Mobile Network Camera

User Manual

Legal Information

About this Manual

The Manual includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of this Manual at the Hikvision website (https://www.hikvision.com/).

Please use this Manual with the guidance and assistance of professionals trained in supporting the Product.

Trademarks

HIKVISION and other Hikvision's trademarks and logos are the properties of Hikvision in various jurisdictions.

Other trademarks and logos mentioned are the properties of their respective owners.

Disclaimer

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THIS MANUAL AND THE PRODUCT DESCRIBED, WITH ITS HARDWARE, SOFTWARE AND FIRMWARE, ARE PROVIDED "AS IS" AND "WITH ALL FAULTS AND ERRORS". HIKVISION MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY, SATISFACTORY QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE. THE USE OF THE PRODUCT BY YOU IS AT YOUR OWN RISK. IN NO EVENT WILL HIKVISION 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, CORRUPTION OF SYSTEMS, OR LOSS OF DOCUMENTATION, WHETHER BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE), PRODUCT LIABILITY, OR OTHERWISE, IN CONNECTION WITH THE USE OF THE PRODUCT, EVEN IF HIKVISION HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSS.

YOU ACKNOWLEDGE THAT THE NATURE OF THE INTERNET PROVIDES FOR INHERENT SECURITY RISKS, AND HIKVISION SHALL NOT TAKE ANY RESPONSIBILITIES FOR ABNORMAL OPERATION, PRIVACY LEAKAGE OR OTHER DAMAGES RESULTING FROM CYBER-ATTACK, HACKER ATTACK, VIRUS INFECTION, OR OTHER INTERNET SECURITY RISKS; HOWEVER, HIKVISION WILL PROVIDE TIMELY TECHNICAL SUPPORT IF REQUIRED.

YOU AGREE TO USE THIS PRODUCT IN COMPLIANCE WITH ALL APPLICABLE LAWS, AND YOU ARE SOLELY RESPONSIBLE FOR ENSURING THAT YOUR USE CONFORMS TO THE APPLICABLE LAW. ESPECIALLY, YOU ARE RESPONSIBLE, FOR USING THIS PRODUCT IN A MANNER THAT DOES NOT INFRINGE ON THE RIGHTS OF THIRD PARTIES, INCLUDING WITHOUT LIMITATION, RIGHTS OF PUBLICITY, INTELLECTUAL PROPERTY RIGHTS, OR DATA PROTECTION AND OTHER PRIVACY RIGHTS. YOU SHALL NOT USE THIS PRODUCT FOR ANY PROHIBITED END-USES, INCLUDING THE DEVELOPMENT OR PRODUCTION OF WEAPONS OF MASS DESTRUCTION, THE DEVELOPMENT OR PRODUCTION OF CHEMICAL OR BIOLOGICAL WEAPONS, ANY ACTIVITIES IN THE CONTEXT RELATED TO ANY NUCLEAR EXPLOSIVE OR UNSAFE NUCLEAR FUEL-CYCLE, OR IN SUPPORT OF HUMAN RIGHTS ABUSES.

IN THE EVENT OF ANY CONFLICTS BETWEEN THIS MANUAL AND THE APPLICABLE LAW, THE LATTER PREVAILS.

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance

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

FCC Conditions

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

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the RE Directive 2014/53/EU, EMC Directive 2014/30/EU, the LVD Directive 2014/35/EU, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
Note	Provides additional information to emphasize or supplement important points of the main text.
Caution	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Danger	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

Safety Instructions

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.
- Input voltage should meet limited power source or PS2 requirements according to the IEC60950-1 or IEC 62368-1 standard. Please refer to technical specifications for detailed information.
- Do not connect several devices to one power adapter as adapter overload may cause over-heating or a fire hazard.
- Please make sure that the plug is firmly connected to the power socket.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

TABLE OF CONTENTS

Chapter 1 Introduction

1.1 Product Features

This Network camera is a digital monitoring product that integrates video and audio acquisition, intelligent coding and compression, network transmission and other functions. With embedded operating system and high-performance hardware processing platform, it has high stability and reliability, and can meet the needs of various industries.

Based on Ethernet control, the network camera can realize image compression and transmit it to different users through the network. Centralized storage based on NAS can greatly facilitate the storage and call of data.

You can control the webcam through the browser, and set the webcam parameters, intelligent functions, audio and video parameters, image parameters, etc. through the browser. Please refer to the actual equipment for specific function parameters.

1.2 Product Function

This chapter explains the camera from the product function, so that you can get to know and get familiar with the camera more quickly.

System function

- Video recording and capturing pictures

The camera supports instant capture and video recording during preview, and can also configure video recording and capture plan after installing memory card or configuring network storage disk, so as to realize planned video recording and capture.

- User Management

You can manage many different users through the administrator "admin" user, and configure different permissions for each user.

Event detection function

The camera supports basic events and Smart events.

- Basic events: Motion Detection, Video Tampering, Exception.
- SMART events: Defocus Detection, Scene Change Detection, Object detection, Intrusion Detection, Line Crossing Detection, Region Entrance Detection, Region Exiting Detection, Loitering Detection, People Gathering Detection, Fast Moving Detection, Parking Detection, Unattended Baggage Detection, Object Removal Detection.

Network function

The camera supports TCP/IP, DHCP, UDP, MCAST, SFTP, SNMP and other network communication protocols; Support open interconnection protocols such as ONVIF.

The function of the product depends on the model, please refer to the technical parameters of the actual product.

Chapter 2 Operation Instructions

Note

- You shall acknowledge that the use of the product with Internet access might be under network security risks. For avoidance of any network attacks and information leakage, please strengthen your own protection. If the product does not work properly, please contact with your dealer or the nearest service center.
- To ensure the network security of the network camera, we recommend you to have the network camera assessed and maintained termly. You can contact us if you need such service.

Before you start:

Step 1 If you want to set the network camera via a LAN (Local Area Network), please refer to Section 2.1 Setting the Network Camera over the LAN.

Step 2 If you want to set the network camera via a WAN (Wide Area Network), please refer to Section 2.2 Setting the Network Camera over the WAN.

2.1 Setting the Network Camera over the LAN

Purpose:

To view and configure the camera via a LAN, you need to connect the network camera in the same subnet with your computer, and install the SADP or iVMS-4200 software to search and change the IP of the network camera.

Note

For the detailed introduction of SADP, please refer to Appendix 1.

2.1.1 Wiring over the LAN

The following figures show the two ways of cable connection of a network camera and a computer:

Purpose:

Step 1 To test the network camera, you can directly connect the network camera to the computer with a network cable as shown in Figure 2-1.

Step 2 Refer to the Figure 2-2 to set network camera over the LAN via a switch or a router.

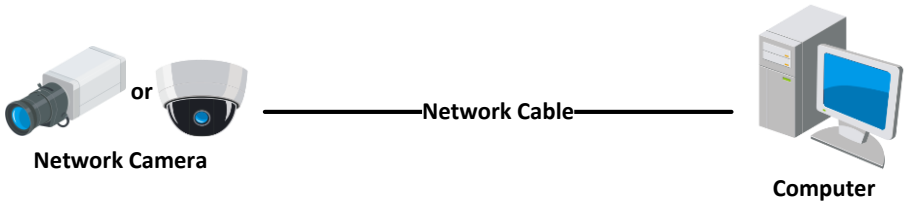


Figure 2-1 Connecting Directly

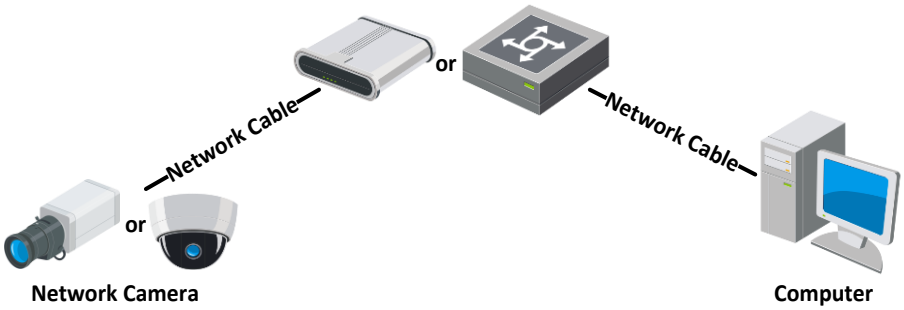


Figure 2-2 Connecting via a Switch or a Router

2.2 Activating the Camera

You are required to activate the camera first by setting a strong password for it before you can use the camera.

Activation via Web Browser, Activation via SADP, and Activation via Client Software are all supported.

2.2.1 Activation via SADP Software

SADP software is used for detecting the online device, activating the camera, and resetting the password.

Get the SADP software from the official website, and install the SADP according to the prompts. Follow the steps to activate the camera.

Step 1 Run the SADP software to search the online devices.

Step 2 Check the device status from the device list, and select the inactive device.

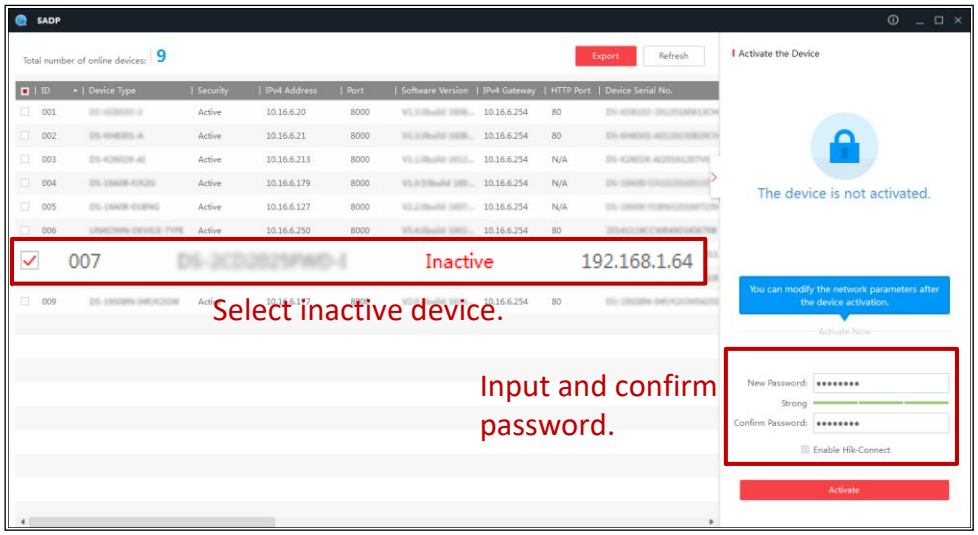


Figure 2-3 SADP Interface

Note

The SADP software supports activating the camera in batch. Refer to the user manual of SADP software for details.

Step 3 Create and input the password in the password field, and confirm the password. A password with user name in it is not allowed.

Caution

STRONG PASSWORD RECOMMENDED

- We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.
- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

You can enable the Hik-Connect service for the device during activation.

Step 4 Click Activate to start activation. You can check whether the activation is completed on the popup window. If activation failed, please make sure that the password meets the requirement and try again.

Step 5 Change the device IP address to the same subnet with your computer by either modifying the IP address manually or checking the checkbox of Enable DHCP.

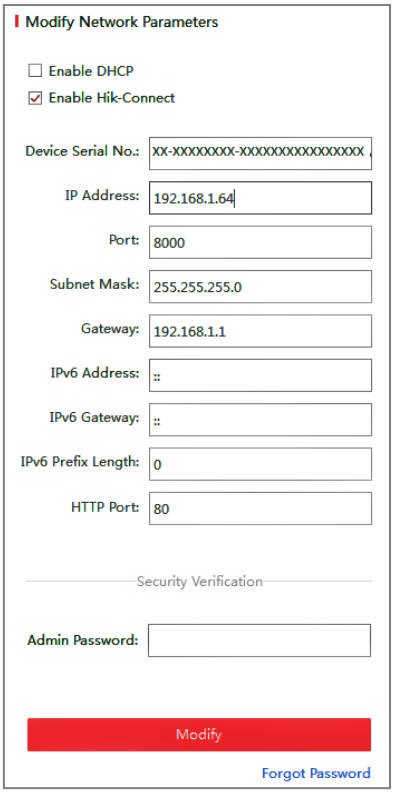


Figure 2-4 Modify the IP Address

Step 6 Input the admin password and click Modify to activate your IP address modification.

2.2.2 Activation via Web Browser

Step 1 Power on the camera, and connect the camera to the network.

Step 2 Input the IP address into the address bar of the web browser, and click Enter to enter the activation interface.

Note

- The default IP address of the camera is 192.168.1.64.
- The computer and the camera should belong to the same subnet.
- For the camera enables the DHCP by default, you need to use the SADP software to search the IP address.

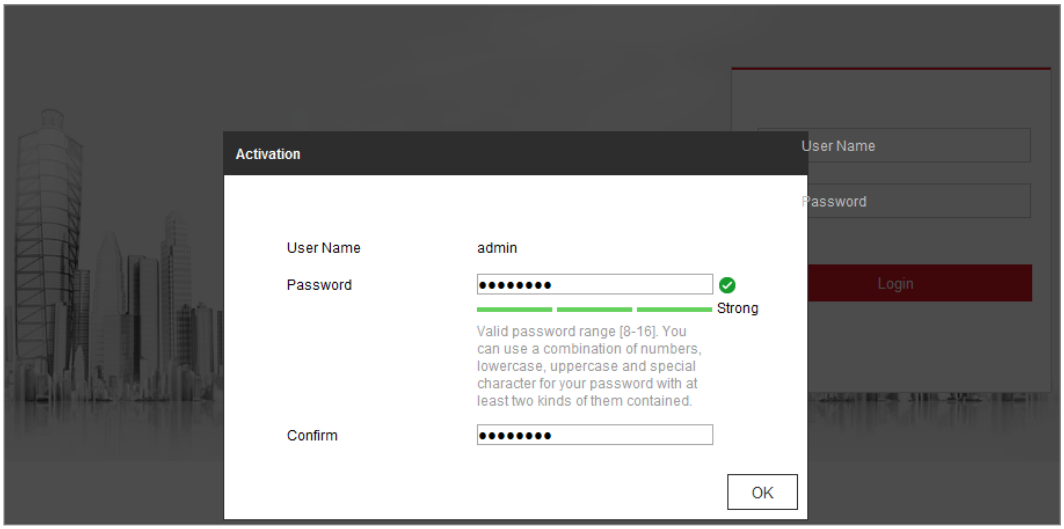


Figure 2-5 Activation via Web Browser

Step 3 Create and input a password into the password field. A password with user name in it is not allowed.

Caution

STRONG PASSWORD RECOMMENDED

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

Step 4 Confirm the password.

Step 5 Click OK to save the password and enter the live view interface.

2.2.3 (Optional) Setting Security Question

Security question is used to reset the admin password when admin user forgets the password.

Admin user can follow the pop-up window to complete security question settings during camera activation. Or, admin user can go to User Management interface to set up the function.

2.3 Login and Logout

2.3.1 Login

For certain camera models, HTTPS is enabled by default and the camera creates an unsigned certificate automatically. When you access to the camera the first time, the web browser prompts a notification about the certificate issue.

To cancel the notification, install a signed-certificate to the camera.

Step 1 Open the web browser.

Step 2 In the browser address bar, input the IP address of the network camera, and press the Enter key to enter the login interface.

Note

The default IP address is 192.168.1.64. You are recommended to change the IP address to the same subnet with your computer.

Step 3 Input the user name and password.

The admin user should configure the device accounts and user/operator permissions properly. Delete the unnecessary accounts and user/operator permissions.

Note

The IP address gets locked if the admin user performs 7 failed password attempts (5 attempts for the user/operator).

Figure 2-6 Login Interface

Step 4 Click **Login**.

Step 5 (Optional) Install the plug-in before viewing the live video and operating the camera. Follow the installation prompts to install the plug-in.

Table 2-1 Install Plugins

OS	Browser Version	Plugin
Windows	• IE 8 and upper • Google Chrome 57 and lower • Mozilla Firefox 52 and lower	Install the plugin according to instructions.
	• Google Chrome 57 and upper • Mozilla Firefox 52 and upper	Click  in the preview page to download and install the plugin for high quality view and device functions.
Mac OS	• Google Chrome 57 and upper • Mozilla Firefox 52 and upper • Mac Safari 16 and upper	To preview, enter Configuration > Network > Advanced Setting > Network Service, and enbale WebSocket. Some functions will be limited after enbling this function, such as video play. The actual equipment shall prevail.

Note

For camera that supports plug-in free live view, if you are using Google Chrome 57 and its above version or Mozilla Firefox 52 and its above version, plug-in installation is not required. But Picture and Playback functions are hidden. To use mentioned function via web browser, change to their lower version, or change to Internet Explorer 8.0 and above version.

2.3.2 Logout

To logout, click the  icon.

2.4 Main Interface

The main interface is shown as follows.

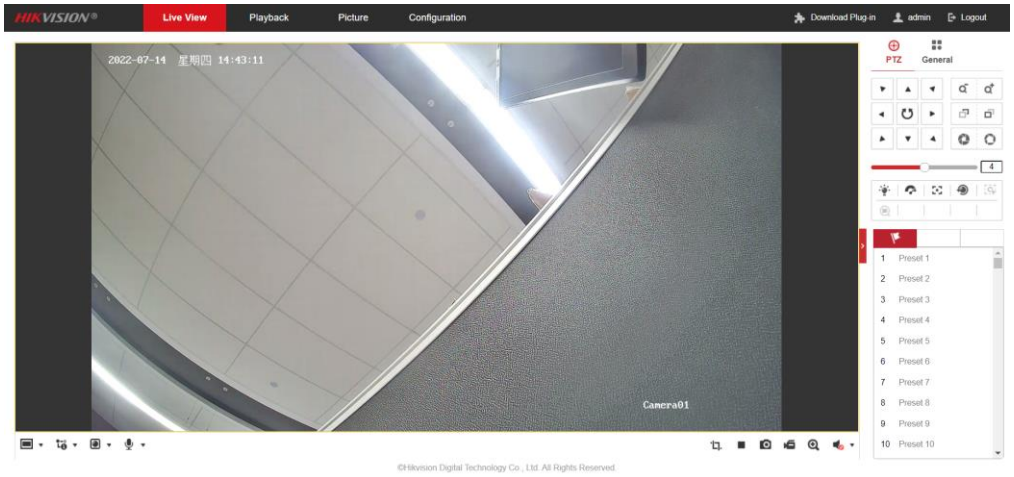


Figure 2-7 Main Interface

Live View: to view the camera and set parameters.

Playback: to play recordings according to their type and time.

Picture: to search, view and download the pictures stored in the SD Card of the network camera.

Configuration: to set the system and function parameters.

Note

The interface may vary according to the model of the camera.

Chapter 3 Basic Functions

3.1 Local Parameters

Go to **Configuration > Local** to configure local configurations. Live View Parameters, Record File Settings, Picture and Clip Settings can be configured.

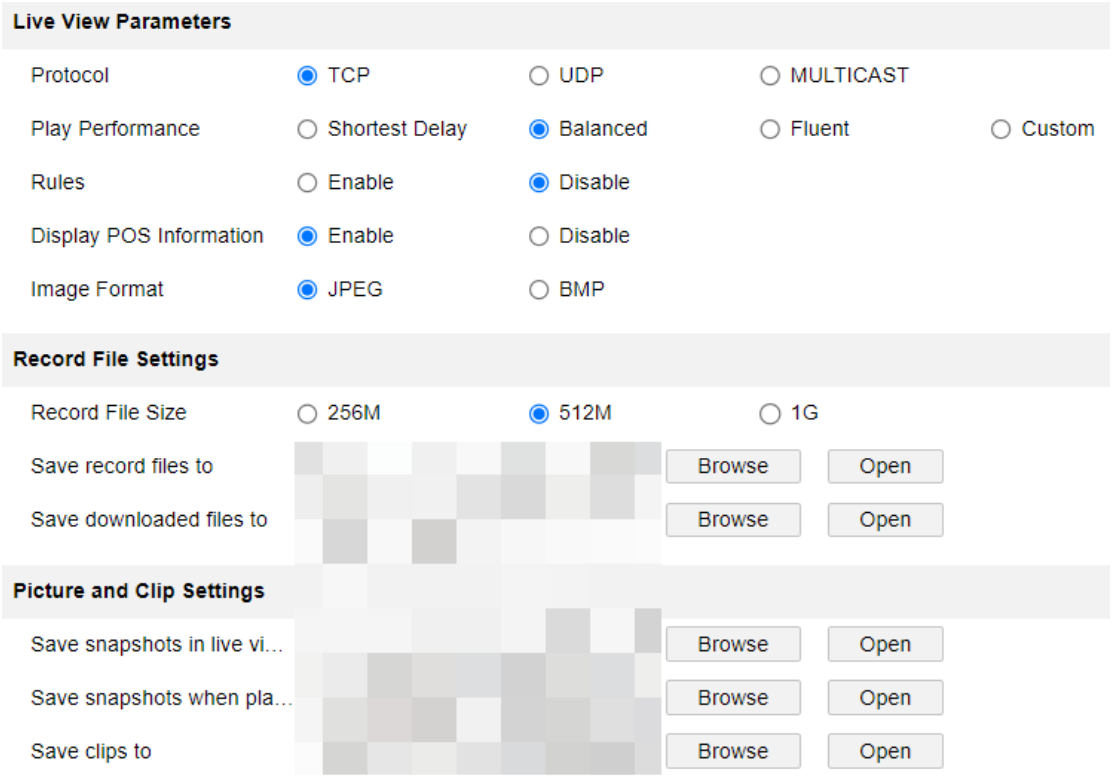


Figure 3-1 Local Parameters

3.1.1 Live View Parameters

- Protocols

TCP, UDP and MULTICAST protocols are supported.

- The default protocol is TCP
- UDP is suitable for the situation that the requirement of video fluency is not high and the network environment is unstable.
- MULTICAST is suitable for multicast addresses with many customers and need to be configured before selection.

- Playback performance:

You can choose the shortest delay, Balanced, Fluent and Custom, and the default is Custom.

- Minimum delay: Real-time is good, but it may affect the fluency of video.
- Balanced: Give consideration to the real-time and fluency of video playback.

- Good fluency: In the same network situation, it takes up less network resources, and the video is smoother than other modes.
- Custom: the frame rate can be set according to the network conditions.
- Information: You can choose to enable or disable it. When enabled, information boxes will appear on the live screen, including the dynamic analysis box of motion detection and the face target box.
- POS information overlay: it can be enabled or disabled. When enabled, when a target triggers a rule, the live screen will display the attribute information of the target.
- Picture and Clip Settings: set the format of captured pictures, with optional JPEG and BMP.

3.1.2 Record File Setting

- Record File Size: it can be set to 256 M, 512 M and 1 G, indicating the size of a single video file stored locally.
- Save record files to: the path where video files are stored locally. You can choose Browse to change the path, and click Open Folder to open the folder under the archive path.
- Save downloaded files to: the path where the video files saved during playback are stored locally. You can choose Browse to change the path, and click Open Folder to open the folder under the archive path.

3.1.3 Picture and Clip Setting

- Save snapshots in live view to: the path where the captured pictures are stored locally during preview. You can choose Browse to change the path, and click Open Folder to open the folder under the archive path.
- Save snapshots when playback to: the path where captured pictures are stored locally during playback. You can choose Browse to change the path, and click Open Folder to open the folder under the archive path.
- Save clips to: the path where the cut video files are stored locally during playback. You can choose Browse to change the path, and click Open Folder to open the folder under the archive path.

3.2 Live View

3.2.1 Live View Page

Purpose:

The live view page allows you to view the real-time video, capture images, realize PTZ control, set/call presets and configure video parameters.

Log in the network camera to enter the live view page, or you can click Live View on the menu bar of the main page to enter the live view page.

Descriptions of the live view page:

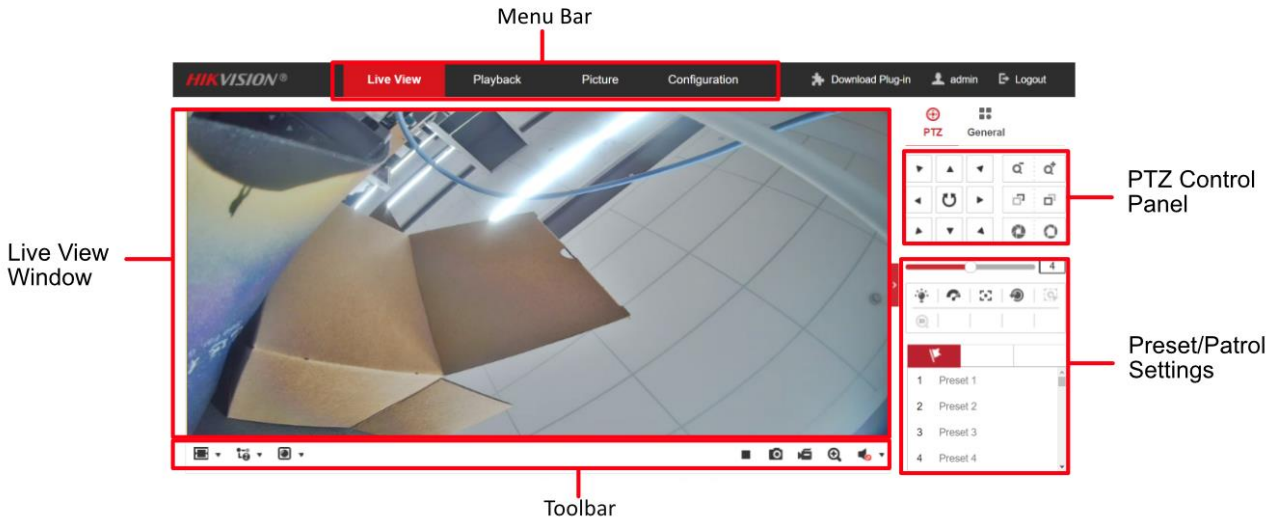


Figure 3-2 Live View Page

- Menu Bar

Click each tab to enter Live View, Playback, Picture, Application, and Configuration page respectively.

- Live View Window

Display the live video.

- Toolbar

Toolbar allows you to adjust the live view window size, the stream type, and the plug-ins. It also allows you to process the operations on the live view page, e.g., start/stop live view, capture, record, audio on/off, two-way audio, start/stop digital zoom, etc.

For IE (Internet Explorer) users, plug-ins as webcomponents and quick time are selectable. And for Non-IE users, webcomponents, quick time, VLC or MJPEG are selectable if they are supported by the web browser.

Note

For camera that supports plug-in free live view, when Google Chrome 45 and its above version or Mozilla Firefox 52 and its above version are used, plug-in installation is not required. But Picture and Playback functions are hidden. To use mentioned function via web browser, change to their lower versions, or change to Internet Explorer 8.0 and its above version.

3.2.2 Starting Live View

In the live view window as shown in Figure 4-2, click ▶ on the toolbar to start the live view of the camera.

Figure 3-3 Live View Toolbar

Table 3-1 Descriptions of the Toolbar

Icon	Description
▶/■	Start/Stop live view.
4:3	The window size is 4:3.
16:9	The window size is 16:9.
1×	The original widow size.
	Self-adaptive window size.
, , , etc.	Live view with the different video streams. Supported video streams vary according to camera models.
	Click to select the third-party plug-in.
	Manually capture the picture.
/	Manually start/stop recording.
/	Audio on and adjust volume /Mute.
/	Turn on/off microphone.
/	Start/stop digital zoom function.

Note

The icons vary according to the different camera models.

3.2.3 Record and Capture Pictures Manually

In the live view interface, click on the toolbar to capture the live pictures; click to record the live view. The saving paths of the captured pictures and clips can be set on the Configuration > Local page. To configure remote scheduled recording, please refer to 9.1 Record Schedule.

Note

The captured image will be saved as a JPEG file or BMP file in your computer.

3.3 Playback

Purpose:

This section explains how to view the remotely recorded video files stored in the network disks or SD cards.

Step 1 Click **Playback** on the menu bar to enter playback interface.

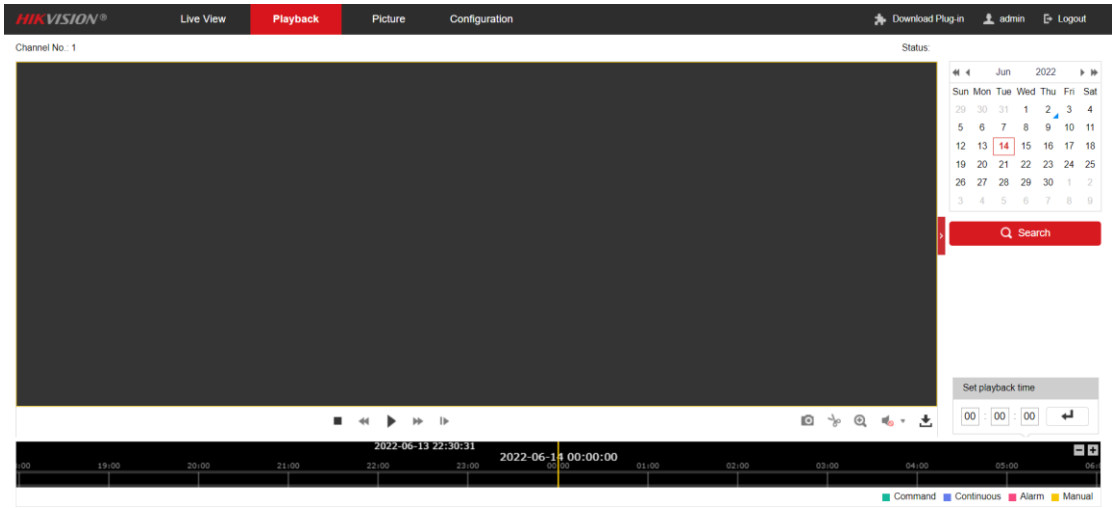


Figure 3-4 Playback Interface

Step 2 Select the date and click **Search**.

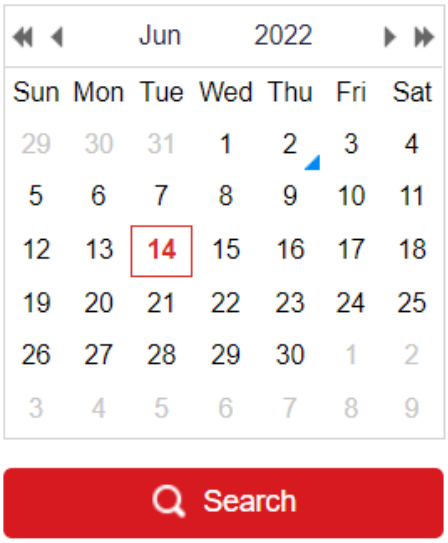


Figure 3-5 Search Video

Step 3 Click ▶ to play the video files found on this date.

The toolbar on the bottom of Playback interface can be used to control playing process.

Figure 3-6 Playback Toolbar

Table 3-2 Description of the buttons

Button	Operation	Button	Operation
▶	Play	📷	Capture a picture
⏸	Pause	✂ / ✂	Start/Stop clipping video files
■	Stop	🔊 ▬▬	Audio on and adjust volume

	Speed down		Mute
	Speed up		Download
/	Enable/Disable digital zoom		Playback by frame

Note

You can choose the file paths locally for downloaded playback video files and pictures in Local Configuration interface.

You can also input the time and click to locate the playback point in the **Set playback time** field. You can also click to zoom out/in the progress bar.

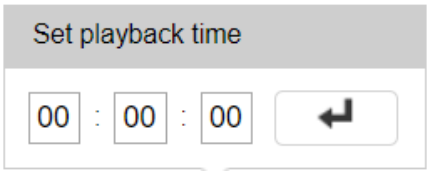


Figure 3-7 Set Playback Time

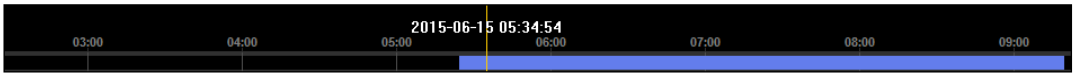


Figure 3-8 Progress Bar

The different colors of the video on the progress bar stand for the different video types.

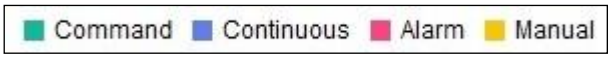


Figure 3-9 Video Types

3.4 Picture

Purpose:

Click Picture to enter the picture searching interface. You can search, view, and download the pictures stored in the local storage or network storage.

Note

- Make sure HDD, NAS or memory card are properly configured before you process the picture search.
- Make sure the capture schedule is configured. Go to **Configuration > Storage** > **Schedule Settings** > **Capture** to set the capture schedule.

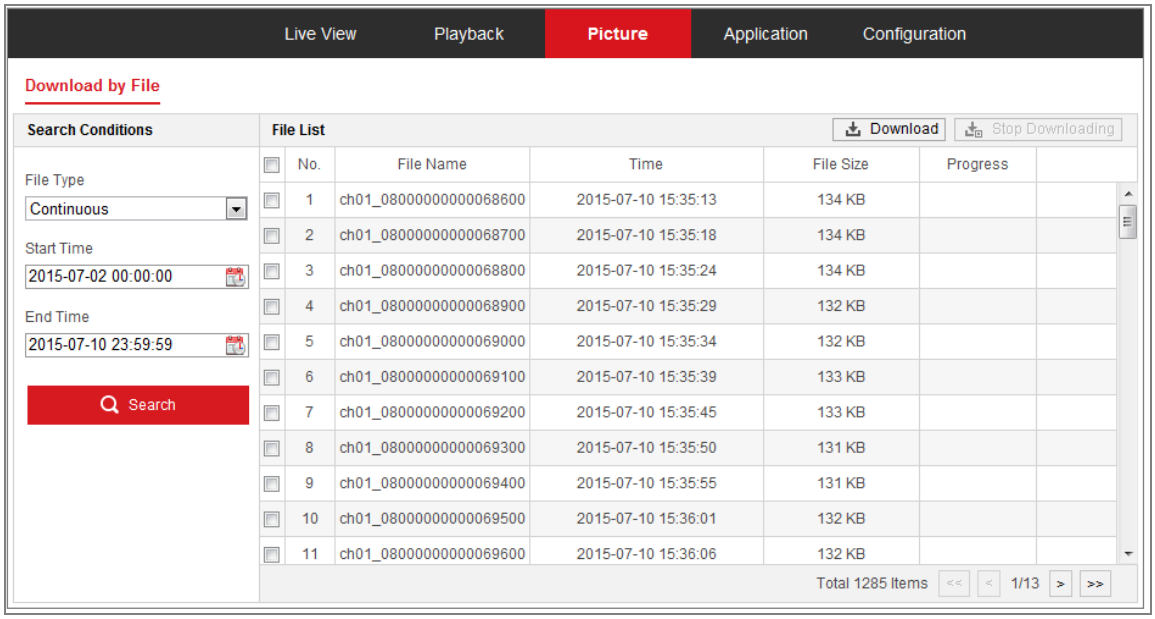


Figure 3-10 Picture Search Interface

Step 1 Select the file type from the dropdown list. Continuous, Motion, Alarm, Motion | Alarm, Motion & Alarm, Line Crossing, Intrusion Detection, and Scene Change Detection are selectable.

Step 2 Select the start time and end time.

Step 3 Click **Search** to search the matched pictures.

Step 4 Check the checkbox of the pictures and then click **Download** to download the selected pictures.

Note

Up to 4000 pictures can be displayed at one time.

Chapter 4 System Configuration

4.1 Configure System Settings

Purpose:

Follow the instructions below to configure the system settings, include System Settings, Maintenance, Security, and User Management, etc.

4.1.1 Basic Information

Step 1 Go to **Configuration** > **System** > **System Settings** > **Basic Information**.

Step 2 Edit the Device Name and Device No.

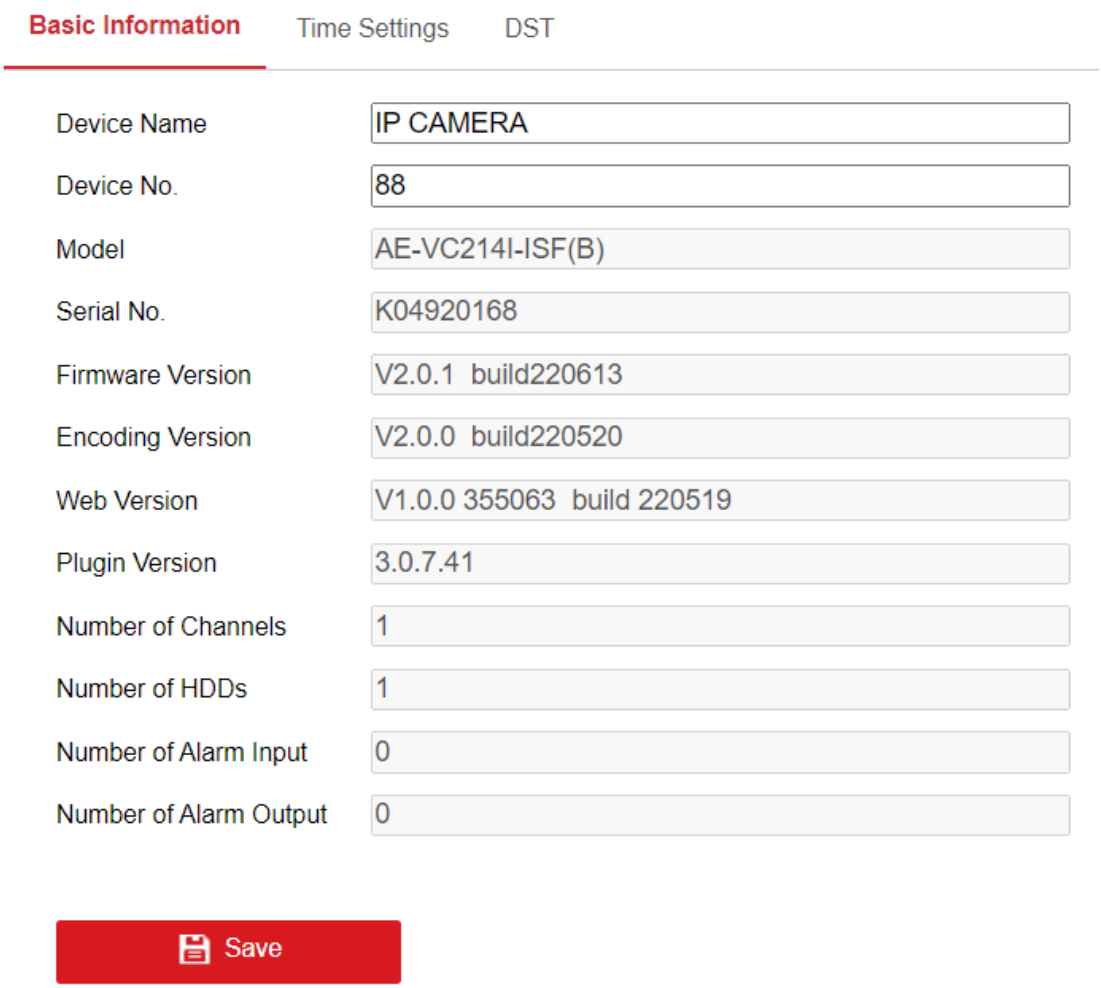


Figure 4-1 Basic Information

Note

Other information of the network camera, such as Model, Serial No., Firmware Version, Encoding Version, Number of Channels, Number of HDDs, Number of Alarm Input and Number of Alarm Output are displayed. The information cannot be changed in this menu. These options are the reference for maintenance or modification in future.

4.1.2 Time Settings

Purpose:

You can follow the instructions in this section to configure the time synchronization and DST settings.

Step 1 Go to **Configuration** > **System**> **System Settings** > **Time Settings**.

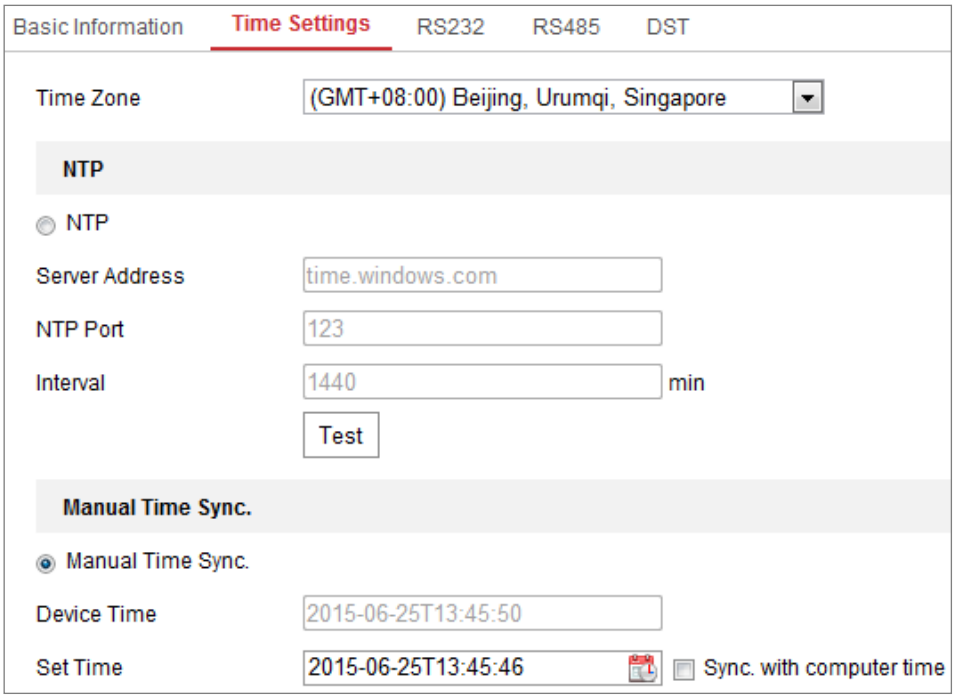


Figure 4-2 Time Settings

Step 2 Select the Time Zone of your location from the drop-down menu.

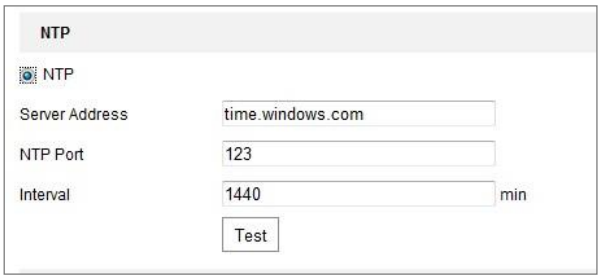
Step 3 Configure the NTP settings.

Step 4 Click to enable the NTP function.

Step 5 Configure the following settings:

- Server Address: IP address of NTP server.
- NTP Port: Port of NTP server.
- Interval: The time interval between the two synchronizing actions with NTP server.

Step 6 (Optional) You can click the Test button to test the time synchronization function via NTP server.



Time Sync by NTP Server

Note

If the camera is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the camera is set in a customized network, NTP software can be used to establish a NTP server for time synchronization.

Step 7 Configure the manual time synchronization.

1) Check the Manual Time Sync. item to enable the manual time synchronization function.
2) Click the icon to select the date, time from the pop-up calendar.
3) (Optional) You can check Sync. with computer time item to synchronize the time of the device with that of the local PC.

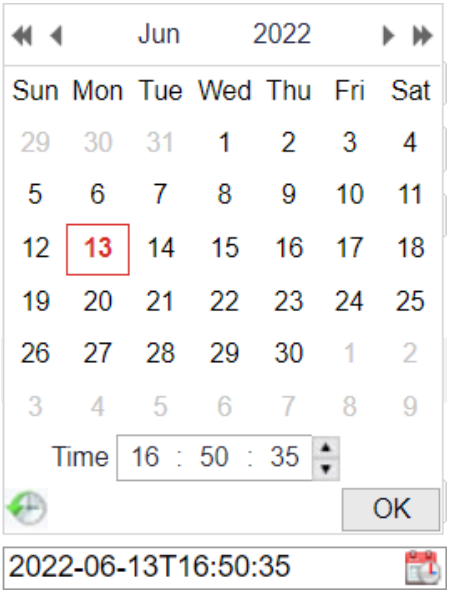


Figure 4-3 Time Sync Manually

Step 8 Click Save to save the settings.

4.1.3 DST

Purpose:

Daylight Saving Time (DST) is a way of making better use of the natural daylight by setting your clock forward one hour during the summer months, and back again in the fall.

Step 1 Go to **Configuration** > **System** > **System Settings** > **DS**T

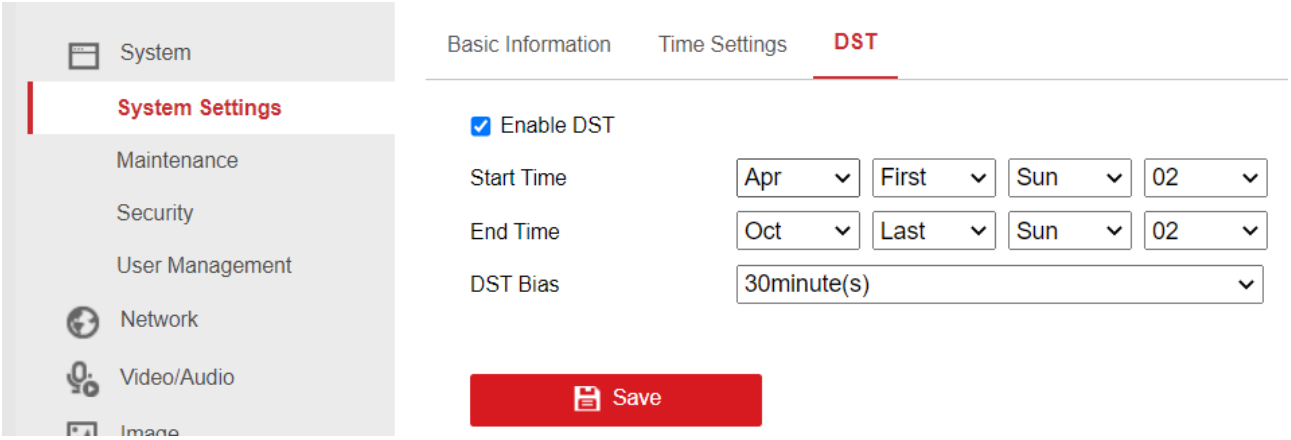


Figure 4-4 DST Settings

Step 2 Check Enable DST.

Step 3 Select the start time and the end time.

Step 4 Select the DST Bias.

Step 5 Click Save to activate the settings.

4.2 Maintenance

4.2.1 Upgrade & Maintenance

Purpose:

The upgrade & maintenance interface allows you to process the operations, including reboot, partly restore, restore to default, export/import the configuration files, and upgrade the device.

Step 1 Go to **Configuration** > **System** > **Maintenance** > **Upgrade & Maintenance**.

- Reboot: Restart the device.
- Restore: Reset all the parameters, except the IP parameters and user information, to the default settings.
- Default: Restore all the parameters to the factory default.

Note

- After restoring the default settings, the IP address is also restored to the default IP address, please be careful for this action.
- For camera that supports Wi-Fi, wireless dial, or wlan function, Restore action does not restore the related settings of mentioned functions to default.

- Information Export

Device Parameters: click to export the current configuration file of the camera.

This operation requires admin password to proceed.

For the exported file, you also have to create an encryption password. The encryption password is required when you import the file to other cameras.

Diagnose Information: click to download log and system information.

- Import Config. File

Configuration file is used for the batch configuration of the cameras.

Step 2 Click Browse to select the saved configuration file.

Step 3 Click Import and input the encryption password that you set during exporting.

Note

The camera needs rebooting after importing configuration file.

Upgrade: Upgrade the device to a certain version.

Step 4 Select firmware or firmware directory to locate the upgrade file.

- Firmware: Locate the exact path of the upgrade file.
- Firmware Directory: Only the directory the upgrade file belongs to is required.

Step 5 Click Browse to select the local upgrade file and then click Upgrade to start remote upgrade.

Note

The upgrading process will take 1 to 10 minutes. Please don't disconnect power of the camera during the process, and the camera reboots automatically after upgrade.

4.2.2 Log

Purpose:

The operation, alarm, exception and information of the camera can be stored in log files. You can also export the log files on your demand.

Before you start:

Please configure network storage for the camera or insert a SD card in the camera.

Step 1 Go to **Configuration** > **System** > **Maintenance** > **Log**.

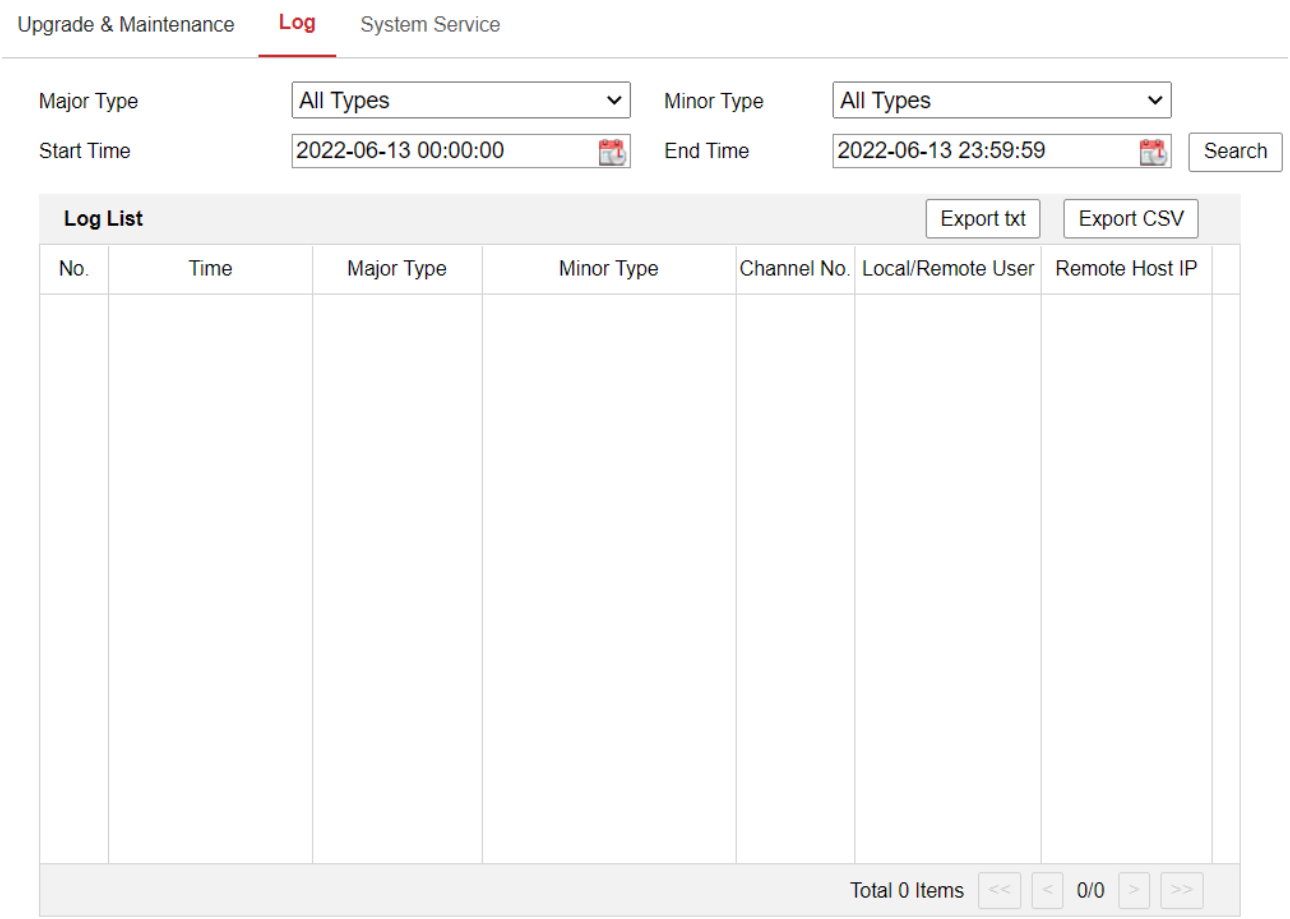


Figure 4-5 Log Searching Interface

Step 2 Set the log search conditions to specify the search, including the Major Type, Minor Type, Start Time and End Time.

Step 3 Click **Search** to search log files. The matched log files will be displayed on the log list interface.

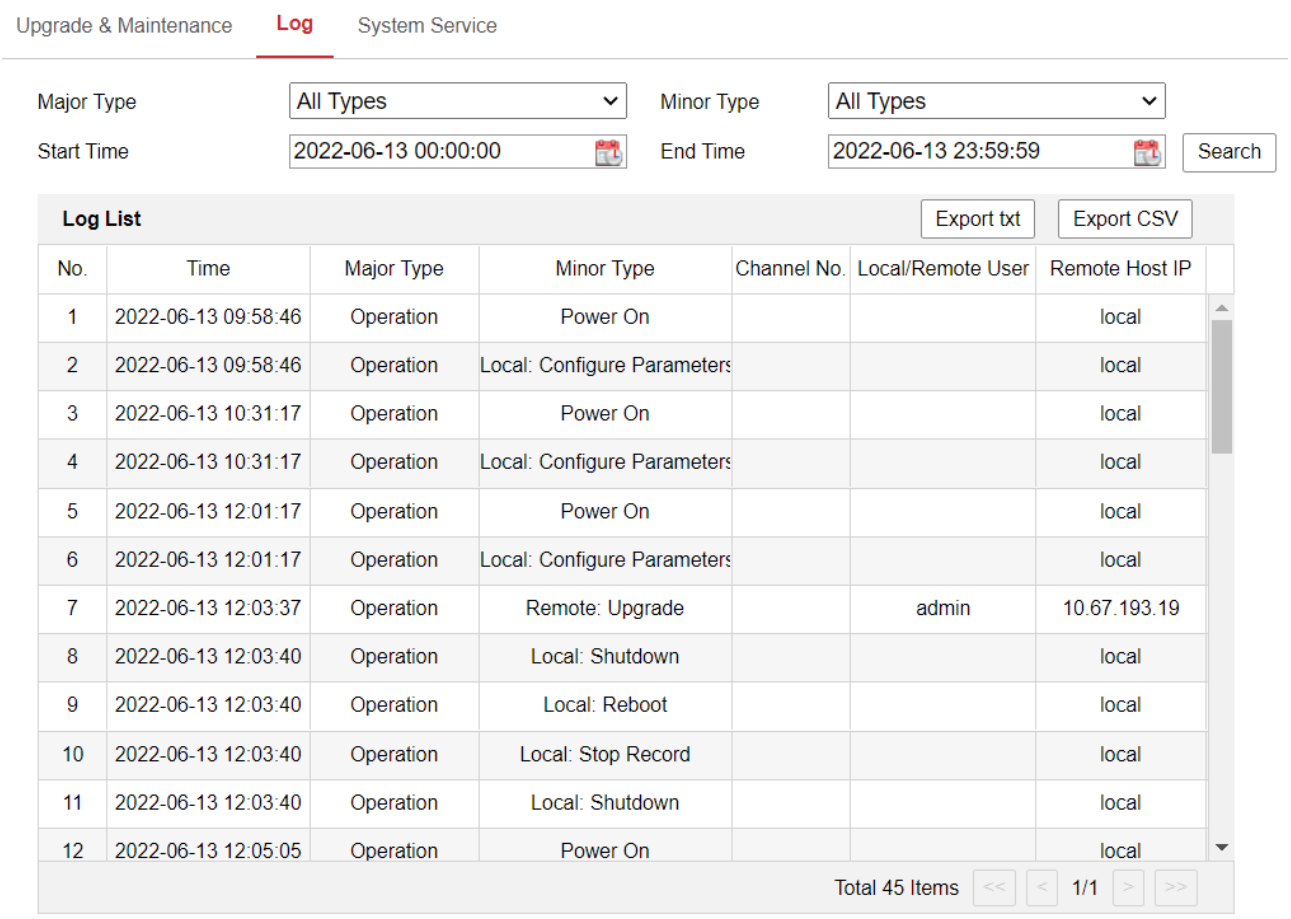


Figure 4-6 Log Searching

Step 4 To export the log files, click **Export** to save the log files.

4.2.3 System Service

Purpose:

System service settings refer to the hardware service the camera supports. Supported functions vary according to the different cameras. For the cameras support IR Light, ABF (Auto Back Focus), Auto Defog, or Status LED, you can select to enable or disable the corresponding service according to the actual demands.

- **ABF:** When ABF function is enabled, you can click on PTZ control panel to realize auxiliary focus.
- **Third Stream**: For some models, third stream is not enabled by default. Check **Enable Third Stream** to enable the function. When the Third Stream is enabled, the smart event will not be supported.

4.3 Security

Configure the parameters, including Authentication, IP Address Filter, and Security Service from security interface.

4.3.1 Authentication

Purpose:

You can specifically secure the stream data of live view.

Step 1 Go to **Configuration** > **System** > **Security** > **Authentication**.

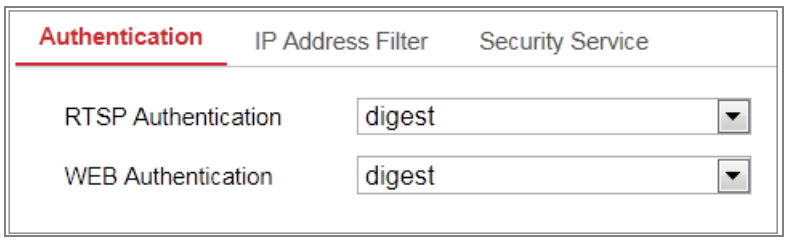


Figure 4-7 Authentication

Step 2 Set up authentication method for RTSP authentication and WEB authentication.

Caution

Digest is the recommended authentication method for better data security. You must be aware of the risk if you adopt basic as the authentication method.

Step 3 Click **Save**.

4.3.2 IP Address Filter

Purpose:

This function makes it possible for access control.

Step 1 Go to **Configuration** > **System** > **Security** > **IP Address Filte**r

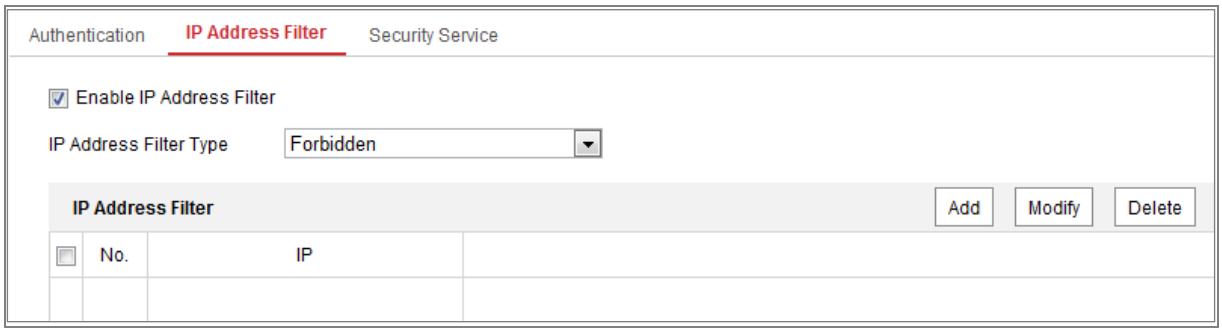


Figure 4-8 IP Address Filter Interface

Step 2 Check the checkbox of Enable IP Address Filter.

Step 3 Select the type of IP Address Filter in the drop-down list, **Forbidden** and **Allowed** are selectable.

Step 4 Set the IP Address Filter list.

- Add an IP Address
  1) Click the **Add** to add an IP.

2) Input the IP Adreess.

Add an IP

3) Click the **OK** to finish adding.

- Modify an IP Address
  1) Left-click an IP address from filter list and click **Modify**.
  2) Modify the IP address in the text filed.

Modify an IP

3) Click the **OK** to finish modifying.

- Delete an IP Address or IP Addresses.
  1) Select the IP address(es) and click **Delete**.
  2) Click **Save** to save the settings.

4.3.3 Security Service

To enable the remote login, and improve the data communication security, the camera provides the security service for better user experience.

Step 1 Go to Configuration > System > Security > Security Service.

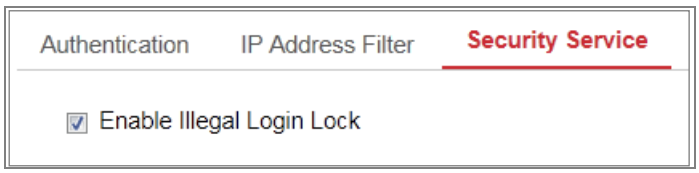


Figure 4-9 Security Service

Step 2 Check the checkbox of Enable Illegal Login Lock.

Step 3 Illegal Login Lock: it is used to limit the user login attempts. Login attempt from the IP address is rejected if admin user performs 7 failed user name/password attempts (5 times for the operator/user).

Note

If the IP address is rejected, you can try to login the device after 30 minutes.

4.4 User Management

4.4.1 User Management

Administrator

The admin user can add, delete or modify user accounts, and grant them different permissions. We highly recommend you manage the user accounts and permissions properly.

Step 1 Go to **Configuration** > **System** > **User Management**.

Note

Admin password if required for adding and modifying a user account.

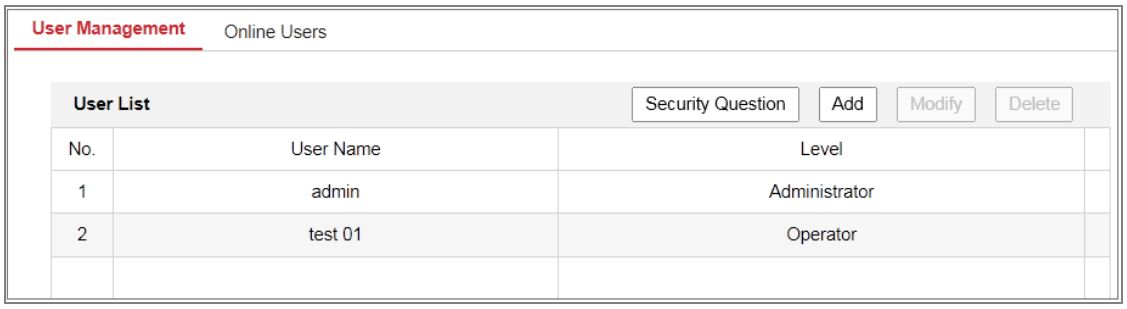


Figure 4-10 User Management Interface

Adding a User

The *admin* user has all permissions by default and can create/modify/delete other accounts.

The *admin* user cannot be deleted and you can only change the *admin* password.

Step 2 Click **Add** to add a user.

Step 3 Input the Admin Password, User Name, select Level and input Password.

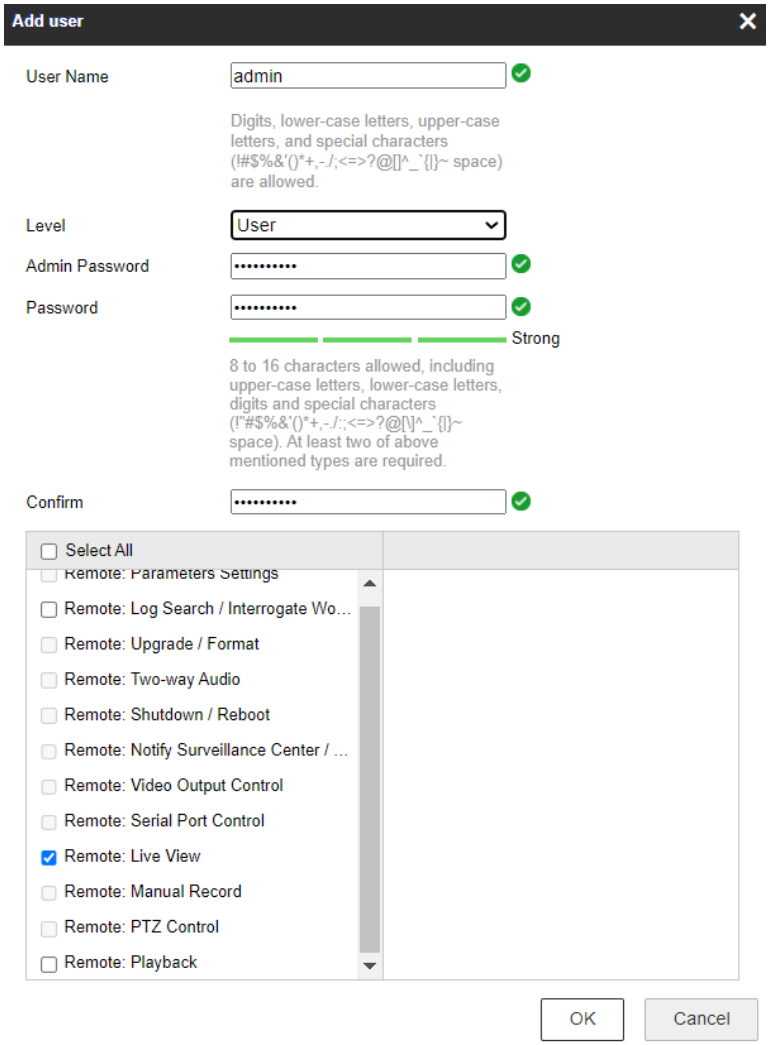


Figure 4-11 Add a User

Note

Up to 16 user accounts can be created.

Users of different levels own different default permissions. Operator and user are selectable.

Caution

Strong Password recommended

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

Step 4 You can check or uncheck the permissions for the new user.

Step 5 Click **OK** to finish the user addition.

Modify a User

Step 6 Left-click to select the user from the list and click **Modify**.

Step 7 Modify the User Name, Level and Password.

Caution

Strong Password recommended

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

Step 8 You can check or uncheck the permissions.

Step 9 Click **OK** to finish the user modification.

Step 10 Deleting a User

1) Click to select the user you want to delete and click **Delete**.
2) Click **OK** on the pop-up dialogue box to confirm the deletion.

Operator/User

Operator or user can modify password. Old password is required for this action.

4.4.2 Security Question

Purpose:

Security question is used to reset the admin password when admin user forgets the password.

Set Security Questions

You can set the security questions during camera activation. Or you can set the function at user management interface.

Security question setting is not cleared when you restore the camera (not to default).

Steps:

Step 1 Go to **Configuration** > **System** > **User Management**.

Step 2 Click Account Security Question.

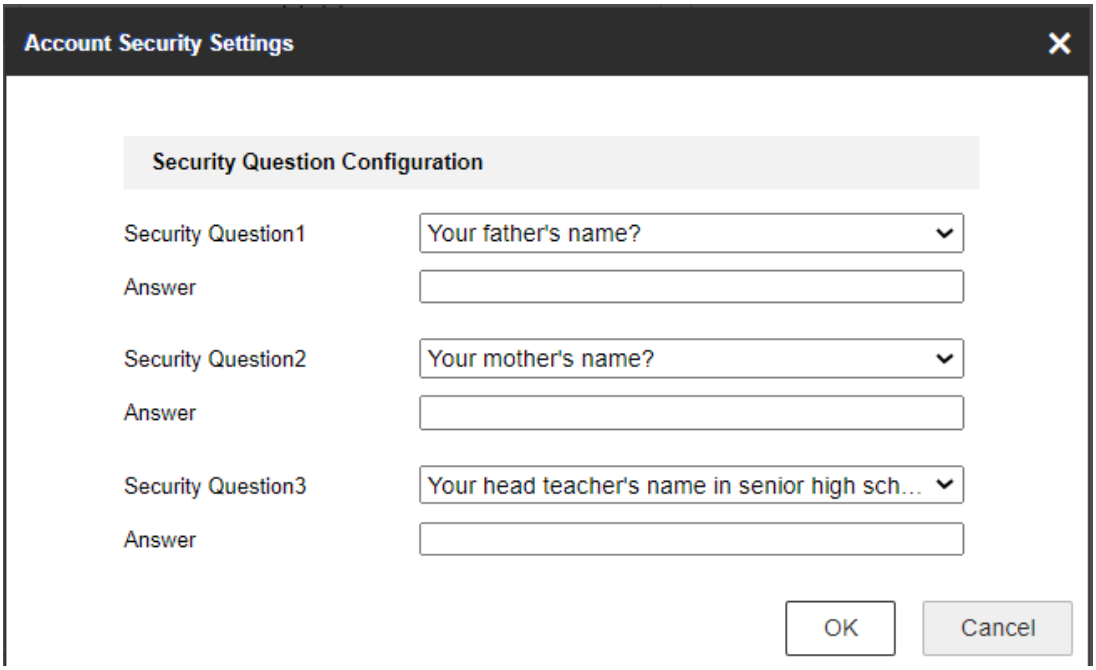


Figure 4-12 Account Security Question

Step 3 Select questions and input answers.

Step 4 Click **OK** to save the settings.

Reset Admin Password:

Before you start:

The PC used to reset password and the camera should belong to the same IP address segment of the same LAN.

Steps:

Step 5 Go to **Configuration** > **Network** > **Advanced Settings** > **QoS**

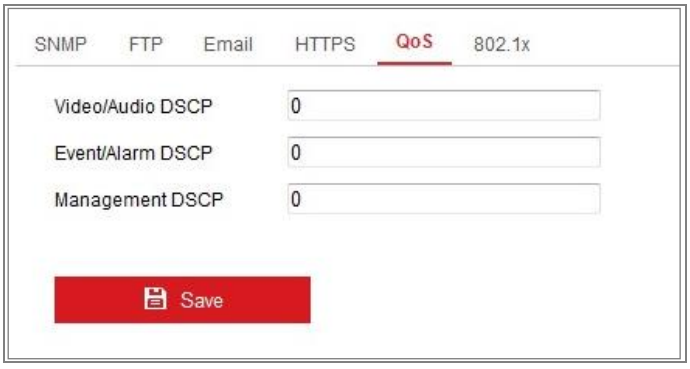


Figure 4-13 QoS Settings

Step 6 Configure the QoS settings, including Video/Audio DSCP, Event/Alarm DSCP and Management DSCP.

Step 7 The valid value range of the DSCP is 0 to 63. The bigger the DSCP value is, the higher the priority is.

Note

DSCP refers to the Differentiated Service Code Point; and the DSCP value is used in the IP header to indicate the priority of the data.

Step 8 Click **Save** to save the settings.

Note

A reboot is required for the settings to take effect.

4.4.3 Online Users

Purpose:

You can see the current users who are visiting the device through this interface. User information, such as user name, level, IP address, and operation time, is displayed in the User List.

Click **Refresh** to refresh the list.

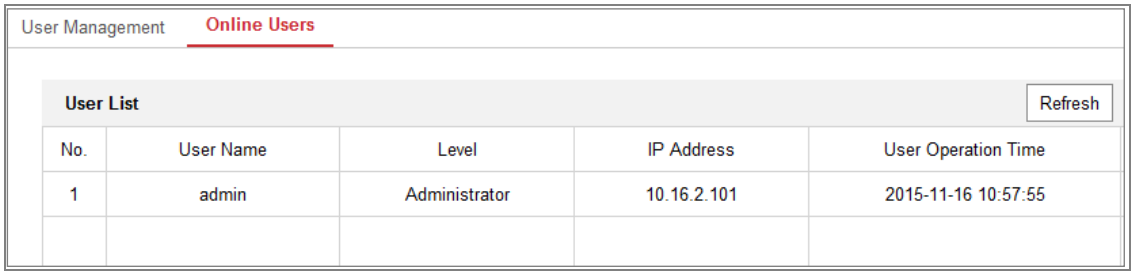


Figure 4-14 View the Online Users

Chapter 5 Network Settings

Purpose:

Follow the instructions in this chapter to configure the basic settings and advanced settings.

5.1 Basic Settings

Purpose:

You can configure the parameters, including TCP/IP, DDNS, Port, and NAT, etc., by following the instructions in this section.

5.1.1 TCP/IP

Purpose:

TCP/IP settings must be properly configured before you operate the camera over network. The camera supports both the IPv4 and IPv6. Both versions can be configured simultaneously without conflicting to each other, and at least one IP version should be configured.

Step 1 Go to **Configuration > Network > Basic Settings > TCP/IP**.

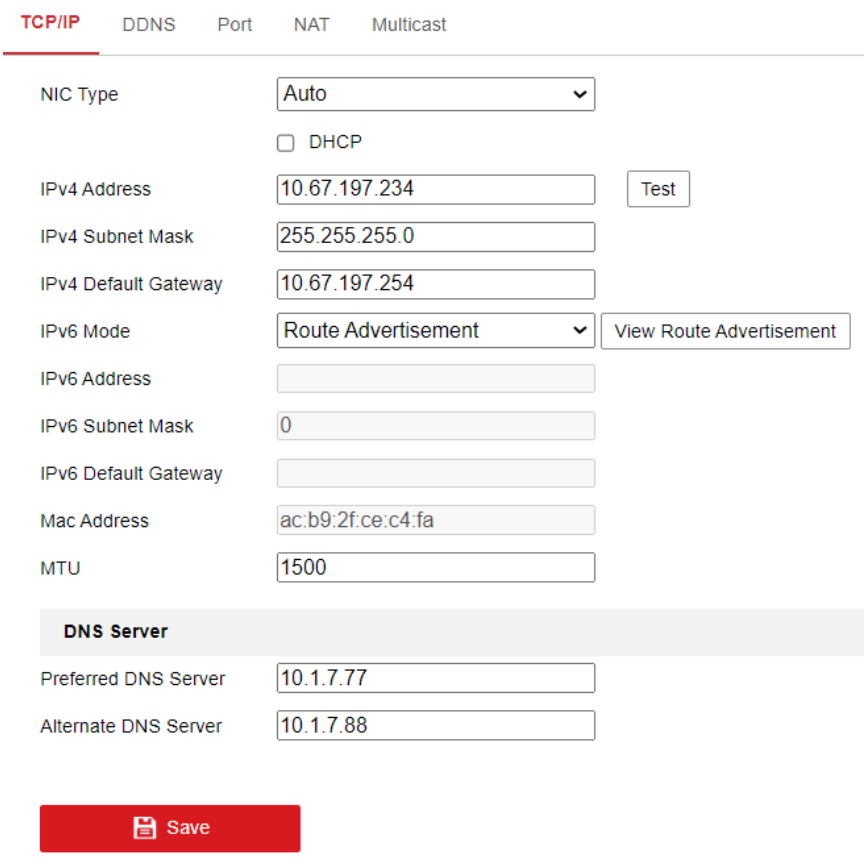


Figure 5-1 TCP/IP Settings

Step 2 Configure the basic network settings, including the NIC Type, IPv4 or IPv6 Address, IPv4 or IPv6 Subnet Mask, IPv4 or IPv6 Default Gateway, and MTU settings.

Step 3 Configure the DNS server. Input the preferred DNS server, and alternate DNS server.

Step 4 Click **Save** to save the above settings.

Note

- The valid value range of MTU is 1280 to 1500.
- A reboot is required for the settings to take effect.

5.1.2 DDNS

Purpose:

As most public internet users in use dynamic IP, Dynamic DNS (DDNS) for network access is best for camera.

Before you start:

Registration on the DDNS server is required before configuring the DDNS settings of the camera.

Step 1 Go to Configuration > Network > Basic Settings > DDNS.

Step 2 Check the Enable DDNS checkbox to enable this feature.

Step 3 Select DDNS Type. Two DDNS types are selectable: DynDNS and NO-IP.

- DynDNS:

Step 1 Enter **Server Address** of DynDNS (e.g. members.dyndns.org).

Step 2 In the **Domain** text field, enter the domain name obtained from the DynDNS website.

Step 3 Enter the **User Name** and **Password** registered on the DynDNS website.

Step 4 Click **Save** to save the settings.

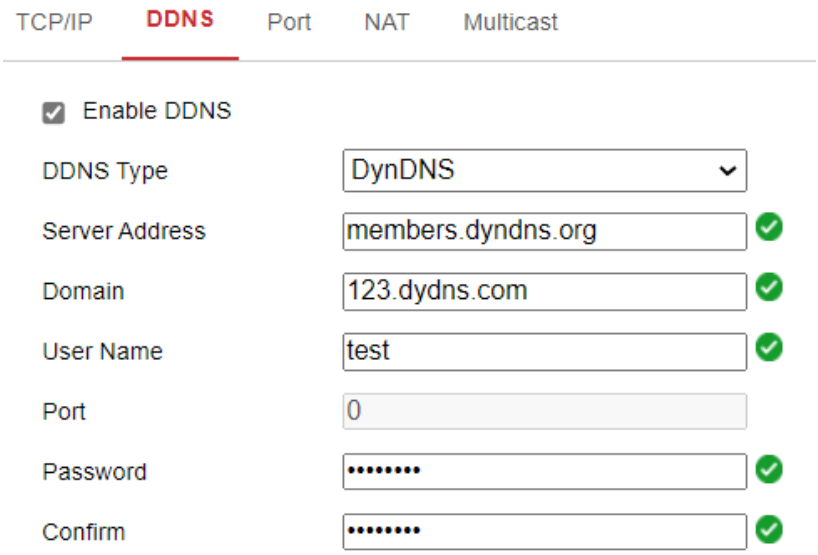


Figure 5-2 DynDNS Settings

- NO-IP:

Step 1 Choose the DDNS Type as NO-IP.

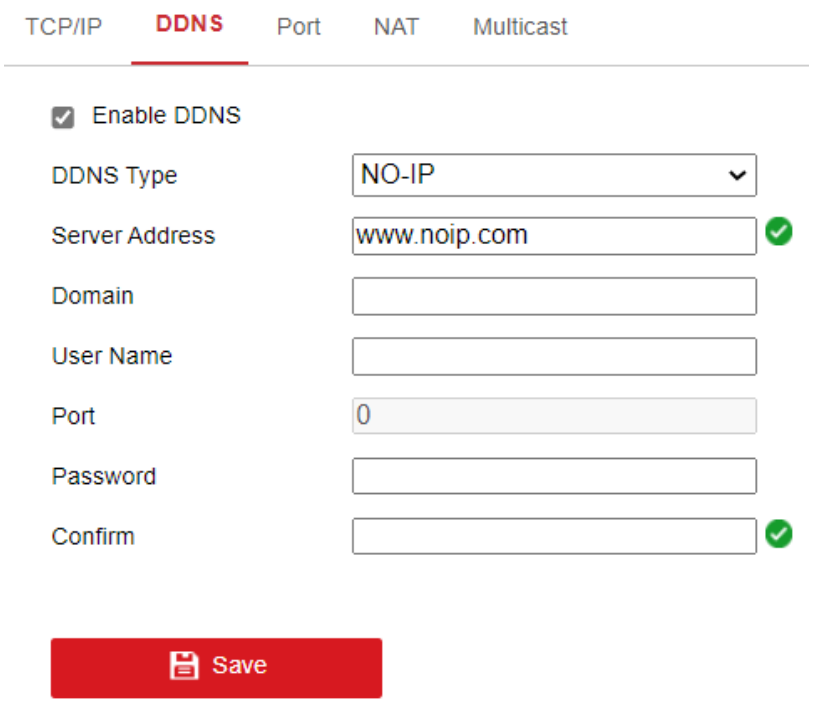


Figure 5-3 NO-IP DNS Settings

Step 2 Enter the Server Address as www.noip.com

Step 3 Enter the Domain name you registered.

Step 4 Enter the User Name and Password.

Step 5 Click **Save** and then you can view the camera with the domain name.

Note

Reboot the device to make the settings take effect.

5.1.3 Port

Step 1 Go to **Configuration > Network > Basic Settings > Port**.

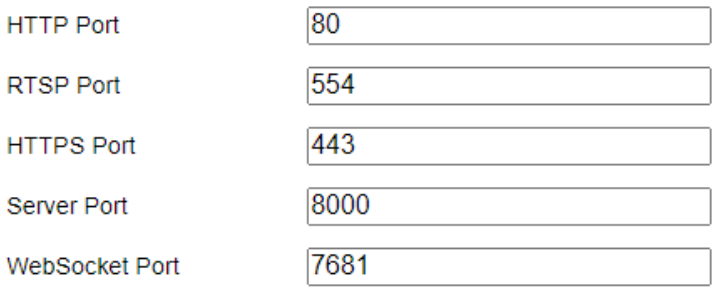


Figure 5-4 Port Settings

Step 2 Set the ports of the camera.

HTTP Port: The default port number is 80, and it can be changed to any port No. which is not occupied.

RTSP Port: The default port number is 554 and it can be changed to any port No. ranges from 1 to 65535.

HTTPS Port: The default port number is 443, and it can be changed to any port No. which is not occupied.

Server Port: The default server port number is 8000, and it can be changed to any port No. ranges from 2000 to 65535.

WebSocket Port: The default port number is 7681. It can be changed to any port No. ranges from 1 to 65535.

Note

The WebSocket protocol is used for plug-in free live view. For detailed information, see *5.2.9 .*

Step 3 Click **Save** to save the settings.

Note

A reboot is required for the settings to take effect.

5.1.4 NAT (Network Address Translation)

Purpose:

NAT interface allows you to configure the UPnP™ parameters.

Universal Plug and Play (UPnP™) is a networking architecture that provides compatibility among networking equipment, software and other hardware devices. The UPnP protocol allows devices to connect seamlessly and to simplify the implementation of networks in the home and corporate environments.

With the function enabled, you don't need to configure the port mapping for each port, and the camera is connected to the Wide Area Network via the router.

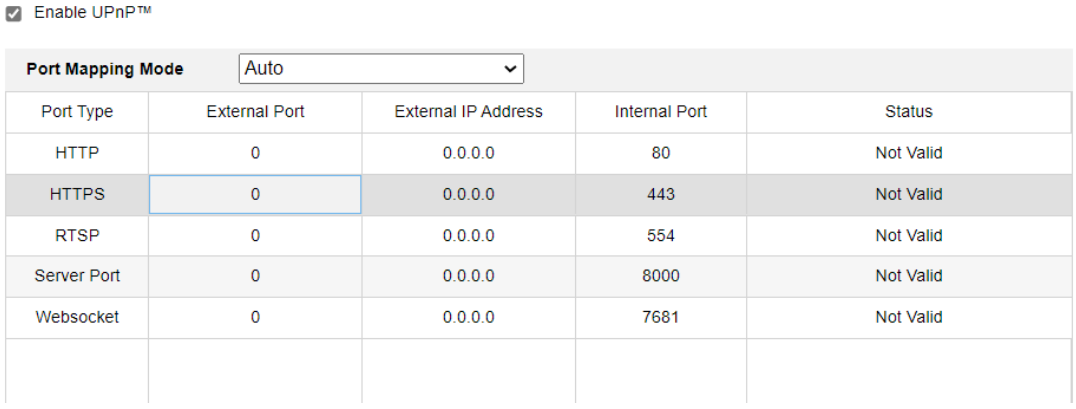


Figure 5-5 UPnP Settings

Step 1 Go to **Configuration > Network > Basic Settings > NAT**.

Step 2 Check the checkbox to enable the UPnP™ function.

Note

Only when the UPnP™ function is enabled, ports of the camera are active.

Step 3 Choose a friendly name for the camera, or you can use the default name.

Step 4 Select the port mapping mode. Manual and Auto are selectable.

Note

- If you select Auto, you should enable UPnP™ function on the router.
- If you select Manual, you can customize the value of the external port and complete port mapping settings on router manually.

Step 5 Click **Save** to save the settings.

5.1.5 Multicast

The Multicast sends a stream to the multicast group address and allows multiple clients to acquire the stream at the same time by requesting a copy from the multicast group address. Before utilizing this function, you have to enable the Multicast function of your router.

Step 1 Go to **Configuration > Network > Basic Settings > Multicast**.

Step 2 Configure the parameters for Multicast.

- IP Address: The IP address of the multicast host.

Note

The range for multicast IP address is 224.0.0.19~239.255.255.255

- Stream Type

Choose the type of stream according to your needs.

Note

- For some models, the **Third Stream** is not enabled by default. Go to **System** > **Maintenance** > **System Service**> **Software** to enable the function is required.
- The main stream is usually for recording and live view with good bandwidth, and the sub-stream can be used for live view when the bandwidth is limited.
- You can customize the following parameters for the selected stream type.

- Video Port and Audio Port: Port for Video and Audio.

Step 3 Click **Save**.

5.2 Advanced Settings

Purpose:

You can configure the parameters, including SNMP, FTP, Email, HTTPS, QoS, 802.1x, etc., by following the instructions in this section.

5.2.1 SNMP

Purpose:

You can set the SNMP function to get camera status, parameters and alarm related information, and manage the camera remotely when it is connected to the network.

Before you start:

Before setting the SNMP, please download the SNMP software and manage to receive the camera information via SNMP port. By setting the Trap Address, the camera can send and download basic parameters from the SNMP management program.

Note

The SNMP version you select should be the same as that of the SNMP software. And you also need to use the different version according to the security level you required. SNMP v1 provides no security and SNMP v2 requires password for access. And SNMP v3 provides encryption and if you use the third version, HTTPS protocol must be enabled.

Caution

STRONG PASSWORD RECOMMENDED

- We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.
- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

Steps:

Step 1 Enter the SNMP Settings interface: Configuration > Network > Advanced Settings > SNMP.

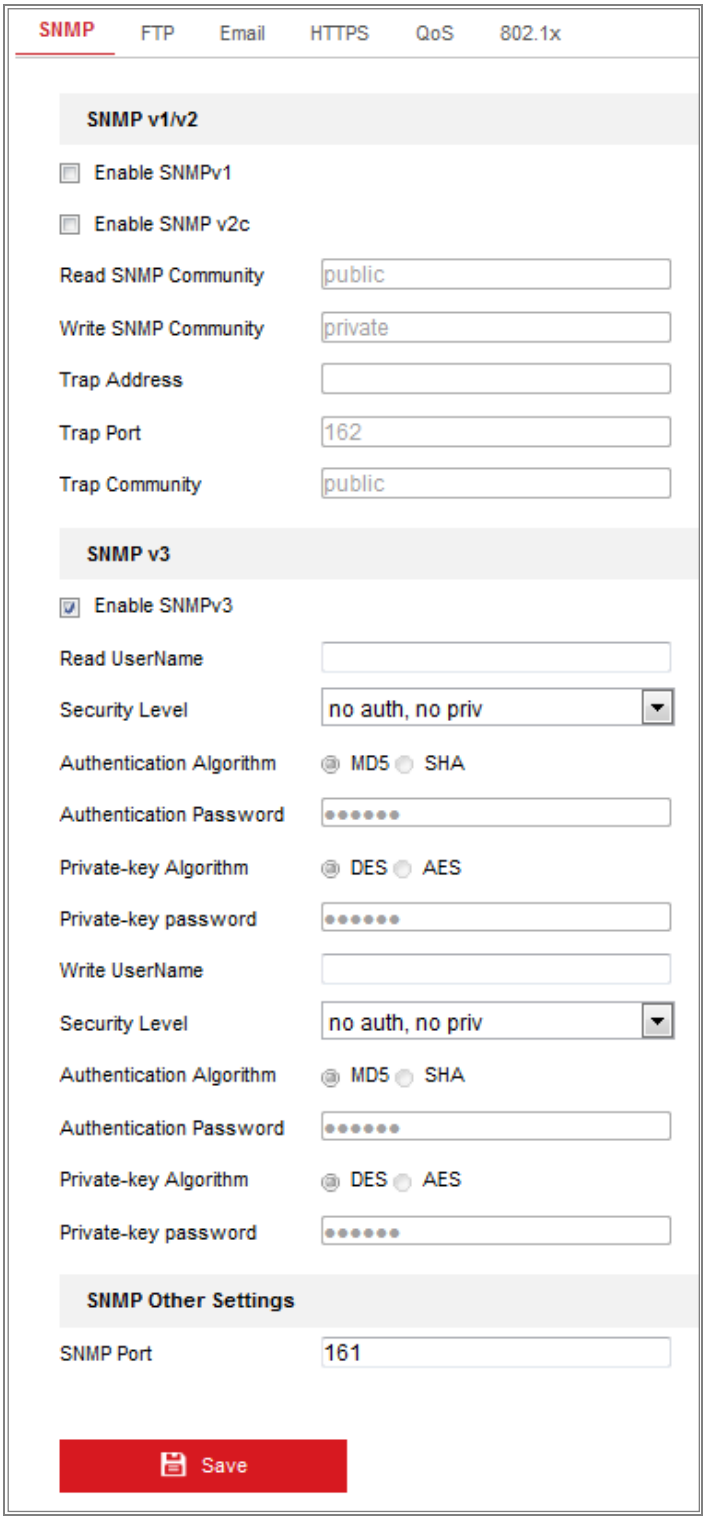


Figure 5-6 SNMP Settings

Step 2 Check the checkbox of Enable SNMPv1, Enable SNMP v2c, Enable SNMPv3 to enable the feature correspondingly.

Step 3 Configure the SNMP settings.

Note

The settings of the SNMP software should be the same as the settings you configure here.

Step 4 Click **Save** to save and finish the settings.

Note

- A reboot is required for the settings to take effect.
- To lower the risk of information leakage, you are suggested to enable SNMP v3 instead of SNMP v1 or v2.

5.2.2 FTP

Purpose:

You can configure the FTP server related information to enable the uploading of the captured pictures to the FTP server. The captured pictures can be triggered by events or a timing snapshot task.

Step 1 Go to Configuration > Network > Advanced Settings > FTP.

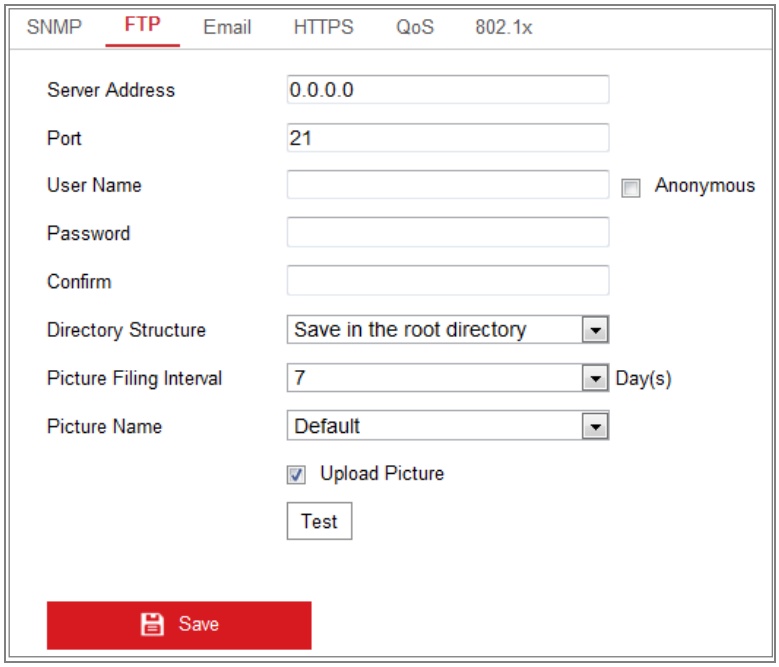


Figure 5-7 FTP Settings

Step 2 Input the FTP address and port.

Step 3 Configure the FTP settings; and the user name and password are required for the FTP server login.

Caution

STRONG PASSWORD RECOMMENDED

- We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.
- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

Step 4 Set the directory structure and picture filing interval.

- **Directory**: In the **Directory Structure** field, you can select the root directory, parent directory and child directory. When the parent directory is selected, you have the option to use the Device Name, Device Number or Device IP for the name of the directory; and when the Child Directory is selected, you can use the Camera Name or Camera No. as the name of the directory.
- **Picture Filing Interval:** For better picture management, you can set the picture filing interval from 1 day to 30 days. Pictures captured in the same time interval will be saved in one folder named after the beginning date and ending date of the time interval.
- **Picture Name:** Set the naming rule for captured picture files. You can choose **Default** in the drop-down list to use the default rule, that is, *IP address channel number capture time event type.jpg* (e.g., 1*0.11.37.189_01_20150917094425492_OBJECT_TRACKING.jpg*).

Or you can customize it by adding a **Custom Prefix** to the default naming rule.

Step 5 Check the Upload Picture checkbox to enable the function.

- **Upload Picture:** To enable uploading the captured picture to the FTP server.
- **Anonymous Access to the FTP Server (in which case the user name and password won't be required.):** Check the **Anonymous** checkbox to enable the anonymous access to the FTP server.

Note

The anonymous access function must be supported by the FTP server**.**

Step 6 Click **Save** to save the settings.

5.2.3 Email

Purpose:

The system can be configured to send an Email notification to all designated receivers if an alarm event is detected, e.g., motion detection event, video loss, video tampering, etc.

Before you start:

Step 1 Please configure the DNS Server settings under **Configuration** > **Network** > **Basic Settings** > **TCP/IP** before using the Email function.

Step 2 Go to **Configuration** > **Network** > **Basic Settings** > **TCP/IP** to set the IPv4 Address, IPv4 Subnet Mask, IPv4 Default Gateway and the Preferred DNS Server.

Note

Please refer to Section 7.1.1 **Configure TCP/IP Settings** for detailed information.

Step 3 Go to **Configuration** > **Network** >**Advanced Settings** > **Email**.

Step 4 Configure the following settings:

- **Sender:** The name of the email sender.
- **Sender's Address:** The email address of the sender.
- **SMTP Server:** IP address or host name (e.g., smtp.263xmail.com) of the SMTP Server.
- **SMTP Port:** The SMTP port. The default TCP/IP port for SMTP is 25 (not secured). And the SSL SMTP port is 465.
- **Email Encryption:** None and SSL are selectable. When you select SSL and disable STARTTLS, e-mails will be sent after encrypted by SSL. The SMTP port should be set as 465 for this encryption method. When you select SSL and enable STARTTLS, emails will be sent after encrypted by STARTTLS, and the SMTP port should be set as 25.

Note

If you want to use STARTTLS, make sure that the protocol is supported by your e-mail server. If you check the Enable STARTTLS checkbox when the protocol is not supported by your e-mail sever, your e-mail will not be encrypted.

- **Attached Image:** Check the checkbox of Attached Image if you want to send emails with attached alarm images.
- **Interval:** The interval refers to the time between two actions of sending attached pictures.
- **Authentication** (optional): If your email server requires authentication, check this checkbox to use authentication to log in to this server and input the login user name and password.

Caution

STRONG PASSWORD RECOMMENDED

- We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.
- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

Step 5 Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

Step 6 The **Receiver** table**:** Select the receiver to which the email is sent. Up to 3 receivers can be configured.

Step 7 **Receiver:** The name of the user to be notified.

Step 8 **Receiver's Address**: The email address of user to be notified.

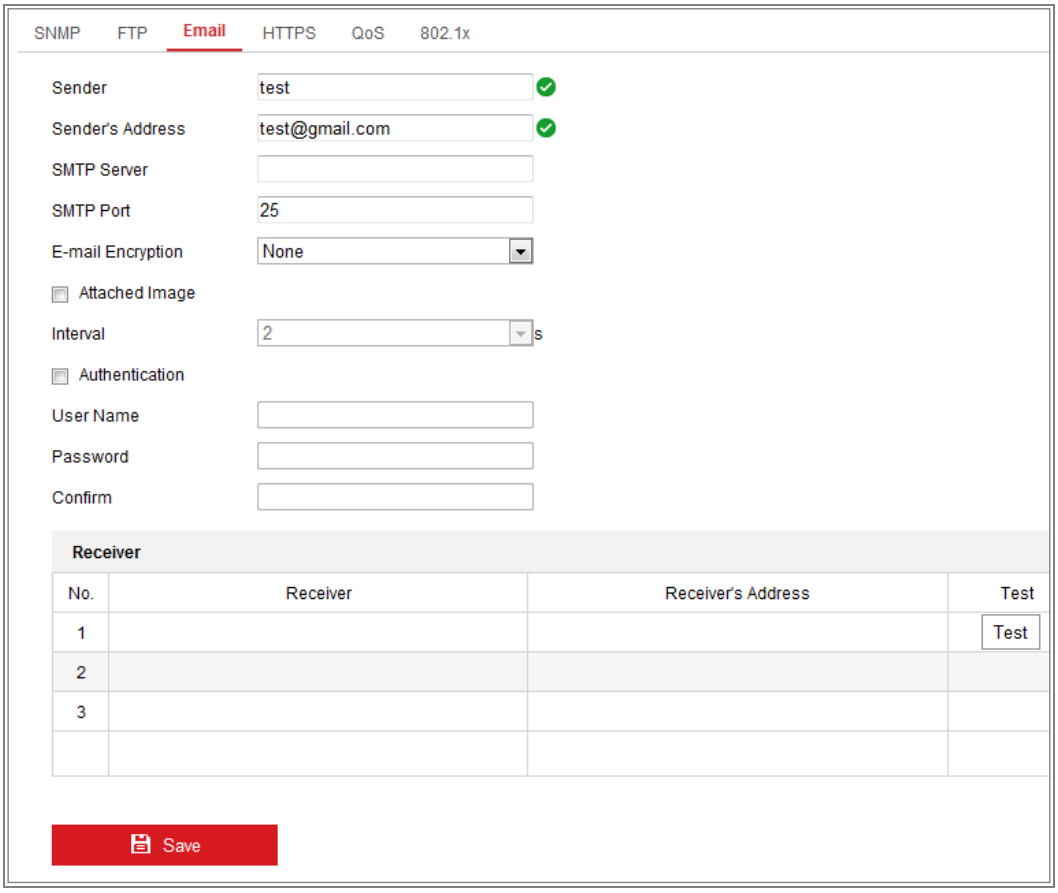


Figure 5-8 Email Settings

Step 9 Click **Save** to save the settings.

5.2.4 Platform Access

Purpose:

Platform access provides you an option to manage the devices via platform.

Step 1 Go to **Configuration > Network > Advanced Settings > Platform Access.**

Step 2 Check the checkbox of Enable to enable the platform access function of the device.

Step 3 Select the Platform Access Mode.

Note

Hik-Connect is an application for mobile devices**.** With the App, you can view live image of the camera, receive alarm notification and so on**.**

If you select Platform Access Mode as Hik-Connect,

1) Click and read "Terms of Service" and "Privacy Policy" in pop-up window.
2) Create a verification code or change the verification code for the camera.

Note

- The verification code is required when you add the camera to Hik-Connect app.
- For more information about the Hik-Connect app, refer to Hik-Connect Mobile Client User Manual.

Step 4 You can use the default server address. Or you can check the Custom checkbox on the right and input a desired server address.

Step 5 Click **Save** to save the settings.

5.2.5 HTTPS

Purpose:

HTTPS provides authentication of the web site and its associated web server, which protects against Man-in-the-middle attacks.

Note

- If HTTPS is enabled by default, the camera creates an unsigned certificate automatically. When you visit the camera via HTTPS, the web browser will send a notification about the certificate issue. Install a signed-certificate to the camera to cancel the notification.

Step 1 G to **Configuration > Network > Advanced Settings > HTTPS**.

Step 2 Check Enable to access the camera via HTTP or HTTPS protocol.

Step 3 Check Enable HTTPS Browsing to access the camera only via HTTPS protocol.

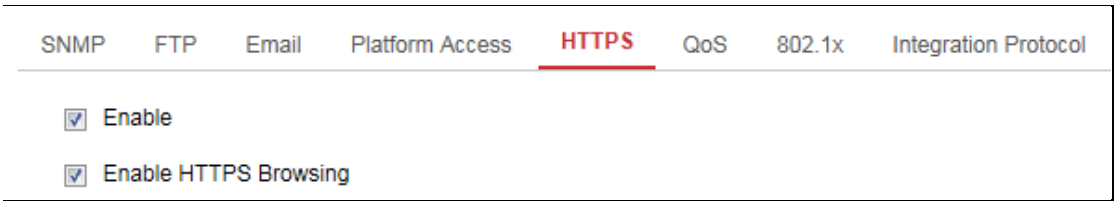


Figure 5-9 HTTPS Configuration Interface

Step 4 Create the self-signed certificate or authorized certificate.

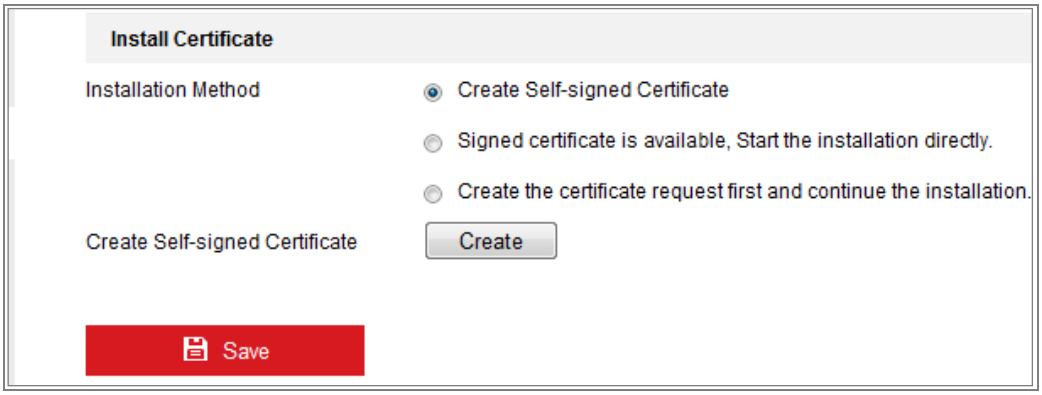


Figure 5-10 Create Self-signed Certificate

Create the self-signed certificate

1) Select **Create Self-signed Certificate** as the Installation Method.
2) Click **Create** button to enter the creation interface.
3) Enter the country, host name/IP, validity and other information.
4) Click **OK** to save the settings.

Note

If you already had a certificate installed, the Create Self-signed Certificate is grayed out.

Create the request and import the authorized certificate

1) Select Create the certificate request first and continue the installation as the Installation Method.
2) Click Create button to create the certificate request. Fill in the required information in the popup window.
3) Click Download to download the certificate request and submit it to the trusted certificate authority for signature.
4) After receiving the signed valid certificate, you can import the certificate in two ways:

– Select Signed certificate is available, Start the installation directly. Click Browse and Install to import the certificate to the device.

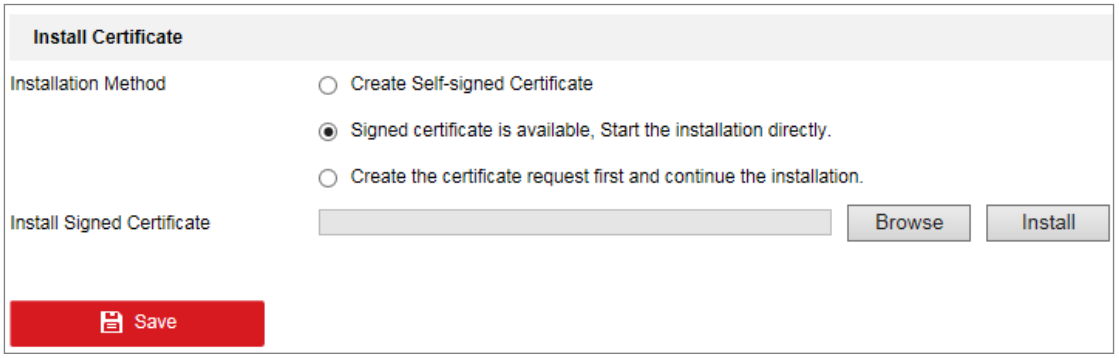


Figure 5-11 Import the Certificate (1)

– Select Create the certificate request first and continue the installation. Click Browse and Install to import the certificate to the device.

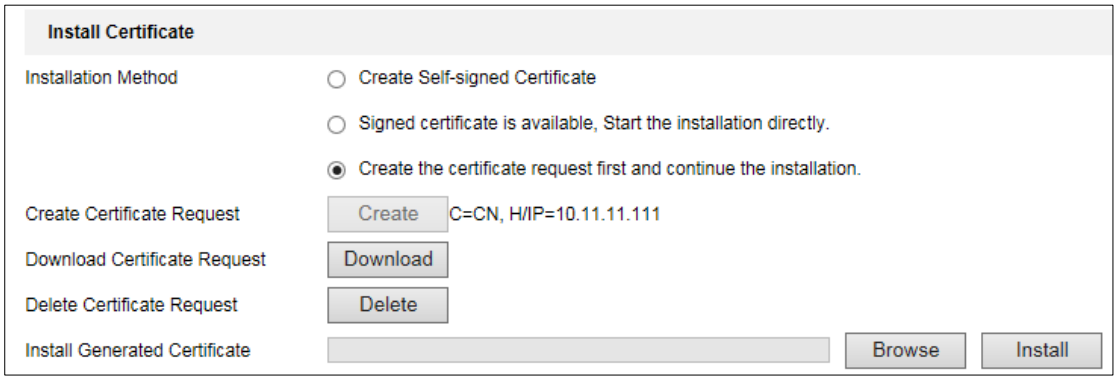


Figure 5-12 Import the Certificate (2)

There will be the certificate information after your successfully creating and installing the certificate.

Figure 5-13 Installed Certificate

Step 5 Export and save the certificate for verification when adding the device to client software.

Note

The exported certificate should be saved in the certificate folder of your client software before adding the device to your PC client.

Step 6 Click the **Save** button to save the settings.

5.2.6 QoS

Purpose:

QoS (Quality of Service) can help solve the network delay and network congestion by configuring the priority of data sending.

Step 1 Enter the QoS Settings interface: **Configuration** > **Network** > **Advanced Settings** > **QoS**.

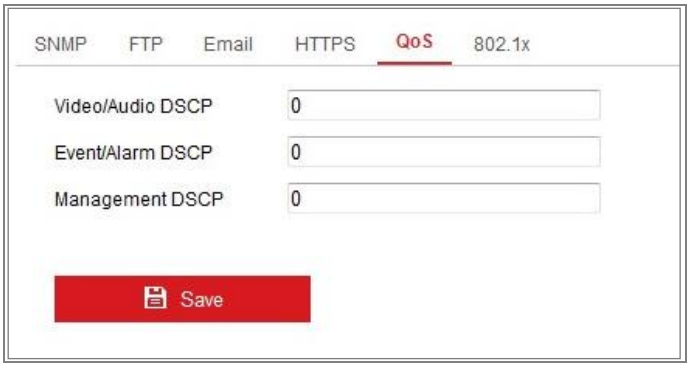


Figure 5-14 QoS Settings

Step 2 Configure the QoS settings, including Video/Audio DSCP, Event/Alarm DSCP and Management DSCP.

The valid value range of the DSCP is 0 to 63. The bigger the DSCP value is, the higher the priority is.

Note **DSCP refers to the Differentiated Service Code Point; and the DSCP value is used in the IP header to indicate the priority of the data**.

Step 3 Click **Save** to save the settings.

Note

A reboot is required for the settings to take effect.

5.2.7 802.1X

Purpose:

The IEEE 802.1X standard is supported by the network cameras, and when the feature is enabled, the camera data is secured and user authentication is needed when connecting the camera to the network protected by the IEEE 802.1X.

Before you start:

The authentication server must be configured. Please apply and register a user name and password for 802.1X in the server.

Caution

- For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing (using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.
- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

Step 1 Go to **Configuration > Network > Advanced Settings > 802.1X**.

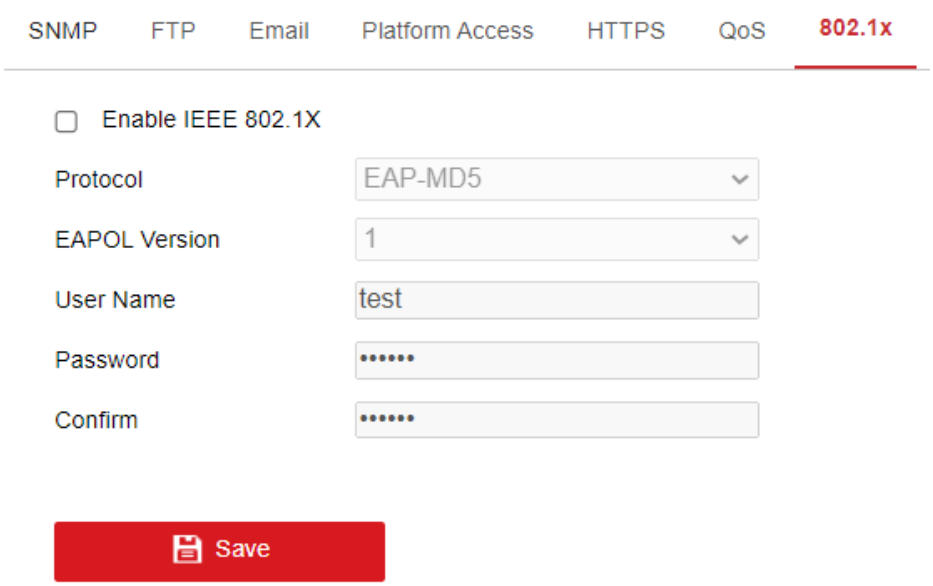


Figure 5-15 802.1X Settings

Step 2 Check the **Enable IEEE 802.1X** checkbox to enable the feature.

Step 3 Configure the 802.1X settings, including Protocol, EAPOL version, User Name, Password and Confirm.

Note

The **EAPOL version** must be identical with that of the router or the switch.

Step 4 Enter the user name and password to access the server.

Step 5 Click **Save** to finish the settings.

Note

A reboot is required for the settings to take effect.

5.2.8 Integration Protocol

Purpose:

If you need to access to the camera through the third party platform, you can enable CGI function. And if you need to access to the device through ONVIF protocol, you can configure ONVIF user in this interface. Refer to ONVIF standard for detailed configuration rules.

ONVIF

Step 1 Check the Enable ONVIF checkbox to enable the function.

Step 2 Add ONVIF users. Up to 32 users are allowed.

Step 3 Set the user name and password, and confirm the password. You can set the user as media user, operator, and administrator.

Note

ONVIF user account is different from the camera user account. You have set ONVIF user account independently.

Step 4 Save the settings.

Note

User settings of ONVIF are cleared when you restore the camera.

5.2.9 Network Service

You can control the ON/OFF status of certain protocol that the camera supports.

Note

- Keep unused function OFF for security concern.
- Supported functions vary according to camera models.

- WebSocket

WebSocket protocol should be enabled if you use Google Chrome 45 and its above version or Mozilla Firefox 52 and its above version to visit your camera. Otherwise, live view, image capture, and digital zoom function can not be used.

  – If the camera uses HTTP, enable **WebSocket**.

- SDK Service and Enhanced SDK Service

If you want to add the device to the client software, you should enable SDK Service or Enhanced SDK Service.

- **SDK Service:** SDK protocol is used.
- **Enhanced SDK Service:** SDK over TLS protocol is used. Communication between the device and the client software is secured by using TLS (Transport Layer Security) protocol.

- TLS (Transport Layer Security)

The device offers TLS 1.1 and TLS 1.2. Enable one or more protocol versions according to your need.

5.2.10 HTTPS Listening

Purpose:

The HTTPS Listening supports uploading the alarm information to a target IP or domain, one that supports http protocal transmission.

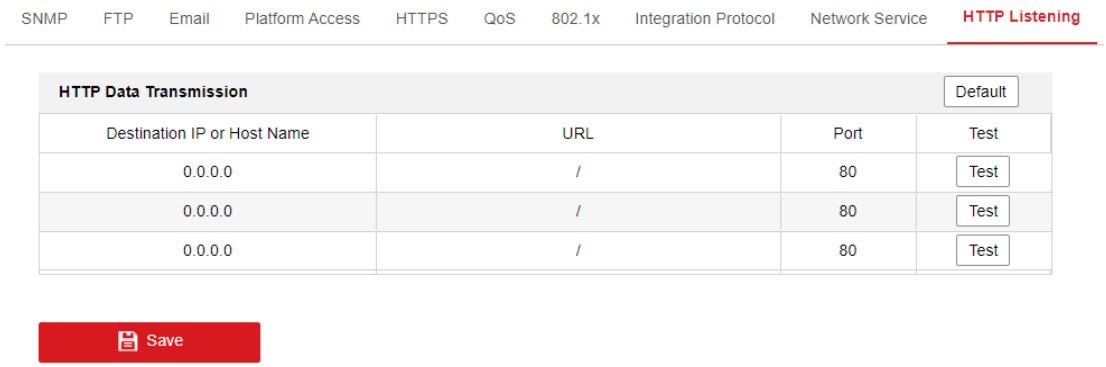


Figure 5-16 HTTPS Listening

Step 1 Click Destination IP or Host Name, URL and Port to enter the target service (Up to 3 services can be set).

Step 2 Click **Test** to test the target service.

Step 3 Click **Default** to reset the entered data.

Step 4 Click **Save**.

5.2.11 RTMP

5.2.12 Network Analysis

Purpose:

Network Analysis .

Step 1 Go to **Configuration > Network > Advanced Settings > Network Analysis**.

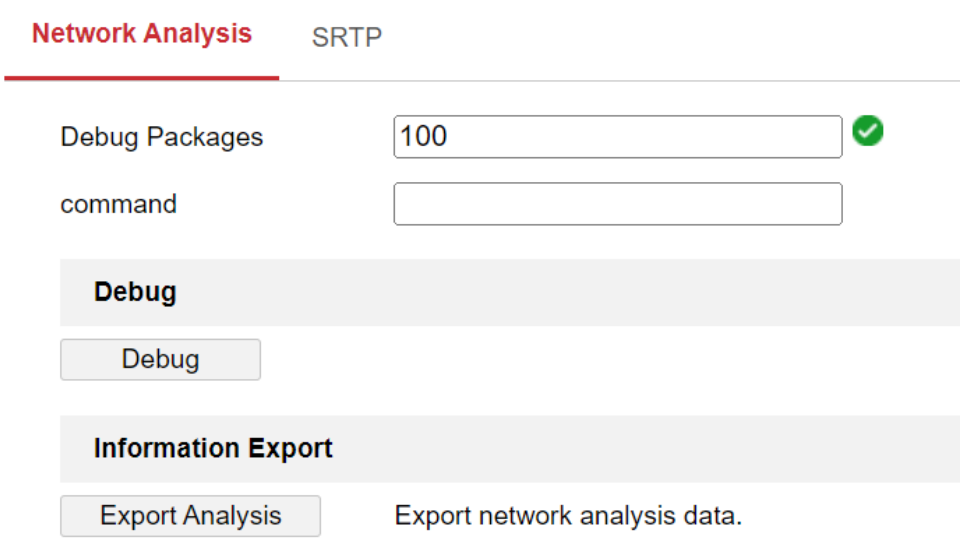


Figure 5-17 Network Analysis

Step 2 Enter the number of debug packages and command to test the network connection.

Step 3 Click **Save**.

5.2.13 SRTP

Purpose:

Set the Sever Certificate and encrypted algorithm to prevent information leak in remote control.

Step 1 Go to **Configuration > Network > Advanced Settings > SRTP**.

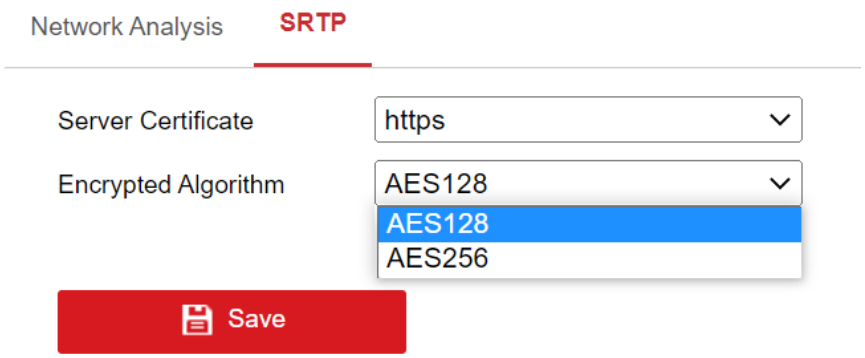


Figure 5-18 HTTPS Listening

Step 2 Select the Sever Certificate, currently only support https.

Step 3 Select the encrypted algorithm as AES128 or AES256.
AES128 means that the length of the key is 128 bits;
AES256 means that the length of the key is 256 bits;
The longer the key is, the more secure. The defaut value algorithm is AES128.

Step 4 Click **Save**.

Chapter 6 Video/Audio Settings

Purpose:

Follow the instructions below to configure the video setting, audio settings, ROI, Display info. on Stream, etc.

6.1 Video

For certain camera models, you can configure parameters for available video streams, for example, the main stream, the sub-stream, etc. And you can also customize additional video streams for further needs.

- On **Video** page, set-up available video streams.
- On **Custom Video** page, add extra video streams

Step 1 Go to **Configuration** > **Video/Audio** > **Video**

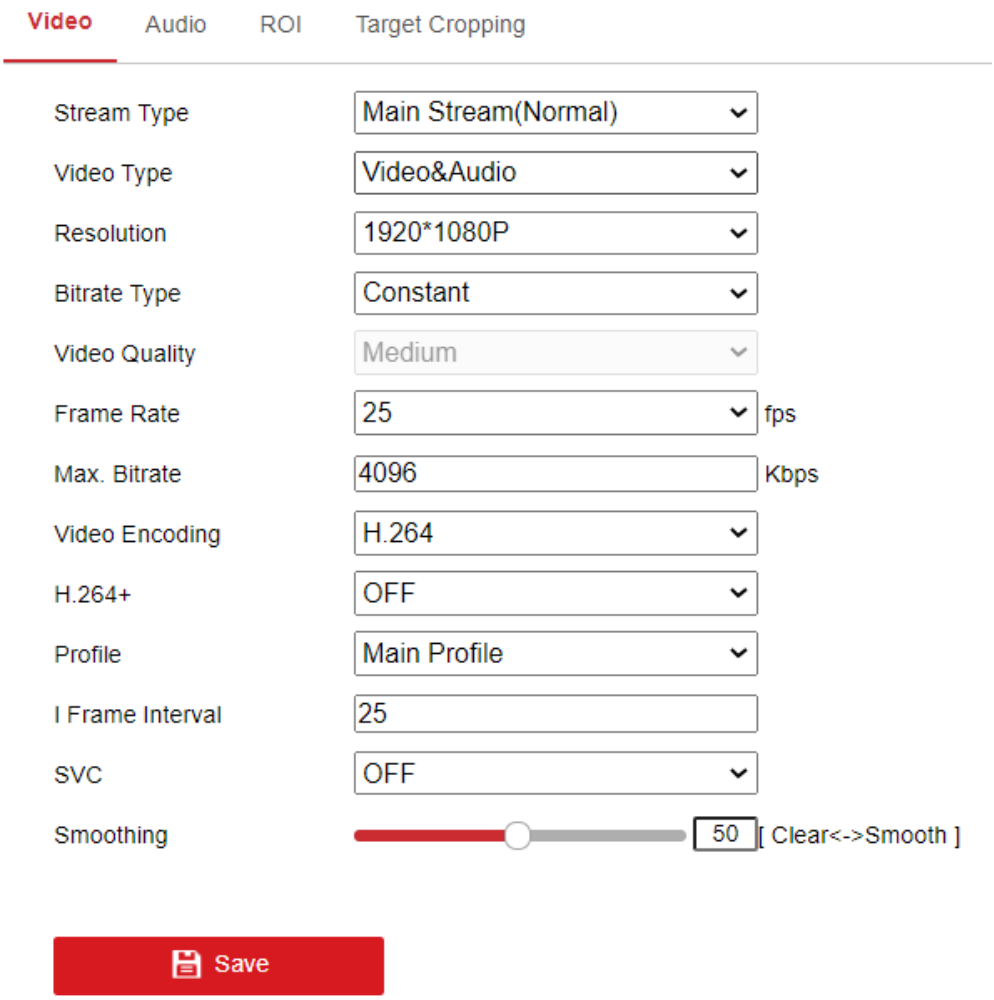


Figure 6-1 Video Settings

Step 2 Select the Stream Type.

Supported stream types are listed in the drop-down list.

Note

- For some models, the **Third Stream** is not enabled by default. Go to **System** > **Maintenance** > **System Service**> **Software** to enable the function is required.
- The main stream is usually for recording and live view with good bandwidth, and the sub-stream can be used for live view when the bandwidth is limited.
- You can customize the following parameters for the selected stream type.

- Video Type:

Select the stream type to video stream, or video & audio composite stream. The audio signal will be recorded only when the **Video Type** is **Video & Audio**.

- Resolution:

Select the resolution of the video output.

- Bitrate Type:

Select the bitrate type to constant or variable.

- Video Quality:

When bitrate type is selected as Variable, 6 levels of video quality are selectable.

- Frame Rate:

Set the frame rate. The frame rate is to describe the frequency at which the video stream is updated and it is measured by frames per second (fps). A higher frame rate is advantageous when there is movement in the video stream, as it maintains image quality throughout.

- Max. Bitrate:

Set the max. bitrate from 32 to 16384 Kbps. The higher value corresponds to the higher video quality, but the better bandwidth is required.

Note

The maximum limit of the max. bitrate value varies according to different camera platforms. For certain cameras, the maximum limit is 8192 Kbps or 12288 Kbps.

- Video Encoding:

The camera supports multiple video encodings types, such as H.264, H.265, and MJPEG. Supported encoding type for different stream types may differ. H.265 is a new encoding technology. Compared with H.264, it reduces the transmission bitrate under the same resolution, frame rate and image quality.

Note

Selectable video encoding types may vary according to different camera modes.

- H.264+ and H.265+:
  - H.264+: If you set the main stream as the stream type, and H.264 as the video encoding, you can see H.264+ available. H.264+ is an improved compression coding technology based on H.264. By enabling H.264+, users can estimate the HDD consumption by its maximum average bitrate. Compared to H.264, H.264+ reduces storage by up to 50% with the same maximum bitrate in most scenes.
  - H.265+: If you set the main stream as the stream type, and H.265 as the video encoding, you can see H.265+ available. H.265+ is an improved compression coding technology based on H.265. By enabling H.265+, users can estimate the HDD consumption by its maximum average bitrate. Compared to H.265, H.265+ reduces storage by up to 50% with the same maximum bitrate in most scenes.

You need to reboot the camera if you want to turn on or turn off the H.264+/H.265+. If you switch from H.264+ to H.265+ directly, and vice versa, a reboot is not required by the system.

Note

- Upgrade your video player to the latest version if live view or playback does not work properly due to compatibility.
- With H.264+/H.265+ enabled, the parameters such as profile, I frame interval, video quality, and SVC are greyed out.
- With H.264+/H.265+ enabled, some functions are not supported. For those functions, corresponding interfaces will be hidden.
- H.264+/H.265+ can spontaneously adjust the bitrate distribution according the requirements of the actual scene in order to realize the set maximum average bitrate in the long term. The camera needs at least 24 hours to adapt to a fixed monitoring scene.

- Max. Average Bitrate:

When you set a maximum bitrate, its corresponding recommended maximum average bitrate will be shown in the Max. Average Bitrate box. You can also set the maximum average bitrate manually from 32 Kbps to the value of the set maximum bitrate.

- Profile:

When you select H.264 or H.265 as video encoding, you can set the profile. Selectable profiles vary according to camera models.

- I Frame Interval:

Set I Frame Interval from 1 to 400.

- SVC:

Scalable Video Coding is an extension of the H.264/AVC and H.265 standard. Select OFF/ON to disable/enable the SVC function. Select Auto and the device will automatically extract frames from the original video when the network bandwidth is insufficient.

- Smoothing:

It refers to the smoothness of the stream. The higher value of the smoothing is, the better fluency of the stream will be, though, the video quality may not be so satisfactory. The lower value of the smoothing is, the higher quality of the stream will be, though it may appear not fluent.

Step 3 Click **Save** to save the settings.

Note

The video parameters vary according to different camera models. Refer to the actual display page for camera functions.

6.2 Audio

Step 1 Go to **Configuration** > **Video/Audio** > **Audio**.

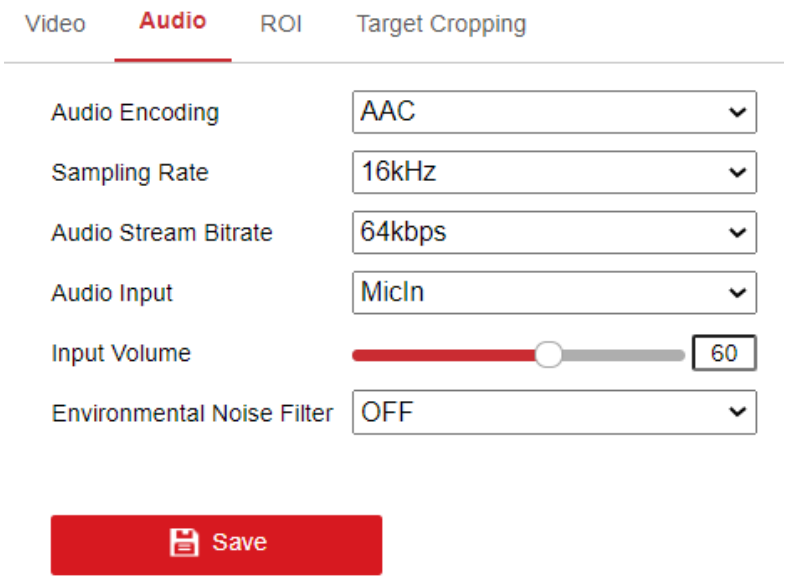


Figure 6-2 Audio Settings

Step 2 Configure the following settings.

Note

Audio settings vary according to different camera models.

Audio Encoding: G.722.1, G.711 ulaw, G.711alaw, G.726 and PCM are selectable. For PCM, the Sampling Rate can be set.

Audio Input: MicIn and LineIn are selectable for the connected microphone and pickup respectively.

Input Volume: 0-100 adjustable.

Environmental Noise Filter: Set it as OFF or ON. When the function is enabled, the noise in the environment can be filtered to some extent.

Step 3 Click **Save** to save the settings.

6.3 ROI Encoding

Purpose:

ROI (Region of Interest) encoding helps to discriminate the ROI and background information in video compression, which means, the technology assigns more encoding resource to the region of interest, thus to increase the quality of the ROI whereas the background information is less focused.

Note

ROI function varies according to different camera models.

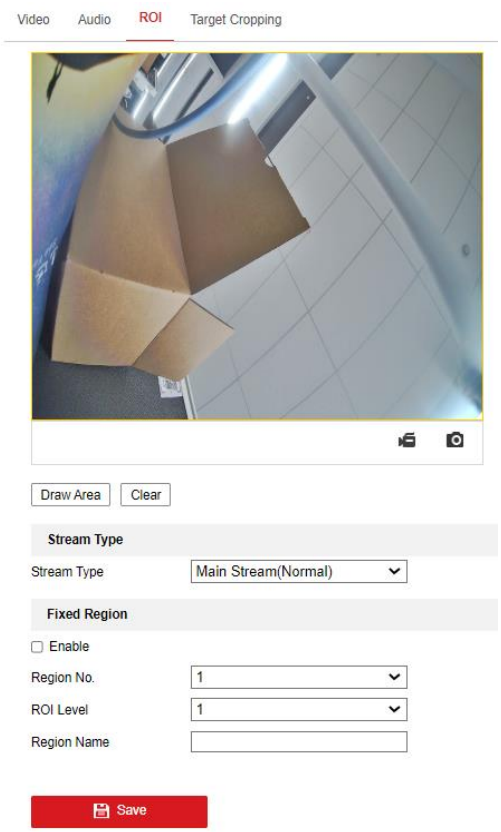


Figure 6-3 Region of Interest Settings

Step 2 Go to **Configuration** > **Video/Audio** > **ROI**.

Step 3 Select the Stream Type for ROI encoding.

Step 4 Check the checkbox of Enable under Fixed Region item.

Step 5 Set Fixed Region for ROI.

1) Select the Region No. from the drop-down list.
2) Check the **Enable** checkbox to enable ROI function for the chosen region.
3) Click **Drawing**. Click and drag the mouse on the view screen to draw a red rectangle as the ROI region. You can click **Clear** to cancel former drawing. Click **Stop Drawing** when you finish.
4) Select the ROI level.
5) Enter a region name for the chosen region.
6) Click **Save** the save the settings of ROI settings for chosen fixed region.
7) Repeat steps (1) to (6) to setup other fixed regions.

Step 6 Click **Save** to save the settings.

Note

ROI level means the image quality enhancing level. The larger the value is, the better the image quality would be.

6.4 Target Cropping

Purpose:

You can specify a target area on the live video, and then the specified video area can be displayed via the third stream in certain resolution, providing more details of the target area if needed.

Note

Target cropping function varies according to different camera models.

Steps:

Step 1 Enter the **Target Cropping** settings interface.

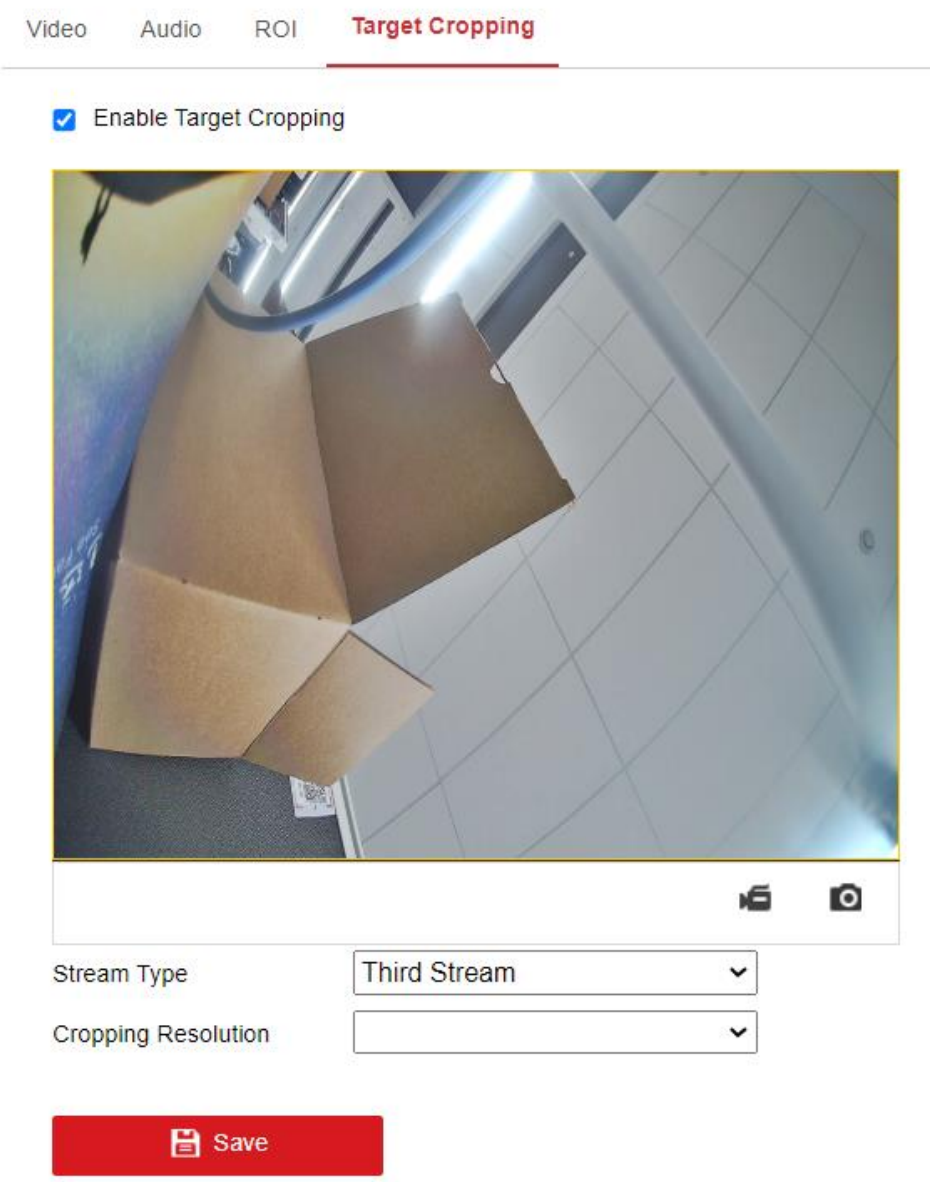


Figure 6-4 Target Cropping

Step 2 Check **Enable Target Cropping** checkbox to enable the function.

Step 3 Set Third Stream as the stream type.

Step 4 Select the cropping resolution for the video display of target area. A red rectangle is displayed on the live video to mark the target area, and you can click-and-drag the rectangle to locate the target area as desired.

Step 5 Click **Save** to save the settings.

6.5 Video Encryption

Purpose:

If you configured Video Encryption, then one can only preview the video with the password you set.

Step 1 Go to Configuration > Video/Audio > Video Encryption.

Step 2 Enter the encryption key.

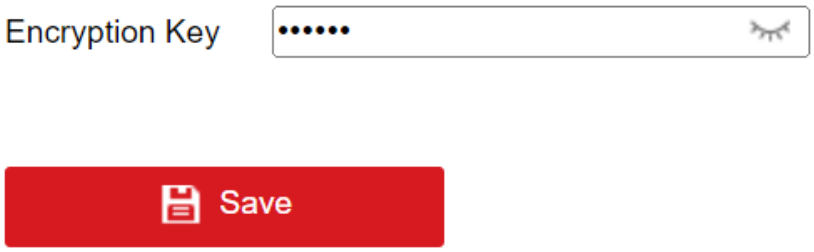


Figure 6-5 Encryption Key

Step 3 Click **Save** to save the settings.

6.6 Privacy Mask

Purpose:

Privacy Mask will pixelate the faces that appear in the video.

Step 1 Go to Configuration > Video/Audio > Privacy Mask.

Step 2 Check Enable Privacy Masks.

Step 3 Click **Save** to save the settings.

Chapter 7 Image Settings

Purpose:

Follow the instructions in this chapter to configure the image parameters, including display settings, OSD settings, privacy mask, and picture overlay.

7.1 Display Settings

Purpose:

Configure the image adjustment, exposure settings, day/night switch, backlight settings, white balance, image enhancement, video adjustment, and other parameters in display settings.

Note

The display parameters vary according to the different camera models. Please refer to the actual interface for details.

7.1.1 Day/Night Auto-Switch

Step 1 Go to **Configuration > Image > Display Settings**.

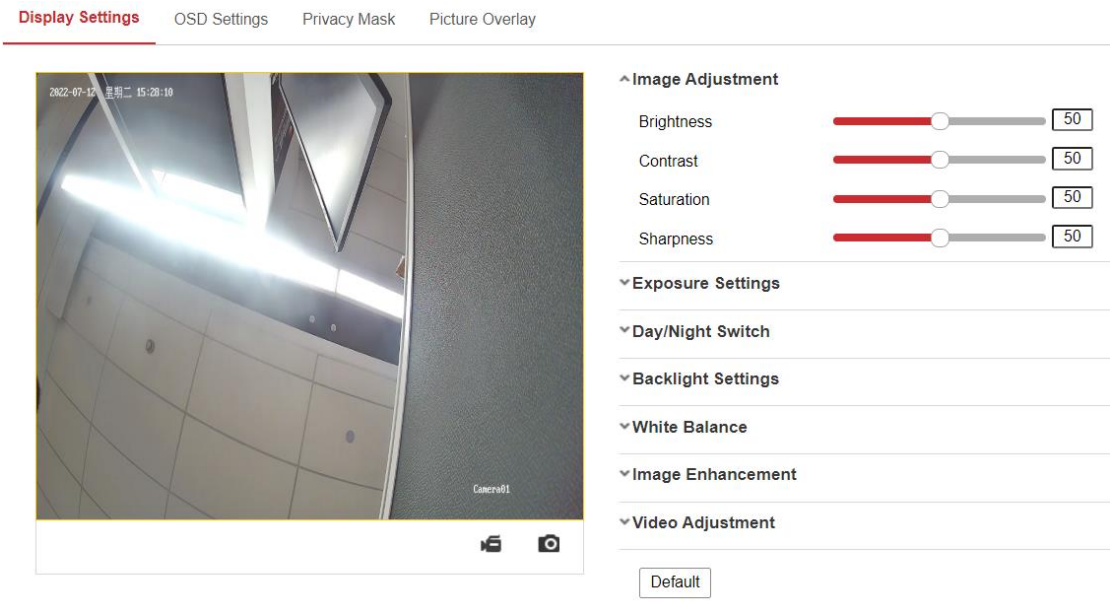


Figure 7-1 Display Settings of Day/Night Auto-Switch

Step 2 Set the image parameters of the camera.

Note

In order to guarantee the image quality in different illumination, it provides two sets of parameters for users to configure.

- Image Adjustment
  - **Brightness** describes how bright the image is, which ranges from 1 to 100.
  - **Contrast** describes the contrast of the image, which ranges from 1 to 100.
  - **Saturation** describes how colorful of the image is, which ranges from 1 to 100.
  - **Sharpness** describes the edge contrast of the image, which ranges from 1 to 100.
- Exposure Settings
  - If the camera is equipped with the fixed lens, only **Manual** is selectable, and the iris mode is not configurable.
  - If **Auto** is selected, you can set the auto iris level from 0 to 100.
  - The **Exposure Time** refers to the electronic shutter time, which ranges from 1 to 1/100, 000 s. Adjust it according to the actual luminance condition.
  - **Gain** of image can also be manually configured from 0 to 100. The bigger the value is, the brighter would the image be, and the noise would also be amplified to a larger extent.

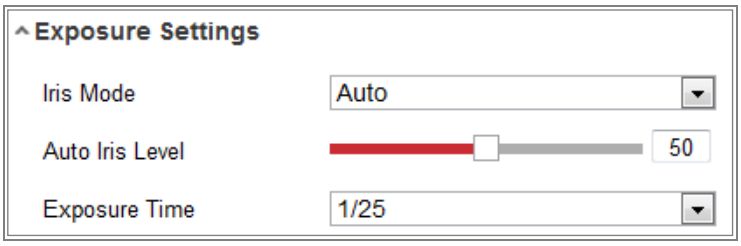


Figure 7-2 Exposure Settings

- Focus

  For camera support motor-driven lens, you can set the focus mode as Auto, Manual or Semi-auto.
  - **Auto:** Camera focus is adjusted automatically according to the actual monitoring scenario.
  - **Manual:** You can control the lens by adjusting the zoom, focus, lens initialization, and auxiliary focus manually.
  - **Semi-Auto:** Camera will focus automatically when you adjust the zoom parameters.

- Day/Night Switch

  Select the Day/Night Switch mode according to different monitoring demand.

  Day, Night, Auto, Scheduled-Switch, and Triggered by alarm input are selectable for day/night switch.

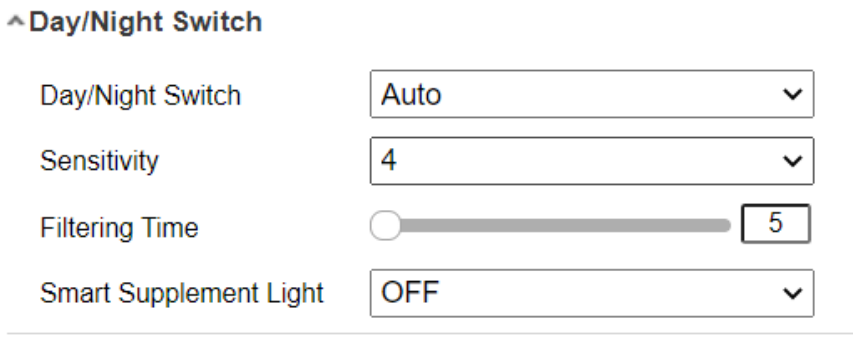


Figure 7-3 Day/Night Switch

  - **Day:** the camera stays at day mode.
  - **Night:** the camera stays at night mode.
  - **Auto:** the camera switches between the day mode and the night mode according to the illumination automatically. The sensitivity ranges from 0 to 7, the higher the value is, the easier the mode switches. The **Filtering Time** refers to the interval time between the day/night switch. You can set it from 5 s to 120 s.
  - **Scheduled-Switch:** Set the start time and the end time to define the duration for day/night mode.
  - **Triggered by alarm input:** The switch is triggered by alarm input. You can set the triggered mode to day or night.
  - **Smart Supplement Light:** Set the supplement light as ON, and Auto and Manual are selectable for light mode.
  - Select **Auto**, and the supplement light changes according to the actual luminance. E.g., if the current scene is bright enough, then the supplement light adjusts itself to lower power; and if the scene is not bright enough, the light adjusts itself to higher power.
  - Select **Manual**, and you can adjust the supplement by adjusting the distance. E.g., if the object is near the camera, the device adjusts the supplement light to lower power, and the light is in higher power if the object is far away.

- Backlight Settings
  - **BLC Area**: If you focus on an object against strong backlight, the object will be too dark to be seen clearly. BLC compensates light to the object in the front to make it clear. OFF, Up, Down, Left, Right, Center, Auto, and Custom are selectable.

Note

If BLC mode is set as Custom, you can draw a red rectangle on the live view image as the BLC area.

- **WDR**: Wide Dynamic Range can be used when there is a high contrast of the bright area and the dark area of the scene.
- **HLC:** High Light Compression function can be used when there are strong lights in the scene affecting the image quality.

- White Balance

  White balance is the white rendition function of the camera used to adjust the color temperature according to the environment.

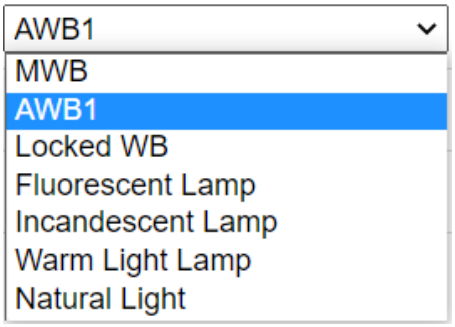


Figure 7-4 White Balance

- Image Enhancement
  - **Digital Noise Reduction**: DNR reduces the noise in the video stream. OFF, Normal and Expert are selectable. Set the DNR level from 0 to 100 in Normal Mode. Set the DNR level from both space DNR level [0-100] and time DNR level [0-100] in Expert Mode.
  - **Defog Mode**: You can enable the defog function when the environment is foggy and the image is misty. It enhances the subtle details so that the image appears clearer.
  - **EIS (Electrical Image Stabilizer)**: EIS reduces the effects of vibration in a video.
  - **Grey Scale**: You can choose the range of the grey scale as [0-255] or [16-235].
- Video Adjustment
  - **Mirror**: It mirrors the image so you can see it inversed. Left/Right, Up/Down, Center, and OFF are selectable.
  - **Rotate**: To make a complete use of the 16:9 aspect ratio, you can enable the rotate function when you use the camera in a narrow view scene.

- When installing, turn the camera to the 90 degrees or rotate the 3-axis lens to 90 degrees, and set the rotate mode as on, you will get a normal view of the scene with 9:16 aspect ratio to ignore the needless information such as the wall, and get more meaningful information of the scene.
- **Scene Mode**: Choose the scene as indoor or outdoor according to the real environment.
- **Video Standard**: 50 Hz and 60 Hz are selectable. Choose according to the different video standards; normally 50 Hz for PAL standard and 60 Hz for NTSC standard.
- **Lens Distortion Correction**: For cameras equipped with motor-driven lens, image may appear distorted to some extent. Turn on this function to correct the distortion.

- Others

Some camera models support CVBS, SDI, or HDMI output. Set the local output ON or OFF according to the actual device.

7.1.2 Day/Night Scheduled-Switch

Day/Night scheduled-switch configuration interface enables you to set the camera parameters for day and night separately, guaranteeing the image quality in different illumination.

Figure 7-5 Day/Night Scheduled-Switch Configuration Interface

Step 1 Click the calendar icon to select the start time and the end time of the switch.

Note

- The start time and end time refer to the valid time for day mode.
- The time period can start and end on two days in a row. For example, if you set start time as 10:00 and end time as 1:00, the day mode will be activated at 10 o'clock in the morning and stopped at 1 o'clock early in the next morning.

Step 2 Click Common tab to configure the common parameters applicable to the day mode and night mode.

Note

For the detailed information of each parameter, please refer to *Section 9.1.1 Day/Night Auto-Switch.*

Step 3 Click Day tab to configure the parameters applicable for day mode.

Step 4 Click Night tab to configure the parameters applicable for night mode.

Note

The settings saved automatically if any parameter is changed.

7.2 OSD Settings

Purpose:

You can customize the camera name, time/date format, display mode, and OSD size displayed on the live view.

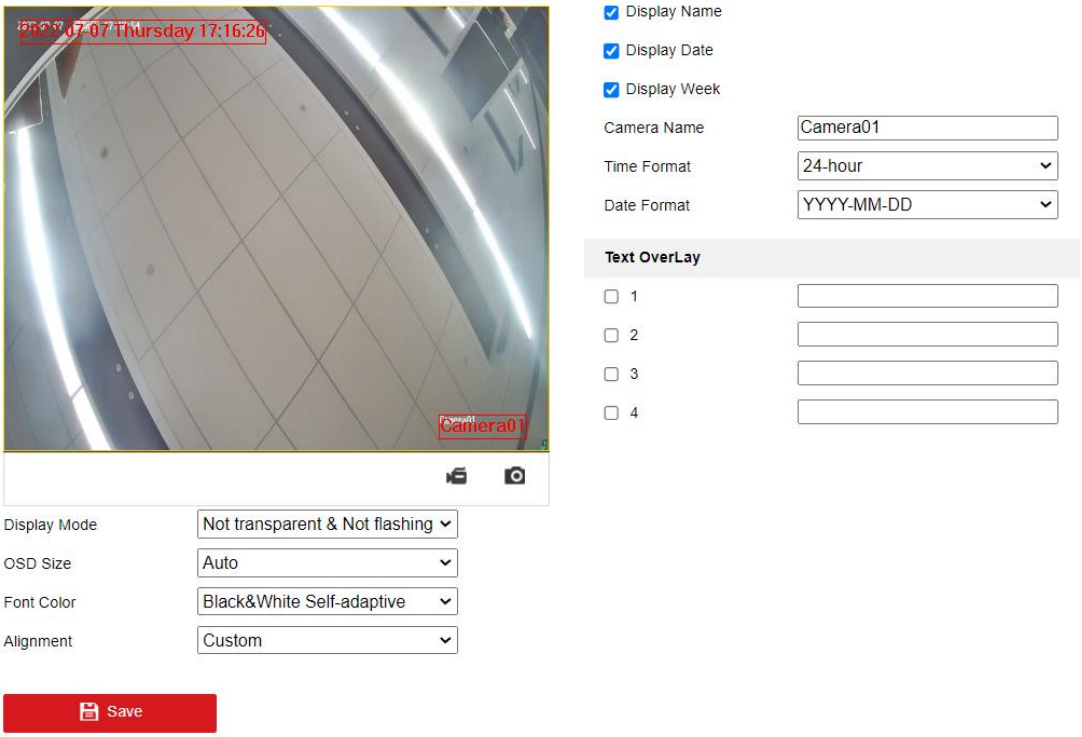


Figure 7-6 OSD Settings

Step 2 Go to **Configuration** > **Image** > **OSD Settings**.

Step 3 Check the corresponding checkbox to select the display of camera name, date or week if required.

Step 4 Edit the camera name in the text field of Camera Name.

Step 5 Select from the drop-down list to set the time format and date format.

Step 6 Select from the drop-down list to set the time format, date format, display mode, OSD size and OSD color.

Step 7 Configure the text overlay settings.

1) Check the checkbox in front of the textbox to enable the on-screen display.
2) Input the characters in the textbox.

Note

Up to 4 text overlays are configurable.

Step 8 Adjust the position and alignment of text frames.

Left align, right align and custom are selectable. If you select custom, you can use the mouse to click and drag text frames in the live view window to adjust their positions.

Note

The alignment adjustment is only applicable to Text Overlay items.

Step 9 Click **Save** to save the settings.

7.3 Privacy Mask

Purpose:

Privacy mask enables you to cover certain areas on the live video to prevent certain spots in the monitoring area from being live viewed and recorded.

Step 1 Go to **Configuration** > **Image** > **Privacy Mask**.

Step 2 Check the checkbox of **Enable Privacy Mask** to enable this function.

Step 3 Click **Draw Area**.

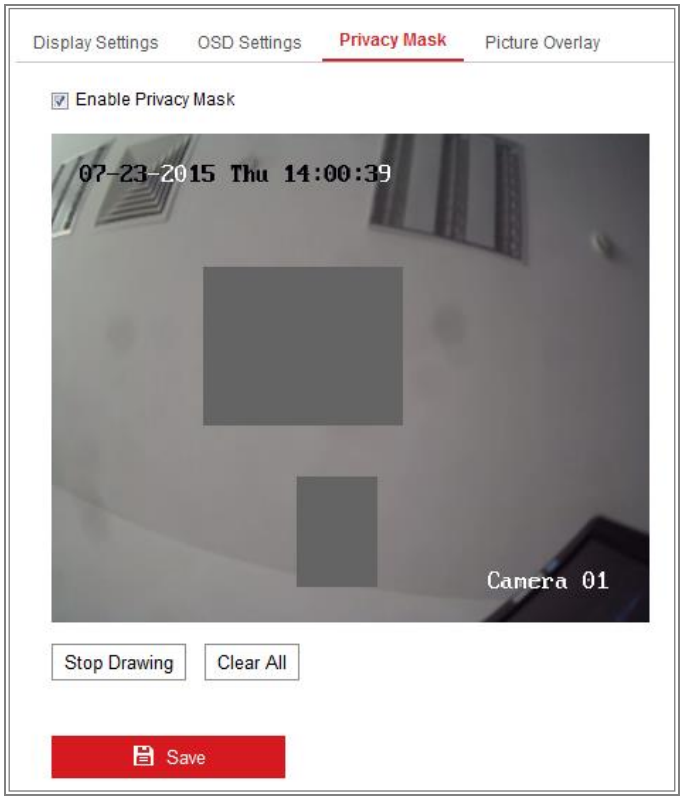


Figure 7-7 Privacy Mask Settings

Step 4 Click and drag the mouse in the live video window to draw the mask area.

Note

You are allowed to draw up to 4 areas on the same image.

Step 5 Click **Stop Drawing** to finish drawing or click **Clear All** to clear all of the areas you set without saving them.

Step 6 Click **Save** to save the settings.

7.4 Picture Overlay

Purpose:

Picture overlay enables you to overlay a picture on the image. This function enables a certain enterprise or users to overlay their logo on the image.

Step 1 Go to **Configuration** > **Image** > **Picture Overlay**.

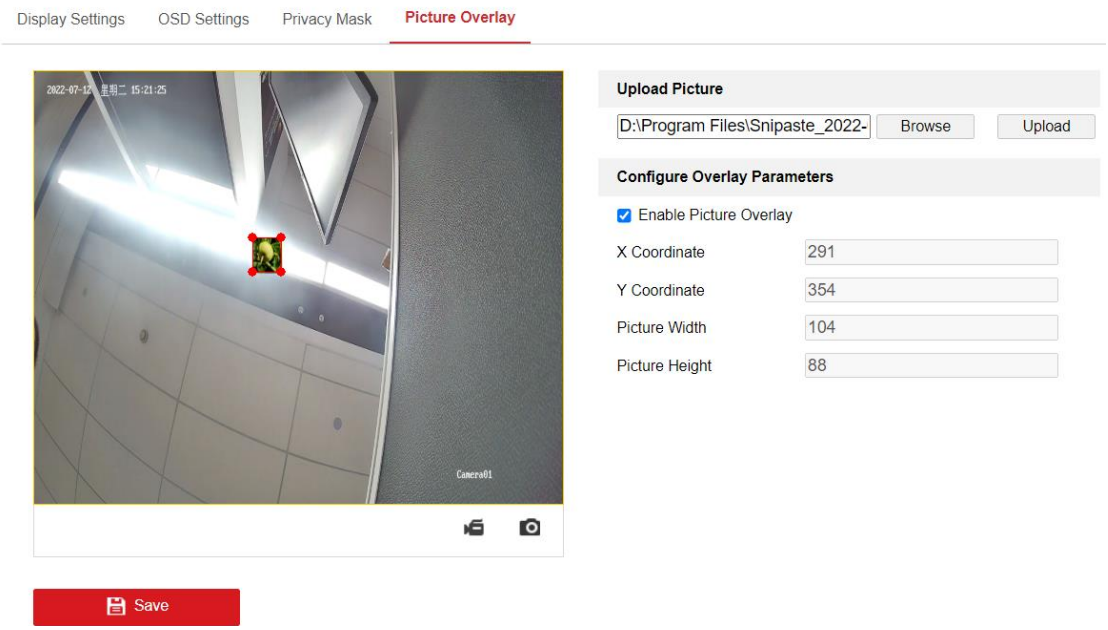


Figure 7-8 Picture Overlay

Step 2 Click **Browse** to select a picture.

Step 3 Click **Upload** to upload it.

Step 4 Check **Enable Picture Overlay** checkbox to enable the function. Uncheck this checkbox to disable picture overlay.

Step 5 Drag the red box to the desired place.

Step 6 Click **Save** and the picture will appear in the red box.

Step 7 To change the position of the picture overlay, upload the picture again and the repeat the above procedures.

Note

The picture must be in RGB24 bmp format and the maximum picture size is 128*128.

Chapter 8 Event Settings

This section explains how to configure the network camera to respond to alarm events, including basic event and smart event.

8.1 Basic Events

You can configure the basic events by following the instructions in this section, including motion detection, video tampering and exception, etc. These events can trigger the linkage methods, such as Notify Monitoring Center, Send Email, etc.

Note

Check the checkbox of Notify Monitoring Center if you want the alarm information to be pushed to PC or mobile client software as soon as the alarm is triggered.

8.1.1 Motion Detection

Purpose:

Motion detection detects the moving objects in the configured monitoring area, and a series of actions can be taken when the alarm is triggered.

In order to detect the moving objects accurately and reduce the false alarm rate, normal configuration and expert configuration are selectable for different motion detection environment.

Normal Configuration

Normal configuration adopts the same set of motion detection parameters in the daytime and at night.

Tasks 1: Set the Motion Detection Area

Step 1 Go to **Configuration** > **Event** > **Basic Event** > **Motion Detection**.

Step 2 Check the checkbox of **Enable Motion Detection**.

Step 3 Check the checkbox of Enable Dynamic Analysis for Motion if you want to mark the detected objects with green rectangles.

Note

Select Disable for rules if you don't want the detected objected displayed with the green rectangles. Select disable rules from **Configuration** > **Local Configuration** > **Live View Parameters-rules**.

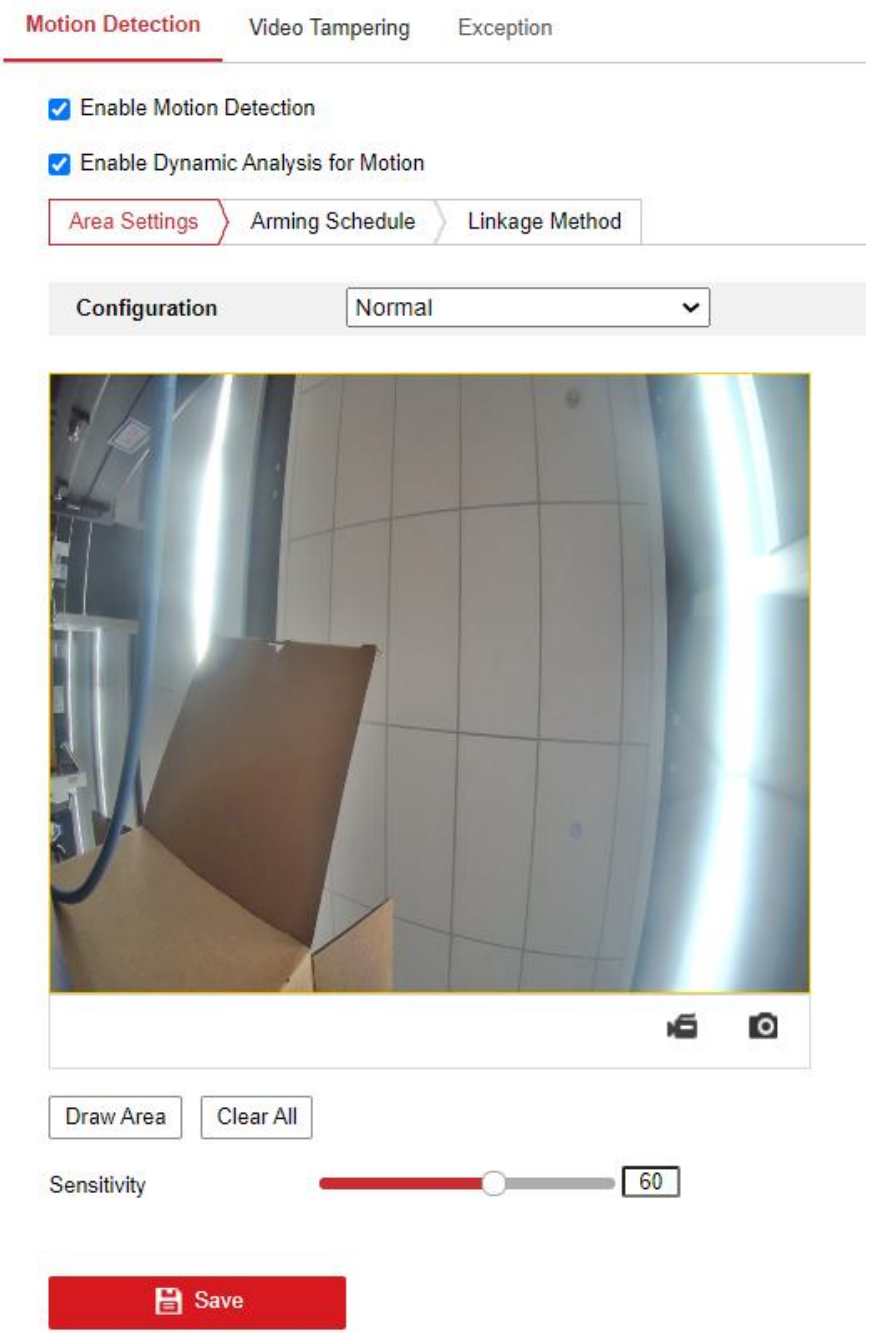


Figure 8-1 Enable Motion Detection

Step 4 Click **Draw Area**. Click and drag the mouse on the live video to draw a motion detection area. Click **Stop Drawing** to finish drawing one area.

Step 5 (Optional) Click **Clear All** to clear all of the areas.

Step 6 (Optional) Move the slider to set the sensitivity of the detection.

Task 2: Set the Arming Schedule for Motion Detection

Figure 8-2 Arming Schedule

Step 7 Click **Arming Schedule** to edit the arming schedule.

Step 8 Click on the time bar and drag the mouse to select the time period.

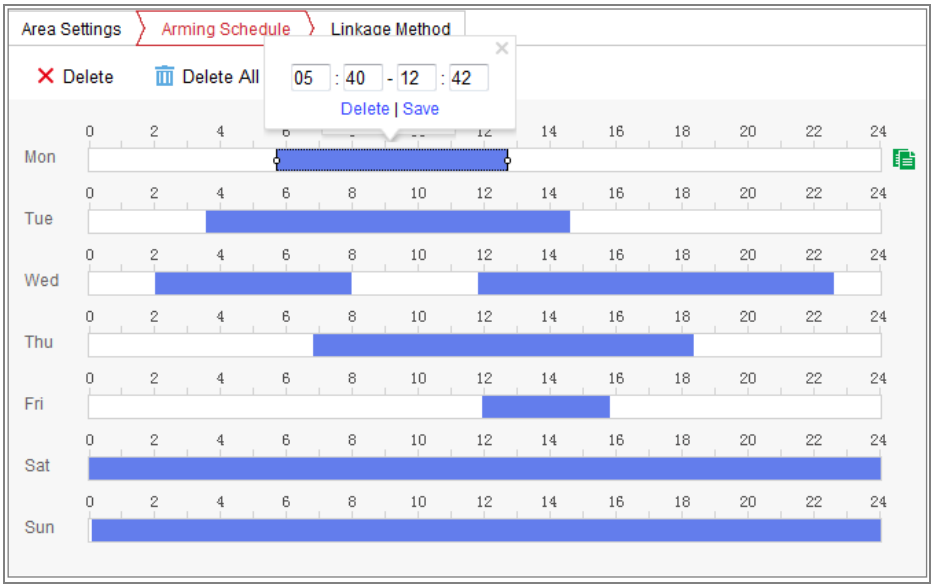


Figure 8-3 Arming Schedule

Note

Click on the selected time period, you can adjust the time period to the desired time by either moving the time bar or input the exact time period.

Step 9 (Optional) Click Delete to delete the current arming schedule, or click Save to save the settings.

Step 10 Move the mouse to the end of each day, a copy dialogue box pops up, and you can copy the current settings to other days.

Step 11 Click **Save** to save the settings.

Note

The time of each period can't be overlapped. Up to 8 periods can be configured for each day.

Task 3: Set the Linkage Method for Motion Detection

Check the checkbox to select the linkage method. Send Email, Notify Monitoring Center, Upload to FTP/Memory Card/NAS and Trigger Recording are selectable. You can specify the linkage method when an event occurs.

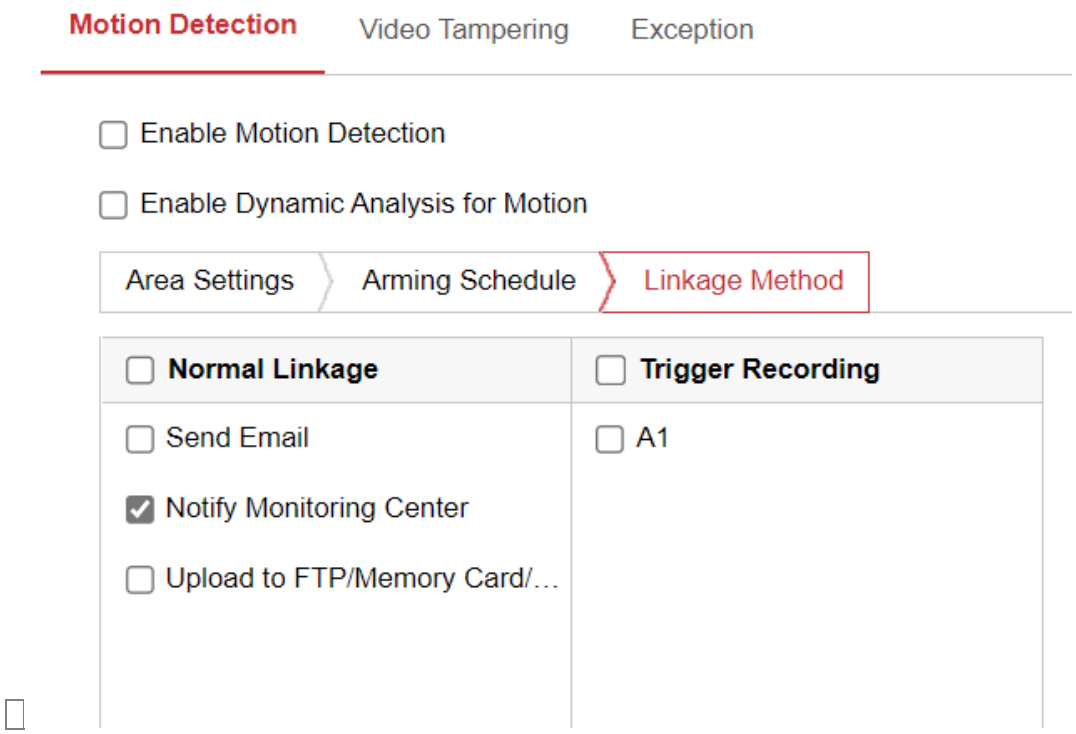


Figure 8-4 Linkage Method

Note

The linkage methods vary according to the different camera models.

- Notify Monitoring Center

Send an exception or alarm signal to remote management software when an event occurs.

- Send Email

Send an email with alarm information to a user or users when an event occurs.

Note

To send the Email when an event occurs, please refer to *Section 7.2.3* to complete Email setup in advance.

- Upload to FTP/Memory Card/NAS

  Capture the image when an alarm is triggered and upload the picture to a FTP server.

Note

- Set the FTP address and the remote FTP server first. Refer to 5.2.2 FTP for detailed information.
- Go to **Configuration** > **Storage** > **Schedule Settings**> **Capture** > **Capture Parameters** page, enable the event-triggered snapshot, and set the capture interval and capture number.
- The captured image can also be uploaded to the available SD card or network disk.

- Trigger Recording

The video will be recorded when the motion is detected. You have to set the recording schedule to realize this function. Please refer to *Section 11.1* for detailed information.

Expert Configuration

Expert mode is mainly used to configure the sensitivity and proportion of object on each area for different day/night switch.

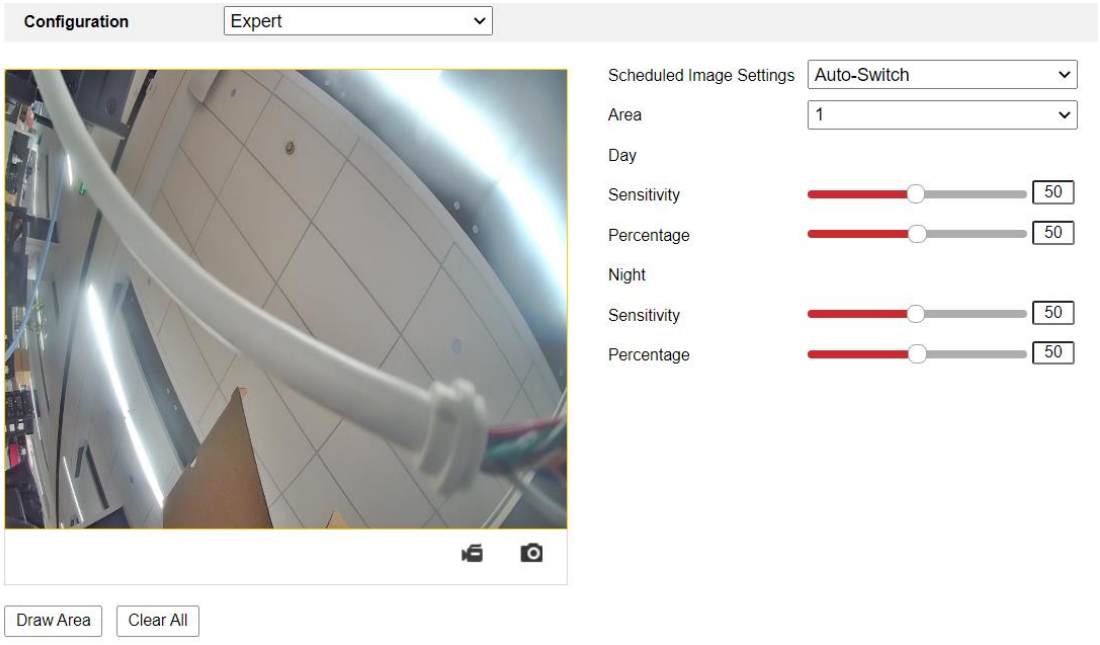


Figure 8-5 Expert Mode of Motion Detection

Day/Night Switch OFF

Step 12 Draw the detection area as in the normal configuration mode. Up to 8 areas are supported.

Step 13 Select **OFF** for **Switch Day and Night Settings**.

Step 14 Select the area by clicking the area No.

Step 15 Slide the cursor to adjust the sensitivity and proportion of object on the area for the selected area.

Step 16 Set the arming schedule and linkage method as in the normal configuration mode.

Step 17 Click **Save** to save the settings.

Day/Night Auto-Switch

Step 18 Draw the detection area as in the normal configuration mode. Up to 8 areas are supported.

Step 19 Select **Auto-Switch** for **Switch Day and Night Settings**.

Step 20 Select the area by clicking the area No.

Step 21 Slide the cursor to adjust the sensitivity and proportion of object on the area for the selected area in the daytime.

Step 22 Slide the cursor to adjust the sensitivity and proportion of object on the area for the selected area at night.

Step 23 Set the arming schedule and linkage method as in the normal configuration mode.

Step 24 Click **Save** to save the settings.

Day/Night Scheduled-Switch

Step 25 Draw the detection area as in the normal configuration mode. Up to 8 areas are supported.

Step 26 Select **Scheduled-Switch** for **Switch Day and Night Settings**.

Figure 8-6 Day/Night Scheduled-Switch

Step 27 Select the start time and the end time for the switch timing.

Step 28 Select the area by clicking the area No..

Step 29 Slide the cursor to adjust the sensitivity and proportion of object on the area for the selected area in the daytime.

Step 30 Slide the cursor to adjust the sensitivity and proportion of object on the area for the selected area at night.

Step 31 Set the arming schedule and linkage method as in the normal configuration mode.

Step 32 Click **Save** to save the settings.

8.1.2 Video Tampering Alarm

Purpose:

You can configure the camera to trigger the alarm when the lens is covered and take certain alarm response actions.

Detection area for this alarm is the whole screen.

Step 1 Go to **Configuration** > **Event** > **Basic Event** > **Video Tampering**.

Step 2 Check Enable **Video Tampering** checkbox to enable the video tampering detection.

Step 3 Click Edit to edit the arming schedule for video tampering. The arming schedule configuration is the same as the setting of the arming schedule for motion detection. Refer to *Task 2: Set the Arming Schedule for Motion Detection* in *Section 8.1.1 .*

Step 4 Check the checkbox to select the linkage method taken for the video tampering. Please refer to *Task 3: Set the Linkage Method for Motion Detection* in *Section 8.1.1 .*

Step 5 Click Save to save the settings.

8.1.3 Exception

The exception type can be HDD full, HDD error, network disconnected, IP address conflicted and illegal login to the cameras.

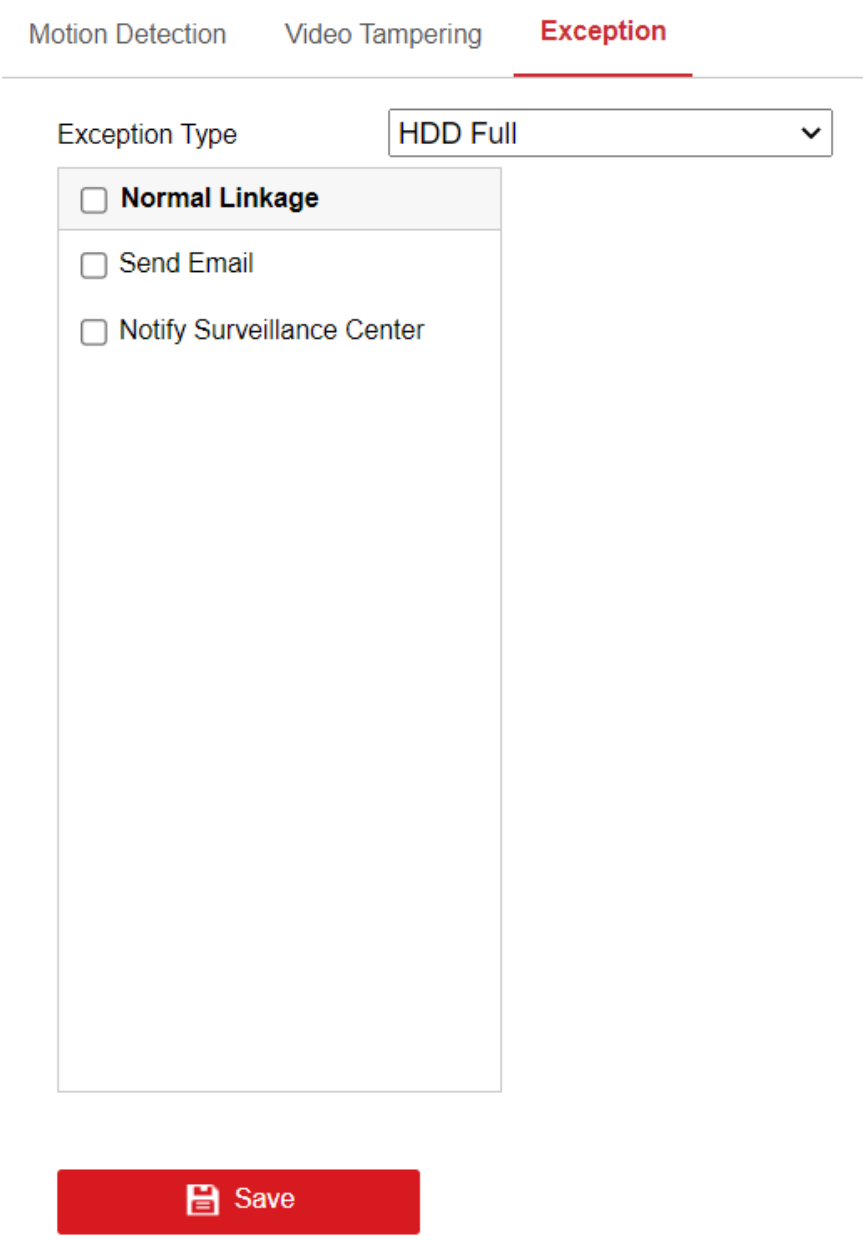


Figure 8-7 Exception

Step 2 Go to **Configuration** > **Event** > **Basic Event** > **Exception**.

Step 3 Check the checkbox to set the actions taken for the Exception alarm. Refer to *Task 3: Set the Linkage Method for Motion Detection* in *Section 8.1.1* .

Step 4 Click **Save** to save the settings.

8.2 Smart Events

Smart Events are incompatible with the third stream. For encoding performance, the bitrate will drop after the smart event is on.

Smart Events includes the following function, as shown in the following table.

Table 8-1 Smart Events and their Linkage Method

Detection Function	**Linkage Method**
Defocus Detection	
Scene Change Detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording
Object detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording
Intrusion Detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording
Line Crossing Detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording
Region Entrance Detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording
Region Exiting Detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording
Loitering Detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording
People Gathering Detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording
Fast Moving Detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording
Parking Detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording

Unattended Baggage Detection	Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Recording

Note

Some of these functions have the options of setting regions, threshold and sensitivity for detection.

- **Region**: A pre-defined vertexes area on the live view image. Targets, such as, people, vehicle or other objects, who enter and loiter in the region will be detected and trigger the set alarm.
- **Threshold:** Range [0 s-10 s], the threshold for the time of the object loitering in the region. If you set the value as 0, alarm is triggered immediately after the object entering the region.
- **Sensitivity**: Range [1-100]. Sensitivity stands for the percentage of the body part of an acceptable target that enters the pre-defined region.

Sensitivity = $100 – S_1/S_T*100$

S_1 stands for the target body part that goes across the pre-defined region. S_T stands for the complete target body.

Example: if you set the value as 60, the action can be counted as an intrusion only when 40 percent body part enters the region.

In general, the higher the sensitivity is, the easier the alarm will be triggered.

Note

- For each of these steps, you can repeat the above steps to configure other regions. Up to 4 regions can be set. You can click the **Clear** button to clear all pre-defined regions.
- Click **Arming Schedule** to set the arming schedule.
- Click **Linkage Method** to select the linkage methods for intrusion detection, including Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS, and Trigger Channel.

8.2.2 Defocus Detection

Purpose:

The image blur caused by defocus of the lens can be detected, and some certain actions can be taken when the alarm is triggered.

Note

Defocus detection function varies according to different camera models.

Step 1 Go to **Configuration > Event > Smart Event > Defocus Detection**.

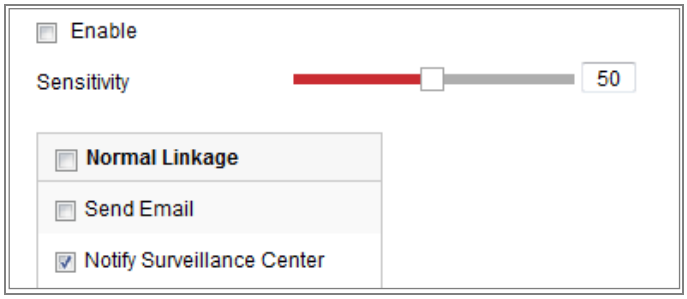


Figure 8-8 Defocus Detection

Step 2 Check the checkbox of **Enable** to enable the function.

Step 3 Click-and-drag the slider to set the detection sensitivity. The sensitivity value ranges from 1 to 100, and the higher the value is, the more easily the defocus image can trigger the alarm.

Step 4 Select the linkage methods for defocus, including Notify Monitoring Center, Send Email and Upload to FTP.

Step 5 Click **Save** to save the settings.

8.2.3 Scene Change Detection

Purpose:

Scene change detection function detects the change of monitoring environment affected by the external factors, such as the intentional rotation of the camera. Some certain actions can be taken when the alarm is triggered.

Note

Scene change detection function varies according to different camera models.

Step 1 Go to **Configuration > Event > Smart Event > Scene Change Detection**.

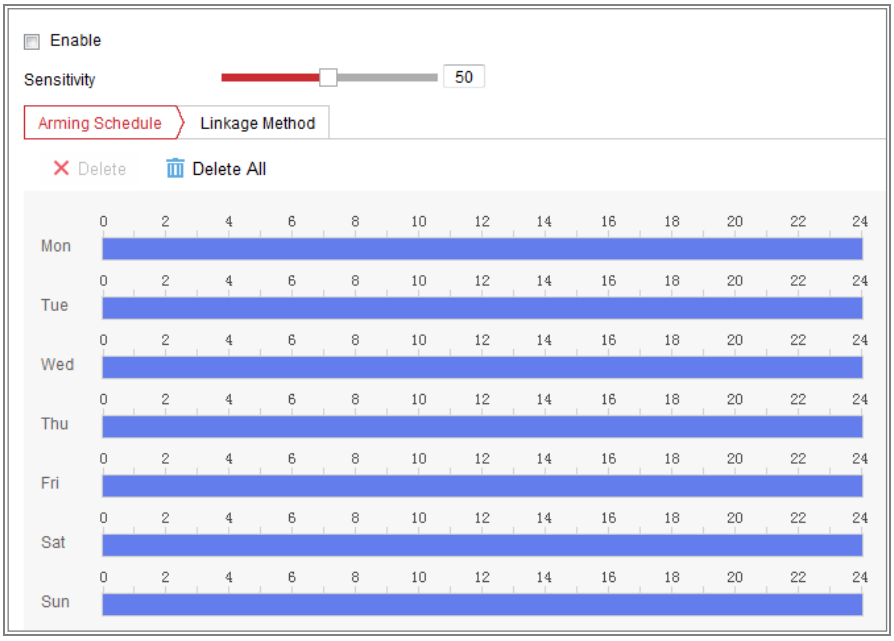


Figure 8-9 Scene Change Detection

Step 2 Check the checkbox of **Enable** to enable the function.

Step 3 Click-and-drag the slider to set the detection sensitivity. The sensitivity value ranges from 1 to 100, and the higher the value is, the more easily the change of scene can trigger the alarm.

Step 4 Click **Arming Schedule** to set the arming schedule. Refer to *Task 2* ***Set the Arming Schedule for Motion Detection*** in *Section 8.1.1* for detailed steps.

Step 5 Click **Linkage Method** to select the linkage methods for scene change, including Notify Monitoring Center, Send Email, Upload to FTP/Memory Card/NAS and Trigger Channel.

Step 6 Click **Save** to save the settings.

8.2.4 Intrusion Detection

Purpose:

Intrusion detection function detects people, vehicle or other objects which enter and loiter in a pre-defined virtual region, and some certain actions can be taken when the alarm is triggered.

Note

- Intrusion detection function varies according to different camera models.
- Then the alarm will stop if the intruding object stays still, and it will start again when the intruding object moves.

Step 1 Go to **Configuration> Event > Smart Event > Intrusion Detection**.

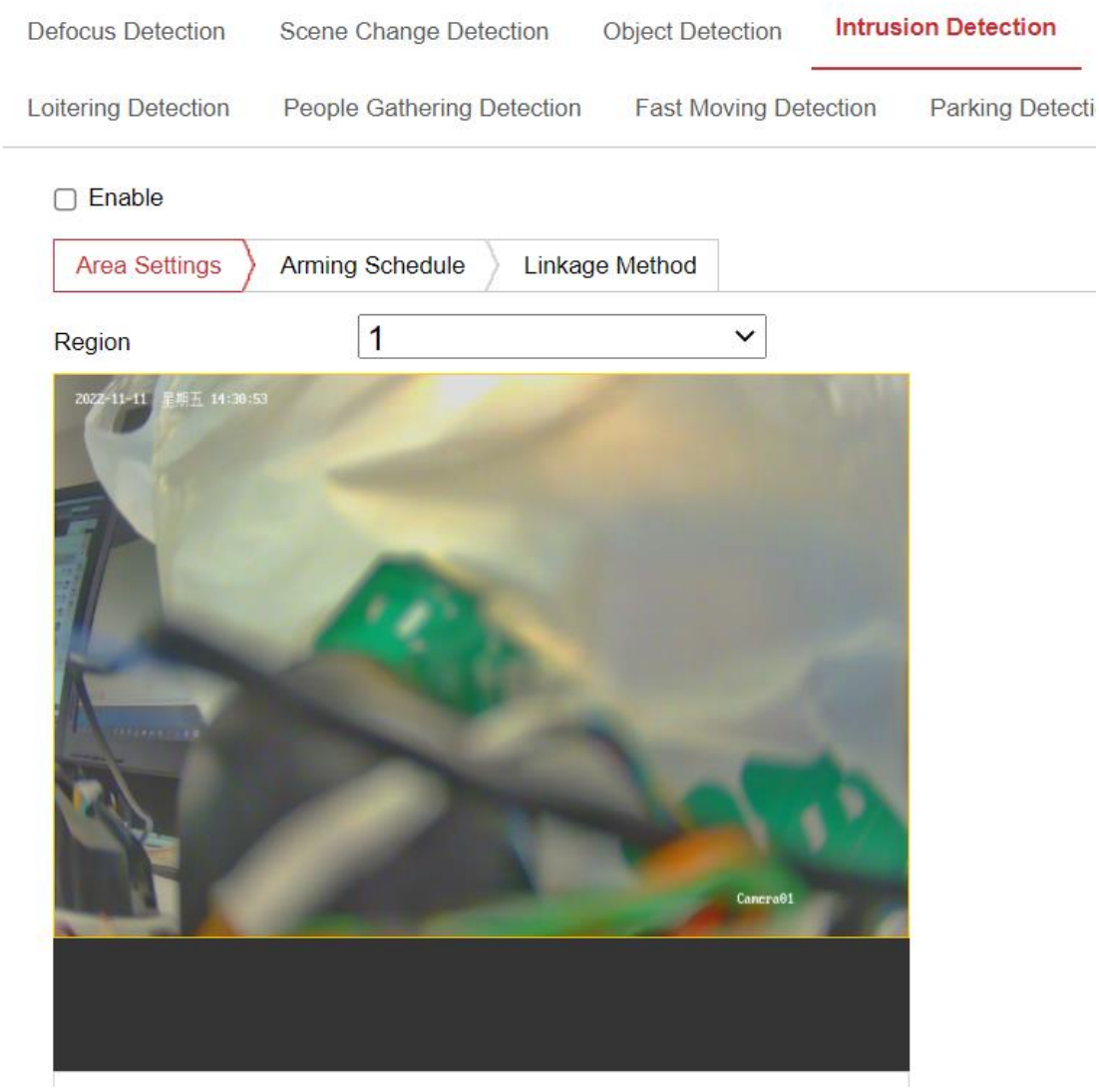


Figure 8-10 Intrusion Detection

Step 2 Check the checkbox of **Enable** to enable the function.

Step 3 Select a region number from the drop-down list of **Region**.

Step 4 Click **Area Settings** tab and click **Draw Area** button to start the region drawing.

Step 5 Click on the live video to specify the four vertexes of the detection region, and right click to complete drawing.

Step 6 Click **Stop Drawing** when finish drawing.

Step 7 Set the time threshold for intrusion detection.

Step 8 Drag the slider to set the sensitivity value.

Note

The **Sensitivity** of the detection is supported by certain models. Refer to actual display for details.

8.2.5 Line Crossing Detection

Purpose:

Line crossing detection function detects people, vehicle or other objects which cross a pre-defined virtual line, and some certain actions can be taken when the alarm is triggered.

Note

Line crossing detection function varies according to different camera models.

Step 1 Go to **Configuration** > **Event** > **Smart Event** > **Line Crossing Detection**.

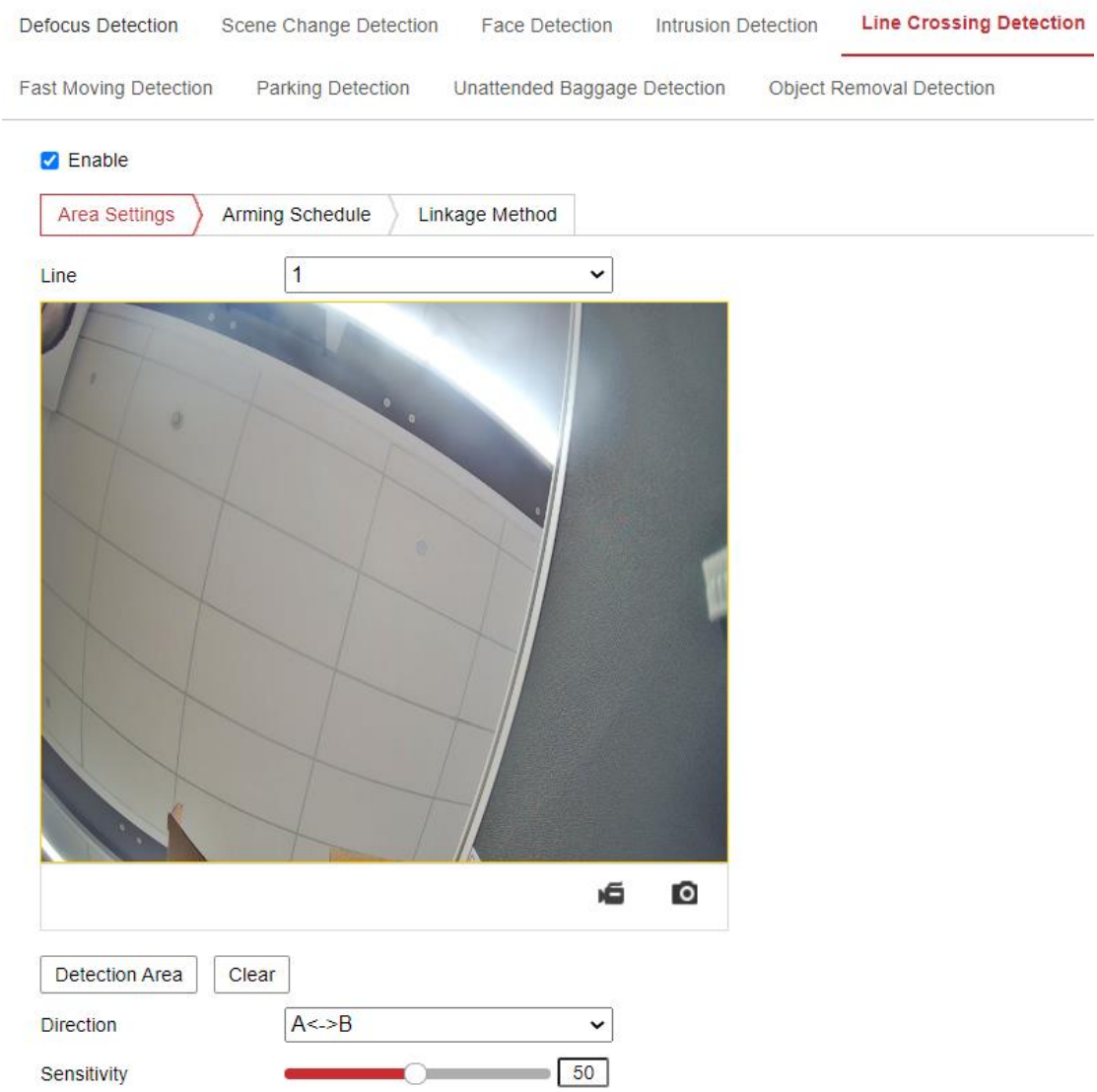


Figure 8-11 Line Crossing Detection

Step 2 Check the checkbox of **Enable** to enable the function.

Step 3 Select the line from the drop-down list.

Step 4 Click **Area Settings** tab and click **Draw Area** button, and a virtual line is displayed on the live video.

Step 5 Drag the line, and you can locate it on the live video as desired. Click on the line, two red squares are displayed on each end, and you can click-and-drag one of the red squares to define the shape and length of the line.

Step 6 Select the direction for line crossing detection. And you can select the directions as A<->B, A ->B, and B->A.

- **A<->B**: The object going across the plane with both directions can be detected and alarms are triggered.
- **A->B**: Only the object crossing the configured line from the A side to the B side can be detected.
- **B->A**: Only the object crossing the configured line from the B side to the A side can be detected.

Step 7 Click **Stop Drawing** when finish drawing.

Step 8 Drag the slider to set the sensitivity value.

8.2.6 Region Entrance Detection

Purpose:

Region entrance detection function detects people, vehicle or other objects which enter a pre-defined virtual region from the outside place, and some certain actions can be taken when the alarm is triggered.

Note

- The difference between intrusion detection and region entrance detection lies in the way that the object enters the region: regions entrance detection will only trigger the alarm when the object enters the region by crossing a cordon, whereas the intrusion detection does not specify the way of entrance.
- Intrusion detection, region exiting detection and region entrance detection will only send alarm once, and stop when the object stay still. Another alarm will be sent when the object moves again.

Step 1 Go to **Configuration** > **Event** > **Smart Event** > **Region Entrance Detection**.

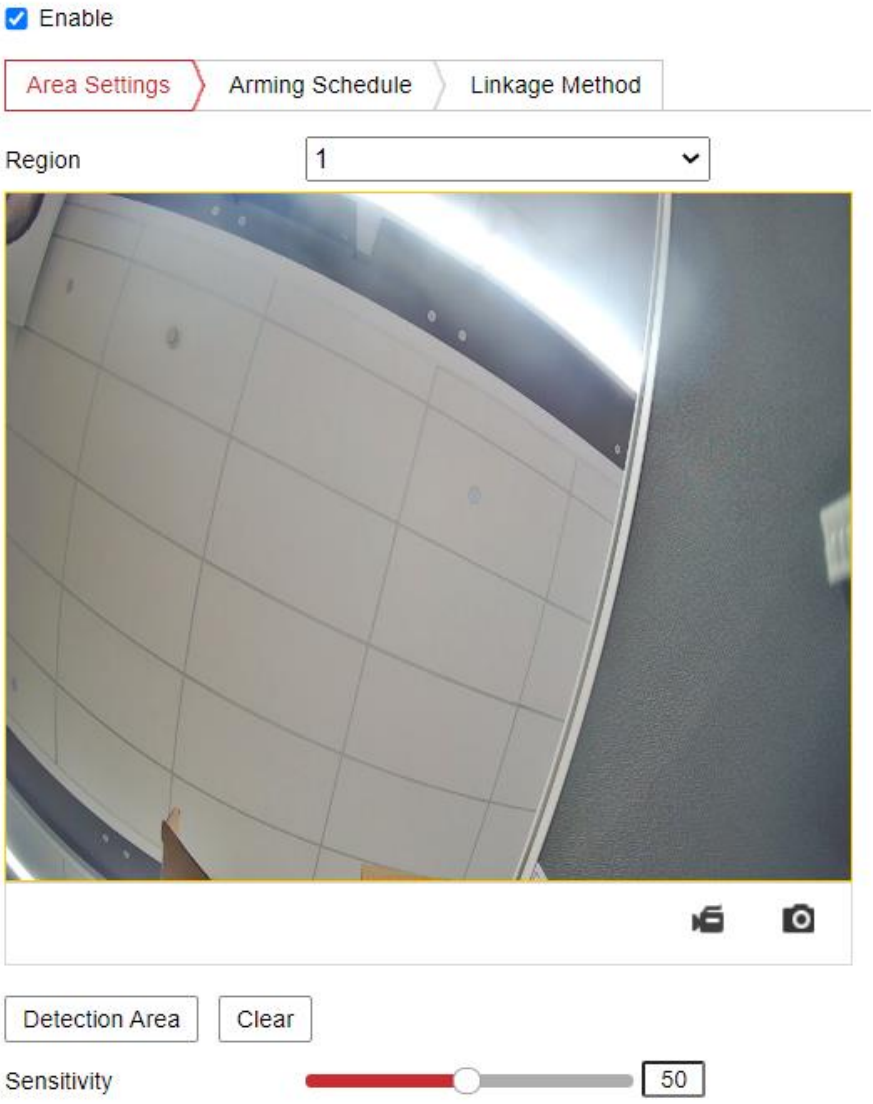


Figure 8-12 Region Entrance Detection

Step 2 Check the **Enable** checkbox to enable the function.

Step 3 Select the **Region** from the drop-down list for detection settings.

Step 4 Click **Area Settings** and click **Draw Area** button to start the area drawing.

Step 5 Click on the live video to specify the four vertexes of the detection region, and right click to complete drawing.

Step 6 Click **Stop Drawing** when finish drawing.

Step 7 Drag the slider to set the sensitivity value.

8.2.7 Region Exiting Detection

Purpose:

Region exiting detection function detects people, vehicle or other objects which exit from a pre-defined virtual region, and some certain actions can be taken when the alarm is triggered.

Step 1 Go to **Configuration** > **Event** > **Smart Event** > **Region Exiting Detection**.

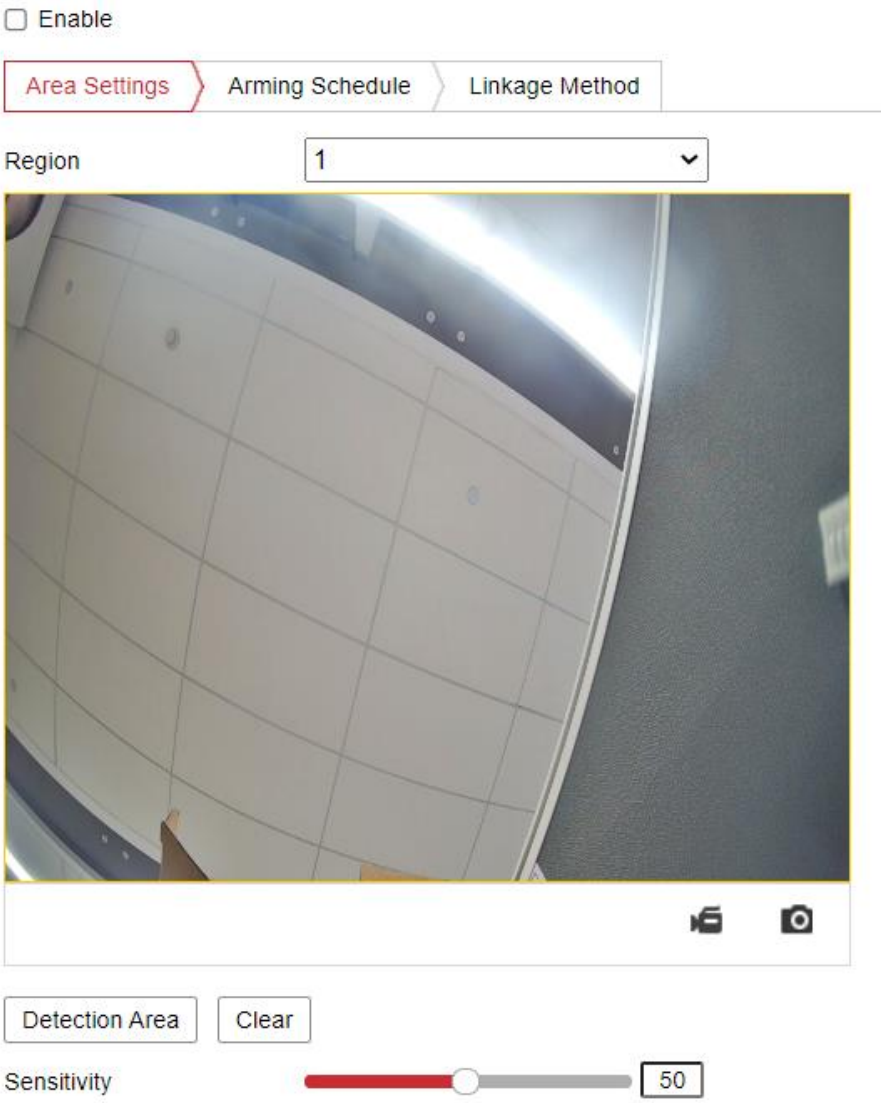


Figure 8-13 Region Exiting Detection

Step 2 Check **Enable** checkbox to enable the function.

Step 3 Select the **Region** from the drop-down list for detection settings.

Step 4 Click **Area Settings** and click **Draw Area** button to start the area drawing.

Step 5 Click on the live video to specify the four vertexes of the detection region, and right click to complete drawing.

Step 6 Click **Stop Drawing** when finish drawing.

Step 7 Drag the slider to set the sensitivity value.

8.2.8 Loitering Detection

Purpose:

Loitering Detection function detects the objects's stay in the pre-defined region over an extended period of time, such as the exhibits on display, and a series of actions can be taken when the alarm is triggered.

Step 1 Go to **Configuration** > **Event** > **Smart Event** > **Loitering Detection**.

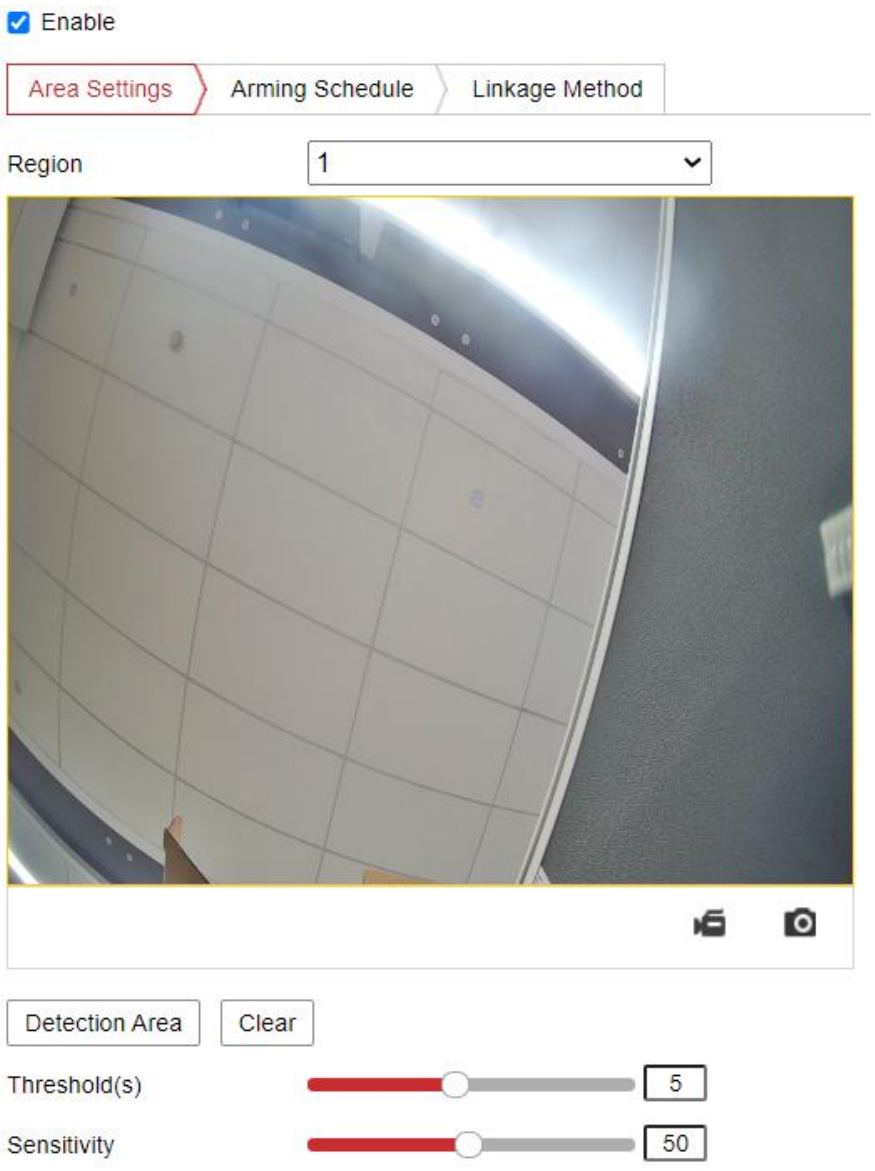


Figure 8-14 Loitering Detection

Step 2 Check **Enable** checkbox to enable the function.

Step 3 Select the **Region** from the drop-down list for detection settings.

Step 4 Click **Area Settings** and click **Draw Area** button to start the area drawing.

Step 5 Click on the live video to specify the four vertexes of the detection region, and right click to complete drawing.

Step 6 Click **Stop Drawing** when finish drawing.

Step 7 Set the time threshold for object removal detection.

Step 8 Drag the slider to set the sensitivity value.

8.2.9 People Gathering Detection

Purpose:

People Gathering Detection function detects the density of people in the pre-defined region, such as the exhibits on display, and a series of actions can be taken when the density of over a preset percentage.

Step 1 Go to **Configuration** > **Event** > **Smart Event** > **People Gathering Detection**.

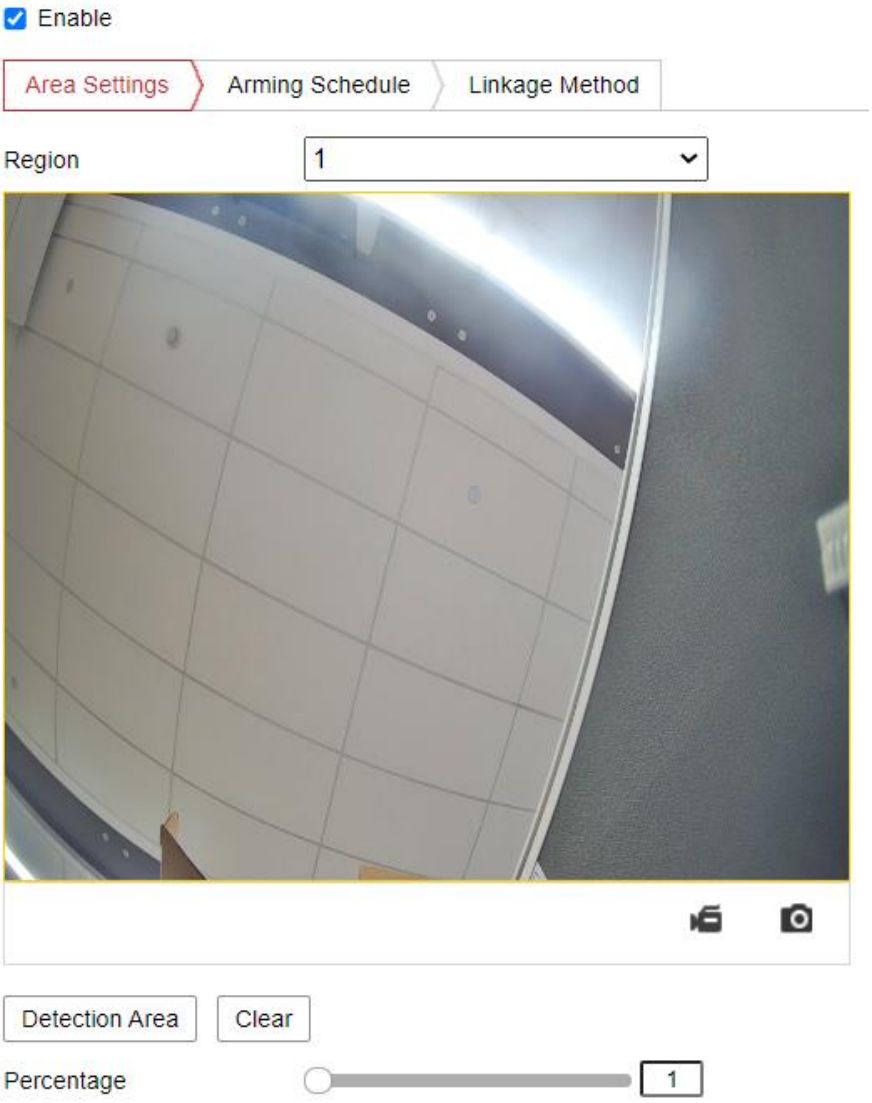


Figure 8-15 People Gathering Detection

Step 2 Check **Enable** checkbox to enable the function.

Step 3 Select the **Region** from the drop-down list for detection settings.

Step 4 Click **Area Settings** and click **Draw Area** button to start the area drawing.

Step 5 Click on the live video to specify the four vertexes of the detection region, and right click to complete drawing.

Step 6 Click **Stop Drawing** when finish drawing.

Step 7 Drag the slider to set the percentage value.

8.2.10 Fast Moving Detection

Purpose:

Object removal detection function detects the objects removed from the pre-defined region, such as the exhibits on display, and a series of actions can be taken when the alarm is triggered.

Step 1 Go to **Configuration** > **Event** > **Smart Event** > **Fast Moving Detection**.

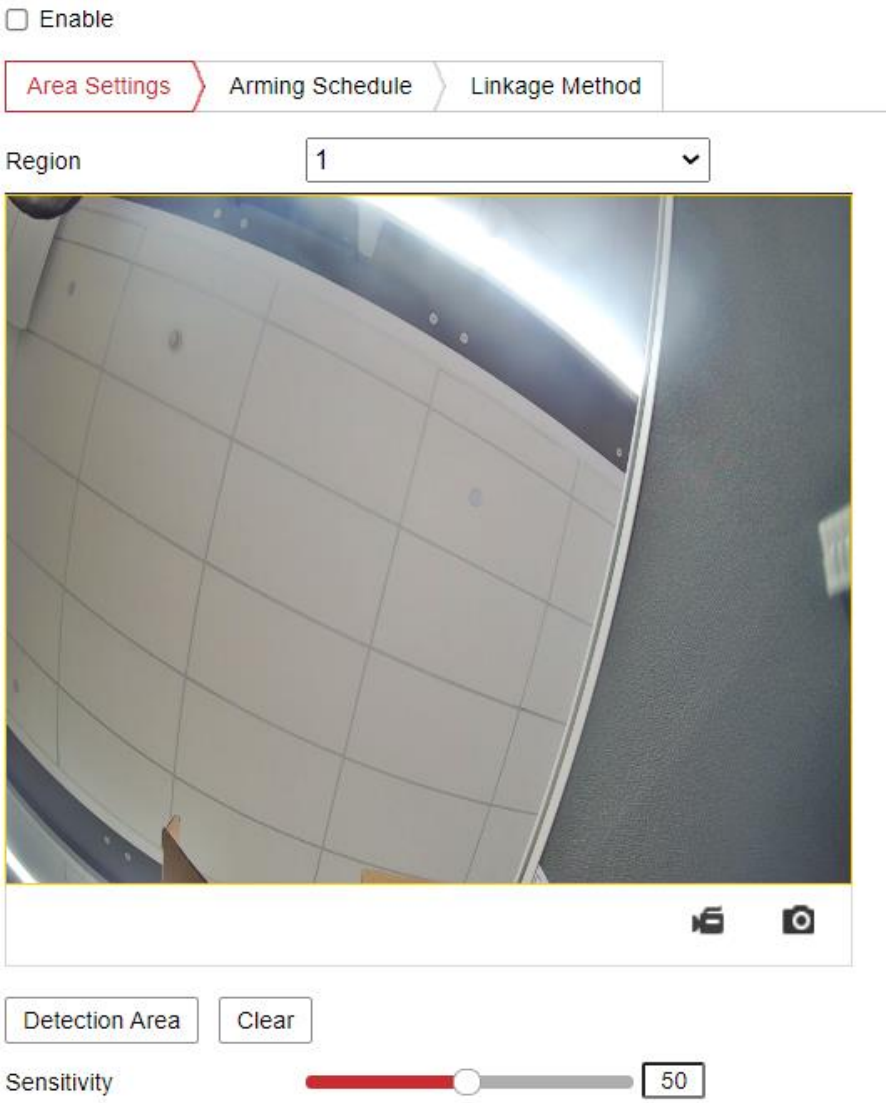


Figure 8-16 Fast Moving Detection

Step 2 Check **Enable** checkbox to enable the function.

Step 3 Select the **Region** from the drop-down list for detection settings.

Step 4 Click **Area Settings** and click **Draw Area** button to start the area drawing.

Step 5 Click on the live video to specify the four vertexes of the detection region, and right click to complete drawing.

Step 6 Click **Stop Drawing** when finish drawing.

Step 7 Drag the slider to set the sensitivity value.

8.2.11 Parking Detection

Purpose:

Parking Detection function detects the time that vehicles stay in the pre-defined region, such as the exhibits on display, and a series of actions can be taken when the alarm is triggered.

Step 1 Go to **Configuration** > **Event** > **Smart Event** > **Parking Detection**.

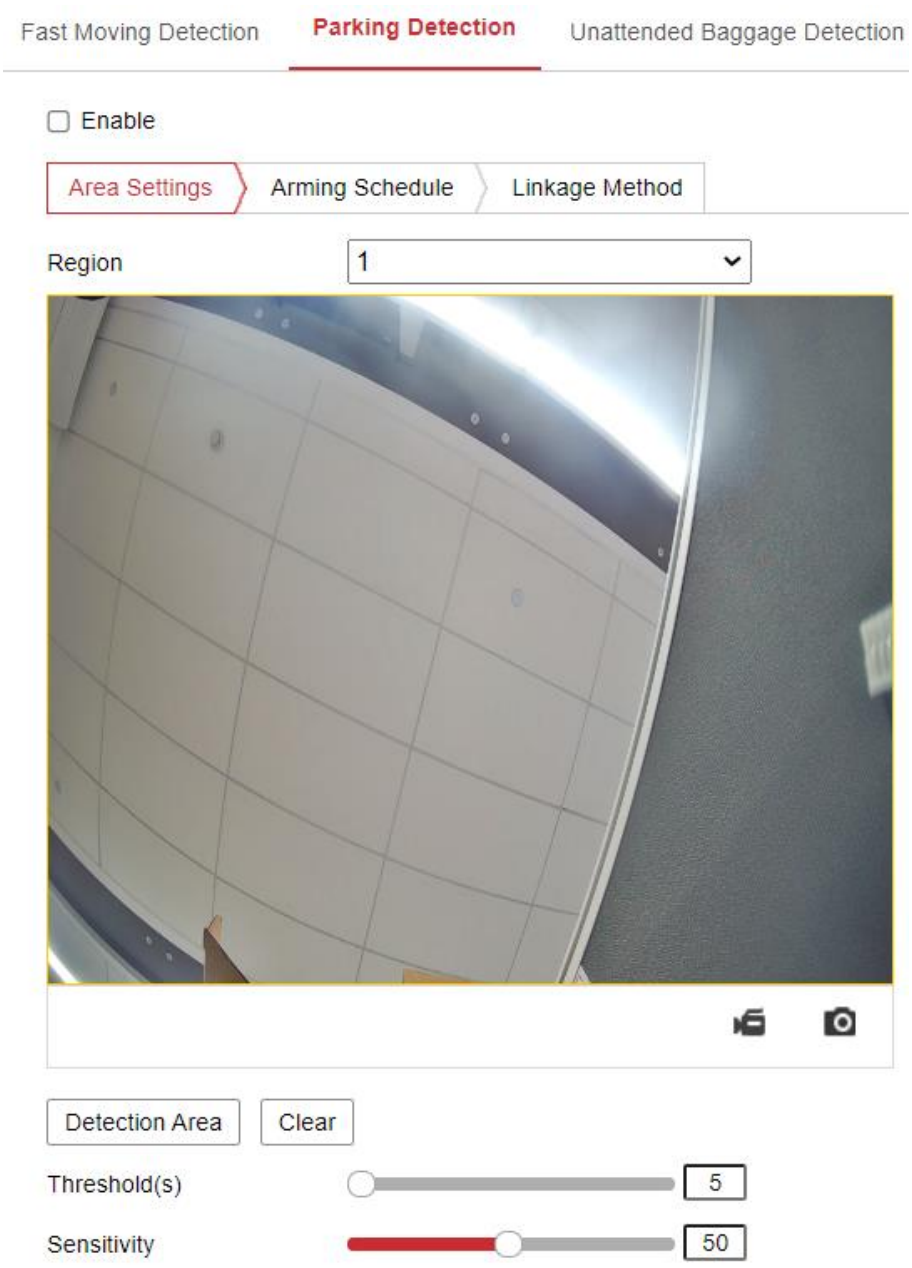


Figure 8-17 Parking Detection

Step 2 Check **Enable** checkbox to enable the function.

Step 3 Select the **Region** from the drop-down list for detection settings.

Step 4 Click **Area Settings** and click **Draw Area** button to start the area drawing.

Step 5 Click on the live video to specify the four vertexes of the detection region, and right click to complete drawing.

Step 6 Click **Stop Drawing** when finish drawing.

Step 7 Set the time threshold for object removal detection.

Step 8 Drag the slider to set the sensitivity value.

8.2.12 Unattended Baggage Detection

Purpose:

Unattended baggage detection function detects the objects left over in the pre-defined region such as the baggage, purse, dangerous materials, etc. A series of actions can be taken when the alarm is triggered.

Step 1 Go to **Configuration** > **Event** > **Smart Event** > **Unattended Baggage Detection**.

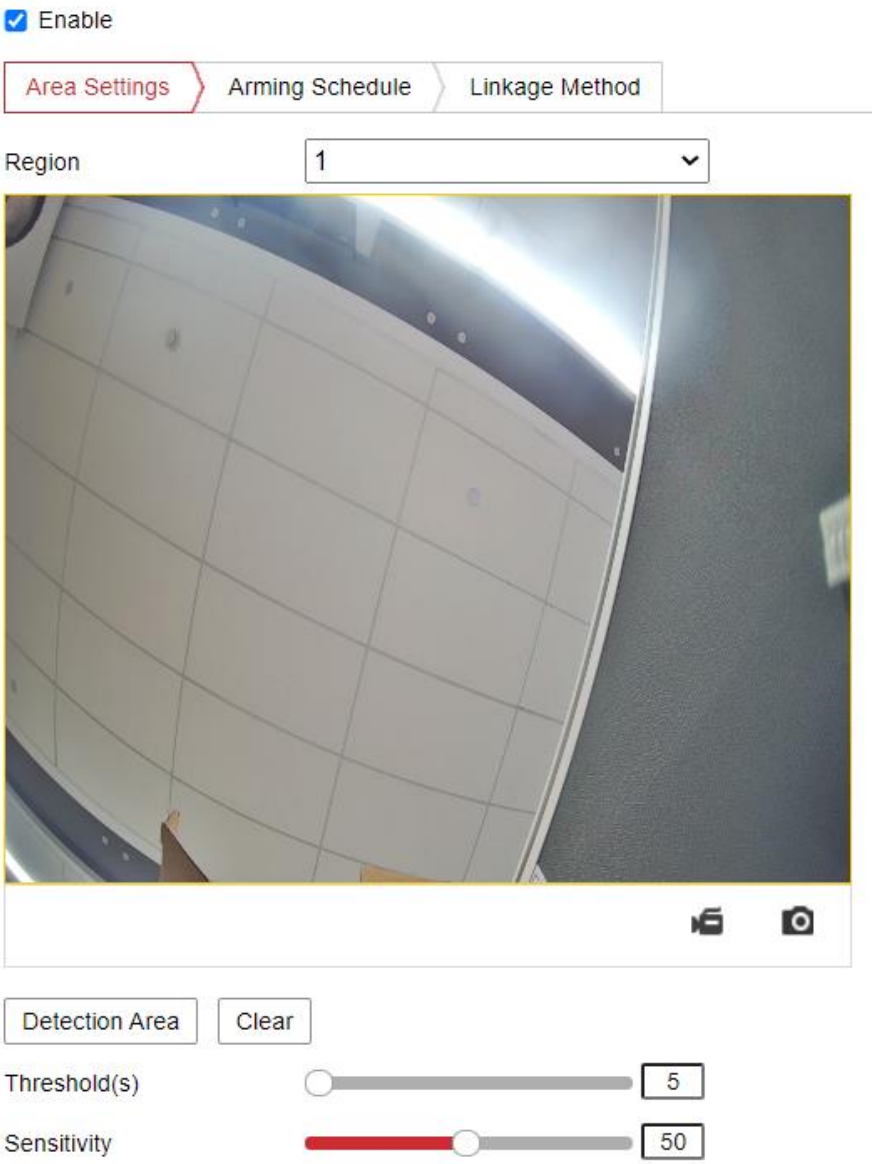


Figure 8-18 Unattended Baggage Detection

Step 2 Check **Enable** checkbox to enable the function.

Step 3 Select the **Region** from the drop-down list for detection settings.

Step 4 Click **Area Settings** and click **Draw Area** to start the area drawing.

Step 5 Click on the live video to specify the four vertexes of the detection region, and right click to complete drawing.

Step 6 Click **Stop Drawing** when finish drawing.

Step 7 Set the time threshold and detection sensitivity for unattended baggage detection.

Step 8 Drag the slider to set the sensitivity value.

8.2.13 Object Removal Detection

Purpose:

Object removal detection function detects the objects removed from the pre-defined region, such as the exhibits on display, and a series of actions can be taken when the alarm is triggered.

Step 1 Go to **Configuration** > **Event** > **Smart Event** > **Object Removal Detection**.

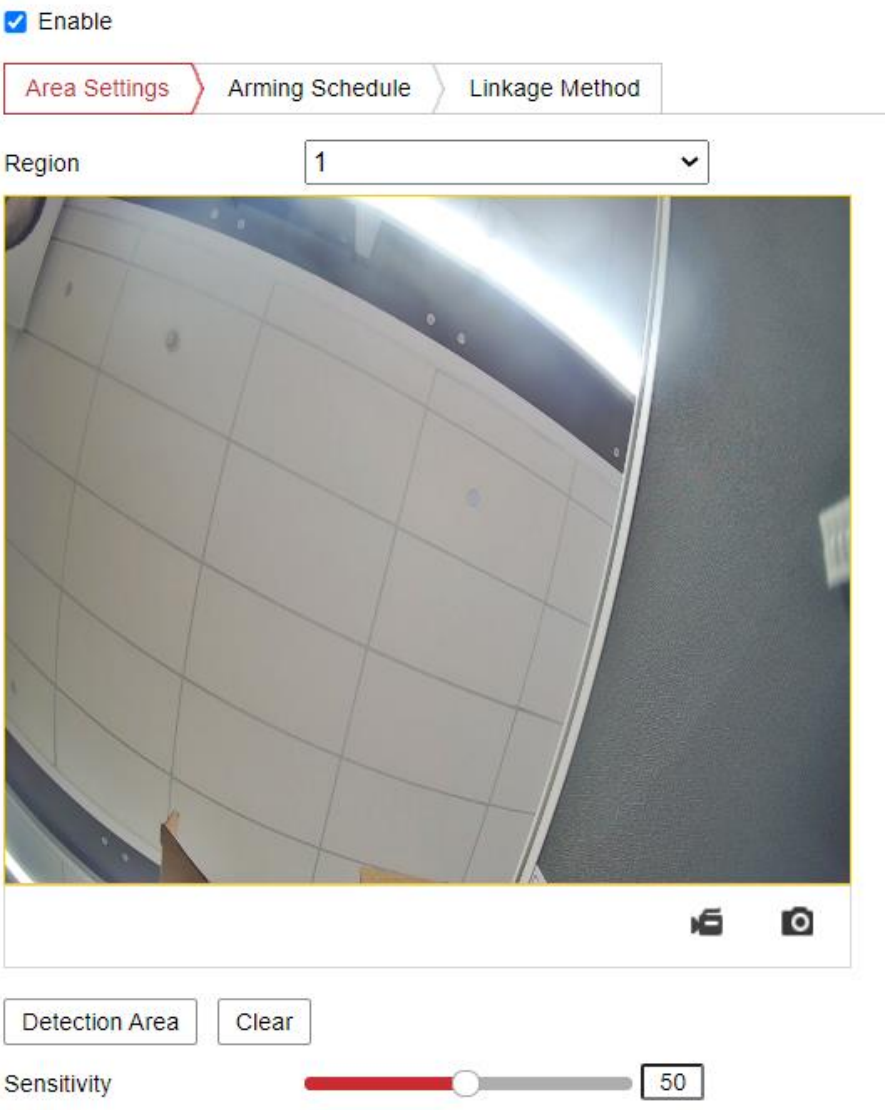


Figure 8-19 Object Removal Detection

Step 2 Check **Enable** checkbox to enable the function.

Step 3 Select the **Region** from the drop-down list for detection settings.

Step 4 Click **Area Settings** and click **Draw Area** button to start the area drawing.

Step 5 Click on the live video to specify the four vertexes of the detection region, and right click to complete drawing.

Step 6 Click **Stop Drawing** when finish drawing.

Step 7 Set the time threshold for object removal detection.

Step 8 Drag the slider to set the sensitivity value.

Chapter 9 Storage Settings

Before you start:

To configure record settings, make sure that you have the network storage device or local storage device configured.

9.1 Record Schedule

Purpose:

There are two kinds of recording for the cameras: manual recording and scheduled recording. In this section, you can follow the instructions to configure the scheduled recording. By default, the record files of scheduled recording are stored in the local storage or in the network disk.

Step 1 Go to **Configuration** > **Storage** > **Schedule Settings** > **Record Schedule**.

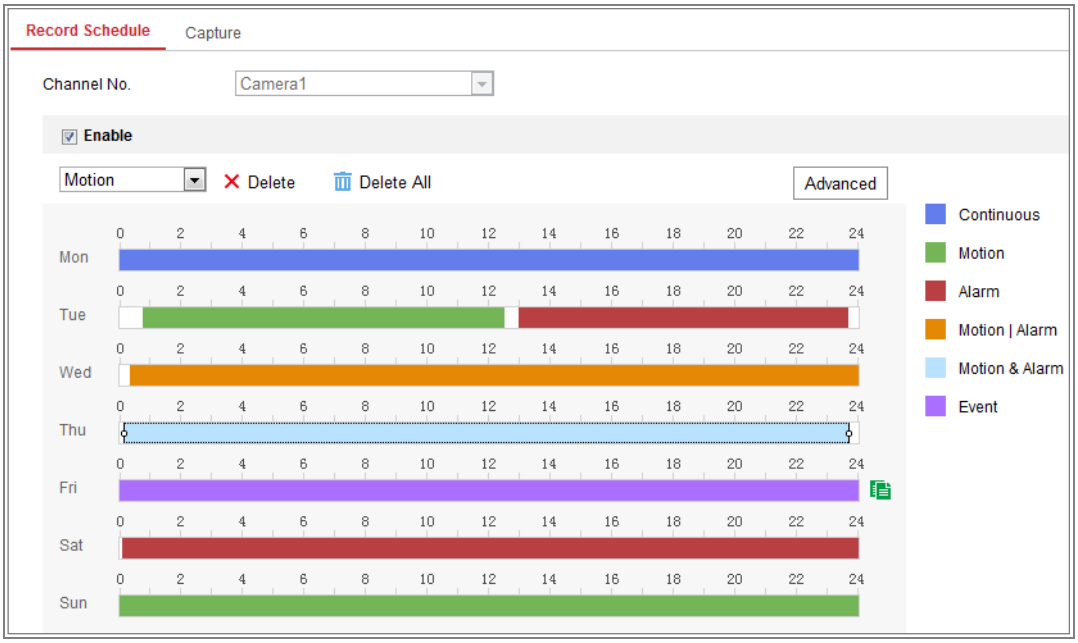


Figure 9-1 Recording Schedule Interface

Step 2 Check the checkbox of **Enable** to enable scheduled recording.

Step 3 Click **Advanced** to set the camera record parameters.

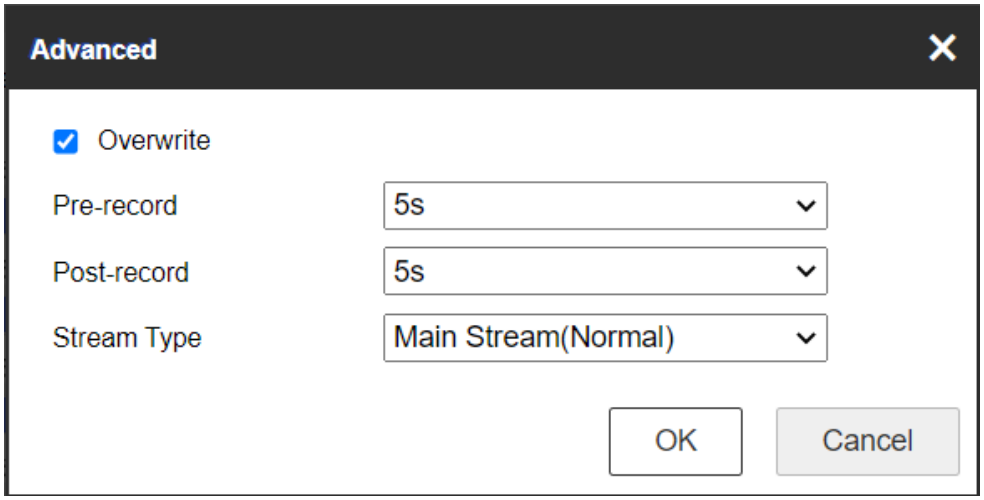


Figure 9-2 Record Parameters

- Pre-record: The time you set to start recording before the scheduled time or the event. For example, if an alarm triggers recording at 10:00, and the pre-record time is set as 5 seconds, the camera starts to record at 9:59:55.

The Pre-record time can be configured as No Pre-record, 5 s, 10 s, 15 s, 20 s, 25 s, 30 s or not limited.

- Post-record: The time you set to stop recording after the scheduled time or the event. For example, if an alarm triggered recording ends at 11:00, and the post-record time is set as 5 seconds, the camera records until 11:00:05.

The Post-record time can be configured as 5 s, 10 s, 30 s, 1 min, 2 min, 5 min or 10 min.

- Stream Type: Select the stream type for recording.

Note

The record parameter configurations vary depending on the camera model.

Step 4 Select a **Record Type**. The record type can be either Continuous or Event.

- Continuous

If you select **Continuous**, the video will be recorded automatically according to the time of the schedule.

- Record Triggered by Events

If you select **Event**, the video will be recorded if any of the events is triggered. Besides configuring the recording schedule, you have to configure the event settings.

Step 5 Select the record type, and click-and-drag the mouse on the time bar to set the record schedule.

Step 6 Click **Save** to save the settings.

9.2 Capture Schedule

Purpose:

You can configure the scheduled snapshot and event-triggered snapshot. The captured picture can be stored in the local storage or network storage.

Step 1 Go to **Configuration** > **Storage** > **Storage Settings** > **Capture**.

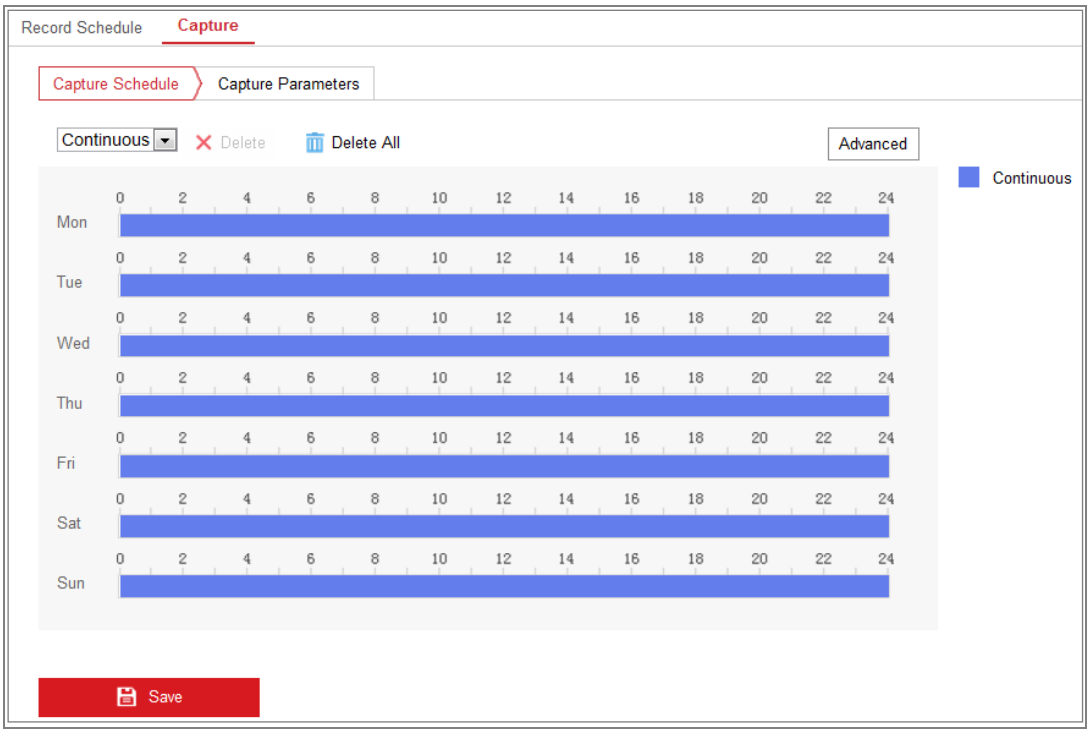


Figure 9-3 Capture Configuration

Step 2 Go to Capture Schedule tab to configure the capture schedule by click-and-drag the mouse on the time bar. You can copy the record schedule to other days by clicking the green copy icon on the right of each time bar.

Step 3 Click **Advanced** to select stream type.

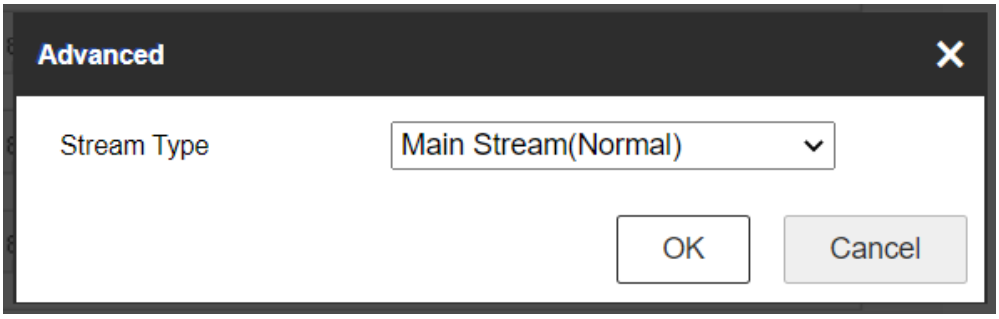


Figure 9-4 Advanced Setting of Capture Schedule

Step 4 Click **Save** to save the settings.

Step 5 Go to Capture Parameters tab to configure the capture parameters.

1) Check the **Enable Timing Snapshot** checkbox to enable continuous snapshot.
2) Select the picture format, resolution, quality and capture interval.
3) Check the **Enable Event-triggered Snapshot** checkbox to enable event-triggered snapshot.
4) Select the picture format, resolution, quality, capture interval, and capture number.

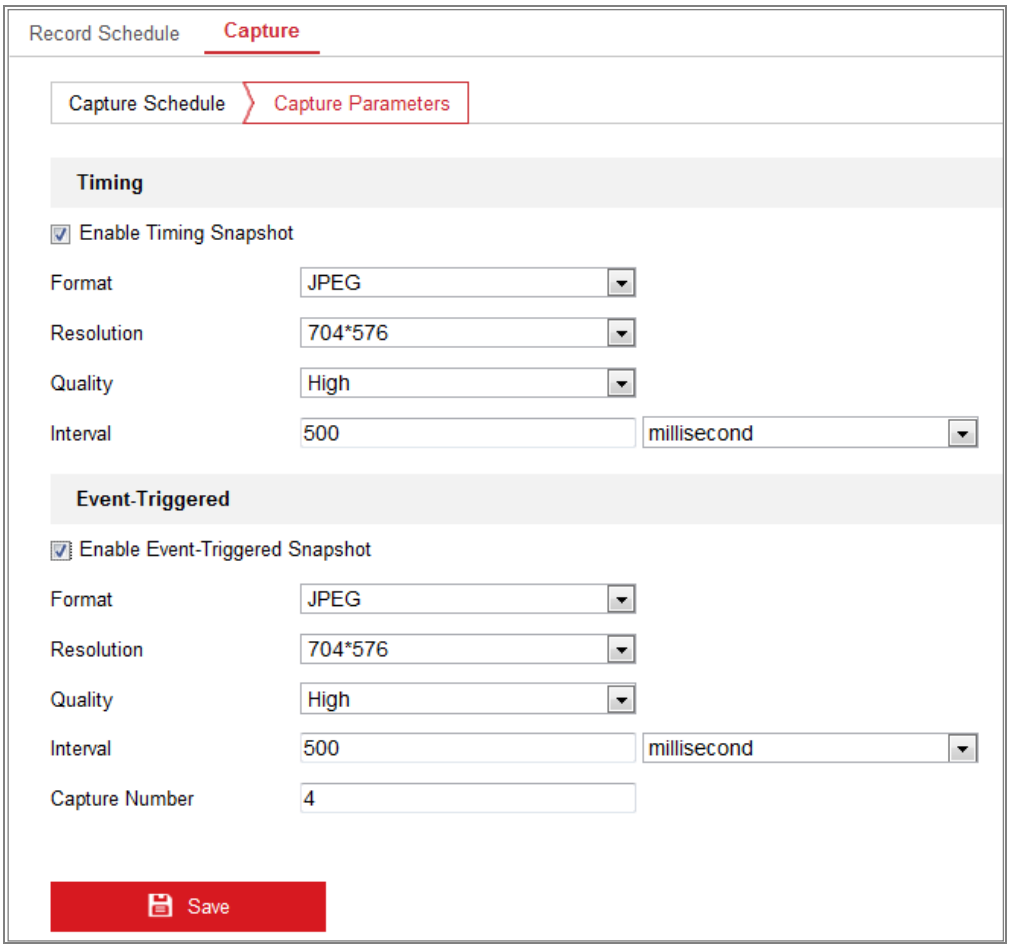


Figure 9-5 Set Capture Parameters

Step 6 Set the time interval between two snapshots.

Step 7 Click **Save** to save the settings.

9.3 Storage Management

Before you start:

The network disk should be available within the network and properly configured to store the recorded files, log files, pictures, etc.

Steps:

Step 1 Go to **Configuration** > **Storage** > **Storage Management** > **HDD Management**, in which you can view the capacity, free space, status, type and property of the disk.

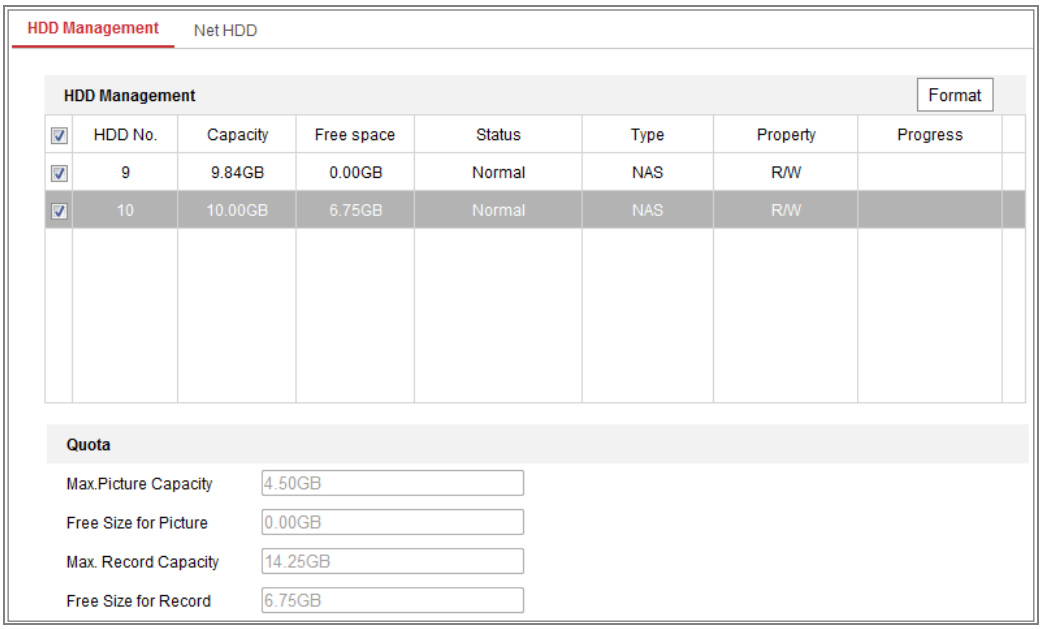


Figure 9-6 Storage Management Interface

Step 2 If the status of the disk is **Uninitialized**, check the corresponding checkbox to select the disk and click **Format** to start initializing the disk.

Step 3 When the initialization completed, the status of disk will become **Normal**.

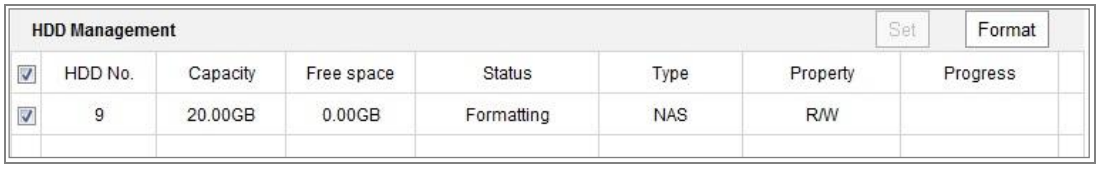


Figure 9-7 View Disk Status

Step 4 Define the quota for record and pictures.

1) Input the quota percentage for picture and for record.
2) Click **Save** and refresh the browser page to activate the settings.

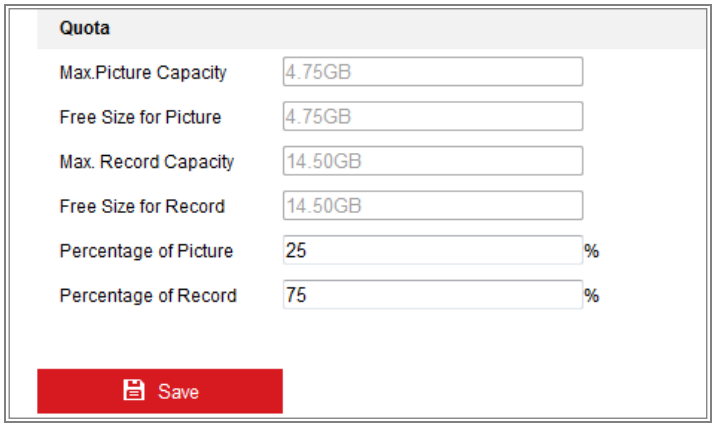


Figure 9-8 Quota Settings

Chapter 10 Access to the Network Camera

Purpose:

This section explains how to connect the network camera to the WAN with a static IP or a dynamic IP.

10.1.1 Via Static IP Connection

Before you start:

Please apply a static IP from an ISP (Internet Service Provider). With the static IP address, you can connect the network camera via a router or connect it to the WAN directly.

Connecting the network camera via a router

Step 1 Connect the network camera to the router.

Step 2 Assign a LAN IP address, the subnet mask and the gateway. Refer to Section 5.1.1 TCP/IP for detailed IP address configuration of the network camera.

Step 3 Save the static IP in the router.

Step 4 Set port mapping, e.g., 80, 8000, and 554 ports. The steps for port mapping vary according to the different routers. Please call the router manufacturer for assistance with port mapping.

Note

Refer to Appendix 2 for detailed information about port mapping.

Step 5 Visit the network camera through a web browser or the client software over the internet.

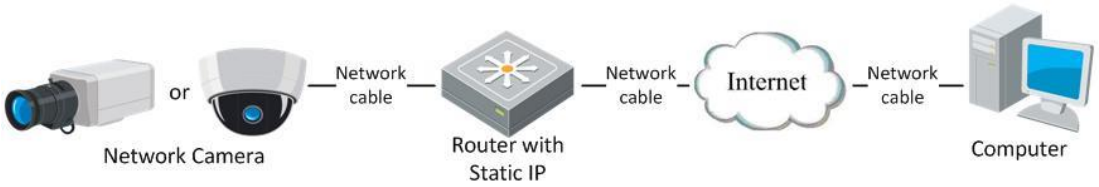


Figure 10-1 Accessing the Camera through Router with Static IP

Connecting the network camera with static IP directly

You can also save the static IP in the camera and directly connect it to the internet without using a router. Refer to Section 5.1.1 TCP/IP for detailed IP address configuration of the network camera.

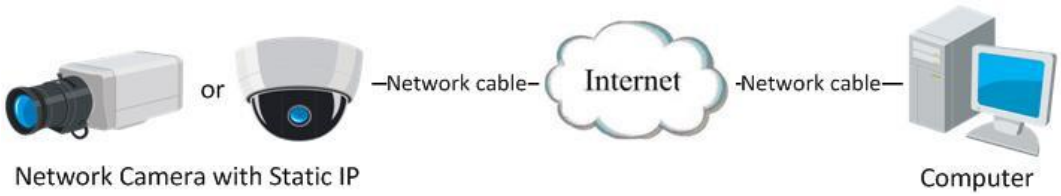


Figure 10-2 Accessing the Camera with Static IP Directly

10.1.2 Via Dynamic IP Connection

Before you start:

Please apply a dynamic IP from an ISP. With the dynamic IP address, you can connect the network camera to a modem or a router.

Connecting the network camera via a router

Step 1 Connect the network camera to the router.

Step 2 In the camera, assign a LAN IP address, the subnet mask and the gateway. Refer to Section 2.1.2 for detailed IP address configuration of the network camera.

Step 3 Set port mapping. E.g. 80, 8000, and 554 ports. The steps for port mapping vary depending on different routers. Please call the router manufacturer for assistance with port mapping.

Note

Refer to Appendix 2 for detailed information about port mapping.

Step 4 Apply a domain name from a domain name provider.

Step 5 Configure the DDNS settings in the setting interface of the router.

Step 6 Visit the camera via the applied domain name.

Step 7 Connecting the network camera via a modem

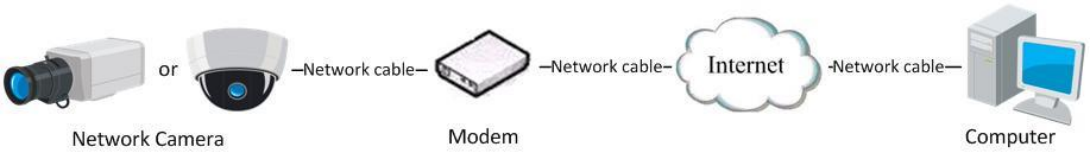


Figure 10-3 Accessing the Camera with Dynamic IP

Chapter 11 Appendix

11.1 Appendix 1 SADP Software Introduction

• Description of SADP

SADP (Search Active Devices Protocol) is a kind of user-friendly and installation-free online device search tool. It searches the active online devices within your subnet and displays the information of the devices. You can also modify the basic network information of the devices using this software.

• Search active devices online

Step 1 Search online devices automatically

Step 2 After launch the SADP software, it automatically searches the online devices every 15 seconds from the subnet where your computer locates. It displays the total number and information of the searched devices in the Online Devices interface. Device information including the device type, IP address and port number, etc. will be displayed.

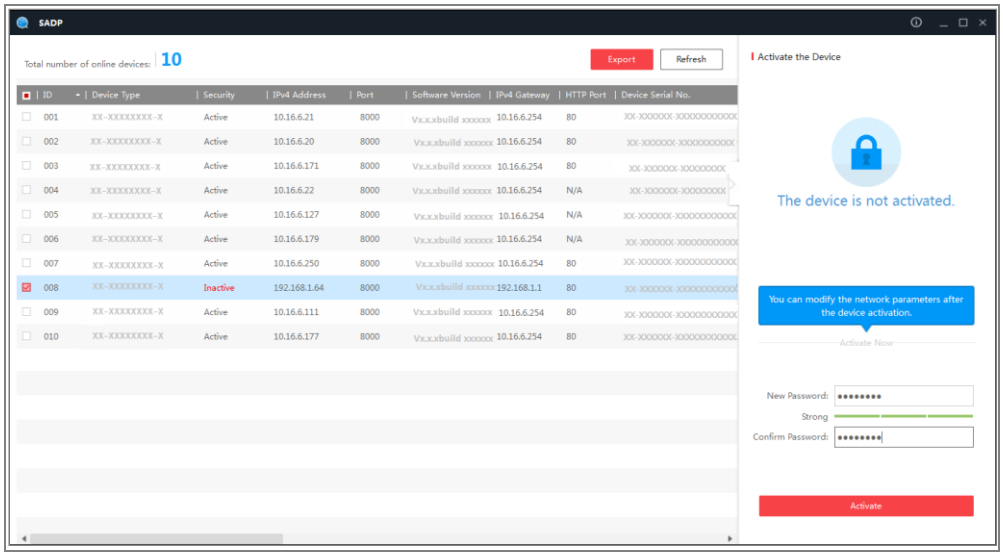


Figure A.1.1 Searching Online Devices

Note

Device can be searched and displayed in the list in 15 seconds after it went online; it will be removed from the list in 45 seconds after it went offline.

Step 3 Search online devices manually

Step 4 You can also click Refresh to refresh the online device list manually. The newly searched devices will be added to the list.

Step 5 NOTE You can click ▲ or ▼ on each column heading to order the information; you can click ▶ to expand the device table and hide the network parameter panel on the right side, or click ◀ to show the network parameter panel.

• Modify network parameters

Step 6 Select the device to be modified in the device list and the network parameters of the device will be displayed in the **Modify Network Parameters** panel on the right side.

Step 7 Edit the modifiable network parameters, e.g. IP address and port number.

Step 8 Enter the password of the admin account of the device in the **Admin Password** field and click Modify to save the changes.

Caution

STRONG PASSWORD RECOMMENDED

- We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.
- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

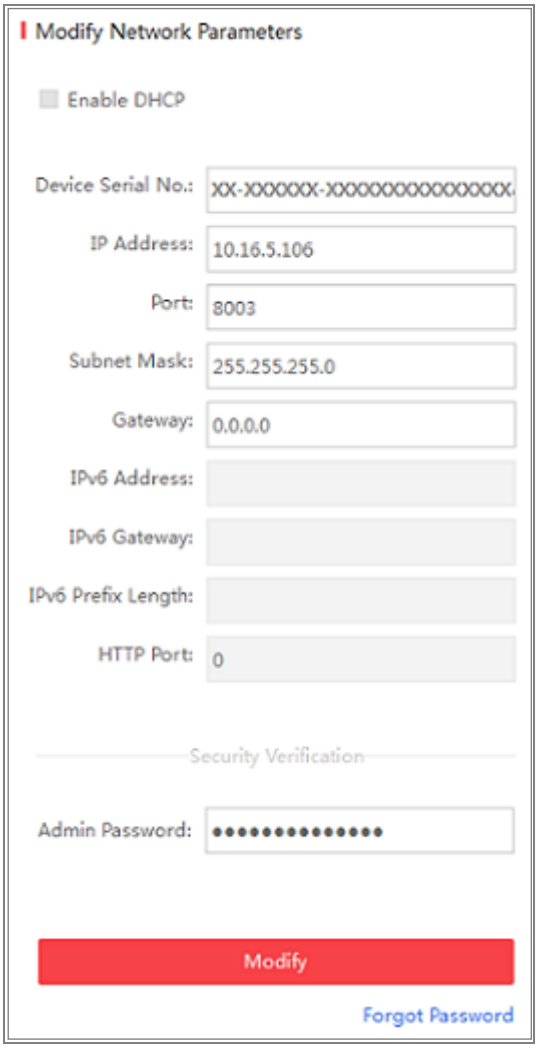


Figure A.1.2 Modify Network Parameters

11.2 Appendix 2 Device APP

Device Communication Matrix

Scan the following QR code to get device communication matrix.

Note that the matrix contains all communication ports of Hikvision network cameras.

Figure 11-1 Device Communication Matrix

Device Command

Scan the following QR code to get device common serial port commands.

Note that the command list contains the commonly used serial port commands for all Hikvision network cameras.

Figure 11-2 device common serial port commands

UD Number