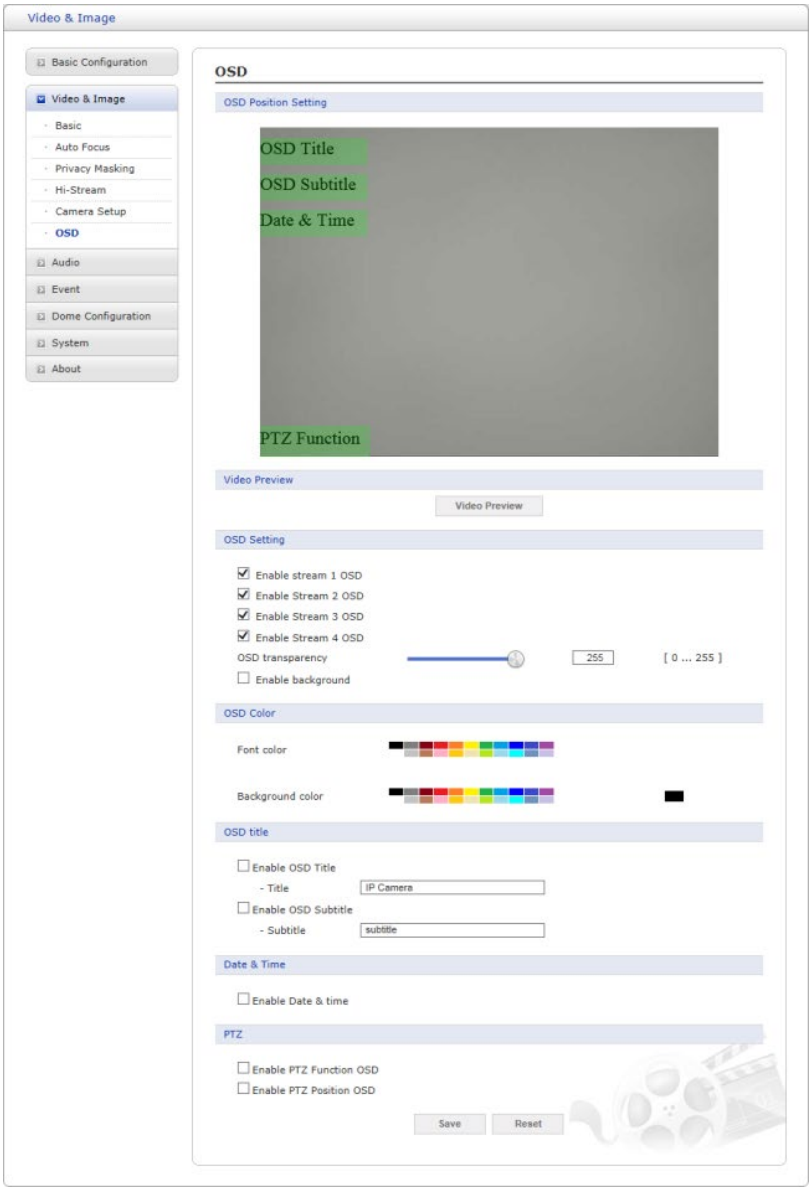
NOTE 1: On level, Off level, and Delay are activated at Sensor Mode only.

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

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

OSD

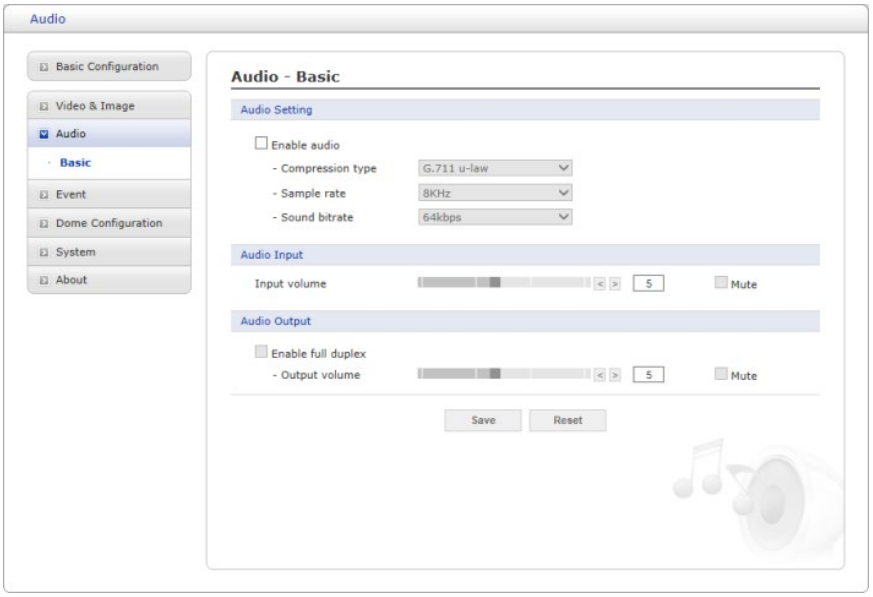
This camera provides four OSD's (on-screen display) on each stream. Users can drag "OSD Title", "OSD Subtitle", "Date and Time" and "PTZ Function" to the desired positions and check at the preview window.



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

NOTE: Changes in this page immediately affects the video stream.

3.6.3 Audio



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

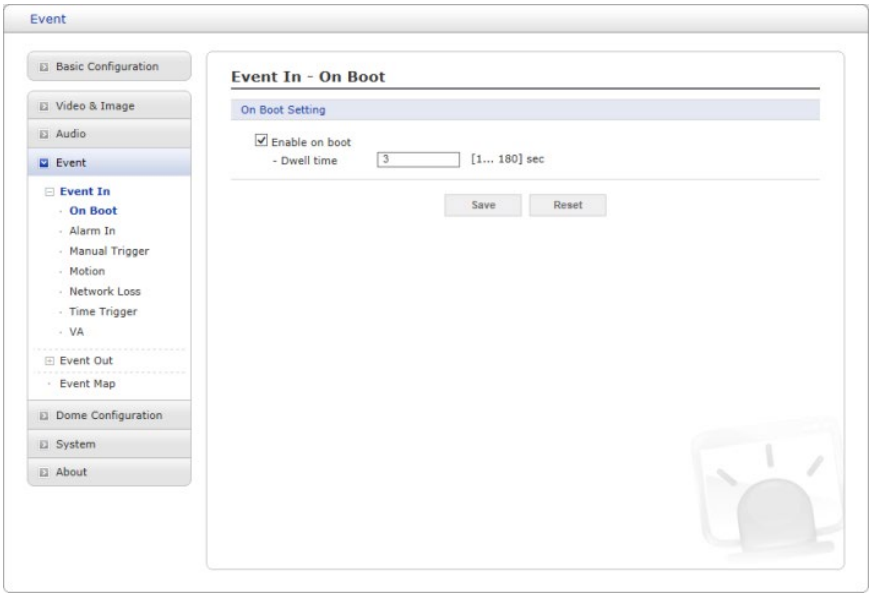
- Audio Setting:
    - **Enable audio:** Check the box to enable audio in the video stream.
    - **Compression type:** G.711 μ-law
    - **Sample rate:** 8KHz
    - **Sound bit rate:** 64kps
- **Audio Input:** Audio from an external microphone can be connected to the cable of the camera.
    - **Input 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, through an open connection 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 that supports full-duplex audio.
    - Uncheck the box to use Simplex mode. The simplex mode only transmits audio from the camera to its web client. It will not receive audio from other web clients.
    - **Output volume:** Adjust the output gain for the active speaker that is 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

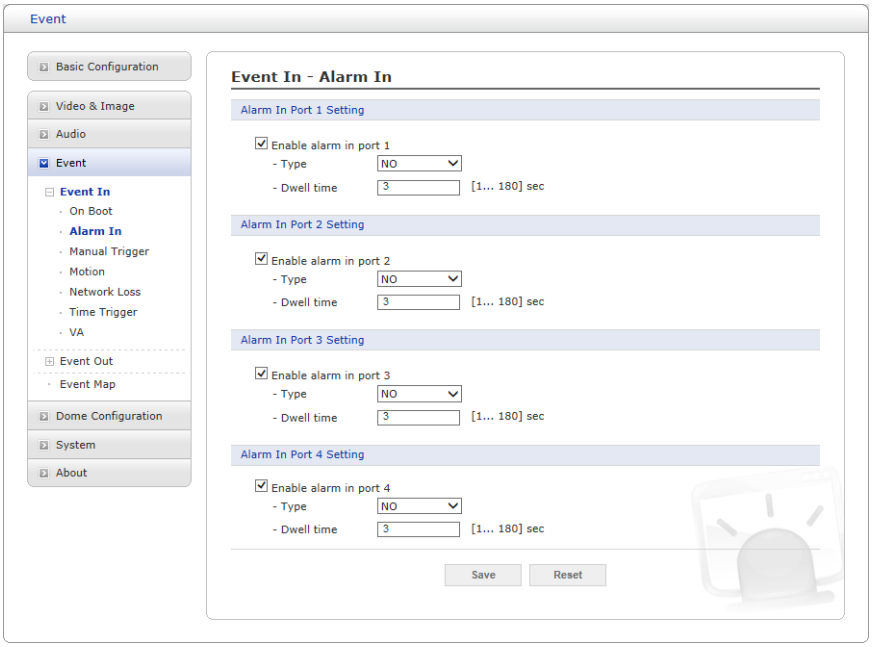


Trigger an event every time the camera is started. Select “Enable on boot” to activate.

Enter the dwell time that the event lasts for from the point of detection, 1 ~ 180 seconds.

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

▽ Alarm In

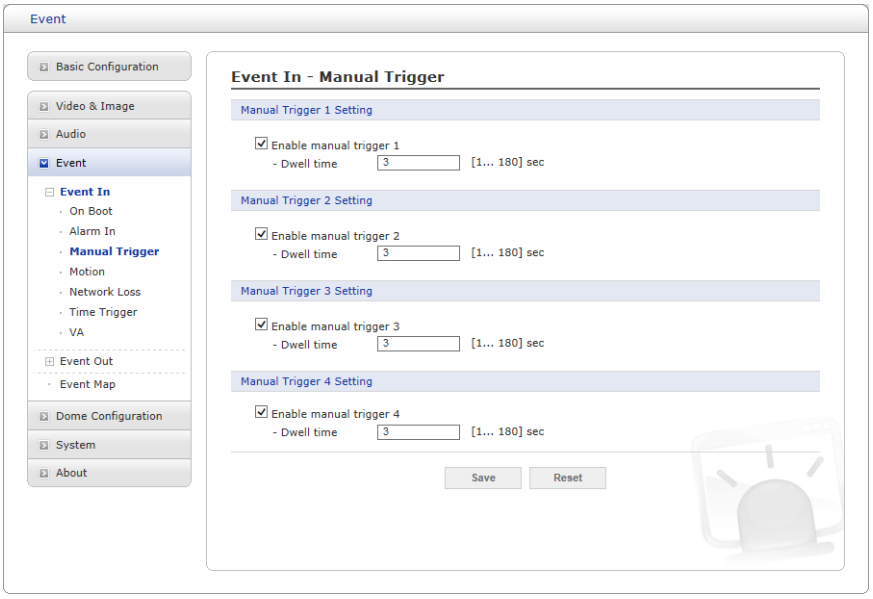


The camera has 4 alarm inputs. To use an alarm port, check the “Enable alarm port #” first.

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

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

▽ Manual Trigger



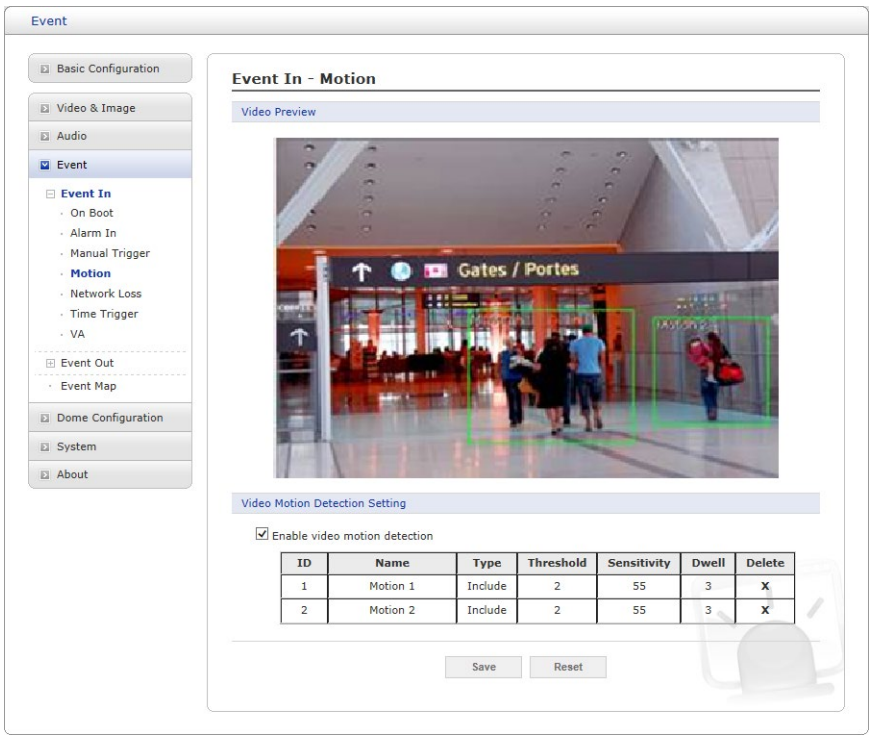
This option makes use of the Manual Trigger button provided on the Live View page, which is used to start or stop the event type manually. Alternatively, the event can be triggered via the product's API (Application Programming Interface).

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

Set the dwell time for how long the trigger will last.

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

∇ Motion



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

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

Select **New Motion**, then click-and-drag to generate an **Include** box (green color).

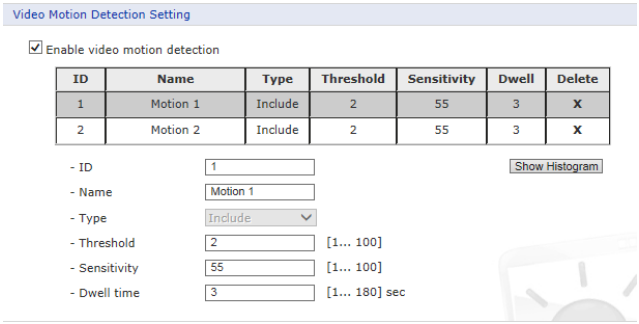
Select **New Mask** and click-and-drag to generate an **Exclude** box (orange color).

Drag the corner or line to resize the boxes.

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

NOTE: VA Motion will be automatically turn off when enabling Motion Detection.

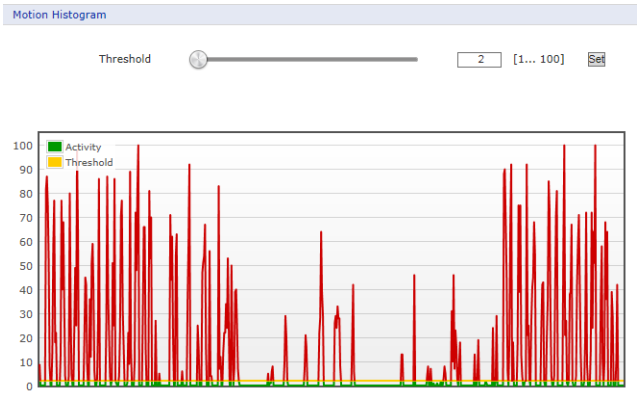
- **Zone List**



  - **ID:** Order of generation, **Include** 1 ~ 8, **Exclude** 9 ~ 16.
  - **Name** User-definable zone name.
  - **Type:** Shows zone type. This setting cannot be changed.
  - **Threshold:** Determines how large the motion in the zone must be to trigger events.
  - **Sensitivity:** Users can change the sensitivity of this function, where a higher

value increases the detection sensitivity.

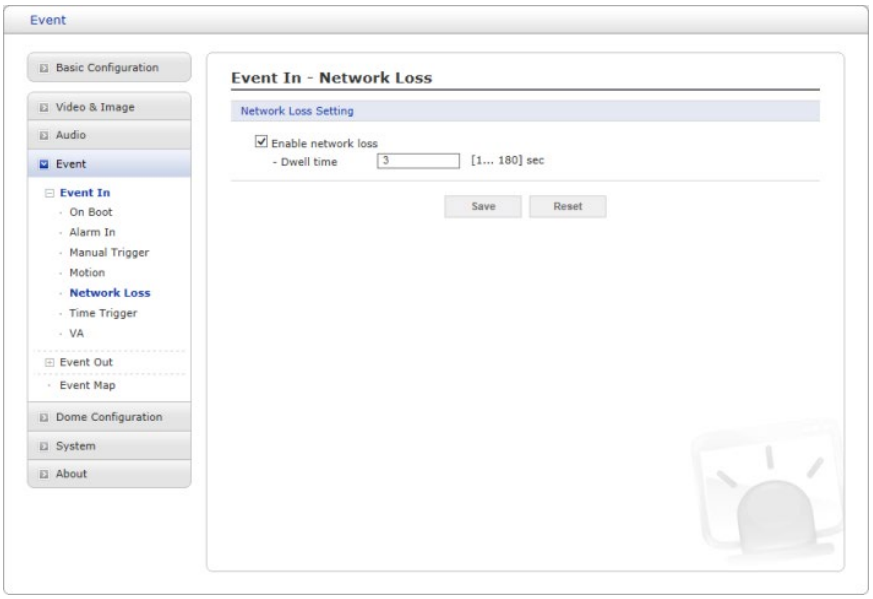
- **Dwell time:** Determines how long the triggered event holds from the last trigger.
- **Show Histogram:** This camera provides a live histogram for easy set up of the threshold level in the motion window. The pop-up window shows activity strength and threshold level, where the user can determine the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



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

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

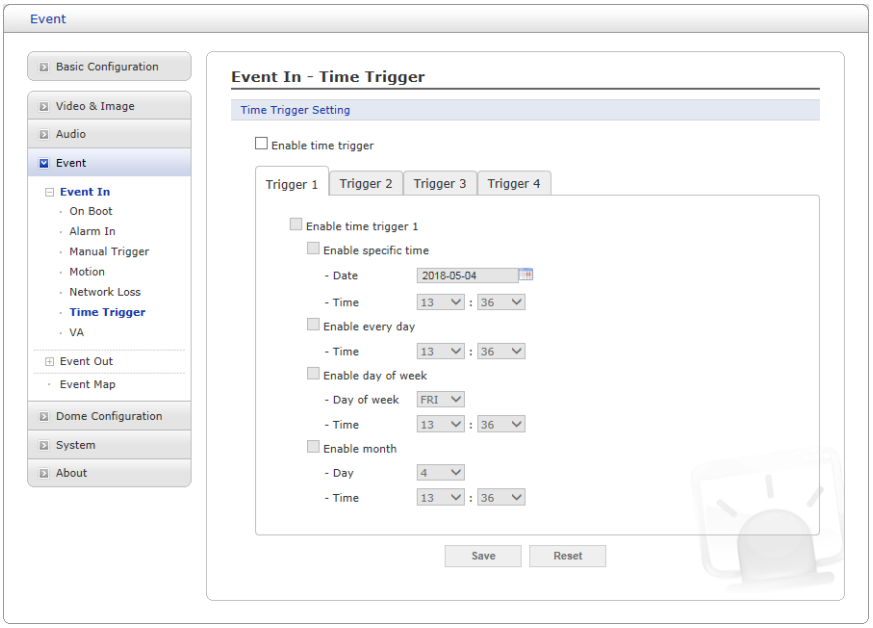
▽ Network Loss



This is used to trigger an event every time the network connection fails. Select "Enable network loss" to activate the Network Loss event trigger. 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 may be used to set alarms at a specific time. Users can set up to four time triggers. Each time trigger can be set to a specific date in the calendar, everyday, a day of the week, or the same date every month.

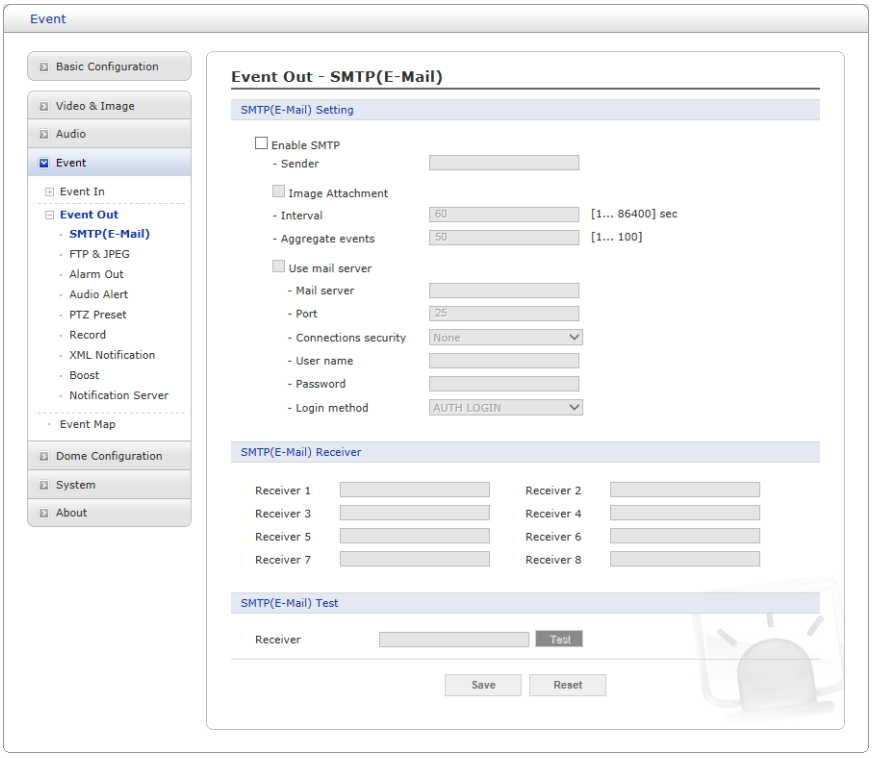
Select "Enable time trigger" to activate the Time Trigger function.

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



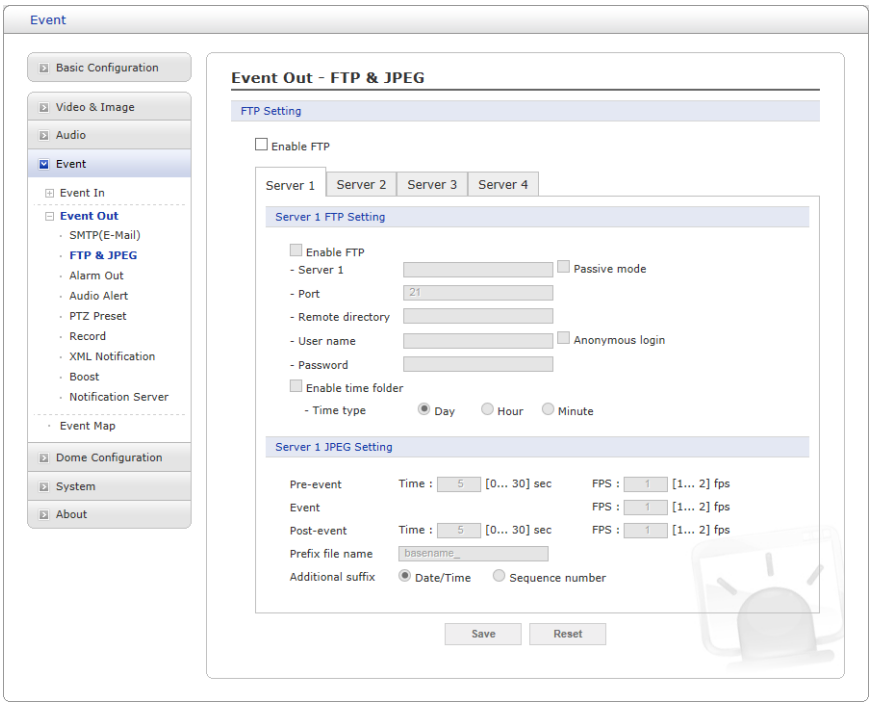
The camera can be configured to send event and error email messages via SMTP (Simple Mail Transfer Protocol).

- **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 between email notifications when multiple events occur.
    - **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 notifications and image emails.
- **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 from 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 servers' settings separately.

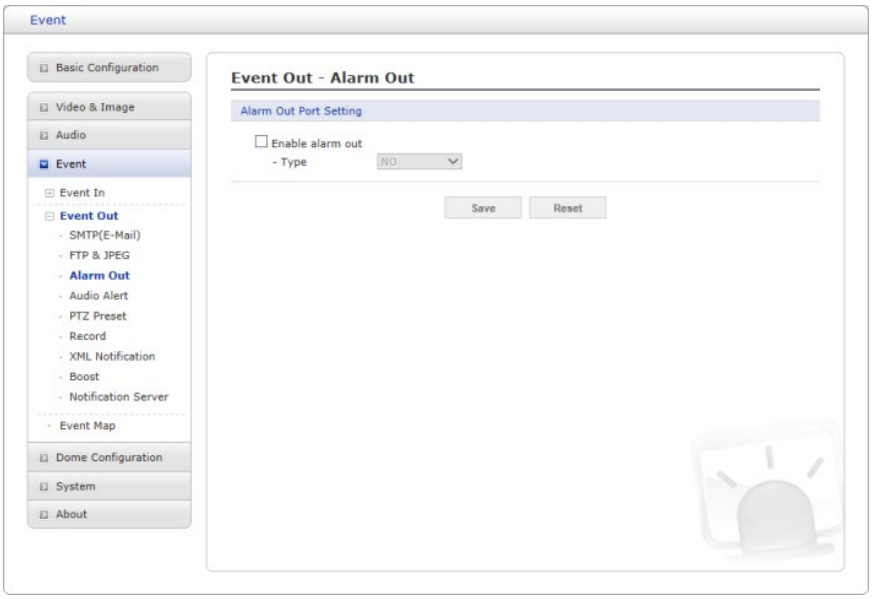
- **FTP Setting:**
    - **Server:** Enter the server's IP address or hostname. Note that a DNS server must be specified in the TCP/IP network settings if using a hostname.
        - **Passive mode:** Under normal circumstances, the camera simply requests the target FTP server to open the data connection. 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 and time when 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-event trigger buffer described above. It 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

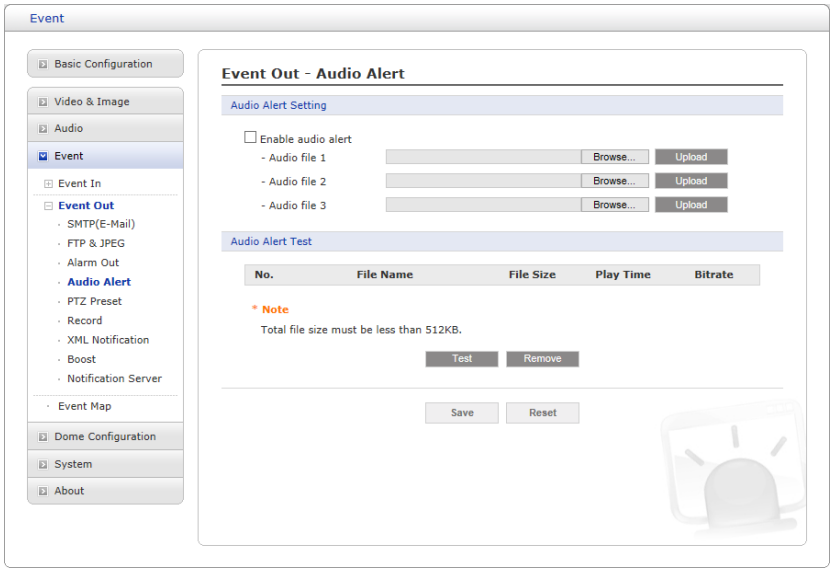


When the camera detects an event, it can control external equipment connected to its alarm output port.

- **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



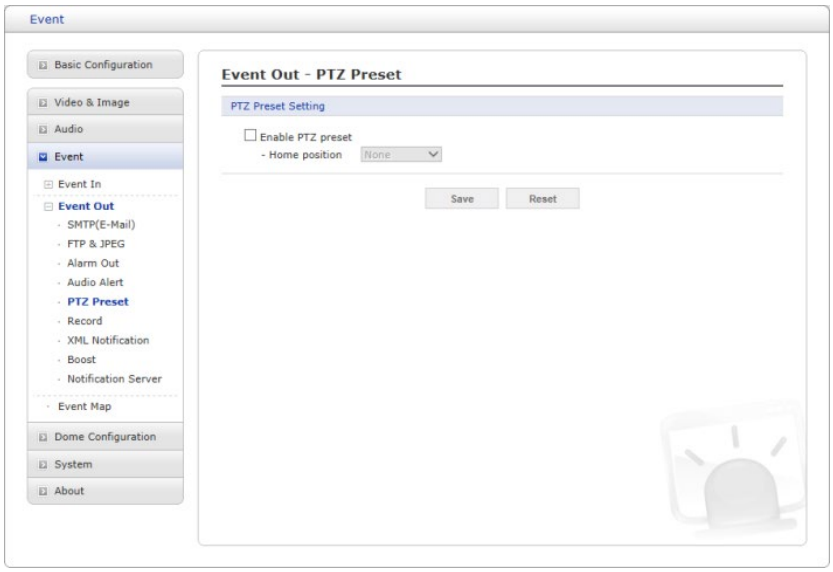
When the camera detects an event, it can output a predefined audio data to an external speaker. Check the "Enable audio alert" box to enable the service.

- **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 can be set up, each file must be less than 512 KB in size.
- **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.

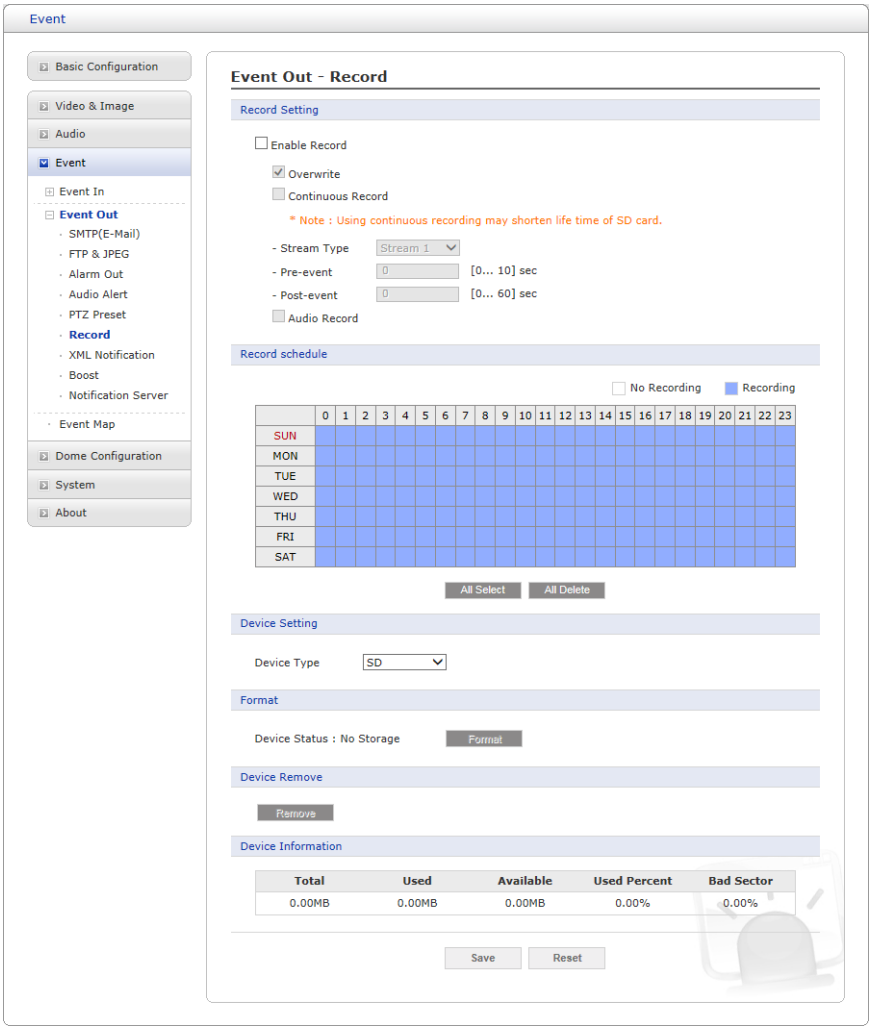
▽ PTZ Preset



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

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

▽ Record



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

- **Record-Setting:**
    - **Overwrite:** Click the checkbox to overwrite the storage device; Continuous Record is available for when you are 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 this box if you want to record audio with the video.

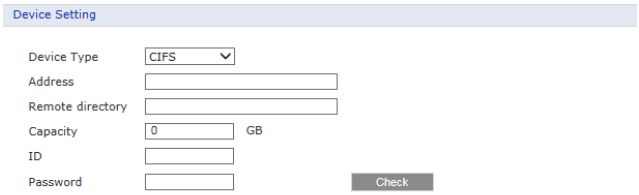
- **Record Schedule:** You can set the weekly recording schedule for each day. Drag or click an area within the box to set a recording schedule. Clicking a block toggles the recording between on and off for that hour/day. Click the 'All Select' button to set a schedule for the entire week or a whole day, respectively.
- **Device Setting:** Select the device type from the drop-down list that will be used for storage. 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.

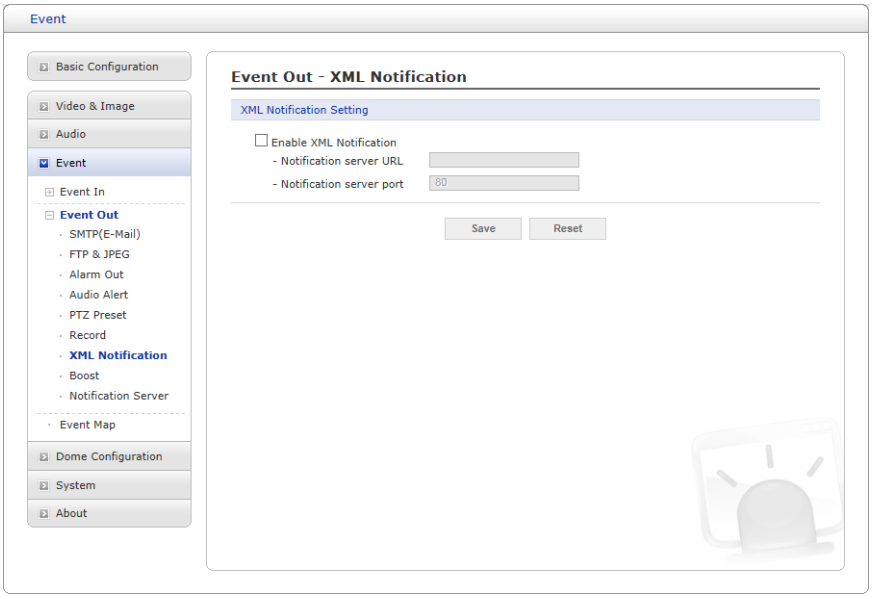


- **Address**: Enter the IP address for the NAS device.
- **Remote Directory**: Enter the directory or folder location to be recorded in the NAS device.
- **Capacity**: Enter the capacity of storage to be used. This must be less than the overall, total storage capacity of the NAS device.
- **ID/Password**: 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

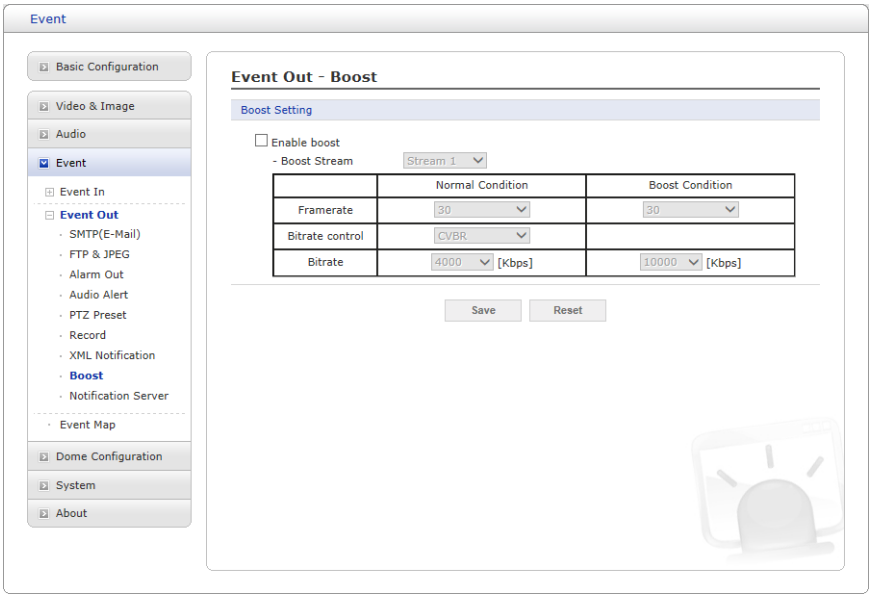


When the camera detects an event, the Notification server is used to receive notification messages as a type of XML data format. Check the box to enable the service.

- 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



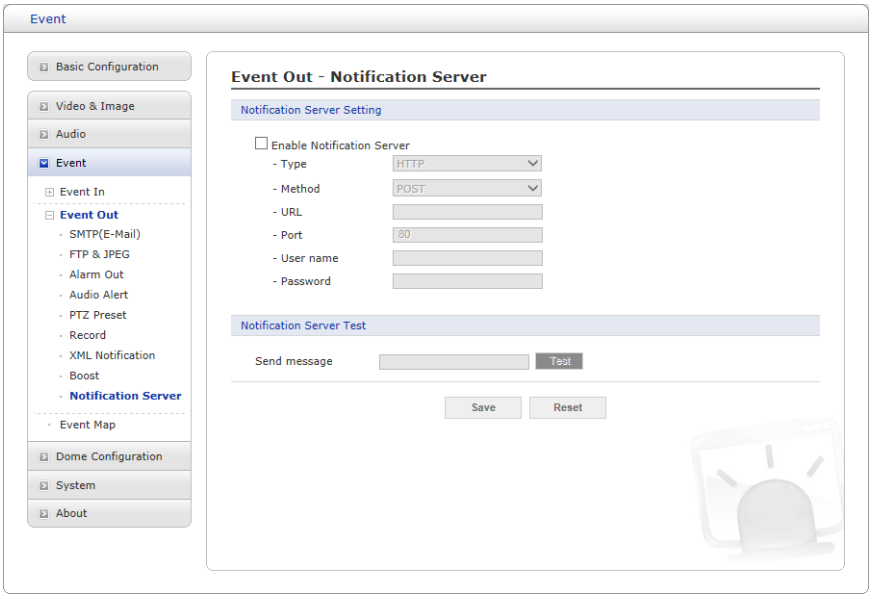
The Boost feature is used in conjunction with event detection. When this feature is turned ON, the Frame rate and Bitrate in the boost condition can be set to a different value than the ones in the normal condition field. When an event is detected, the camera will boost the Frame rate and Bit rate from 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.
    - **Boot Stream:** Select a video stream for each condition in the drop-down list.
    - **Frame rate:** Select a frame refresh rate (per second) from the drop-down list for each condition.
- **Bitrate control:** Select CBR or CVBR in the drop-down list in Normal Condition. You cannot change it in Boost Condition.
- **Bitrate:** 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

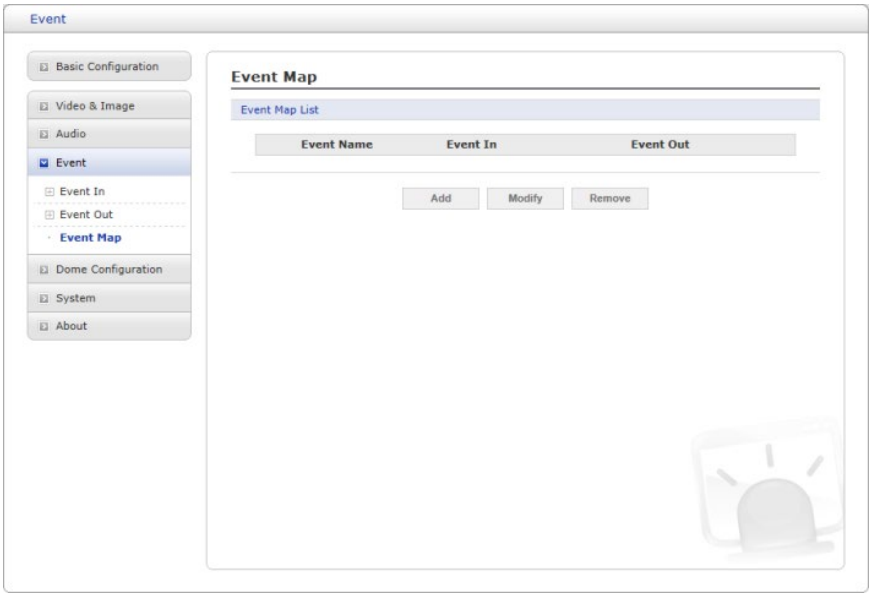


When the camera detects an event, the Notification Server is used to receive uploaded image files and/or notification messages. Check the box to enable the service.

- **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 login 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.

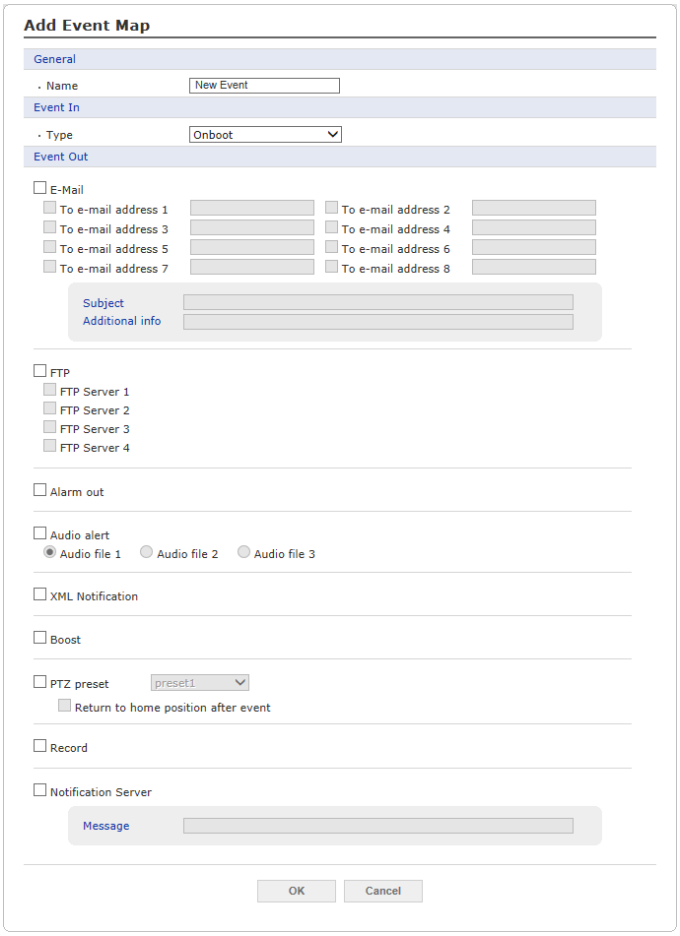
Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

Event Map



The event map allows you to change the settings and establish a schedule for each event trigger from the camera; a maximum of up to 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, then 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 Bitrate 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 the camera to move to during 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.

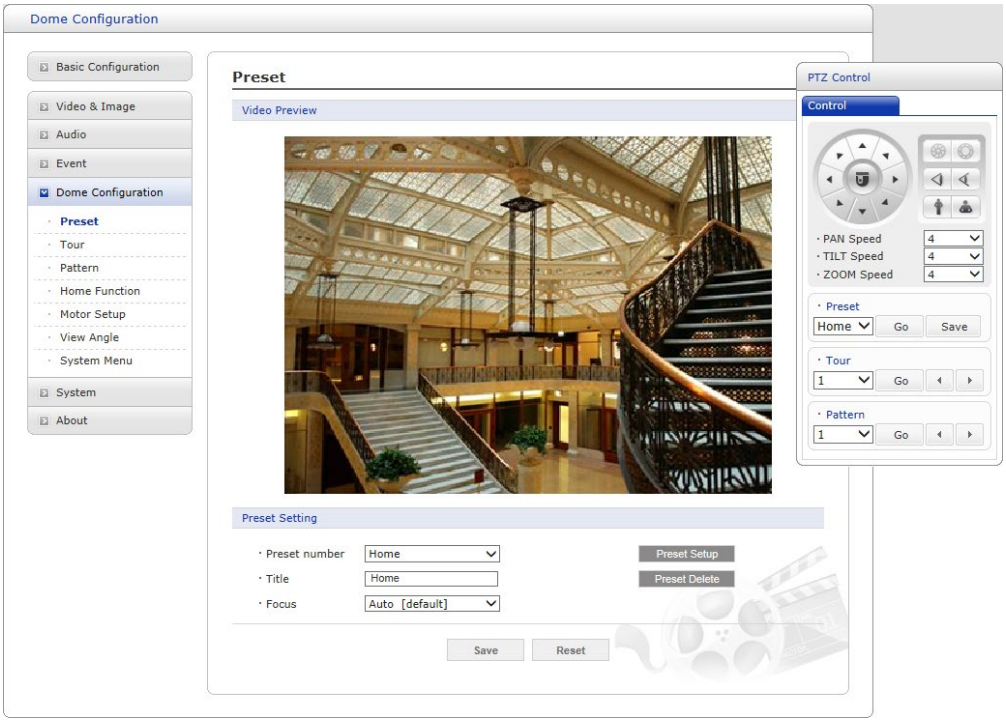
    - Notification Server: It sends notification messages to the notification server that listens for these. The destination server must first be configured on the Event On page. Enter a message you want to send.

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

3.6.5 Dome Configuration

NOTE: Dome Configuration is available only through Internet Exploerer.

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.

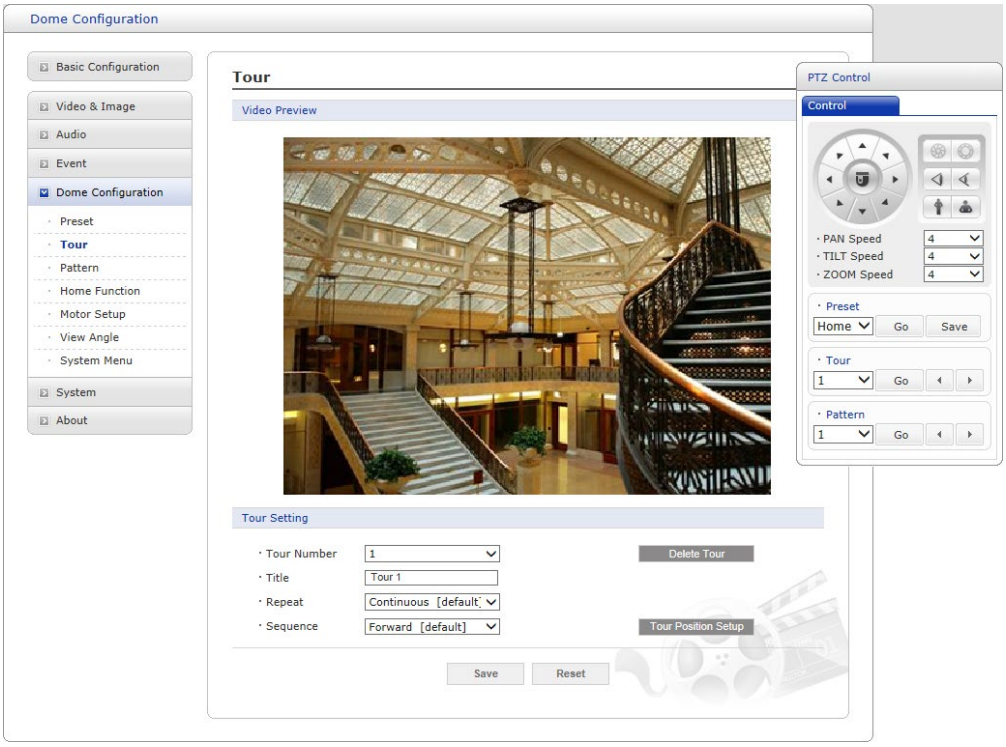
- **Preset Setting:**
  - **Preset number:** The Preset number can be selected in the range 1 ~ 256.
  - **Title:** Up to 12 characters (Alphanumeric characters and space)
  - **Focus:**
    - **Auto:** Auto Focus is always active.
    - **Manual:** Auto Focus is inactive.
  - **Preset Setup:** Activate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

Follow steps below to store the Preset positions:

1. Click the **Preset Setup** button. The PTZ Control Panel will display.
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.

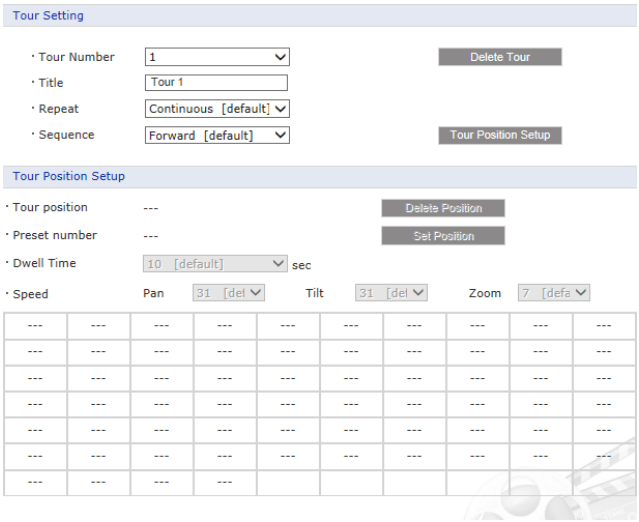
Click 'Save' to save the settings, or click 'Reset' to clear all the changes.

Tour



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

- **Tour Setting:**
  - **Tour Number:** The Tour number can be selected ranging from 1 ~ 8.
  - **Title:** Up to 12 characters (Alphanumeric characters and space)
  - **Repeat:** Select the number of repetitions from Continuous to 90. The default setting is Continuous.
  - **Sequence:** Select either Forward or Backward sequencing of the Tour position list.
  - **Delete Tour:** Delete the stored Tour Position Setup from the list of Tour numbers.
  - **Tour Position Setup:** Open or close the Tour Position Setup as below.

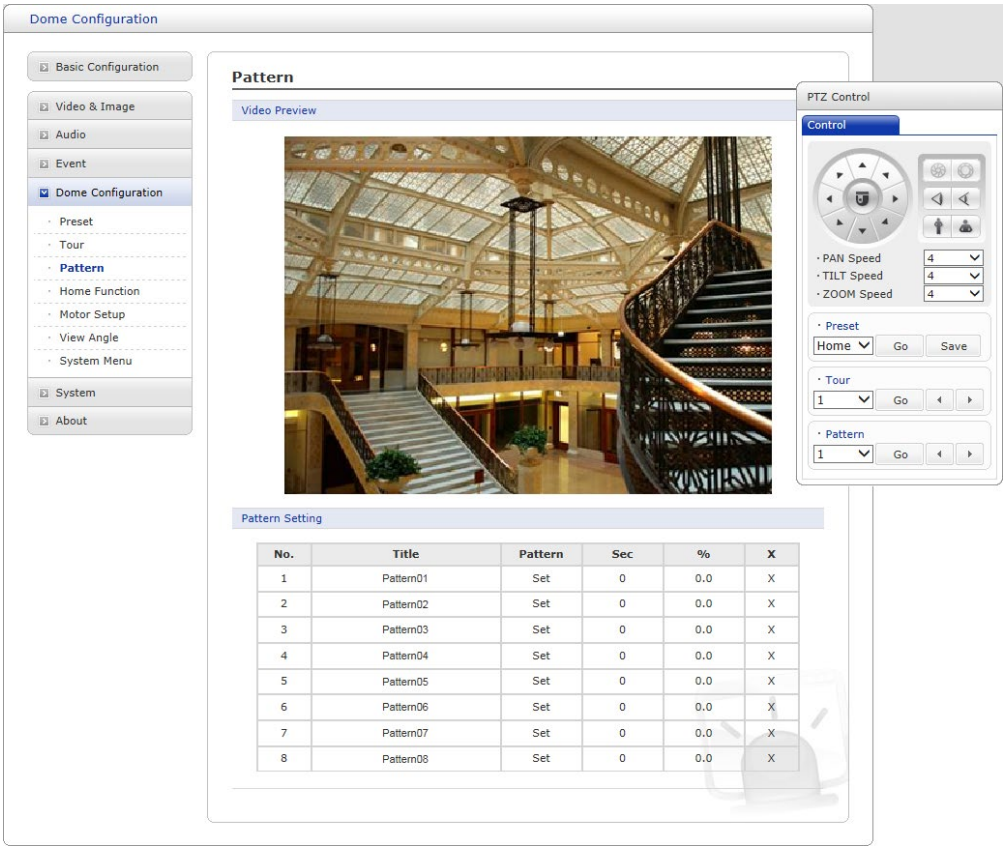


- **Tour position:** The Tour position can be selected in the range 1 ~ 64.
- **Preset number:** Show the selected Preset number.
- **Dwell Time:** Select the Dwell Time from 0 to 99 seconds. The default setting is 10 seconds.
- **Speed:** Adjust Pan/Tilt/Zoom Speed if you want to a slow movement. The default settings are set for 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 on the desired Tour position from the Tour Position Setup list, click the Set Position button, then show the saved Presets on the drop-down list. Select 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



'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.

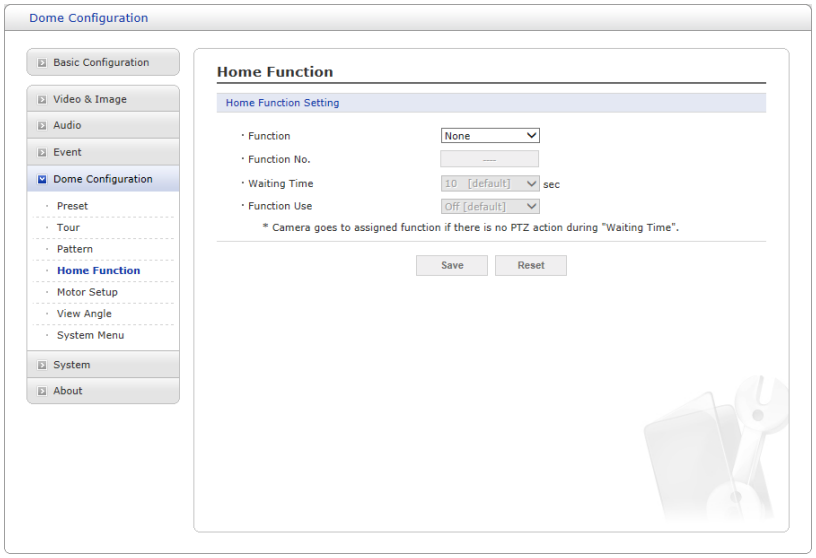
Follow steps below to program the Patterns:

1. Click the **Set** button of the desired Pattern number from the Pattern Setting list, then move pan, tilt, or zoom using the Control box. The movement history is automatically recorded.
2. Click the **Done** button after you have completed the camera movement programming.
3. Repeat steps 1 through 2 for each desired Pattern number.
4. If you are not satisfied with the programed 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

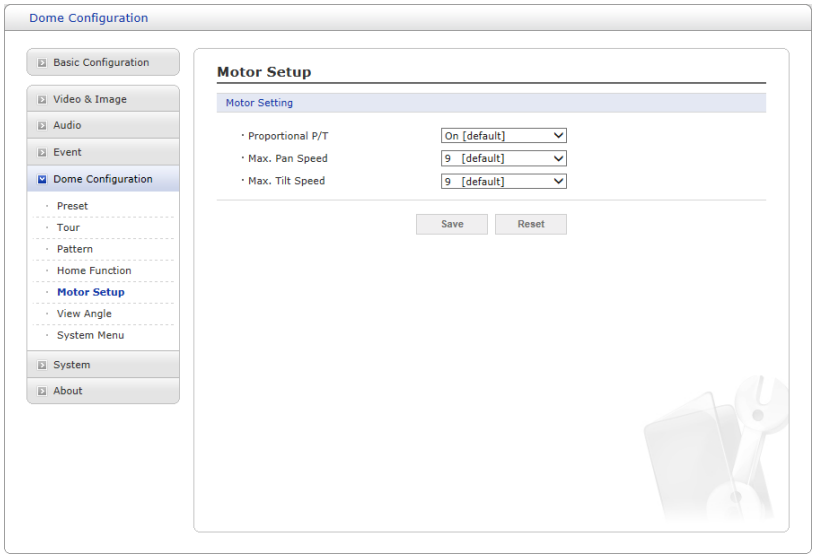


The camera is set to default to the Home Position when there is no PTZ action after exceeding the “Waiting Time” setting.

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

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

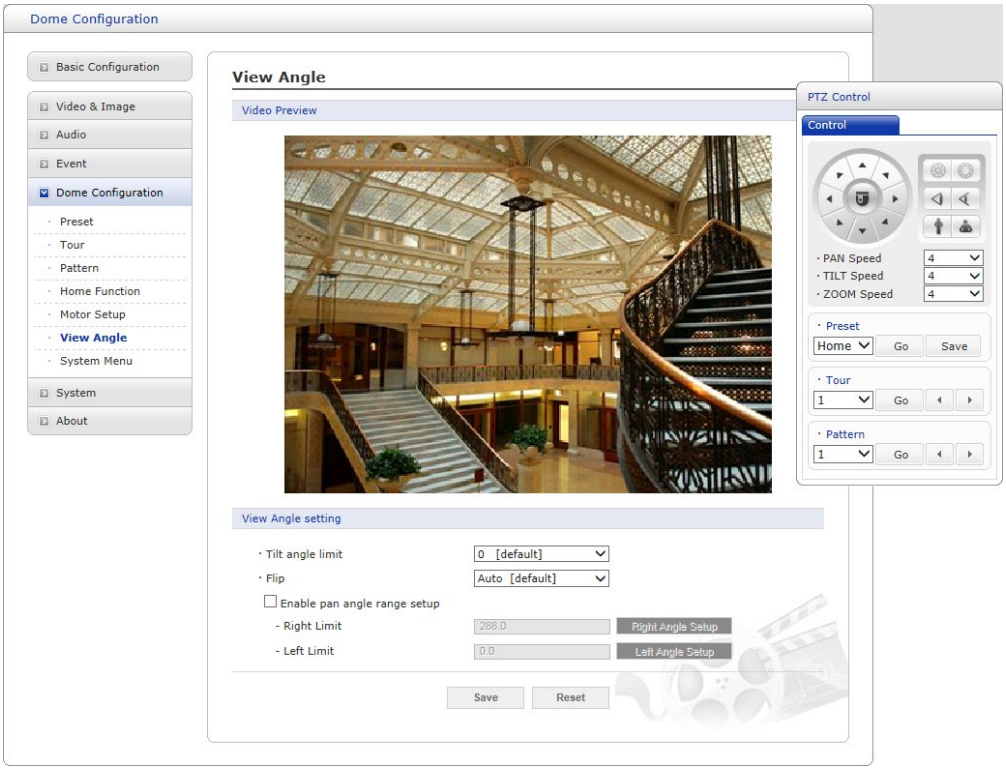
Motor Setup



- **Motor Setting:**
  - **Proportional P/T:** Select On or Off.
  - **Max. Pan Speed:** Adjus thte 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.

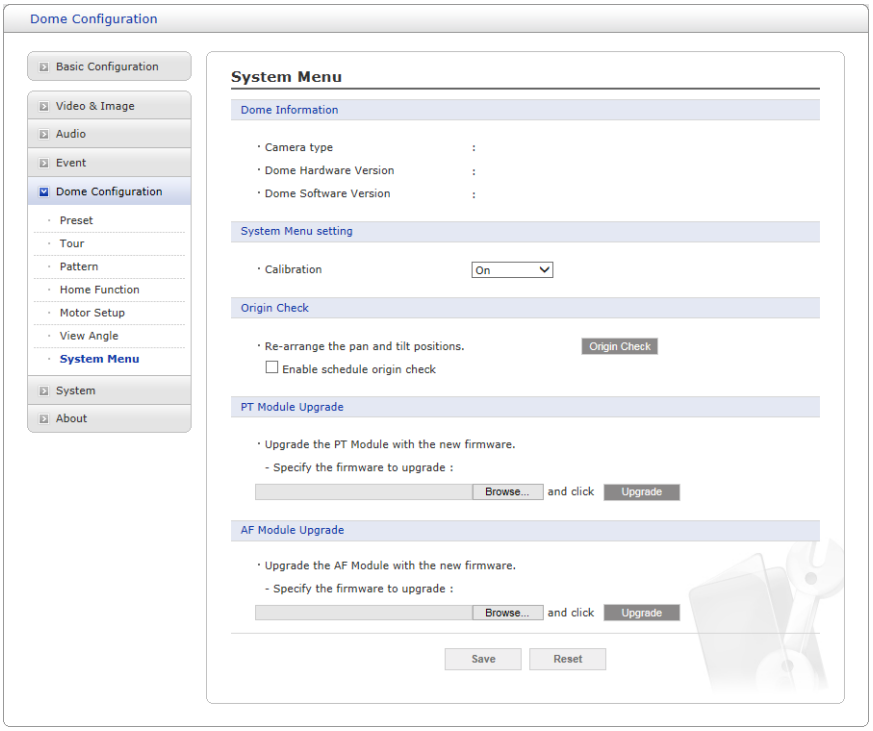
View Angle



- View Angle Setting:
  - Tilt Angle Limit: This option is designed to limit the view angle as there is some lens obstruction when zooming out on specific areas of the tilt angle.
  - Flip:
    - Off: The dome camera moves until pointed at 90° vertically.
    - Auto: When the camera reaches the floor, directly above the moving object, it will stop. At that time, release and pull it down again to run the auto-flip function. When you use the panning range, it is recommended to set 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

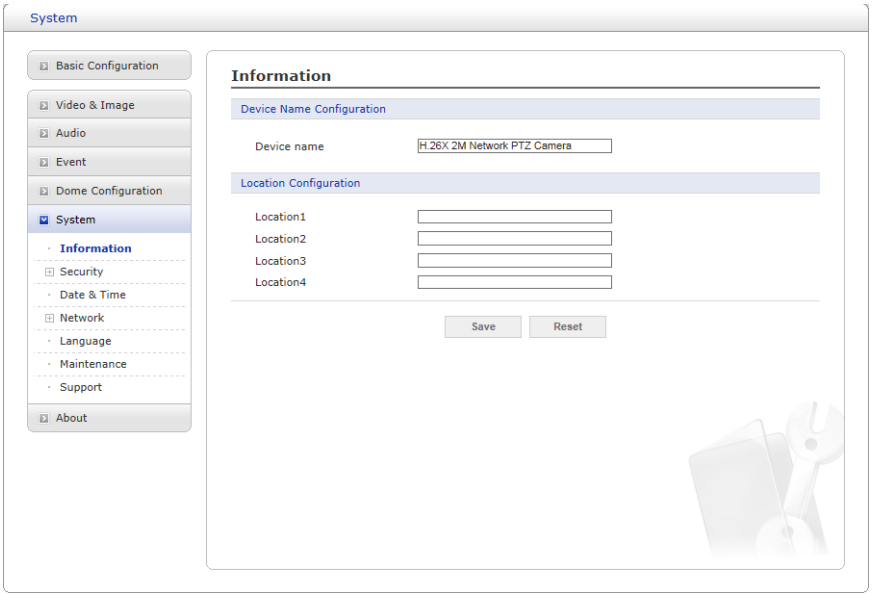


- **Dome Information:** The system information provides essential information about the dome if service is required. The information cannot be modified.
- **System Menu setting:** User can set the camera to use an auto-calibration mode.
- **Origin Check:** If you find the dome in the wrong position during operation, execute this origin check by clicking the Origin Check button and the dome camera will return to the correct 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



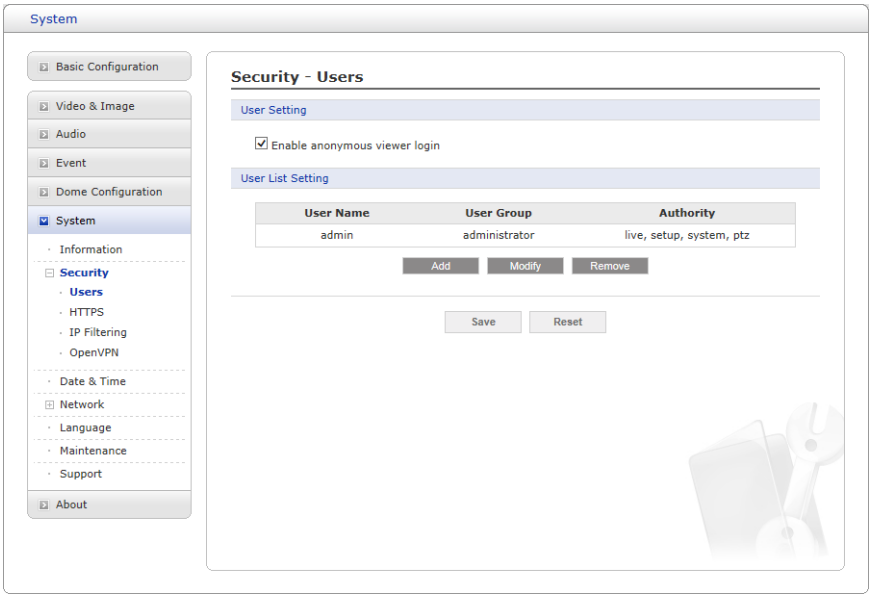
You can enter the system information. This page is very useful when you require device information after installation.

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

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

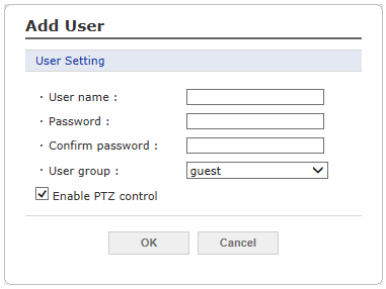
Security

▽ Users



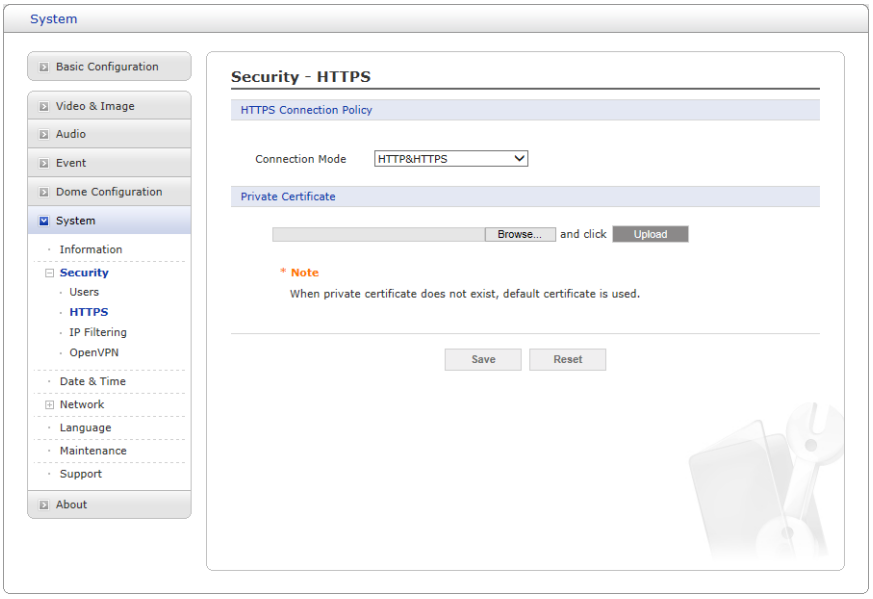
User access control is enabled by default when the administrator sets the root password on first access. New users can be provided authorized access with user names and passwords, or the administrator can choose to allow anonymous viewer login to the Live View page, as described below:

- **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 registered user accounts. To add a new user, press the Add button, then enter a user name and password for the new user. You will see the pop-up window as below.



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

▽ HTTPS



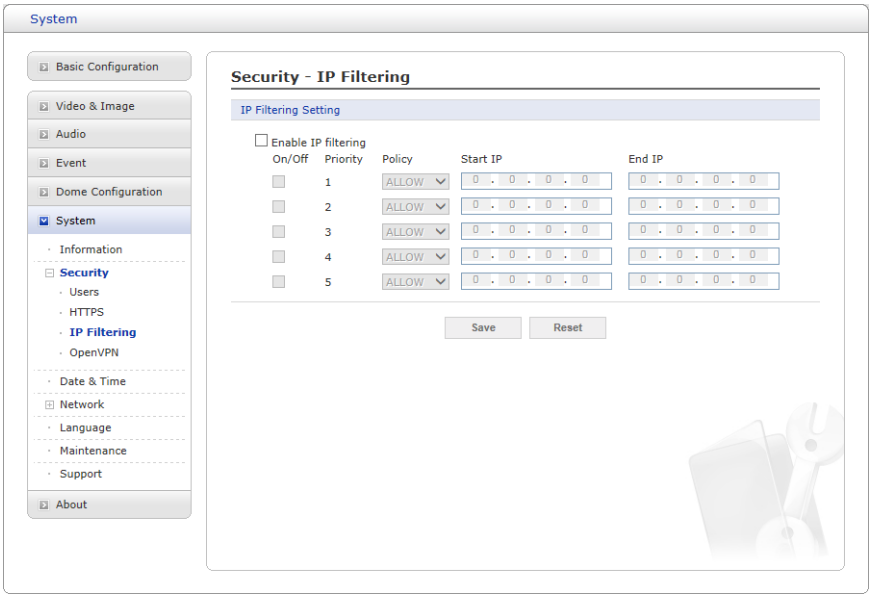
For greater security, the camera can be configured to use HTTPS (Hypertext Transfer Protocol over SSL (Secure Socket Layer)). All communication that would otherwise go via HTTP will instead go via an encrypted HTTPS connection.

- **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



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

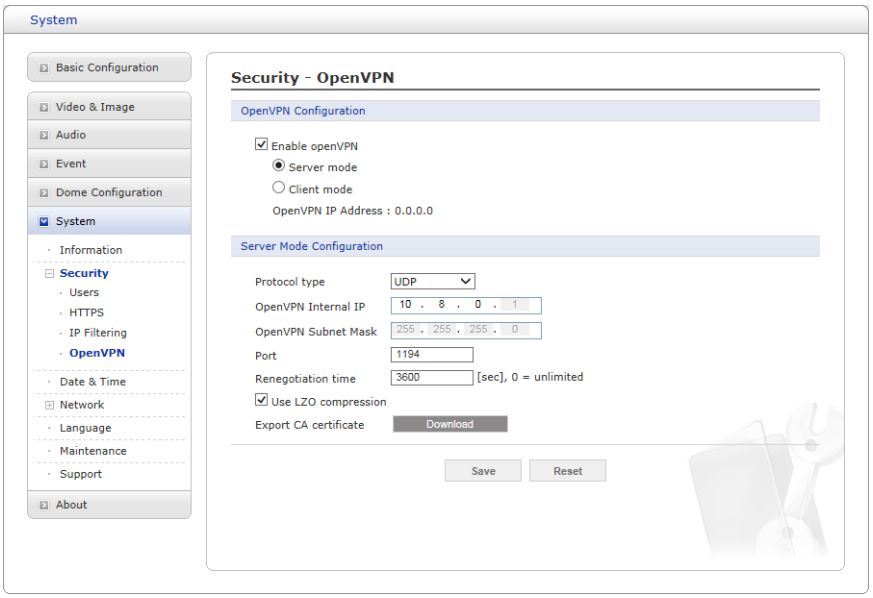
When the IP address filter is enabled, addresses added to the list are set as allowed or denied addresses. All other IP addresses not in this list will then be denied access accordingly. See the online help for more information.

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.

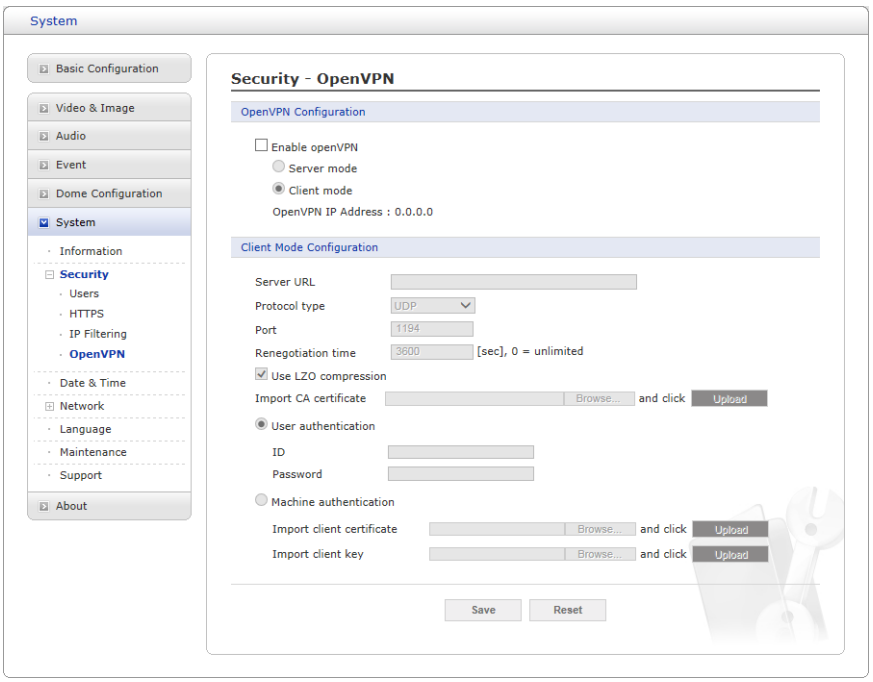
▽ OpenVPN

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



- **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 set up Protocol type, Port number, LZO compression usage, 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 the setup, click the Save button. The camera operates as an OpenVPN Server.

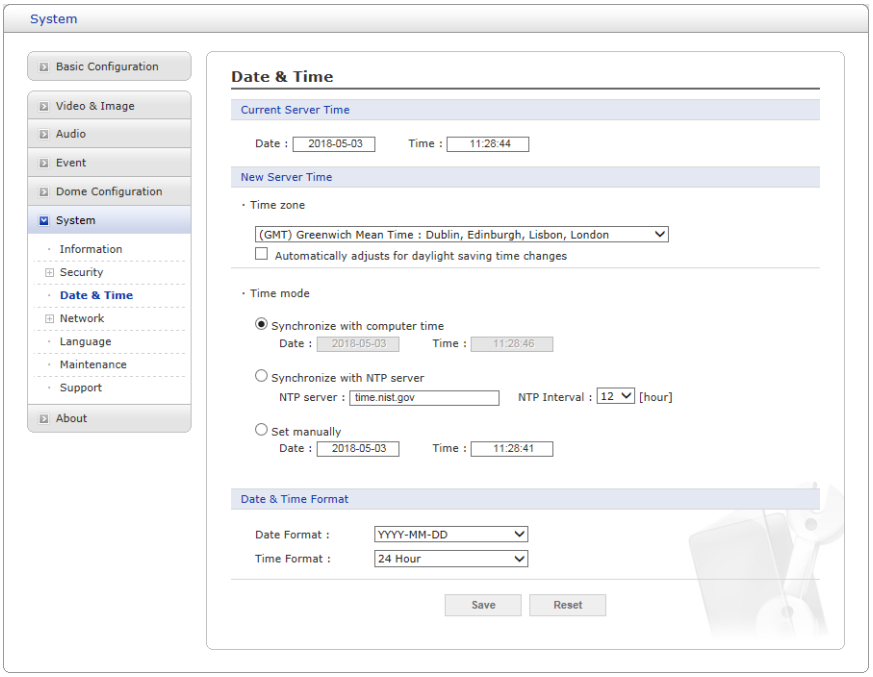


- OpenVPN Client Mode

1. Checking the “Enable OpenVPN” box activates the mode selection buttons. Select Client mode, to enable the Client Mode Configuration to adjust the Client Mode settings.
2. In Client Mode Configuration, you can set up Server URL, Protocol type, Port number, LZO usage, and Renegotiation time.
    - Server URL sets OpenVPN IP address.
    - Protocol type, Port number, and LZO settings must match the Server settings.
    - 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. The camera will operate as an OpenVPN Client.

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

Date and Time



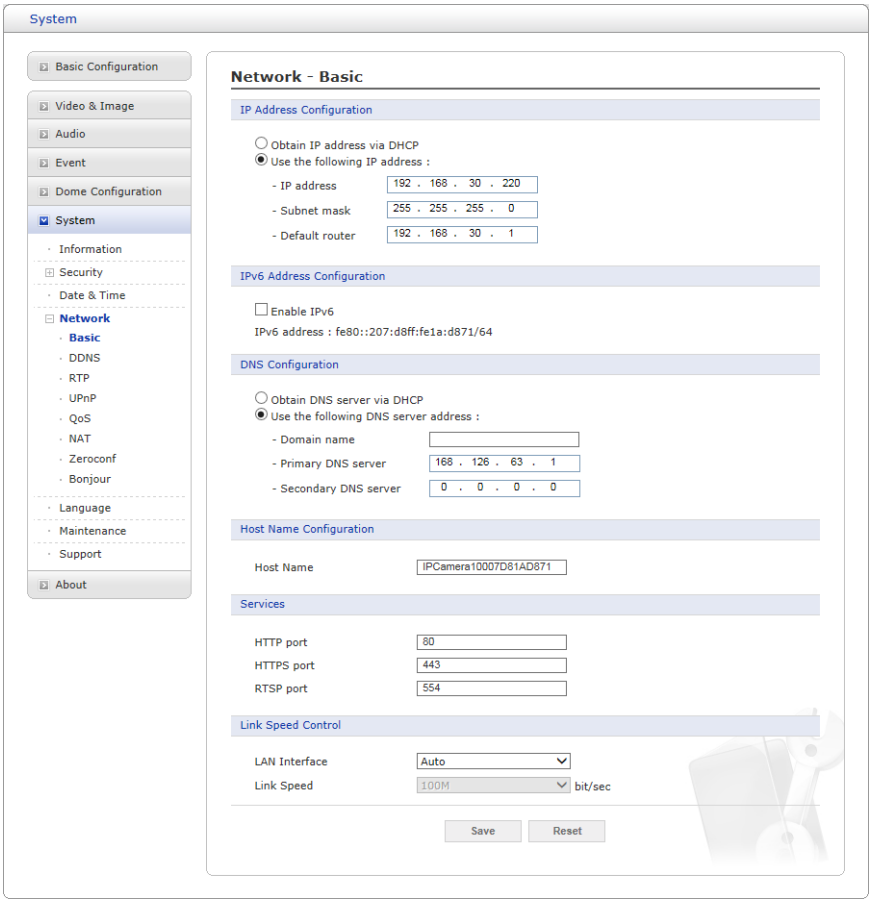
- **Current Server Time:** This displays the current date and time (24h clock). The time can be displayed in the 12h clock format (see below).
- **New Server Time:**
    - **Time zone:** Select your time zone from the drop-down list. If you want the server clock to automatically adjust for daylight savings time, check the box for "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



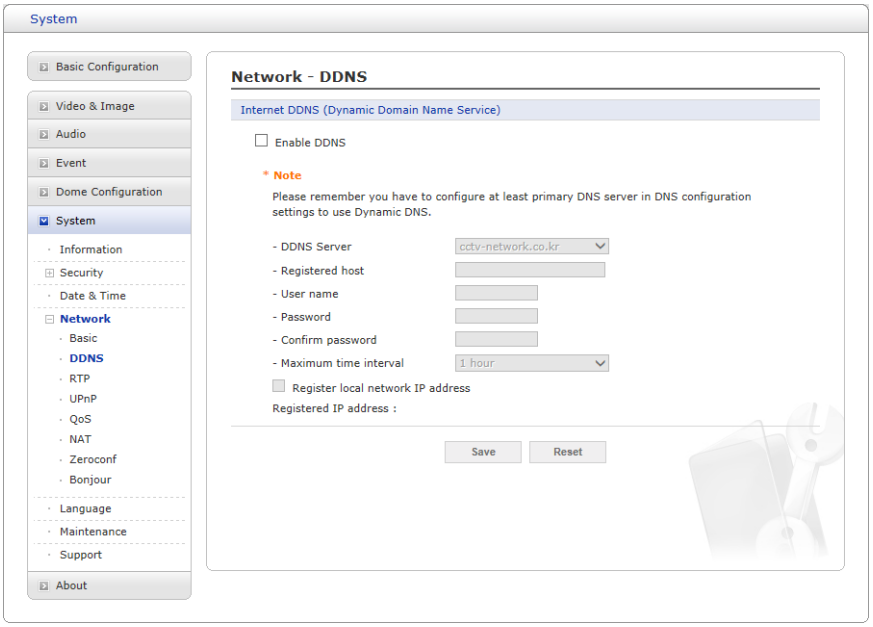
- IP Address Configuration:
    - **Obtain IP address via DHCP:** Dynamic Host Configuration Protocol (DHCP) lets network administrators centrally manage and automate the assignment of IP addresses on a network. DHCP is enabled by default. Although a DHCP server is mostly used to set an IP address dynamically, 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.

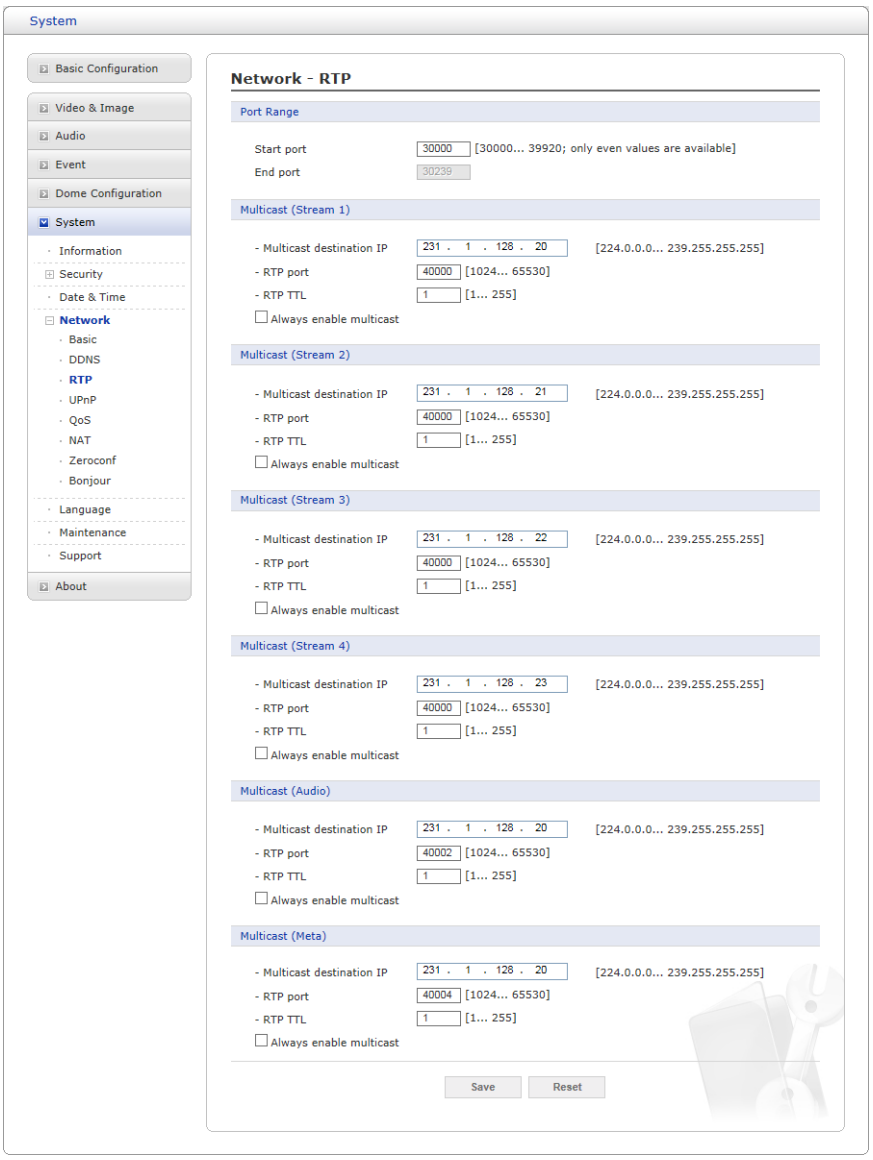
▽ DDNS



- **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.

▽ RTP

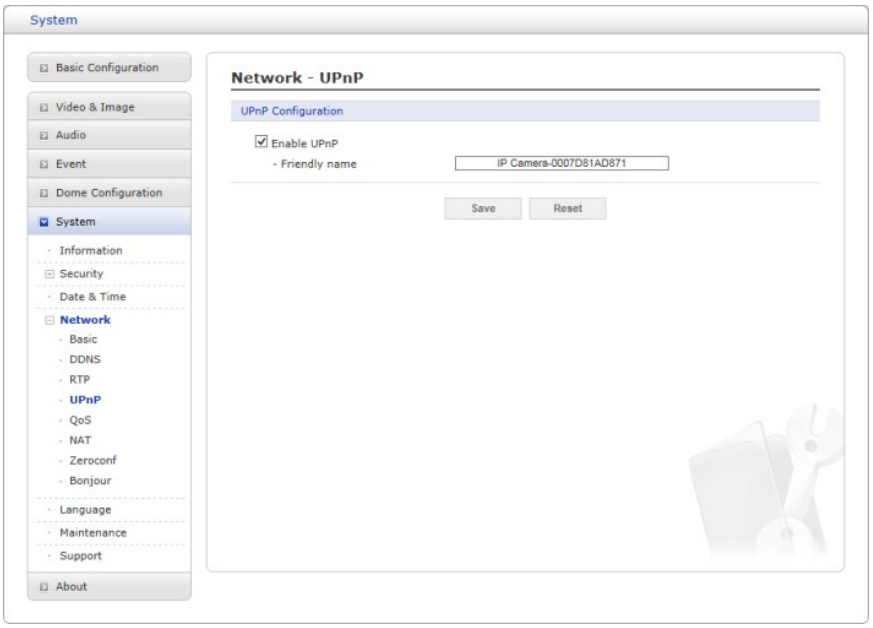


Create a setting for sending and receiving an audio or video on a real-time basis. These settings are the IP address, port number and Time-To-Live value (TTL) to use for media stream(s) in a multicast H.264 format.

- **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 good, 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



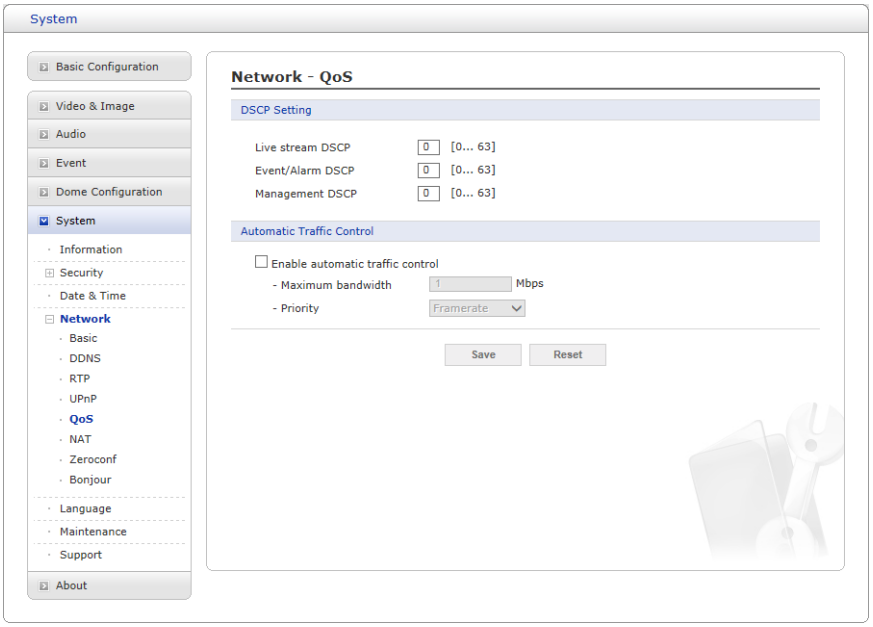
The camera includes support for UPnP. UPnP is enabled by default, so the camera is automatically detected by operating systems and clients that support this protocol.

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.

▽ QoS



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 allow critical data flow to be served before data 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 traffic 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.

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

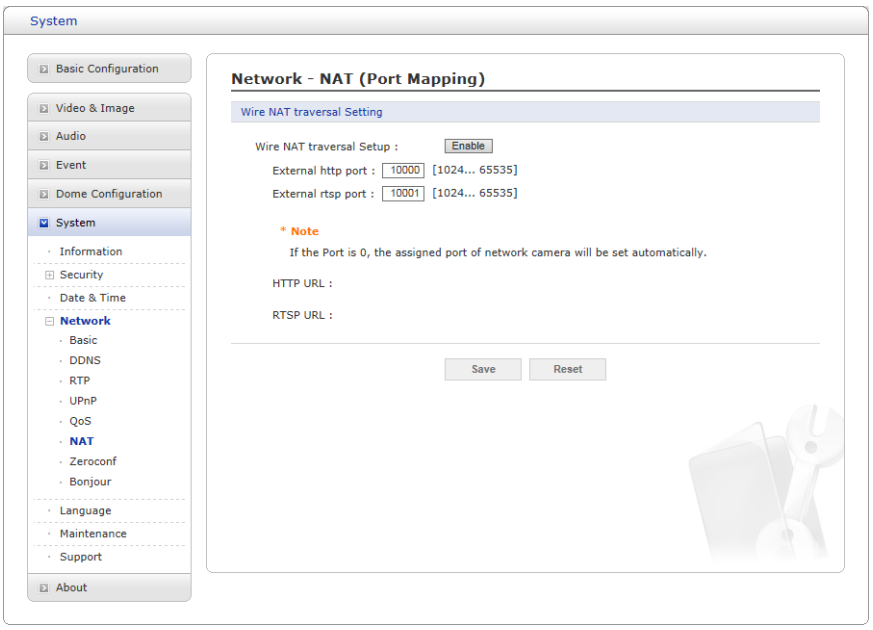
The following types of traffic are marked; enter a value for each type of traffic used:

- **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)



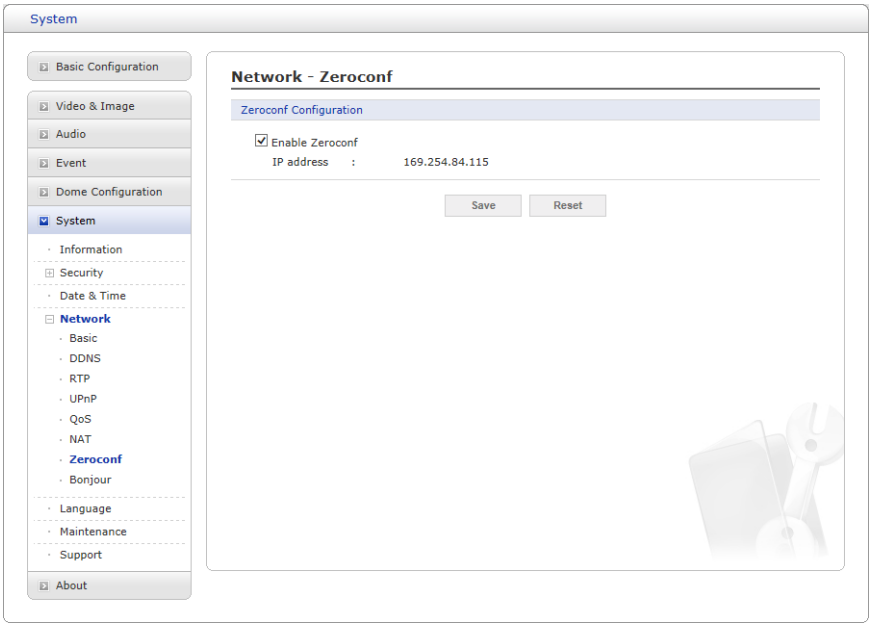
- Wire NAT traversal Setting
    - **Enable:** Check this box to enable NAT traversal. When enabled, the camera attempts to configure port mapping in a NAT router on your network, using UPnP. Note that UPnP must be enabled in the camera (see System > Network > UPnP).
        - **Automatic setting:** 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 provided field.

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.

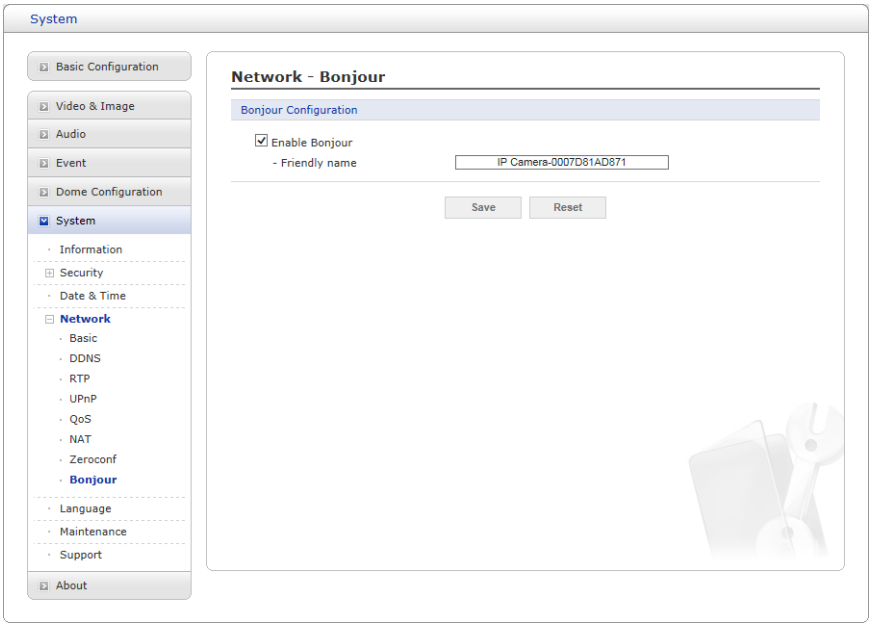
Zeroconf is built on three core technologies:

- 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



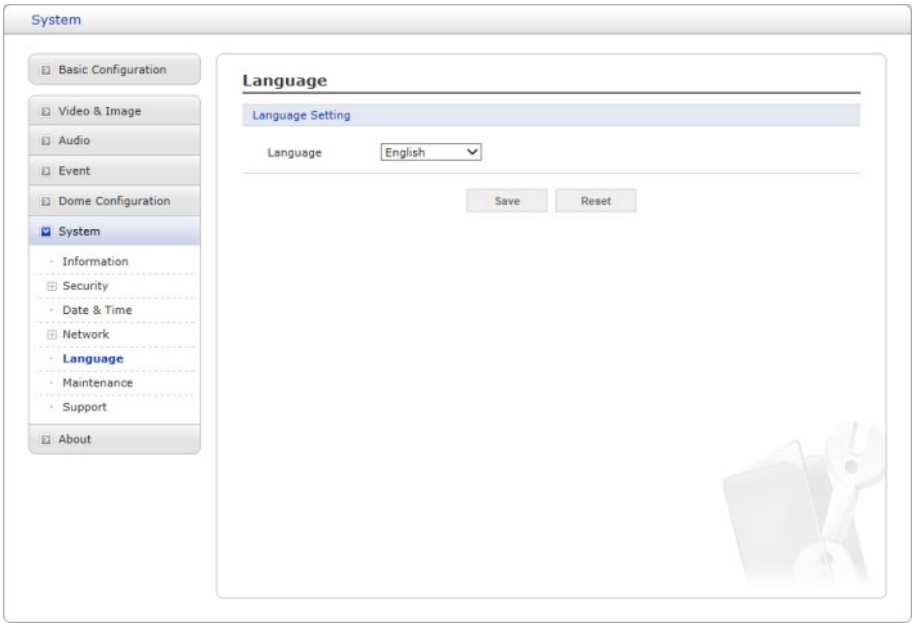
The camera includes support for Bonjour. When enabled, the camera is automatically detected by operating systems and clients that support this protocol.

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.

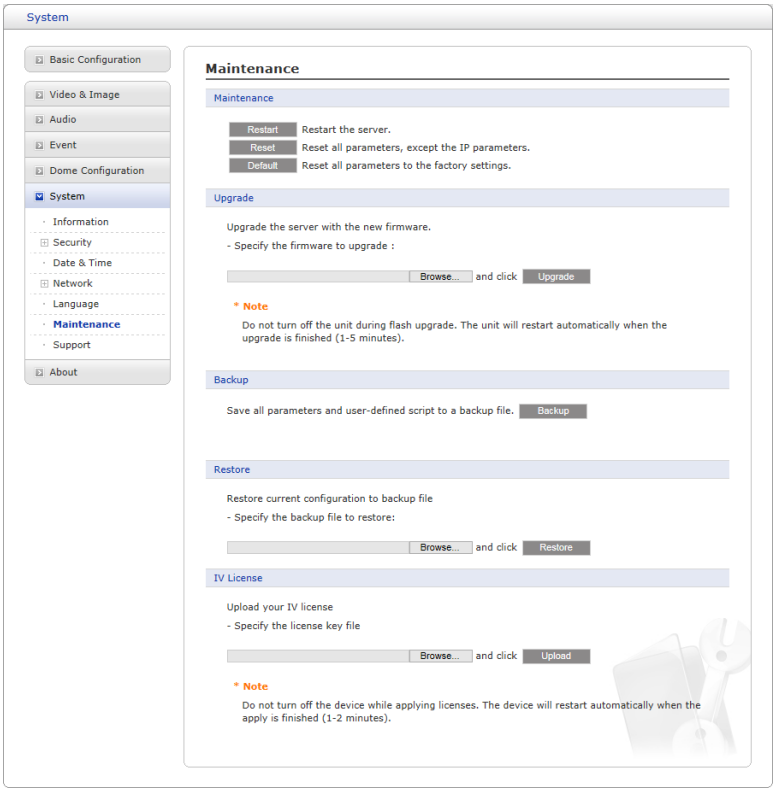
Language



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.

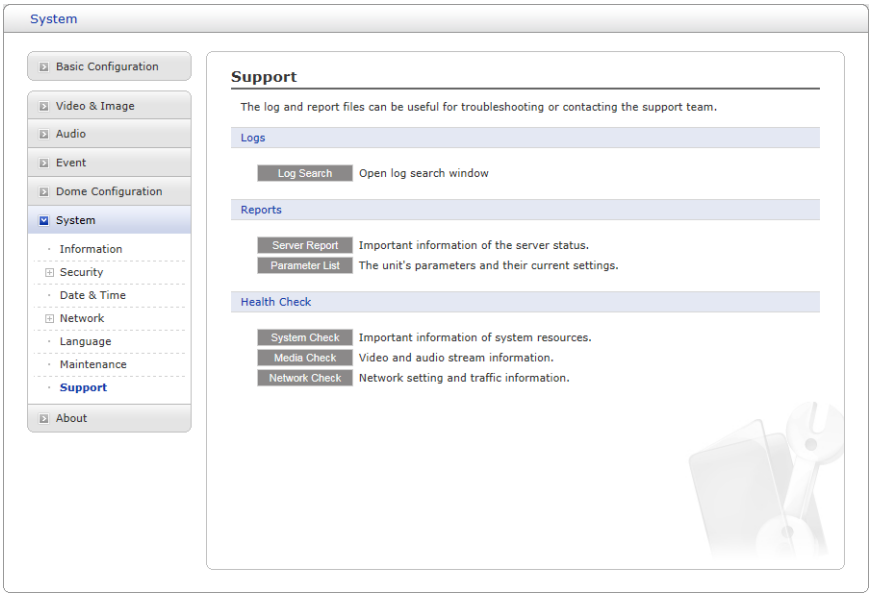
Maintenance



- 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 of 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.

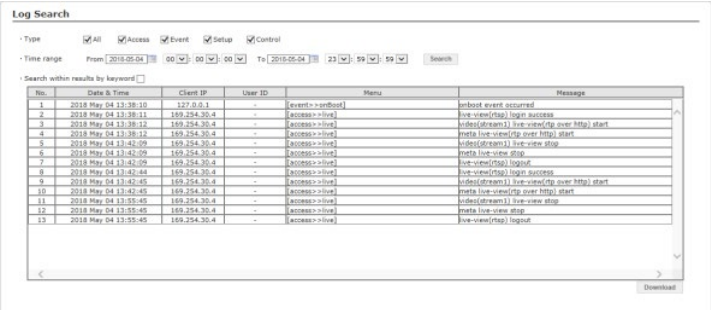
NOTE: Backup and Restore can only be used on the same unit and must be running the same firmware. This feature is not intended for multi-configurations or firmware upgrades.

Support

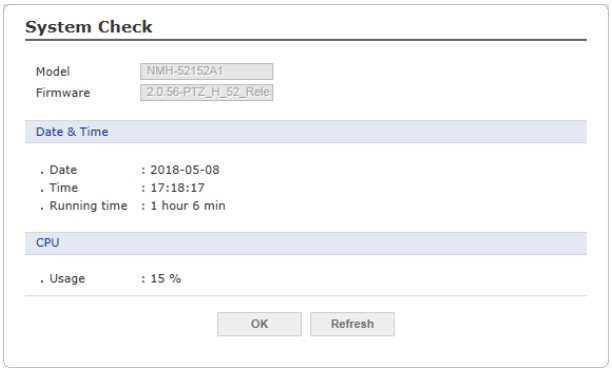


The support page provides valuable information on troubleshooting and contact information, should you require technical assistance.

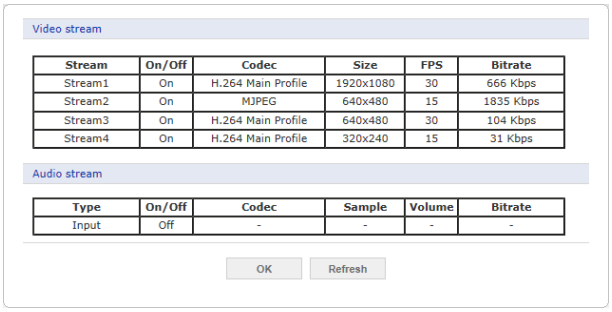
- **Logs:** The camera supports system and event log information. Click the **Log Search** button to search the Access, Event, Setup or Control log data.



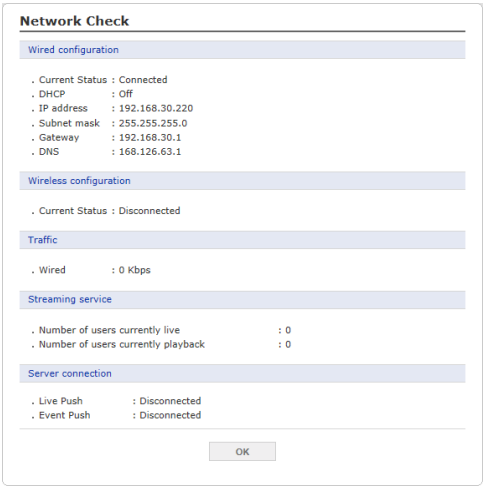
- **Reports:**
    - **Server Report:** Click the **Server Report** button to get important information about the server's status; this should always be included when requesting support.
    - **Parameter List:** Click the **Parameter List** button to see the unit's parameters and their current settings.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



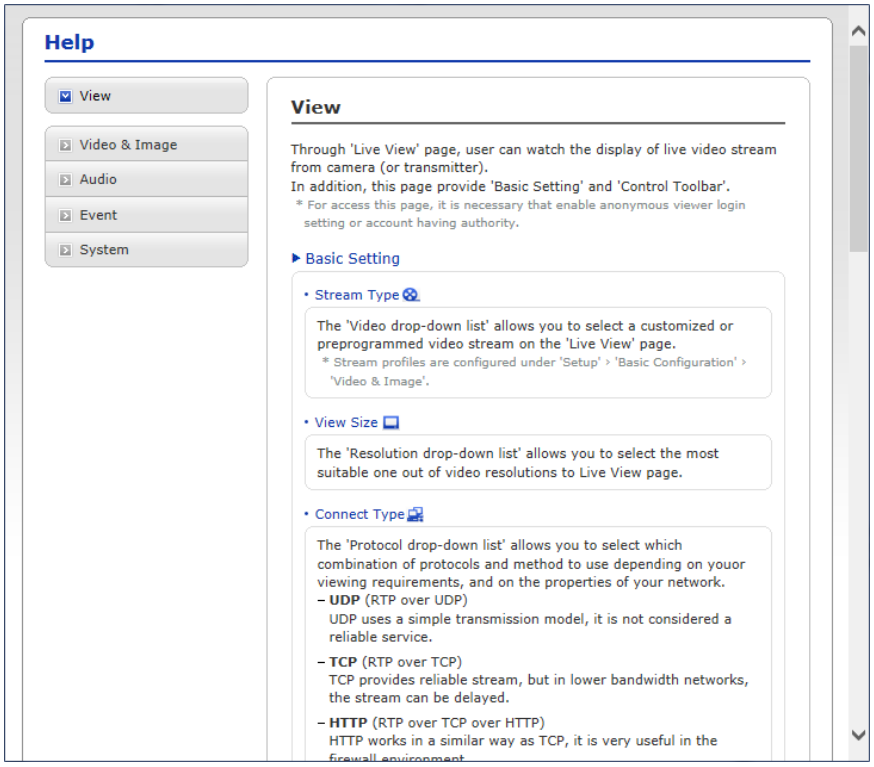
- **Media Check:** Click the **Media Check** button to get the information about the camera's video and audio stream. You can see the pop-up window below.



- **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.



3.7 Help



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.

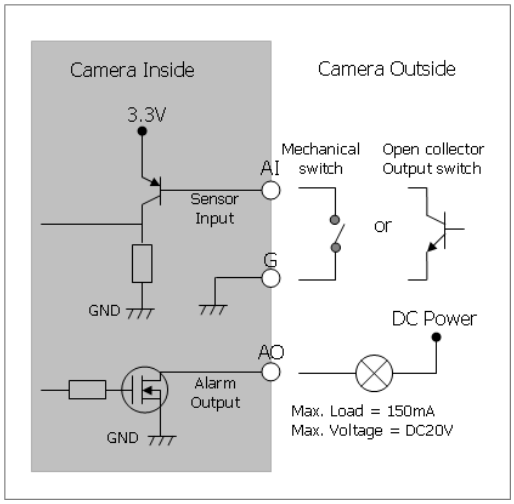
4 Appendix

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-months:

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
IMAGE		
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)
LENS		
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
I/O		
Audio input / output	1/1, User-defined 3 audio files	
Audio compression	G.711	
Alarm input/ output	4/1	
Manual triggers	4 Programmable triggers	
OPERATIONAL		
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.	
PTZ FUNCTION		
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	
NETWORK		
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	

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

* Specifications are subject to change without notice.

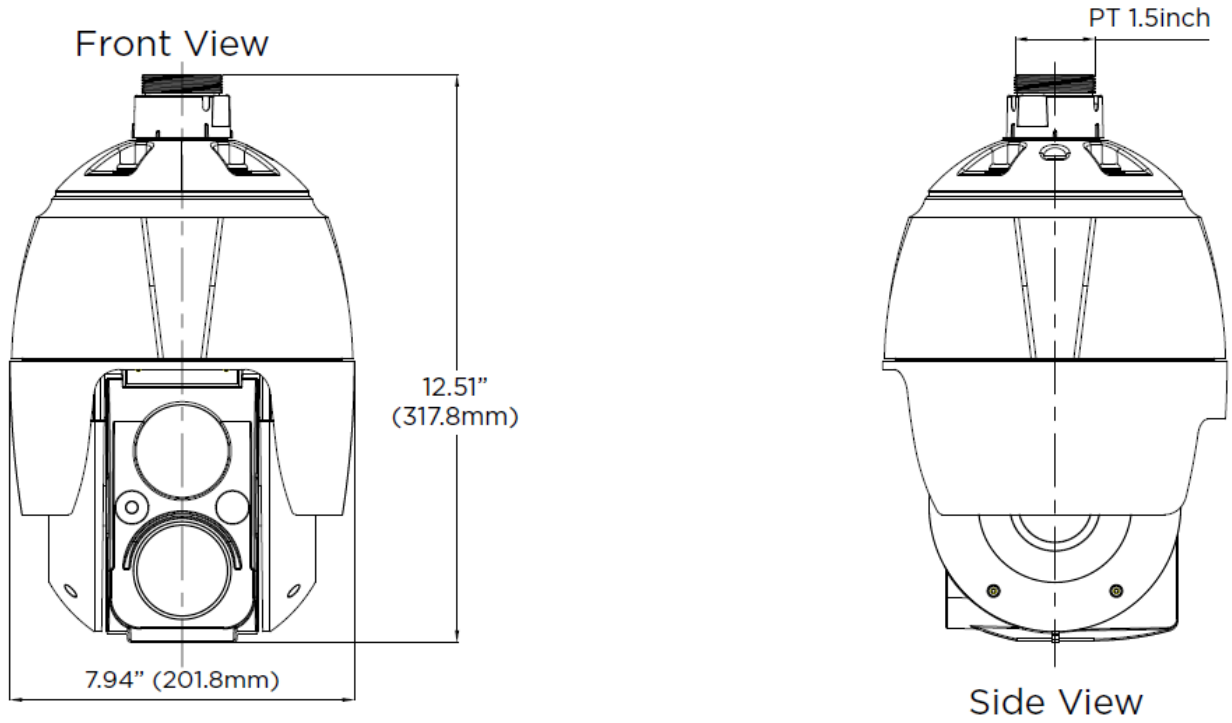


Figure – Dimensions

Warranty Information

Go to https://digital-watchdog.com/page/rma-landing-page/ to learn more about Digital Watchdog's warranty and RMA.

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

A purchase receipt or other proof of the date of the original purchase is needed 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 that 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.

DIGITAL WATCHDOG®

Complete Surveillance Solutions

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French Canadian 1+ (514) 360-1309
Technical Support hours: Monday-Friday 9:00am to 8:00pm Eastern Standard Time