Thermal Bi-spectrum Network PTZ Device

User Manual

<u>User Manual</u>

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 (http://www.hikvision.com/en/).

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

Trademarks Acknowledgement

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Symbol Convention

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.
WARNING	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 Instruction

● The device should be used in compliance with local laws and electrical safety regulations. Refer to the appropriate documentation for detailed information.

● The input voltage should conform to IEC60950-1 standard: SELV (Safety Extra Low Voltage) and the Limited Power Source (24 VAC/12 VDC). Refer to the appropriate documentation for detailed information.

● DO NOT connect multiple devices to one power adapter, to avoid over-heating or fire hazards caused by overload.

● Make sure the plug is properly connected to the power socket.

● If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center.

● The installer and user are responsible for password and security configuration and its settings.

● Both internal and external grounds should be connected properly. (The cross section area of the grounding wire must be no less than 4 mm2, and no less than that of the phase connector).

● Do not drop the device or subject it to physical shock.

● Wipe the device gently with a clean cloth and a small quantity of ethanol, if necessary.

● Do not aim the lens at the sun or any other bright light.

● When any laser equipment is in use, make sure that the device lens is not exposed to the laser beam, or it may burn out.

● Do not expose the device to high electromagnetic radiation or extremely hot, cold, dusty, or damp environments.

● Place the device in a dry and well-ventilated environment.

● Keep non-waterproof devices away from liquids.

● Keep the device in original or similar packaging while transporting it.

● A few device components (e.g., electrolytic capacitor) require regular replacement. The average lifespan varies, so periodic checking is recommended. Contact your dealer for details.

● Improper use or replacement of the battery may result in explosion hazard. Replace with the same or equivalent type only. Dispose of used batteries in conformance with the instructions provided by the battery manufacturer.

● Never attempt to disassemble the device.

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Chapter 1   Overview

1.1 Overview

Thermal bi-spectrum network device (named as device in the chapters below) integrates the function of the decoder, thermal camera, and the high-definition zoom camera. It performs temperature measurement, dynamic fire source detection and other smart detections in the remote surveillance of the power system, metallurgy system, and petrochemical engineering, and so on.

You can get a high-quality live view via web browser or client software.

1.2 System Requirement

System requirement of web browser accessing is as follows:

Operating System: Microsoft Windows XP SP1 and above version / Vista / Win7 / Server 2003 / Server 2008 32bits

CPU: Intel Pentium IV 3.0 GHz or higher

RAM: 1G or higher

Display: 1024×768 resolution or higher

Web Browser: Internet Explorer 8.0 and above version, Apple Safari 5.02 and above version, Mozilla Firefox 5 and above version and Google Chrome 18 and above versions.

1.3 Functions

The main functions of this camera is fire source detection, and temperature measurement, and VCA (video content analysis) functions.

- **Fire Detection**

    Fire Source Detection Shield enables you to shield certain areas from being detected in fire source detection.

    For fire detection, refer to **Section 5.3 Fire Source Detection Configuration**.

- **Temperature Measurement**

    When you enable this function, it measures the actual temperature of the spot being monitored. The device alarms when temperature exceeds the temperature threshold value.

    For temperature measurement, refer to **Section5.4 Temperature Measurement.**

- **VCA function**

    You can do intelligent analysis, such as behavior analysis. Multiple rules can be configured for different requirements.

For VCA function, refer to **5.5PTZ Configuration**

⌊i⌋ NOTE

● On the event configuration page, click ▌ to show the PTZ control panel or click ▌ to hide it.

● Click the direction buttons to control the pan/tilt movements.

● Click the zoom/iris/focus buttons to realize lens control.

● The functions vary depending on the models of device.

1.3.1 Configure Basic PTZ Parameters

Purpose:

You can configure the basic PTZ parameters, including proportional pan, preset freezing, preset speed, etc.

1. Go to the. Basic PTZ Parameter Configuration interface:

    Configuration > **PTZ** > **Basic Settings**

Figure 1-1 Basic PTZ Configuration Interface

2. Configure the following settings:

● **Basic Parameters**: Enable/disable proportional pan and preset freezing, set the preset speed, keyboard control speed, and auto scan speed.

   ◆ **Proportional Pan**: If you enable this function, the pan/tilt speeds change according to the amount of zoom. When there is a large amount of zoom, the pan/tilt speed will be

slower for keeping the image from moving too fast on the live view image.

♦ **Preset Freezing**: This function enables the live view to switch directly from one scene defined by a preset to another, without showing the middle areas between these two, to ensure the surveillance efficiency. It can also reduce the use of bandwidth in a digital network system.

☐ⓘ NOTE

Preset freezing function is invalid when you calling a pattern.

♦ **Preset Speed**: You can set the speed of a defined preset from 1 to 8.

♦ **Manual Control Speed**: The device provides 5 control speed modes: Compatible, Pedestrian, Non-motor Vehicle, Motor Vehicle and Auto. Select it from the dropdown list.

♦ **Keyboard Control Speed**: Define the speed of PTZ control by a keyboard as Low, Medium or High.

♦ **Auto Scan Speed**: The scan speed can be set from level 1 to 40.

♦ **Auto Flip** : Select auto flip mode as ON/OFF.

♦ **Max. Tilt-angle**: Set the tilt-angle of the device from the dropdown list.

♦ **Zooming Speed**: The speed of zooming is adjustable.

● **PTZ OSD:** Set the on-screen display duration of the PTZ status.

♦ **Zoom Status:** Set the OSD duration of zooming status as 2 seconds, 5 seconds, 10 seconds, Always Close or Always Open.

♦ **PT Status:** Set the azimuth angle display duration while panning and tilting as 2 seconds, 5 seconds, 10 seconds, Always Close or Always Open.

♦ **Position Display Format:** Set the position display format as PT or Direction and the position parameter displays in corresponding format.

♦ **Preset Status:** Set the preset name display duration while calling the preset as 2 seconds, 5 seconds, 10 seconds, Always Close or Always Open.

♦ **Action Status Display:** Display the current status of device in optical channel or not. Such as patrol, fire detection, etc.

● **Power-off Memory:** The device can resume its previous PTZ status or actions after it restarted from a power-off. You can set the time point of which the device resumes its PTZ status. You can set it to resume the status of 30 seconds, 60 seconds, 300 seconds or 600 seconds before power-off.

● **Linkage Control:** Check **Synchronized Zoom** to zoom the thermal lens and optical lens at the same time. The image of these two channels will be consistent.

3. Click 🖫 Save .

1.3.2 Configure PTZ Limits

Purpose:

The device can be programmed to move within the configurable PTZ limits (left/right, up/down).

Steps:

1. Go to the. Limit configuration interface:

   Configuration > **PTZ** > **Limit**
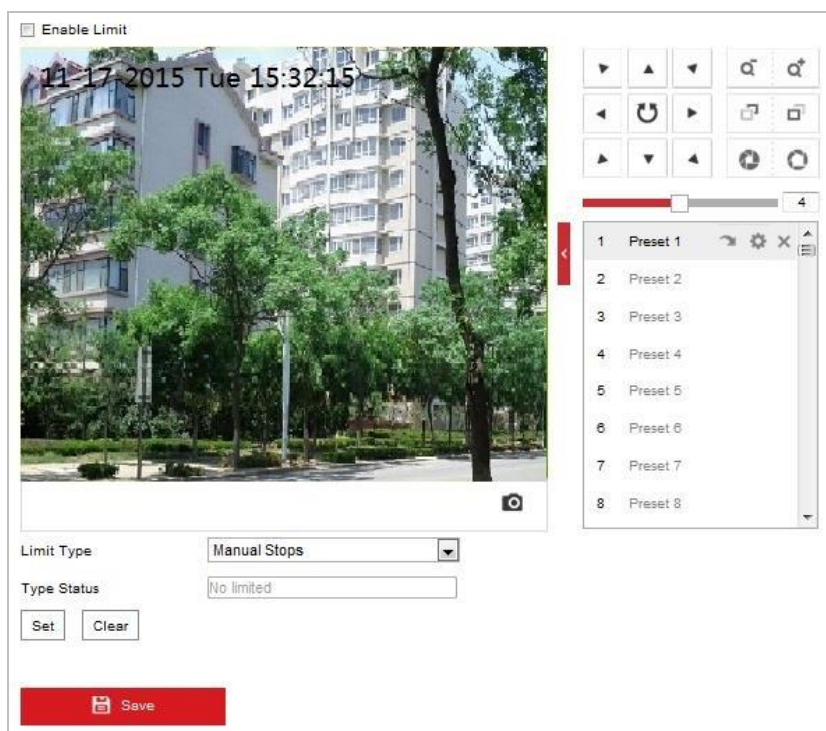
Figure 1-2 Configure the PTZ Limit

2. Click **Enable Limit** and choose the limit type as manual stops or scan stops.

● **Manual Stops:**

When manual limit stops are set, you can operate the PTZ control panel manually only in the limited surveillance area.

● **Scan Stops:**

When scan limit stops are set, the random scan, frame scan, auto scan, tilt scan, panorama scan is performed only in the limited surveillance area.

[i] NOTE

Manual Stops of **Limit Type** is prior to **Scan Stops.** When you set these two limit types at the same time, **Manual Stops** is valid and **Scan Stops** is invalid.

3. Click the PTZ control buttons to find the left/right/up/down limit stops; you can also call the defined presets and set them as the limits of the device.

4. Click **Set** to save the limits or click **Clear** to clear the limits.

1.3.3 Configure Park Actions

Purpose:

This feature allows the device to start a predefined park action (scan, preset, pattern and etc.) automatically after a period of inactivity (park time).

[i] NOTE

● **Scheduled Tasks** function is prior to **Park Action** function. When these two functions are set at the same time, only the **Scheduled Tasks** function takes effect.

● Pattern function varies depending on device models.

Steps:

1. Go to the. Park Action settings interface:

   Configuration > **PTZ** > **Park Action**

Figure 1-3 Set the Park Action

2. Check **Enable Park Action**.

3. Set the **Park Time** as the inactivity time of the device before it starts the park actions.

4. Choose **Action Type** the from the dropdown list.

Figure 1-4 Action Types

5. Select the **Action Type ID** from the dropdown list.

6. Click .

1.3.4 Configure Privacy Mask

Purpose:

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

Steps:

1. Go to the. Privacy Mask settings interface:

   Configuration > **PTZ** > **Privacy Mask**
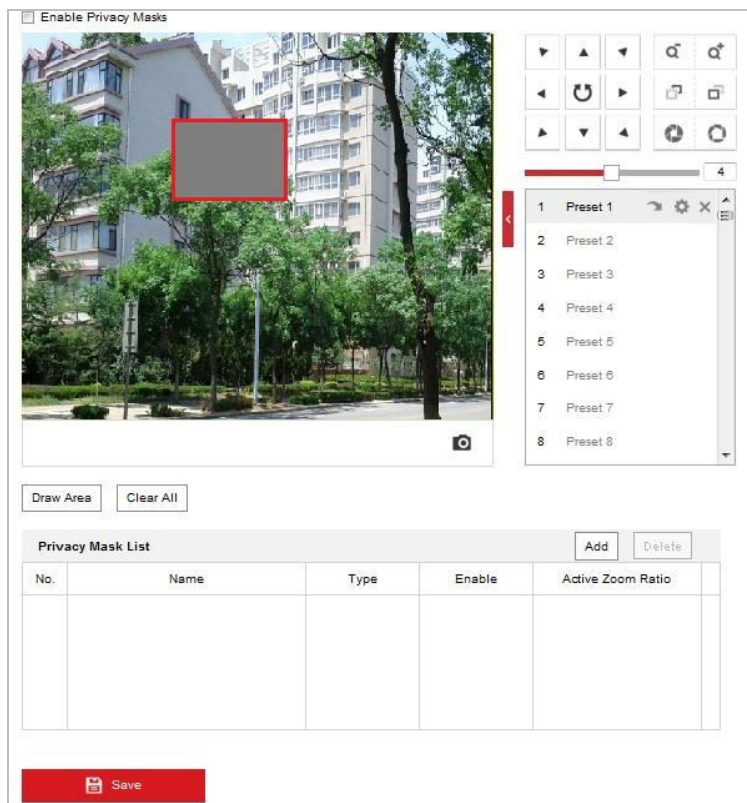
Figure 1-5 Draw the Privacy Mask

2. Click the PTZ control buttons to find the area you want to set the privacy mask.

3. Click Draw Area ; click and drag the mouse in the live video window to draw the area.

4. You can drag the corners of the red rectangle area to draw a polygon mask.

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

6. Click Add to save the privacy mask, and it will be listed in the **Privacy Mask List** area; set the value of **Active Zoom Ratio** on your demand, and then the mask will only appear when the zoom ratio is greater than the predefined value.

Figure 1-6 Privacy Mask List

7. Check **Enable Privacy Mask**.

[i] NOTE

You are allowed to draw up to 8 areas for the device.

1.3.5 Configure Scheduled Tasks

Purpose:

You can configure the network device to perform a certain action automatically in a user-defined time period.

Steps:

1. Go to the. Scheduled Task settings interface:

   Configuration> **PTZ** > **Scheduled Tasks**
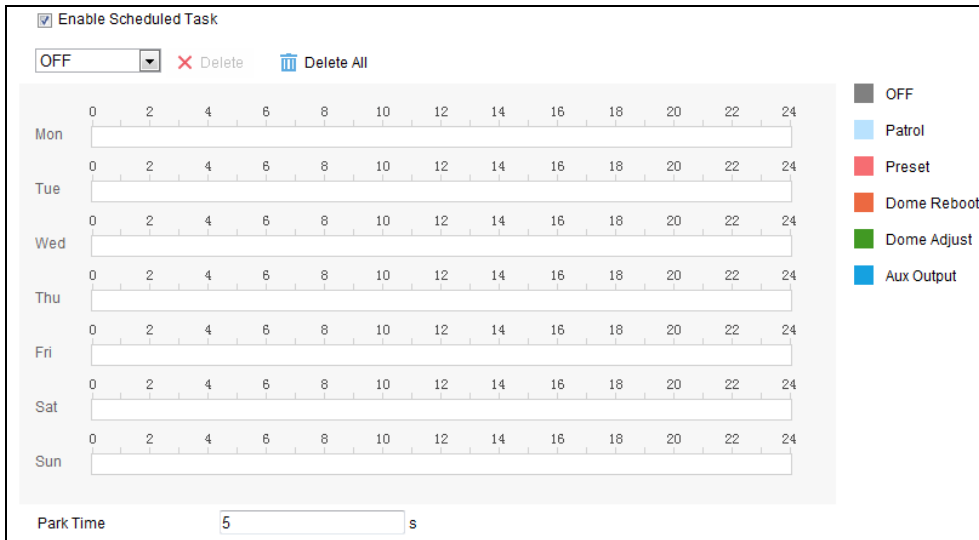
Figure 1-7 Configure Scheduled Tasks

2. Check **Enable Scheduled Task**.

3. Set the **Park Time**. You can set the park time (a period of inactivity) before the device starts the scheduled tasks.

4. Select the task type from the dropdown list. You can choose scan, preset, pattern and etc.
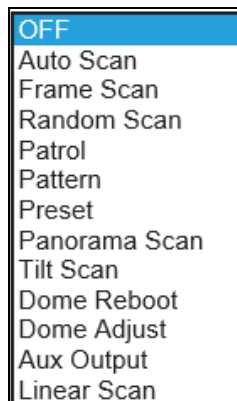
Figure 1-8 Task Types

5. Select the timeline of a certain day, click and drag the the mouse to set the recording schedule (the start time and end time of the recording task).

6. After you set the scheduled task, you can click and copy the task to other days (optional).
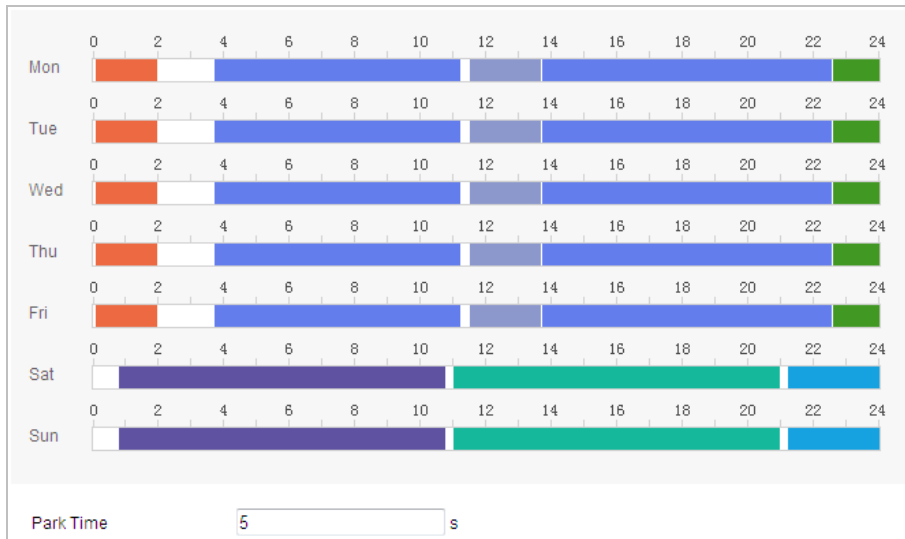
Figure 1-9 Edit the Schedule and Task Type

☐**i NOTE**

The time of each task cannot be overlapped. Up to 10 tasks can be configured for each day.

7.   Click ![Save] .

1.3.6 Clear PTZ Configurations

Purpose:

You can clear PTZ configurations in this interface, including all presets, patrols, privacy masks, PTZ limits, scheduled tasks and park actions.

☐**i NOTE**

Pattern function varies depending on device models.

Steps:

1.   Go to the. Clearing Configuration interface:
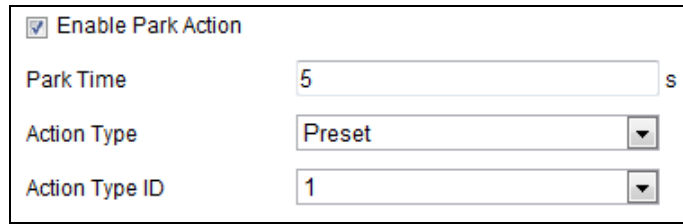
   Configuration > PTZ > Clear Config

2.   Select the items you want to clear.

3.   Click ![Save] .

1.3.7 Prioritize PTZ

Steps:

1.   Go to the Prioritize PTZ interface:

   Configuration > **PTZ** > **Prioritize PTZ**.

Figure 1-10 Position Settings

2. Select Network or RS-485 from the dropdown list

3. Set the delay time (Range 2-200s).

4. Click [💾 Save] .

1.3.8 Position and Vandal-Resistance Alarm Settings

Steps:

1. Go to the. Position Settings interface:

    Configuration > **PTZ** > **Position Settings**.

    [i] NOTE

    The actual interface may vary from model to model.
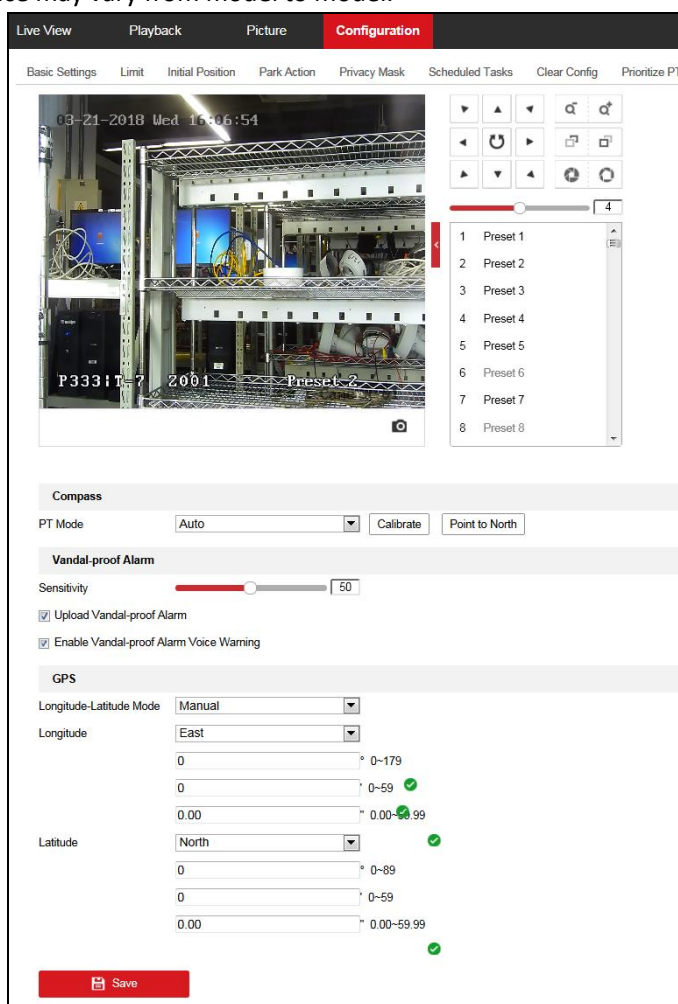
Figure 1-11 Position Settings

2. Set the vandal-resistance alarm.

    (1) Slide the bar to adjust the sensitivity of vandal-resistance detection.

    (2) Check **Upload Vandal-Resistance Alarm** to upload the vandal-resistance alarm.

    (3) Check **Enable Vandal-Resistance Alarm Voice Warning** to enable the voice warning of vandal-resistance alarm.

3. Set GPS settings.

   (1) Select Longitude-Latitude Mode as **Manual**.

   (2) Select longitude and latitude as East or West according to the actual position.

   (3) Input the value of longitude and latitude in three textboxes.

4. Click ![Save] .

1.3.9 Configure Linear Scan

Steps:

1. Go to the linear scan interface:

   Configuration > Advanced Configuration> PTZ > Linear Scan.
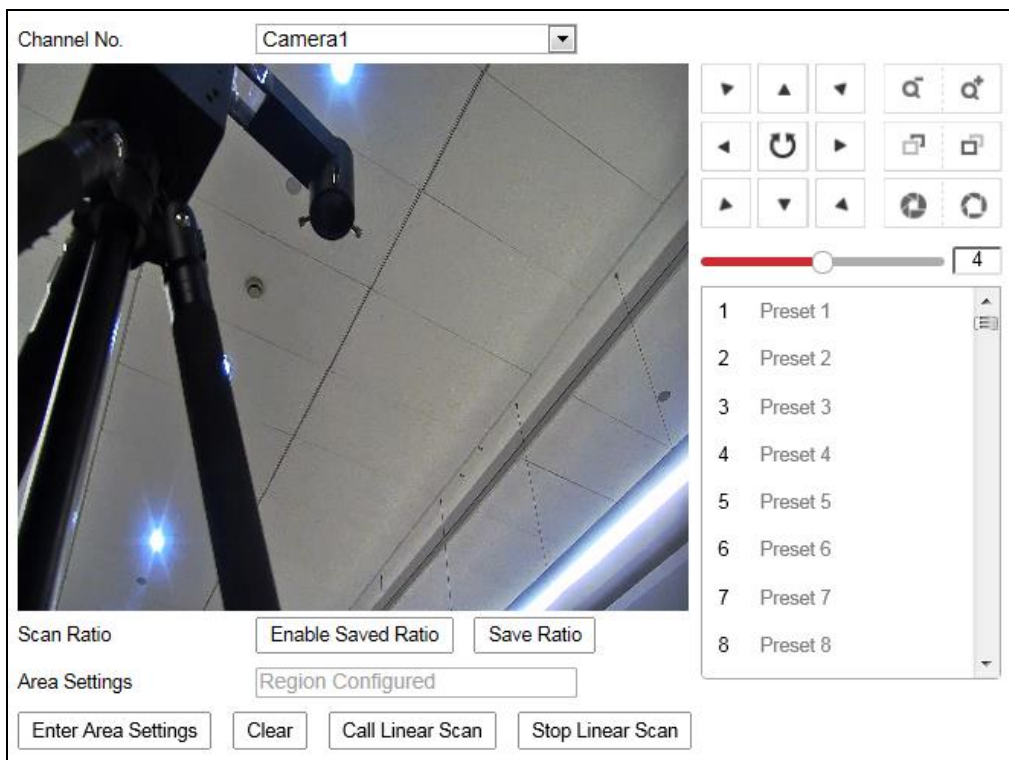
Figure 1-12 Linear Scan

2. Select Camera 1 or Camera 2 from the Channel No. list.

3. Zoom in and zoom out the camera to the appropriate zoom ratio.

4. Click **Save Ratio**.

5. Optionally, you can click **Enable Saved Ratio** to set the camera to the saved zoom ratio.

6. Click **Set Scan Area** and set the left/right/up/down limits with the PTZ control panel and Iris+/- button.

7. Optionally, you can click **Clear** to delete the saved scan area.

8. Click **Save** and the **Linear Scan Area** shows *Scan area saved*.

9. Click **Start Linear Scan** and **Stop Linear Scan** to start and stop the saved linear scan.

VCA Configuration*.*

● **Alarm Input and Output**

Refer to the figure below to configure the alarm devices and sensors.

Alarm In/Out Settings

Start

Connect your camera with the alarm device(s).

Alarm Device (e.g., siren)　　Alarm Device /Alarm Sensor?　　Alarm Sensor (e.g., gas detector)

Connect to Alarm Output Terminal (labeled ALARM OUT)　　Connect to Alarm Input Terminal (labeled ALARM IN)

Turn on the Camera.　　Turn on the Camera.

Go to Event>Basic Event>Alarm Output and set the alarm.　　Go to Event>Basic Event>Alarm Input and set the alarm.

Set the schedule for the alarm device.　　Set the schedule for the sensor.

Set Alarm Linkage for events.　　Link the alarm to e-mail, center, alarm out , etc.

END

[i] **NOTE** The functions vary depending on the models.

● **Bi-spectrum**

The device has two lens, an optical one and a thermal one, and two images are respectively provided by each lens.

● **PTZ Limits**

The device can be programmed to move within the PTZ limits (left/right, up/down).

● **Scan Modes**

The device provides 5 scan modes: auto scan, tilt scan, frame scan, random scan and panorama scan.

● **Presets**

A preset is a predefined image position. When the preset is called, the device will automatically move to the defined position. The presets can be added, modified, deleted and called.

● **Label Display**

The on-screen label of the preset title, azimuth/elevation, zoom, time and device name can be displayed on the monitor. The displays of time and device name can be programmed.

● **Auto Flips**

In manual tracking mode, when a target object goes directly beneath the device, the video will

automatically flips 180 degrees in horizontal direction to maintain continuity of tracking. This function can also be realized by auto mirror image depending on different camera models.

● **Privacy Mask**

This function allows you to block or mask certain area of a scene, for preventing the personal privacy from recording or live viewing. A masked area will move with pan and tilt functions and automatically adjust in size as the lens zooms telephoto and wide.

● **3D Positioning**

In the client software, use the left key of mouse to click on the desired position in the video image and drag a rectangle area in the lower right direction, then the device will move the position to the center and allow the rectangle area to zoom in. Use the left key of mouse to drag a rectangle area in the upper left direction to move the position to the center and allow the rectangle area to zoom out.

● **Proportional Pan/Tilt**

Proportional pan/tilt automatically reduces or increases the pan and tilt speeds according to the amount of zoom. At telephoto zoom settings, the pan and tilt speeds will be slower than at wide zoom settings. This keeps the image from moving too fast on the live view image when there is a large amount of zoom.

● **Auto Focus**

The auto focus enables the camera to focus automatically to maintain clear video images.

● **Day/Night Auto Switch**

The devices deliver color images during the day. And as light diminishes at night, the devices switch to night mode and deliver black and white images with high quality.

● **Slow Shutter**

In slow shutter mode, the shutter speed will automatically slow down in low illumination conditions to maintain clear video images by extending the exposure time. The feature can be enabled or disabled.

● **Backlight Compensation (BLC)**

If you focus on an object against strong backlight, the object will be too dark to be seen clearly. The BLC (Backlight Compensation) function can compensate light to the object in the front to make it clear, but this causes the over-exposure of the background where the light is strong.

● **Wide Dynamic Range (WDR)**

The wide dynamic range (WDR) function helps the camera provide clear images even under back light circumstances. When there are both very bright and very dark areas simultaneously in the field of view, WDR balances the brightness level of the whole image and provide clear images with details.

● **White Balance (WB)**

White balance can remove the unrealistic color casts. White balance is the white rendition function of the camera to adjust the color temperature according to the environment automatically.

● **Patrol**

A patrol is a memorized series of pre-defined preset function. The scanning speed between two presets and the dwell time at the preset are programmable.

● **Pattern**

A pattern is a memorized series of pan, tilt, zoom, and preset functions. By default the focus and

iris are in auto status during the pattern is being memorized.

● **Power Off Memory**

The device supports the power off memory capability with the predefined resume time. It allows the device to resume its previous position after power is restored.

● **Scheduled Task**

A time task is a preconfigured action that can be performed automatically at a specific date and time. The programmable actions include: auto scan, random scan, patrol 1-8 ,pattern 1-4, preset 1-8,frame scan, panorama scan, tilt scan, day, night, reboot, PT adjust, Aux Output, etc.

● **Park Action**

This feature allows the device to start a predefined action automatically after a period of inactivity.

● **3D Digital Noise Reduction**

Comparing with the general 2D digital noise reduction, the 3D digital noise reduction function processes the noise between two frames besides processing the noise in one frame. The noise will be much less and the video will be clearer.

Chapter 2   Network Connection

Before you start:
- If you want to set the network device via a LAN (Local Area Network), please refer to *Section 2.1.*
- If you want to set the network device via a WAN (Wide Area Network), please refer to *Section 2.2.*

2.1 Set the Network Device over the LAN

Purpose:

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

NOTE

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

2.1.1 Wiring over the LAN

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

Purpose:
- To test the network device, you can directly connect the network device to the computer with a network cable as shown in Figure 2-1.
- Refer to the Figure 2-2 to set the network device over the LAN via a switch or a router.
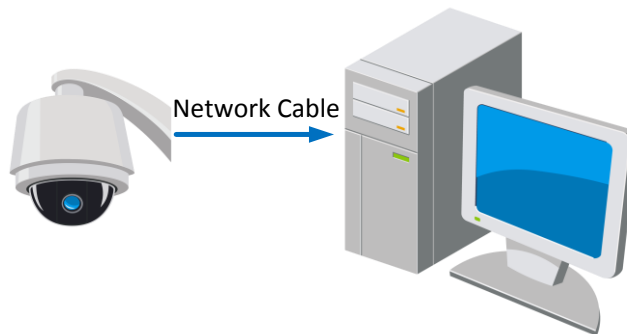
Figure 2-1 Connect Directly
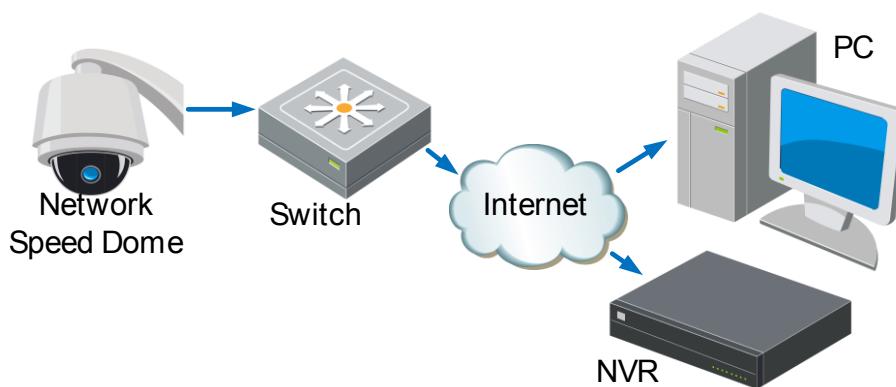
Figure 2-2 Connect via a Switch or a Router

2.1.2 Activate the Device

Purpose:

You are required to activate the device first before you can use the device.

Activation via Web Browser, Activation via SADP, and Activation via client software are supported. In the following sections, activation via web browser and SADP will be taken as examples. You may refer to the user manual of the device for the details of activation via client software.

◆ Activate via Web Browser

Steps:

1.   Power on the device, and connect the device to the network.
2.   Input the IP address into the address bar of the web browser, and click **Enter** to go to the activation interface.

  [i] NOTE
  The default IP address of the device is 192.168.1.64.

Figure 2-3 Activation Interface(Web)

3.   Create a password and input the password into the password field.
4.   Confirm the password.

  ⚠ WARNING

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

5. Click **OK**.

◆ Activate via SADP Software

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

Get the SADP software from the supplied disk or the official website, and install the SADP according to the prompts. Follow the steps to activate the device*.*

Steps:

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

2. Check the device status from the device list, and select an inactive device.
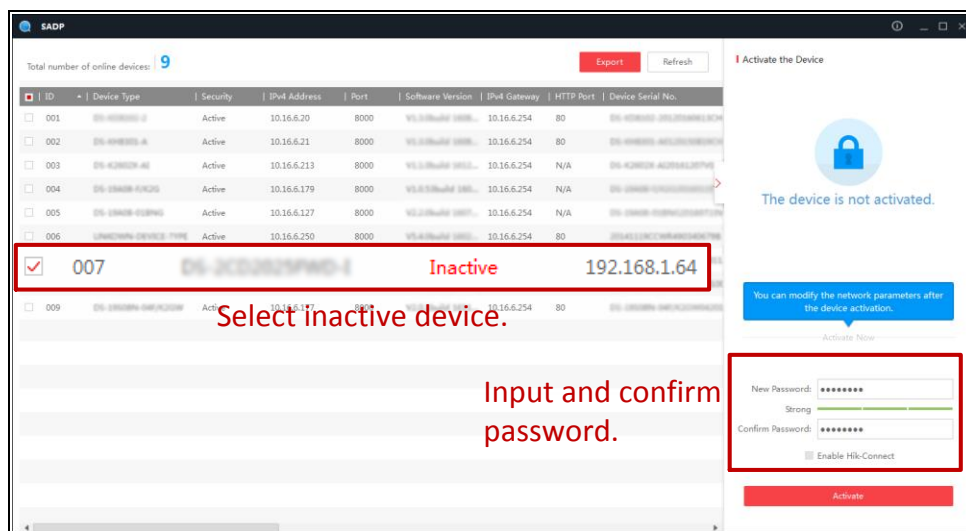
Figure 2-4 SADP Interface

⚠ WARNING

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

3. Create a password and input the password in the password field, and confirm the password.

4. Click **OK**.

   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 then try again.

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

Figure 2-5 Modify the IP Address

6. Input the password and click **Save**.

2.2 Set the Network Device over the WAN

Purpose:

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

2.2.1 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 device via a router or connect it to the WAN directly.

● **Connect the network device via a router**

Steps:

1. Connect the network device to the router.
2. Assign a LAN IP address, the subnet mask and the gateway. Refer to ***Section 2.1.2*** for detailed IP address configuration of the device.
3. Save the static IP in the router.
4. 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.
5. Visit the network device through a web browser or the client software over the internet.
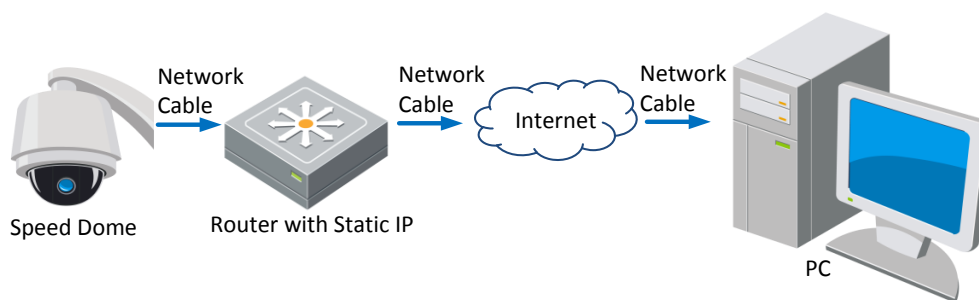
Figure 2-6 Access the Device through Router with Static IP

● **Connect the network device with static IP directly**

You can also save the static IP in the device and directly connect it to the internet without using a router. Refer to *Section 2.1.2* for detailed IP address configuration of the device.
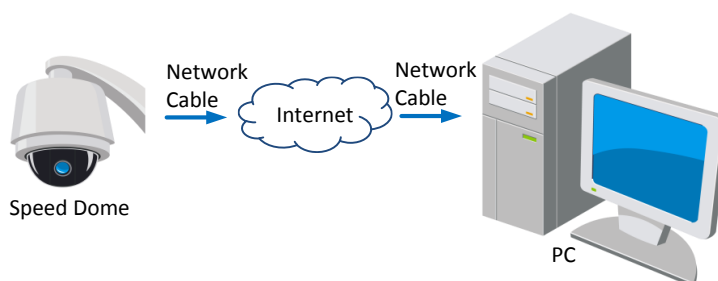
Figure 2-7 Access the Device with Static IP Directly

2.2.2 Dynamic IP Connection

Before you start:

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

● **Connect the network device via a router**

Steps:
1. Connect the network device to the router.
2. In the device, assign a LAN IP address, the subnet mask and the gateway. Refer to *Section 2.1.2* for detailed LAN configuration.
3. In the router, set the PPPoE user name, password and confirm the password.

⚠ WARNING

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

4. 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.

5. Apply a domain name from a domain name provider.

6. Configure the DDNS settings.

7. Visit the device via the applied domain name.

● **Connecting the network device via a modem**

Purpose:

This device supports the PPPoE auto dial-up function. The device gets a public IP address by ADSL dial-up after the device is connected to a modem. You need to configure the PPPoE parameters of the network device. Refer to *Section 7.1.1 Configure PPPoE Settings* for detailed configuration.
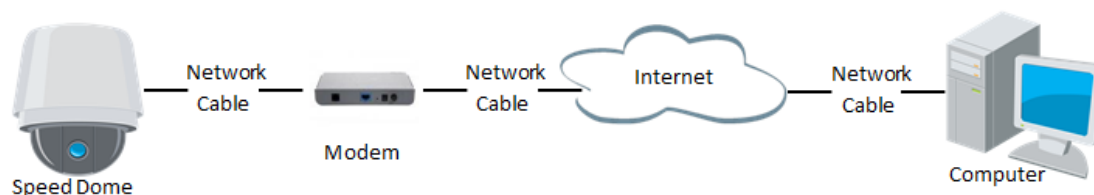
Figure 2-8 Access the Device with Dynamic IP

[i] NOTE

The obtained IP address is dynamically assigned via PPPoE, so the IP address always changes after rebooting the device. To solve the inconvenience of the dynamic IP, you need to get a domain name from the DDNS provider (E.g. DynDns.com). Please follow below steps for normal domain name resolution and private domain name resolution to solve the problem.

◆ Normal Domain Name Resolution
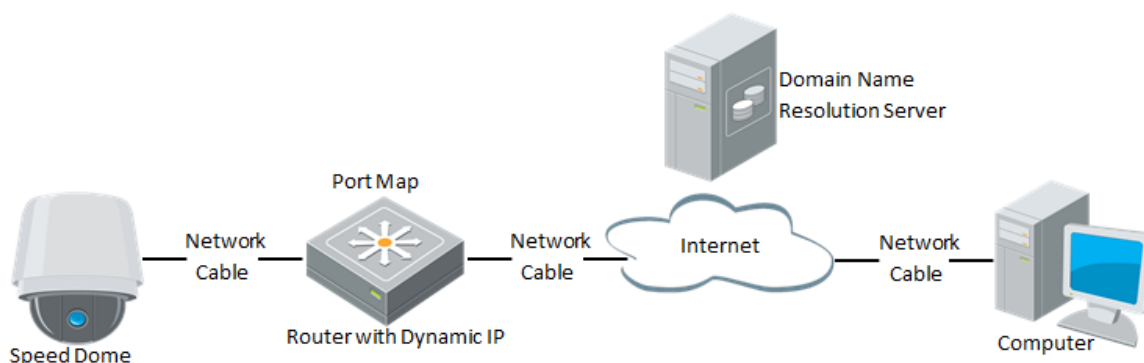
Figure 2-9 Normal Domain Name Resolution

Steps:

1. Apply a domain name from a domain name provider.

2. Configure the DDNS settings in the **DDNS Settings** interface of the network device. Refer to *Section 7.1.1 Configure DDNS* for detailed configuration.

3. Visit the device via the applied domain name.

◆ Private Domain Name Resolution
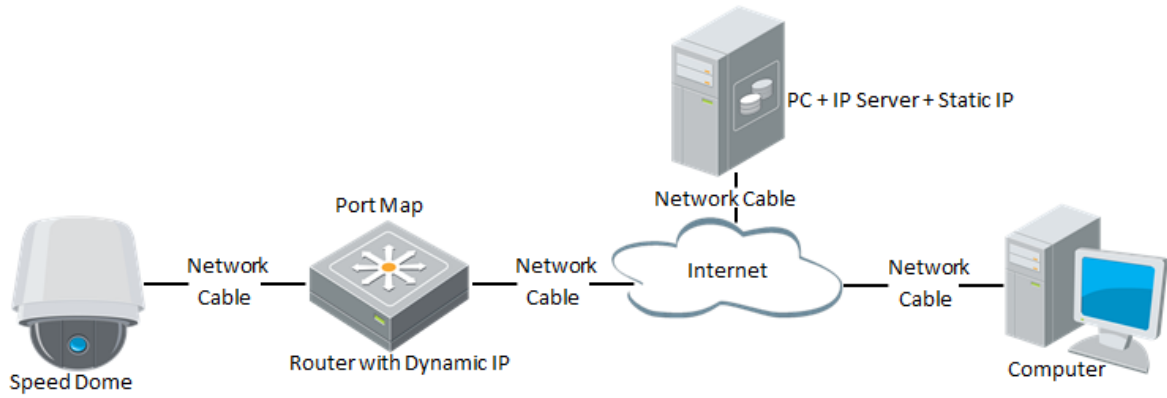
Figure 2-10 Private Domain Name Resolution

Steps:

1. Install and run the IP Server software in a computer with a static IP.
2. Access the network device through the LAN with a web browser or the client software.
3. Enable DDNS and select IP Server as the protocol type. Refer to **Section 7.1.1 Configure DDNS** for detailed configuration.

Chapter 3   Access to the Network Device

You can access to the device by using web browser or client software. Here is the introduction of accessing by web browser.

Steps:

1. Open the web browser.
2. In the address field, input the IP address of the network device, e.g., 192.168.1.64 and press the **Enter** key to go to the. login interface.
3. Activate the device for the first time using, refer to the ***section 2.1.2 Activate the Device***.
4. Select English as the interface language on the top-right of login interface.
5. Input the user name and password and click   Login   .

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

   [i] **NOTE**

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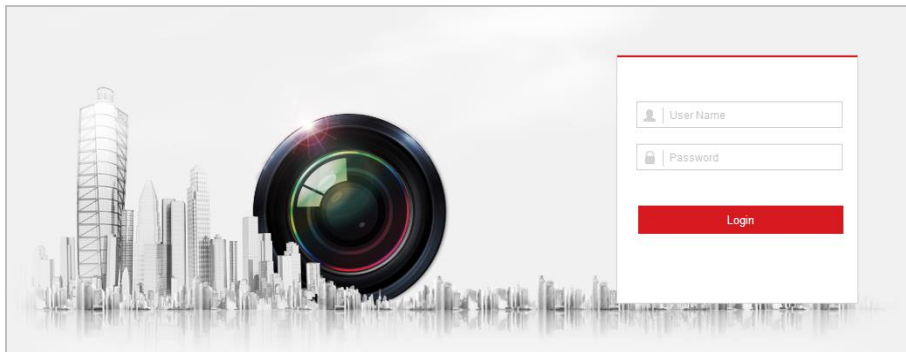

Figure 3-1 Login Interface

6. Install the plug-in before viewing the live video and operating the device. Please follow the installation prompts to install the plug-in.

   [i] **NOTE**

   You may have to close the web browser to install the plug-in. Please reopen the web browser and log in again after installing the plug-in.
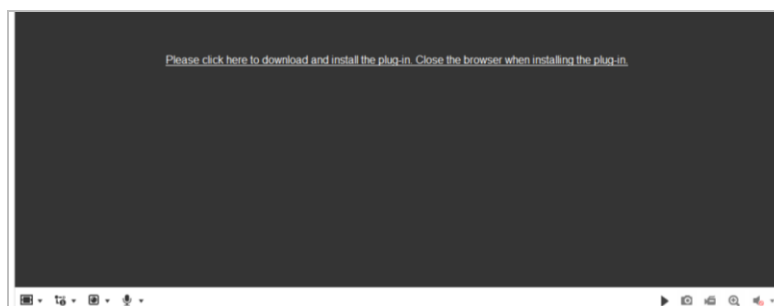
Figure 3-2 Download and Install Plug-in

Chapter 4   Basic Operations

In this and the following chapters, operation of the device by the web browser will be taken as an example.

4.1 Configure Local Parameters

NOTE

The local configuration refers to the parameters of the live view and other operations using the web browser.

Steps:
1.   Go to the. Local Configuration interface:
     Configuration > Local

Figure 4-1 Local Configuration Interface

2.   Configure the following settings:
● **Live View Parameters:** Set the protocol type, play performance, rules and image format.

◆   **Protocol Type:** TCP, UDP, MULTICAST and HTTP are selectable.

TCP: Ensures complete delivery of streaming data and better video quality, yet the real-time transmission will be affected.

UDP: Provides real-time audio and video streams.

MULTICAST: It's recommended to select the protocol type to **MULTICAST** when using the Multicast function.

HTTP: Allows the same quality as of TCP without setting specific ports for streaming

under some network environments.
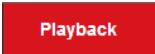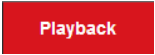
- ♦ **Play Performance:** Set the play performance to Shortest Delay, or Auto.
- ♦ **Rules:** You can enable or disable the rules of dynamic analysis for motion here.
- ♦ **Fire Point: Locate Highest Temperature Point**, and **Frame Fire Point** are selectable. Display the highest temperature area as point or frame.
- ♦ **Display Temperature Info.:** Display temperature information or not with temperature measurement rule configured.
- ♦ **Display Temperature Info. on Capture:** Display temperature information on the capture or not.
- ♦ **Image Format:** The captured pictures can be saved as different format. JPEG and BMP are available.
- ♦ **Display Rules Info. on Capture:** Display rules information on the capture or not.
- ● **Record File Settings:** Set the saving path of the video files.
  - ♦ **Record File Size:** Select the packed size of manually recorded and downloaded video files. The size can be set to 256M, 512M or 1G.
  - ♦ **Save record files to:** Set the saving path for the manually recorded video files.
  - ♦ **Save downloaded files to:** Set the saving path for the downloaded video files in

     interface.

- ● **Picture and Clip Settings:** Set the saving paths of the captured pictures and clipped video files.
  - ♦ **Save snapshots in live view to:** Set the saving path of the manually captured pictures in

     interface.

  - ♦ **Save snapshots when playback to:** Set the saving path of the captured pictures in

     interface.

  - ♦ **Save clips to:** Set the saving path of the clipped video files in interface.
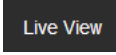
   NOTE
  - ● You can click **Browse** to change the directory for saving video files, clips and pictures.
  - ● You can click **Open** to directly open the video files, clips and pictures.

3. Click .

4.2 Live View Page

Purpose:

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

Log in the network device to go to the. live view page, or you can click on the menu bar of the main page to go to the. live view page.

Descriptions of the live view page:
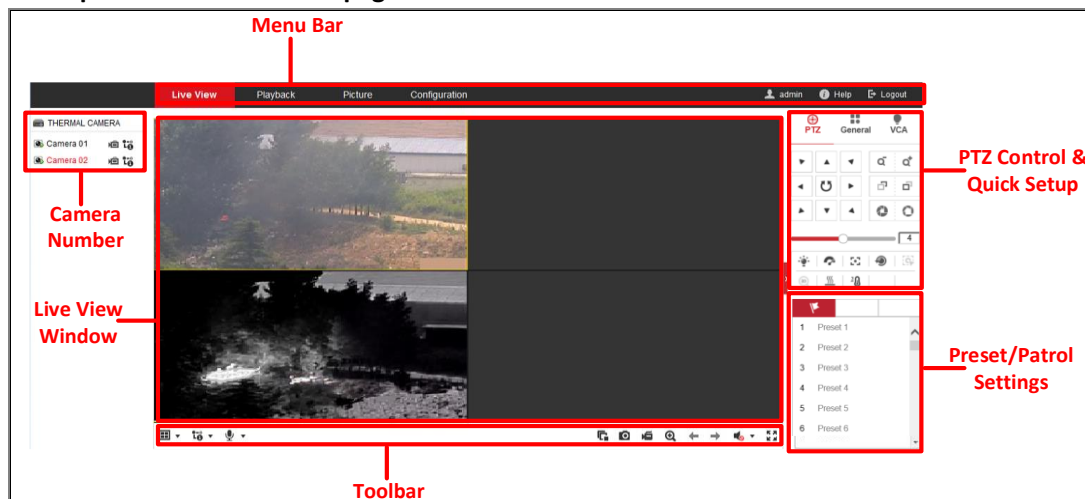
Figure 4-2 Live View Page

Menu Bar:

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

Click   to display the help file of the device.

Click   to logout the system.

Live View Window:

Display the live video.

Toolbar:

Operations on the live view page, e.g., live view, capture, record, audio on/off, regional exposure, regional focus, etc.

PTZ Control:

Panning, tilting, focusing and zooming actions of the device. The lighter, wiper, one-touch focus and lens initialization control.

Preset/patrol/pattern:

Set and call the preset/patrol/pattern for the device.

 NOTE

Pattern function varies depending on the models of device.

Live View Parameters:

Configure the image size, stream type, plug-in type, and two-way audio of the live video.

4.3 Start Live View

In the live view window as shown in Figure 4-3, click   on the toolbar to start the live view of the device.

Figure 4-3 Start Live View

4.3.1 Toolbar Description

Table 4-1 Descriptions of the Toolbar

Icon	Description	Icon	Description
/	Start/Stop Live view.		Manually capture the pictures.
/ / /	Display in 1×1/2×2/3×3/4×4 window.	/	Live view with the main/sub stream.
/	Manual start/stop recording.	/	Start/Stop Two-way Audio.
/	View previous / next page.	/	Mute/Audio on and adjust volume
	Show full screen	/	Enable / Disable Regional Focus

● Double-click on the live video to switch the current live view into full-screen or return to normal mode from the full-screen.

● Click ▼ to select from / / / and display live video in 1 × 1/2 × 2/3 × 3/4 × 4 window.

● Click ▼ to select from / and display live video with the main/ sub stream. The main stream is with a relatively high resolution and needs much bandwidth. The default setting of stream type is .

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● Click ![mic icon] ▼ and it displays ![mic icon]. Click ![mic icon] to enable two-way audio and the icon turns into ![mic icon]. Click the icon again to stop two-way audio.

● Click ![live view icon] to start live view and the icon turns into ![live view icon]. Click the icon again to stop live view.

● Click ![capture icon] to capture the picture.

● Click ![record icon] to start recording and the icon turns into ![record icon]. Click the icon again to stop recording.

● Click ![arrow icons] to switch between the optical channel and thermal channel when selecting 1 × 1 live view window.

● Click the ![focus icon] on the toolbar to go to the. regional focus operation mode and the icon turns into ![focus icon]. Then click and drag the mouse to draw a rectangle on the image as the desired focus region.

● Click ![volume icon] ▼ to display the ![volume slider]. Drag the slider to adjust the volumn.

● Click ![fullscreen icon] to show full screen of live view, press Esc to exit.

![i NOTE icon] **NOTE**

Before using the two-way audio or recording with audio functions, please set the **Stream Type** to **Video & Audio** referring to *Section 7.2.1 Configure Video Settings*.

Please refer to the following sections for more information:

● Configure remote recording in *Section 5.1.1 Configure Recording Schedule*.

● Setting the image quality of the live video in *Section 7.3 Configure Image Settings.* and *Section 7.2.1 Configure Video Settings*.

● Setting the OSD text on live video in *Section 7.3.2 Configure OSD Settings*.

4.4 Operate PTZ Control

Purpose:

In the live view interface, you can use the PTZ control buttons to control panning, tilting and zooming.

4.4.1 PTZ Control Panel

On the live view page, click ![panel icon] to show the PTZ control panel or click ![panel icon] to hide it.

Click the direction buttons to control the pan/tilt movements.

Click the zoom/iris/focus buttons to realize lens control.

Figure 4-4 PTZ Control Panel

Table 4-2 Descriptions of PTZ Control Panel

Button	Name	Description
	PTZ Control Panel	Hold and press the direction button to pan/tilt the device. Click ↻ and the device keeps panning, the icon turns into ↻. Click the icon again to stop the device.
	Zoom out/in	Click Q^+, the lens zooms in, click Q^-, and the lens zooms out.
	Focus near/far	Click ⊡, the lens focus far and the items far away gets clear. Click ⊡, the lens focus near and the items nearby gets clear.

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Button	Name	Description
Iris close/open	Iris close/open	When the image is too dark, click ○ to open the iris. When the image is too bright, click ◐ to close the iris.
Auxiliary Functions panel	Auxiliary Functions	The auxiliary functions include light, wiper, auxiliary focus, lens initialization, manual tracking, 3D positioning, de-icing heater, click-to-thermometry, synchronize FOV
▬▬▬□▬▬▬ 4	Speed Adjustment	Adjust speed of pan/tilt movements.
⚑	Preset	Refer to **4.4.3** for detailed information of setting preset.
⟳	Patrol	Refer to **4.4.3** for detailed information of setting patrol.
⤴	Pattern	Refer to**4.4.5** for detailed information of setting pattern.

● **Buttons on the Preset/Patrol/Patterns interface:**

Table 4-3 Descriptions of Buttons

Buttons	Description
▶	Start the selected patrol/pattern.
■	Stop current patrol/pattern.
✿	Set the selected preset/patrol.
✕	Delete the selected preset/patrol/pattern.
⊙	Start recording a pattern.
⊙	Stop recording the pattern.

4.4.2 Auxiliary Functions

The Auxiliary functions panel is shown in the figure below:

Figure 4-5 Auxiliary Functions

● 🔆 Light

Click 🔆 to enable/disable the light supplement of the device. This function is reserved.

● 🔧 Wiper

Click 🔧 to move the wiper once.

● ⌗ Auxiliary Focus

The auxiliary focus function is reserved.

● 🔄

Click 🔄 and the lens operates the movements for initialization.

● ♨

Click ♨ to enable manual De-Icing function of the device.

📖 **NOTE**

The de-icing function takes effect when the device inner temperature is ≤ 30°C (86°F).

● 🌡

Click 🌡 to enable/disable the manual thermometry function of the device. You can click any position on the interface to show the real temperature.

● 🔄

Click 🔄 to synchronize the FOV of optical lens and thermal lens

● 🎯 Manual Tracking

Before you start:

Go to **Configuration > System > Maintenance > VCA Resource Type** and select the VCA Resource as **Temperature Measurement + Behavior Analysis**.

Then go to the. VCA Information Configuration interface:

Configuration > VCA Configuration > VCA Info and enable Intelligent Analysis first.

Steps:

1. Click 🎯 on the toolbar of live view interface.

2. Click a moving object in the live video.
   The device will track the object automatically.

● 🔍 3D Positioning

Steps:

1. Click 🔍 on the toolbar of live view interface.

2. Operate the 3D positioning function:

3. Click a position of the live video. The corresponding position will be moved to the center of the live video.

4. Hold down the left mouse button and drag the mouse to the lower right on the live video. The corresponding position will be moved to the center of the live video and zoomed in.

5. Hold down the left mouse button and drag the mouse to the upper left on the live video. The corresponding position will be moved to the center of the live video and zoomed out.

4.4.3 Set / Call a Preset

Purpose:

A preset is a predefined image position. For the defined preset, you can click the calling button to quickly view the desired image position.

● **Set a Preset:**

Steps:

1. In the PTZ control panel, select a preset number from the preset list.
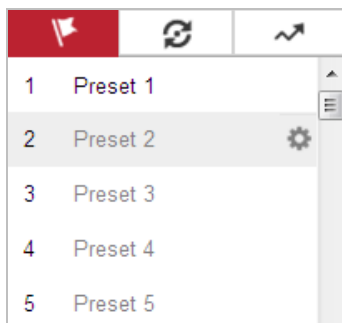
Figure 4-6 Set a Preset

2. Use the PTZ control buttons to move the lens to the desired position.

   • Pan the speed dome to the right or left.

   • Tilt the speed dome up or down.

   • Zoom in or out.

   • Refocus the lens.

3. Click ⚙ to finish the setting of the current preset.

4. Edit a preset name by double clicking on the default name such as preset 1. (The pre-defined presets are named already and not configurable. Please refer to the user manual for detailed function description.)

5. You can click ✕ to delete the preset.

   ☐ℹ **NOTE**

You can configure up to 256 presets.

● **Call a Preset:**

In the PTZ control panel, select a defined preset from the list and click ↱ to call the preset.
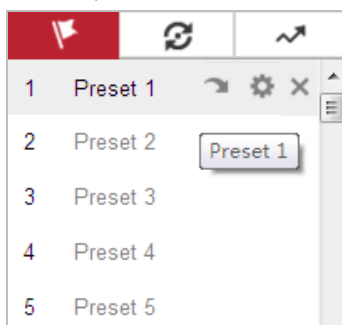
Figure 4-7 Call a Preset

For convenient preset selection, refer to the following steps to navigate to the preset you want.

Steps:

1. Select any preset from the list.

2. Click the preset number you need on the keyboard.

[i] NOTE

● The following presets are predefined with special commands. You can only call them but not configure them. For instance, preset 99 is the "Start auto scan". If you call the preset 99, the speed dome starts auto scan function.

● Pattern function varies depending on the models of speed dome.

Table 4-4 Special Presets

Preset	Function	Preset	Function
33	Auto flip	92	Start to set limit stops
34	Back to initial position	93	Set limit stops manually
35	Call patrol 1	94	Remote reboot
36	Call patrol 2	95	Call OSD menu
37	Call patrol 3	96	Stop a scan
38	Call patrol 4	97	Start random scan
39	Day mode (IR cut filter in)	98	Start frame scan
40	Night mode (IR cut filter out)	99	Start auto scan
41	Call pattern 1	100	Start tilt scan
42	Call pattern 2	101	Start panorama scan
43	Call pattern 3	102	Call patrol 5
44	Call pattern 4	103	Call patrol 6
45	One-touch Patrol	104	Call patrol 7
90	Wiper	105	Call patrol 8
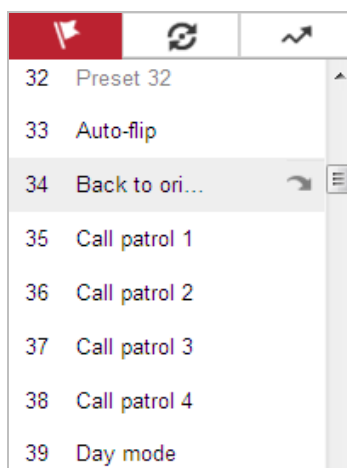
Figure 4-8 Special Preset

[i] NOTE

You may need to use the OSD (On Screen Display) menu when controlling the speed dome remotely. To display the OSD menu on the live view screen, you can call the preset number 95.

4.4.4 Set / Call a Patrol

Purpose:

A patrol is a memorized series of preset function. It can be configured and called on the patrol settings interface. There are up to 8 patrols for customizing. A patrol can be configured with 32 presets.

Before you start:

Please make sure that the presets you want to add into a patrol have been defined.

● **Set a Patrol:**

Steps:

1. In the PTZ control panel, click <img> to go to the. patrol settings interface.

2. Select a patrol number from the list and click <img>.

3. Click <img> to go to the. adding interface of preset, as shown in Figure 4-9.

Figure 4-9 Add Presets

4. Configure the preset number, patrol time and patrol speed.

Name	Description
Patrol Time	It is the duration staying on one patrol point. The device moves to another patrol point after the patrol time.
Patrol Speed	It is the speed of moving from one preset to another.

5. Click **OK** to save a preset into the patrol.
6. Repeat the steps from 3 to 5 to add more presets.
7. Click **OK** to save all the patrol settings.

● **Call a Patrol:**

In the PTZ control panel, select a defined patrol from the list and click <img> to call the patrol, as shown in Figure 4-10.
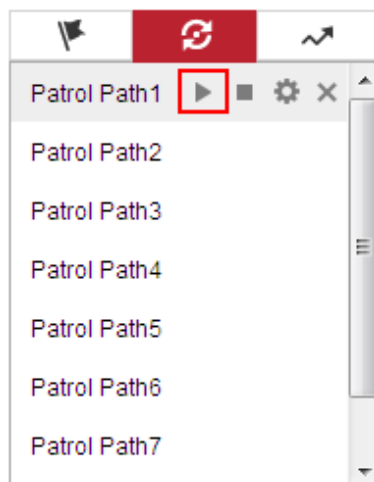
Figure 4-10 Call a Preset

4.4.5 Set / Call a Pattern

Purpose:

A pattern is a memorized series of pan, tilt, zoom, and preset functions. It can be called on the pattern settings interface. There are up to 4 patterns for customizing.

□i **NOTE**

Pattern function varies depending on device models.

● **Set a Pattern:**

Steps:

1. In the PTZ control panel, click [image] to go to the. pattern settings interface.

2. Select a pattern number from the list as shown in Figure 4-11.
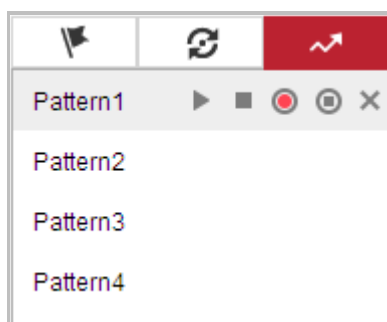
Figure 4-11 Patterns Settings Interface

3. Click [image] to enable recording the panning, tilting and zooming actions.

4. Use the PTZ control buttons to move the lens to the desired position after the information of **PROGRAM PATTERN REMAINNING MEMORY(%)** is displayed on the screen.

● Pan the device to the right or left.

● Tilt the device up or down.

● Zoom in or out.

● Refocus the lens.

5. Click to save all the pattern settings.

● **Buttons on the Patterns interface:**

Buttons	Description
▶	Start the selected patrol/pattern.
■	Stop current patrol/pattern.
⚙	Set the selected preset/patrol.
✕	Delete the selected preset/patrol/pattern.
◉	Start recording a pattern.
●	Stop recording the pattern.

[i] NOTE

● These 4 patterns can be operated separately and with no priority level.
● When configuring and calling the pattern, proportional pan is valid; the limit stops and auto flip will be invalid; and the 3D positioning operation is not supported.

4.5 Quick Setup

It allows quick setup of image/video related parameters on live view page.
Steps:

1. Click ❙ button on the right of the live view page to show the PTZ control panel. Click ❙ to hide it.
2. Specify **Display**, **OSD**, **Video/Audio,** and **VCA** resource parameters. For more settings, go to **Configuration -> Image**, **Configuration -> Video/Audio** and **Configuration -> VCA**.

● **Display Settings**
    Set the brightness, contrast, palettes, DNR, DDE, etc.

● **OSD (On Screen Display)**
    Set text information displayed on screen. Save the settings after configuration.

● **Video/Audio**
    Resolution and Max. Bit rate are adjustable. Click to change stream.

● **VCA Resource**
    Select VCA resource type as required.
    Note:
        ● VCA Resource function varies according to different camera models.
        ● VCA options are mutually exclusive.
        ● The function may not be supported by some camera models.
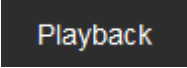
4.6 Playback

Purpose:

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

4.6.1 Play Back Video Files

Steps:

1. Click **Playback** on the menu bar to enter playback interface.
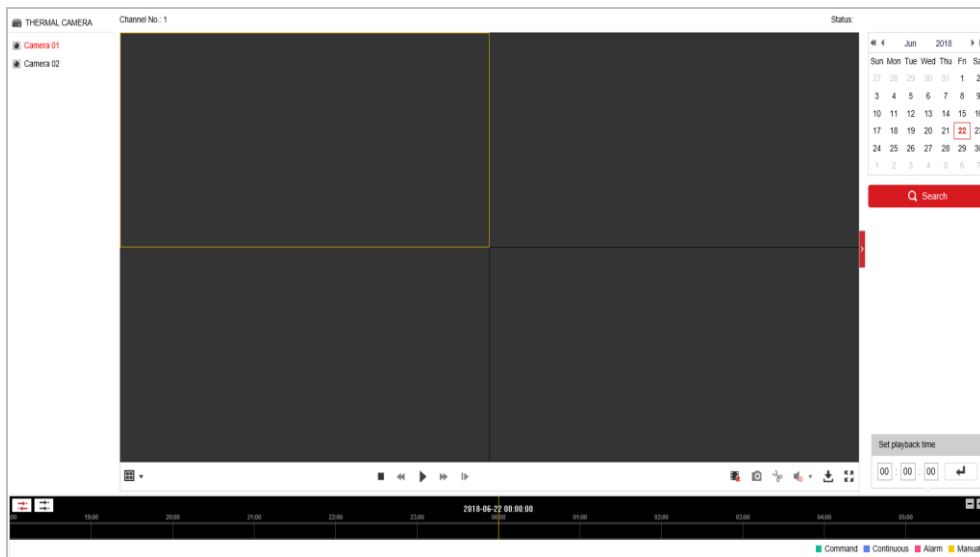
Figure 4-12 Playback Interface

2. Select the date and click **Q Search**.
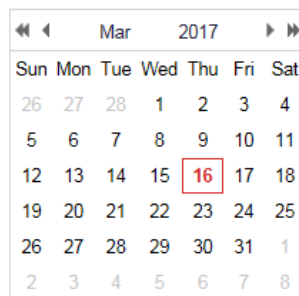
Figure 4-13 Search Video

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 4-14 Playback Toolbar

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Table 4-5 Description of the buttons

Button	Operation	Button	Operation
▶	Play	▢	Capture a picture
❚❚	Pause	✂ / ✂	Start/Stop clipping video files
■	Stop	🔊 ▬□▬ / 🔇	Audio on and adjust volume/Mute
◀◀	Speed down	⬇	Download
▶▶	Speed up	❙▶	Playback by frame
▣/⊞/⊞/⊞	Display in 1×1/2×2/3×3/4×4 window.	⤡	Show full screen
▦✗	Stop all Playback	⇄	Play recorded videos of different cameras asynchronously.
⇄	Play recorded videos of different cameras synchronously.		

📖 **NOTE**

You can choose the file paths locally for downloaded playback video files and pictures in Local Configuration interface. Please refer to **Section 4.1 Configure Local Parameters** for details.

Drag the progress bar with the mouse to locate the exact playback point. 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.
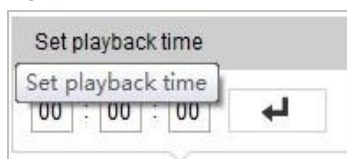
Figure 4-15 Set Playback Time
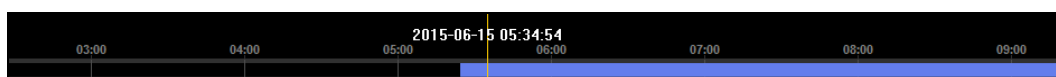
Figure 4-16 Progress Bar

The different colors of the video on the progress bar stand for the different video types as shown in Figure 4-17.
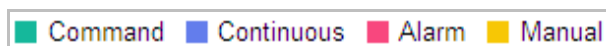
Figure 4-17 Video Types

Synchronously play recorded videos of different channels

Steps:

1. Click [icon] to enable synchronous playback function.

2. Choose camera channels.
3. Setting date and time of recorded videos.

4. Click [icon] to view the videos of optical channel and thermal channel synchronously.

Asynchronously play recorded videos of different channels

Steps:

1. Click [icon] to enable asynchronous playback function.

2. Choose Channel No: 1.
3. Setting date and time of recorded videos.
4. Choose Channel No: 2.
5. Setting date and time of recorded videos.
6. Repeat step 2-5 to configure the date and time for different channels separately.

7. Click [icon] to view the videos of optical channel and thermal channel asynchronously.

4.6.2 Download Video Files

Steps:

1. Click [icon]. The pop-up menu is shown in Figure 4-18.

2. Set the start time and end time. Click **Search**. The corresponding video files are listed on the left.
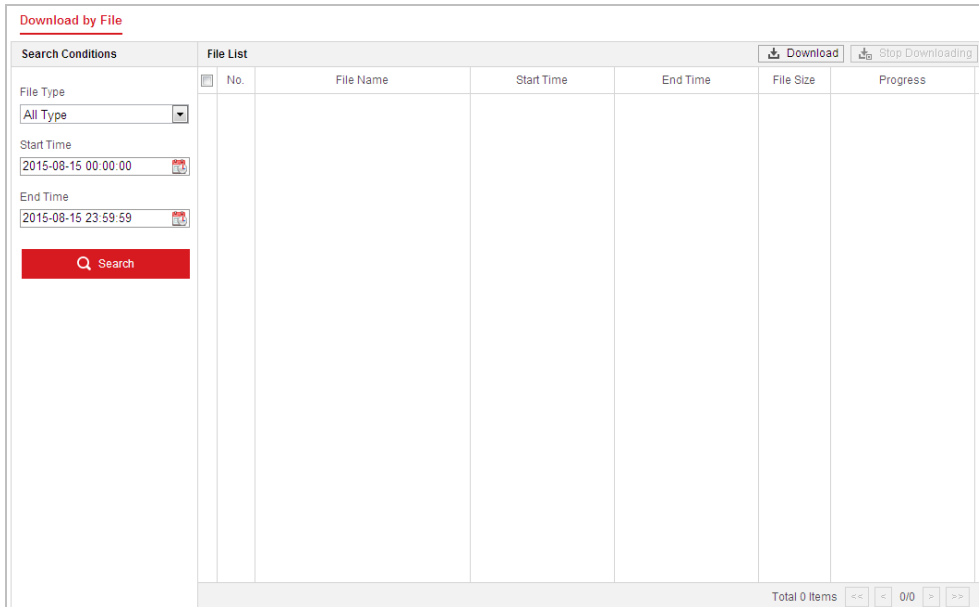
Figure 4-18 Video Downloading interface

3. Select the video files that you need to download.

4. Click ![Download].

4.7 Picture

Purpose:

This section explains how to view the captured picture files stored in the network disks or the memory cards and download the captured pictures.

Steps:

1. Click ![Picture].
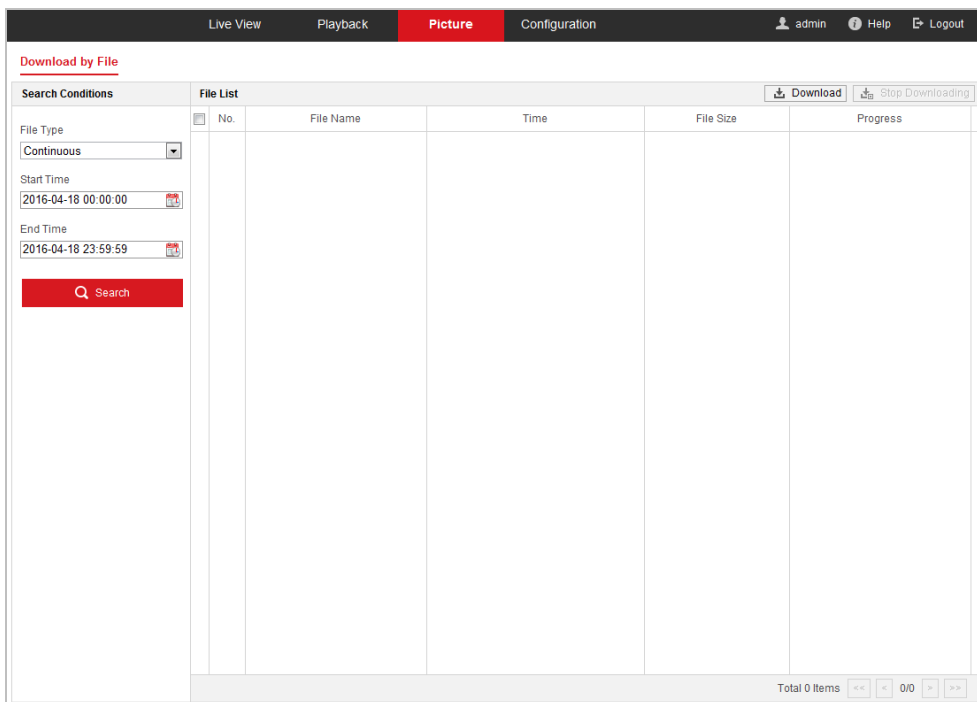
Figure 4-19 Picture Interface

2.   Select the channel No. and file type of capturing the pictures from the list as timing, alarm, motion, etc.

3.   Set the start time and end time. Click **Search**. The corresponding picture files will be listed.

4.   Select the files that you need to download.

5.   Click .

Chapter 5   System Configuration

5.1   Storage Settings

Before you start:

To configure record settings, please make sure that you have the network storage device within the network or the memory card inserted in your device.

5.1.1   Configure Recording Schedule

Purpose:

There are two kinds of recording for the devices: 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 memory card (if supported) or in the network disk.

Steps:

1. Go to **Record Schedule** settings interface:

   Configuration > Storage > Schedule Settings > Record Schedule
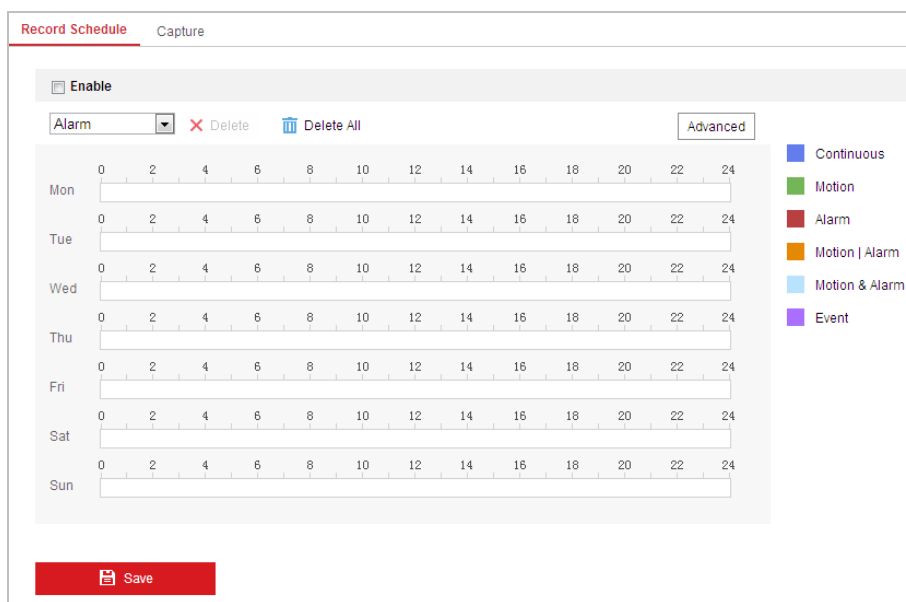
Figure 5-1 Recording Schedule Interface

2. Check **Enable**.

3. Click [Advanced] to set the advanced settings of the device.
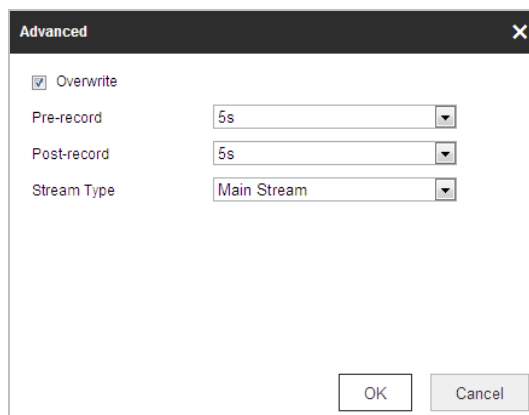
Figure 5-2 Record Parameters

- **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 device starts to record at 9:59:55.

  [i] NOTE

  The pre-record time changes according to the video bitrate.

- **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 device records until 11:00:05.

- **Stream Type**: You can select the stream type for recording; Main Stream, Sub Stream and Third Stream are selectable. If you select the sub stream, you can record for a longer time with the same storage capacity.

  [i] NOTE

  The Pre-record and Post-record parameters vary depending on the models of device.

4. Click **OK**.
5. Select a Record Type. The record type can be Continuous, Motion, Alarm, Motion | Alarm, Motion & Alarm, and Event.

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

   - Record Triggered by Motion Detection: If you select Motion, the video will be recorded when the motion is detected. Besides configure the recording schedule, you have to set the motion detection area and check **Trigger Channel** in the Linkage Method of Motion Detection settings interface. For detailed information, please refer to Section ***Motion Detection***.

   - Record Triggered by Alarm: If you select Alarm, the video will be recorded when the alarm is triggered via the external alarm input channels. Besides configure the recording schedule, you have to set the Alarm Type and check **Trigger Channel** in the Linkage Method of Alarm Input settings interface. For detailed information, please refer to Section ***Alarm Input***.

   - Record Triggered by Motion & Alarm: If you select Motion & Alarm, the video will be recorded when the motion and alarm are triggered at the same time. Besides configure the recording schedule, you have to configure the settings on the Motion Detection and Alarm Input settings interfaces.

   - Record Triggered by Motion | Alarm: If you select Motion | Alarm, the video will be

recorded when the external alarm is triggered or the motion is detected. Besides configure the recording schedule, you have to configure the settings on the Motion Detection and Alarm Input settings interfaces.

● Record Triggered by VCA events: If you select VCA, the video will be recorded when the either of the VCA events is triggered. Besides configure the recording schedule, you have to configure the settings on the VCA interface.

[i] NOTE

VCA function varies depending on the models of device.

● Record Triggered by Event: If you select to record by event, the video will be recorded when any of the events is triggered.

6. Click [🖫 Save] .

5.1.2 Configure 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.

Steps:

1. Go to the. Snapshot settings interface:

   Configuration > Storage > Schedule Settings > Capture
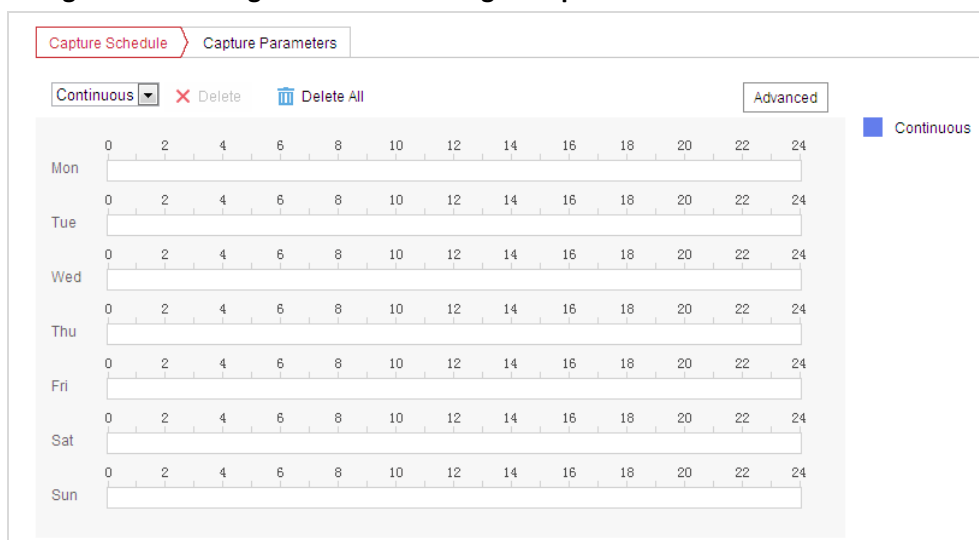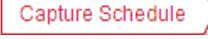
Figure 5-3 Snapshot Settings

2. Click [Capture Schedule ⟩] .

3. Select the timeline of a certain day, click and drag the left button of the mouse to set the capture schedule (the start time and end time of the recording task).

4. After you set the scheduled task, you can click [📋] and copy the task to other days (optional).

5. After setting the capture schedule, you can click a capture segment to display the

segment capture settings interface to edit the segment capture parameters. (optional)
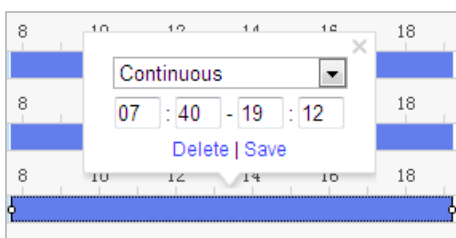
Figure 5-4 Segment Snapshot Settings

6. Click ⌐Advanced⌐. You can select the stream type of the capture.

7. Click ⟩Capture Parameters.

8. Check **Enable Timing Snapshot** to enable continuous snapshot, and configure the schedule of timing snapshot. Check **Enable Event-triggered Snapshot** to enable event-triggered snapshot.

9. Select the format, resolution, quality of the snapshot.

10. Set the time interval between two snapshots.

11. Click ⌐🖫 Save⌐.

Uploading to FTP

📖 NOTE

Please make sure that the FTP server is online.

You can follow below configuration instructions to upload the snapshots to FTP.

● **Upload continuous snapshots to FTP**

Steps:

1) Configure the FTP settings and check **Upload Picture** checkbox in FTP Settings interface. Please refer to *Section 7.1.2* for more details to configure FTP parameters.

2) Check the **Enable Timing Snapshot** checkbox.

3) Click **Edit** to set the snapshot schedule. Refer to *Section 5.2.1*.

● **Upload event-triggered snapshots to FTP**

Steps:

1) Configure the FTP settings and check **Upload Picture** checkbox in FTP Settings interface. Please refer to *Section 7.1.2* for more details to configure FTP parameters.

2) Check **Upload to FTP** checkbox in Motion Detection Settings or Alarm Input interface. Refer to *Section 5.2.1*.

3) Check **Enable Event-triggered Snapshot**.

5.1.3 Configure Net HDD

Before you start:

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

Steps:

● **Add the network disk**

1. Go to the. NAS (Network-Attached Storage) settings interface:

    Configuration > Storage > Storage Management > Net HDD

Figure 5-5 Select Net HDD Type

2. Input the IP address and the file path of the network disk.

3. Select the mounting type. NFS and SMB/CIFS are selectable. You can set the user name and password to guarantee the security if SMB/CIFS is selected.

    ⌈i⌉ NOTE

    Please refer to the *NAS User Manual* for creating the file path.

    ⚠ WARNING

    We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

4. Click [💾 Save] .

    ⌈i⌉ NOTE

    After having saved successfully, you need to reboot the device to activate the settings.

● **Initialize the added network disk.**

1. Go to the HDD settings interface (**Configuration > Storage > Storage Management > HDD Management**), in which you can view the capacity, free space, status, type and property of the disk.
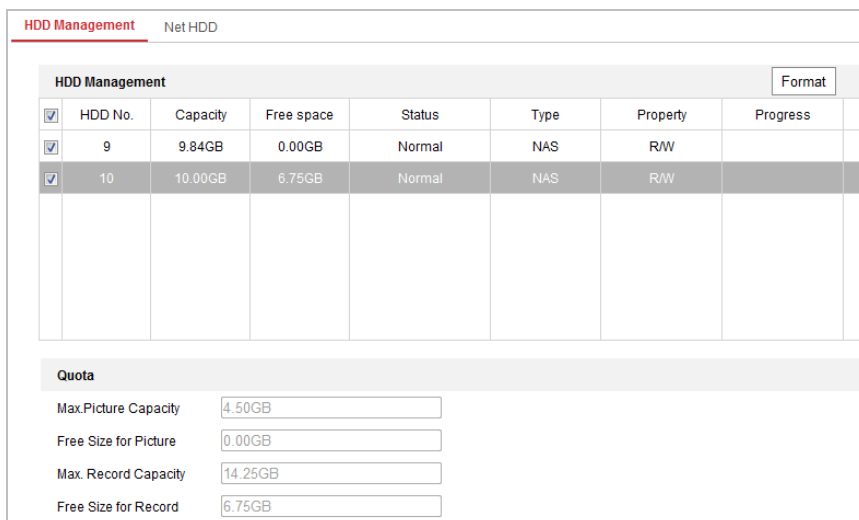
Figure 5-6 Storage Management Interface

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.

3. When the initialization completed, the status of disk will become **Normal** as shown in Figure 5-7.

Figure 5-7 View Disk Status

● **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.
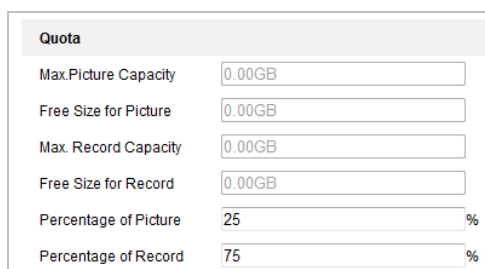
Figure 5-8 Quota Settings

[i] NOTE
● Up to 8 NAS disks can be connected to the device.
● To initialize and use the memory card after insert it to the device, please refer to the steps of NAS disk initialization

5.2 Event Configuration

Purpose:

This section explains how to configure the network device to respond to alarm events, including motion detection, video tampering alarm input, alarm output and exception. These events can trigger the alarm actions, such as Send Email, Notify Surveillance Center, etc.

For example, when motion detection is triggered, the network device sends a notification to an e-mail address.

⬜ **NOTE**

- On the event configuration page, click ▌ to show the PTZ control panel or click ▌ to hide it.
- Click the direction buttons to control the pan/tilt movements.
- Click the zoom/iris/focus buttons to realize lens control.
- The functions vary depending on the models of device.

5.2.1 Configure Motion Detection

Purpose:

Motion detection is a feature which can trigger alarm actions and actions of recording videos when the motion occurred in the surveillance scene.

Steps:

1. Go to the. motion detection setting interface:

   Configuration > Event > Basic Event > Motion Detection

2. Select the channel to set the motion detection.

3. Check **Enable Motion Detection**.

   You can check **Enable Dynamic Analysis for Motion** if you want the detected object get marked with rectangle in the live view.

4. Select the configuration mode as **Normal** or **Expert** and set the corresponding motion detection parameters.

   - **Normal**
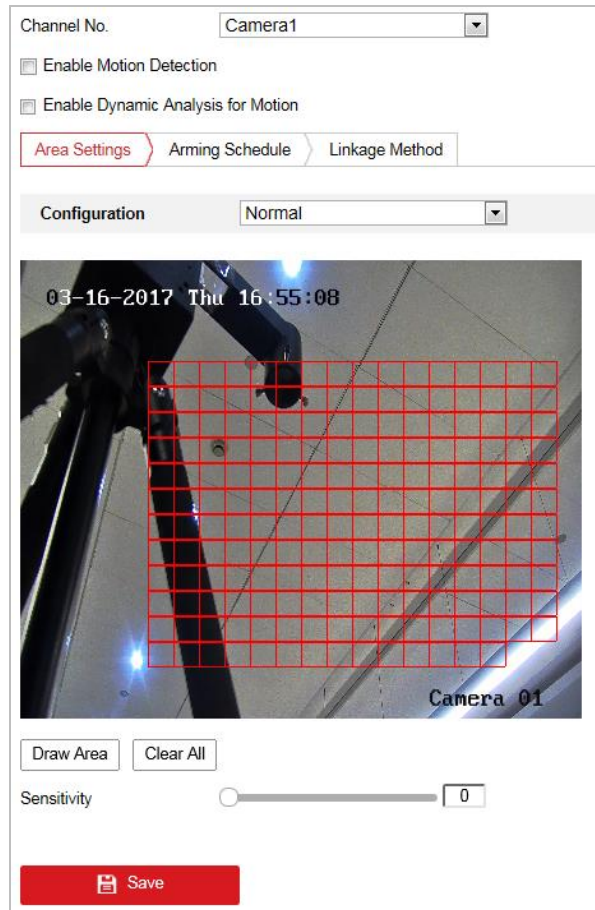
Figure 5-9 Motion Detection Settings-Normal

Steps:

(1) Click [Draw Area] and drag the mouse on the live video image to draw a motion

detection area.

(2) Click [Stop Drawing] to finish drawing.

[i] NOTE

● You can draw up to 8 motion detection areas on the same image.

● You can click **Clear All** to clear all of the areas.

(3) Move the slider [Sensitivity _____ 0] to set the

sensitivity of the detection.

● **Expert**

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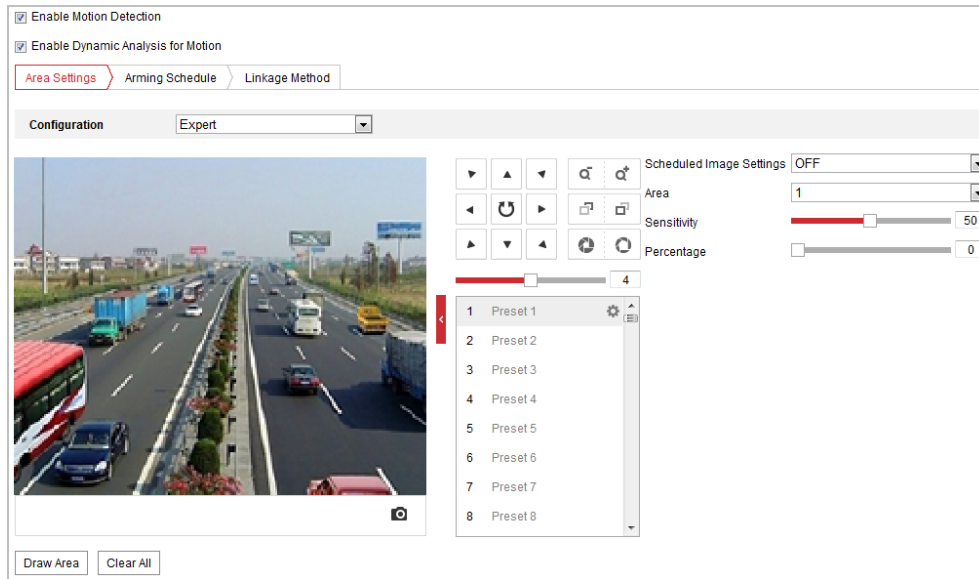
Figure 5-10 Motion Detection Settings-Expert

Steps*:*

(1) Set the **Schedule Image Settings**, there are **OFF**, **Auto-Switch** and **Scheduled-Switch** selectable. If the schedule image switch mode is enabled, you can configure the detection rule for the day and night separately.

OFF: Disable the day and night switch.

Auto-Switch: Switch the day and night mode according to the illumination automatically.

Scheduled-Switch: Switch to the day mode at 6:00 a.m., and switch to the night mode at 18:00 p.m..

(2) Select **Area No.** to configure in the dropdown list.

(3) Set the values of sensitivity and proportion of object on area.

Sensitivity: The greater the value is, the easier the alarm will be triggered.

Proportion of Object on Area: When the size proportion of the moving object exceeds the predefined value, the alarm will be triggered. The less the value is, the easier the alarm will be triggered.

5. Set the **Arming Schedule** for Motion Detection.

(1) Click .

Figure 5-11 Arming Schedule

(2) Select the timeline of a certain day, click and drag the mouse to set the arming schedule (the start time and end time of the arming task).

(3) After you set the scheduled task, you can click [icon] and copy the task to other days (optional).
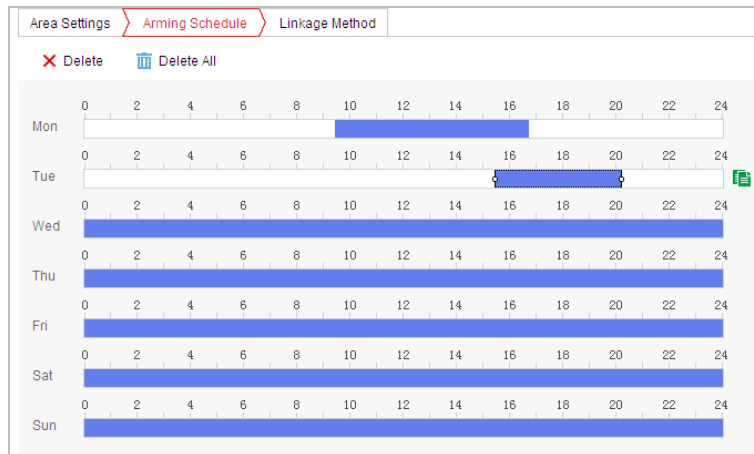
Figure 5-12 Arming Time Schedule

(4) After setting the arming schedule, you can click a segment to display the segment arming settings interface to edit the segment record parameters (optional).
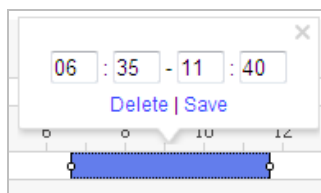
Figure 5-13 Segment Arming Settings

(5) Click [Save] .

[NOTE]

50

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

6. Set the **Alarm Actions** for Motion Detection.

Click $\boxed{\text{Linkage Method}}$ tab to go to the. **Linkage Method** interface.

You can specify the linkage method when an event occurs. The following contents are about how to configure the different types of linkage method.

Figure 5-14 Linkage Method

Check to select the linkage method. Notify Surveillance Center, Send Email, Upload to FTP/Memory/NAS, Trigger Alarm Output and Trigger Recording are selectable.

● **Notify Surveillance 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.

[i] NOTE

To send the Email when an event occurs, you need to refer to *Section Configure Email Settings* to set the Email parameters.

● **Upload to FTP/Memory/NAS**

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

[i] NOTE

You need a FTP server and set FTP parameters first. Refer to *Section Configure FTP* for setting FTP parameters.

● **Trigger Alarm Output**

Trigger one or more external alarm outputs when an event occurs.

NOTE

To trigger an alarm output when an event occurs, please refer to **Section 5.2.4**
Configure Alarm Output to set the alarm output parameters.

● **Trigger Recording**

Record a video when an event occurs.

NOTE

You have to set the recording schedule to realize this function. Please refer to **Section**
5.1.1 Configure Recording Schedule for settings the recording schedule.

5.2.2 Configure Video Tampering Alarm

Purpose:

You can configure the device to trigger the alarm actions when the lens is covered.

Steps:

1. Go to the. Video Tampering settings interface :
   Configuration > Event > Basic Event > Video Tampering
2. Select the channel to set the video tampering alarm.
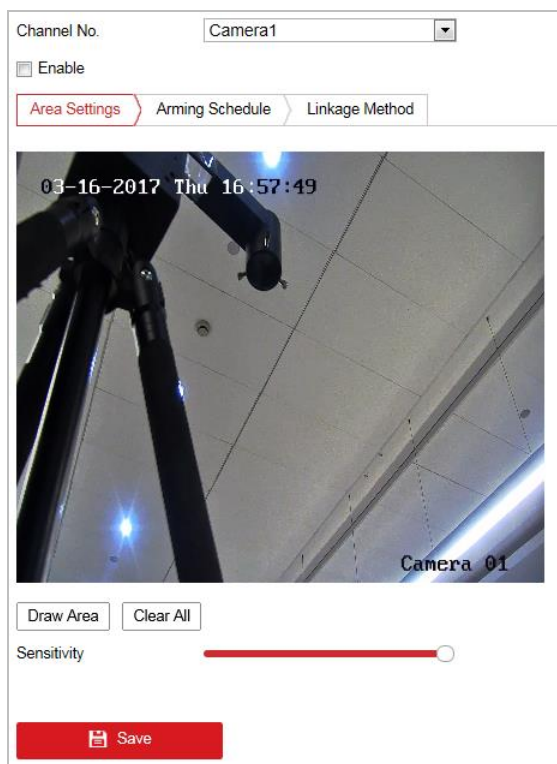
Figure 5-15 Tampering Alarm

3. Check **Enable**.

4. Click [Arming Schedule] tab to go to the. arming schedule setting interface. The arming
   schedule configuration is the same as the setting of the arming schedule for motion detection.
   Refer to **Section 5.2.1 Configure Motion Detection**.

5. Click [Linkage Method] tab to select the linkage method taken for tampering, notify surveillance center, send email and trigger alarm output are selectable. Refer to **Section 5.2.1 Configure Motion Detection**.

6. Click [💾 Save] .

5.2.3 Configure Alarm Input

Steps:

1. Go to the. Alarm Input settings interface:
   Configuration > Event > Basic Event > Alarm Input

2. Choose the alarm input No. and the Alarm Type. The alarm type can be NO (Normally Open) and NC (Normally Closed).

3. Edit the name in [Alarm Name   (cannot copy)] to set a name for the alarm input (optional).

Figure 5-16 Alarm Input Settings

4. Click [Arming Schedule] tab to go to the. arming schedule setting interface. The arming schedule configuration is the same as the setting of the arming schedule for motion detection. Refer to **Section 5.2.1 Configure Motion Detection**.

5. Click [Linkage Method] tab to select the linkage method taken for alarm input, including Notify Surveillance Center, Send Email, Upload to FTP/Memory Card/NAS, Trigger Alarm Output and Trigger Recording. Refer to **Section 5.2.1 Configure Motion Detection**.

6. You can also choose the PTZ linking for the alarm input. Check the relative checkbox and select the No. to enable Preset Calling, Patrol Calling or Pattern Calling.

7. You can copy your settings to other alarm inputs.

8. Click [🖫 Save] .
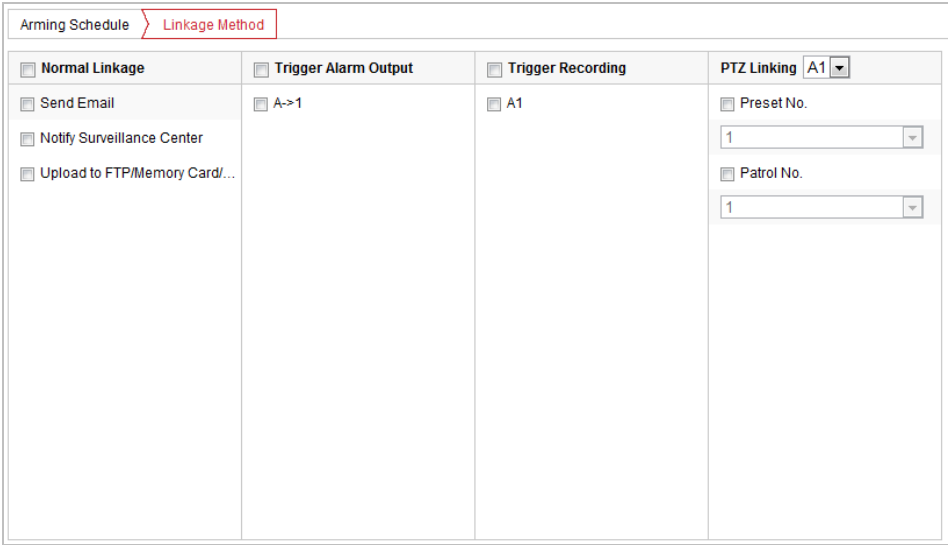
Figure 5-17 Linkage Method

5.2.4 Configure Alarm Output

Steps:
1. Go to the. Alarm Output settings interface:
    Configuration> Event > Basic Event > Alarm Output
2. Select one alarm output channel in the **Alarm Output** dropdown list.

3. Set a name in [Alarm Name _____ (cannot copy)] for the alarm output
    (optional).
4. The **Delay** time can be set to **5sec**, **10sec**, **30sec**, **1min**, **2min**, **5min, 10min** or **Manual**. The
    delay time refers to the time duration that the alarm output remains in effect after alarm
    occurs.
5. .Select the **Alarm Type**. The alarm type can be NO (Normally Open) and NC (Normally
    Closed)

6. Click [Arming Schedule] tab to go to the. arming schedule setting interface. The time
    schedule configuration is the same as the settings of the arming schedule for motion
    detection. Refer to *Section 5.2.1 Configure Motion Detection*.

Figure 5-18 Alarm Output Settings

7. You can copy the settings to other alarm outputs.

8. Click [Save].

5.2.5 Handle Exception

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

Steps:

1. Go to the. Exception settings interface:

    Configuration > Event > Basic Event > Exception

2. Check to set the actions taken for the Exception alarm. Refer to ***Section 5.2.1 Configure Motion Detection***.

Figure 5-19 Exception Settings

3. Click [Save].

5.2.6 Configure Burning-Prevention

Purpose:

This function enable the movement of lens to protect it from high temperature damage.

Steps:

1. Go to **Burning-Prevention** interface.
2. Check **Enable**.
3. Set the protection mode as **Lens Movement**.
4. Set the protection duration.
5. Click **Save**.
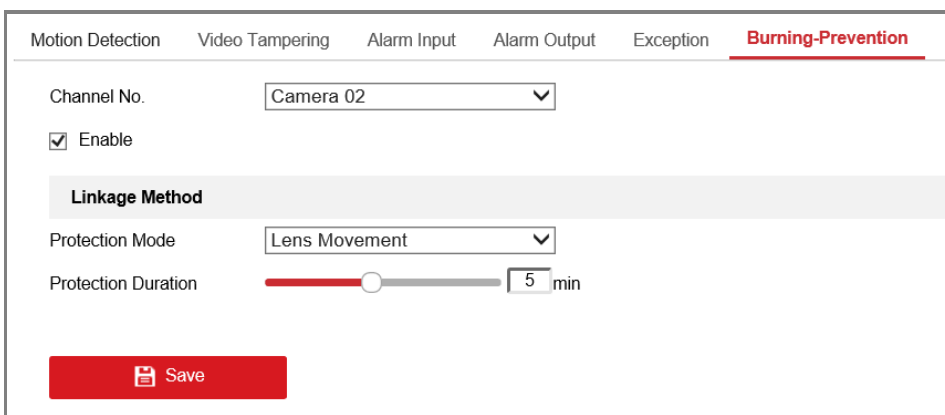
Figure 5-20 Burning-Prevention

5.2.7 Detect Audio Exception

Purpose:

When you enable this function and audio exception occurs, the alarm actions will be triggered.

Steps:

1. Go to the video audio exception detection interface:

    Configuration > Event > Smart Event > Audio Exception Detection
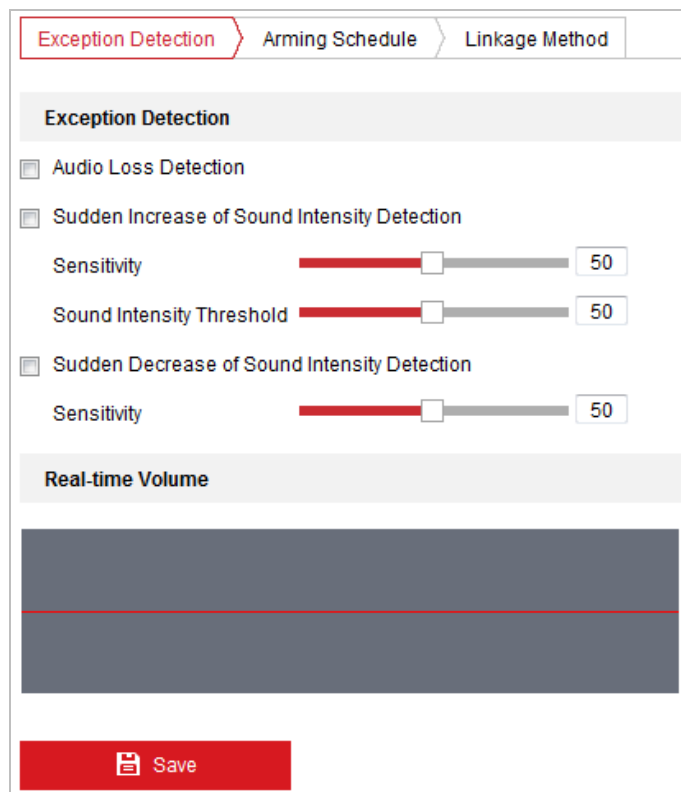
Figure 5-21 Audio Exception Detection

2. Check **Audio Loss Detection** to enable the audio input exception detection.

3. Check **Sudden Increase of Sound Intensity Detection** to enable the sudden rise detection.

    ● **Sensitivity**: Range [1-100], the smaller the value the more severe the sound change will

trigger the detection.

● **Sound Intensity Threshold**: Range [1-100], it can filter the sound in the environment, the louder the environment sound, the higher the value should be. You can adjust it according to the actual environment.

4. Check **Sudden Decrease of Sound Intensity Detection** to enable the sudden drop detection. **Sensitivity**: Range [1-100], the smaller the value the more severe the sound change will trigger the detection.

5. Click ⟩ Arming Schedule ⟩ tab to go to the. arming schedule setting interface. The time schedule configuration is the same as the settings of the arming schedule for motion detection. Refer to *Section 5.2.1 Configure Motion Detection*.

6. Click ⟩ Linkage Method tab to select the linkage method taken for the audio input exception, Notify Surveillance Center, Send Email, Trigger Alarm Output and Trigger Recording are selectable. Refer to *Section 5.2.1 Configure Motion Detection*.

7. Click 🖺 Save .

5.3 Fire Source Detection Configuration

📖 NOTE

The functions vary depending on the models of device.

Dynamic Fire Source Detection

```
                              ┌──────────┐
                              │  Start   │
                              └──────────┘
                                    │
                                    ▼
                    If GPS information is required for
        YES                    platform accessing?                    NO
         │                                                             │
         ▼                                                             │
  ┌─────────────────┐                                                  │
  │ Enable GPS of Position                                             │
  │     Settings    │                                                  │
  └─────────────────┘                                                  │
         │                                                             │
         ▼                                                             │
  ┌─────────────────┐                                                  │
  │ Set the north as the                                              │
  │  Initial Position │                                                │
  └─────────────────┘                                                  │
         │              ┌─────────────────────┐                       │
         └─────────────▶│ Set the VCA resource to │◀─────────────────┘
                        │    Fire Detection    │
                        └─────────────────────┘
                                    │
                                    ▼
                        ┌─────────────────────────┐
                        │   Enable Fire Detection  │
                        │ (Event > Dynamic Fire Source Detection) │
                        └─────────────────────────┘
                                    │
                                    ▼
                        ┌─────────────────────────┐
                        │ Enable Fire Detection Shield. │
                        └─────────────────────────┘
                                    │
                                    ▼
                        If the PTZ function is supported by the
                                  camera?
                    ✔ YES              │                        NO
                                       ▼                         │
                        ┌─────────────────────────┐             │
                        │  Set the application scene │           │
                        │   and zoom parameters.   │            │
                        └─────────────────────────┘             │
                                    │                           │
                                    ▼                           │
                        ┌─────────────────────────┐             │
                        │      Enable the          │            │
                        │  patrol/park/linear scan. │           │
                        └─────────────────────────┘             │
                                    │                           │
                                    ▼◀──────────────────────────┘
                        ┌─────────────────────────┐
                        │  Enable the fire point in │
                        │   the Local Settings.    │
                        └─────────────────────────┘
                                    │
                                    ▼
                              ┌──────────┐
                              │   END    │
                              └──────────┘
```

5.3.1 Configure Initial Position

Purpose:

The initial position is the origin of PTZ coordinates. It can be the factory default initial position. You can also customize the initial position according to your own demand.

If you connect the device to the system platform, the platform can mark all the fire positions.

Steps:

1. Go to the. Position Settings interface:

   Configuration > **PTZ** > **Position Settings**.
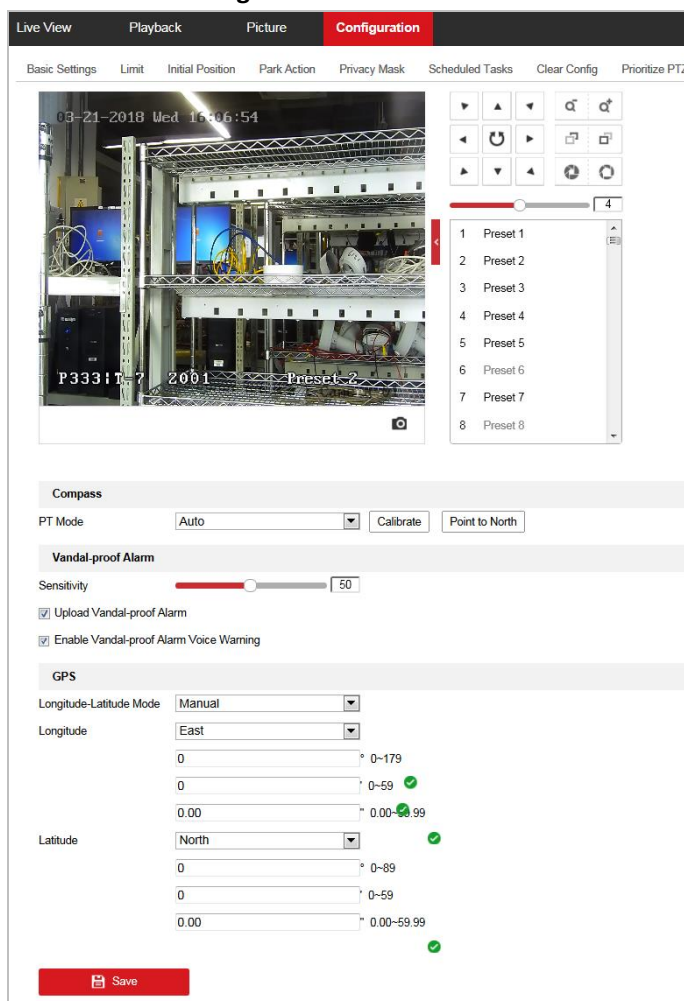
Figure 5-22 Position Settings

2. Set the compass parameters.

   (1) Select PT Mode as **Manual**.

   (2) Click the PTZ control buttons to find the north direction; you can also call a defined preset and set it as the north direction.

   (3) Click **Set as North** to save the position.

   (4) Optionally, you can click **Point to North** to move the device to the north direction if the north direction was once saved.

3. Set the sensitivity of Vandal-proof Alarm. The higher the value is, more easily the alarm will be triggered.

4. Enable or disable the alarm uploading and alarm voice warning function.

5. Set GPS settings.

   (4) Select Longitude-Latitude Mode as **Manual**.

   (5) Select longitude and latitude as East or West according to the actual position.

   (6) Input the value of longitude and latitude in three textboxes.

6. Click **Point to North** and save**.**

7. Go to the Initial Position Configuration interface:

   Configuration > **PTZ** > **Initial Position**

Figure 5-23 PTZ Configuration

8. Click the PTZ control buttons to find a position as the initial position of the device; you can also call a defined preset and set it as the initial position of the device.
9. Click **Set** to save the position.
● **Call/delete an Initial Position:**

You can click 📷 to call the initial position. You can click ✕ to delete the initial position and restore the factory default initial position.

5.3.2 Configure Dynamic Fire Source Detection

Purpose:
When you enable this function and fire source or smoke is detected, the alarm actions will be triggered. You can set different detection mode, fire source zoom mode, and so on.
Steps:
1. Enter **Configuration>Advanced Configuration>System>VCA Resource Type** to select **Fire and Smoke Detection** as VCA Resource Type.
2. Go to the. fire and smoke detection interface:
   Configuration > Event > Smart Event > Dynamic Fire Source Detection

Figure 5-24 Dynamic Fire Source Detection

3. Check **Enable Dynamic Fire Source Detection**.

   [i] NOTE

   The function of dynamic fire source detection can only be enabled for camera 2.

4. Check **Display Fire Source Info on Stream** to add fire source information on stream, and the overlay will be displayed in live view.

5. Select the **Application Scene** from the list. Forest-Fire Prevention, Straw Burning, High-building, and Indoor/Perimeter are selectable. Set the **Installation Height** for scene if required.

6. Set the fire detection parameters:

   ● **Detection Mode:** Select detection mode as **by Multiple Frame**, and the system alarms with high accuracy. Select detection mode as **by Single Frame**, and the system alarms with short delay.

   ● **Sensitivity:** Set the detection sensitivity and verification sensitivity of fire detection. The smaller the value is, the lower temperature the fire souce can be detected.

   ● **Hold-and-Alarm Mode:** The system will stop when it detects the fire source. You can set the duration while it keeps still.

      - In **Auto** mode, you can set the dwell time, range [0-120]. During the dwell time the camera stays still where it detects the fire source when performing auto scan, patrol, pattern, scheduled task, and park action.

      - In **Manual** Mode, the device stays still where it detects the fire source, until you manually moves the camera.

- **Fire Source Zoom Ratio:** Set the zoom ratio of the optical channel when it detects the fire source. In Auto mode, the optical channel changes its zoom ratio until two channels have the same field of view. In Manual mode, you can set the optical zoom ratio.
- **Cancel Repeated Alarm:** Enable this function to trigger alarm only once for same place during one day.

7. Check **Display Fire Source Frame on Stream** to display a red frame around the fire source on stream when fire occurs. (Optional)

8. Check to select the linkage method taken for the alarm input. Refer to Step 3 in **Section 5.2.1 Configure Motion Detection**. In the field of **Other Linkage**, you can check to enable the alarm output (The alarm output number varies depending on device ability).

9. Click [💾 Save] .

5.3.3 Configure Fire Source Detection Shield

Purpose:

Fire Source Shield enables you to shield certain areas from being detected in fire source detection.

⃞ᵢ **NOTE**

The privacy mask function is supported by the optical lens only.

Steps:

1. Go to the. Fire Source Detection Shield Setting interface:

   Configuration > **Event** > **Smart Event** > **Fire Source Detection Shield**
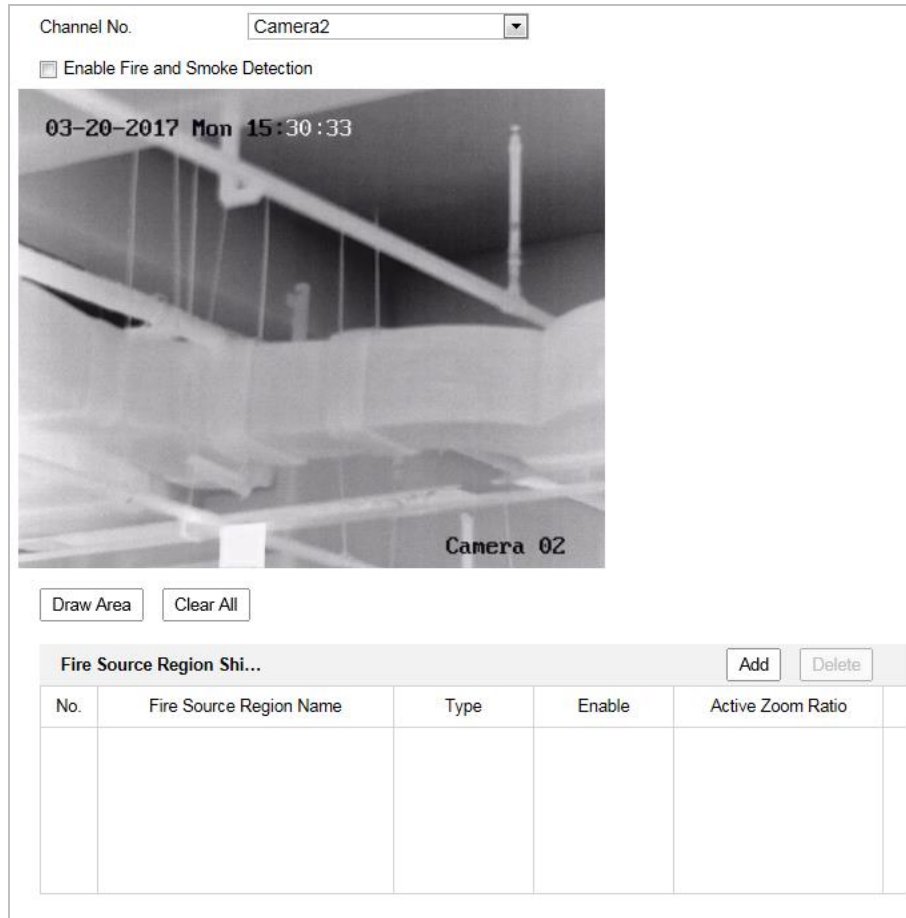
Figure 5-25 Fire Source Detection Shield

2. Click the PTZ control buttons to find the area you want to shield from the smoke detection.

3. Click **Draw Area** and drag the mouse in the live video window to draw the area.

4. You can drag the corners of the red rectangle area to change its shape and size.

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

6. Set the value of **Active Zoom Ratio** on your demand, and then the shield will only appear when the zoom ratio is greater than the predefined value.

7. Click **Add** to save the smoke detection shield, and it will be listed in the **Fire Source Detection Shield List** area; you can select a region and click **Delete** to delete it from the list; you can also define the color of the regions.

8. Check **Enable Fire Source Detection Shield** to enable this function.

   [i] NOTE

   You are allowed to draw up to 24 areas on the same image.

9. Click [Save].

   [i] NOTE

   For some models, the smoke detection function is not supported and you cannot select Fire and Smoke Detection Mode.

5.4 Temperature Measurement

Purpose:

When you enable this function, it measures the actual temperature of the spot being monitored. The device alarms when temperature exceeds the temperature threshold value.

Before You Start:

Enter **Configuration > Advanced Configuration > System > VCA Resource Type** to select **Temperature Measurement + Behavior Analysis** as VCA Resource Type.

5.4.1 Configure Temperature Measurement

Steps:

1. Go to **Configuration > Temperature Measurement > Basic Settings**.

Figure 5-26 Dynamic Fire Source Detection

2. Set the temperature measurement configurations.
    - **Enable Temperature Measurement:** Check to enable temperature measurement function.
    - **Enable Color-Temperature:** Check to display Temperature-Color Ruler in live view.
    - **Display Temperature Info. on Stream:** Check to display temperature information on the stream.

- **Display Temperature in Optical Channel**: Check to display thermal channel temperature information in the optical channel.
- **Display Max. Temperature**: Check to display maximum temperature information in thermal view when the temperature measurement rule is line or area.
- **Display Min. Temperature**: Check to display minimum temperature information in thermal view when the temperature measurement rule is line or area.
- **Display Average Temperature**: Check to display average temperature information in thermal view when the temperature measurement rule is line or area.
- **Position of Thermometry Info**: Select the position of temperature measurement information showed on the live view interface. Select Top Left to display the information on the top left of screen. Select Near Target to display the information around the temperature measurement rule.
- **Add Original Data on Capture:** Check to add original data on capture.
- **Add Original Data on Stream:** Check to add original data on stream.
- **Data Refresh Interval:** Select the data refresh interval from 1s to 5s.
- **Unit:** Display temperature with Degree Celsius (°C)/Degree Fahrenheit (°F)/Degree Kelvin (K）.
- **Temperature Range:** Set the temperature range.
- **Version**: View the version of current algorithm.

3. Clcik **Save** .

5.4.2 Temperature Measurement and Alarm

Purpose:

This function is used for measuring the temperature of detected spot and the device compares temperature of selected regions and alarms.

Steps:

- **Normal Mode**
    1. Go to **Configuration > Temperature Measurement > Advanced Settings**.
    2. Select the temperature measurement and alarm configuration as **Normal**.
    3. Configure the parameters.

Figure 5-27 Temperature Measurement Configuration

Emissivity: Set the emissivity of your target.

[i] NOTE

The emissivity of each object is different.

Distance (m): The straight-line distance between the target and the device.

Pre-Alarm: When the temperature of target exceeds the **Pre-Alarm Threshold**, and this status keeps NOT shorter than the **Filtering Time**, it triggers the Pre-Alarm.

Check Pre-Alarm Output to set link the pre-alarm with the connected alarm device.

Alarm: When the temperature of target exceeds the **Alarm Threshold**, and this status keeps NOT shorter than the **Filtering Time**, it triggers the Alarm.

Check **Alarm Output** to set link the pre-alarm with the connected alarm device.

4. Click **Save**.

● **Expert Mode:**

1. Enter **Configuration > Temperature Measurement > Advanced Settings**.
2. Select the temperature measurement and alarm configuration as **Expert**.
3. Adjust the PTZ.
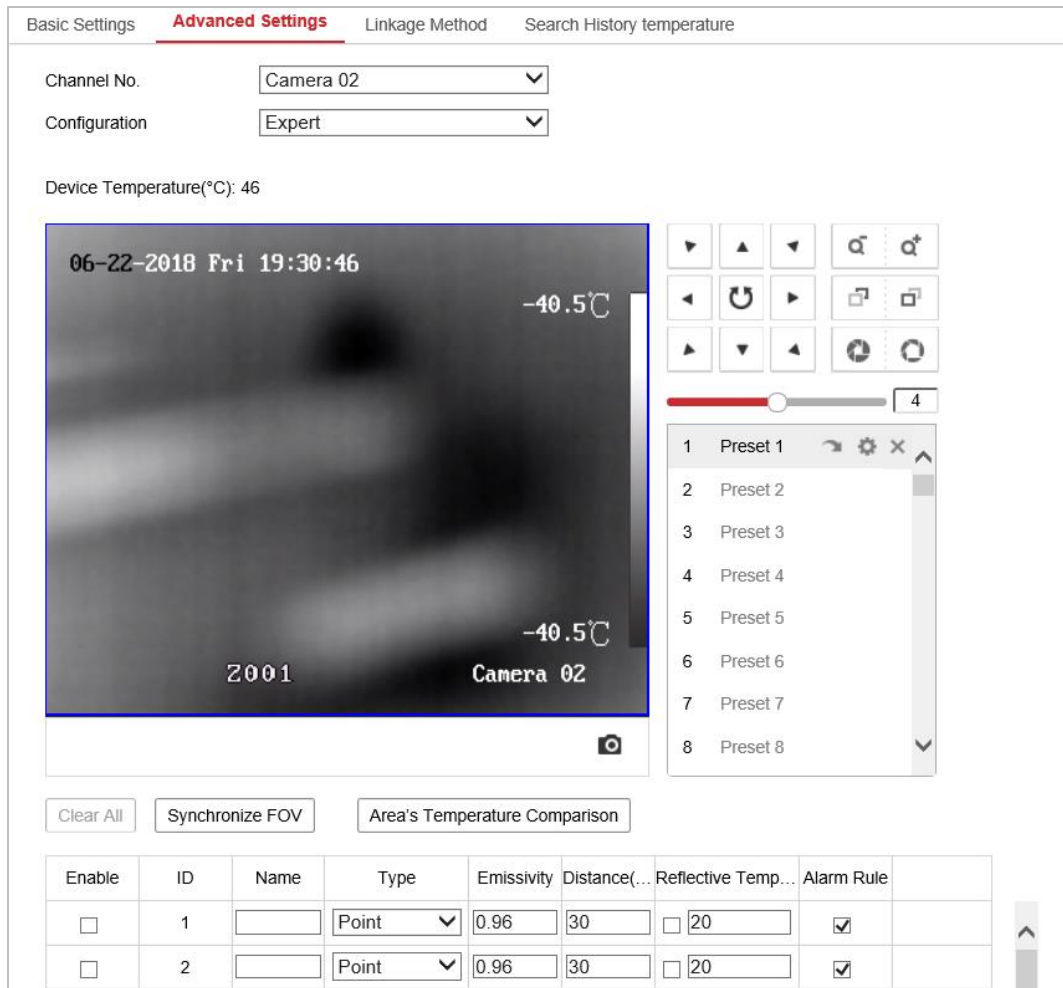
Figure 5-28 Temperature Measurement Configuration

4. Adjust the image to the scene for temperature measurement with the PTZ control panel. Save current scene as certain preset.

NOTE

- You can set the preset in live view interface before and call the preset in the temperature measurement and alarm interface.
- You can set/ call/ clear the preset in temperature measurement interface.
- Click **Synchronize FOV** this button to synchronize the FOV of thermal light channel and optical light channel.

5. Configure the parameters.
   1) Set the alarm rule: Select a temperature measurement rule from the rule list and configure the parameters.

      Name: You can customize the rule name.

      Type: Select **Point**, **Line**, or **Area** as rule type.

      Emissivity: Set the emissivity of your target. The emissivity of each object is different, you can refer to the Quick Start Guide Appendix for details.

      Distance (m): The straight-line distance between the target and the device.

      Reflective Temperature: If there is any target with high emissivity in the scene, check and set the reflective temperature to correct the temperature. If no such target exists,

uncheck the checkbox.

Tolerance Temperature: The device judges whether the triggered alarm stops until the device temperature/temperature difference is lower than rule temperature by tolerance temperature. E.g., set tolerance temperature as 3°C, set alarm temperature as 55°C, and set pre-alarm temperature as 50°C. The device sends pre-alarm when its temperature reaches 50°C and it alarms when its temperature reaches 55°C and only when the device temperature is lower than 52°C will the alarm be cancelled.

2) Set the alarm rules.

    For Point Rule:

    a) Click ⚙ to show the Alarm Rule setting interface.

Figure 5-29 Alarm Rule Settings (Point)

    b) Set the alarm rule.

    c) Set the Alarm Temperature, Pre-Alarm Temperature, and Tolerance Temperature.

    d) Set the Pre-Alarm Output and Alarm Output with the connected alarm sensor and alarm device.

E.g., select Alarm Rule as **Above (Average Temperature)**, and set the Alarm Temperature to 50 °C, and the device alarms when its average temperature is higher than 50 °C.

    For Line Rule:

    a) Click ⚙ to show the Alarm Rule setting interface.
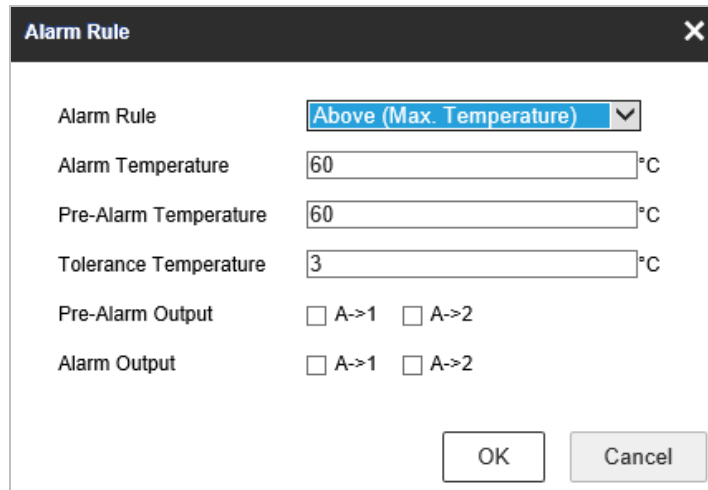
Figure 5-30 Alarm Rule Settings (Line)

b) Set the alarm rule.

c) Set the Alarm Temperature, Pre-Alarm Temperature, and Tolerance Temperature.

d) Set the Pre-Alarm Output and Alarm Output with the connected alarm sensor and alarm device.

E.g., select Alarm Rule as **Above (Max. Temperature)** and set the Alarm Temperature to 40 °C, and the device alarms when the maximum temperature is higher than 40 °C.

For Area Rule:

Task 1.

a) Click [icon] to show the Alarm Rule setting interface.
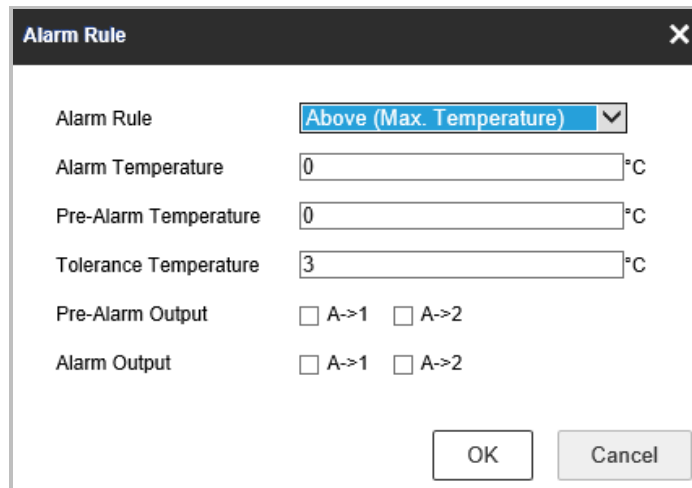
Figure 5-31 Alarm Rule Settings (Area)

b) Set the alarm rule.

c) Set the Alarm Temperature, Pre-Alarm Temperature, and Tolerance Temperature.

d) Set the Pre-Alarm Output and Alarm Output with the connected alarm sensor and alarm device.

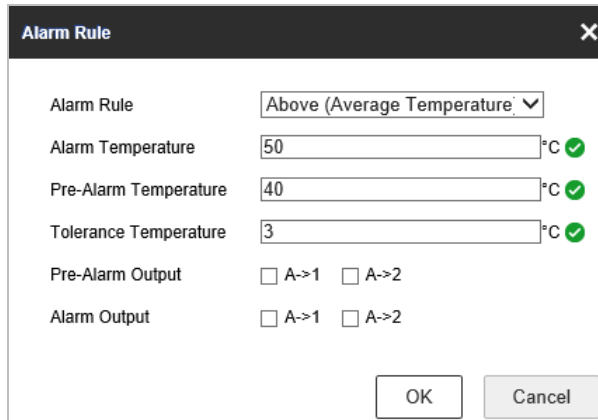E.g., select Alarm Rule as **Above (Max. Temperature)** and set the Alarm Temperature to 40 °C, and the device alarms when the maximum temperature is higher than 40 °C.

Task 2.

For two alarm rules of area, you can set the alarm for area temperature difference.

a) Set the area alarm rules.

b) Click **Area's Temperature Comparison** to show the area temperature difference alarm interface.

Figure 5-32 Area Temperature Difference Alarm

c) Select two rules to compare the saved areas.

d) Set the alarm rules and the temperature.

E.g., select **Area 1** and **Area 2**, and set the comparison rule as **Above (Max. Temperature)**, and set the temperature difference threshold to 5 °C. The device alarms when the difference of two areas' maximum temperature is above 5 °C.

e) Set the Alarm Output with the connected alarm sensor and alarm device.

5.4.3 Linkage Method

Purpose:

Set the linkage method of the alarm.

Steps:

1. Go to **Configuration** > **Temperature Measurement** > **Linkage Method**.
2. Set the arming schedule and linkage method.
   - **Arming Schedule**: Click on the time bar and drag the mouse to select the time period.
   - **Linkage Method**: Click Linkage Method and check to select the linkage method. Audible warning, notify surveillance center, send email, upload to FTP, trigger channel and trigger alarm output are selectable. You can specify the linkage method when an event occurs.
3. Click **Save**.

After the settings, you can view the current temperature and humidity on the top of this interface.

5.4.4 Search History Temperature

Purpose:

Search the history temperature and generate the temperature/time graphic.

Steps:

1. Select the camera channel, preset point, rule and display time interval from the drop-down list.

2. Set the start time.

3. Click **Search** to generate the graphic.

4. Click **Export** to download the graphic.

Basic Settings	Advanced Settings	Linkage Method	**Search History temperature**			
Channel No.	Camera 02					
Preset	Preset1	Rule	Rule1	Start Date	2018-07-09	
Display Time Int…	5minute(s)	Search	Export			

Figure 5-33 History Temperature Graphic Configuration

5.5 PTZ Configuration

[i] NOTE

● On the event configuration page, click ❯ to show the PTZ control panel or click ❮ to hide it.
● Click the direction buttons to control the pan/tilt movements.
● Click the zoom/iris/focus buttons to realize lens control.
● The functions vary depending on the models of device.

5.5.5 Configure Basic PTZ Parameters

Purpose:
You can configure the basic PTZ parameters, including proportional pan, preset freezing, preset speed, etc.

4. Go to the. Basic PTZ Parameter Configuration interface:
    Configuration > **PTZ** > **Basic Settings**

Basic Parameter	
☑ Enable Proportional Pan	
☐ Enable Preset Freezing	
Preset Speed	4
Manual Control Speed	Compatible
Keyboard Control Speed	Medium
Auto Scan Speed	28
Auto Flip	ON
Zooming Speed	3
PTZ OSD	
Zoom Status	2s
PT Status	2s
Position Display Format	PT
Preset Status	2s
Action Status Display	OFF
Power Off Memory	
Set Resume Time Point	30s
Linkage Control	
☐ Synchronized Zoom	

Figure 5-34 Basic PTZ Configuration Interface

5. Configure the following settings:
● **Basic Parameters**: Enable/disable proportional pan and preset freezing, set the preset speed, keyboard control speed, and auto scan speed.

◆ **Proportional Pan**: If you enable this function, the pan/tilt speeds change according to the amount of zoom. When there is a large amount of zoom, the pan/tilt speed will be slower for keeping the image from moving too fast on the live view image.

◆ **Preset Freezing**: This function enables the live view to switch directly from one scene defined by a preset to another, without showing the middle areas between these two, to ensure the surveillance efficiency. It can also reduce the use of bandwidth in a digital network system.

[i] NOTE

Preset freezing function is invalid when you calling a pattern.

◆ **Preset Speed**: You can set the speed of a defined preset from 1 to 8.

◆ **Manual Control Speed**: The device provides 5 control speed modes: Compatible, Pedestrian, Non-motor Vehicle, Motor Vehicle and Auto. Select it from the dropdown list.

◆ **Keyboard Control Speed**: Define the speed of PTZ control by a keyboard as Low, Medium or High.

◆ **Auto Scan Speed**: The scan speed can be set from level 1 to 40.

◆ **Auto Flip** : Select auto flip mode as ON/OFF.

◆ **Max. Tilt-angle**: Set the tilt-angle of the device from the dropdown list.

◆ **Zooming Speed**: The speed of zooming is adjustable.

● **PTZ OSD:** Set the on-screen display duration of the PTZ status.

◆ **Zoom Status:** Set the OSD duration of zooming status as 2 seconds, 5 seconds, 10 seconds, Always Close or Always Open.

◆ **PT Status:** Set the azimuth angle display duration while panning and tilting as 2 seconds, 5 seconds, 10 seconds, Always Close or Always Open.

◆ **Position Display Format:** Set the position display format as PT or Direction and the position parameter displays in corresponding format.

◆ **Preset Status:** Set the preset name display duration while calling the preset as 2 seconds, 5 seconds, 10 seconds, Always Close or Always Open.

◆ **Action Status Display:** Display the current status of device in optical channel or not. Such as patrol, fire detection, etc.

● **Power-off Memory:** The device can resume its previous PTZ status or actions after it restarted from a power-off. You can set the time point of which the device resumes its PTZ status. You can set it to resume the status of 30 seconds, 60 seconds, 300 seconds or 600 seconds before power-off.

● **Linkage Control:** Check **Synchronized Zoom** to zoom the thermal lens and optical lens at the same time. The image of these two channels will be consistent.

6. Click [🖫 Save] .

5.5.6 Configure PTZ Limits

Purpose:

The device can be programmed to move within the configurable PTZ limits (left/right, up/down).

Steps:

5. Go to the. Limit configuration interface:

Configuration > PTZ > Limit
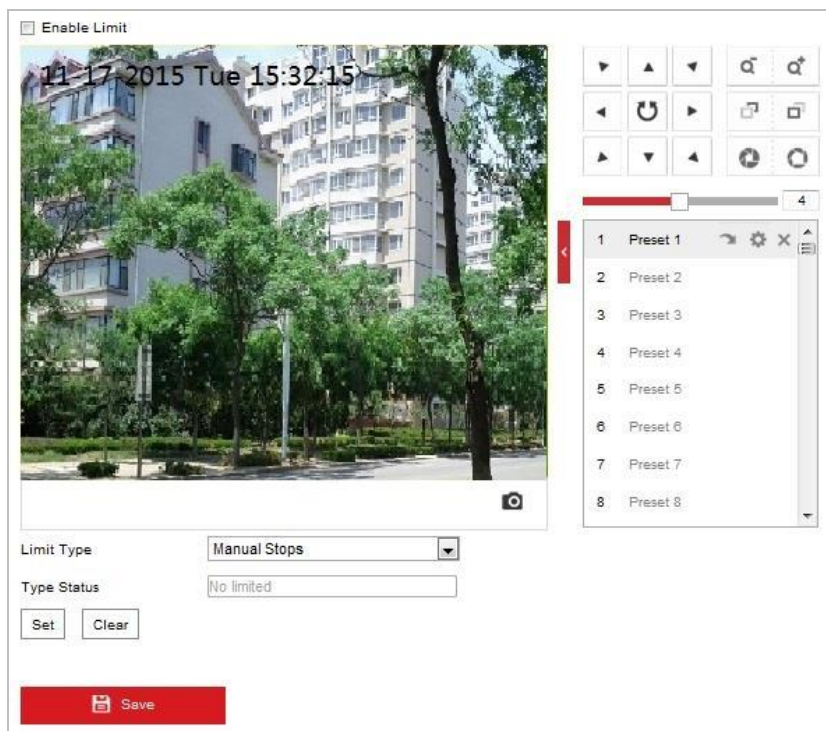
Figure 5-35 Configure the PTZ Limit

6.   Click **Enable Limit** and choose the limit type as manual stops or scan stops.

●   **Manual Stops:**

When manual limit stops are set, you can operate the PTZ control panel manually only in the limited surveillance area.

●   **Scan Stops:**

When scan limit stops are set, the random scan, frame scan, auto scan, tilt scan, panorama scan is performed only in the limited surveillance area.

☐ⓘ NOTE

Manual Stops of **Limit Type** is prior to **Scan Stops.** When you set these two limit types at the same time, **Manual Stops** is valid and **Scan Stops** is invalid.

7.   Click the PTZ control buttons to find the left/right/up/down limit stops; you can also call the defined presets and set them as the limits of the device.

8.   Click **Set** to save the limits or click **Clear** to clear the limits.

5.5.7 Configure Park Actions

Purpose:

This feature allows the device to start a predefined park action (scan, preset, pattern and etc.) automatically after a period of inactivity (park time).

☐ⓘ NOTE

●   **Scheduled Tasks** function is prior to **Park Action** function. When these two functions are set at the same time, only the **Scheduled Tasks** function takes effect.

●   Pattern function varies depending on device models.

Steps:

7. Go to the. Park Action settings interface:

   Configuration > **PTZ** > **Park Action**

Figure 5-36 Set the Park Action

8. Check **Enable Park Action**.

9. Set the **Park Time** as the inactivity time of the device before it starts the park actions.

10. Choose **Action Type** the from the dropdown list.

Figure 5-37 Action Types

11. Select the **Action Type ID** from the dropdown list.

12. Click .

5.5.8 Configure Privacy Mask

Purpose:

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

Steps:

8. Go to the. Privacy Mask settings interface:

   Configuration > **PTZ** > **Privacy Mask**
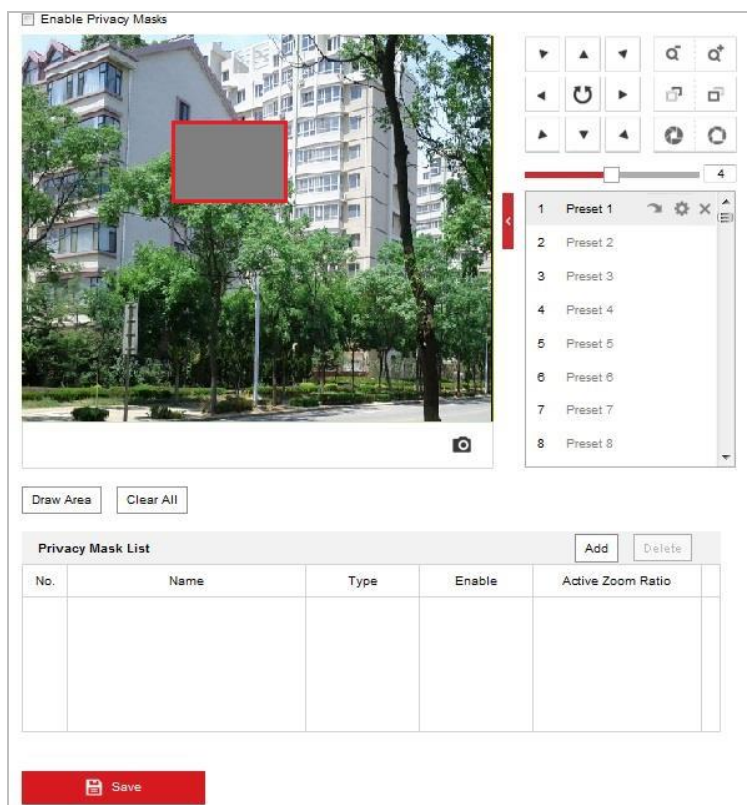
Figure 5-38 Draw the Privacy Mask

9. Click the PTZ control buttons to find the area you want to set the privacy mask.

10. Click Draw Area ; click and drag the mouse in the live video window to draw the area.

11. You can drag the corners of the red rectangle area to draw a polygon mask.

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

13. Click Add to save the privacy mask, and it will be listed in the **Privacy Mask List** area; set the value of **Active Zoom Ratio** on your demand, and then the mask will only appear when the zoom ratio is greater than the predefined value.

Figure 5-39 Privacy Mask List

14. Check **Enable Privacy Mask**.

    [i] **NOTE**

    You are allowed to draw up to 8 areas for the device.

5.5.9 Configure Scheduled Tasks

Purpose:

You can configure the network device to perform a certain action automatically in a user-defined time period.

Steps:

8.   Go to the. Scheduled Task settings interface:

Configuration> **PTZ** > **Scheduled Tasks**
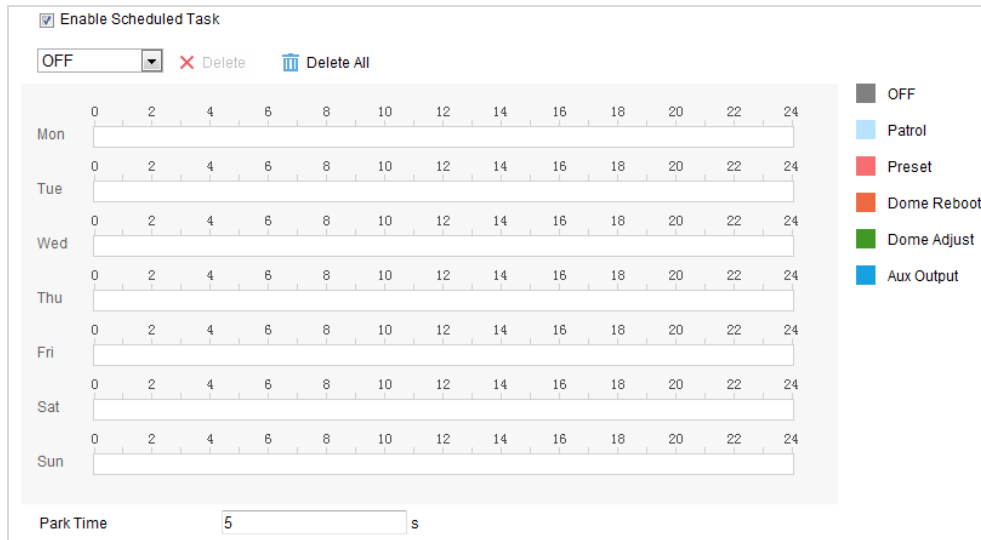
Figure 5-40 Configure Scheduled Tasks

9.   Check **Enable Scheduled Task**.

10. Set the **Park Time**. You can set the park time (a period of inactivity) before the device starts the scheduled tasks.

11. Select the task type from the dropdown list. You can choose scan, preset, pattern and etc.
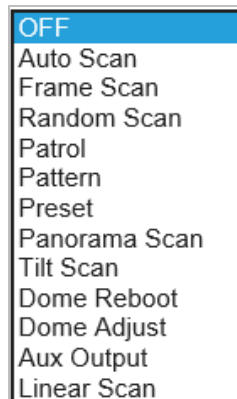
Figure 5-41 Task Types

12. Select the timeline of a certain day, click and drag the the mouse to set the recording schedule (the start time and end time of the recording task).

13. After you set the scheduled task, you can click and copy the task to other days (optional).

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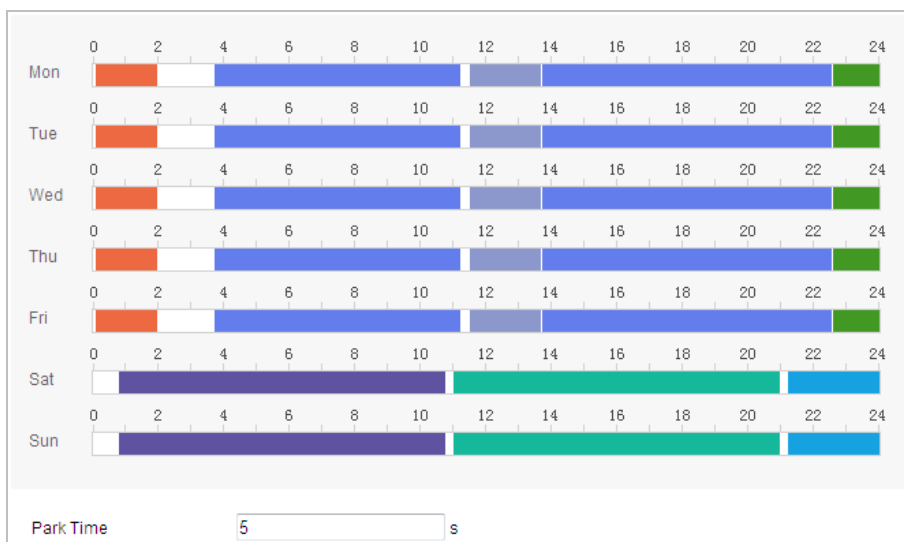
Figure 5-42 Edit the Schedule and Task Type

☐ i NOTE

The time of each task cannot be overlapped. Up to 10 tasks can be configured for each day.

14. Click ![Save] .

5.5.10 Clear PTZ Configurations

Purpose:

You can clear PTZ configurations in this interface, including all presets, patrols, privacy masks, PTZ limits, scheduled tasks and park actions.

☐ i NOTE

Pattern function varies depending on device models.

Steps:

4. Go to the. Clearing Configuration interface:
   Configuration > PTZ > Clear Config

5. Select the items you want to clear.

6. Click ![Save] .

5.5.11 Prioritize PTZ

Steps:

5. Go to the Prioritize PTZ interface:
   Configuration > PTZ > Prioritize PTZ.

Figure 5-43 Position Settings

6. Select Network or RS-485 from the dropdown list

7. Set the delay time (Range 2-200s).

8. Click ⟨💾 Save⟩ .

5.5.12 Position and Vandal-Resistance Alarm Settings

Steps:

5. Go to the. Position Settings interface:

   Configuration > **PTZ** > **Position Settings**.

   ⟨ⓘ NOTE⟩

   The actual interface may vary from model to model.
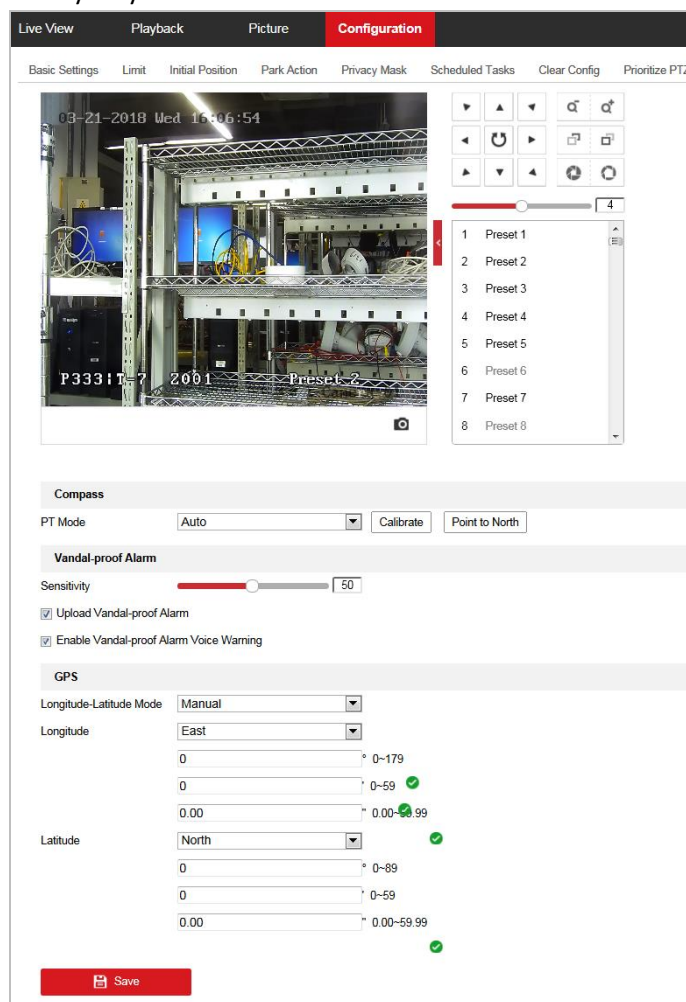
Figure 5-44 Position Settings

6. Set the vandal-resistance alarm.

   (4) Slide the bar to adjust the sensitivity of vandal-resistance detection.

   (5) Check **Upload Vandal-Resistance Alarm** to upload the vandal-resistance alarm.

   (6) Check **Enable Vandal-Resistance Alarm Voice Warning** to enable the voice warning of vandal-resistance alarm.

7. Set GPS settings.

    (7)   Select Longitude-Latitude Mode as **Manual**.

    (8)   Select longitude and latitude as East or West according to the actual position.

    (9)   Input the value of longitude and latitude in three textboxes.

8. Click   🖫 Save   .

5.5.13 Configure Linear Scan

Steps:

10. Go to the linear scan interface:

    Configuration > Advanced Configuration> PTZ > Linear Scan.
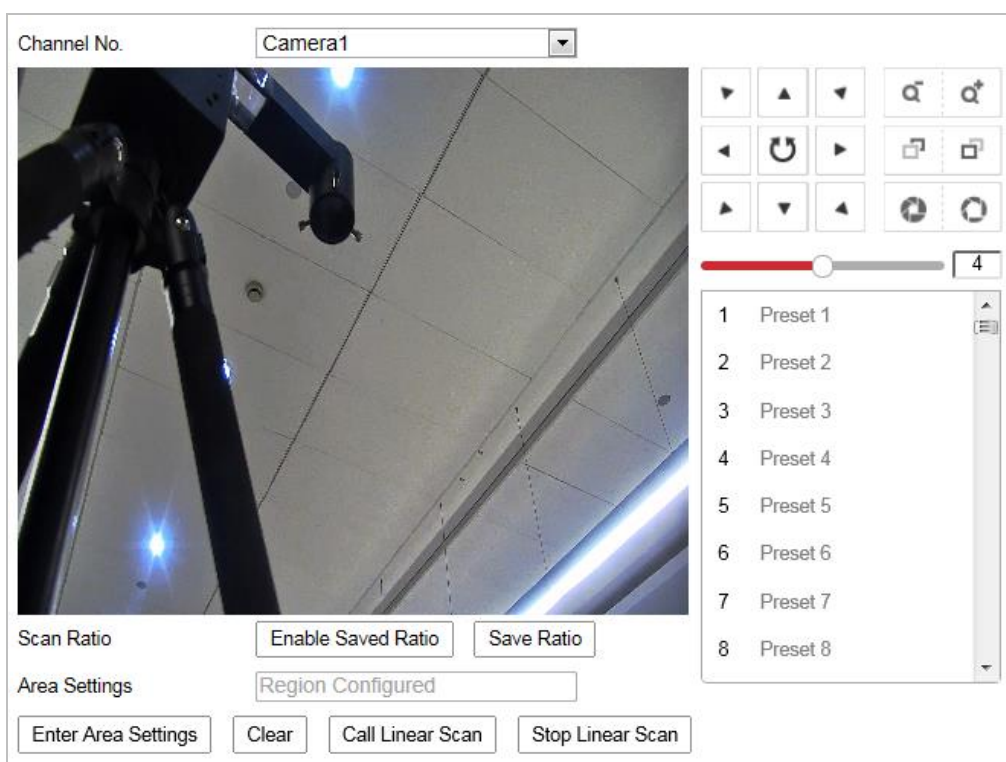
Figure 5-45 Linear Scan

11. Select Camera 1 or Camera 2 from the Channel No. list.

12. Zoom in and zoom out the camera to the appropriate zoom ratio.

13. Click **Save Ratio**.

14. Optionally, you can click **Enable Saved Ratio** to set the camera to the saved zoom ratio.

15. Click **Set Scan Area** and set the left/right/up/down limits with the PTZ control panel and Iris+/- button.

16. Optionally, you can click **Clear** to delete the saved scan area.

17. Click **Save** and the **Linear Scan Area** shows *Scan area saved*.

18. Click **Start Linear Scan** and **Stop Linear Scan** to start and stop the saved linear scan.

Chapter 6   VCA Configuration

Before you start:

Go to **Configuration > System > Maintenance > VCA Resource Type** and select the VCA Resource as **Temperature Measurement + Behavior Analysis**.

Purpose:

You can do intelligent analysis, such as behavior analysis, with the device. Multiple rules can be configured for different requirements.

☐ NOTE

The VCA (Video Content Analysis) function only supported by the thermal channel.

6.1   Configure VCA Information

Steps:

1. Go to the. VCA Information Configuration interface:

   Configuration > VCA Configuration > VCA Info.

Figure 6-1 VCA Information

2. Check to enable the Intelligent Analysis. And you can view the current version for the behavior analysis.

3. Set the display information:
   - If you select to display the target info and rule info on the alarm picture are supported; you can enable the functions by ticking the corresponding checkbox on your demand.
   - And if you tick display target info and rule on stream, the information will be added to the video stream, and the overlay will be displayed if you get live view or play back by the VS Player.

4. Set the Snapshot:
   ● You can configure the **Notify Surveillance Center** function which is used for uploading the picture to the surveillance center when and VCA alarm occurs.
   ● You can also set the quality and resolution of the picture separately.

5. Click [💾 Save] .
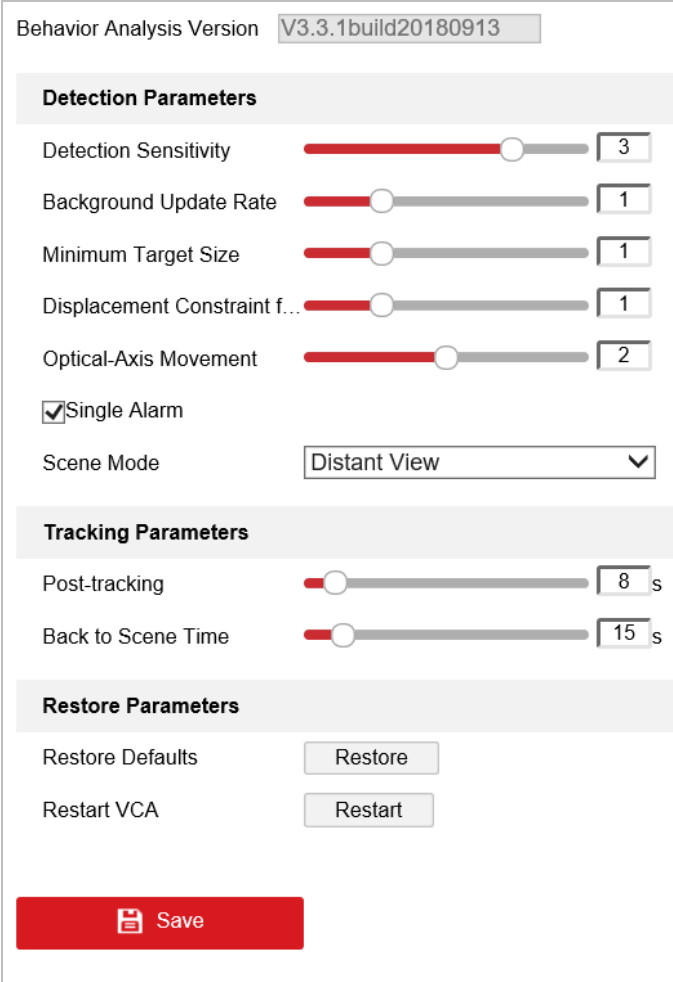
6.2 Advanced Configuration

All the parameters for both behavior analysis and face capture are collected in the advanced configuration page. You can configure these parameters for different VCA types on your demand.

Steps:
1. Go to the. Advanced Configuration interface:
   Configuration > VCA > Advanced Configuration

Figure 6-2 Advanced Configuration

2. Adjust the Detection Parameters.
   Detection Sensitivity: Range [0-4], the higher the sensitivity is, the easier the target will be detected.
   Background Update Rate: Range [0-4], if a detected target remains in the monitoring scene

for a certain time, the system will count the target as the background automatically. The greater the value is, the faster the target will be counted as the background.

Minimum Target Size: Range [0-4], The system will filter out the object smaller than the minimum target size.

Displacement Constraint for Target Generation: Range [0-4], the higher the value is, the slower the target is generated, and the higher accuracy the analysis will get.

Scene Modes: The scene mode is set to be General by default. Select Distant View when you are far from the targets. Select Indoor when you are indoor.

Optical-axis Movement: Check when the target moves in the direction of camera's optical -axis.

Single Alarm: You can enable Single Alarm, and the system only sends alarm once for one target triggering. Otherwise, the alarm will be triggered continuously until the target disappears.

3. Adjust the Tracking Parameters.

Post-Tracking: Range [2-600], you can configure the tracking duration after the target is still.

Back to Scene Time: Set the duration of the camera move back to original scene after manually interrupting behavior analysis.

Restore Default: Click **Restore** to restore the parameters to the default.

Restart VCA: Click **Restart** to restart the VCA function.

6.3   Behavior Analysis

Purpose:

The device supports patrol tracking for multiple scenes. At most 8 rules can be configured for a single scene. You can configure the rules for the scene on your demand.

Steps:

1. Configure the **VCA Info**: For details, see 7.2 Configure VCA Information.
2. Configure the **Zooming Ratio** parameters: Set the appropriate tracking zooming ratio with

   the PTZ control panel. Click on [🖫 Save] .

   The optical camera will track the target when the VCA rule is triggered which is configured on the thermal camera.
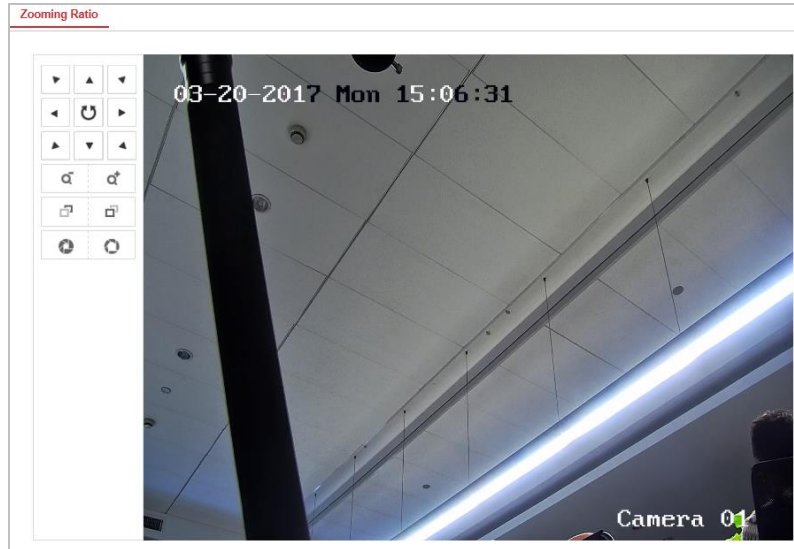
Figure 6-3 Zoom Ratio

3. Configure the Scene:

    Go to **VCA > Scene Configuration > Scene Parameters**

    At most 10 scenes can be added. Different rules and properties can be configured for each scene.
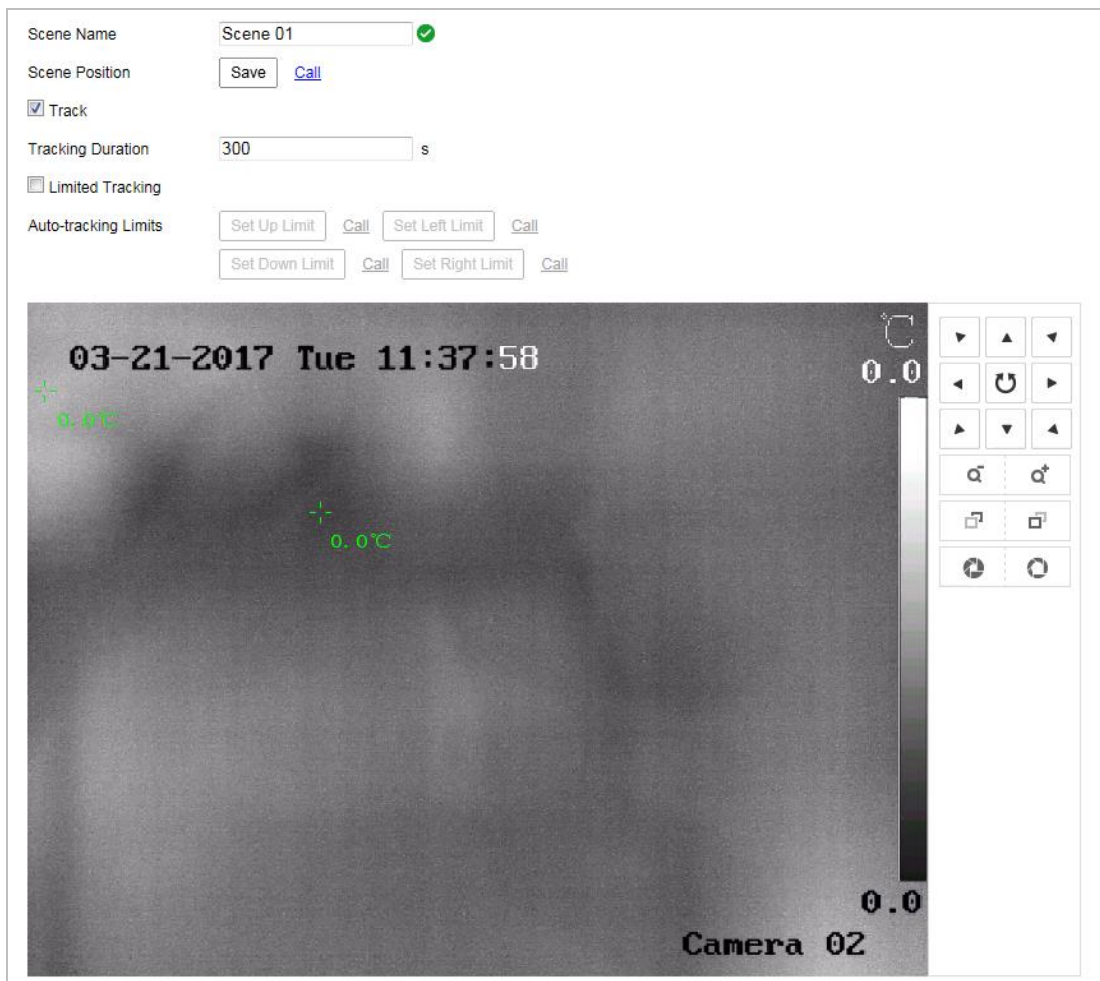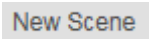

Figure 6-4 Scene Parameters

● **Create a Scene:**

1) Add New Scene: Click New Scene to create a new scene.
2) Control the PTZ to get the required scene.
3) Set the scene parameters:
   Scene Name: Enter a custom scene name.
   Patrol Sequence: Set the sequence for the scene when doing patrol tracking. If the sequence is selected as 0, this scene will not be configured for patrol tracking.
   Duration: Set the dwell time of the scene when doing patrol tracking. The intelligent analysis will be enabled during the period. If the alarm is triggered, the device will start to track automatically.
   Enable Track: Check to enable the tracking function for the scene.
   Tracking Duration: Set the duration of the tracking. If the value is selected as 0, the tracking duration will not be limited.
   Limited Tracking: You can check to enable/disable the function. If the function is enabled, you can set the limited position for the tracking.

4) Click 🖫 Save .

● **Rule Configuration:**
   At most 8 rules can be configured for a single scene. Follow the steps below to configure the rule for the scene.
1) Click the **Rule** tab to go to the. rule settings interface.
2) Create new rule: Click on the button ✛ to add a new rule.
3) Select rule type: Click the dropdown menu to select the rule type. Line Crossing, Intrusion, Region Entrance, and Region Exiting are selectable.

Rule List			✛
Enable	No.	Rule Name	Rule Type
☑	1	RULE1	Intrusion ⌄ ✕

☐ Filter by	Pixel ⌄	Duration	1	s ✅
Max. Size	0 * 0 (W*H)	Sensitivity	50	✅
Min. Size	0 * 0 (W*H)	Detection Target	All ⌄	

Figure 6-5   Rule List

4) Configure the rule area: Click the Draw Line or Draw Area button on the tool bar of the live view panel. Click the mouse on the live view panel. Right click the mouse to finish drawing. For details, see *6.4 Rule Configuration Demonstration*.
5) Configure the filtering size: The filtering function is supported for all rules. You can set the minimum and maximum size of the object needs to be filtered. The system will only detect the object in a size between the configured minimum and maximum value. For details, see*6.4 Rule Configuration Demonstration*.
6) Configure the Duration: Set the dwell time of the target cross the line or area. The intelligent analysis will be enabled during the period.
7) Configure the Sensitivity: The higher the value is, more easily the alarm will be

triggered.

8) Configure the Detection Target.

9) Enable rules: Check the **Enable** checkbox of each rule in the rule list to enable the rule.

10) Click ⬛ Save .

📑 **NOTE**

Create multiple rules: You can create more rules by repeating the above steps.

● **Configure Arming schedule:**

1) Click the Arming Schedule tab.

2) Select a rule from the rule list.

Figure 6-6 Arming Schedule

3) Click on the Edit button to edit the arming time segment.
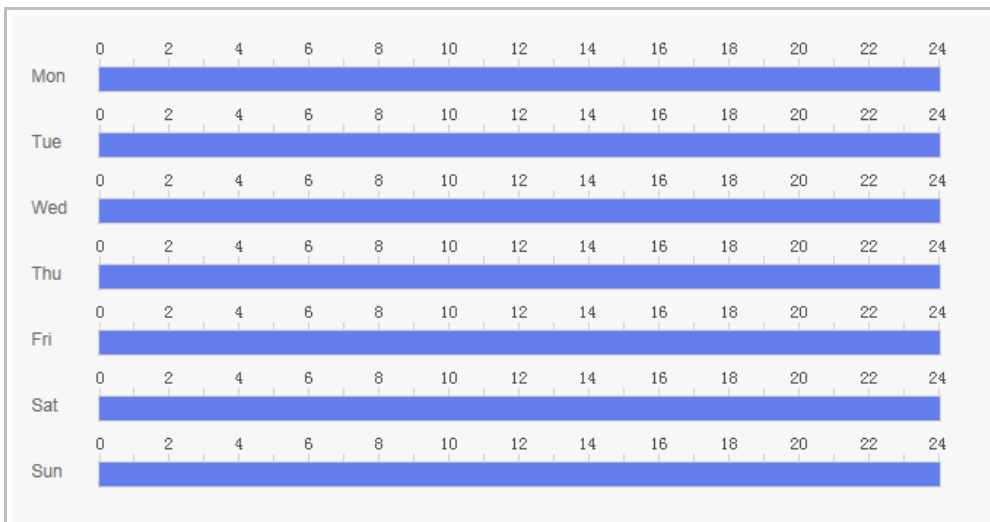
Figure 6-7 Schedule Time

[i] **NOTE**

You can select to copy the settings to whole week or are specific days of the week. At most 8 segments can be configured.

4) Click [💾 Save] .

● **Configure Arming schedule:**
1) Click the Alarm Linkage tab.
2) Select a rule from the rule list.

Rule List

No.	Rule Name	Rule Type
1	RULE1	Intrusion

☐ **Normal Linkage**	☐ **Trigger Alarm Output**	☐ **Trigger Recording**
☐ Send Email	☐ A->1	☐ A1
☑ Notify Surveillance Center	☐ A->2	☐ A2

Figure 6-8 Alarm Linkage

3) Check corresponding linkage actions to enable it.
4. Advanced Configuration: For details, see **_section 6.2 Advanced Configuration_**. Click

[💾 Save] .

6.4 Rule Configuration Demonstration

Purpose:

This section provides detailed configuration steps for each rule.

6.4.1 Line Crossing

Purpose:

This function can be used for detecting people, vehicles and objects traversing a set virtual plane. The traversing direction can be set as bidirectional, from left to right or from right to left. The alarm will be triggered if the rule is broken.

Steps:

1. Create new rule: Click on the button ![+] to add a new rule.

2. Select rule type: Click the dropdown menu and select **Line Crossing** as the rule type.

Figure 6-9 Select Rule Type

3. (Optional) Configure the size filter, if you want to narrow the detection target to a desired range.
   a. Check the **Filter by**, and only filer by pixel is available.
   b. Click the ![button] button and draw a rectangle on the live view image as the Min. size filter.
   c. Click the ![button] button and draw a rectangle on the live view image as the Max. size filter.

4. Configure the rule area:

   Click ![pen] on the tool bar of the live view panel. Specify a point of the line by clicking the mouse on the live view image, and then specify the other one.
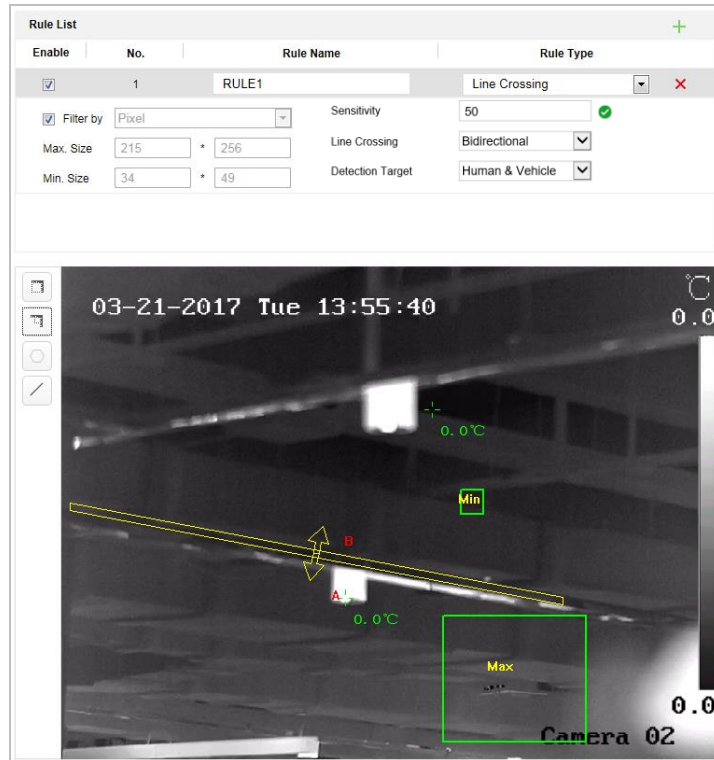
Figure 6-10 Draw Line

5. Click the dropdown menu in the **Line Crossing** to select the crossing direction.
6. Set the sensitivity of detecting a target. The higher the value is, the easier a target would be recognized, and the higher possibility of misinformation would be.
7. Click the dropdown list of **Detection Target** to select the target.
8. Enable rules.
9. Click ![Save] .

6.4.2 Intrusion

Purpose:

This function can be used for detecting whether there are people, vehicles and objects intrude into the pre-defined region longer than the set duration. The alarm will be triggered if the rule is broken.

Steps:

1. Create new rule: Click on the button ![+] to add a new rule.

2. Select rule type: Click the dropdown menu and select **Intrusion** as the rule type.
3. Configure the filtering size: for details, see step 3 in ***section 6.4.1 Line Crossing***.
4. Configure the rule area:

   Click ![○] on the tool bar of the live view panel. Click the mouse on the live view image to specify a corner of the area. After you specify all the corners, right click the mouse to

connect the first corner and the last corner, which means the polygonal area is drawn.
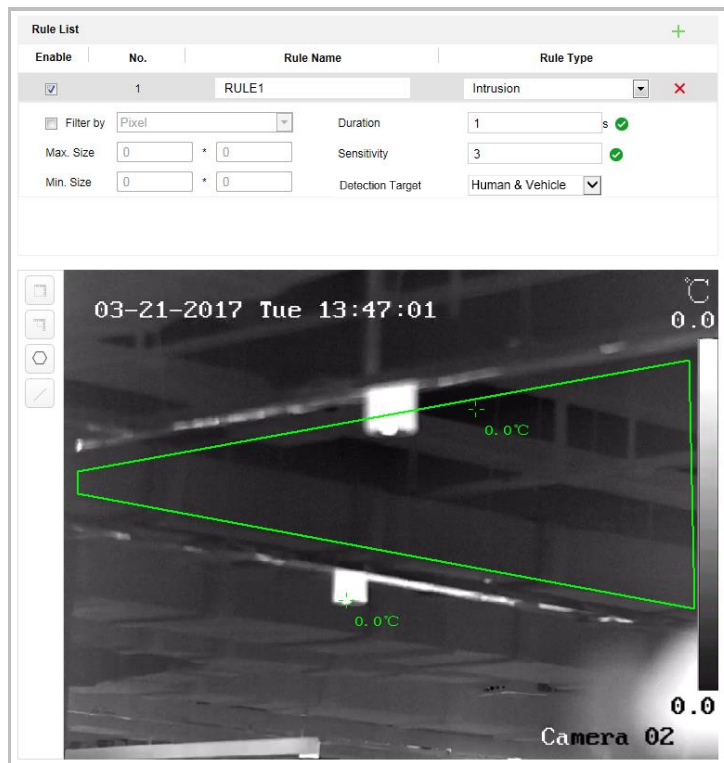
Figure 6-11 Draw Area

5.   Set the duration from 1 to 100.

6.   Set the sensitivity of detecting a target. The higher the value is, the easier a target would be recognized, and the higher possibility of misinformation would be.

7.   Click the dropdown list of **Detection Target** to select the target.

8.   Enable rules.

9.   Click [Save] .

6.4.3 Enter Region

Purpose:

This function can be used for detecting people, vehicles and objects entering the pre-defined region. The alarm will be triggered if the rule is broken.

Steps:

1.   Create new rule: Click on the button ✚ to add a new rule.

2.   Select rule type: Click the dropdown menu and select **Region Entrance** as the rule type.

3.   Configure the rule area:

Click ⬡ on the tool bar of the live view panel. Click the mouse on the live view panel. Right click the mouse to finish drawing.

4.   Configure the filtering size: for details, see step 3 in ***section 6.4.1 Line Crossing***.

5. Click the dropdown list of **Detection Target** to select the target.
6. Enable rules.

7. Click [🖫 Save] .

6.4.4 Exit Region

Purpose:

This function can be used for detecting people, vehicles and objects exiting the pre-defined region. The alarm will be triggered if the rule is broken.

Steps:

1. Create new rule: Click on the button [+] to add a new rule.

2. Select rule type: Click the dropdown menu and select **Region Exiting** as the rule type.
3. Configure the rule area:

    Click [◇] on the tool bar of the live view panel. Click the mouse on the live view panel. Right click the mouse to finish drawing.

Figure 6-12 Draw Area

4. Configure the filtering size: for details, see step 3 in *section 6.4.1 Line Crossing*.
5. Click the dropdown list of **Detection Target** to select the target.

6.   Enable rules.

7.   Click   **🖫 Save**   .

Chapter 7   Device Configuration

7.1 Configure Network Settings

NOTE

The functions vary depending on the models of device.

7.1.1 Basic Settings

Configure TCP/IP

Purpose:

TCP/IP settings must be properly configured before you operate the device over network. IPv4 and IPv6 are both supported.

Steps:

1.   Enter TCP/IP settings interface:

   Configuration > Network > Basic Settings > TCP/IP

Figure 7-1 TCP/IP Settings

2. Configure the NIC settings, including the **IPv4 (IPv6) Address**, **IPv4 (IPv6) Subnet Mask** and **IPv4(IPv6) Default Gateway**.

3. Click [Save] .

4. Click **Test** to make sure that the IP address is valid.

[i] NOTE
● If the DHCP server is available, you can check [ ] DHCP to automatically obtain an IP address and other network settings from that server.

● The valid value range of Maximum Transmission Unit (MTU) is 500 ~ 1500. The default value is 1500.

● 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 and configure the gateway of the network device.

● If the DNS server settings are required for some applications (e.g., sending email), you should properly configure the **Preferred DNS Server** and **Alternate DNS server**.

DNS Server	
Preferred DNS Server	8.8.8.8
Alternate DNS Server	

Figure 7-2 DNS Server Settings

[i] NOTE
The router must support the route advertisement function if you select **Route Advertisement** as the IPv6 mode.

Configure DDNS

Purpose:
If your device is set to use PPPoE as its default network connection, you can use the Dynamic DNS (DDNS) for network access.

Before you start:
Registration on the DDNS server is required before configuring the DDNS settings of the device.

⚠ WARNING

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

Steps:
1. Go to the. DDNS settings interface:
   Configuration > Network > Basic Settings > DDNS

Figure 7-3 DDNS Settings

2. Check **Enable DDNS**.

3. Select **DDNS Type**.

- **DynDNS:**

  Steps:

  (1) Input the **Server Address** of DynDNS (e.g. members.dyndns.org).

  (2) In the **Domain** text field, input the domain name obtained from the DynDNS website.

  (3) Input the. **Port** of DynDNS server.

  (4) Input the **User Name** and **Password** registered on the DynDNS website.

  (5) Click [💾 Save] .

Figure 7-4 DynDNS Settings

- **NO-IP:**

  Steps:

  (1) Input the **Server Address** of NO-IP.

  (2) In the **Domain** text field, input the domain name obtained from the NO-IP website.

  (3) Input the **Port** of NO-IP server.

  (4) Input the **User Name** and **Password** registered on the NO-IP website.

  (5) Click [💾 Save] .

Configure PPPoE Settings

Purpose:

If you have no router but only a modem, you can use Point-to-Point Protocol over Ethernet (PPPoE) function.

Steps:

1. Go to the. PPPoE settings interface:

   Configuration > Network > Basic Settings > PPPoE

Figure 7-5 PPPoE Settings

2. Check **Enable PPPoE**.
3. Input the User Name, Password, and Confirm password for PPPoE access.

   [i] NOTE

   The user name and password should be assigned by your ISP.

   ⚠ WARNING

   We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

4. Click [🖫 Save] .

[i] NOTE

A reboot is required for the settings to take effect.

Configure Port Settings

Purpose:

If there is a router and you want to access the device through Wide Area Network (WAN), you need to forward the 3 ports for the device.

Steps:

1. Go to the Port settings interface:

   Configuration > Network > Basic Settings > Port

HTTP Port	80
RTSP Port	554
HTTPS Port	443
Server Port	8000

Figure 7-6 Port Settings

2.   Set the HTTP port, RTSP port and port of the device.

HTTP Port: The default port number is 80.

RTSP Port: The default port number is 554.

HTTPS Port: The default port number is 443.

Server Port: The default port number is 8000.

3.   Click [**Save**] .

Configure NAT (Network Address Translation) Settings

Purpose:

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 house 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.

Steps:

1.   Go to the. UPnP™ settings interface.

Configuration >Network > Basic Settings > NAT

2.   Check to enable the UPnP™ function.

[i] NOTE

You can edit the Friendly Name of the device. This name can be detected by corresponding device, such as a router.

3.   Set the port mapping mode:

To port mapping with the default port numbers:

Choose | Port Mapping Mode | Auto ▼ |

To port mapping with the customized port numbers:

Choose | Port Mapping Mode | Manual ▼ |

And you can customize the value of the port number by yourself.

Figure 7-7 Port Mapping Mode

4. Click [Save] .

Configure Multicast Settings

Purpose:

Multicast is group communication where data transmission is addressed to a group of destination devices simultaneously.

Figure 7-8 Set Multicast

Steps:

1. Go to the Multicast setting interface: **Configuration** > **Network** > **Basic Settings** > **Multicast.**
2. Select the channel number.
3. Set **IP Address, Stream Type, Video Port,** and **Audio Port** of the camera.

   Notes:

- IP Address stands for the address of multicast.
- Video port and audio port of each video stream of each camera channel can be specified by selecting a stream in Video Stream and inputting port number in Video Port and Audio Port.
4. Click **Save**.

7.1.2 Advanced Settings

Configure SNMP

Purpose:

You can use SNMP to get device status and parameters related information.

Before you start:

Before setting the SNMP, please use the SNMP software and manage to receive the device information via SNMP port. By setting the Trap Address, the device can send the alarm event and exception messages to the surveillance center.

> ☐ⓘ NOTE
>
> The SNMP version you select should be the same as that of the SNMP software.

Steps:

1. Go to the. SNMP settings interface:

   Configuration > Network > Advanced Settings > SNMP

Figure 7-9 SNMP Settings

2. Check **Enable SNMP v1**, **Enable SNMP v2c**, or **Enable SNMP v3** to enable the feature.

3. Configure the SNMP settings.

    ☐i NOTE

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

4. Click [🖫 Save].

Configure FTP

Purpose:

You can set a FTP server and configure the following parameters for uploading captured pictures.

Steps:

1. Go to the. FTP settings interface:

    Configuration > Network > Advanced Settings > FTP

Figure 7-10 FTP Settings

2. Configure the FTP settings, including server address, port, user name, password, directory,
   and upload type.

    ☐i NOTE

    The server address supports both the domain name and IP address formats.

    ⚠ WARNING

    *We highly recommend you create a strong password of your own choosing (using a minimum
    of 8 characters, including 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.*

● **Set the directory in FTP server for saving files**:

    In the **Directory Structure** field, you can select the root directory, parent directory and
    child directory.

◆ **Root directory**: The files will be saved in the root of FTP server.

◆ **Parent directory**: The files will be saved in a folder in FTP server. The name of folder can be defined as shown in following Figure 7-11.
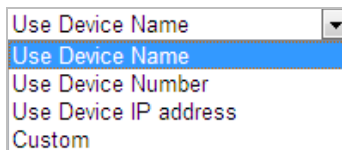
Figure 7-11 Parent Directory

◆ **Child directory**: It is a sub-folder which can be created in the parent directory. The files will be saved in a sub-folder in FTP server. The name of folder can be defined as shown in following Figure 7-12.
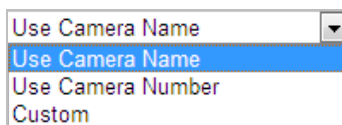
Figure 7-12 Child Directory

● **Upload type:** To enable uploading the captured picture to the FTP server.

3. Click [Save] .

4. You can click **Test** to confirm the configuration.

 NOTE

If you want to upload the captured pictures to FTP server, you also have to enable the continuous snapshot or event-triggered snapshot in **Snapshot** interface.

Configure Email Settings

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:

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

Steps:

1. Go to the. Email settings interface:

   Configuration> Network > Advanced Settings > Email

Figure 7-13 Email Settings

2. Configure the following settings:

Sender: The name of the email sender.

Sender's Address: The email address of the sender.

SMTP Server: The SMTP Server IP address or host name (e.g., smtp.263xmail.com).

SMTP Port: The SMTP port. The default TCP/IP port for SMTP is 25.

E-mail encryption: None, SSL, and TLS are selectable. When you select SSL or TLS and disable STARTTLS, e-mails will be sent after encrypted by SSL or TLS. The SMTP port should be set as 465 for this encryption method. When you select SSL or TLS and enable STARTTLS, emails will be sent after encrypted by STARTTLS, and the SMTP port should be set as 25.

🛈 NOTE

STARTTLS protocol must be supported by the email server for e-mail encryption with STARTTLS. When it is not supported by the email server and Enable STARTTLS is checked, the email will not be encrypted.

Attached Image: Check **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.

⚠ WARNING

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

Receiver: Select the receiver to which the email is sent. Up to 2 receivers can be configured.

Receiver: The name of the user to be notified.

Receiver's Address: The email address of user to be notified. (Optional: click **Test** to make sure that the email server can send email out.)

3. Click ▣ Save .

Configure Platform Access

Purpose:

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

Steps:

1. Go to the. Platform Access interface.

   Configuration > Network > Advanced Settings > Platform Access

   ☑ Enable

   Platform Access Mode   Cloud P2P   ▾

   Server IP   ☐ Custom

   Register Status   Offline   ▾

Figure 7-14 Platform Access Settings

2. Check **Enable**.
3. Select the Platform Access Mode from the dropdown list.
4. Set the Server IP.

5. Click ▣ Save

Configure HTTPS Settings

Purpose:

HTTPS is consisted by SSL&HTTP. It is used for encryption transmission, identity authentication network protocol which enhances the security of WEB accessing.

⚠ WARNING

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

Steps:

1. Go to the. HTTPS settings interface.
   Configuration > Network > Advanced Settings > HTTPS
2. Create the self-signed certificate or authorized certificate.
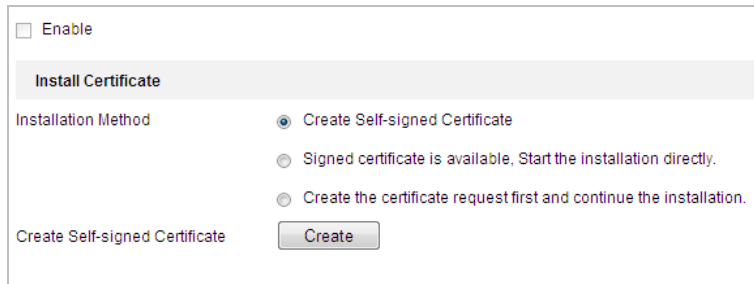
Figure 7-15 Create Certificate

OPTION 1: Create the self-signed certificate

1) Select Create Self-signed Certificate.

2) Click **Create**.
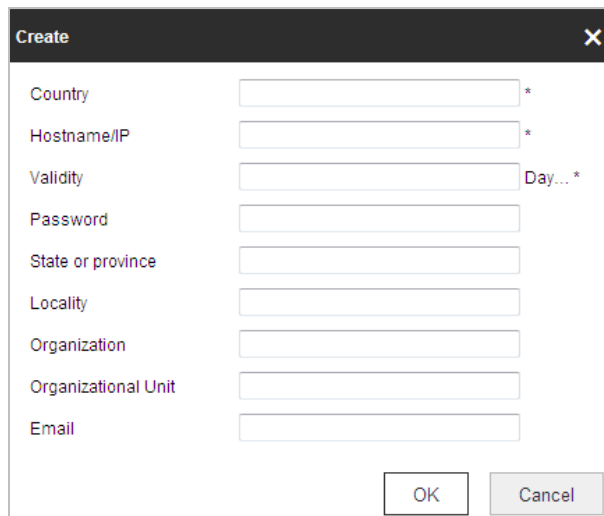
Figure 7-16 Create Self-signed Certificate

3) Input the country, host name/IP, validity and other information.

4) Click **OK**.

OPTION 2: Start the installation when signed certificate is available.

1) Select Signed certificate is available, Start the installation directly.

2) Click **Browse** to upload the available certificate.

3) Click **Install** to install the certificate.

4) Click **OK**.

OPTION 3: Create certificate request first and continue the installation.

1) Select Create certificate request first and continue the installation.

2) Click **Create** to create the certificate request, and fulfill the required information.

3) Download the certificate request and submit it to the trusted certificate authority for signature.

4) After receiving the signed valid certificate, import the certificate to the device.

5) Click **OK**.

3. There will be the certificate information after you successfully create and install the certificate.
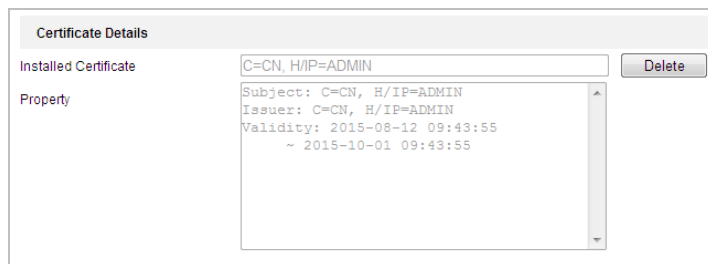
Figure 7-17 Installed Certificate Property

NOTE

● The default port number of HTTPS is 443. The port value ranges from 1 to 65535.
● When the port number is the default number 443, the format of the URL is ***https://IP address,*** eg., https://192.168.1.64.
● When the port number is not the default number 443, the format of the URL is ***https://IP address:port number***, eg., https://192.168.1.64:81.

Configure QoS Settings

Purpose:

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

Steps:

1. Go to the. QoS settings interface:

   Configuration >Advanced Configuration > Network > QoS
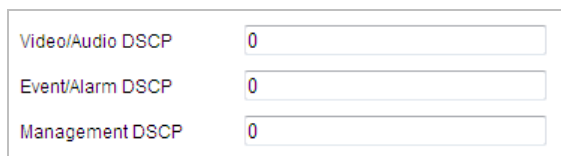
Figure 7-18 QoS Settings

2. Configure the QoS settings, including video / audio DSCP, event / alarm DSCP and Management DSCP.

   The valid DSCP value ranges from 0 to 63. The DSCP value is bigger, the priority is higher.

3. Click 🖫 Save .

NOTE

● Make sure that you enable the QoS function of your network device (such as a router).
● It will ask for a reboot for the settings to take effect.

Configure 802.1X

Purpose:

The device supports IEEE 802.1X standard.

IEEE 802.1X is a port-based network access control. It enhances the security level of the LAN. When devices connect to this network with IEEE 802.1X standard, the authentication is needed. If

the authentication fails, the devices don't connect to the network.

The protected LAN with 802.1X standard is shown as follows:
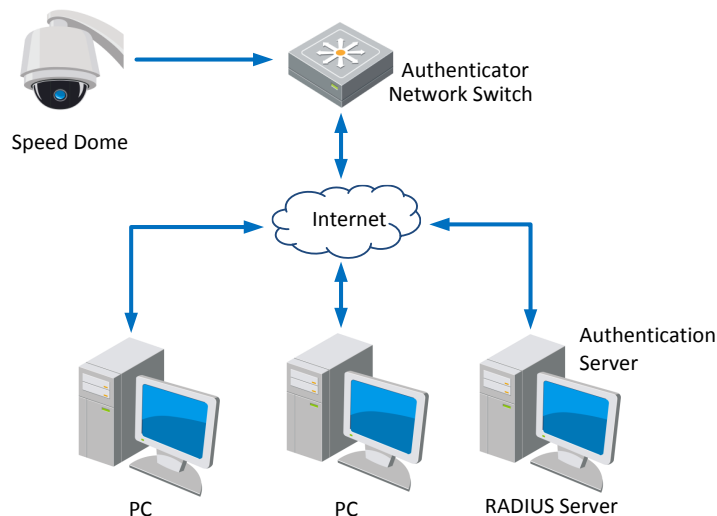
Figure 7-19 Protected LAN

- Before connecting the Network Camera to the protected LAN, please apply a digital certificate from a Certificate Authority.
- The network camera requests access to the protected LAN via the authenticator (a switch).
- The switch forwards the identity and password to the authentication server (RADIUS server).
- The switch forwards the certificate of authentication server to the network camera.
- If all the information is validated, the switch allows the network access to the protected network.

⚠ **WARNING**

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

Steps:

1. Connect the network camera to your PC directly with a network cable.
2. Go to the. 802.1X settings interface:

   Configuration > Network > Advanced Settings > 802.1X

Figure 7-20 802.1X Settings

3. Check **Enable IEEE 802.1X**.
4. Configure the 802.1X settings, including user name and password.

   📄 **NOTE**

   The EAP-MD5 version must be identical with that of the router or the switch.

5. Click [💾 Save] .

   📄 **NOTE**

   The camera reboots when you save the settings.
6. After the configuration, connect the camera to the protected network.

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.

● **CGI**

Check **Enable Hikvision_CGI** and then select the authentication from the drop-down list.

📄 **NOTE**

Digest is the recommended authentication method.

● **ONVIF**

Steps:
1. Check **Enable ONVIF** to enable the function.
2. Add ONVIF users. Up to 32 users are allowed.
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.

4. Save the settings.

📄 **NOTE**

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

7.2 Configure Video and Audio Settings

7.2.1 Configure Video Settings

Steps:
1. Go to the. Video settings interface:

   Configuration > Video/Audio > Video

Figure 7-21 Configure Video Settings

2. Select the **Channel No.** in the dropdown list.
3. Select the **Stream Type** of the device to main stream (normal), sub-stream or third stream. The main stream is usually for recording and live viewing with good bandwidth, and the sub-stream can be used for live viewing when the bandwidth is limited. Refer to the ***Section 4.1 Configure Local Parameters*** for switching the main stream and sub-stream for live viewing.
4. You can customize the following parameters for the selected stream.

   [i] NOTE

   The parameters vary depending on the models of the device.

   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:

   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 to 256~16384Kbps. The higher value corresponds to the higher video

quality, but the higher bandwidth is required.

Video Encoding:

The **Video Encoding** standard can be set to H.264 or H.265.

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 if the bitrate type is variable.

- 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.

Profile:

Basic Profile, Main Profile and High Profile are selectable.

I Frame Interval:

Set the I-Frame interval from 1 to 400.

SVC:

Scalable Video Coding is an extension of the H.264/AVC 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, the better fluency of the stream, though, the video quality may not be so satisfied. The lower value of the smoothing, the higher quality of the stream, though it may appear not fluent.

Display VCA Info By: Select the display media as Player or Video. Player means the VCA info can displayed only by dedicated player from the manufacturer. Video means the VCA info can displayed by any general video player.

5. Click 🖫 Save .

7.2.2 Configure Audio Settings

Steps:

1. Go to the. Audio settings interface
   Configuration > Video/Audio > Audio
2. Select the channel No. from the dropdown list.

Figure 7-22 Audio Settings

3. Configure the following settings.
   Audio Encoding: G.722.1, G.711ulaw, G.711alaw, MP2L2, G.726 and PCM are selectable.
   Audio Input: When an intercom is connected to the device, you need to set this option to **LineIn**. When a microphone is connected to the device, you need to set this option to **MicIn**.
   Audio Stream Bitrate: When the Audio Encoding is selected as MP2L2, you can configure the Audio Stream Bitrate in the dropdown list. The greater the value is, the better the audio quality will be.
   Sampling Rate: When the Audio Encoding is selected as MP2L2, you can configure the Sampling Rate in the dropdown list. The greater the value is, the better the audio quality will be.
   Input Volume: Slid the **bar** to turn up/down the volume. The value ranges from 0 to 100.
   Environmental Noise Filter: Select ON or OFF in the dropdown list to enable or disable the function. It's recommended to enable the function when the sampling rate is lower than 32kHz.

4. Click [💾 Save] .

7.2.3 Configure ROI Settings

Purpose:

ROI (Region of Interest) encoding is used to enhance the quality of images which are specified in advance. There are two different ROI methods: **Fixed Region** and **Dynamic Region**. When **Fixed Region** is enabled, image quality of ROI area will be enhanced and image quality of other areas will be reduced. When **Dynamic Region** is enabled, image quality of tracking target will be enhanced.

[i] **NOTE**

ROI function varies depending on the models of device.

Steps:

1. Go to the. ROI settings interface:

111

Configuration >Video/Audio > ROI

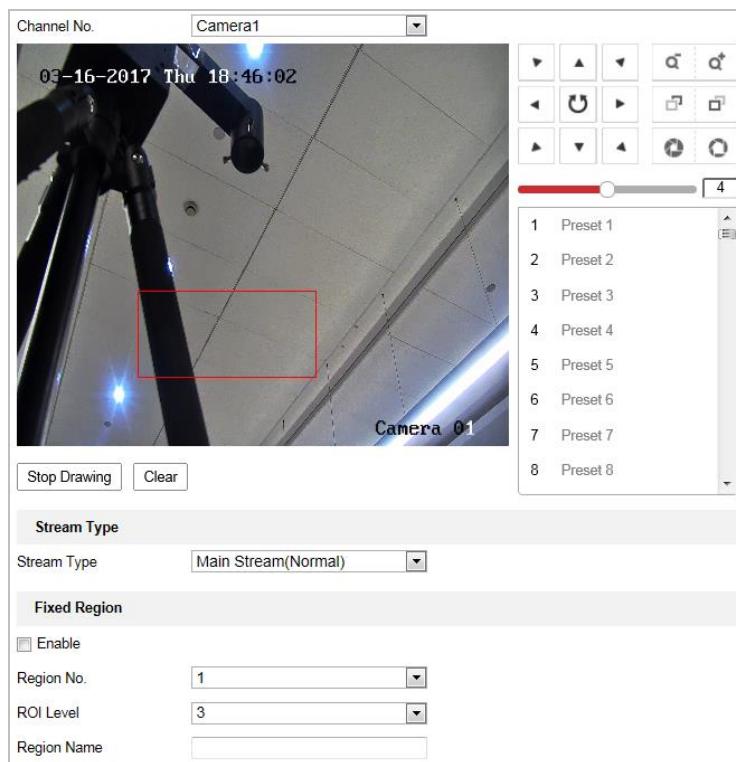2. Select the channel No. from the drop-down list.

Figure 7-23 Region of Interest

● **ROI for Fixed Region**

Steps:

1. Check **Enable** .

2. Select a stream type. You can set the ROI function for main stream, sub stream or third stream.

3. Click [Draw Area] and then click-and-drag the mouse to draw a red frame in the live view image. You can click [Clear] to clear it.

[i] NOTE

The number of areas supported in ROI function varies depending on the models of device.

4. Select the **Region No.** from the dropdown list.

5. Adjust the **ROI level** from 1 to 6. The higher the value, the better image quality in the red frame.

6. Enter a **Region Name**.

7.3 Configure Image Settings

[i] NOTE

● On the event configuration page, click ▌ to show the PTZ control panel or click ▌ to hide it.
● Click the direction buttons to control the pan/tilt movements.
● Click the zoom/iris/focus buttons to realize lens control.
● The functions vary depending on the models of device.

7.3.1 Configure Display Settings

Purpose:

You can set the image quality of the device, including brightness, contrast, saturation, sharpness, etc.

⌈ī⌉ NOTE

● The parameters in **Display Settings** interface vary depending on the models of device.
● You can double click the live view to enter full screen mode and double click it again to exit.

Steps:

1. Go to the. Display settings interface:
   Configuration > Image> Display Settings
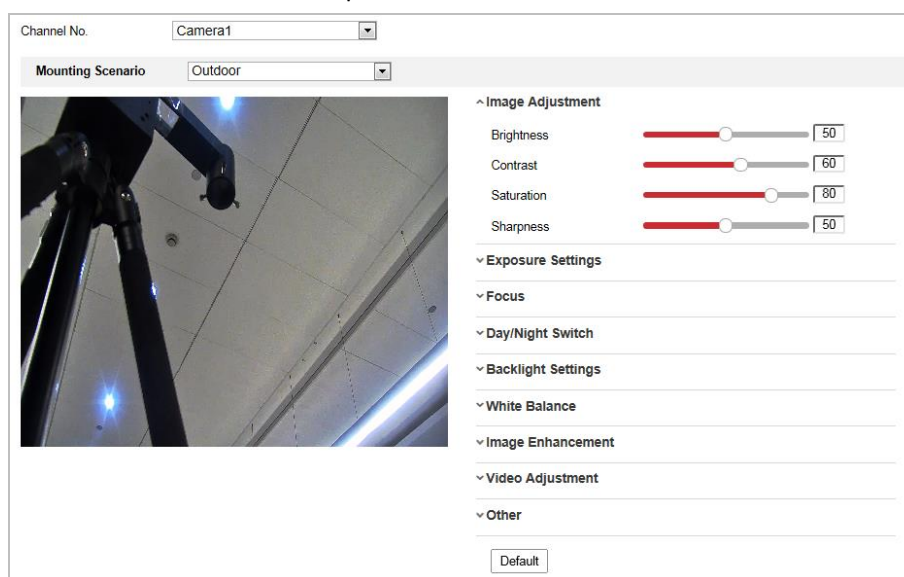2. Select the channel No. from the dropdown list.

Figure 7-24 Display Settings

3. Select the **Scene** in the dropdown list with different predefined image parameters.
4. Set the image parameters of the device.

◆ Set the Channel Camera 1

Image Adjustment

● **Brightness**
This feature is used to adjust brightness of the image. The value ranges from 0 to 100.

● **Contrast**

This feature enhances the difference in color and light between parts of an image. The value ranges from 0 to 100.

● **Saturation**

This feature is used to adjust color saturation of the image. The value ranges from 0 to 100.

● **Sharpness**

Sharpness function enhances the detail of the image by sharpening the edges in the image. The value ranges from 0 to 100.

⬚ **NOTE**

The parameters vary depending on the models of device.

Exposure Settings

● **Exposure Mode**

The **Exposure Mode** can be set to **Auto, Iris Priority, Shutter Priority,** and **Manual.**

◆ Auto:

The iris, shutter and gain values will be adjusted automatically according to the brightness of the environment.

◆ Iris Priority:

The value of iris needs to be adjusted manually. The shutter and gain values will be adjusted automatically according to the brightness of the environment.
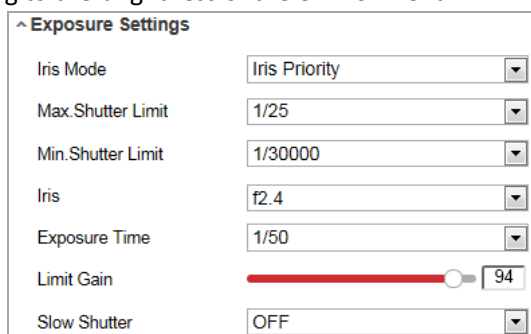

Figure 7-25 Manual Iris

◆ Shutter Priority:

The value of shutter needs to be adjusted manually. The iris and gain values will be adjusted automatically according to the brightness of the environment.
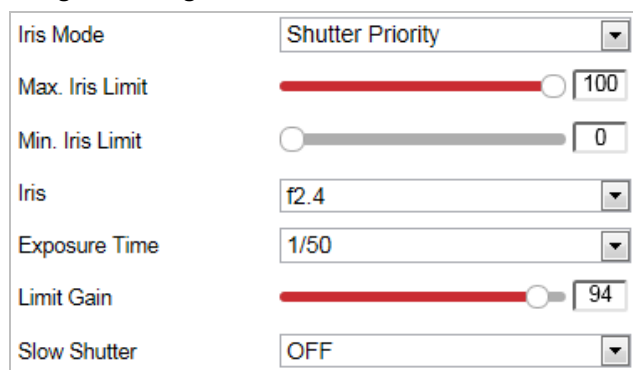

Figure 7-26 Manual Shutter

◆ Manual:

In **Manual** mode, you can adjust the values of **Gain**, **Shutter**, **Iris** manually.

● **Limit Gain**

This feature is used to adjust gain of the image. The value ranges from 0 to 100.

● **Slow Shutter**

This function can be used in underexposure condition. It lengthens the shutter time to ensure full exposure.

● **Slow Shutter Level**

When slow shutter is set as ON, you can select the slow shutter level from the dropdown list. The slow shutter lever can be set to **Slow Shutter*2, *3, *4, *6, *8**.

Slow Shutter	ON
Slow Shutter Level	Slow Shutter*2

Figure 7-27 Slow Shutter

NOTE

The parameters vary depending on the models of device.

Focus Settings

● **Focus Mode**

The **Focus Mode** can be set to **Manual**, **Semi-auto**.

◆ Semi-auto:

The device focuses automatically only once after panning, tilting and zooming.

◆ Manual**:**

In **Manual** mode, you need to use   on the control panel to focus manually.

● **Min. Focus Distance**

This function is used to limit the minimum focus distance.

NOTE

The minimum focus value varies depending on the models of device.

Day/Night Switch

● **Day/Night Switch**

The **Day/Night Switch** mode can be set to **Auto, Day, Night** and **Scheduled-Switch**.

NOTE

This function varies depending on the models of device.

◆ **Auto**:

In **Auto** mode, the day mode and night mode can switch automatically according to the light condition of environment.

Figure 7-28 Auto Mode Sensitivity

◆ **Day**:

In **Day** mode, the device displays color image. It is used for normal lighting conditions.

◆ **Night**:

In **Night** mode, the image is black and white. **Night** mode can increase the sensitivity in low light conditions.

◆ **Scheduled-Switch:**

In **Schedule** mode, you can set the time schedule for day mode as shown in Figure 7-29. The rest time out of the schedule is for night mode. And you can tick **Triggered by Alarm Input**: to define the Day/Night mode by alarm triggered.

Figure 7-29 Day Night Schedule

Backlight Settings

● **BLC (Back Light Compensation)**

If there's a bright backlight, the subject in front of the backlight appears silhouetted or dark. Enabling **BLC**(back light compensation) function can correct the exposure of the subject. But the backlight environment is washed out to white.

● **WDR (Wide Dynamic Range)**

The wide dynamic range (WDR) function helps the camera provide clear images even under back light circumstances. When there are both very bright and very dark areas simultaneously in the field of view, WDR balances the brightness level of the whole image and provide clear images with details.

You can enable or disable the WDR function as shown in Figure 7-30. The wide dynamic level ranges from 0 to 100.

Figure 7-30 WDR

📖 **NOTE**

This function varies depending on the models of device.

● **HLC**

HLC (High Light Compensation) makes the camera identify and suppress the strong light sources that usually flare across a scene. This makes it possible to see the detail of the image that would normally be hidden.

White Balance

The **White Balance** mode can be set to **Auto**, **MWB**, **Outdoor**, **Indoor**, **Fluorescent Lamp**, **Sodium Lamp** and **Auto-Tracking**.

◆ **Auto**:

In **Auto** mode, the camera retains color balance automatically according to the current color temperature.

◆ **Manual White Balance:**

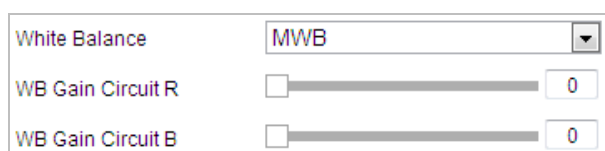In **MWB** mode, you can adjust the color temperature manually to meet your own demand as shown in Figure 7-31.

Figure 7-31 Manual White Balance

◆ **Outdoor**

You can select this mode when the device is installed in outdoor environment.

◆ **Indoor**

You can select this mode when the device is installed in indoor environment.

◆ **Fluorescent Lamp**

You can select this mode when there are fluorescent lamps installed near the device.

◆ **Sodium Lamp**

You can select this mode when there are sodium lamps installed near the device.

◆ **Auto-Tracking**

In **Auto-Tracking** mode, white balance is continuously being adjusted in real-time according to the color temperature of the scene illumination.

[i] NOTE

This function varies depending on the models of device.

Image Enhancement

[i] NOTE

This function varies depending on the models of device.

● **3D Digital Noise Reduction**

You can set **Digital Noise Reduction** function to **Normal** and adjust the **Noise Reduction Level** as shown in Figure 7-32. The level ranges from 0 to 100.
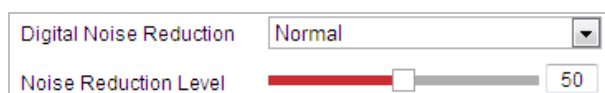
Figure 7-32 3D Digital Noise Reduction

If you are a professional technician, you can set it to **Expert** Mode then adjust **Space DNR Level** and **Time DNR Level**. The level ranges from 0 to 100.
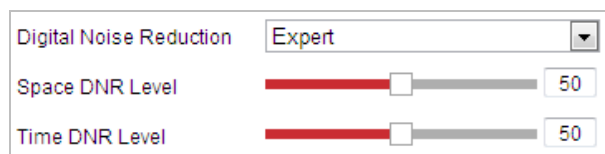
Figure 7-33 Expert Mode

● **Gray Scale**

You can set the gray scale of image, [0-255] and [16-235] are selectable.

● **Defog Mode**

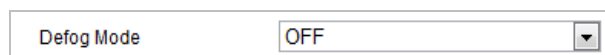You can set the **Defog Mode** to ON or OFF as you need.

Figure 7-34 Defog Mod

NOTE

When the defog mode is ON and the defog level is higher than 80, the optical defog function is activated automaticlly to enhance the defog effect.

● **Laser Compensation Region:**

Choose the region of laser compensation according to the scene. Adaptive, Center, Full Screen are selectable.

● **Laser Level:**

Choose the level of laser compensation.

Video Adjustment

● **Mirror**

If you turn the **MIRROR** function on, the image will be flipped. It is like the image in the mirror. The flip direction can be set to OFF or CENTER.

NOTE

This function varies depending on the models of device.

● **Video Standard**

You can set the **Video Standard** to 50hz(PAL) or 60hz(NTSC) according to the video system in your country.

NOTE

This function varies depending on the models of device.

Other

● **Lens Initialization**

The lens operates the movements for initialization when you check the check box of **Lens Initialization.**

- **Zoom Limit**

You can set **Zoom Limit** value to limit the maximum value of zooming. The value can be selected from the list.

- **Local Output**

You can enable or disable the video output through the BNC interface on your demand.

[i] **NOTE**

The functions vary depending on the models of device.
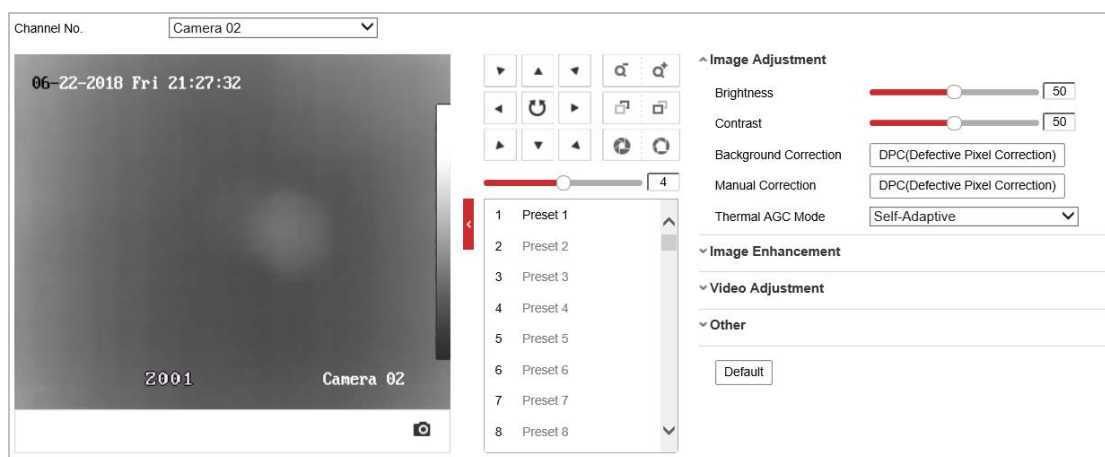
◆ **Set the Channel Camera 2**

Figure 7-35 Camera No. 2 Image Settings

Image Adjustment

- **Brightness**

This feature is used to adjust brightness of the image. The value ranges from 0 to 100.

- **Contrast**

This feature enhances the difference in color and light between parts of an image. The value ranges from 0 to 100.

- **Background Correction**

Fully cover the lens with an object (lens cover is recommended) and click the **Background Correction** button, and then the device adjusts the image according to the current environment.

- **Manual Correction**

Click the **Manual Correction** button and then the device adjusts the image according to the temperature of the camera itself.

- **Thermal AGC**

Choose the AGC mode according to different scenes to balance and improve the image quality.

- Histogram: Choose for scene with obvious WDR and high temperature difference, can improve image contrast and enhance image. E.g. the scene contains both indoor and outdoor scenes.

- Linear: Choose for scene with low temperature difference and the target is not obvious, can improve image contrast and enhance image. E.g. the bird in forest.
- Self-Adaptive: Choose AGC mode automatically according to current scene.

Image Enhancement

● **Digital Noise Reduction:**

DNR reduces the noise in the video stream. OFF, Normal Mode and Expert Mode are selectable.

OFF: DNR is disabled.

Normal Mode: Set the DNR level from 0~ 100, and the default value is 50.

Expert Mode: Set the DNR level from both space DNR level [0~100] and time DNR level [0~100] in Expert Mode.

● **Palettes**

The palettes allow you to select the desired colors. white hot, black hot, fusion 1, rainbow, fusion 2, ironbow 1, ironbow2, sepia, color 1, color 2, ice fire, rain, red hot, and green hot are selectable.

● **DDE**

The DDE (Digital Detail Enhancement) can adjust the details of the image. And you can set it to OFF or Normal mode. And **DDE Level** can be adjust from 1 to 100 when in normal mode.

● **Brightness Sudden Change Suppression**

When the brightness of target and the background is hugely different (the temperature difference of target and background is huge), the system reduces the difference for viewing.

● **Target Enhancement**

In low temperature difference environment, you can select **ON** to enable this function to distinguish the target from the background.

☐**i** NOTE

These functions vary depending on different camera models.

Video Adjustment

● **Mirror**

If you turn the **Mirror** function on, the image will be flipped. You can set the mirror direction to Center or disable it.

☐**i** NOTE

This function varies depending on the models of device.

● **Video Standard**

The **Video Standard** is configurable.

☐**i** NOTE

This function varies depending on the models of device.

● **Digital Zoom**

The digital zoom is available for the thermal sensor, there are x2 and X4 selectable.

☐**i** NOTE

This function varies depending on the models of device.

● **Other**

Local Output: Turn on or off the local output of device.

7.3.2 Configure OSD Settings

Purpose:

The device supports following on screen displays:

Time: Supports for time display.

Camera Name: Identifies the name of device.

You can customize the on screen display of time.

Steps:

1. Go to the. OSD settings interface:

    Configuration > Image > OSD Settings

2. Select the channel No..

Figure 7-36 OSD Settings

3. Select the display of device name, date or week if required.
4. Edit the device name in the text field of **Camera Name**.
5. Set the time format, date format, display mode, OSD size and Font color.
6. Click and drag the text frame in the live view window to adjust the OSD position.

Figure 7-37 Adjust OSD Location

7. Click 【 Save 】 .

7.3.3 Configure Text Overlay Settings

Purpose:

You can customize the text overlay.

Steps:

1. Go to the. Text Overlay settings interface:
   Configuration > **Image** > **OSD Settings**
2. Enable the on-screen display.
3. Input the characters in the textbox.
4. Click and drag the red text frame in the live view window to adjust the text overlay position.

5. Click 【 Save 】 .

7.3.4 VCA Rule Display

Purpose:

You can customize the VCA rule display information format.

Step:
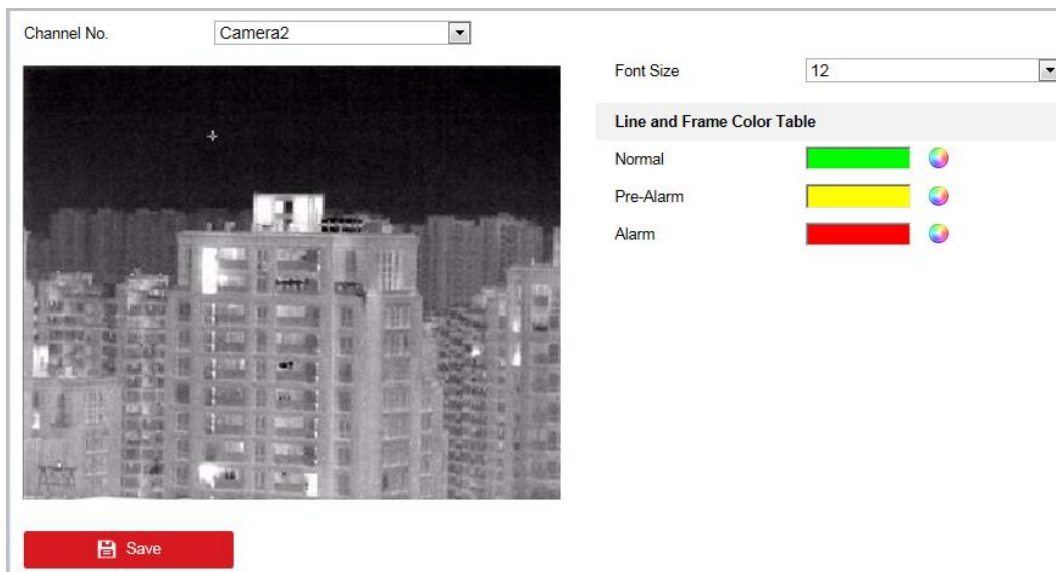
Figure 7-38 VCA Rule Display

1. Set the font size of the VCA rules.
2. Customize the color of line and frame for Normal, Pre-Alarm, and Alarm.

3. Click **[💾 Save]** .

7.3.5 Configure 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.

Steps:

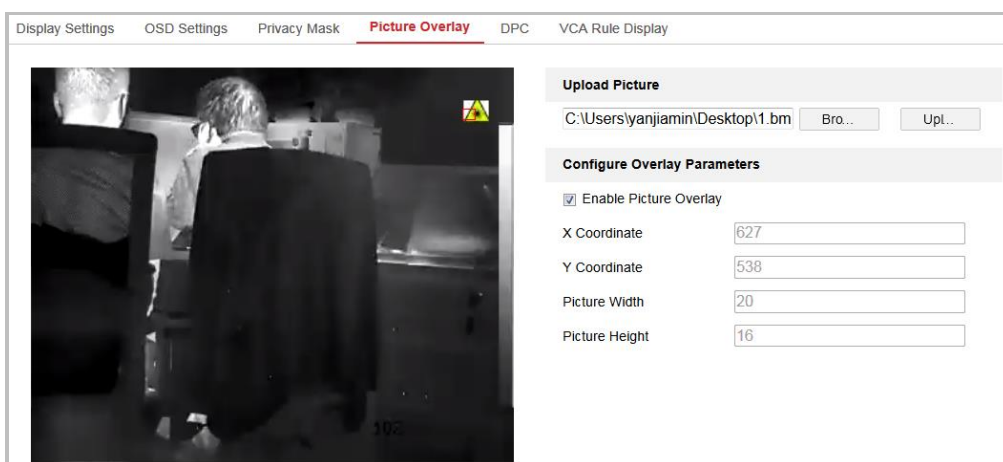1. Go to the Picture Overlay Settings interface, **Configuration** > **Image** > **Picture Overlay**.

Figure 1-1 Picture Overlay

2. Select the channel No.
3. Click **Browse** to select a picture.
4. Click **Upload**.

5. Check **Enable Picture Overlay**.
6. Set X Coordinate and Y Coordinate values adjust the picture position on the image. Adjust picture width and picture height to the desired size.
7. Click **Save**.
Note: The picture must be in RGB24 bmp format and the maximum picture size is 128*128.

7.3.6 Configure DPC Settings

DPC (Defective Pixel Correction) refers to the function that the camera can correct the defective pixels on the LCD which are not performing as expected.
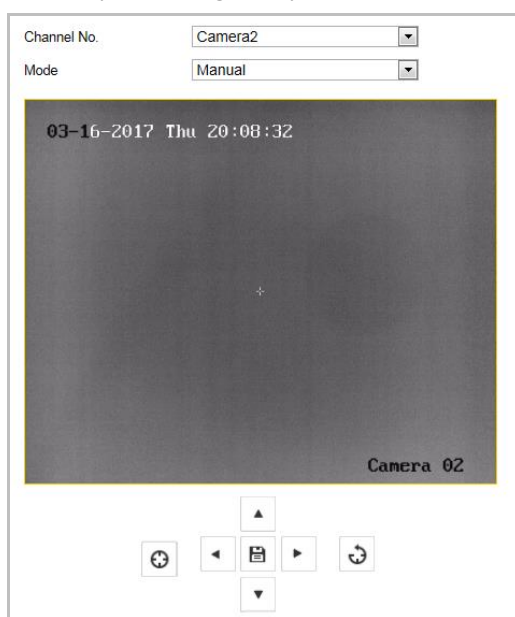

Figure 7-39 Defective Pixel Correction

◆ **Manual DPC Correction**

Steps:

1. Select Manual from the modes.
2. Point to the defective pixel, and click to adjust the position.
3. Click to start correction.
4. (Optional) Click to cancel the correction.

⌐i⌐ NOTE

This function varies depending on the models of device.

7.3.7 Picture in Picture

Purpose:
The system plays the live view of thermal channel and optical channel at the same time.
Steps:
1. Select the channel No. from the list.

 NOTE

Select Camera 1 and the device plays the live view of Camera 2 inside the live view of Camera 1.

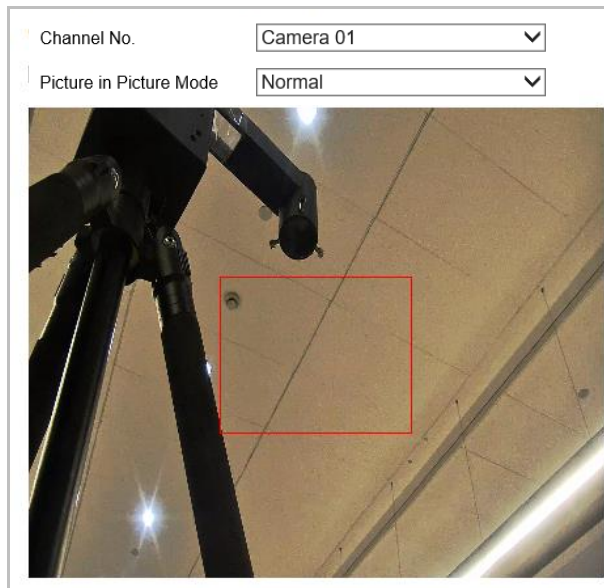2. Select **Overlap Mode** from **Picture in Picture Mode**

Figure 7-40 Picture in Picture

3. Drag the red frame to adjust the picture in picture site.
4. Click **Save**.

7.4 Configure System Settings

7.4.1 System Settings

View Basic Information

Go to the. Device Information interface:

Configuration > System > System Settings > Basic Information

In the **Basic Information** interface, you can edit the Device Name and Device No..

Other information of the network zoom camera, such as Model, Serial No., Firmware Version, Encoding Version, Web Version, Plugin 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. It is the reference for maintenance or modification in future.

Device Name	IP DOME
Device No.	88
Model	
Serial No.	
Firmware Version	
Encoding Version	
Web Version	
Plugin Version	
Number of Channels	
Number of HDDs	
Number of Alarm Input	
Number of Alarm Output	

Figure 7-41 Device Information

Time Settings

Purpose:

You can follow the instructions in this section to configure the time which can be displayed on the video. There are Time Zone, Time Synchronization, Daylight Saving Time (DST) functions for setting the time. Time Synchronization consists of auto mode by Network Time Protocol (NTP) server and manual mode.

Go to the. Time Settings interface:

Configuration > System > System Settings > Time Settings

Figure 7-42 Time Settings

● **Configure Time Synchronization by NTP Server**

Steps:

(1) Enable the **NTP** function.

(2) 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 by NTP server. It can be set from 1 to 10080 minutes.

Figure 7-43 Time Sync by NTP Server

You can click [Test] to make sure that the NTP server is connected.

NOTE

If the device 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 device is set in a customized network, NTP software can be used to establish a NTP server for time synchronization.

● **Configure Time Synchronization Manually**

Steps:

(1) Check **Manual Time Sync**.

(2) Click [calendar icon] to set the system time from the pop-up calendar.

(3) Click [Save].

NOTE

You can also check **Sync with local time** to synchronize the time of the device with the time of your computer.

Figure 7-44 Time Sync Manually

● **Select the Time Zone**

Purpose:

When the device is taken to another time zone, you can use the **Time Zone** function to adjust the time. The time will be adjusted according to the original time and the time difference between the two time zones.

From the **Time Zone** dropdown menu as shown in Figure 7-45, select the Time Zone in which the device locates.
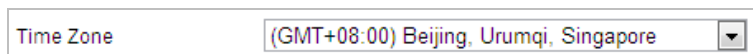

Figure 7-45 Time Zone Settings

Configure DST (Daylight Saving Time)

Purpose:

If there is the habit of adjusting clocks forward in your country in certain time period of a year, you can turn this function on. The time will be adjusted automatically when the Daylight Saving Time (DST) comes.

Steps:

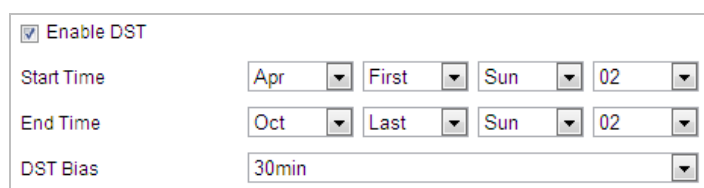1. Go to the. **DST** interface**: Configuration > Advanced Configuration > System > DST**

Figure 7-46 DST Settings

2. Check **Enable DST**.

3. Set the date of the DST period.

4. Click .

Configure RS-232

Steps:

1. Go to RS-232 Port Setting interface: **Configuration** > **System** > **System Settings** > **RS-232**.

Figure 7-47 RS-232 Settings

2. Set the RS-232 parameters and click **Save**.

Configure RS-485

Purpose:

The RS-485 serial port is used to control the PTZ of the camera. The configuring of the PTZ parameters should be done before you control the PTZ unit.

Steps:

1. Go to RS-485 Port Setting interface:

   Configuration> Advanced Configuration> System > RS-485

Figure 7-48 RS-485 Settings

2. Set the RS-485 parameters and click [Save] .

ℹ️ NOTE

The Baud rate, PTZ Protocol and PTZ Address parameters of the device should be exactly the same as those of the control device.

View License

Purpose:

You can view the open source software licenses that are applied to the IP camera.

Steps:

1. Go to **Configuration** > **System** > **System Settings** > **About** .
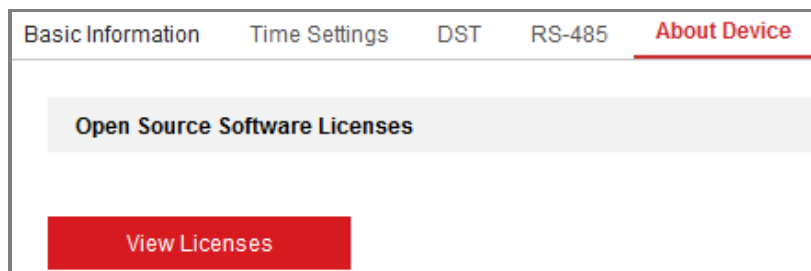2. Click **View Licenses.**

Figure 7-49 About Device Interface

Set Same Unit

Purpose:

Set the same temperature unit and distance unit in this page. When you enable this function, the unit cannot be configured separately in other setting pages.

Steps:

1. Go to **Configuration** > **System** > **System Settings** > **Unit Settings**.
2. Check **Use Same Unit.**
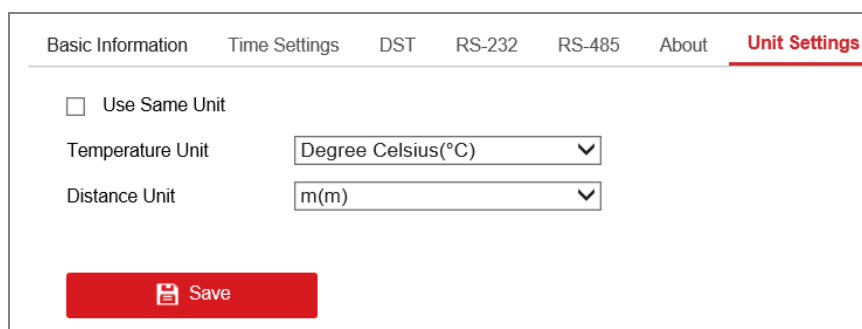3. Set the temperature unit and distance unit.
4. Click **Save.**

Figure 7-50 Unit Settings

7.4.2 Maintenance

Upgrade & Maintenance

● **Reboot the Device**

Steps:

1. Go to the. Maintenance interface:

2. **Configuration** > **System** > **Maintenance > Upgrade & Maintenance:**

3. Click **Reboot** to reboot the network device.

● **Restore Default Settings**

Steps:

1. Go to the. Maintenance interface:

   Configuration > **System** > **Maintenance > Upgrade & Maintenance:**

2. Click **Restore** or **Default** to restore the default settings.

   ![i] **NOTE**

   Click **Default** to restores all the parameters to default settings including the IP address and user information. Please use this button with caution.
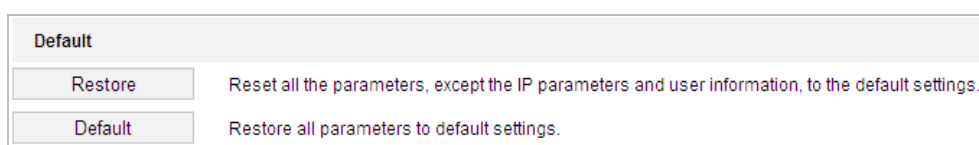

Figure 7-51 Restore Default Settings

● **Information Export**

Steps:

1. Go to the. Maintenance interface:

   Configuration > **System** > **Maintenance > Upgrade & Maintenance:**

2. Click **Device Parameters** and input the encryption password twice to encrypt the config file.

Figure 7-52 Encryption Configuration File

3. Select the path to export the current configuration file. You can configure the other cameras with the file.

4. Click **Diagnose Information** to view the device error information.

● **Import/Export Configuration File**

Steps:

1. Go to the. Maintenance interface:

   Configuration > **System** > **Maintenance > Upgrade & Maintenance:**

2. Click **Browse** to select the local configuration file and then click **Import** to start importing configuration file.

You need to reboot the device after importing configuration file.

Import Config. File			
Device Parameters		Browse	Import
Status			

Figure 7-53 Import Configuration File

3. If the configuration file is encrypted, input the password.

File Decryption	✕
Input the password of configuration file.(1 to 16 characters)	
●● ✓	
OK Cancel	

Figure 7-54 File Decryption

● **Upgrade the System**

Steps:

1. Go to the. Maintenance interface:

   Configuration >System > Maintenance > Upgrade & Maintenance

2. Select Firmware or Firmware Directory.

   ● **Firmware**: when you select **Firmware**, you need to find the firmware in your computer to upgrade the device.

   ● **Firmware Directory**: You need to find the directory where the firmware locates. The device can find the firmware in the directory automatically.

3. 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 device during the process. The device reboots automatically after upgrading.

Upgrade			
Firmware ▾	ade Package\IPD_R3_EN_NEU_5.3.10_150729\digicap.dav	Browse	Upgrade
Status			

Note: The upgrading process will be 1 to 10 minutes, please don't disconnect power to the device during the process. The device reboots after upgrading.

Figure 7-55 Remote Upgrade

Search Log

Purpose:

The operation, alarm, exception and information of the device 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 device or insert a memory card in the device.

Steps:

1. Go to the Log interface:

   Configuration >System > Maintenance > Log

Figure 7-56 Log Searching Interface

2. Set the log search conditions to specify the search, including the Major Type, Minor Type, Start Time and End Time as shown in Figure 7-56.

3. Click [Search]. The matched log files will be displayed on the **Log** interface.

4. To export the log files, click **Save Log**.

VCA Resource Type

Purpose:

Before using the VCA function of the camera, you should select the VCA resource type first. To use Temperature Measurement and Behavior Analysis, select Temperature Measurement and Behavior Analysis. To use Temperature Measurement and Behavior Analysis and Fire Detection function, select Temperature Measurement and Behavior Analysis and Fire Detection.

Steps:

1. Go to the. VCA Resource Type interface:

   Configuration > Advanced Configuration > System > VCA Resource Type
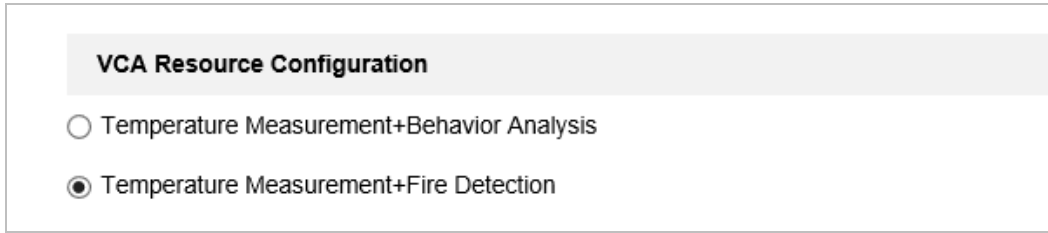
Figure 7-57 VCA Information

2. Check to enable the VCA resource type.

3. The system reboots and the selected VCA resource will be enabled.

[i] NOTE

Once you select any of the resources, the other VCA rules cannot be enabled.

7.4.3 Security

Configure Authentication Security

Purpose:

You can specifically secure the stream data of live view.

Steps:

1. Go to the. Authentication interface:

   Configuration> **System**> **Security** > **Authentication**

2. Set the authentication mode for each authentication type.

   RTSP Authentication: Select the authentication mode as digest or basic/digest in the dropdown list.

   WEB Authentication: Select the authentication mode as digest or basic/digest in the dropdown list.

3. Click [Save].

Configure IP Address Filter

Purpose:

With this function on, the camera allows certain IP addresses whether to log in or not.

Steps:

1. Go to IP Address Filter interface:

   Configuration > **System** > **Security** > **IP Address Filter**

Figure 7-58 IP Address Filter

2. Check **Enable IP Address Filter**.

3. Select the type of IP Address Filter in the dropdown list, Forbidden and Allowed are selectable.

4. Set the IP Address Filter list.

   ● **Add an IP Address**

   Steps:

   (1) Click **Add**.

   (2) Input the IP Adreess.

Figure 7-59 Add an IP

   (3) Click **OK**.

   ● **Modify an IP Address**

   Steps:

   (1) Left-click an IP address from filter list and click **Modify**.

   (2) Modify the IP address in the text filed.

Figure 7-60 Modify an IP

   (3) Click **OK**.

- **Delete an IP Address**

  Left-click an IP address from filter list and click **Delete**.

- **Delete all IP Addresses**

  Click **Clear** to delete all the IP addresses.

5. Click .

Configure Security Service Settings

Steps:

1. Go to the. Security Service interface:

   Configuration> **System** > **Security** > **Security Service**

2. Check to enable the SSH function.

   Enable SSH: Enabling SSH (Secure Shell) function is to encrypt and compress the data and to reduce the transmission time.

3. Check to enable the Illegal Login Lock function.

   Illegal Login Lock: Enabling illegal login lock function is to automatically lock the device IP after the admin user performing 7 failed password attempts (5 attempts for the user/operator).

4. Click .

7.4.4 User Management

Go to the. User Management interface**:**

Configuration > **System** > **User Management**

The **admin** user has access to create, modify or delete other accounts. Up to 32 user accounts can be created.

Figure 7-61 User Information

● **Add a User**

Steps:

1. Click ⌐Add¬.

2. Input the new **User Name**, select **Level** and input **Password**.

⚠ WARNING

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

ⓘ NOTE
The level indicates the permissions you give to the user. You can define the user as **Operator** or **User**.

3. In the **Basic Permission** field and **Camera Configuration** field, you can check or uncheck the permissions for the new user.

4. Click ⌐OK¬.

Figure 7-62 Add a User

● **Modify a User**

Steps:

1. Left-click to select the user from the list and click [Modify].

2. Modify the **User Name**, **Level** or **Password**.

3. In the **Basic Permission** field and **Camera Configuration** field, you can check or uncheck the permissions.

4. Click [OK].

Figure 7-63 Modify a User

● **Delete a User**
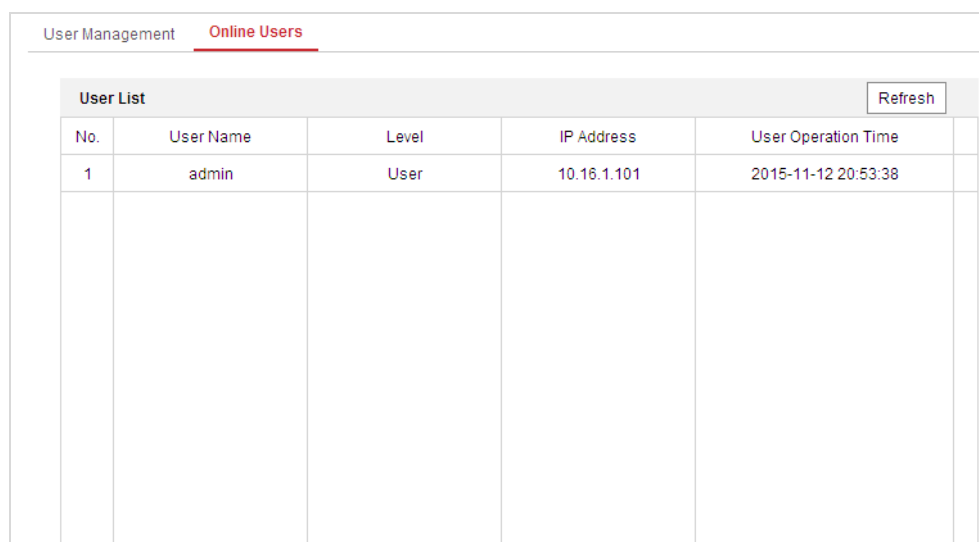
Steps:

1. Left-click the user name you want to delete and click [Delete].

2. Click [OK].

Online Users

Go to the. Online Users configuration interface**:**

Configuration > **System** > **User Management** > **Online Users**

Figure 7-64 Online Users

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**.

Appendix

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**

♦ **Search online devices automatically**

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.
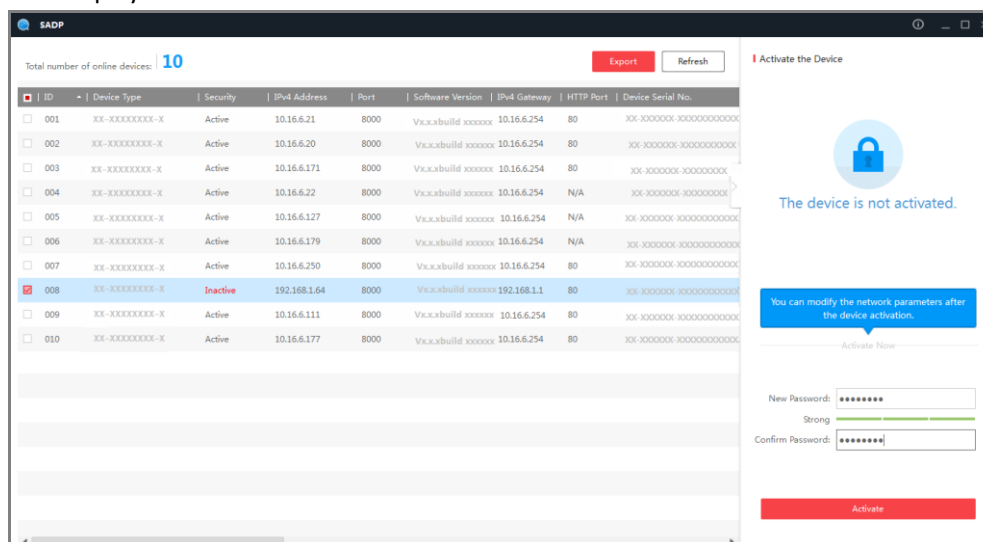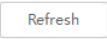

Figure A.1.1 Search Online Devices

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.

♦ **Search online devices manually**

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

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**

Steps:
1. 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.
2. Edit the modifiable network parameters, e.g. IP address and port number.
3. Input the password of the admin account of the device in the Password field and click **Modify**.

 WARNING

We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including 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.

Figure A.1.2 Modify Network Parameters

Appendix 2

Device Communication Matrix

Scan the following QR code to get device communication matrix.
Note that the matrix contains all communication ports of Hikvision thermal cameras.

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 Hikvision thermal cameras.

See Far, Go Further