

FEX SERIES FIXED 4K/HD IP ZOOM CAMERA

USER MANUAL

VERSION: FEXM11192018



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IP ZOOM Camera User Manual

Operating Instructions

Thank you for purchasing our product. If there are any questions, please contact the authorized dealer.

Before operating the unit, please read this manual thoroughly and retain it for future reference.

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IMPORTANT INFORMATION

Legal Notice

Attention:

To ensure account security, please change the password after your first login. You are recommended to set a strong password (no less than eight characters).

The contents of this document are subject to change without prior notice. Updates will be added to the new version of this manual.

We will readily improve or update the products or procedures described in the manual.

Best effort has been made to verify the integrity and correctness of the contents in this document, but no statement, information, or recommendation in this manual shall constitute formal guarantee of any kind, expressed or implied. We shall not be held responsible for any technical or typographical errors in this manual.

The product appearance shown in this manual is for reference only and may be different from the actual appearance of your device.

This manual is a guide for multiple product models and so it is not intended for any specific product.

In this manual, the illustrations of displayed interface, parameters displayed, drawings and value ranges may vary with models.

Please see the actual product for details.

Due to uncertainties such as physical environment, discrepancy may exist between the actual values and reference values provided in this manual.

Use of this document and the subsequent results shall be entirely on the user's own responsibility.

Disclaimer

CAUTION!

The default password is used for your first login. To ensure account security, please change the password after your first login. You are recommended to set a strong password (no less than eight characters).

- To the maximum extent permitted by applicable law, the product described, with its hardware, software, firmware and documents, is provided on an "as is" basis.
- Best effort has been made to verify the integrity and correctness of the contents in this manual, but no statement, information, or recommendation in this manual shall constitute formal guarantee of any kind, expressed or implied. We shall not be held responsible for any technical or typographical errors in this manual. The contents of this manual are subject to change without prior notice. Update will be added to the new version of this manual.
- Use of this manual and the subsequent result shall be entirely on the user's own responsibility. In no event shall we be liable to you for any special, consequential, incidental, or indirect damages, including, among others, damages for loss of business profits, business interruption, or loss of data or documentation in connection with the use of this product.
- Video and audio surveillance can be regulated by laws that vary from country to country. Check the law in your local region before using this product for surveillance purposes. We shall not be held responsible for any consequences resulting from illegal operations of the device.
- The illustrations in this manual are for reference only and may vary depending on the version or model. The screenshots in this manual may have been customized to meet specific requirements and user preferences. As a result, some of the examples and functions featured may differ from those displayed on your monitor.
- This manual is a guide for multiple product models and so it is not intended for any specific product.
- Due to uncertainties such as physical environment, discrepancy may exist between the actual values and reference values provided in this manual. The ultimate right to interpretation resides in our company.

Environmental Protection

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

Symbols

The symbols in the following table may be found in this manual. Carefully follow the instructions indicated by the symbols to avoid hazardous situations and use the product properly.

WARNING!: Indicates a hazardous situation which, if not avoided, could result in bodily injury or death.

CAUTION!: Indicates a situation which, if not avoided, could result in damage, data loss or malfunction to product.

NOTE: Indicates useful or supplemental information about the use of product.

Safety Information

WARNING!

Installation and removal of the unit and its accessories must be carried out by qualified personnel. You must read all of the Safety Instructions supplied with your equipment before installation and operation.

Warnings:

- If the product does not work properly, please contact your dealer. Never attempt to disassemble the camera yourself. (We will not assume any responsibility for problems caused by unauthorized repair or maintenance.)
- This installation should be made by a qualified service person and should conform to all the local codes.
- When shipping, the camera should be packed in its original packaging.
- Make sure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.
- Do not touch sensor modules with fingers. If cleaning is necessary, use a clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period of time, put on the lens cap to protect the sensor from dirt.

Maintenance Precautions:

- If there is dust on the front glass surface, remove the dust gently using an oil-free brush or a rubber dust blowing ball.
- If there is grease or a dust stain on the front glass surface, clean the glass surface gently from the center outward using anti-static gloves or an oil-free cloth. If the grease or the stain still cannot be removed, use anti-static gloves or an oil-free cloth dipped with detergent and clean the glass surface gently until it is removed.
- Do not use organic solvents, such as benzene or ethanol when cleaning the front glass surface.

Regulatory Compliance

FCC Part 15

This equipment has been tested and found to comply with the limits for digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.



LVD/EMC Directive

This product complies with the European Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC.



WEEE Directive—2002/96/EC

The product this manual refers to is covered by the Waste Electrical & Electronic Equipment (WEEE) Directive and must be disposed of in a responsible manner.

Overview

This user guide is suitable for the following models:

- FEX30BHD-RNP2 (FHD, IP)
- FEX22B4K-RNP2 (4K, IP)

Key Features

- 4K Resolution: 12MP, 4K(8MP), 6MP, 5MP, 3MP, 1080P, 720P
- Full HD Resolution: up to 1080P/60)
- Zoom: Optical 4K: 22X; FHD: 30X
- Video Output: IP
- H.264/265 encoding, higher compression efficiency
- Corrosion Resistant treatment.
- Outdoor Environmental Rating: IP68, Waterproof Connector, Faceplate heater,
- Nitrogen Pressurized Housing, Corrosion Resistant Housing.
- Sunshield equipped.
- Wide operating temperature range, -40°C to 65°C continuous, up to 70°C for 12 hours.
- Input Power: POE (IEEE802.3at)
- ONVIF Profile S & G compliant
- Various Image Functionalities: WDR, BLC, Defog
- Supports Motion Detection
- Infrared LED, Illumination up to 50 meters(Optional)
- Supports 255 Presets
- Built-in electrical transient/surge protection
- Faceplate Heater (Model Specific)
- 18 pin MS connector on housing with detachable 5ft long Tail-cable water proof RJ45 connector
- Mounting plate for standard bracket use.

WHAT'S IN THE BOX



Camera X 1



Tail cable with female 18 pin connector and RJ45 waterproof coupler



A set of screws X 1



User Manual X 1

Accessory



FEX-WM-A

Aluminum alloy wall mount bracket

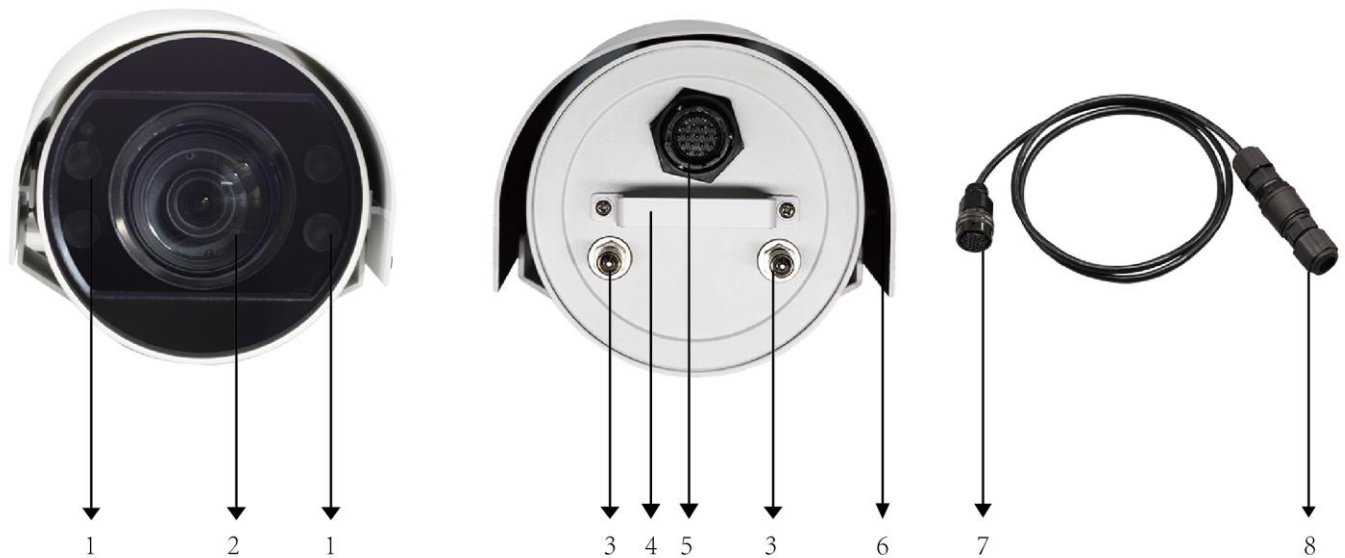


FEX-WM-S

Stainless steel wall mount bracket

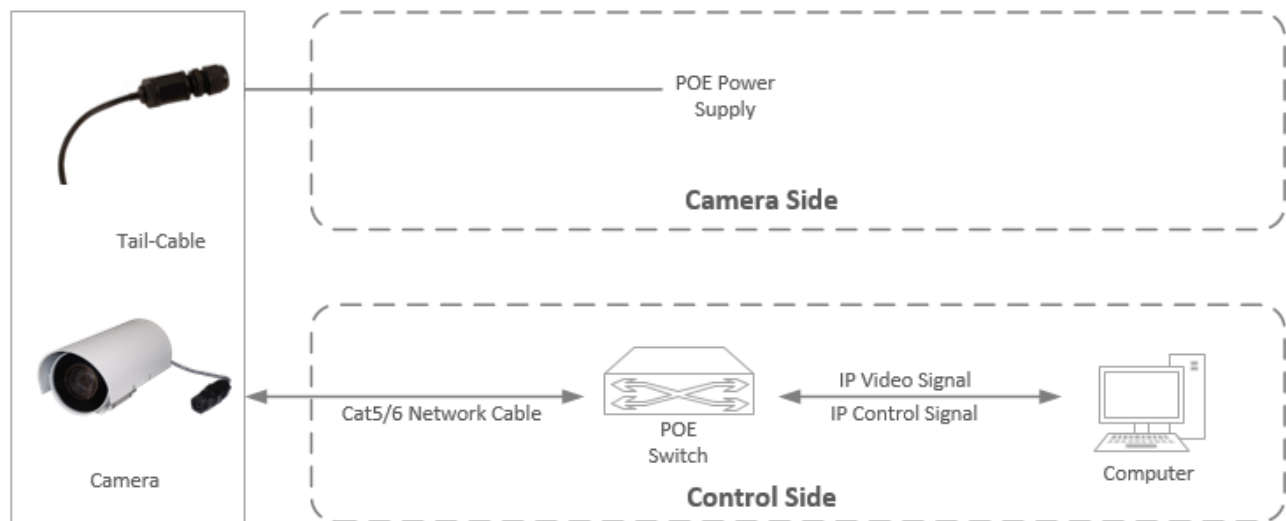
Camera Diagrams

Camera



1. Infrared LED Lights
2. Camera Lens, 30X(FHD) zoom, 22X(4K) zoom
3. Nitrogen Pressurization Schrader Valve (For Factory Use Only)
4. Handle
5. MS Connector (Male) 18 Pin, POE+ Power Input.
6. Sunshield
7. MS Connector (Female) 18 Pin built with 5ft long Tail cable
8. RJ45 + Waterproof Coupler built with 5ft long Tail cable

RJ45 POE Connection



NOTE:

- Use water proof / IP67 rated junction box/ connection box to protect the RJ45 and other connections. A water proof RJ45 connector is available on some models.

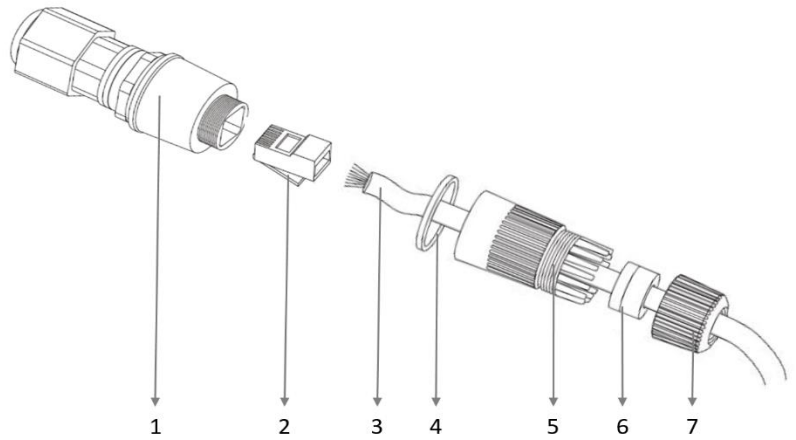
Installing Your Camera

The diagrams included in this user guide are for your reference only. See the actual product to mount your camera.

RJ45 Waterproof Connector Installation Guide

The RJ45 connector is IP67 water-proof rated. Please follow the illustration bellow to install the connector.

1. Network Port POE ready (Built with Water Proof Coupler)
2. Crystal Head
3. Network Cable
4. Silicone Ring
5. Paw
6. Silica Gel Pad
7. Cap



1. Insert the "3" Network cable through the waterproof head kit ("4/5/6/7").
2. Insert the Crystal head.
3. Insert the crystal into the network port.
4. Tighten the head kits ("4/5/6/7").

NOTE:

Please install the connector properly as the following picture:



NOTE:

The connector that has been installed properly should be like the picture below:



Cable Requirements

Network Cable 10/100 Mbps Ethernet CAT 5/5E/6 UTP cables are applicable to the ANSI/EIA/TIA-568A/B and ISO/D. Eight wires in the network cable need to be inserted in parallel into the top of the cable connector. The cable connector needs to be crimped in position. When the cable connector is in position, ensure that the metal pieces of the cable connector are parallel to each other and the clamp of the cable connector is intact.

Install the Tail Cable

Install and detach the Tail Cable included with the product as following:

Mounting the Camera

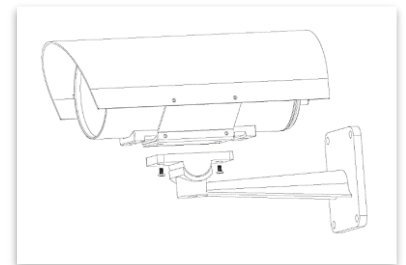
Check Camera Components and Installation Conditions Before mounting your camera, check the device model number and included contents against the packing list to ensure components are complete.

Important:

1. Verify the bearing capacity of the mounted position
2. Verify that the mounted position meets the bearing requirements. Otherwise, you are advised to reinforce the mounted position for the device weight. For more information, see the product datasheet.
3. Verify lightning protection and grounding requirements
4. Ground the terminal properly.

NOTE:

- When mounting the camera, please install the bracket adapter to the bracket first and then mount the camera to the racket.
- Tighten all the screws to hold the camera securely.

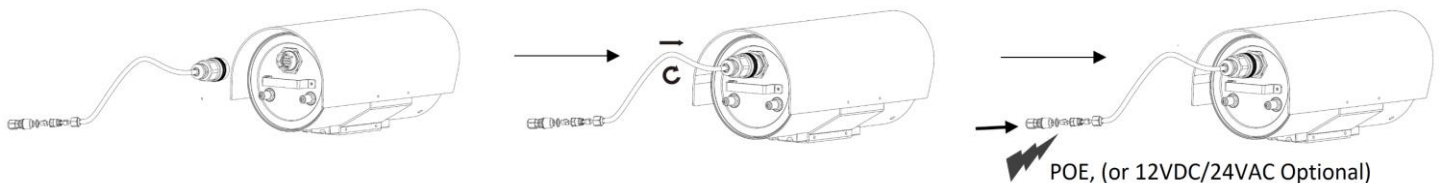


Power the camera

NOTE:

- Do not turn on the power nor connect the power/POE network cable to the camera Tail Cable until the camera Tail Cable has been connected completely to the camera.

Use IEEE802.3at standard POE power adaptor or POE switch to power the camera. It takes about 2 minutes for the camera to be completely powered on.



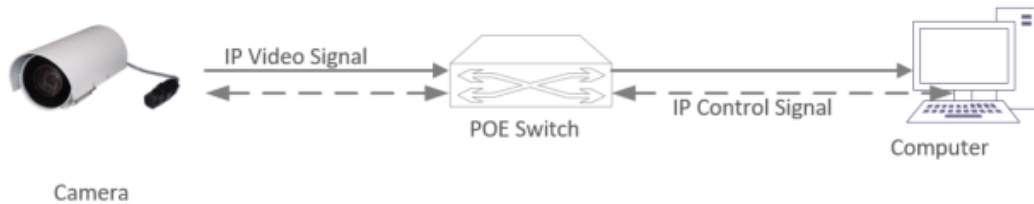
Starting the Camera

After you have mounted the camera properly, connect the camera to switch or router.

Setting Camera over the LAN

To view and configure your camera via the local area network (LAN), you need to install the VMS (Video Management System) to access the camera.

1. Connect your camera and your PC as shown in the figure below to ensure the routing is available.
2. Use VMS or IPC-Search-Tool to search available cameras on the network automatically.
3. Modify the camera settings if necessary, including its IP address and subnet mask.



NOTE:

- The default IP address is “192.168.0.13”. The default username is “admin”, and the default password is “admin” or “123456”.
- To access your camera from a different subnet, set the gateway for your camera after you log in.

Accessing Your Camera

For camera models with IP output, you can manage and control through the web interface from a PC.

System Requirements for Your PC

1. Operating System: Microsoft Windows 8/Windows 7/Windows XP (32-bit or 64-bit). Microsoft Windows 7 (32-bit) is recommended.
2. CPU: 2.0 GHz or higher, dual-core. Intel i3 CPU or higher are recommended.
3. Memory: At least 1 GB. 2 GB (or higher) is recommended.
4. Graphic Card: At least 128 MB display memory. Mainstream discrete graphics with more than 1 GB display memory are recommended. The hardware should support DirectX9.0c. *Make sure that the latest driver is installed on graphic card.*
5. Sound Card: Essential. *The intercom and voice broadcast require the latest driver on sound card.*
6. Network Card: Gigabit Ethernet network cards (or higher) are recommended.

Accessing Your Camera

Before you begin, please check:

1. Make sure the self-test is completed.
2. Your camera is operating properly and connected to the network.
3. The PC client you are using is installed with Internet Explorer 8.0 or higher.
4. Open Internet Explorer on your PC.
5. In the address bar, input the IP address of your camera (Default IP is 192.168.0.13) and then press Enter to open the login page.
6. Enter the username (default is “admin”) and password (default is “admin” or “123456”) and then click Login.

NOTE:

- Install the ActiveX on your first login. For detailed steps, see [Installing the ActiveX](#). When the installation of the ActiveX is completed, open IE to log in.

Installing the ActiveX

- The following message will show in IE browser on first login. Click **Download** to install Active X.



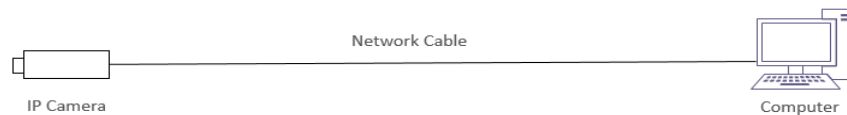
- Click **Run**. You may also click **Save** to download the file to your computer first.
- Close the browser and follow the steps to complete the installation.

NOTE:

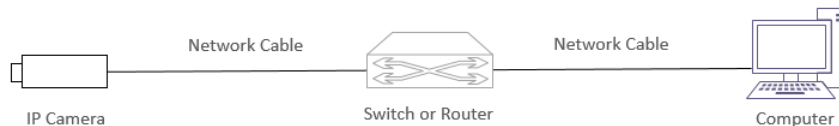
- For your first login with Windows 7, if the system does not prompt you to install ActiveX, follow these steps to turn off UAC: Click the **Start** button, and then click **Control Panel**. In the search box, type **UAC**, and then click **Change User Account Control Settings**. Move the slider to the **Never Notify** position, and then click **OK**. After UAC is turned off, log in again.
- If the installation fails, open **Internet Option** in IE before login. Click the **Security** tab, click **Trusted sites**, and then click **Sites** to add the website. If you use Windows 7, you need to save the *setup.exe* to your PC first, and then right-click the file, select **Run as administrator**, and then install it according to instructions.

Network Connection

Before accessing a network camera (also known as IP Camera or IPC) from a PC, you need to connect the network camera to the PC directly with a network cable or via a switch or router.



Use a Shielded Twisted Pair (STP) cable to connect the network interfaces of the network camera and the PC.



Use Shielded Twisted Pair (STP) cables to connect the network interfaces of the camera and the switch or router.

Login

Preparation

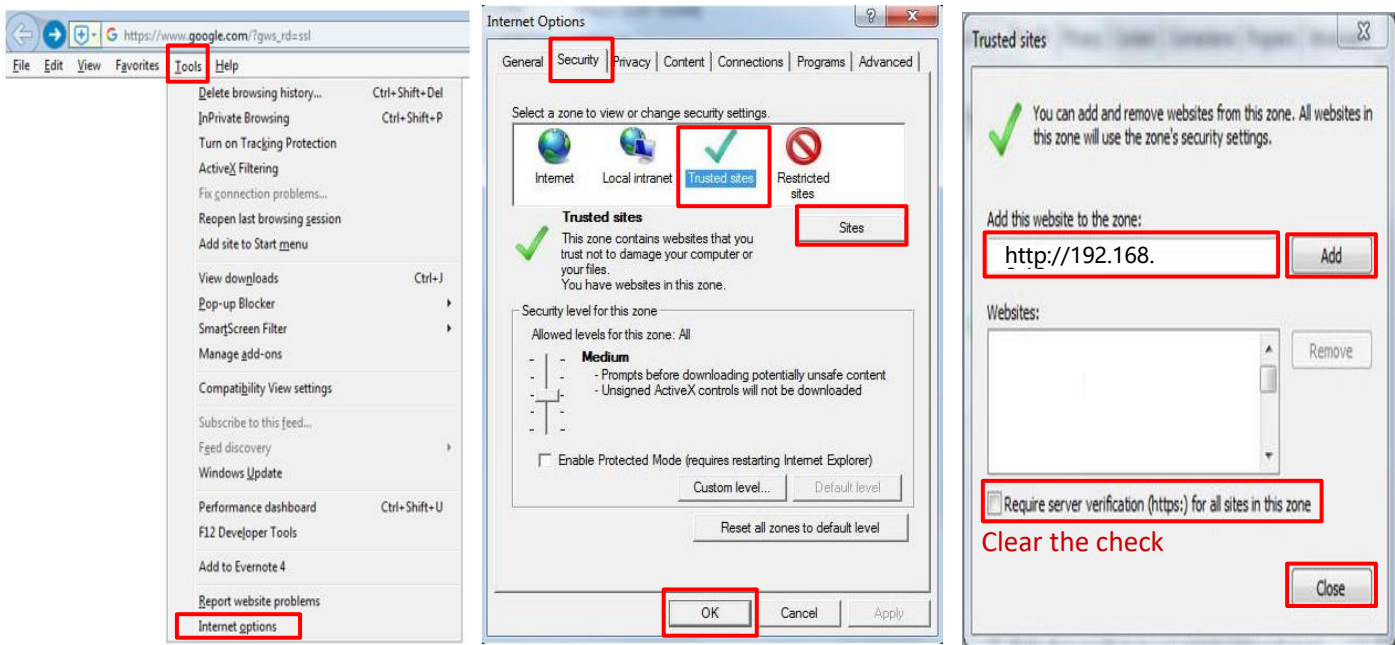
After you have completed the installation in accordance with the quick guide, connect the camera to power to start it. After the camera is started, you can access the camera from a PC client installed with a web browser or the video management software. Internet Explorer (IE) is a recommended web browser. Please contact your dealer to get the video management software. Please refer to the user manual of video management software for detailed information. The following takes IE on a Microsoft Windows 7.0 operating system as an example.

Check before login

- The camera is operating correctly.
- The network connection between the PC and the camera is normal.
- The PC is installed with Internet Explorer 8.0 or higher.
- (Optional) The resolution is set to 1440 x 900.

Add the IP address as a trusted site

Follow the illustrations below:

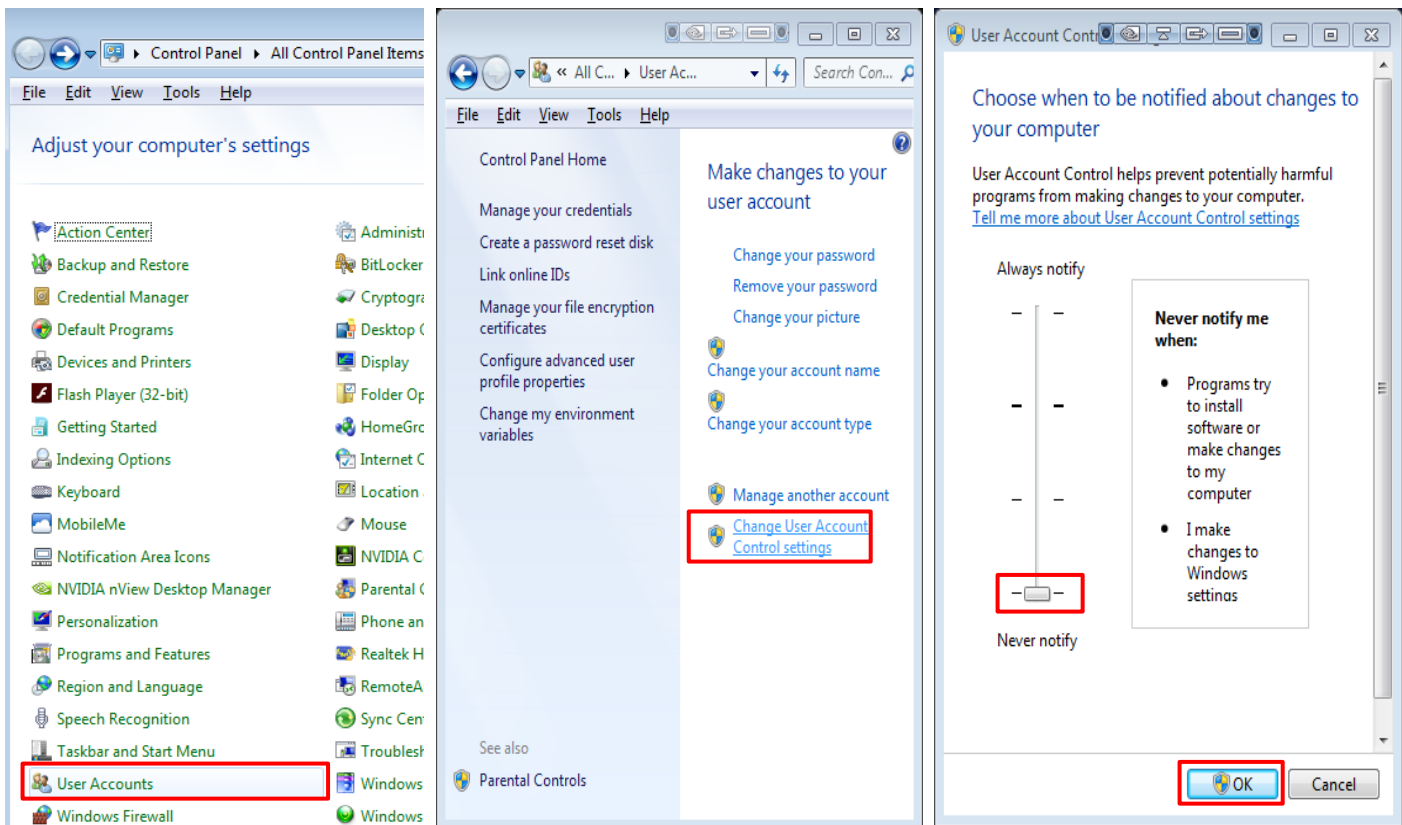


NOTE:

- The IP address 192.168.0.13 in this example is the default IP address. Please replace it with the actual address of your camera if it has been changed.

Modify user access control settings (Optional)

Before you access the camera, follow the steps to set **User Account Control Settings** to **never notify**.

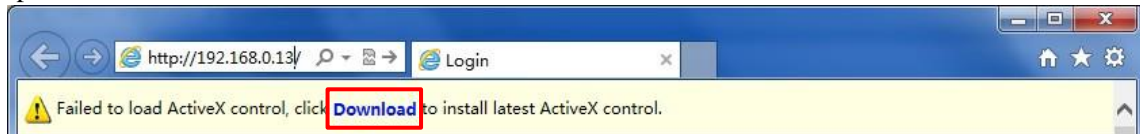


Login to the Web Interface

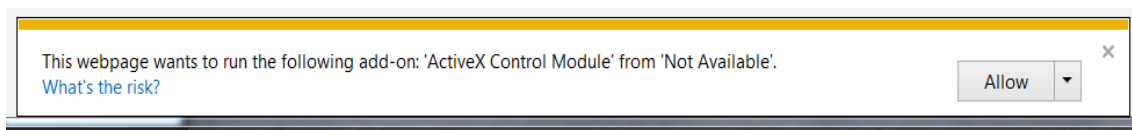
The default static IP address of the camera is 192.168.0.13, and the default subnet mask is 255.255.255.0. DHCP is turned on by default. If a DHCP server is used in the network, the IP address of your camera may be assigned dynamically, and you need to use the correct IP address to log in. Use the video management software to view the dynamic IP address of your camera.

The following takes IE as an example to describe the login procedure.

1. Browse to the login page by entering the correct IP address of your camera in the address bar.
2. If you log in for the first time, follow system prompts and install the ActiveX. You need to close your browser to complete the installation.



3. Click **Allow** to proceed the login process.



NOTE:

- To manually load the ActiveX, type `http://IP address/ActiveX/Setup.exe` in the address bar and press **Enter**.
- The default password is used for your first login. To ensure account security, please change the password after your first login. You are recommended to set a strong password (no less than eight characters).
- The camera protects itself from illegal access by limiting the number of failed login attempts. If login fails six times consecutively, the camera locks automatically for ten minutes.

4. Enter the username and password, and then click **Login**. For the first login, use the default username **admin** and password **123456** or **admin**.

- If you log in with **Live View** selected, live video will be displayed when you are logged in. Otherwise, you need to start live video manually in the live view window.
- If you log in with **Save Password** selected, you do not need to enter the password each time when you log in. To ensure security, you are not advised to select **Save Password**.
- To clear the **Username** and **Password** text boxes and the **Save Password** check box, click **Reset**.



NOTE:

- **Important:** Be sure to keep the new password written down and put in a safe place. If the password is forgotten, camera will require hardware resetting. Additional charges may apply for reset services.
- **Forgot Password?** If you forget the password, email the device Product Bar Code and camera's current time mm/dd/yy to supportbolintechnology.com for a temporary password. You will be able to change the password after login.

Introduction to the Web Interface

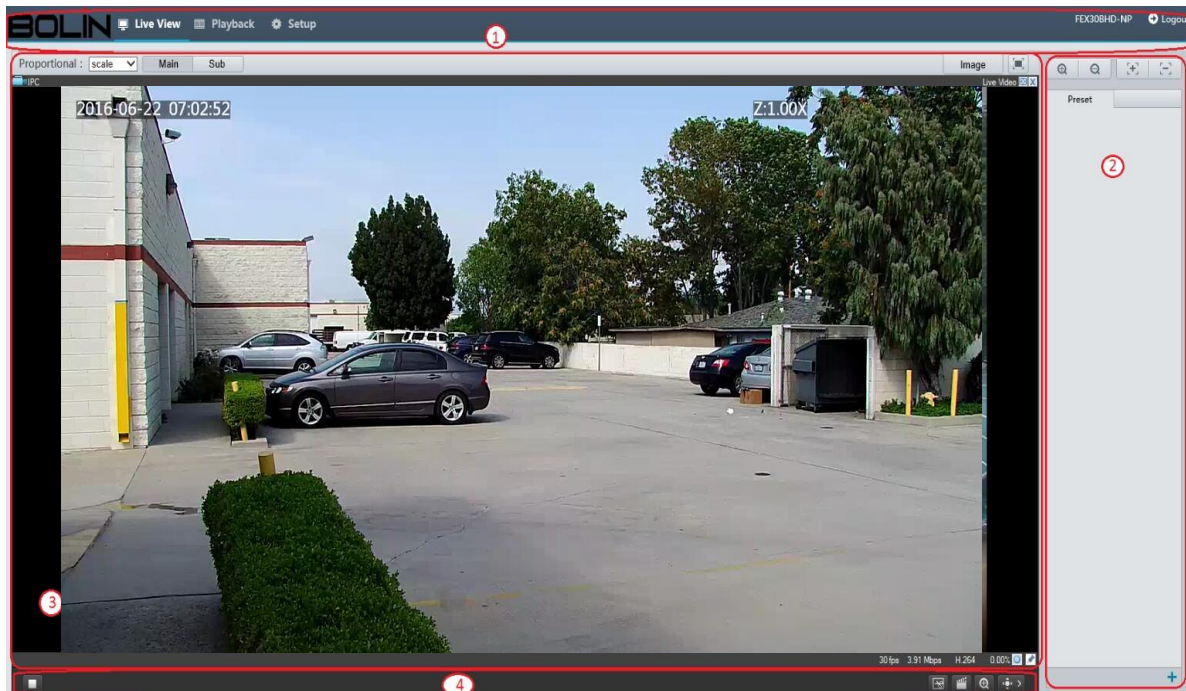
By default, the live view window is displayed when you are logged in to the Web interface. The following shows an example.

Initial Configuration

After you log in to the device, please perform the following initial configuration.

1. Set the TCP/IP address for the device: Reconfigure the device IP and network parameters based on the actual networking.
2. Log out and log in again to the Web using the new IP address.
3. Set the system time for actual situation.
4. (Optional) Setting the management server based on the actual networking.
5. Set OSD, set the information displayed on the screen as needed.
6. (Optional) Manage users. Change the default password and add common users as needed.

You can watch the live video after finishing the initial configuration. Please configure other parameters as needed.



1. Menu
2. Zoom/ Focus control area.
3. Live view window
4. Live view toolbar

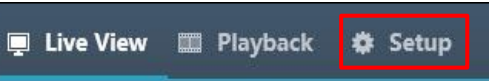
NOTE:

- The displayed live view interface, parameters displayed and value ranges may vary with models. Please see the actual Web interface for details.
- The parameters that are grayed out cannot be modified. For the actual settings, see the Web interface.
- It is recommended that you change the password when you are logged in the first time. For details about
- How to change a password, see Security.

Configuring Parameters

Local Parameters

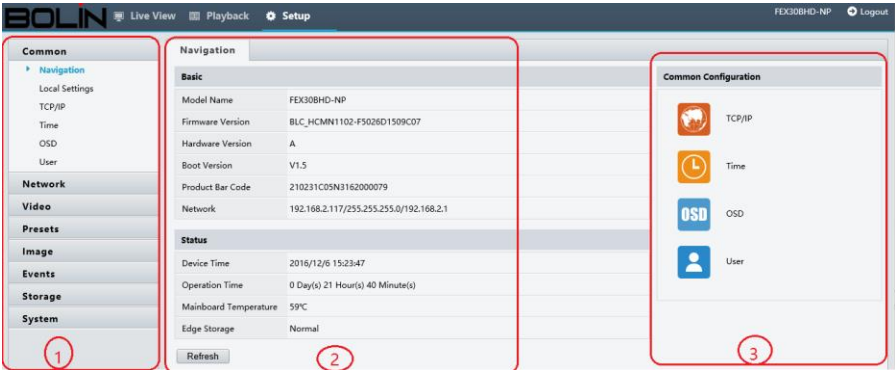
Set local parameters for your PC.



NOTE:

- The local parameters may vary with models, please see the actual Web interface for details.
1. Setting options
 2. Basic information, if click-in setting, there are shown parameter for selections.
 3. Shortcut entrance to common Configuration, you can one-click to enter relevant setting for IPC.

Select **Setup** to go into IP camera setting up menu.



1. Select **Setup > Common > Basic Info.**
It displays the basic information of the camera.
2. Select **Setup > Common > Local Settings.**

Video Param

Display Mode

High Quality

Processing Mode

Fluent Prior

Video Pixel Format

YUV420

Protocol

TCP

Recording and Snapshot

Recording

Subsection By Size

Subsection Size (MB)

100

[10-1024]

When Storage Full

☒ Overwrite Recording ☐ Stop Recording

Total Capacity(GB)

10

[1~1024]

Local Recording

TS

Recording Folder

D:\CMRFiles\Record\

Browse...

Open

Snapshot Folder

D:\CMRFiles\Snap\

Browse...

Open

Save

3. Modify the settings as required. The following table describes some major parameters.
- A. Video Parameter
- a. Processing Mode

- i. Real Time Prior: Recommended if the network is in good condition.
 - ii. Fluent Prior: Recommended if you want short time lag for live video.
 - iii. Ultra-low Delay: Recommended if you want the minimum time lag for live video.
 - b. Video Pixel Format
 - i. Set the video format for images on the PC client.
It is recommended to choose **YUV420** if the graphic card of your PC supports it. **RGB32** is only supported by some low-version graphic cards.
 - c. Protocol
 - i. Set the protocol used to transmit media streams to be decoded by the PC.
 - B. Record and Snapshot
 - a. Recording
 - i. Subsection By Time: Duration of recorded video for each recording file on the computer. For example, 2 minutes.
 - ii. Subsection By Size: Size of each recording file stored on the computer. For example, 5M.
 - b. When Storage Full
 - i. Overwrite Recording: When the assigned storage space on the computer is used up, the camera deletes the existing recording files to make room for the new recording file.
 - ii. Stop Recording: When the assigned storage space on the computer is full, recording stops automatically.
4. Click **Save**.

Network Configuration

TCP/IP

Modify communication settings such as the IP address for the camera so that the camera can communicate with other devices.

NOTE:

- After you have changed the IP address, you need to use the new IP address to log in.
- The configurations of DNS (Domain Name System) server are applicable when the device is accessed by domain name.

1. Click **Setup > Network > TCP/IP**.
2. Select **Static IP** from the **IP Obtain Mode** drop-down list.
3. Enter the IP address, subnet mask, and default gateway address. Make sure that the IP address of the camera is unique in the network.
4. Click **Save**.

Common	TCP/IP
Network	
<ul style="list-style-type: none"> TCP/IP Port DDNS FTP E-mail Port Mapping SNMP 802.1x 	IPv4 <ul style="list-style-type: none"> IP Obtain Mode: Static IP IPv4 Address: 192.168.1.13 Subnet Mask: 255.255.255.0 Default Gateway: 192.168.1.1 IPv6 <ul style="list-style-type: none"> IPv6 Mode: Manual IPv6 Address: Prefix Length: 64 Default Gateway: DNS <ul style="list-style-type: none"> Preferred DNS Server: 114.114.114.114 Alternate DNS Server: 114.114.115.115 MTU: 1500 Port Type: FE Port Operating Mode: Auto-negotiation Save
Video & Audio	
PTZ	
Image	
Events	
Storage	
System	

If a gatekeeper or firewall is used in the network, Universal Network Passport (UNP) can be used to interconnect the network, and the UNP server will assign an IP address to the connected cameras.

1. Select Enable for UNP Service.
2. In the **UNP Server IP** text box, enter an IP address for the UNP server. Select **Yes** to enable authentication, and then set the username and password for UNP authentication.
3. Click **Save**.

NOTE:

- This function is not supported by some models, please see the actual model for details.

UNP

UNP Service ☒ Enable

UNP Server IP

Authentication ☒ Yes ☐ No

Username

Password

PPPoE

If the camera is connected to the network through Point to Point over Ethernet (PPPoE), you need to select PPPoE as the IP obtainment mode.

1. Click **Setup > Network > TCP/IP**.
2. Select **PPPoE** from the **IP Obtain Mode** drop-down list.
3. Enter the username and password provided by your internet Service Provider (ISP).
4. Click **Save**.

NOTE:

- This function is not supported by some models, please see the actual model for details.

IPv4

IP Obtain Mode **PPPoE**

Username

Password

IPv6

IPv6 Mode **Manual**

IPv6 Address

Prefix Length

Default Gateway

DNS

Preferred DNS Server

Alternate DNS Server

MTU

Port Type **FE Port**

Operating Mode **Auto-negotiation**

Save

DHCP

The Dynamic Host Configuration Protocol (DHCP) is enabled by default when the camera is delivered. If a DHCP server is deployed in the network, the camera can automatically obtain an IP address from the DHCP server.

To manually configure DHCP, follow the steps below:

1. Click **Setup > Network > TCP/IP**.
2. Select **DHCP** from the **IP Obtain Mode** drop-down list.
3. Click **Save**.

IPv4

IP Obtain Mode **DHCP**

IPv6

IPv6 Mode **Manual**

IPv6 Address

Prefix Length

Default Gateway

DNS

Preferred DNS Server

Alternate DNS Server

MTU

Port Type **FE Port**

Operating Mode **Auto-negotiation**

Save

Port

1. Click **Setup > Network > Port**.
2. Configure relevant port numbers.
3. Click **Save**.

Port

HTTP Port

HTTPS Port

RTSP Port

Note: Modifying the RTSP or server port number will cause the device to restart.

Save

NOTE:

- This function is not supported by some models, please see the actual model for details.
- If the entered HTTP port number has been occupied, a prompt message will be displayed as *Port conflicts*. Please try again. 23, 81, 82, 85, 3260 and 49152 are occupied by default. And other occupied ports will be detected automatically.

FTP

After the configuration of FTP, you will be able to upload snapshots from network cameras to the specified FTP server.

1. Click **Setup > Network > FTP**.
2. Configure the IP address, port number of the FTP server, the username and password of the upload account, enable **Upload Images** and **Overwrite Storage**, and then set the overwrite image threshold.
3. Click **Save**.

FTP

Server Parameters

Server IP: 192.168.0.150

Port No.: 21

Username:

Password:

Upload Images: ☐

Overwrite Storage: ☐

Overwrite At(image): 1000

Save

E-Mail

After the configuration of E-mail, when alarms are triggered, you will be able to send messages to the specified E-mail address.

1. Click **Setup > Network > E-mail**.
2. Configure relevant parameters of the sender and the recipient.

The following table describes some major parameters.

- A. SSL
 - a. When enabled, the e-mail will be sent through SSL encryption.
 - B. Attach Image
 - a. When enabled, the e-mail will contain 3 instant snapshots as attachment according to the Capture Interval.
3. Click **Save**.

E-mail

Sender

Name:

Address:

SMTP Server:

SMTP Port: 25

SSL: ☐ Enable

Capture Interval(s): 2 ☒ Attach Image

Server Authentication: ☒ Enable

Username:

Password:

Recipient

Name1:

Address1:

Name2:

Address2:

Name3:

Address3:

Save

Port Mapping

1. Click **Setup > Network > Port Mapping**.
2. Enable **Port Mapping** and select mapping type. If **Manual** is selected, then external ports must be configured (external IP is obtained automatically by the camera). If the configured port is occupied, then the **Status** will show Inactive.
3. Click **Save**.

Port Mapping

Port Mapping: ☐ Enable ☒ Disable

Mapping Type: Automatic

Port Type	External Port	External IP	Status
HTTP	50080	0.0.0.0	Inactive
RTSP	50554	0.0.0.0	Inactive
Server	50081	0.0.0.0	Inactive

Save

DDNS

BoLin IPC supports DynDNS, NO-IP and EzDDNS. Some of DDNS provider will be extra fee for using their service.

1. Click **Setup > Network > DDNS**.
2. Enable **DDNS Service**.
3. Click **Save**.

NOTE:

- *This function is not supported by some models, please see the actual model for details.*

The screenshot shows the 'DDNS' configuration page. At the top, there's a tab labeled 'DDNS'. Below it, the 'DDNS Service' checkbox is unchecked. The 'DDNS Type' dropdown menu is open, showing three options: 'DynDNS' (selected), 'NO-IP', and 'EzDDNS'. Below the dropdown are input fields for 'Server Address', 'Domain Name', 'Username', 'Password', and 'Confirm Password'. A 'Save' button is at the bottom right.

Image Configuration

Image Adjustment

NOTE:

- *The image parameters displayed and value ranges allowed may vary with camera model. For the actual parameters and value ranges of your camera, see the Web interface. You may move the sliders to adjust settings or enter values in the text boxes directly.*
 - *Clicking **Default** will restore all the default image settings.*
1. Click **Setup > Image > Image**.
See the Image Adjustment page as bellow:

The screenshot shows the 'Image Adjustment' page. On the left is a sidebar with a menu: 'Common', 'Network', 'Video', 'Presets', 'Image' (selected), 'Events', 'Storage', and 'System'. Under 'Image', there are sub-items: 'Image' (selected), 'OSD', and 'Privacy Mask'. The main area has a tab labeled 'Image'. It features a live video feed of a parking lot. Above the feed is a 'Proportional' dropdown set to 'scale'. Below the feed is a '[None]' dropdown and a set of zoom and crop controls. To the right of the video feed are several expandable settings sections: 'Scenes' (with an 'Enable Auto Switching' checkbox and a 'Default' button), 'Image Enhancement', 'Exposure', 'Smart Illumination', 'Focus', 'White Balance', and 'Advanced'.

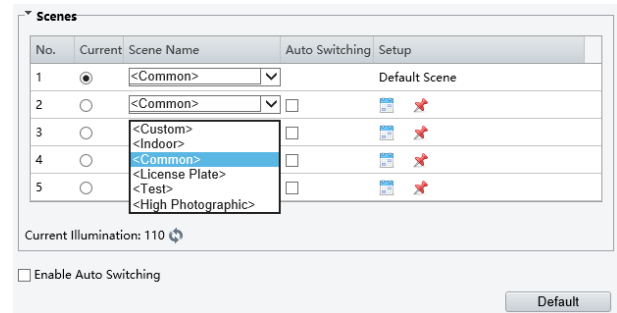
Setting the Scene

Set image parameters to achieve the desired image effects based on live video in different scenes.

Click **Setup > Image > Image**.

Click **Scenes**.

The scene management page for some models is displayed as follows (Right Top), you can select the desired scene in the drop-down list.



The Web interface of certain models is displayed as follows (Right Below).

No.	Current	Scene Name	Auto Switching	Setup
1	<input checked="" type="radio"/>	<Standard>	<input type="checkbox"/>	Default Scene
2	<input type="radio"/>	<Bright>	<input type="checkbox"/>	
3	<input type="radio"/>	<Vivid>	<input type="checkbox"/>	
4	<input type="radio"/>	<Standard>	<input type="checkbox"/>	
5	<input type="radio"/>	<Standard>	<input type="checkbox"/>	

1. Click **Scenes**.
2. Select a scene, and then set scene switching parameters. The following table describes some major parameters.
 - A. Current
 - a. Indicates the scene that is being used.
 - i. Select an option button to switch to the scene and display the corresponding image parameters for the scene.
 - ii. The camera switches the current scene automatically when **Enable Auto Switching** is selected.
 - B. Scene Name
 - a. Name of the current scene. The device provides several preset scene modes. When you select a scene, the corresponding image parameters are displayed. You can adjust image settings according to actual needs.
 - i. Common: recommended for outdoor scenes
 - ii. Indoor: recommended for indoor scenes
 - iii. License Plate: recommended for plate snapshot on roads
 - iv. High Sensitivity: recommended for scenes with low light
 - v. Highlight Suppression: recommended for scenes with intense light, for example, it is used to reduce the car light to snapshot the license plate
 - vi. WDR: recommended for scenes with high-contrast lighting, such as window, corridor, front door or other scenes that are bright outside but dim inside
 - vii. Custom: set a scene name as needed
 - viii. Standard: default image settings
 - ix. Vivid: increase the saturation of the image based on the standard mode.
 - x. Bright: increase the brightness of the image based on the standard mode.
 - C. Auto Switching
 - a. Indicates whether to add a scene to the auto-switching list.
 - i. If **Auto Switching** is selected, the system switches to a scene automatically when the condition for switching to the scene is met. By default, the auto-switching list includes the default scene.
 - D. Setup
 - a. Click to set conditions for auto-switching, including schedule, illumination, and current elevation (angle between the PTZ and the horizontal direction). It means that auto-switching is triggered only when illumination and the current elevation during the set time period meet the set conditions. A condition is invalid if both the start and end values are set to 0.
3. Select a scene and then click to set it as the default scene.
4. If auto-switching is enabled, the camera can switch to the scene automatically when the condition for switching to a non-default scene is met. Otherwise, the camera remains in the default scene. When auto-switching is not enabled, the camera remains in the current scene.

NOTE:

- If Auto Switching is enabled (scene settings will be unavailable), the device will switch between the set scenes. If not, the device will stay at the current scene. The device will stay at default scenes unless the non-default scenes are triggered.
- If multiple non-default scenes are triggered, then the device will switch to the scene with the minimum
- number (starts from 1 to 5).

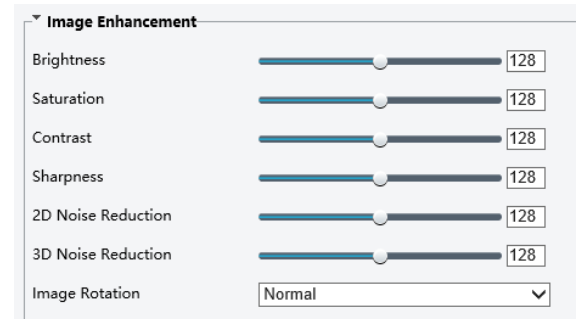
Image Enhancement

NOTE:

- This function is not supported by some models, please see the actual model for details.

1. Click **Setup > Image > Image** and then click **Image Enhancement**.
2. Use the sliders to change the settings. You may also enter values directly. The following table describes some major parameters.

- A. Brightness
 - a. Set the degree of brightness of images.
- B. Saturation
 - a. The amount of a hue contained in a color.
- C. Contrast
 - a. Set the degree of difference between the blackest pixel and the whitest pixel.
- D. Hue
 - a. Overall tendency of colors in an image.
- E. Sharpness
 - a. Contrast of boundaries of objects in an image.
- F. 2D Noise Reduction
 - a. Reduce the noise of images. The function may cause image blurring.
- G. 3D Noise Reduction
 - a. Reduce the noise of images. The function may cause motion blur (or ghosting in some applications).
- H. Image Rotation
 - a. Rotation of the image



3. To restore default settings in this area, click **Default**.

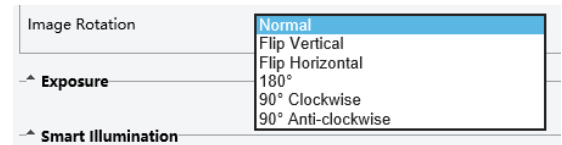
Exposure

NOTE:

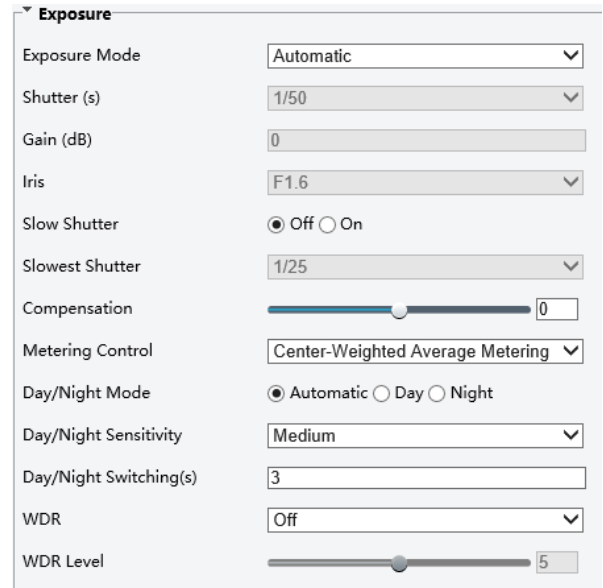
- This function is not supported by some models, please see the actual model for details.
- The default settings are used for common scenes. Keep the default settings unless a particular scene is required.

1. Click **Setup > Image > Image** and then click **Exposure**.
2. Set the parameters as required. The following table describes some major parameters.

- A. Shutter (s)



- a. Shutter is used to control the light that comes into the lens. A fast shutter speed is ideal for scenes in quick motion. A slow shutter speed is ideal for scenes that change slowly.
 - i. You can set a shutter speed when **Exposure Mode** is set to **Manual** or **Shutter Priority**.
 - ii. If **Slow Shutter** is set to **Off**, the reciprocal of the shutter speed must be greater than the frame rate.
- B. Gain (dB)
 - a. Control image signals so that the camera outputs standard video signals according to the light condition.
 - i. You can set this parameter only when **Exposure Mode** is set to **Manual** or **Gain Priority**.
- C. Slow Shutter
 - a. Improves image brightness in low light conditions.
 - i. You can set this parameter only when **Exposure Mode** is not set to **Shutter Priority** and when **Image Stabilizer** is disabled.
- D. Slowest Shutter
 - a. Set the slowest shutter speed that the camera can use during exposure.
 - i. You can set this parameter only when **Slow Shutter** is set to **On**.
- E. Compensation
 - a. Adjust the compensation value as required to achieve the desired effects.
 - i. You can set this parameter only when **Exposure Mode** is not set to **Manual**.
- F. Metering Control
 - a. Set the way the camera measures the intensity of light.
 - i. Center-Weighted Average Metering: Measure light mainly in the central part of images.
 - ii. Evaluative Metering: Measure light in the customized area of images.
 - iii. Highlight compensation: Ignore the brightness of the overexposed area of images. But selecting this setting will decrease the overall brightness of the image.
 - iv. You can set this parameter only when **Exposure Mode** is not set to **Manual**.
- G. Day/Night Mode
 - a. Automatic: The camera outputs the optimum images according to the light condition. In this mode, the camera can switch between night mode and daymode automatically.
 - b. Night: The camera provides high-quality black and white images using the existing light
 - c. Day: The camera provides high-quality color images using the existing light.
 - d. Input Boolean: The camera switches between day mode and night mode based on the alarm input.
- H. Day/Night Sensitivity
 - a. Light threshold for switching between day mode and night mode. A higher sensitivity means that the camera is more sensitive to the change of light and becomes more easily to switch between day mode and night mode.
 - i. You can set this parameter only when **Day/Night Mode** is set to **Automatic**.
- I. Day/Night Switching(s)
 - a. Set the length of time before the camera switches between day mode and night mode after the conditions for switching are met.
 - i. You can set this parameter only when **Day/Night Mode** is set to **Automatic**.
- J. WDR
 - a. Enable WDR to distinguish the bright and dark areas in the same image.
 - i. You can set this parameter only when **Exposure Mode** is set to **Automatic**, **Indoor 50Hz**, **Indoor 60Hz** and when **Image Stabilizer** and **Defog** is disabled.
- K. WDR Level



Exposure	
Exposure Mode	Automatic
Shutter (s)	1/50
Gain (dB)	0
Iris	F1.6
Slow Shutter	<input checked="" type="radio"/> Off <input type="radio"/> On
Slowest Shutter	1/25
Compensation	0
Metering Control	Center-Weighted Average Metering
Day/Night Mode	<input checked="" type="radio"/> Automatic <input type="radio"/> Day <input type="radio"/> Night
Day/Night Sensitivity	Medium
Day/Night Switching(s)	3
WDR	Off
WDR Level	5

- a. After enabling the WDR function, you can improve the image by adjusting the WDR level.
 - i. Use level 7 or higher when there is a high contrast between the bright and dark areas of the scene. In the case of low contrast, it is recommended to disable WDR or use level 1-6.
3. To restore the default settings, click Default.

Smart Illumination

NOTE:

- This function is not supported by some models, please see the actual model for details.

1. Click **Setup > Image > Image** and then click **Smart Illumination**.

The Web interface of certain box camera model is displayed as follows. Select the corresponding lightning type and then configure other parameters.

The Web interface of certain network camera model is displayed as follows. Follow steps below to configure the illumination parameters.

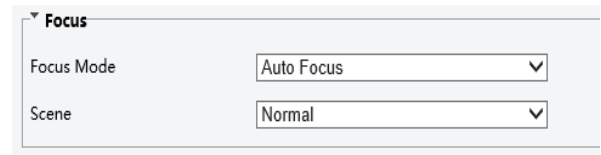
2. Select the correct IR control mode and set the parameters. The following table describes some major parameters.
 - A. Control Mode
 - a. **Global Mode:** The camera adjusts IR illumination and exposure to achieve balanced image effects. Some areas might be overexposed if you select this option. This option is recommended if monitored range and image brightness are your first priority.
 - b. **Overexposure Restrain:** The camera adjusts IR illumination and exposure to avoid regional overexposure. Some areas might be dark if you select this option. This option is recommended if clarity of the central part of the image and overexposure control are your first priority.
 - c. **Illumination Preset-Road:** This mode offers strong illumination in whole and is recommended for monitoring wide-ranging scenes, for example, road.
 - d. **Illumination Preset-Park:** This mode offers uniform light and is recommended for monitoring small range scenes with many obstacles, for example, industrial parks.
 - e. **Manual:** This mode allows you to manually control the intensity of IR illumination.
 - f. **Indoor:** This mode is recommended for application in indoor scenes.
 - B. Illumination Level
 - a. Set the intensity level of the IR light. The greater the value, the higher the intensity. 0 means that the IR light is turned off.
 - i. You can set this parameter only when **Control Mode** is set to **Manual**.
 - ii. You are recommended to set this parameter first for a wide-angle scene.
 - iii. You are recommended to set this parameter first if the scene requires an intermediate focal length.
 - iv. You are recommended to set this parameter first if the scene requires a telephotoview.
3. To restore the default settings, click **Default**.

Focus

NOTE:

- This function is not supported by some models, please see the actual model for details.

1. Click **Setup > Image > Image** and then click **Focus**.
2. Select the focus mode as required.



Focus	
Focus Mode	Auto Focus
Scene	Normal

A. Focus Mode

- a. Auto Focus: The camera focuses automatically according to the current light condition.
- b. Manual Focus: Manually adjust camera focus as required.
- c. One-Click Trigger: The camera is triggered to focus once when rotating, zooming or going to a preset.
- d. One-Click Trigger (IR): In a low light condition such as during night hours or in a dark house, this focus mode achieves better effects with the IR light turned on.

B. Scene

- a. Normal: Used for common scenes, such as road and industrial park.
- b. Long Distance: Used for long-distance monitoring on a road. For example, when the camera is installed over 30 meters high to monitor a distant road intersection.

3. To restore the default settings, click **Default**.

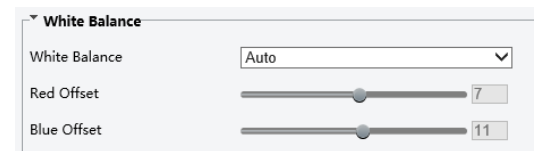
White Balance

White balance is the process of offsetting unnatural color cast in images under different color temperatures so as to output images that best suit human eyes.

NOTE:

- This function is not supported by some models, please see the actual model for details.

1. Click **Setup > Image > Image** and then click **White Balance**.
2. Select a white balance mode as required. The following table describes some major parameters.



White Balance	
White Balance	Auto
Red Offset	7
Blue Offset	11

A. White Balance: Adjust the red or blue offset of the image:

- a. Auto: The camera adjusts the red and blue offset automatically according to the light condition (the color tends to be blue).
- b. Fine Tune: Allow you to adjust the red and blue offset manually.
- c. Sodium Lamp: The camera adjusts red and blue offset automatically according to the light condition (the color tends to be red).
- d. Outdoor: It is recommended for the outdoor scenes with a wide range of the color temperature variation
- e. Locked: Lock the current color temperature settings without adjustment.

B. Red Offset

- a. Adjust the red offset manually.
 - i. You can set this parameter only when **White Balance** is set to **Fine Tune**.

C. Blue Offset

- a. Adjust the blue offset manually.
 - i. You can set this parameter only when **White Balance** is set to **Fine Tune**.

3. To restore the default settings, click **Default**.

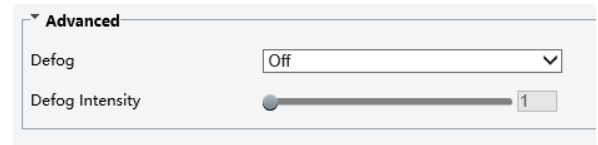
Defog

Use the defog function to adjust the clarity of images captured in fog or haze conditions.

NOTE:

- This function can be configured only when WDR is disabled.

1. Click **Setup > Image > Image** and then click **Advanced**.
2. Enable the defog function and then select a level for the scene. Level 5 achieves the maximum defog effects, and level 1 achieves the minimum.
3. To restore the default settings, click **Default**.



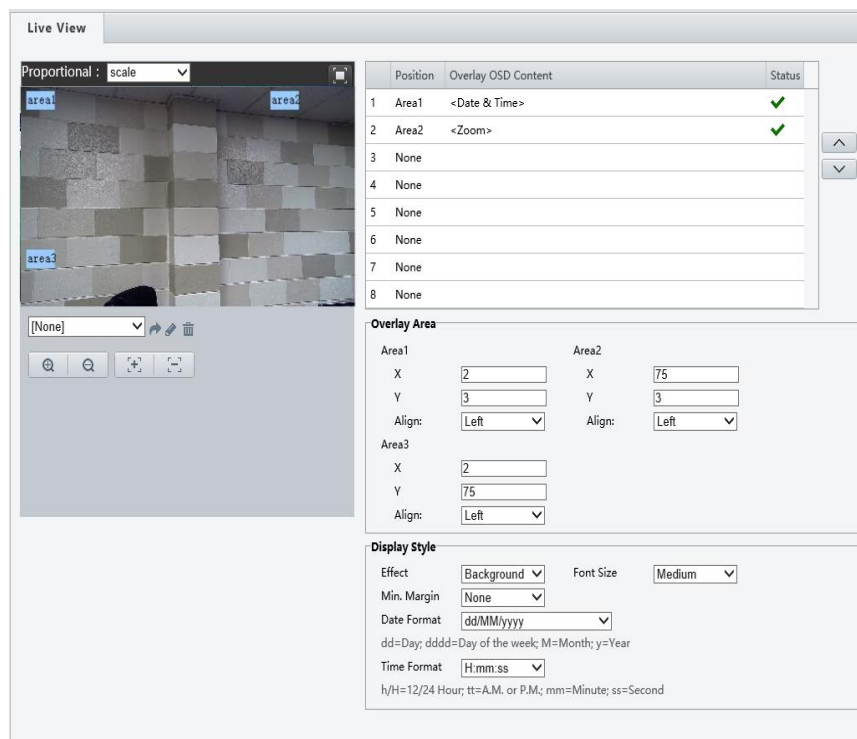
OSD Settings

On Screen Display (OSD) is the text displayed on the screen with video images and may include time and other customized contents.

NOTE:

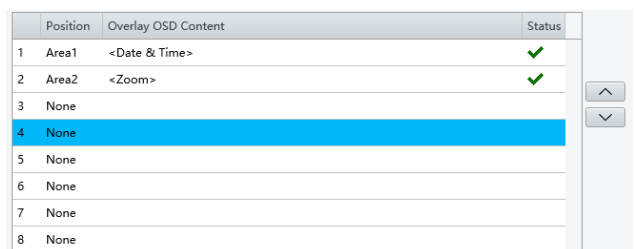
- This function may vary with models, please see the actual Web interface for details.

1. Click **Setup > Image > OSD**. See the OSD page as follow:




2. Select the check box, the content of the OSD and then set the position to display it.

- Position: Click the desired box in the **Live View** area. After the cursor shape is changed, click and hold the button to move the box to the desired position. To set the position precisely, use the X and Y coordinates under **Overlay Area**.
- Overlay OSD Content: The drop-down list provides **Time**, **Preset** and **Serial Info**. You may also select



Custom and enter the content you want.

- After you have set the position and OSD content, the  symbol appears in the **Status** column, which means that the OSD is set successfully. You may set multiple lines of contents for each area and use **and** to adjust the sequence of display.

3. After you have completed the settings, a message appears to indicate the successful settings.

You may right-click in the preview window and then choose to view in full screen mode or at an aspect ratio. You may also double-click the preview window to enter or exit full screen mode.

To cancel OSD for an area, clear the OSD content in the **Overlay OSD Content** column or select **None** in the **Position** column.

The right picture shows an example of Data & Time / Zoom OSD.



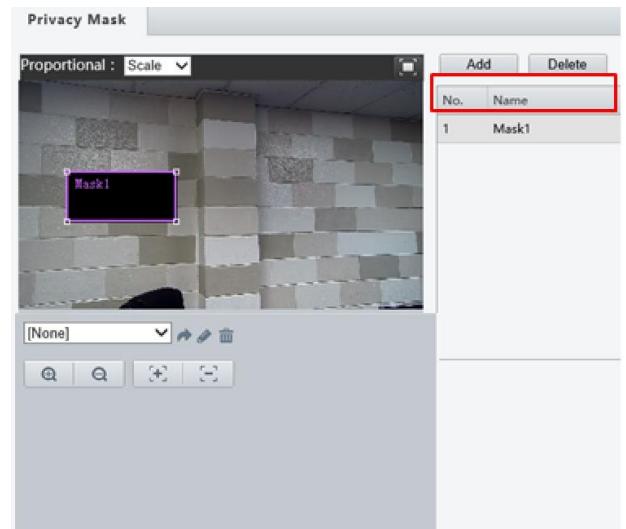
Privacy Mask

On certain occasions, you may need to set a mask area on the camera image to protect privacy, for example, the keyboard of an ATM machine. When PTZ changes its position or zooms, the Privacy Mask will be adjusted accordingly to protect the area all along.

NOTE:

- *This function may vary with models, please see the actual Web interface for details.*

1. Click **Setup > Image > Privacy Mask**.
2. Click **Add** to add a privacy mask, and click **Delete** to delete a mask.
 - To mask a position: Click the box (with **Mask** displayed on it) to activate the mask. After the cursor shape has changed, drag the box to the intended position.
 - To mask an area: Use the mouse to draw a box on the area you want to mask.
 - When privacy mask is configured, the intended area is blocked. The following shows an example.



Audio and Video Configuration

Video Configuration

You can set video parameters that your camera supports and view the current status of BNC output. If available, you may also enable sub-stream and third stream as required.

NOTE:

- This function may vary with models. Only some camera models support the third stream. To determine if your camera supports this function, see the Web interface.
- After enabling the sub or third stream, modify the parameters as required. The parameters for the sub and third stream have the same meanings as that for the main stream.

1. Click **Setup > Video & Audio > Video**.

The screenshot displays the Video Configuration interface with three main sections: Main, Enable Sub, and Enable Third. Each section contains settings for Video Compression, Resolution, Frame Rate, Bit Rate, Bitrate Type, Image Quality, I Frame Interval, GOP, and Smoothing. The Main section is set to 1080P@30, H.264, CBR, and Quality. The Enable Sub section is checked and set to 720P@10, H.264, CBR, and Quality. The Enable Third section is checked and set to D1@1, H.264, VBR, and Quality.

Section	Video Compression	Resolution	Frame Rate(fps)	Bit Rate(kbps)	Bitrate Type	Image Quality	I Frame Interval	GOP	Smoothing
Main	H.264	1080P	30	4096 [128~16384]	CBR	Quality	60 [5 ~ 250]	IP	Clear
Enable Sub	H.264	720P	10	2048 [128~16384]	CBR	Quality	50 [5 ~ 250]	IP	Clear
Enable Third	H.264	D1	1	1024 [128~16384]	VBR	Quality	20 [5 ~ 250]	IP	Clear

2. Modify the settings as required. The following table describes some major parameters.

A. Bitrate Type

- a. CBR: Constant Bit Rate, which means that the camera transmits data at a constant data rate.
- b. VBR: Variable Bit Rate, which means that the camera adjusts the bit rate dynamically according to image quality.

B. Frame Rate

- a. Frame rate for encoding images. Unit: FPS (frame per second).
 - i. To ensure image quality, note that the frame rate should not be greater than the reciprocal of shutter speed.

C. Image Quality

- a. When **Encoding Mode** is **VBR**, you can move the slider to adjust quality level for images. Moving the slider toward **Bit Rate** decreases the bit rate and may affect image quality. Moving the slider toward **Quality** increases the bit rate and improves image quality.

D. Smoothing

- a. Set the extent of smoothing. Choosing **Clear** means disabling **Smoothing**. Moving the slider toward **Smooth** increases the level of smoothing but will affect image quality.
 - i. In a poor network environment, you can enable smoothing to get more fluent video.

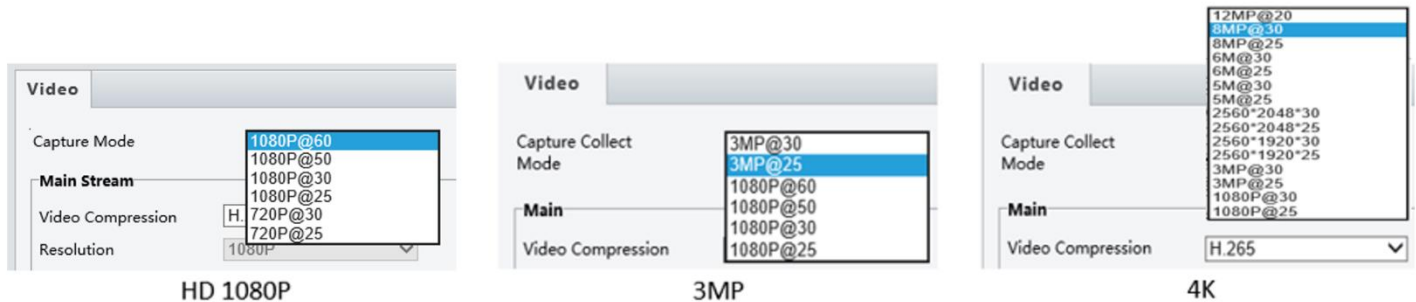
E. BNC Output

- a. BNC output supports NTSC and PAL.

3. Click **Save**.

Video Format

1. You can select the video format from **Capture Collect Mode** dropdown menu.
2. The selection of the video format is different on HD, 3MP, 4K resolution models.



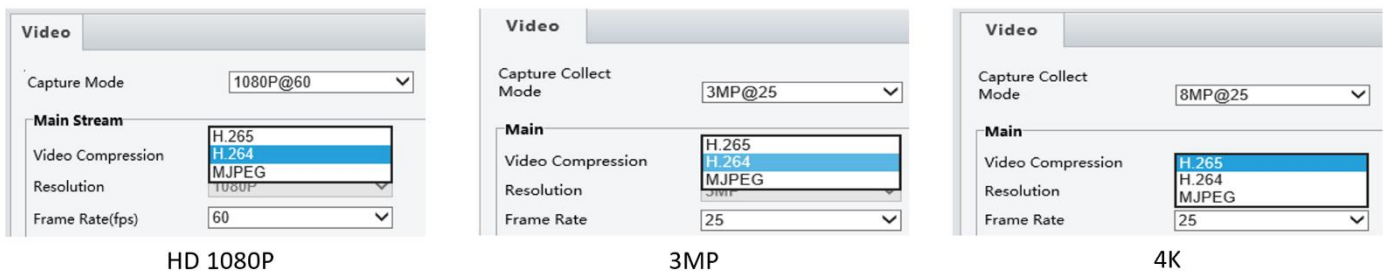
3. Click **Save** after you make the selection.

NOTE:

- Changing the video format/capture mode will restore the default encoding setting and causes the device to restart. It takes a little while for the camera to finish the rebooting.
- The screen will be frozen during the camera rebooting. The camera image or setting page will come back automatically or you may need to click **Video** or **Live View** again to retrieve the page and video.

Video Compression

1. You can select the video format from **Video Compression** dropdown menu.
2. The selection of the Video compression is different on HD, 3MP, 4K resolution models.



3. Click **Save** after you make the selection.

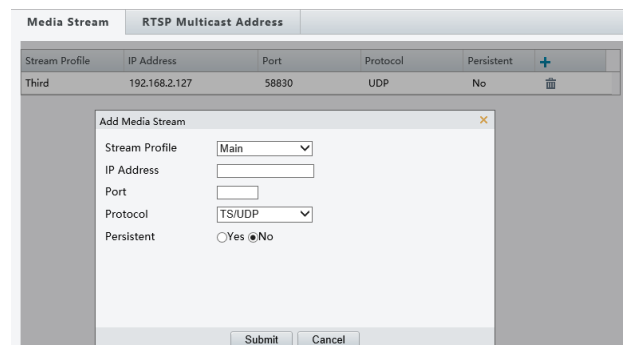
Media Stream Configuration


NOTE:

- This function may vary with models, please see the actual Web interface for details.

Media Stream

You can display the established media streams from a camera. You may also set the camera so it transmits code streams by the UDP or TCP protocol to a specified IP address and port number. The settings can be saved and take effect after the camera is restarted.



1. Click **Setup > Video & Audio > Media Stream**.
2. Click +, select a stream type, and then set the IP address and port number of the unicast or multicast group for the decoding device that receives audio and video streams from the camera. If you want the device to establish the media stream that has been configured before automatically after the restart, select **Yes** for **Persistent**.
3. To delete a stream, click .
4. Click **Submit** to complete the operations.

RTSP URL are as following:

- **Main Steam:** **rtsp://username:password@IP:port/media/video1**
- **Sub:** **rtsp://username:password@IP:port/media/video2**
- **Third:** **rtsp://username:password@IP:port/media/video3**

Note: We recommend that you can use VCL or FFMPEG Media Player as they will often be faster and include audio support.

RTSP Multicast Address

After an RTSP multicast address is configured, the third-party player can request the RTSP multicast media stream from the camera through the RTP protocol.

1. Click **Setup > Video & Audio > Media Stream > RTSP Multicast Address**.
2. Set the multicast address (224.0.0.0 to 239.255.255.255) and port number (0 to 65535).
3. Click **Save**.

Media Stream	RTSP Multicast Address
Main	
Multicast Address	0.0.0.0
Port	0
Sub	
Multicast Address	0.0.0.0
Port	0
Third	
Multicast Address	0.0.0.0
Port	0
Save	

Alarm Configuration

NOTE:

- *This function may vary with models, please see the actual Web interface for details.*
- *The alarm triggered actions supported by the camera may vary with models, please see the actual Web interface for details.*

You can schedule alarm reporting and set actions that can be triggered by other devices so that alarms and the triggered actions can be handled in time.

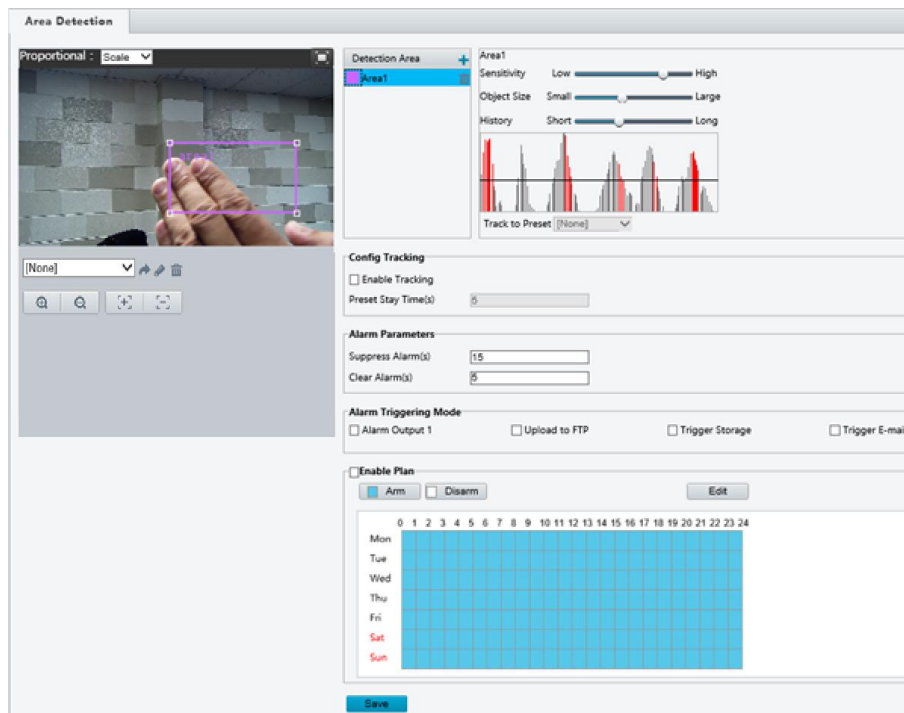
Alarm reporting can be scheduled for motion detection alarm, alarm input, alarm output, tampering detection alarm, and audio detection alarm. The supported alarms may vary with device model. For the alarm types that your camera supports, see the Web interface.



Configuring Motion Detection Alarm

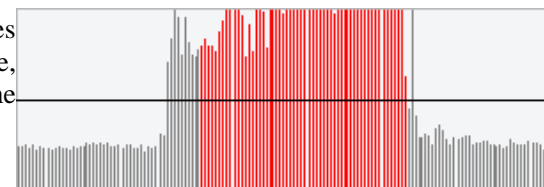
Motion Detection

Motion detection detects the object motion in a specified rectangular area during a period. You need to set a detection area, sensitivity of detection, object size, and history for the camera to decide whether to report a motion detection alarm when it detects motion.

1. Click **Setup > Events > Common Alarm > Motion Detection**.



2. In the Detection Area, click  to add a new detection area. To delete a detection area, click .
3. Click and drag the mouse to set a detection area.
4. Set the detection sensitivity, object size, and history for the camera to decide whether to report a motion detection alarm.
 - a. Moving the slider to the right increases detection sensitivity. When the extent of motion within the detection area exceeds the set object size, and if the duration of motion exceeds the set duration, the camera reports an alarm.
 - b. Motion detection results are shown in real time. The red lines represent the raised motion detection alarms. The longer a line, the greater the extent of motion. The denser the lines, the greater the frequency of motion.
5. Set the alarm parameters.
 - a. Suppress Alarm(s): After an alarm is triggered, the same alarm will not be reported within the set time.
 - b. Clear Alarm(s): After an alarm is triggered,
 - i. If the same alarm is not triggered within the set time, the alarm will be cleared and the same alarm can be reported again.
 - ii. If the same alarm is triggered within the set time, the alarm will not be cleared until the suppress alarm time expires. Then the same alarm can be reported again.
6. Set actions to be triggered by motion detection alarm and the plan.
 - a. The following table describes the major alarm-triggered actions and how to set a plan.
 - b. Alarm Output 1
 - i. Select the check box. This setting is the alarm output interface linked to motion detection alarm.
 1. When an alarm is reported, the camera triggers alarm output so as to trigger actions by a third-party device.
 - c. PTZ to Preset
 - i. Select the check box and set the preset linked to motion detection alarm.
 1. Make sure you have set presets. Otherwise, you cannot set this parameter. For details about how to set a preset, [see Setting Presets](#).



2. When an alarm is reported, the PTZ camera automatically goes to the preset to capture video in the correct scene.
- d. Upload to FTP
 - i. With **Upload to FTP** selected, the camera will automatically upload snapshots to the specified FTP server when an alarm is triggered.
 1. Make sure you have completed FTP and Configuring Capture before using this function.
- e. Trigger E-mail
 - i. With **Trigger E-mail** selected, the camera will automatically send snapshots to the specified E-mail address when an alarm is triggered.
 1. Make sure you have completed E-Mail and Configuring Capture before using this function.
- f. Trigger Storage
 - i. With **Trigger Storage** enabled, the camera automatically starts recording after an alarm is triggered.
 1. Make sure you have completed the post-recording time settings before using this function.
- g. Enable Plan
 - i. Select the check box and set the start and end times during which motion detection alarm is effective. You can directly drag the mouse to draw a plan and click **Edit** to edit time periods in the table. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.
 - ii. You can select from Monday to Sunday and set four periods for each day.
 - iii. Plan drawing using a mouse is only supported by IE versions later than 8.0. After setting the plan for one day, you can apply the same settings to other days by clicking **Copy** and **Paste**.

No.	Start Time	End Time
1	07:00:00	10:00:00
2	12:00:00	17:00:00
3	22:00:00	23:59:59
4		

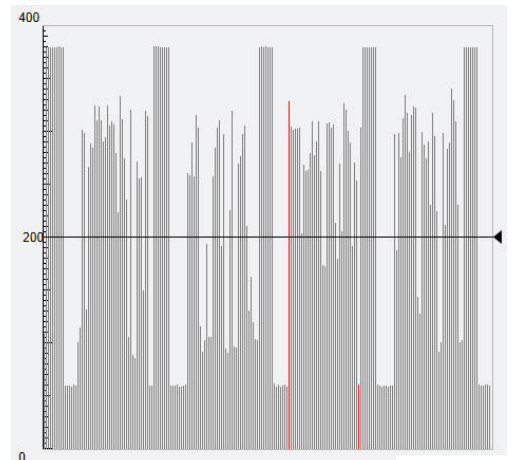
- iv. Drag the mouse to draw a plan and Edit time periods in the table.
7. Click **Save**.

Configuring Audio Detection Alarm

The camera can detect input audio signals for exceptions. When the rise or fall of volume exceeds the set limit, or when the input volume reaches the threshold, the camera reports an alarm and triggers the set actions. Make sure that an audio input device is correctly connected to the camera and audio input is turned on in Configuring Alarm Input.

1. Click **Setup > Events > Common Alarm > Audio Detection**.

2. Select **Enable** for **Audio Detection**, select a detection type and set the difference or threshold. To disable audio detection, clear the **Enable** check box. The following table describes some major parameters.
 - a. Detection Type
 - i. Rise Above: An alarm is reported when the rise of volume exceeds the difference.
 - ii. Falls Below: An alarm is reported when the fall of volume exceeds the difference.
 - iii. Passes: An alarm is reported when the rise or fall of volume exceeds the difference.
 - iv. Threshold: An alarm is reported when the volume exceeds a threshold.
 - b. Threshold/ Difference
 - i. Threshold: After a volume is set as the threshold, an alarm is reported when the threshold is exceeded.
 - ii. Difference: the difference between two volumes. When the rise or fall of volume exceeds the difference, an alarm is reported.
 1. The scale in the audio detection area is used to measure sound volume.
 2. Audio detection results are shown in real time. The red part indicates that the volume of the audio alarm has reached the threshold and the alarm does not necessarily report.
3. Set the alarm-triggered actions and arming schedule as required. For the detailed steps, see the descriptions of alarm-triggered actions in [Configuring Motion Detection Alarm](#).
4. Click **Save**.



Configuring Alarm Input

The camera can receive alarm information from a third-party device. To use this function, you need to configure the following information for alarm input first: port, alarm name, alarm type (normally open or normally closed) and alarm reporting time.

1. Click **Setup > Events > Alarm Input**.
2. Select the Boolean and set the Boolean name.
3. Select **Normally Open** or **Normally Closed** according to the type of the third-party alarm input device. For example, if the third-party alarm input device is normally open, you need to select **Normally Open** here, so that the camera can receive alarm information from the third-party alarm input device.
4. Set actions to be triggered by an input alarm and the plan. For the detailed steps, see the descriptions of alarm-triggered actions in [Configuring Motion Detection Alarm](#).
5. Click **Save**.

Configuring Alarm Output

After alarm output is triggered by a motion detection alarm, temperature alarm or Boolean alarm, the camera can output alarm information to the third-party device if alarm output is set correctly to Normally Open or Normally Closed. The alarm output duration is configurable.

1. Click **Setup > Events > Alarm Output**.
2. Select the alarm and set the alarm name. Set the status to **Normally Open** (default setting) and set the alarm duration.
3. Click **Save**.

Select Alarm	Alarm Output 1
Alarm Name	2
Status	Normally Open
Delay(s)	5

CAUTION:

Strictly follow the sequence when powering on the devices to avoid damaging camera components:

- Check that the alarm type is set to *Normally Open* (default setting), and that the camera and the alarm output device are powered off.
- After completing the connection, power on the alarm output device first and then power on the camera.

Configuring Capture

With the function of capture configured, when an alarm is triggered, the camera will automatically upload the captured snapshots to the FTP server or send snapshots the specified email address.

1. Click **Setup > Events > Capture**.
2. Enable **Capture**, and configure relevant parameters.
3. Click **Save**.

Capture	<input type="checkbox"/> Enable
Resolution	1920*1080
Image Quality	Medium
Capture Interval(s)	1
Number to Capture	1
Scheduled Snapshot	
Mode	<input type="radio"/> Timed <input checked="" type="radio"/> Continued
Interval(s)	60

Memory Card Storage

NOTE:

- This function is not supported by some models, and may vary with models, please see the actual model for details.
- Memory storage is recommended when the camera operates in stand-alone mode.

Memory card storage is used to save videos and snapshots to the memory card directly.

Manual storage

The camera records live video repeatedly if manual storage is enabled.

1. Click **Setup > Storage > Storage**.
2. Enable memory card storage and modify the settings as required. The following table describes some major parameters.
 - a. Storage Medium
 - i. Storage resource type.
 1. To format the memory card, disable the storage function for the card first. Then Click **Format** and then click **OK** to confirm the operation. The system will restart when the format is completed.
 2. Information about the total and free space is displayed.
 - b. When Storage Full

Storage Medium	Memory Card	Format
Total Capacity 122497 MB, Free Space 73238 MB.		
Video Storage Info		
Edge Storage	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
Stream	Main	
When Storage Full	<input type="radio"/> Overwrite <input checked="" type="radio"/> Stop	
Post-Record(s)	60	

- i. Overwrite: If there is no free space in the memory card, new data will overwrite the existing data repeatedly.
 - ii. Stop: If there is no free space in the memory card, new data will not be saved to the memory card.
 - c. Post-Record(s)
 - i. When an alarm is raised, the camera is triggered to record live video and continues recording for a set post-record time after the alarm is cleared.
- 3. Click **Save**.

Planned storage

If planned storage is enabled, the camera records video to the memory card during the specified periods.

1. Click **Setup > Storage > Storage**.
2. Select **Planned Storage**, and then set the periods during which the camera records video to the memory card.
3. Click **Save**.

NOTE:

- To play recordings in the memory card, see *Video Playback and Download with Edge Storage*.

Storage Medium: Memory Card [Format]

Total Capacity 122497 MB, Free Space 73238 MB.

Video Storage Info

Edge Storage: ☒ Enable ☐ Disable

Stream: Main

When Storage Full: ☐ Overwrite ☒ Stop

Post-Record(s): 60

Enable Plan

☒ Arm ☐ Disarm [Edit]

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon																									
Tue																									
Wed																									
Thu																									
Fri																									
Sat																									
Sun																									

[Save]

System Maintenance

NOTE:

- This function is not supported by some models, and may vary with models, please see the actual model for details.

Security

User Management

There are two types of users in the system:

- Administrator: referred to as “admin” in this manual. The default name of the administrator is admin, which cannot be modified. Admin has full permission and can manage all users and devices. Only one admin user is allowed in the

system.

- Common user: referred to as “user” in this manual. User only has permission to play live and recorded video. Up to 31 common users are allowed in the system.

You can add a user on the user management interface (under **Setup > System > Security**).

After the user is added successfully, you can change the password by entering the new password or delete the user by clearing the username.

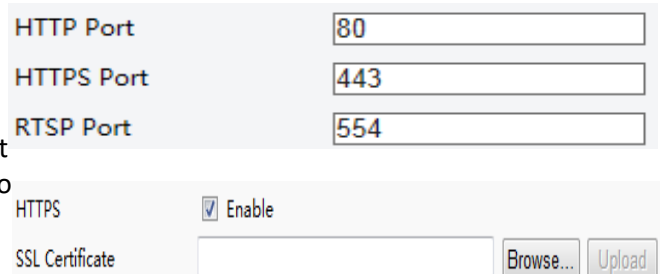
NOTE:

- Only admin can change passwords. Changing the username or password for a user when the user is still logged in will force the user to log out. The user must use the new username or password to log in.
- Only admin can add and delete users. Deleting a user when the user is still logged in will force the user to log out. A deleted user cannot log in.

Setting Secure Data Transmission

Set a secure channel for data transmission to ensure security.

1. Click **Setup > Network > Port**.
2. Enter the port number in the **HTTPS Port** text box and then click **Save**.
3. Click **Setup > System > Security**. Under **HTTPS**, select **Enable**. Uploading a custom SSL certificate is also supported to ensure security.
4. Click **Save**.

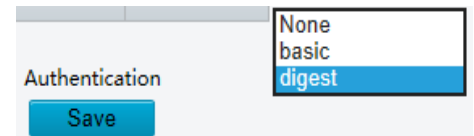


Next time you log in, enter the address in *https://IP:HTTPS port number* format, for example, <https://192.168.0.13:443>, to enter secure channel mode. If HTTPS uses a default port number, enter the address in <https://IP> directly.

RTSP Authentication

RTSP (Real Time Streaming Protocol) is an application layer protocol. To transmit and control the audio and video, set RTSP authentication on the Web interface.

1. Click **Setup > System > Security > RTSP Authentication**.
2. Select an authentication mode (basic/digest) and then click **Save**.



Hide Vendor Information

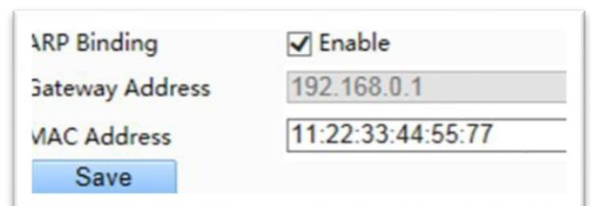
You can set to hide the vendor information of the network camera on the Web interface.

1. Click **Setup > System > Security**.
2. Under **Registration Info**, select **Enable**.

ARP Binding

This function can protect the camera from ARP attacks. When the camera visits an IP of another network segment via a gateway, it can communicate only with the MAC address binding to the gateway address in the same segment.

1. Click **Setup > System > Security > ARP Binding**.
2. Select the check box to enable the ARP binding function and set the MAC address.
3. Click **Save**.



IP Address Filtering

You can allow or deny the access from the specified IP address to your camera.

1. Click **Setup > System > Security > IP Address Filtering**.
2. Select **Enable**. Select the filtering mode and then enter the desired IP addresses.
3. Click **Save**.

No.	IP Address
1	204.4.1.22

NOTE:

- If the filtering mode is set to **Allow Access**, only the specified IP addresses are allowed to access the camera. If the filtering mode is set to **Deny Access**, the specified IP addresses are denied for the access.
- Up to 32 IP addresses are allowed. And the added IP addresses cannot duplicate.
- The first byte of the IP address can only be a number ranging from 1 to 223 and the fourth byte cannot be 0. For example, 0.0.0.0, 127.0.0.1, 255.255.255.255 and 224.0.0.1 all are invalid IP addresses.

Video Watermark

You can set the video watermark for the camera to encrypt the video and protect it from being deleted or modified.

1. Click **Setup > System > Security > Video Watermark**.
2. Select **Enable** and set the watermark content.
3. Click **Save**.

Video Watermark ☐ Enable

Watermark Content

Save

Setting the System Time

You can use the following methods to adjust the system time of your device.

Manually Setting or Synchronizing the System Time

1. Click **Setup > Common > Time**, and then click the **Time** tab.
2. Select **Enable** for **Client Time Synchronization**.
3. Set the correct time zone and system time. You may also click **Sync with Computer Time** to synchronize the time settings of your camera with that of your PC.
4. Click **Save**.

Time

Time Sync ☒ Enable ☐ Disable

Time Zone (UTC-08:00) Pacific Time(US & Canada)

Time Sync None

Device Time 2016-08-10 00:04:43 Sync with Computer Time

NTP Server

NTP ☐ Enable ☒ Disable

Server IP 0.0.0.0

Server sync interval(s) 600

Save

Synchronizing with the NTP Server

1. Click **Setup > Common > Time**, and then click the **Time** tab.
2. Select **Enable** for **NTP**, and then enter the IP address of the NTP server and the camera's sync interval with the NTP server.
3. Click **Save**. The camera will periodically synchronize time with the NTP server.

Setting Servers

If the camera is managed by a central server, you need to configure the server related parameters.

CAUTION:

- This function is not supported by some models, please see the actual model for details.

- If the device ID, protocol or server IP is changed, the camera will restart, and the login password for admin and the system time will be updated as the settings on the central management server. In addition, all settings, except the following, will be restored to factory defaults: network interface card, server, image, OSD, privacy mask, custom information, and ROI.
- Registration will fail if the device ID is different from that stored on the central management server. You need to restart the camera in order for the registration to succeed.
- If the camera operates independently, select **None** for **Protocol**.

Connect via the Private protocol

1. Click **Setup > Common > Server**, and then click the **Management Server** tab.
2. In the **Device ID** text box, enter an ID that is unique in the network.
3. Select **Private** from the **Protocol** drop-down list.
4. Enter the correct IP address and port number for the central management server.
5. Click **Save**.

The screenshot shows the 'Management Server' configuration page. It includes the following fields and options:

- Device ID:** A text box containing '0F-7A-DC'.
- Protocol:** A dropdown menu with 'Private' selected.
- Server IP:** A text box containing '0.0.0.0'.
- Server Port:** A text box containing '5060'.
- Recording Backup:** Radio buttons for 'Enable' and 'Disable', with 'Disable' selected.
- BM Server IP:** A text box containing '0.0.0.0'.
- Cache Post Recording:** Radio buttons for 'Enable' and 'Disable', with 'Disable' selected.
- Server IP Address:** A text box containing '0.0.0.0'.

At the bottom, there is a **Note:** 'Changing device ID, server IP or protocol will cause device restart and restore part of server settings to their default values.' and a blue **Save** button.

Serial Port Mode Configuration

The RS485 serial port is used for data exchange with the third-party device. Serial port settings on the camera should be consistent with that of the connected third-party device.

NOTE:

- This function is not supported by some models, please see the actual model for details.
- The actual displayed Web interface may vary with the device model.

PTZ control

To control a PTZ camera through a third-party device, you need to set **Port Mode** to **PTZ Control**.

By sending PELCO-D compliant PTZ control commands through the RS485 port, you can control the PTZ camera without using the PTZ control panel.

1. Click Setup > System > Ports & Devices, and then click the Serial Port tab.
2. Select PTZ Control from the Port Mode drop-down list. The following table describes some major parameters.
 - a. PTZ Protocol
 - i. Set the PTZ protocol that the channel supports.
 1. You can set this parameter only when **Port Mode** is set to **PTZ Control**.
 2. When **PTZ Protocol** is set to **INTERNAL-PTZ**, the camera can connect to the external PTZ without using the serial port (serial port parameters are grayed out). In this case, you only need to connect the zoom and focus interfaces of the camera to the lens, and then you can operate the PTZ like an internal PTZ.
 - b. PTZ Mode
 - i. Built-in PTZ Priority: When this option is selected, the camera first tries to control the PTZ (for example, to zoom or focus) by itself instead of through the external PTZ. For operations that the camera cannot accomplish by itself, the camera uses the external PTZ.
 - ii. External PTZ Priority: The camera first tries to control the PTZ through the PTZ connected through the serial port.
 1. You can set this parameter only when **Port Mode** is set to **PTZ Control**.
 2. When **INTERNAL-PTZ** is selected, this parameter is always set to **Built-in PTZ Priority**, and it is unnecessary to connect the camera to an external PTZ through the serial port. Control through the external PTZ is not effective even when the camera has been connected to an external PTZ.
 3. Set this parameter as required. Make sure PTZ control related interfaces are correctly connected.
 - c. Address Code
 - i. Set the address code for the PTZ.
 1. You can set this parameter only when **Port Mode** is set to **PTZ Control** and **PTZ Protocol** is not set to **INTERNAL-PTZ**.
 - d. Click **Save**.

The screenshot shows the 'RS485_1' configuration window. The 'Port Mode' is set to 'PTZ Control'. The 'Baud Rate' is 9600, 'Data Bits' is 8, 'Stop Bits' is 1, 'Parity' is None, and 'Flow Control' is None. The 'PTZ Protocol' is set to 'INTERNAL-PTZ', and the 'PTZ Mode' is set to 'Built-in PTZ Priority'. The 'Address Code' is set to 1. At the bottom, there is a checkbox labeled 'Enable Trans-Channel' which is currently unchecked.

Transparent channel

Use the RS485 serial port to achieve transparent data transmission with the third-party device.

1. Click **Setup > System > Ports & Devices**, and then click the **Serial Port** tab.
2. Select **Trans-Channel** from the **Port Mode** drop-down list.
3. Click **Save**.

The screenshot shows the 'RS485_1' configuration window. The 'Port Mode' is set to 'Trans-Channel'. The 'Baud Rate' is 9600, 'Data Bits' is 8, 'Stop Bits' is 1, 'Parity' is None, and 'Flow Control' is None. At the bottom, there is a checkbox labeled 'Enable Trans-Channel' which is currently unchecked.

OSD

To display information from the third-party device on the OSD, you need to select OSD as the port mode. The camera receives information from the third-party device through the RS485 serial port, translates the received information, and then displays it on the OSD.

NOTE:

To enable the camera to correctly translate information received from the third-party device, make sure that the information sent by the third-party device through the serial port complies with the data format specified by our company. For more details, contact your dealer.

1. Click **Setup > System > Ports & Devices**, and then click the **Serial Port** tab.
2. Select **OSD** from the **Port Mode** drop-down list and select **Enable OSD Report**. Then OSD data will be reported to the management platform.
3. Click **Save**.

The screenshot shows the 'RS485_1' configuration window. The 'Port Mode' is set to 'OSD'. The 'Enable OSD Report' checkbox is checked. Other settings include Baud Rate: 9600, Data Bits: 8, Stop Bits: 1, Parity: None, and Flow Control: None. The 'Enable Trans-Channel' checkbox is unchecked.

Transparent Channel Configuration

Transparent channel is mainly used to achieve transparent data transmission between two devices.

NOTE:

- *This function is not supported by some models, please see the actual model for details.*
- *Make sure that you have set **Port Mode** to **Trans-Channel** for your camera.*
- *The actual displayed Web interface may vary with the device model.*

1. Click **Setup > System > Ports & Devices**, and then click the **Trans-Channel** tab.
2. Select **Enable** for **Trans-Channel**.
3. Enter the destination IP address and port number (IP address and port number that the transparent channel connects to).
4. Click **Save**.

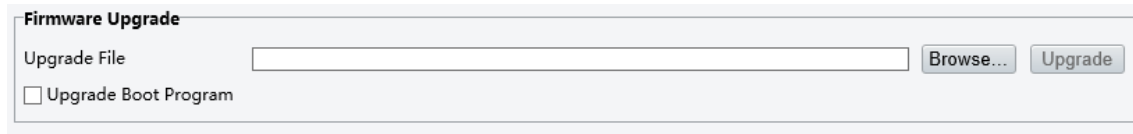
The screenshot shows the 'RS485_1' configuration window. The 'Port Mode' is set to 'Trans-Channel'. The 'Enable Trans-Channel' checkbox is checked. Other settings include Baud Rate: 9600, Data Bits: 8, Stop Bits: 1, Parity: None, and Flow Control: None. Below the checkbox, the 'Destination IP' is set to '192.168.0.30', 'Destination Port' is '17081', 'Source IP' is '204.4.1.234', and 'Source Port' is '1025'.

Maintenance

Upgrading the Device

If the device is managed by the central management server and you want to upgrade the devices in batch mode, it is recommended to perform the upgrade operation on the central server. For detailed steps, see the user manual for the central management server.

1. Click **Setup > System > Maintenance**.

The screenshot shows a 'Firmware Upgrade' dialog box. It has a title bar 'Firmware Upgrade'. Inside, there is a label 'Upgrade File' followed by a text input field. To the right of the input field are two buttons: 'Browse...' and 'Upgrade'. Below the input field is a checkbox labeled 'Upgrade Boot Program'.

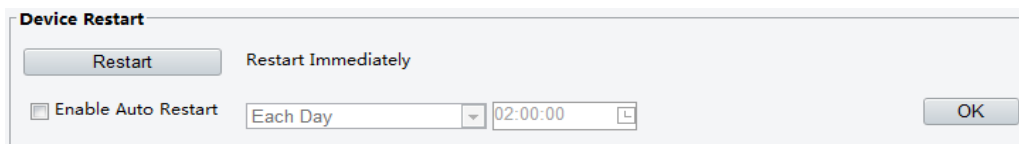
2. Under **Firmware Upgrade**, click **Browse** and select the correct upgrade file.
3. (Optional) Select the check box to enable **Upgrade Boot Program**.
4. Click **Upgrade** and then confirm to start. The camera will restart automatically after the upgrade is completed.

NOTE:

- You must use the correct upgrade file for your camera. Otherwise, unexpected results may occur.
- The upgrade file is a ZIP file and must include all the necessary files.
- The boot program loads the operating system and then the system starts running. The upgrade boot program function is disabled by default, and only the camera will be upgraded to the latest version. If enabled, both the camera and the boot program are upgraded, and the operating system of the following new versions can be booted properly and the camera can be upgraded conveniently.
- Ensure that the power supply is normal during upgrade. The device will restart after the upgrade is completed.

Restarting the System

1. Click **Setup > System > Maintenance**.

The screenshot shows a 'Device Restart' dialog box. It has a title bar 'Device Restart'. Inside, there are two buttons: 'Restart' and 'Restart Immediately'. Below these buttons is a checkbox labeled 'Enable Auto Restart'. To the right of the checkbox is a dropdown menu currently showing 'Each Day' and a time input field showing '02:00:00'. There is an 'OK' button on the far right.

2. Under **Device Restart**, click **Restart**. The device will restart after you confirm the operation. You may also enable auto-restart by selecting **Enable Auto Restart** and setting a time for auto-start. The device will restart at the set time.
3. Perform this operation with caution because restarting the system interrupts the ongoing service.

Importing and Exporting System Configuration File

Export the current configurations of the camera and save them to the PC or an external storage medium. You can also quickly restore configurations by importing backup configurations stored on the PC or an external storage medium back to the camera.

CAUTION:

- After you perform the Default operation, all settings are restored to factory defaults, except the following: login password of the system administrator, network settings, and system time.
- Make sure you import the correct configuration file for your camera. Otherwise, unexpected results may occur.
- The camera will restart when the configuration file is imported successfully.

1. Click **Setup > System > Maintenance**.

2. To import configurations that you have backed up, click **Browse** next to the **Import** button and select the configurations you want to import, and then click **Import**. The result will be displayed.
3. To export configurations, click **Browse** next to the **Export** button, select the destination folder, and then click **Export**.
4. To restore default configurations, click **Default** and then confirm the operation. The device will restart and restore the default configurations.

Collecting Diagnostic Information

Diagnostic information includes logs and system configurations. You can export diagnostic information to your PC.

1. Click **Setup > System > Maintenance**.

2. Under **Diagnosis Info**, click **Browse** to select the destination folder, and then click **Download** to save the diagnostic information to the specified folder.

NOTE:

- Diagnostic information is exported to the local folder in form of a compressed file. You need to decompress the file using a tool such as WinRAR and then open the file using a text editor.
- Select **Collect Image Debugging Info**. Then the recording and the debugging information can be displayed synchronously for convenient troubleshooting.

Digital Zoom & Focus Configuration

Min. Focus Distance

The device can adjust the speed of auto-focus according to the minimum focus distance. In order to shoot clear objects, it is recommended that the minimum focus distance is set shorter than the distance between the objects and lens, for example, if the minimum focus distance is 3m, then the objects within 3m from lens will be out of focus.

1. Click **Setup > System > Maintenance**.

2. Configure **Minimum Focus Distance** under **Focus**.
3. Click **OK**.

Max. Zoom Ratio

This section provides the zoom capabilities, which is digital zoom capabilities.

1. Click **Setup > System > Maintenance**.

Focus

Min. Focus Distance(cm) 10

Max. Zoom Ratio 22

44

88

176

352

Note: 1. Software upgrade, sys
2. Restarting the device

um focus distance will cause

2. Configure zoom ratio in dropdown menu. The smallest number is the camera optical zoom range.
3. Click **OK**.

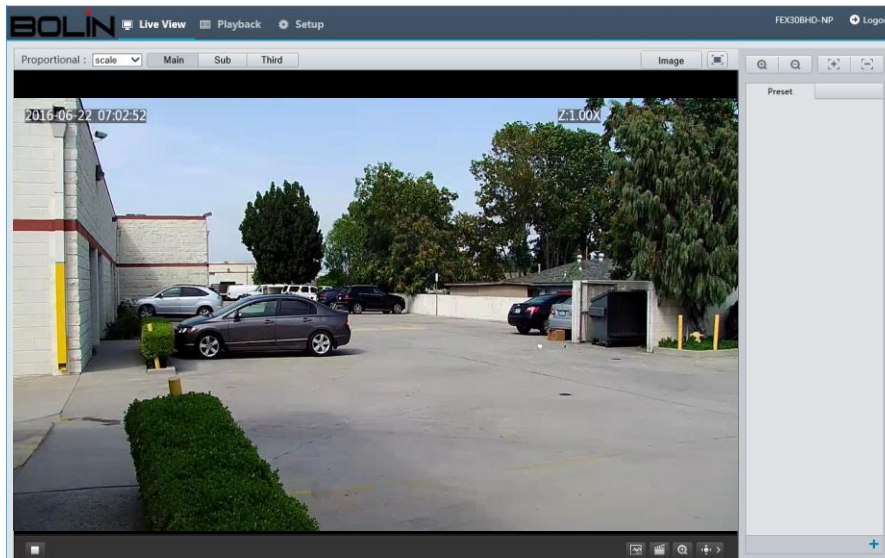
NOTE:

- This digital zoom functionality is **ONLY** available in 3MP, 4K H.265 models.

Live View

Live view means playing live video (real-time audio and video) received from a camera in a window through the Web interface.

If you log in with the **Live View** check box selected, live video appears by default when you are logged in. You may double-click the window to enter or exit full screen mode.



Live View Toolbar

NOTE:

The supported live view operations may vary with camera model. For the operations that your camera supports, see the Web interface.



1. Play/stop live video.
2. Take a snapshot of the current image displayed on the PC. The path for saving snapshots is set in **System Configuration**.
3. Start/stop local recording. The path for saving local recordings is set in **System Configuration**.
4. Start/stop digital zoom. For more details, see [Using Digital Zoom](#).
5. Show/hide the Zoom control panel.
6. Set the display ratio of the image.
 - a. Scale: display images by 16:9
 - b. Stretch: display images by window size
 - c. Original: display images in its original size
7. Select a live video stream that the camera supports: main stream, sub stream or third stream.
8. Click this button to open the image setting page.
9. Display in full screen mode.

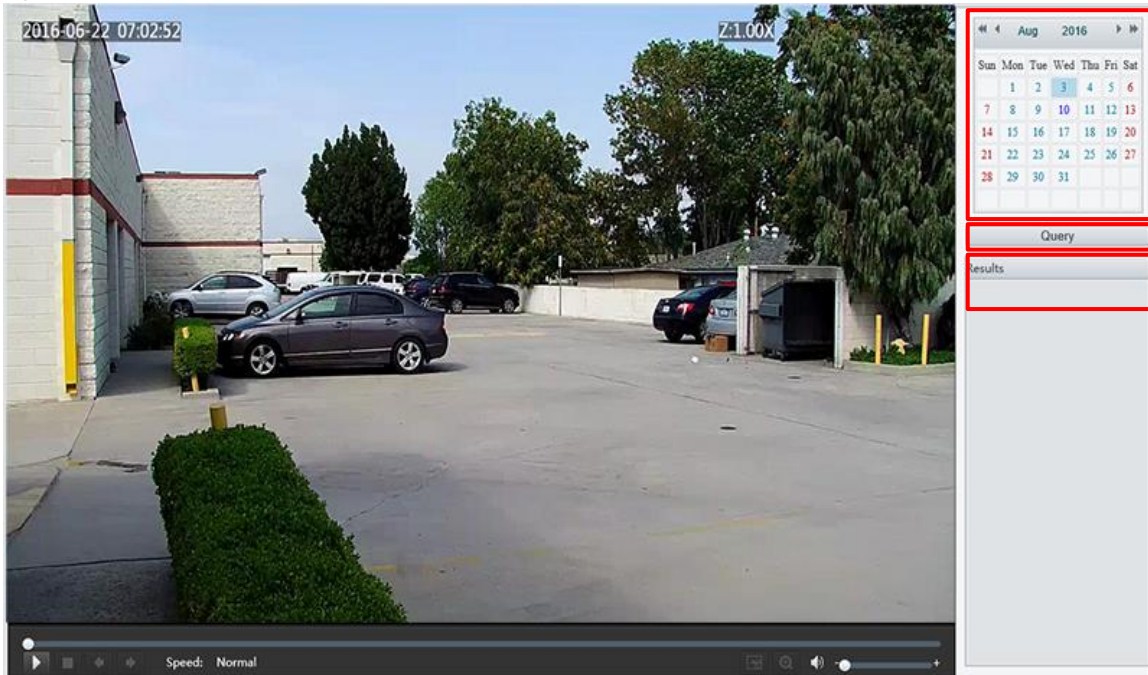
Viewing Certain Area of Images

Digital zoom and 3D positioning allow you to get more details of certain part of images. Digital zoom enlarges an image with loss in image quality, while 3D positioning enlarges an image without.

Video Playback and Download with Edge Storage

NOTE:

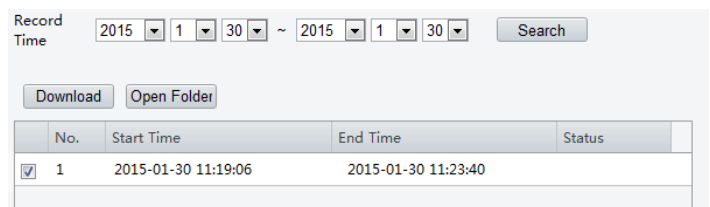
- Edge storage refers to recording video to the memory card of a frontend device (mostly a camera). Local recording refers to recording video to a local PC client.
 - Before you play back video with edge storage, check that the camera has been installed with a memory card and storage has been configured.
1. This function is not supported by some models, please see actual models for details. Click **Playback** on the home page.



2. Select the date from the calendar.
3. Click **Query**.
4. Under **Results**, double-click the time period to start playing the recording.

Download

1. Click **Setup > Storage > Record Download**.
2. Search for video within a specified period. The results will be shown in a list.
3. Select your video and click **Download**. The video will be downloaded to your local path from the memory card (local path can be changed in **System Configuration**).
4. Click **Open Folder** to show the folder where the downloaded video is saved.



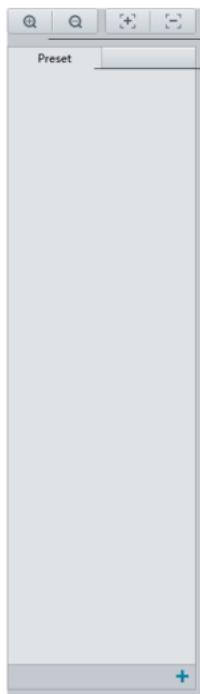
PTZ Control

This function is available only for the PTZ dome cameras or a box camera installed on a Pan/Tilt motor.

NOTE:

- Some of the lens control functions are applicable to cameras equipped with motorized lens.
- The PTZ control buttons may vary with camera model. For the PTZ control buttons that your camera supports, see the Web interface.

PTZ Control Toolbar



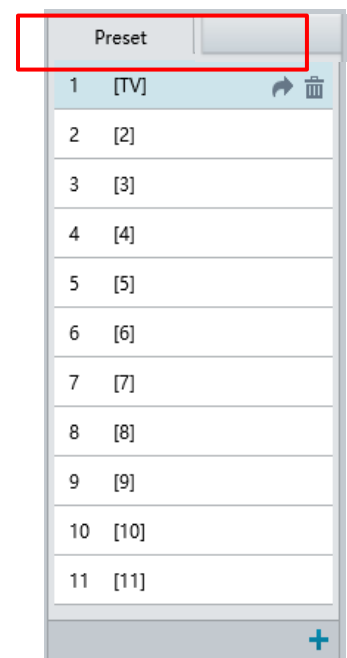
1. Adjust camera zoom.
2. Adjust camera focus.
3. Select a preset and then click . The camera goes to the selected preset. To add a preset, click . To delete a preset, click .

Go to a preset

1. On the **Live View** page, click **Preset** on the control panel.
2. Click for a preset. The PTZ camera goes to the selected preset.

Delete a preset

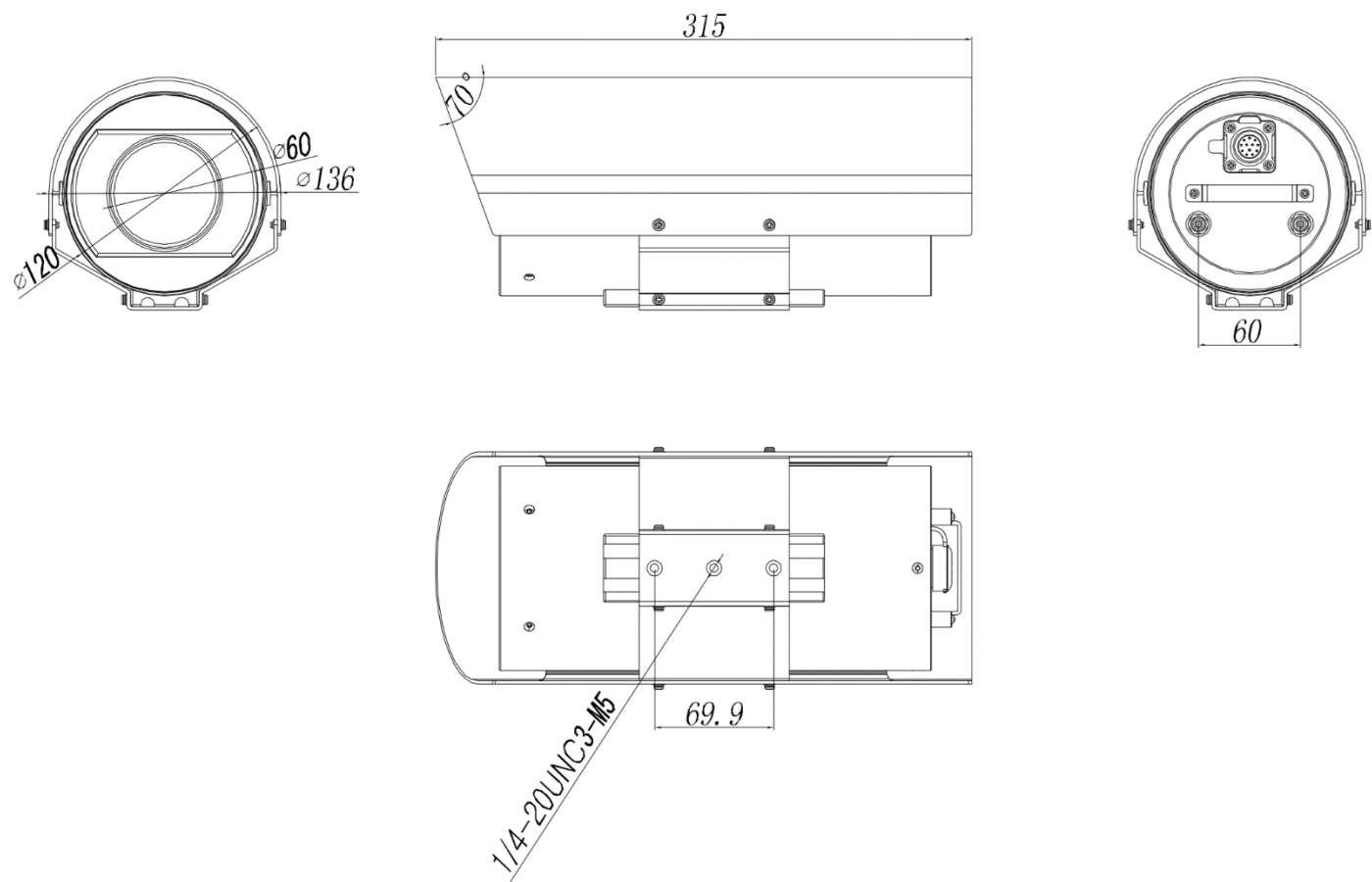
1. On the Live View page, click Preset on the control panel.
2. Click for a preset and then confirm the delete.



Dimensions

Unit: mm

Model: FEX30BHD-NP2 (Nitrogen Pressurized Housing)





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