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Note: The manual is subject to change without notice

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PREFACE

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Acknowledgements

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Safety Information

Before installing and using the device, note the following precautions:

- Read all instructions carefully.
- Follow all warnings and cautions in this manual.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not use the camera in extreme temperature conditions. Please use the camera within 0°C to 40°C. Air vent is required at high temperature.
- Do not use or store the camera in humid environment. It may cause poor image quality.
- Do not use the camera in unstable lighting conditions. Inconsistent lighting or flickering may cause poor image.
- Never use the camera close to gas or oil leak. It may not operate properly.
- Do not disassemble the camera. There is no user serviceable part inside.
- Do not drop the camera or apply force on it. It may cause a malfunction.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Never face the camera to strong light for long periods of time. It may damage the sensor.

RoHS Compliance



DivioTec RoHS Environmental Policy and Status Update

DivioTec is a global citizen for building the digital infrastructure. We are committed to providing green products and services, which are compliant with

European Union RoHS (Restriction on Use of Hazardous Substance in Electronic Equipment) directive 2011/65/EU, to be your trusted green partner and to protect our environment.

RoHS restricts the use of Lead (Pb) < 0.1% or 1,000ppm, Mercury (Hg) < 0.1% or 1,000ppm, Cadmium (Cd) < 0.01% or 100ppm, Hexavalent Chromium (Cr6+) < 0.1% or 1,000ppm, Polybrominated biphenyls (PBB) < 0.1% or 1,000ppm, and Polybrominated diphenyl Ethers (PBDE) < 0.1% or 1,000ppm.

In order to meet the RoHS compliant directives, DivioTec has established an engineering and manufacturing task force to implement the introduction of green products. The task force will ensure that we follow the standard DivioTec development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which DivioTec are renowned.

The model selection criteria will be based on market demand. Vendors and suppliers will ensure that all designed components will be RoHS compliant.

How to recognize DivioTec RoHS Products?

For existing products where there are non-RoHS and RoHS versions, the suffix "(LF)" will be added to the compliant product name.

All new product models launched after January 2013 will be RoHS compliant. They will use the usual DivioTec naming convention.

Installation Recommendations

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- A Philips screwdriver
- A flat-tipped screwdriver
- A grounding strap
- An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nose pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

Technical Support and Assistance

- 1. For the most updated information of DivioTec products, visit DivioTec's website at www.diviotec.com.
- 2. For technical issues that require contacting our technical support team or sales representative, please have the following information ready before calling:
 - Product name and serial number
 - Detailed information of the peripheral devices
 - Detailed information of the installed software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wordings of the error messages

Warning!

- 1. Handling the unit: carry the unit with both hands and handle it with care.
- 2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.

Conventions Used in this Manual



Warning:

Information about certain situations, which if not observed, can cause personal injury. This will prevent injury to yourself when performing a task.



Caution:

Information to avoid damaging components or losing data.



Note:

Provides additional information to complete a task easily.

Package Contents

The TBR927 and TBR927-W package contain the following accessories:

Name	Quantity
Placement sticker	1
Quick installation guide	1
Mounting accessory kit	1
Waterproof connector	1
3-axis cable concealed wall mount bracket	1
Dehumidifier packet	1
Wall mount base	1







Quick installation guide



Mounting accessory kit



Waterproof connector



3-axis cable concealed wall mount bracket



Dehumidifier packet



Wall mount base

CHAPTER 1: PRODUCT INTRODUCTION

Overview



Key Features

- 30fps@5MP
- IR LED 45M / White LED 15M
- Capture Plate Distance 10M~20M
- Support De-icing function
- 5mm -- 50mm Advance P-Iris
- 120 dB True WDR

Hardware Specifications

Camera

- Image sensor: 1/2.8" 5MP True WDR progressive scan CMOS sensor
- Minimum Illumination: B/W 0 lux / Color 0.04 lux
- Lens: 5mm~50mm Motorized Lens, F2.1
- Field of View:
 - Horizontal:8°~48°
 - Vertical:6°~35°
 - Diagonal:10°~60°
- Iris type: P-iris
- Day and night: Yes (True D/N)
- IR distance:
 - TBR927: 45M (IR LED)
 - TBR927-W: 15M (White LED)
- Target Capture Plate: Reflective
- De-icing: Support (available above -10°C)
- Car Moving Speed: 0~50KM/h
- IR wavelength: 850nm
- ICR: Yes
- WDR: YES (True WDR), 120dB
- Image Enhancement
 - Brightness, Contrast, Saturation, Sharpness, Hue, Rotation, Flip, Day/ Night, Anti-flicker, AWB, BLC, Corridor

Video

- Video compression: H.264/H.265/M-JEPG
- Video streaming: Triple streaming
- Video quality: VBR/CVBR
- Frame rate:
 - 2592x1944 @30 fps
 - 2560x1440 @30 fps
 - 1920x1080 @30 fps
 - 1280x960 @30fps
 - 640x480 @30fps
 - 640x360 @30fps

Audio

- Audio streaming: Two-way
- Audio compression: G.711 8KHz/ 16-bit
- Audio input: Line-in
- Audio output: Line-out

Network

- Interface: 10/100 Mbps ETHERNET, RJ-45
- Supported protocols: HTTP, HTTPS, TCP/IP, UDP, RTP, RTSP, RTCP, FTP
 dient ,FTP server, SMTP,NFS, DHCP, DNS, DDNS,
 NTP, uPnP, ONVIF, IPv4/v6, SNMP,SSL, LDAP,
 802.1x, BT28181, SSH
- Browser: Internet Explorer, Chrome, Firefox, Safari
- Security: Multi-level passwords/ HTTP encryption

I/O Connector

Audio in/out port: 3.5mm phone jack x1

D I/O: DI x1, DO x1

RS485: N/A

• Micro SD slot: Yes, SD card slot x1

RJ45: Yes

Event Management

• Event trigger: Alarm, Motion detection, Sabotage

 Notifications: Trigger alarm output, e-mail/FTP and record Snapshot/ video to Network storage or SD card

Post-recording: YesPre-recording: Yes

Power

DC/AC: DC 12V/AC 24V terminal block

PoE: Yes/IEEE 802.3at (PoE+)

General

Power consumption:

- TBR927: 25W

- TBR927-WH: 30W

• Weight: 3kg

Dimension: 317.23mm (D) x 161mm (W) x 263.3mm (H)

Operating Temp.: -40°C~60°C / -40°F~140°F

• Humidity: 90% RH (no condensation)

Certification: CE/FCCVandal resistant: IK10Weather Proof: IP67

Application: SDK available for application development

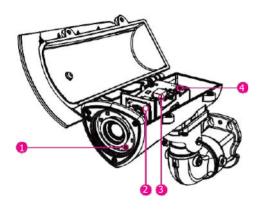
· Heater: Optional

Packaging Information

NWT: 3kgGWT: 3.1ka

• Dimension: 311mm (D) x 286mm (W) x 178mm (H)

DI/O & Function Description

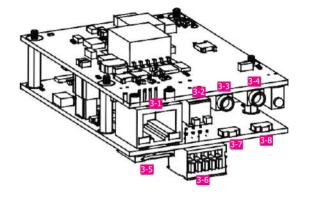


No.	Item	No.	Item
1	8 PCS LED IR Illuminator Board Plate	3	MB Module
2	SB Module	4	Dehumidier Packet



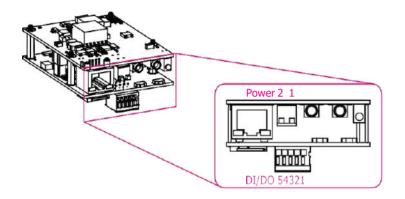






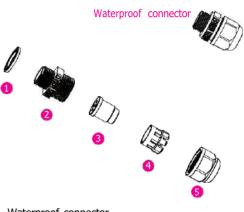
No. Item		No. Item	
3-1	Ethernet / PoE	3-5	Micro SD
3-2	DC 12V / AC 24V	3-6	DI/DO
3-3	Line-out	3-7	Reset
3-4	Line-in	3-8	Default

DI/O Pin Definition & Waterproof Connector Description



Description
ALM_IN (+)
ALM_IN (-)
ALM_out_NC
ALM_out_COM
ALM_out_NO

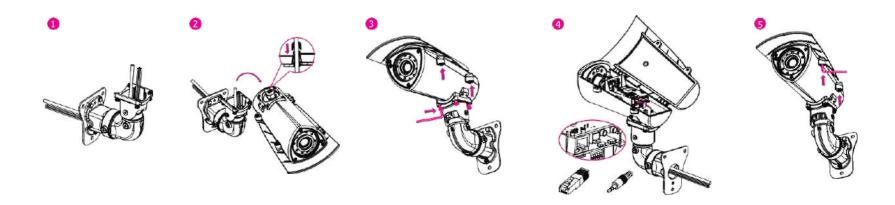
Power			
No.	Description		
1	AC24V/DC12V (+)		
2	AC24V/DC12V (-)		



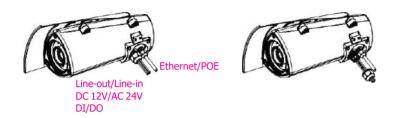
waterproof connector		
No. Description		
1	Gasket	
2	Main body	
3	Tightening collar	
4	Strain relief	
5	Seal nut	

Cable Wiring Description

- 1. Run the cable inside the wall mount bracket and out through the cable opening at the front.
- Wire the network cables to the waterproof connector on the right, and wire the line-in, line-out, DC 12V/AV 24V, DI/DO and other cables to the waterproof connector on the left. Tighten the waterproof connector after all the cables are secured in place.
- 3. Secure the camera onto the wall mount bracket using the four screws provided. Unscrew the 2 screws on the camera's top cover at the side in preparation for the next step.
- 4. Open the camera's top cover to access the wired cables. Install the RJ45 connector to the Ethernet cable and plug it into the corresponding port on the MB module.
- 5. Close the camera's top cover and secure it with the supplied hardware tool to complete.

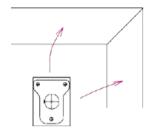


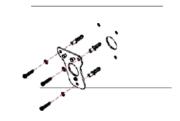
Cable Outlet Description



- 1. The camera features two waterproof connectors, the right one in the diagram is for PoE connection, while the left one is for line-in, line-out, DC 12V/AC 24V, and DI/DO connections.
- 2. The left one features four wire holes. Please cover unused holes with sealing plugs to prevent water from entering.
- 3. Applicable cable diameter:
 - * Ø 1.8~2.5mm (Left)
 - * Ø 4.7~6.9mm (Right)

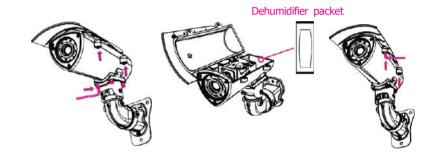
Hardware Installation





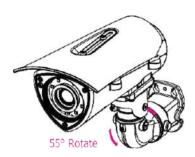
- 1. Position the placement sticker at the desired installation location and use a driller to drill the holes on the sticker.
- 2. Insert three screw anchors into the holes then place the wall mount base on top of them with the mounting holes aligned.
- 3. Wire the required cables through the cable opening on the front of the wall mount bracket. Then, attach and secure the wall mount bracket to the wall mount plate with two M5 screws. Next, install the waterproof connectors onto the cables on the front of the wall mount bracket.

- 4. Secure the camera to the wall mount bracket with the four screws and hex wrench. Open the camera's cover and connect the cables to their corresponding ports on the MB module. Then, glue the dehumidifier packet onto the metal bracket using the adhesive sticker on its back, as depicted in the diagram below. Quickly close the camera's cover and ensure the clip is locked in position to prevent the dehumidifier packet from losing its effectiveness.
- 5. Secure the top cover to finish the installation.

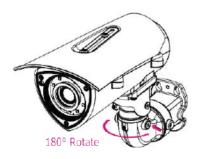


3-axis Angle Adjustment

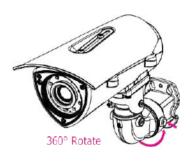
1. The vertical tilt angle of the camera can be adjusted up or down within an angle of 55°. Loosen the left and right screws depicted below to adjust the vertical tilt angle and then tighten the screws after finishing the adjustment.



2. The horizontal tilt angle of the camera can be adjusted left or right within an angle of 180°. Loosen the left and right screws depicted below to adjust the horizontal tilt angle and then tighten the screws after finishing the adjustment.



3. The rotatable axis can be rotated in 360°. Loosen the left and right screws depicted below to adjust the 360-degree position and then tighten the screws after finishing the adjustment.



CHAPTER 2: CAMERA CONFIGURATION

Accessing the Camera's Configuration Menu (Graphical User Interface)

The camera's default IP address is 192.168.1.168, make sure the IP address of the computer accessing the camera is on the same network subnet before proceeding.

You can access the camera via a web browser or IP-FINDER software. The following information outlines the instructions for each method.

Installing IP-FINDER Software



If the IP-FINDER is already installed, you can skip this section and continue to the section of IP-FINDER.

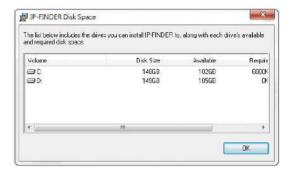
- Download the IP-FINDER installer file.
- 2. Unzip the IP-FINDER file to a location on the hard drive.
- 3. Once unzipped, double click on the setup file to start the installation program.
- 4. Click the **Next** button on the welcome screen to continue.



To continue the installation using the default directory of the drive, click Next.

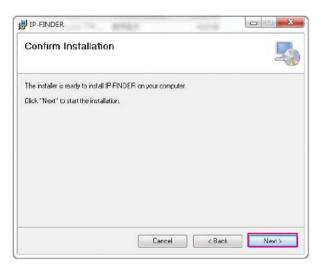


- 5.1 To specify a different folder, click **Browse** and locate the desired installation folder.
- 5.2 To check the available drives and their available and required disk space for installing the software, click **Disk Cost**. When clicking the **Disk Cost** button, a pop-up window will appear on the screen to show the disk information.

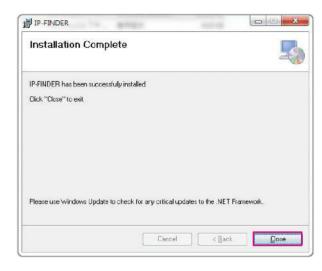


5.3 Specify which user accounts on the computer can access the program, the options are **Everyone** and **Just me**.

6. Click on **Next** button to begin installation.



7. Once the installation process is completed, click on **Close** button to finish. A shortcut will be created on the desktop.



IP-FINDER

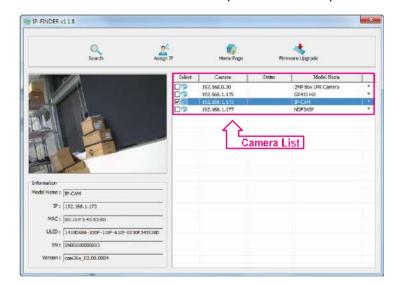
1. Locate and open the **IP-FINDER** software shortcut on the desktop.



2. When the program is launched, it will begin searching the network for IP cameras automatically (the search will last for up to 90 seconds). You can also manually search cameras by clicking on the **Search** button.



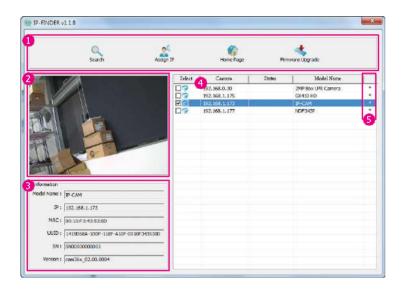
- 3. Once the camera is discovered, it will show the following information:
 - Model Name
 - IP address
 - MAC address
 - UUID
 - Serial Number
 - Version
- **4.** You can access the menu by double clicking the camera's **IP address** under **Camera List**. A browser will be opened automatically.





The cameras displayed in the Camera list are based on the camera that you have connected.

Introduction to the IP-FINDER User Interface



No.	UI Block	Description		
1	Control Bar	Contain [Search], [Assign IP], [Home Page], and [Firmware Upgrade] buttons.		
2	Preview	Display the selected camera image.		
3	Information	rmation Display the selected camera information such as Model Name , IP , MAC , UUID , SN , and Version .		
4	Camera List List the cameras discovered by the search function. Each camera shows the "IP", "Status", "Model Name" and, "Device Mark". Users can also click the column headers to sort the list.			
5	Device Mark	Asterisk sign indicates that this device has " Preview ", " Assign IP " and, " Firmware Upgrade " functions.		

Control Bar

Function	Button	Description
Search	Search	Discover IP cameras available on the network.
Assign IP	Assign IP	Change the IP address of the camera.
Home Page	Home Page	Open the web browser to the home page of the camera.
Firmware Upgrade	Firmware Upgrade	Upgrade the camera firmware.

Search

When the **[Search]** button is clicked, the application will start searching cameras on the network. To stop searching, click the **[Done]** button.

Assign IP

When the **[Assign IP]** button is clicked, a pop-up window "IP Address Configuration" will appear, providing options to use DHCP or static IP address.

Home Page

To view the home page of a particular camera, double click on the camera in the list, the web browser will open and redirect to the home page. To access the home page of two or more cameras, tick the box of the cameras you wish to view and click on the **[Home Page]** button.

Firmware Upgrade

To update the camera firmware, tick the box of the cameras you wish to update and click on the **[Firmware Upgrade]** button. Follow the on-screen prompts to complete the upgrade. If the camera does not support firmware upgrade, a pop-up window will be displayed.

NOTE: Different IP camera models use different firmwares, **please Do NOT** update the firmware of different models using the same firmware.

Web Browser

- 1. Locate and open one of the web browsers (such as Chrome, Edge, Firefox, etc.) shortcut on the desktop.
- 2. In the address bar, type 192.168.1.168 (default IP address of the camera) and then press the **Enter** button.
- 3. You will be prompted with a pop-up window asking for login information, type in "admin" (default login name) and "9999" (default password).



4. Once logged in, you will see the main screen. If no video is displayed on the screen, please make sure you have VLC Media Player installed on the computer. If not, please download and install it first, then you can see the video from the web browser.





The recommended browsers to use are Chrome, Edge, Firefox, and Safari. However, Chrome only supports the viewing of the web setup menu; by Vec View of the video stream is not supported.

Live View

Views the live video of the camera.







1 Zoom Control

Adjust the camera's zoom level. Move the zoom slider bar left or right to adjust the zoom level. The value of the zoom position will be reflected in the text field. Alternatively, the zoom position can be configured by entering a desired number into the text filed.

Pocus Control

To fine tune the focus manually, drag the slider bar. For a finer level of adjustment, click on the directional arrows as many times as needed, till the image on the screen renders the needed result.

6 Snap Shot

Take an image snapshot from the camera, you will be prompted to store the image file onto the computer's hard drive.

Pause

Press to stop the live video or press again to restart.

Configuring the Camera's Setting

To configure the camera's setting, click on button on the main screen to enter the configuration menu.



Browsing Through the Configuration Menu

The layout of the configuration menu is split into two sections. All the camera settings are located on the left hand side of the interface, clicking on each item to open the corresponding sub-menu on the right.



The following are the camera settings available on the left hand side:

Video: Video Configuration / Audio Configuration / Digital zoom

Image: Exposure / Basic Settings / ROI / Privacy Zone / OSD

Network: Basic / FTP / SSL / SSH / 802.1x / SNMP / Firewall / LDAP / DDNS

/ RTSP / Bonjour / Upnp

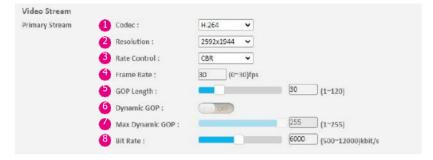
System: Date/Time / Maintenance / User Management / Homepage Layout

Event: Alarm Handler / Motion Detection / Tampering Alarm / Network Loss Detection / FTP Upload / SMTP / Network Storage / Relay

Handler / SD Record Handler / Playback / TCP Notify

Video - Video Configuration

Primary Stream



Codec

Configure the format of the video stream, the available options are **H.265**, **H.264**, and **MJPEG**.

Resolution

Configure the resolution of the video stream, the available options are **2592x1944**, **2560x1440**, and **1920x1080**.

Rate Control

Configure the Rate Control mode as **CBR** (constant bit rate) or **CVBR** (constrained variable bit rate) for the stream.

Frame Rate

Adjust the frame rate of the video stream, the range is $1\sim30$ FPS. The stream will be off if 0 is selected.

GOP Length

Configure the GOP length of the stream, the range is 1~120. Users can enter a value or adjust it through the slider bar.

Opening Bornamic GOP

Enable or disable Dynamic GOP feature. Enabling it will allow GOP to automatically increase when no moving objects are detected to save bandwidth. When moving objects are detected, GOP will automatically decrease, the range is 1~255.

Bit Rate

Configure the bit rate, the range is 500~12000. Users can enter a value or adjust it through the slider bar.

Secondary Stream



Codec

Configure the format of the video stream, the available options are **H.265** and **H.264**.

Resolution

Configure the resolution of the video stream, the available options are 1920x1080, 1280x960, and 1280x720.

Rate Control

Configure the Rate Control mode as **CBR** (constant bit rate) or **CVBR** (constrained variable bit rate) for the stream.

4 Frame Rate

Adjust the frame rate of the video stream, the range is $1\sim30$ FPS. The stream will be off if 0 is selected.

GOP Length

Configure the GOP length of the stream, the range is $1\sim120$. Users can enter the value or adjust it through the slider bar.

6 Dynamic GOP

Enable or disable Dynamic GOP feature. Enabling it will allow GOP to automatically increase when no moving objects are detected to save bandwidth. When moving objects are detected, GOP will automatically decrease, the range is 1~255.

Bit Rate

Configure the bit rate, the range is 500~8000. Users can enter a value or adjust it through the slider bar.

Third Stream



Resolution

Configure the resolution of the video stream, the available options are **640x480** and **640x360**.

Quality

Configure the video quality of the stream, the available options are **High, Normal,** and **Low**.

6 Frame Rate

Adjust the frame rate of the video stream, the range is $1\sim30$ FPS. The stream will be off if 0 is selected.

Video - Audio Configuration



1 Audio In

Enable or disable audio-in on the camera.

2 Encoding

Adjustment of audio compression, the available options are **A-Law** and **U-Law**.

Audio In Volume

Volume adjustment for audio-in of the camera, the available options are **High, Mid,** and **Low**.

4 Audio Out

Enable or disable audio-out on the camera.

6 Audio Out Volume

Volume adjustment for audio-out of the camera, the available options are **High**, **Mid**, and **Low**.

Video - Digital Zoom





Configurations

Enable or disable digital zoom (1) feature. Drag the mouse to select the digital zoom area directly on the live screen. When enabled, a zoom controller panel (2) will appear at the bottom of the screen to move the digital zoom area toward four different directions in steps.

Image - Exposure



Configurations

Profile

Select which profile (**Day** or **Night**) to configure. Users can set up one day profile and one night profile.

AE Mode

The available options are Auto, Iris Priority, Shutter Priority, 50Hz, 60Hz, and Lock.

If Lock is selected, Exposure Time Control, Gain Control, and BLC will be unavailable for editing. Only Exposure Time can be edited (the range is $1/3 \sim 1/50000$).

6 Iris Control

The available option is 0~100% and Auto.

4 Adjustment

Adjust the weighting from $0\sim100$. Users can enter a value or adjust it through the slider bar.

6 Exposure Time Control

The available options are **OFF**, 1/30, 1/15, 1/7.5, and **User Define**. Selects **User Define** to enter a values of **Maximum Exposure Time** (the range is $1/3 \sim 1/50000$) and **Minimum Exposure Time** (the range is $1/3 \sim 1/50000$) manually.

6 Exposure Time

The range is $1/3 \sim 1/50000$. It is available for editing when **Lock** is selected in the AE Mode.

Image - Exposure



6 Gain Control

The available options are **OFF**, **Low**, **Medium**, **High**, and **User Define**. Selects **User Define** to enter a value of Maximum Gain (the range is $1\sim512$) manually.

Gain

The range is $1\sim512$. It can only be edited when **Lock** is selected in the AE Mode.

BLC

Enable or disable backlight compensation function, enable this option if the camera image is too dark.

WDR

Enable this function if the camera is exposed to bright backlight, glare or high contrast lighting. The available options are **OFF**, **Low**, **Medium**, and **High**.

10 AWB Mode (Auto White Balance Mode)

White balance allows the camera to produce more accurate colors under different lighting conditions. The default setting is **Auto**, which automatically adjusts the white balance to suit the current lighting condition. You can also adjust the white balance manually through **R Gain** or **B Gain**. The range is $0 \sim 1000$.

Defog

Enable this function to remove fog or moisture. The available options are **OFF**, **Low**, **Medium**, and **High**.

Noise Reduction

Enable this function to reduce noise. The available options are **OFF**, **Low**, **Medium**, and **High**.

Image - Exposure



Day Night Setting

- Image Profile
 Select day or night profile to automatically set up parameters quickly.
 The available options are AUTO, Force Day, and Force Night.
- Oay Night Control Select the day and night control mode. The available options are AUTO, Force Day, Force Night, EXT Alarm1, and Schedule.
- Wide IR The available options are OFF, Auto, Always ON, High, Medium, and Low.
- Tele IR
 The available options are OFF, Auto, Always ON, High, Medium, and Low.
- IR Cut Control
 Select the IR cut control mode to use. The available options are AUTO,
 Force Day, and Force Night.

Image - Basic Settings



Orientation

Mirror

Flip the image horizontally (**Flip left-to-right**) or vertically (**Flip top-to-bottom**). Both options can be selected at the same time.

Rotate

Allow you to get a vertically oriented image from the camera. It is suitable for narrow corridors, hallways, or aisles applications.

Digital Processing

Stabilize

Enable or disable video stabilization function. Enabling it will allow the camera to minimize the shakiness seen on the video stream (such as vibrations caused by strong winds or earthquakes).

4 Sharpness Adjust

Configure the sharpness of the image, the range is 0~255, with 0 being the lowest sharpness. Enter a value or adjust the bar to increase or decrease the value. The default value is 127.

6 Saturation Adjust

Configure the color saturation of the image, the range is $0\sim100$, with 0 being the lowest saturation. Enter a value or adjust the bar to increase or decrease the value. The default value is 50.

6 Contrast Adjust

Configure the contrast of the image, the range is $0\sim100$, with 0 being the lowest contrast. Enter a value or adjust the bar to increase or decrease the value. The default value is 50.

Image - Basic Settings



Brightness Adjust

Configure the brightness of the image, the range is $0\sim100$, with 0 being the lowest brightness. Enter a value or adjust the bar to increase or decrease the value. The default value is 50.

8 Hue Adjust

Configure the overall hue of the image, the range is $0\sim100$. Increasing the value will adjust the image hue towards red. Decreasing the value will adjust the image hue towards blue. The default value is 50.

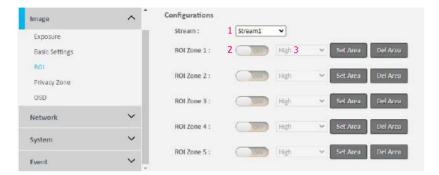
Restore Settings to Defaults

Discard all the settings applied to the image and reset to the default settings.

Default All Image Settings

Discard all the settings applied to the image and revert to the previous settings.

Image - ROI



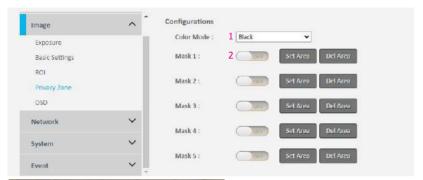


Configurations

ROI is used to select which areas will be monitored and recorded with higher image quality while using lower image quality for other non-ROI zones to save bandwidth and storage. The instructions below illustrate how to setup ROI.

- Select Stream 1 or Stream 2 to set the ROI on.
- 2. There are 5 ROI zones that can be configured (zone 1~zone 5). Switch to **ON** to enable the ROI function. The default is **OFF**.
- 3. Set the image quality of the ROI in the Level drop-down menu, the options are **Low**, **Medium**, or **High**.
- 4. Select the area to set the ROI by holding down the mouse left button and drag to make a rectangular square, release the button once the desired area is covered.
- 5. Press the **Set Area** button for the setting to take effect. The ROI area will then be seen on the video stream.
- 6. Press the **Del Area** button or select **OFF** (step 1) to delete the ROI area.

Image - Privacy Zone



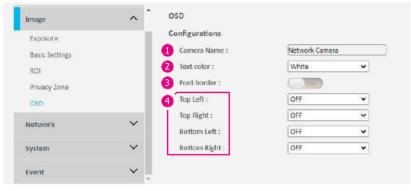


Configurations

Configures which area of the video stream will be masked for privacy.

- 1. Select a desired color for privacy area, the options are **Black**, **White**, **Blue**, **Yellow**, **Green**, **and Red**.
- 2. There are 5 private zones that can be configured (mask 1~mask 5). Switch to **ON** to enable the private zone function. The default is **OFF**.
- 3. Select the area to set the privacy zone by holding down the mouse left button and drag to make a rectangular square, release the button once the desired area is covered.
- 4. Press the (Set Area) button for the setting to take effect. The masked area will be filled with the color mask you chose and the label Mask will be seen on the video stream.
- 5. Press the DelArea (Del Area) button or select OFF (step 1) to delete the privacy zone.

Image - OSD

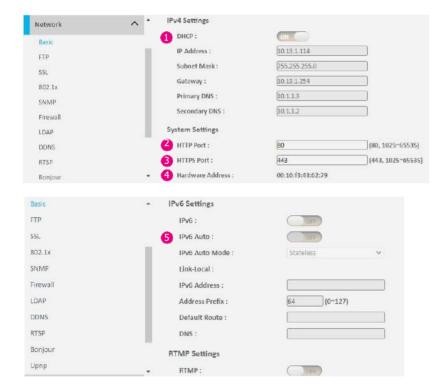




General Settings

- **1 Camera Name**Specify a name for the device. The maximum length is 32 characters.
- Text Color Configure the text color as Black, White, Green, Yellow, or Red.
- **§** Font border Enable the function made the text content been shown in bold character.
- Text Overlay
 There are 4 content positions (Top Left, Top Right, Bottom Left, and Bottom Right) to display the camera name, current date/time, and text overlay.
- Gontent
 OFF: The default setting is OFF (as no content shown on the screen).
 Date/Time: Displays the current date/time.
 Camera Name: Displays the device name.
 - **Camera Name + Date/Time:** Displays the device name and date/time. **Custom Text:** A customized text can be specified here.
- 6 Save
 Apply the configuration settings. Click on (Save) button once all the settings are confirmed for the new changes to take effect.

Network - Basic



IPv4 Settings

O DHCP

Enable or disable DHCP, use this feature if the camera is connected to a network with DHCP server.

To manually configure an IP address, disable DHCP and input the IP address, subnet mask, default gateway, primary, and secondary DNS server address.

System Settings

- **2** HTTP Port Configure the HTTP port number of the web configuration menu.
- **6) HTTPS Port** Configure the HTTPS port number of the web configuration menu.
- 4 Hardware Address Unique MAC address for each camera device.

IPv6 Settings

Enable or disable IPv6 and IPv6 Auto function.

To manually input an IP address, enable IPv6 and input the address prefix, default route, enable/disable router advertisement, and DNS server address.

IPv6 Auto

There are 3 modes to be selected: **Stateless, Stateless DHCP**, and **Stateful DHCP**, enable IPv6 Auto then the address prefix won't be able to be inputted.

Network - Basic



RTMP Settings

6 RTMP

Enable or disable RTMP function.

7 URLConfigure the web URL address.

Link Speed

8 Speed and Duplex

There are 5 modes available for selection: Auto, 100Mbps Full Duplex, 100Mbps Half Duplex, 10Mbps Full Duplex, and 10Mbps Half Duplex.

Save

Network - FTP



Configurations

1 Enable

Enable or disable FTP access to this camera. This function is only available when an SD card is inserted. You can access files in the SD card attached to the IP camera.

Password

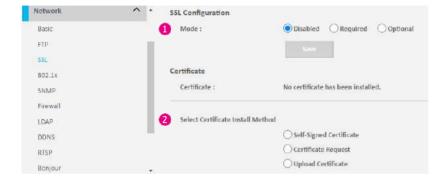
Specify the FTP login password to access the IP camera.

Max Connection

Specify the maximum number of FTP connections the IP camera can support, range from $1\sim10$.

Save

Network - SSL







SSL Configurations

Mode

Disabled: Support for http only.
Optional: Support for http & https.
Required: Support for https only.

Certificate

Select Certificate install Method

There are three options available for installing a new CA certificate: **Self-Signed Certificate**, **Certificate Request**, and **Upload Certificate**. Once you select an option, a configuration page will appear on the screen for further settings. You can find reference images for each option below.

Save



Network - 802.1x



802.1 x Configurations

1 Protocol

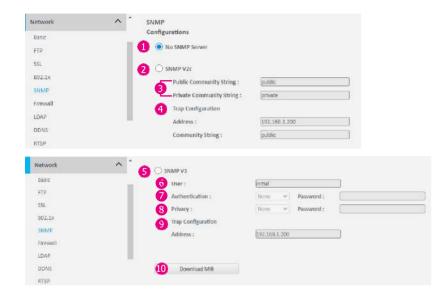
The default is **None** to disable 802.1x function.

Select a protocol to activate the 802.1x function. The available protocols are **EAP-MD5**, **EAP-TLS**, **EAP-TLS**, or **EAP-PEAP**.

After the protocol has been selected, manually configure the username, password, and other required information.

Save

Network - SNMP



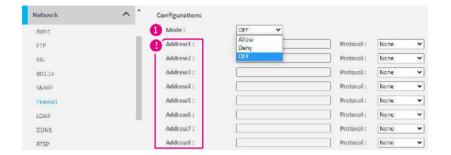
Save

Save button to apply the configurations, click on this button once all the settings are confirmed for the new changes to take effect.

SNMP Configurations

- No SNMP Server
 Disable SNMP function.
- 2 SNMP V2c Enable or disable SNMPv2c support.
- **3** Public / Private Community String Configure the community string.
- Trap Configuration Specify the destination IP address to send the SNMP trap messages.
- **6) SNMP V3** Enable or disable SNMPv3 support.
- **6** User Configure the SNMPv3 username.
- Authentication Mode Configure the Authentication mode. The options are None, MD5, and SHA.
- 8 Privacy Configure encryption for SNMPv3. The options are DES and AES.
- Trap Configuration Specify the destination IP address to send the SNMP trap messages.
- O Download MIB Download MIB file for SNMP.

Network - Firewall



Firewall Configurations

Mode

Select **OFF** to disable the filtering of the specified IP address. Selects **Allow** or **Deny** in the drop-down menu to specify the type of filtering rule applied to the IP address entered.

Address1 to Address8

The IP address and associated protocol (**TCP**, **UDP**, or **None**) to filter can be entered here. A total of 8 IP addresses can be added to the list.

Save

Network - LDAP



LDAP Configurations

• Enable

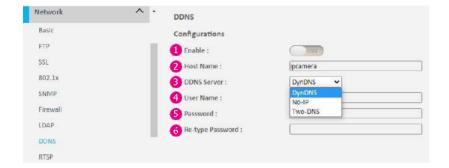
Enable or disable LDAP, use this feature if the camera is connected to a network with LDAP server.

2 CA Certificate

The CA certificate is created by the Certification Authority for the purpose of validating itself. Upload the certificate for checking the server's identity.

Save

Network - DDNS



DDNS Configurations

Enable

Enable or disable DDNS service.

4 Hostname

Hostname of the DDNS account.

6) DDNS Server

Select the DDNS service provider from the drop-down menu, the available providers are **DynDNS**, **NO-IP**, and **Two-DNS**. The default option is **DynDNS**.

4 Username

Username of the DDNS account.

6 Password

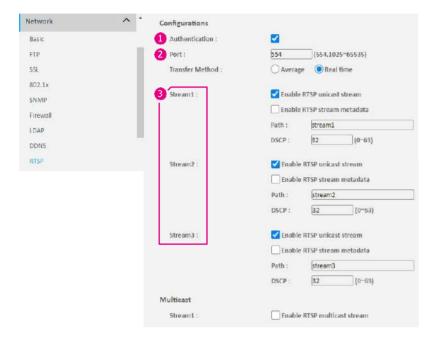
Password of the DDNS account.

6 Re-type Password

Type the same password again for confirmation.

Save

Network - RTSP



RTSP Configurations

Authentication

Enable or disable verification of the account and password. The account and password are the same as the camera's login account and password.

Port

Configure the port number for stream 1 to stream 3. The range is $554/1025\sim65535$.

Stream 1 to Stream 3

Enable or disable RTSP unicast for stream 1 to stream 3. The RTSP port number and pathname for each stream can be configured here.

Default URL Path of Stream 1 to Stream 3

Stream 1: rtsp://cameraIP/stream1 Stream 2: rtsp://cameraIP/stream2 Stream 3: rtsp://cameraIP/stream3

Network - RTSP



Multicast (Stream 1 to Stream 3)

- **4** Enable RTSP Multicast Enable or disable RTSP multicast streaming.
- **6** Always Multicast Check to enable the video stream to start the multicast streaming without using RTCP.
- **6 Video IP**Configure the multicast address to stream video.
- Video Port Configure the port number of the video stream.
- 8 Audio IP Configure the multicast address to stream audio.
- **9 Audio Port** Configure the port number of the audio stream.
- Meta IP Configure the multicast address for the html meta.
- Meta Port Configure the port number of the html meta.
- Path Configure the URL address of the video stream.
- TTL Configure the time-to-live threshold of the multicast datagram before it is discarded by the router.

Network - Bonjour / Upnp



Bonjour / Upnp Configurations

1 Bonjour

Enable or disable Bonjour settings.

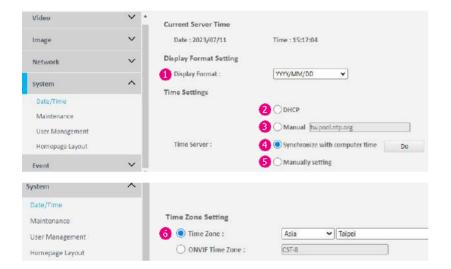
It randomly chooses an IP address from a predetermined range of addresses (set aside for local-link addressing by the Internet Assigned Numbers Authority, or IANA) and assigns it to the device.

Upnp

Enable or disable Upnp (Universal Plug and Play) settings.

Universal Plug and Play is a service that allows devices on the same local network to discover each other and automatically connect through standard networking protocols (such as TCP/IP HTTP, and DHCP).

System - Date / Time



Display Format Setting

Oisplay Format

Display the current date and time. The drop-down menu offers a choice of formats.

Time Server Settings

OHCP

If your DHCP server provides NTP server information, select this setting to enable NTP information retrieval.

Manual

Select this option to configure the NTP server address manually for date and time synchronization.

4 Sync with computer time

Manually synchronize with the current computer date and time.

6 Manual setting

Manually define the date and time. The format is yyyy/mm/dd or hh:mm:ss.

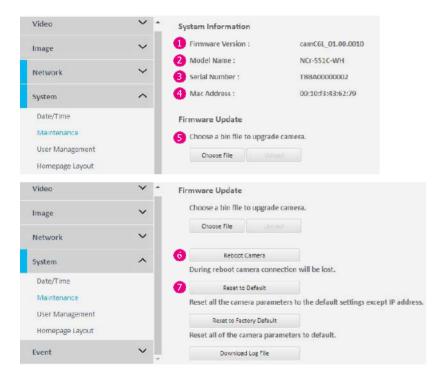
Time Zone Setting

6 Time Zone

Select the time zone relevant to your location in the drop-down menu.

Save

System - Maintenance



System Information

- Firmware Version Display the current firmware version.
- Model Name Display the IP camera model number.
- Serial Number Display the IP camera serial number.
- MAC Address Display the IP camera MAC number.

Firmware Update

6 Firmware Update To update the camera's firmware, click on the Choose File button and

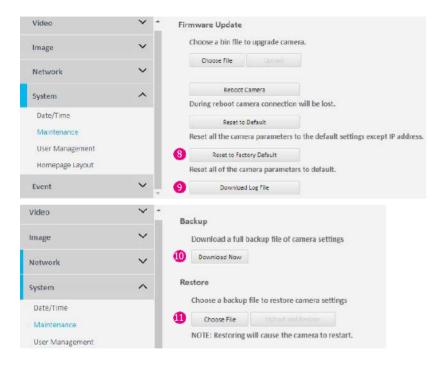
locate the firmware image file, once the file is selected, press the Upload button to begin.



During the update, **Do NOT** disconnect the network cable, reset, or power off the IP camera, as you may damage the device.

- 6 Reboot Camera Click this button to reboot the camera.
- Reset to Default Click this button to restore all the camera's setting back to factory default except IP address (keeps all the settings on the Network Basic setting page).

System - Maintenance



Firmware Update

- Reset to Factory Default
 - Click this button to restore all the camera's setting back to factory default, including IP address (default is 192.168.1.168).
- O Download Log File

Record all the status information of the camera in list format when the camera is connecting to the PC. Downloads the log file to the computer as a text file.

Backup

O Download Now

Download the current camera settings to a backup file.

Restore

- Update and Restore
 - Click on the **Choose File** button and locate the backup file, once the file is selected, press the **Update and Restore** button to restore camera settings.

System - Maintenance



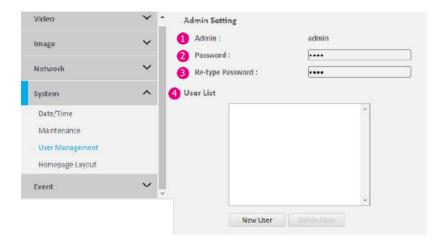
Video System

Video System Option to switch between NTSC or PAL video system. The camera will restart and reset to default after switching the video system.

Focus

19 D/N Auto Focus Calibration Enable Day & Night focus calibration.

System - User Management



Admin Setting

Admin

The default username is admin and cannot be changed.

Password

Set up the password for administrator's authorization.

3 Re-type PasswordRetype the same password to confirm.

User List

4 User List

Display user accounts available on the camera.

Press **New Use**r to add a new account and set up the authorization level of this user from the following **User Information**. Press **Give Up** to delete the new user if you do not want to set up continually.

To delete an account, press the **Delete User** button.

System - User Management



User Information

This section allows users to set up each new user's authorization level. A total of ten accounts can be created for Admins/Views.

6 Access Level

Admins: Has full control (read/write) over every configuration menu item. Views: Only has access (read) to the live view of the camera (main screen).

- **6** User Name
 Username must be at least 1 and up to 16 characters.
- Password
 Password must be at least 1 and up to 16 characters.
- **8** Re-type Password Retype the same password to confirm.

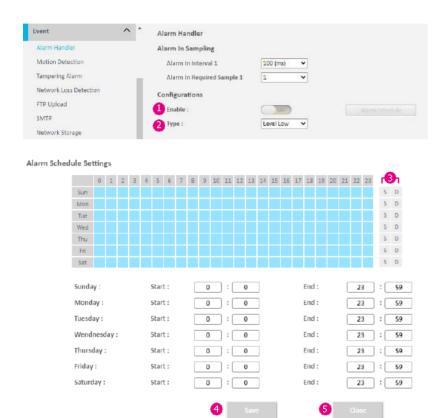
System - Homepage Layout



Logo Graph

Customize the logo for the homepage. You can either upload a new logo or use the default image. To upload your own logo, click on the **Choose File** button to locate and select the image file, then press **Upload** button. The image file format should be GIF, JPG, or PNG, it will be resized to 240x40 pixel to replace the previous logo.

Event - Alarm Handler



Alarm Handler Configurations

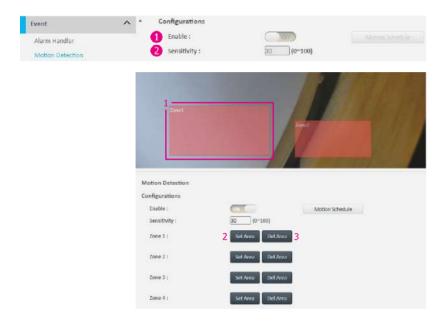
- Enable
 Enable or disable the alarm schedule setup.
- 2 Type Configure for handling alarm signals or events. Available options are Level Low, Level High, Edge Low, and Edge High.
- 3 Alarm Schedule Settings
 S: Press S for a particular weekday to set up a 24-hour schedule automatically.

D: Press D for a particular weekday to clear all the previous scheduled settings automatically.

Configure the scheduled time by holding down the mouse button and clicking the time block to enable the schedule settings on the selected time. A light blue color on the time block indicates that the alarm schedule is enabled, while a light grey color indicates that the alarm schedule is disabled.

- Save Save button to apply the configurations, click on this button once all the settings are confirmed for the new changes to take effect.
- **S** Close Press to exit the schedule setting page.

Event - Motion Detection



Motion Configurations

This section configures which area of the live video will be monitored for detecting motion.

1 Enable

Enable or disable motion detection function.

Sensitivity

Configure the sensitivity of motion detection, the range is 0 to 100.

Zone1 to Zone5 Setup

Configure the type of area layout to use for motion detection. You can configure up to 5 zones. The instructions below illustrate how to set up 5 zones.

- 1. To create zone 1, on the live video screen, select the area to set the zone by holding down the mouse button and drag to make a rectangular square, release the button once the desired area is covered.
- 2. Press the **Set Area** button in zone 1 to set this area as motion zone 1. Repeat the above steps to create motion areas for zones 2 to 5.
- 3. To delete an area, find the motion zone number you would like to remove, and press the **Del Area** button.

Event - Motion Detection

Motion Schedule Settings



Motion Schedule Settings

3 S: Press S for a particular weekday to set up a 24-hour schedule automatically.

D: Press D for a particular weekday to clear all the previous scheduled settings automatically.

Configure the scheduled time by holding down the mouse left button and clicking the time block to enable the schedule settings on the selected time. A light blue color on the time block indicates that the alarm schedule is enabled, while a light grey color indicates that the alarm schedule is disabled.

Alternatively, you can manually enter numbers to configure the hours and minutes from start to end for all weekdays.

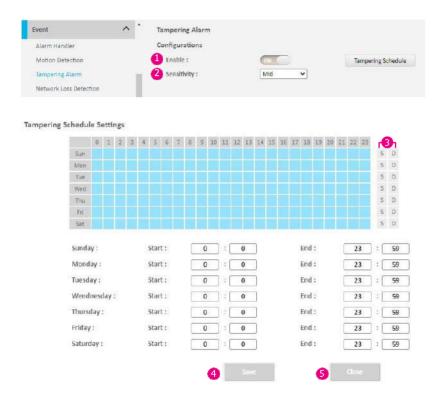
Save

Save button to apply the configurations, click on this button once all the settings are confirmed for the new changes to take effect.

G Close

Press to exit the schedule setting page.

Event - Tampering Alarm



Tampering Alarm Configurations

Enable

Enable or disable the tampering alarm function.

2 Sensitivity

Configure the sensitivity level of sabotage detection, the options are **High, Medium**, and **Low**.

- **3** Tampering Alarm Settings
 - S: Press S for a particular weekday to set up a 24-hour schedule automatically.
 - D: Press D for a particular weekday to clear all the previous scheduled settings automatically.

Configure the scheduled time by holding down the mouse left button and clicking the time block to enable the schedule settings on the selected time. A light blue color on the time block indicates that the alarm schedule is enabled, while a light grey color indicates that the alarm schedule is disabled.

Alternatively, you can manually enter numbers to configure the hours and minutes from start to end for all weekdays.

Save

Save button to apply the configurations, click on this button once all the settings are confirmed for the new changes to take effect.

Close

Press to exit the schedule setting page.

Event - Network Loss Detection

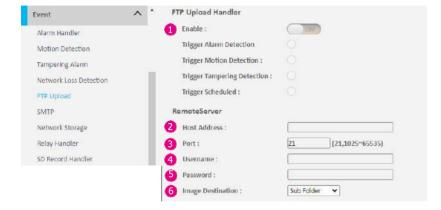


Network Loss Detection Configurations

1 Enable

Enable or disable the network loss detection function.

Event - FTP Upload



FTP Upload Handler Configurations

1 Enable

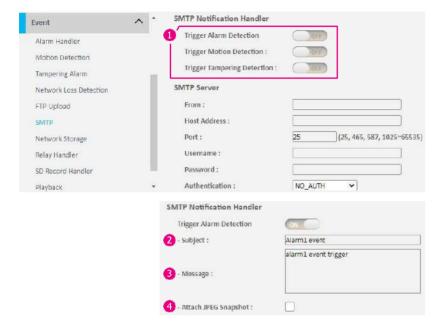
Configure which type of event trigger to enable and the FTP server address that the camera will connect to. The options are:

- Trigger Alarm Detection
- Trigger Motion Detection
- Trigger Sabotage Detection
- Trigger Object Detection
- Trigger Scheduled

Remote Server

- When the server is a server in the server is a server in the server.
 Each of the server is a server in the server in the server is a server in the server in the server is a server in the server in the server is a server in the server in the server is a server in the serve
- 6 Port Specify the port number of the FTP server.
- Username Specify the login username for the FTP server.
- Password Specify the login password for the FTP server.
- 6 Image Destination Sub Folder or Single Folder as options to be chooses.

Event - SMTP Notification



SMTP Notification Handler Configurations

In this section, you can configure the SMTP mail server address that the camera will use to send e-mails.

1 Trigger Event

Configure which type of event trigger to enable and the SMTP server address that the camera will connect to. The options are:

- Trigger Alarm Detection
- · Trigger Motion Detection
- Trigger Tampering Detection

After enabling the desired option, additional settings will become available for configuration.

Subject

Specify the subject of the message.

6 Message

Specify the message content.

4 Attach JPEG Snapshot

Enable or disable e-mail delivery of trigger event snapshots.

Event - SMTP Notification



SMTP Server

6 From

Specify the email address of the sender.

6 Host Address

Specify the host name or IP address of the SMTP mail server.

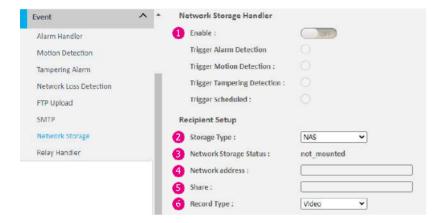
- Port Specify the port number of the SMTP mail server.
- **(8) Username**Specify the login username for the SMTP mail server.
- Password Specify the login password for the SMTP mail server.
- Authentication Mode Specifies the SMTP server authentication mode, the options are NO_ AUTH, SMTP_PLAIN, LOGIN, and TLS_TLS.

Recipient List

Specify the e-mail address to send the e-mail when an event is triggered by Alarm, Motion, or Tampering. A maximum of 10 e-mail addresses can be configured.

Save

Event - Network Storage



Network Storage Handler

In this section, you can configure the network storage server address that the camera will use when an event trigger is detected.

1 Enable

Configure which type of event trigger to enable and the network storage server that the camera will connect to. The options are:

- Enable Trigger Alarm Detection
- Enable Trigger Motion Detection
- Enable Trigger Tampering Detection
- Enable Trigger Scheduled

Recipient Setup

Storage Type

NAS or iSCSI to be selected.

Network Storage Status

Display the current connection status with the network storage server. (not_mounted or ok)

4 Network Address

Specify the IP address of the network storage server.

6 Share

Specify the shared folder name on the network storage server.

6 Record Type

Specify the event trigger action. The options are Snapshot and Video.

Event - Network Storage



Login Certificate

Username and Password

Specify the login username and password for the network storage server.

Mount and Remove Network Storage

8 Mount

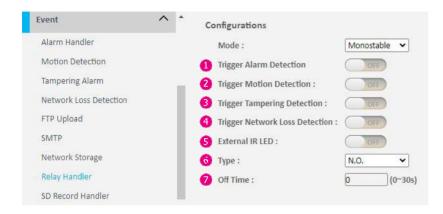
Set up a network connection with the network storage server. All the video recordings or snapshots from event triggers will be uploaded to the network storage server. After the setting is complete, the **Network Storage Status** will display **ok**.

Remove

Delete the previous setting or set up a new one. After the setting is removed, the **Network Storage Status** will display **not mounted**.

Save

Event - Relay Handler



Save

Save button to apply the configurations, click on this button once all the settings are confirmed for the new changes to take effect.

Relay Handler Configurations

This section configures the event trigger options for devices connected to the DI/DO of the camera.

1 Trigger Alarm Detection

When a signal is detected from **Alarm in**, the **Alarm out** will be triggered.

1 Trigger Motion Detection

When a motion detection event is detected, the **Alarm out** will be triggered.

1 Trigger Tampering Detection

When a tampering detection event is detected, the **Alarm out** will be triggered.

4 Trigger Network Loss Detection

When a Network Loss detection event is detected, the **Alarm out** will be triggered.

6 External IR LED

When an External IR LED event is detected, the Alarm out will be triggered.

Type

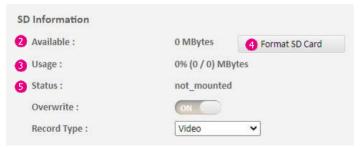
The options are N.O. and N.C.

Off Time

Configure the seconds from 0 to 30 seconds.

Event - SD Record Handler





SD Record Handler Configurations

Enable

Configures which type of event trigger to enable the SD recording and scheduling function. The following options are available:

- Enable Trigger Alarm Detection
- Enable Trigger Motion Detection
- Enable Trigger Tampering Detection
- Enable Trigger Network Loss Detection
- Enable Trigger Scheduled

SD Information

Available

If an SD card is installed, this section will display information on the availability of the SD card.

Usage

If an SD card is installed, this section will display the percentage of the total storage used.

4 Format SD Card

Format the SD card, all data stored on the SD card will be erased if this option is used.

Status

Display whether an SD card is installed or not. If an SD card is detected, **ok** will be displayed; if an SD card is not detected (or a faulty SD card is used), **not mounted** will be displayed.



6 Overwrite

Enable or disable SD card overwrite.

Record Type

Configure the recording type to record the stream on to the SD card. The options are **Video** and **Snapshot**.

Event - TCP Notify



TCP Notify Configurations

Send notifications or alerts when trigger events are detected. The available options are:

- Trigger Alarm Detection
- Trigger Motion Detection
- Trigger Zone1 Motion Detection
- Trigger Zone2 Motion Detection
- Trigger Zone3 Motion Detection
- Trigger Zone4 Motion Detection
- Trigger Zone5 Motion Detection
- Trigger Tempering Detection

IP Address

Configure the number of address

Port

Configure the port number. The range is 1025~65535.

6 Message

Input messages for the detection.