Tiandy

Network Video Recorder Series

User Manual

ISO 9001
ISO 14001
ISO 45001

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Preface

You are welcome to purchase our products. If you have any questions in use, please consult the dealer or our after-sales service.

The purpose of this document is to ensure that the user uses the product properly to avoid danger or property damage. Before using this product, please read it carefully and keep it for future reference.

Instructions before use

- Visit our website (www.tiandy.com) for manuals, application tools and development materials.
- Please time the equipment before use.

Notation convention

Symbol	Explain
Warning	Indicates a potential risk that, if not avoided, could result in injury, equipment damage, or business interruption.
Notice	Indicates to alert the user to an important action or to prevent potential injury or property damage. If not avoided, it may cause injury accidents, equipment damage or business interruption.
Explain	The expression is the additional information of the text, which is the emphasis and supplement to the text.

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Precautions for safe use

Warining：

- Containers containing liquids (such as water cups) cannot be placed on the NVR.
- Install the NVR in a well-ventilated location. When multiple devices are installed, the distance between the devices should be greater than 2cm.
- Make the NVR work within the allowable temperature (-10 ℃ ~ + 55 ℃) and humidity (10% ~ 90%). (The operating temperature range of H.265 series NVR in RAID mode is 0 ℃ ~ + 55 ℃; the operating temperature range of H.265 series NVR in E16 model in redundancy mode is + 20 ℃ ~ + 55 ℃; the operating temperature range of E24 series NVR in monitor-level 1T ~ 4T hard disk is 0 ℃ ~ + 50 ℃).
- When cleaning the equipment, be sure to unplug the power cord and cut off the power completely.
- The dust on the circuit board in the NVR will cause short circuit when it gets damp. Please regularly use a soft brush to remove dust from the circuit board, connector, chassis and chassis fan. If the dirt is difficult to remove, you can use a neutral detergent diluted with water to wipe off the dirt, and then dry it.
- When cleaning the equipment, please use volatile solvents such as alcohol, benzene or thinner. Do not use strong or abrasive cleaning agents, which will damage the surface coating.
- Please purchase monitor-level SATA hard disk from regular channels to ensure the quality and use requirements of the hard disk. We recommend Seagate

monitor-level hard disk.

- In the process of video recording configuration, the maximum storage bit stream of a single disc group shall not be higher than 100Mbps (for H.265 series NVRmE16 model, the maximum storage bit stream of a single disc group below 0 ℃ shall not be higher than 50Mbps).
- Make sure that there is no danger due to uneven mechanical loading.
- Please ensure that there is enough installation space for the video cable and audio cable, and the bending radius of the cable shall not be less than 5 times of the outer diameter of the cable.
- Make sure that the NVR is reliably grounded.
- If the battery is replaced improperly, there will be a risk of explosion, and it is not recommended that the user replace it directly. If replacement is required, it should only be done with the same or equivalent type of battery.

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1 Activation and Login

In network access, in order to protect the security and privacy of personal accounts and improve the security of monitoring, the login password is set to activate the device and prevent others from logging in the device to obtain monitoring data.

1.1 Activation via Device Management Application

Through the device management software on your computer, search for and activate devices on the same local area network as your computer.

Prerequisites

Access the www.tiandy.com, download the device management application from Support-Download Center-Utilities, and complete the installation.

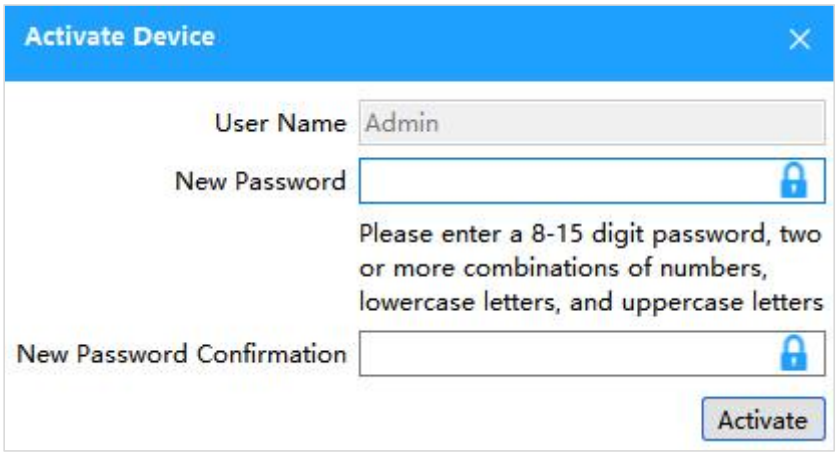
Operation steps:

1. Connect the device to the network and ensure that the device and the computer are on the same LAN.

2. Run the device management application software to automatically search for online devices in the same network segment.

3.Select the device in the list that needs to be activated and whose activation status is not activated.

4. When activating the device, please set the device password.



Notice：

- In order to protect your personal privacy and enterprise data and avoid network security problems of equipment products, it is recommended that you set a strong password that meets the security specifications.
- For greater security when using the product over the Internet, use an 8-15 digit password with two or more combinations of numbers, lowercase letters, uppercase letters, and special characters (special characters cannot be quotes, colons, semicolons, # signs, spaces, and backslashes).

1.2 Activate via browser

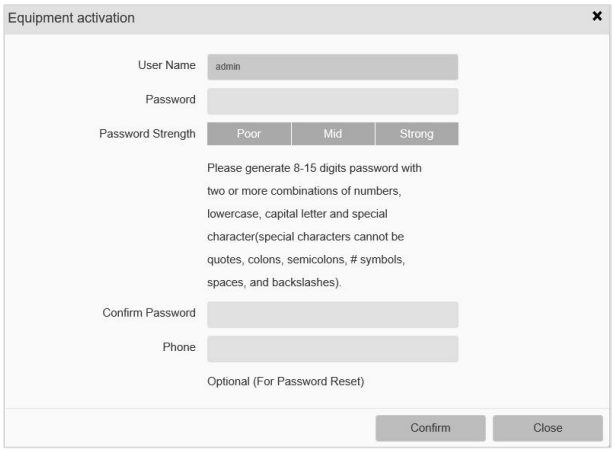
Activate the device by accessing the device through a browser.

Operation steps:

1. Connect the device to the network and ensure that the device and the computer are on the same LAN.

2.Make sure that the device IP address and the computer IP address are on the same network segment.

3.Enter the IP address of the device in the browser to display the activation interface.



4.Set the device activation password at the activation device and click OK.

5. Enter the activation password to log in to the device.

Explain：

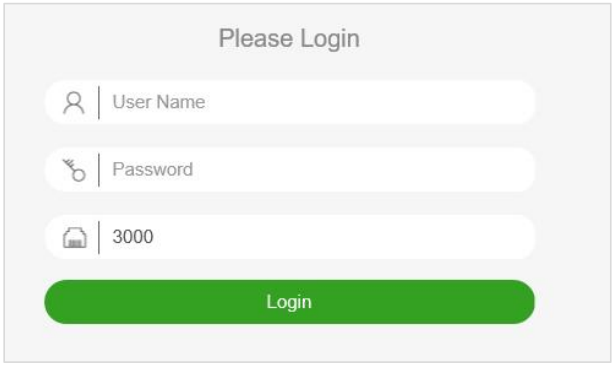
- If the equipment is directly connected to the computer through a network cable, the factory IP address of the equipment is 192.168.1.3, and the IP address of the computer can be set to any IP address between 192.168.1.4 and 192.168.1.253. For example, set the IP address of the computer to 192.168.1.4.

1.3 Login

Log in to the device through a browser.

Operation steps:

1. Enter the IP address of the device in the browser to pop up the login screen.



2. The device prompts to install the browser plug-in. Install the plug-in according to the

interface prompt.

3.Open the browser again and enter the IP address of the device.

4. Enter the user name and password and click Login.

Notice：

- If you use Google Chrome to access the device, you can use port 3002 for plugin-free access, which requires no plug-ins to be installed, or port 3000, which requires plug-ins to be installed.

1. 3. 1 Operating environment

It is recommended to run in Win7 and above operating system environment. In order to operate and use the equipment better and make the performance and effect fully reflected, please ensure that the following items are set or installed correctly:

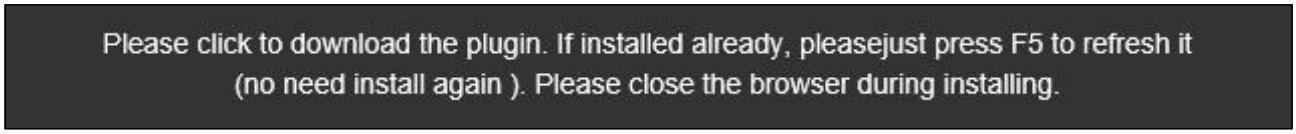
(1) Set the display resolution to 1024 × 768 or higher, and set the color to Enhanced Color (32-bit). Refer to the Windows Help documentation or online help for instructions on how to set the display resolution and colors.

(2) Confirm that the required font, Song typeface, is installed in the Windows operating system. If the interface is not displayed properly, the required font may not be installed, or the required font has been damaged and needs to be reinstalled.

1. 3. 2 Plug-in installation

When logging in the device through different operating systems and browsers, different functions may be displayed. In order to ensure the normal display and use of

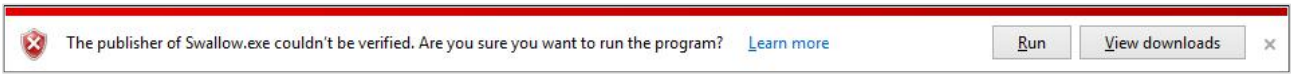
the functions, please install plug-ins or set parameters according to the use situation, and the actual device interface shall prevail.



Click the text link to open the Save or Run control interface, as shown in the following figure. Select "Save" to download the Swallow. Exe locally, and select "Run" to automatically install the Swallow. Exe after the download is completed. Please close the browser during the installation of the plug-in, otherwise the installation may fail.



After the control is downloaded, it needs to be installed. The interface of running the control installation program will pop up, as shown in the following figure. Click the "Run" button.



When the installation control interface appears, click "Next" or "Next" to complete the installation.

After the plug-in is installed successfully, refresh the browser to display the preview image.



After logging in to the device, click the icon above the interface to switch to a different interface or execute related commands.

Icon	Explain
Live View	Click this icon to enter the interface of “Live View”.
Playback	Click this icon to enter the interface of “Playback”.
Log	Click this icon to enter the interface of “Log”.
Configuration	Click this icon to enter the interface of “Configuration”.
EW	Click this icon to enter the interface of “EW”.(Supported by some resource models)
admin	Display the user name for this login. (This icon can only be displayed but not be clicked)
	Click this icon for online help information. (supported by some models)
	Click this icon to log out.

1. 3. 3 Reset Password

By configuring the account security information, when the admin user forgets the password, the password can be reset through the equipment management application of our company. You can reset the password of the admin user through the email.

Explain：

- When resetting the admin user password, ensure that the IP of the device and the computer are on the same LAN segment.

Set the account security during activation and fill in the email, or click Edit admin account and fill in the mobile phone number through Configuration → Common Settings → User Management.

2 Live View

This section describes the function icons and preview parameters of the device preview interface.

2.1 Preview interface

Icon	Explain
	Display device IP (this Icon can only be displayed and cannot be clicked)
	Turn on to show all channels, turn off to show only online channels
	Channel search, enter keywords to search the corresponding channel
	Click Enable to preview the video picture of the corresponding channel, and click it again to close it
	Click Enable, and the video window will display the main code stream after selection. The resolution, code rate and image quality of the preview picture are high. It is recommended to select when the network bandwidth is sufficient.
	Click Enable, and the video window will display the secondary stream after selection. The resolution, code rate and image quality of the preview picture are low. It is recommended to select when the network bandwidth is insufficient to ensure the fluency of the

Icon	Explain
	live picture.
	1 * 1 split screen, select to display only one screen.
	2 * 2 split screen, select and display four screens.
	6 Split screen, select to display six screens.
	8 Split screen, select to display eight screens.
	3 * 3 split screen, select and display nine screens.
	13 Split screen, select to display thirteen screens.
	4 * 4 split screen, select to display 16 screens.
	The video is displayed at a fixed scale.
	The video automatically adapts to the preview window display.
	QR Code button. Click the QR Code. The user can scan QR Code according to the mobile phone type and download the mobile client. When the device is connected to the public network, the second QR Code will appear. The device can be added by scanning in the mobile client.
	Only fisheye camera is supported. Click it to display the optional fisheye expansion mode.
	NVR alarm elimination button, click Enable to eliminate NVR alarm
	Click Show Preview Smart Rules, and click don't Show Rules again
	System alarm button. Click Enable to display the system alarm information

Icon	Explain
	Connect/Disconnect All Channel
	Local manual snapshot control button. Click Enable to enable the preview picture to be captured and saved locally. The storage path of the snapshot file can be modified. Modify the page: Configuration-System Settings-Local Settings-Preview Snapshot Storage Path.
	Local manual video recording control button. Click Enable to start local video recording. The video file storage path can be modified. Modify the page: Configuration-System Settings-Local Settings-Video File Storage Path.
	Audible alert button. Click Enable. When enabled, an alert tone is played.
	Previous/next page, switching page
	Voice intercom switch, after enabling, local audio can be transmitted to the front-end equipment output through the network.
	Audio preview volume adjustment button. Adjust the local output volume by adjusting the slider position.
	Electronic zoom in button. After clicking the button to enable this function, press the left mouse button for a long time on the

Icon	Explain
	preview screen to draw the area to be zoomed in. You can zoom in to view the area. Drag the mouse to move the screen. Click the button again to turn off the electronic magnification function.
	显示目标信息，点击后，识别人脸。
	智能图搜按钮，选中正在播放的通道画面后点击该按钮，可以检测画面中的人脸及人体。
	Full screen display button. After clicking Icon, the video monitoring picture fills the whole screen. In the full screen display state, double click the video picture or press the "ESC key" to exit the full screen.

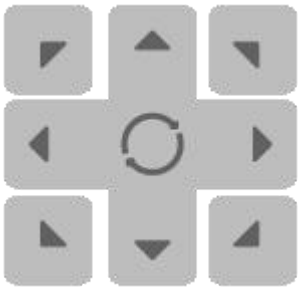
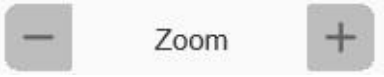
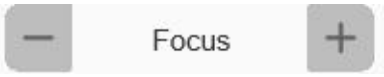
Notice:

- All Icon are valid when pressed.
- When there is no video in the interface, the audio preview is invalid.
- Only one intercom is supported at the same time. It is recommended to close the intercom in time after the intercom is used.

2.2 Control menu - PTZ

2. 2. 1 PTZ

Icon	Explain

Icon	Explain
	8 direction keys.
	The slider can adjust the rotation speed of the equipment. The closer to the "-" end, the slower the speed is. The closer to the "+" end, the faster the speed is.
	Zoom control button, press "-" to control the device to execute zoom small operation, the field angle becomes larger, and the scene becomes smaller; press "+" to control the device to execute zoom large operation, the field angle becomes smaller, and the scene becomes larger.
	Focus control button, press "-" to control the device to execute focus near operation, the near scene is clear and the far scene is blurred; press "+" to control the device to execute focus far operation, the far scene is clear and the near scene is blurred.
	Aperture control button, press "-" to control the device to perform aperture reduction operation, and press "+" to control the device to perform aperture increase operation.
	Wiper control button, support wiper equipment, after clicking

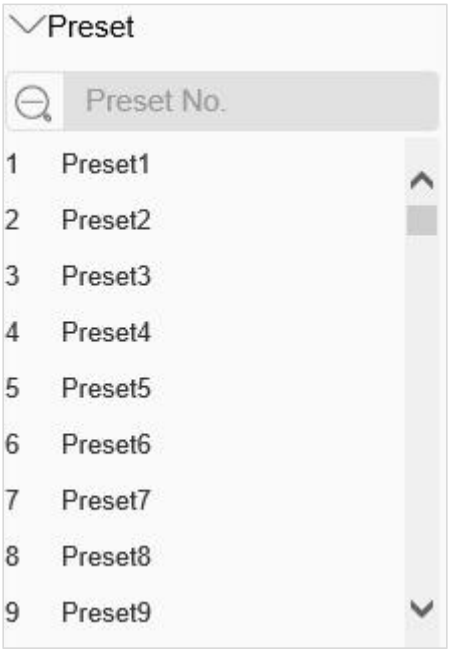
Icon	Explain
	the button, the wiper will execute one operation. In order to prolong the service life of the wiper, the wiper is equipped with low temperature protection measures, and the function of ambient temperature below 0 degrees is turned off.
	Video flip: control the video image to flip by 180 ° .
	Front end capture button, press the button to activate the front-end capture function and capture the front-end image.
	One-button focusing (supported by some models), the device automatically completes the focusing operation.
	Front-end intercom button, press the button to start the front-end intercom function.
	Area exposure button, when the brightness difference of the monitoring scene is relatively large, the area to be adjusted can be selected through the area exposure function, so that the brightness of the key monitoring area is moderate.
	Area focus button, when the depth of field range of the monitoring scene is relatively large, the part of the scene that needs to be focused clearly can be selected through the area focus function.
	By pressing the watch button, you can automatically set the current scene to the watch preset position (default preset

Icon	Explain
	position 1) and turn on the watch function. If you want to deactivate the one-button watch function, please deactivate the standby action in Dome Settings-Basic Settings.
	The 3D positioning button is used to adjust the scene to be monitored to the center of the video by clicking the mouse. The specific operations are as follows: 1. Click the left button to monitor the point to be monitored on the video screen, and move the corresponding point to the center of the video; 2. Press and hold the left button to pull out a rectangular area to the lower right, and move the center of the corresponding designated area to the center of the video and zoom in; 3. Press and hold the left button to pull out a rectangular area to the upper left, and then move the center of the corresponding designated area to the center of the video and zoom out for viewing.
	Laser alert button, click Enable to start the laser, click it again to stop the laser, the working temperature of the laser is -15 ℃ -45 ℃, the longest continuous start time is 300 seconds, and the laser will automatically stop after 300 seconds.
	Strong light alert button (supported by some models). Click

Icon	Explain
	Enable to enable the strong light. Click it again to turn off the strong light.
	Audible alert button (supported on select models). Click Enable. When enabled, an audible alert tone is played.
	Manual tracking button, click Enable, and then manually click the target to track the target.
	Alarm light alert button, click Enable to turn on the alarm light, and click it again to turn off the alarm light (supported by some models).
	Similar angle of view button, click to enable, after enabling, the visible light will zoom to the angle of view similar to the thermal imaging channel (supported by the thermal imaging model).
	Face capture enable button, after enabling, when the ball machine has no action, quickly start the face capture algorithm. The default detection area is full-screen 4/5 centered, and the push strategy is the fastest. (Supported on select models)
	IPC alarm elimination button, click Enable to eliminate IPC alarm.

2. 2. 2 Preset position

The preset position function is that the device can store the position parameters such as the horizontal angle, the tilt angle and the focal length of the lens of the device in the current state into the memory, and can quickly call these parameters and adjust the PTZ and the camera to the position when needed. Only cameras that support PTZ are supported. Enter the preset bit number and click the Find button to select operations for the preset bit, including [Set] and [Call] operations.



Operation steps:

1.Click [Preset] to open or hide the parameter setting page.

2. [Setting]: Control the PTZ to move to the specified position, select the desired preset tag number, and then preset the button behind the tag number.

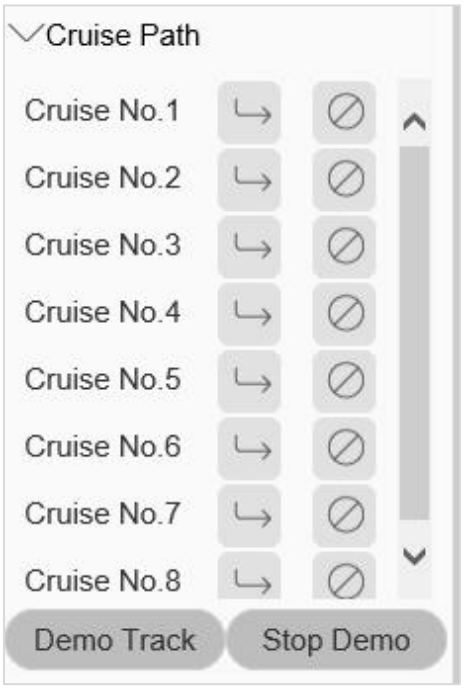
The corresponding preset bit is added successfully; multiple preset bits can be added.

3. [Call]: Input the corresponding preset tag number in the blank column, press Enter to query, find the corresponding preset tag number, and then click the button ↪ after

the preset tag number to realize the call. After the call, the PTZ moves to the specified preset position.

2. 2. 3 Cruise path

The cruise path function means that when the device is connected to a dome device, it can play the trajectory of the dome through the cruise path set by the NVR device on the UI interface, as shown in the following figure.



Operation steps:

1. Open [Cruise Path] to open or hide the parameter setting page.

2. [Call]: Click "↪" to call the corresponding cruise path, and the PTZ moves to the specified preset position.

3. [Stop]: Click "⊘" to cruise the device along the specified path and stop the PTZ movement.

4. [Demo Trace]: Click Enable to enable the trace call based on the default trace.

5. [Stop Demo]: Click Enable to enable the stop trajectory.

2. 2. 4 Image



Operation steps:

1. 1.Click [Video Parameters] to open or hide the parameter setting page.

2. Video parameters such as brightness, contrast, saturation and hue can be adjusted by adjusting the corresponding slider.

3. If you need to restore all video parameters to the default state, you can click the "" icon.

The video parameter icons are described as follows:

Icon	Explain
50	Brightness adjustment, adjust the position of the slider to change the brightness of the image.
50	Contrast adjustment, adjust the position of the slider to change the image contrast.
50	Saturation adjustment. Adjust the position of the slider to

	change the saturation of the image.
	Chroma adjustment, adjust the position of the slider to change the chroma of the image.
	Restore Defaults button. Push the button to restore the video parameters to the default values. (Supported on select models)

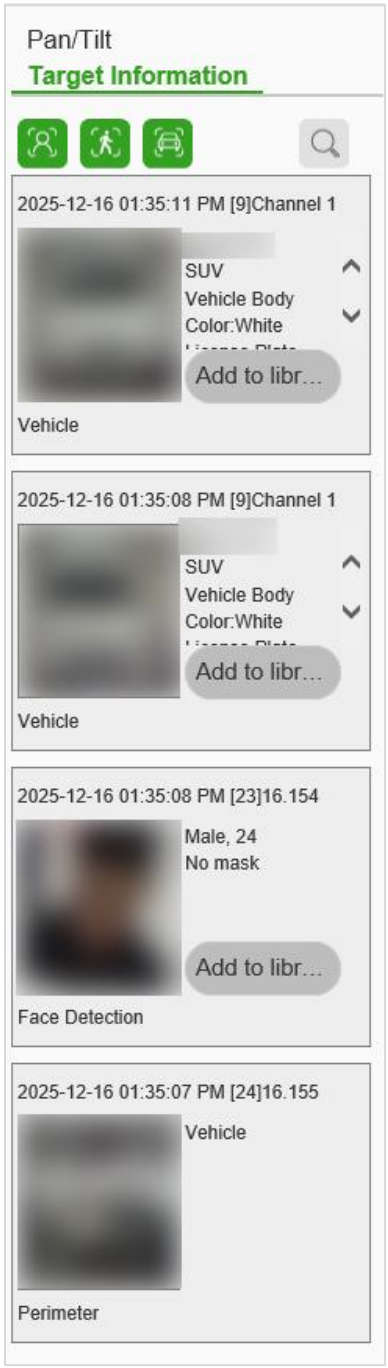
2. 2. 5 Quick Scene



Through this interface, two transmission modes of [adaptive] and [shortest delay] can be selected according to the network environment of equipment transmission. In the case of limited network bandwidth, it is recommended to select the adaptive mode to ensure smooth images; in the application environment with high video quality requirements, it is recommended to select the transmission mode with the shortest delay.

2.3 Control Menu-Target Information

Display facial or intelligent alarm photos captured by the channel.

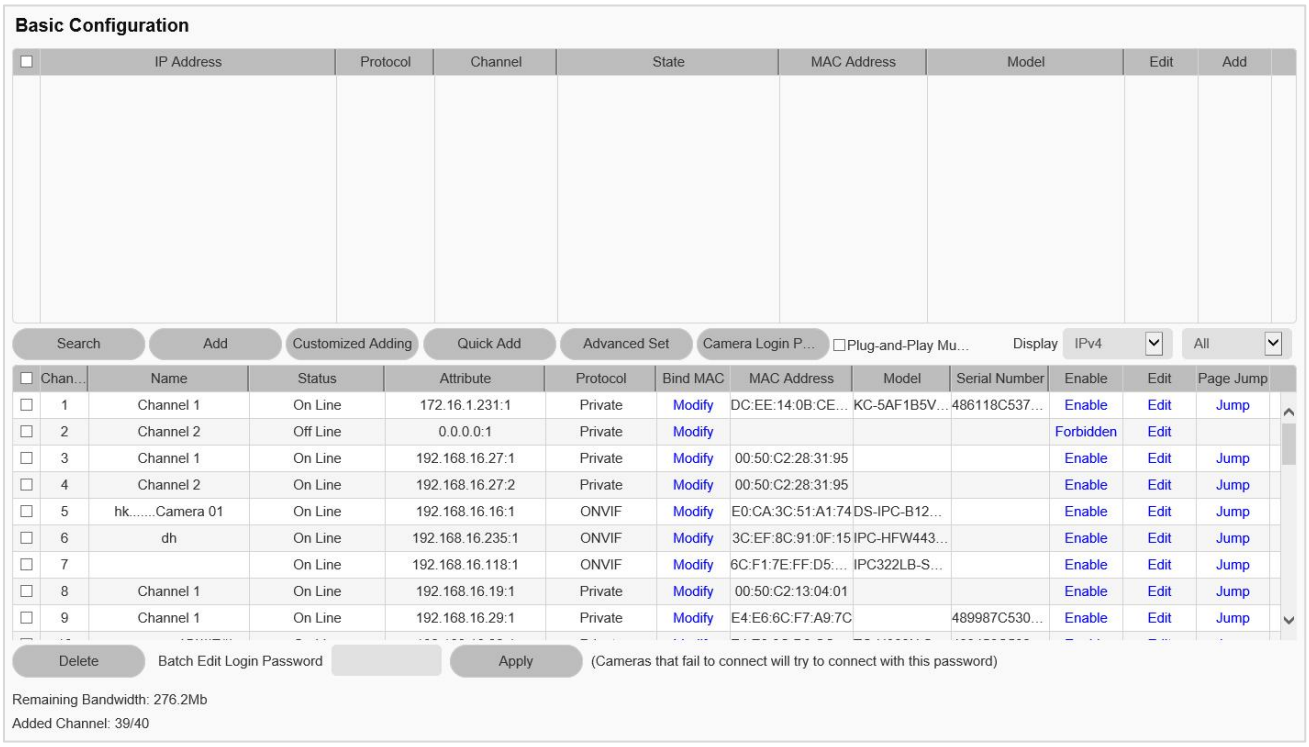


Before using this function, it is necessary to configure the intelligent analysis event or face detection, connect the channel to capture, and install the hard disk and enable the NVR device.

3 Manage Channels

The device supports operations such as adding and editing digital channels on the WEB client.

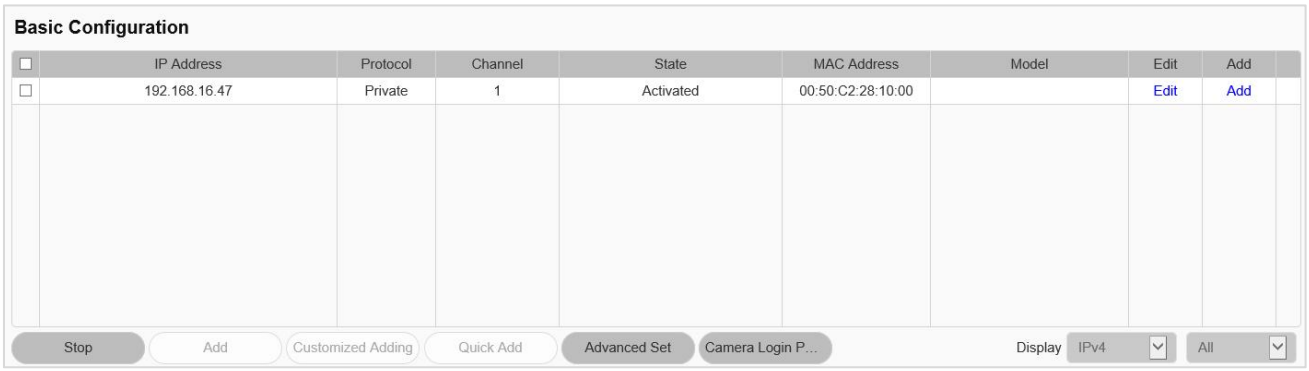
3.1 Basic configuration



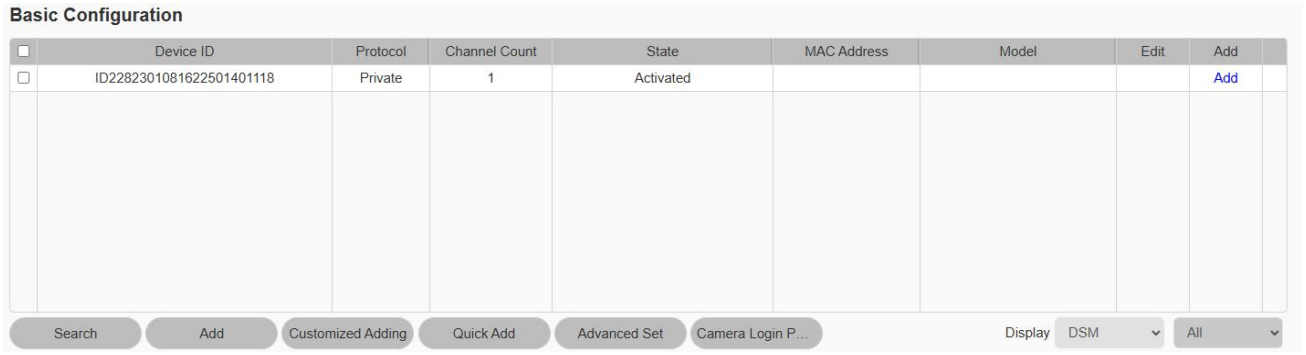
3. 1. 1 Search Add Channel

Operation steps:

1. Click [Search], and the device starts to search. Search results are automatically sorted based on IP address. You can modify the basic information of the IP front end in the search result list, as shown in the following figure.



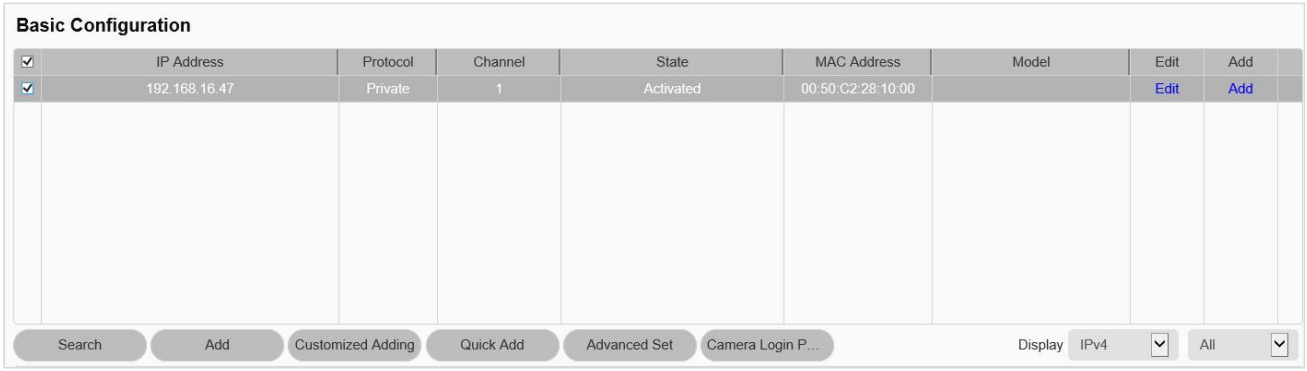
(1) After the search is completed, display filtering can be performed to show the search results for IPv4, IPv6, or Active Mode. For example, the result of filtering for Active Mode is shown in the figure below.



2. Click the [Edit] button to pop up the IP modification interface, as shown in the following figure.



3. Select the IP channel to be added in the search list and click [Add]. The IP device will be added to the idle channel of NVR. Multiple IP channels can be selected for addition, as shown in the following figure.

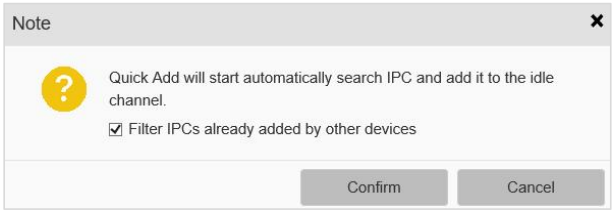


Explain：

- If [Camera Login Password] is not configured, use the NVR password to add the device.
- The status bar shows whether the device is active and whether it has been added by another NVR device.
- Only some devices can show whether they are added by other devices. Please refer to the actual situation.

3. 1. 2 Quick Add

In order to facilitate the user to add equipment quickly, the user can select to open the [Quick Add] function to add channels. In this mode, the device is automatically searched and added to the digital channels.



Explain：

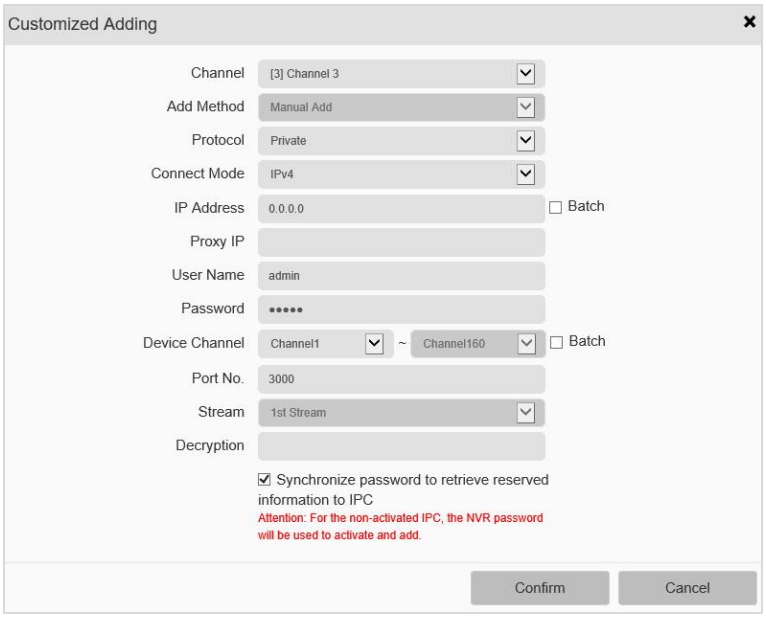
- The one-click add function automatically searches for the IPC and adds it to the idle channel.
- Filter the IPC added by other devices: if the searched devices have been added to other NVRs, after checking this option, the one-click addition will skip these devices.

- If [Camera Login Password] is not configured, use the NVR password to add the device.

3. 1. 3 Custom Add

Operation steps:

1. In the digital channel interface, click [Custom Add] to pop up the [Custom Add] pop-up box. When the device type is a private protocol, the optional connection modes are IPv4, IPv6, domain name, and active mode, as shown in the following figure.



（1）When selecting IPV4 and IPV6 connection modes, you need to enter information such as IP address or proxy IP, user name, password, and device port.

（2） When selecting the standard domain name connection mode, the camera needs to support and configure DDNS in advance, and then input the domain name, user name, password and other information in the custom addition interface for addition.

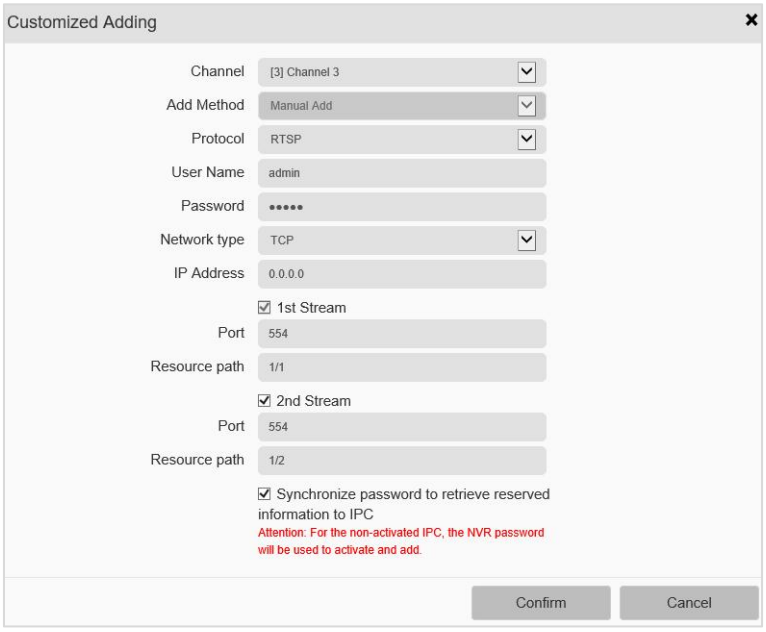
（3）When selecting the active mode connection mode, the camera needs to support and configure the active mode in advance, and then input the device ID, user name,

password and other information in the custom addition interface for addition.

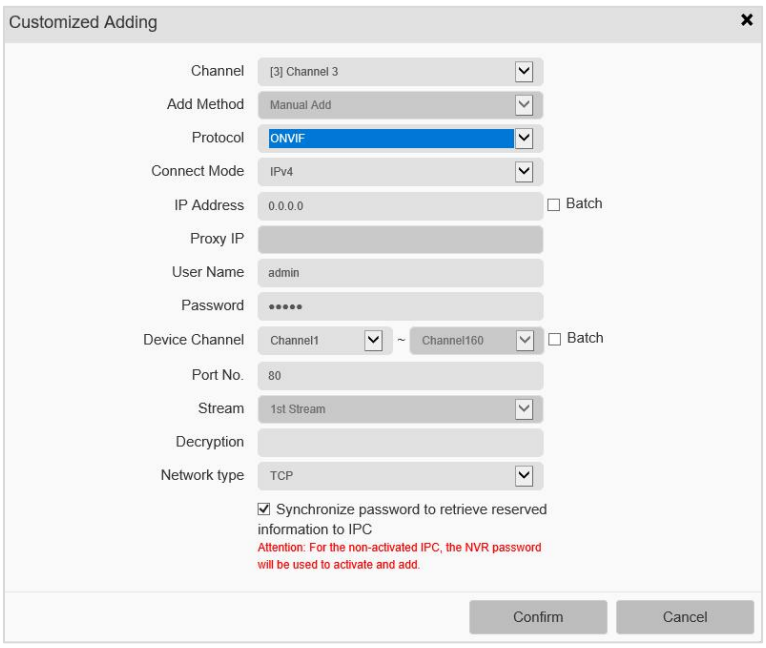
Explain：

- Decryption password: If the IPC channel video is encrypted, fill in the decryption password to decrypt it during custom addition, and there is no need to decrypt it during preview.
- Synchronize the password retrieval reservation information: Synchronize the password retrieval reservation information set on the IPC, such as the mailbox.

2. When the device type is RTSP, as shown in the following figure. The user name, password and the URL of the primary and secondary streams need to be input. The URL can refer to the RTSP path in the IPC interface [Configuration-Network Settings-Basic Configuration-TCP/IP Settings].



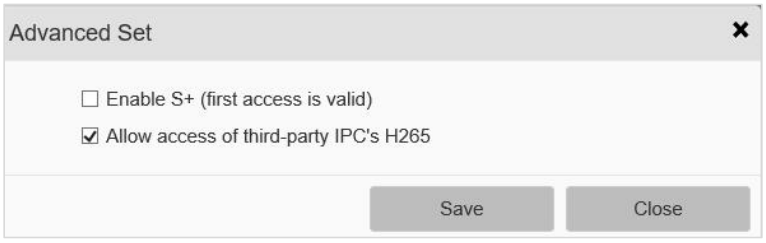
3. When the device type is ONVIF, the optional connection modes are IPv4, IPv6 and domain name, as shown in the following figure. The adding method is the same as that of the private protocol. Pay attention to the correctness of the port.



4. After selecting the IP address and the batch of the device channel, the device channel can be added to the NVR channel in batch.

3. 1. 4 Advanced Options

For ease of use, you can select [Advanced Options] to set it, as shown in the following figure.

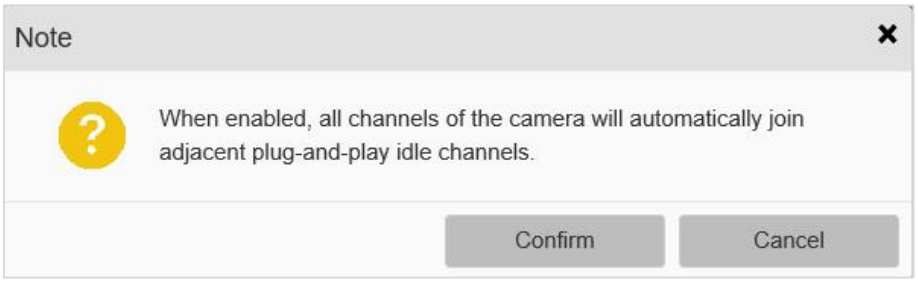


3. 1. 5 Camera login password

After configuring the camera login password, the added device will be added with the set password, otherwise, it will be added with the password of NVR.

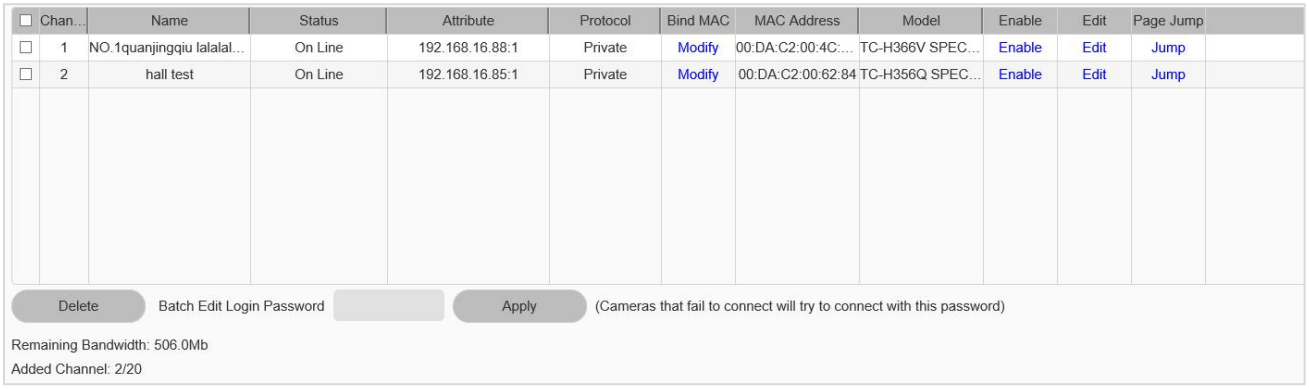
3. 1. 6 Plug and play multi-channel camera

The multi-channel POE camera is connected to the NVR through the POE interface of the NVR device. When [Plug and Play Multi-Channel Camera] is enabled, all channels of the camera automatically join the adjacent Plug and Play idle channels. For example, if the POE interface 1 and interface 2 of the NVR device are idle, and a dual-channel POE camera accesses the interface 1, the channel 1 of the camera joins the NVR channel 1, and the channel 2 automatically accesses the NVR channel 2. If channel 2 is already occupied by another camera, channel 2 of the dual-channel POE camera cannot join NVR channel 2.



3. 1. 7 Device Added

1. The user enables/disables the added front-end device at the added device and modifies the IP information, as shown in the following figure.

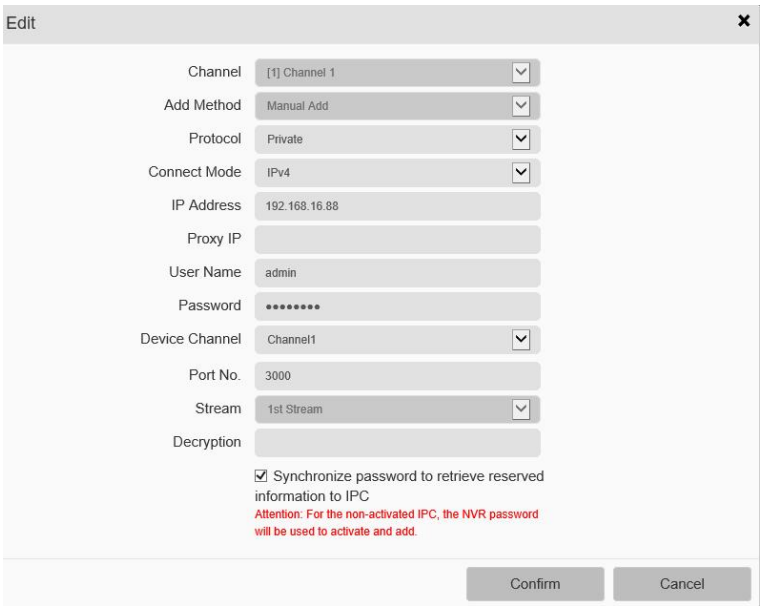


2. [Enable/Disable]: Click [Disable] to disconnect the video. Click [Enable] to reconnect the video.

3. Edit

(1) Select the front end to be operated in the added device list.

(2) Click [Edit] to pop up the manual modification box, as shown in the following figure.



(3) Change the information according to the actual situation.

(4) Click [OK], and the equipment information will be modified.

4. Web page jump

Before using this function, you need to map the port of the IPC device. After the configuration is completed, select the channel and click the web page to jump to the web interface of the IPC device through the public network IP and port mapped by the IPC device.

Explain：

- Batch edit login password: The camera that fails to connect will try to connect with this

password.

3.2 IPC Management

Restart the IPC, restore the default, change the password, and allocate resources, as shown in the following figure.

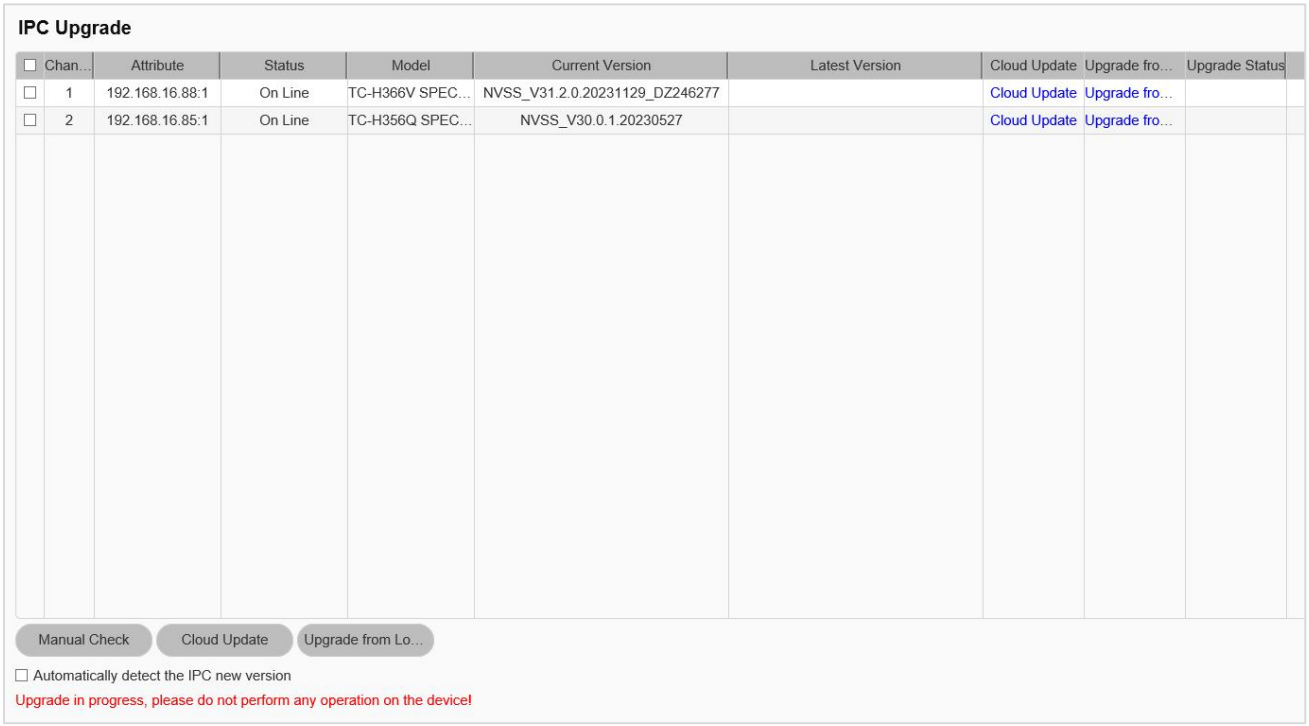


Explain：

- Resource allocation: to modify the resource allocation of the camera, the camera must support this function. Different devices support different types of resource allocation modes. Please refer to the actual situation.

3.3 IPC Upgrade

Perform local upgrade and cloud upgrade for IPC, as shown in the following figure.



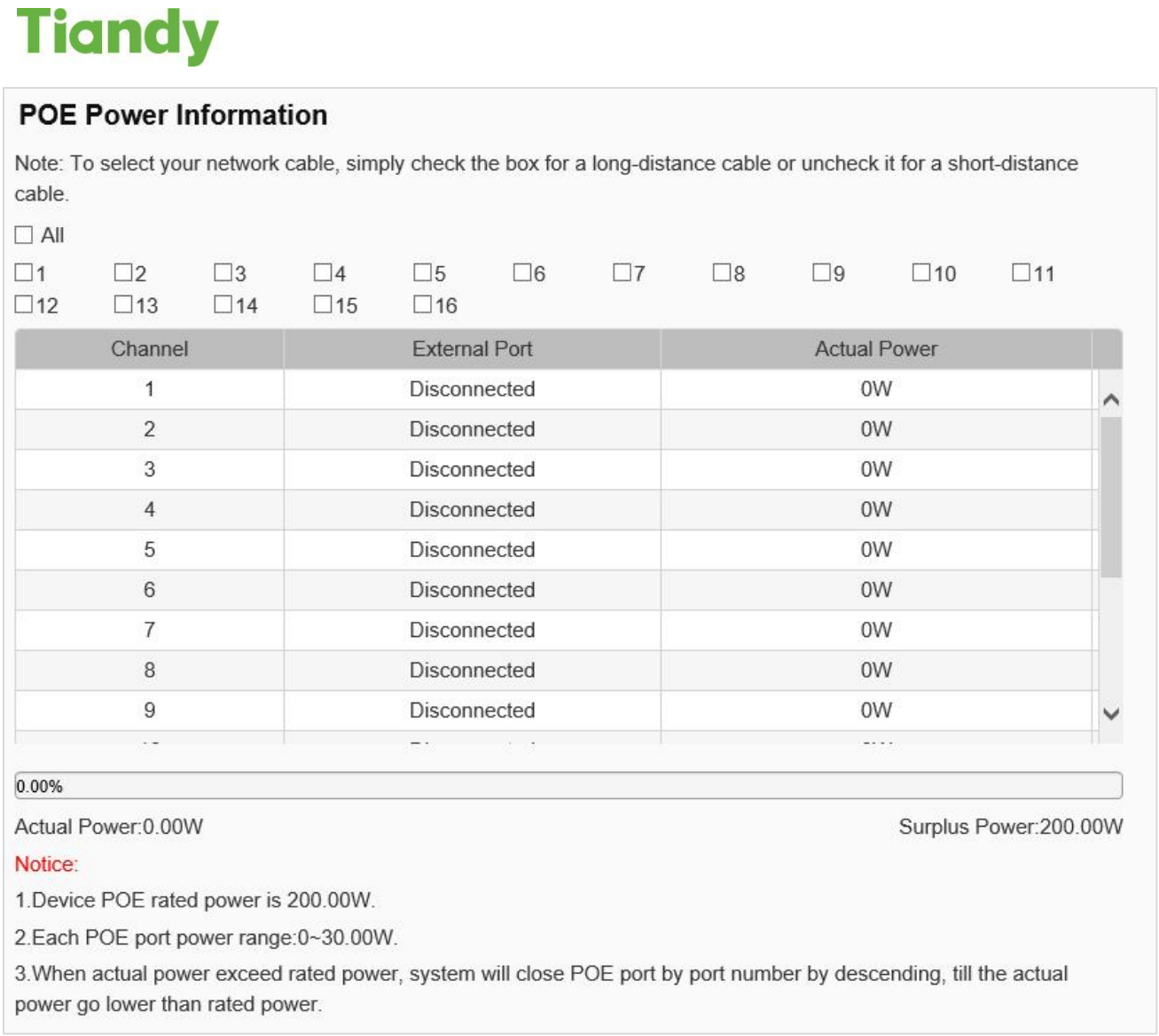
Notice:

- Automatically detect the new version of IPC: automatically detect the new version of IPC. If there is a new version, a prompt box will pop up.
- Do not do anything to the device during the upgrade.

3.4 POE Power Information

1.The list displays the connection status and actual power information of the Poe device.

2.The progress bar indicates the information of actual power and remaining power.

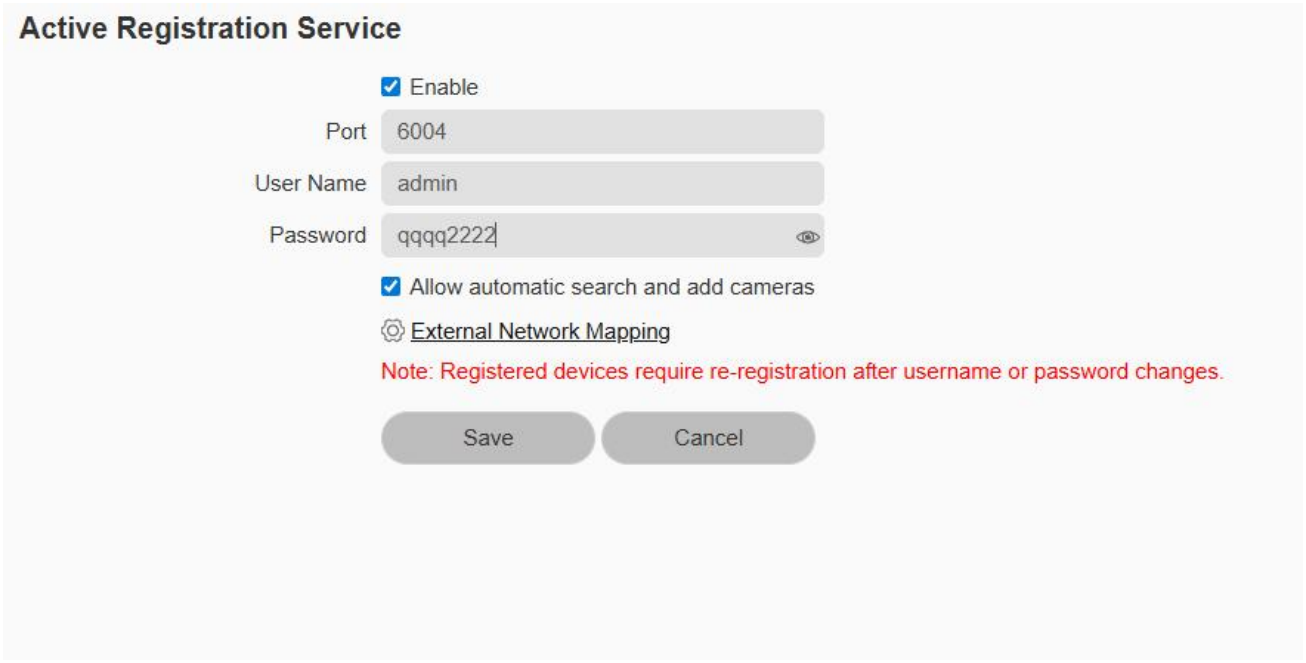


Notice：

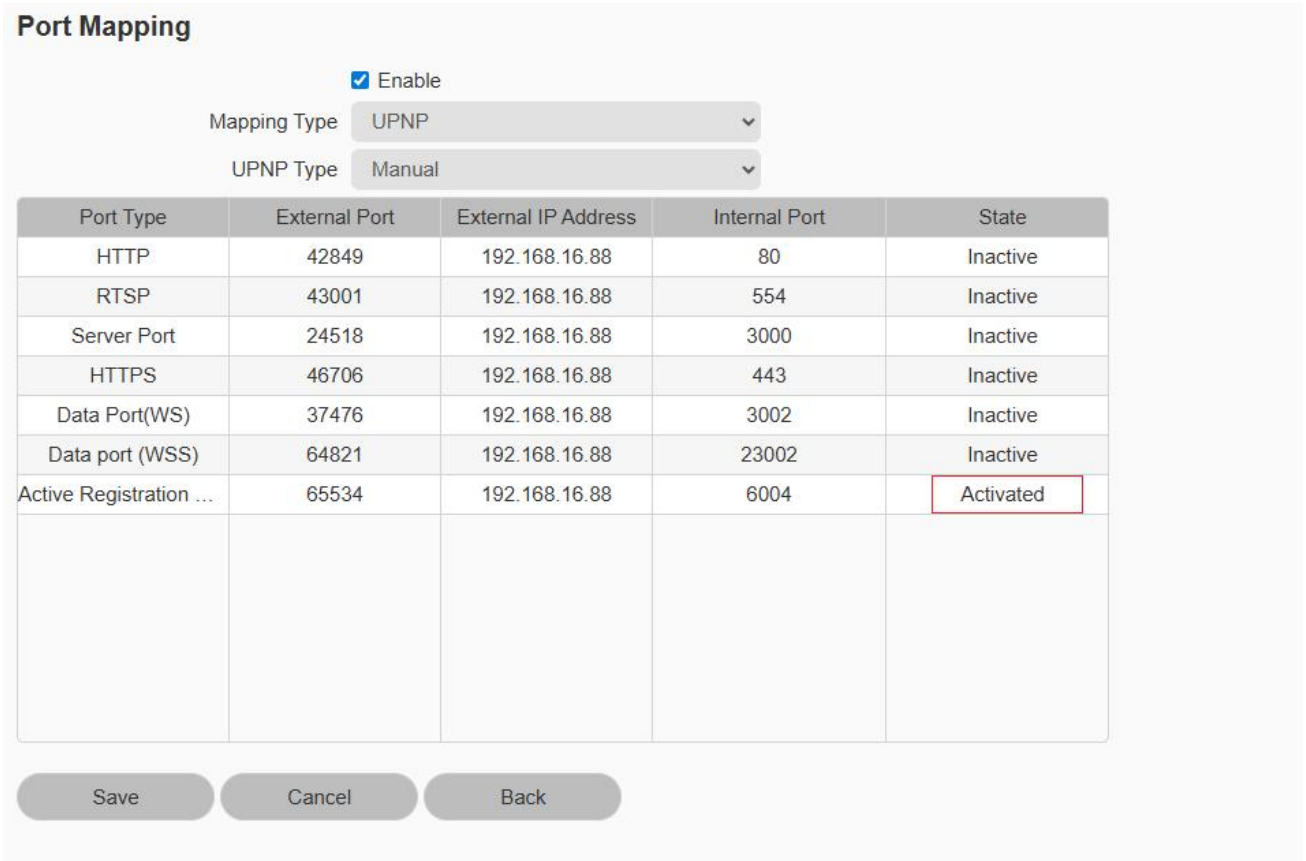
- This feature is only available for devices that support the POE interface.

3.5 Access Service

When configuring the active registration service, you can add cameras in active mode by setting the port, username, and password, as shown in the figure below.



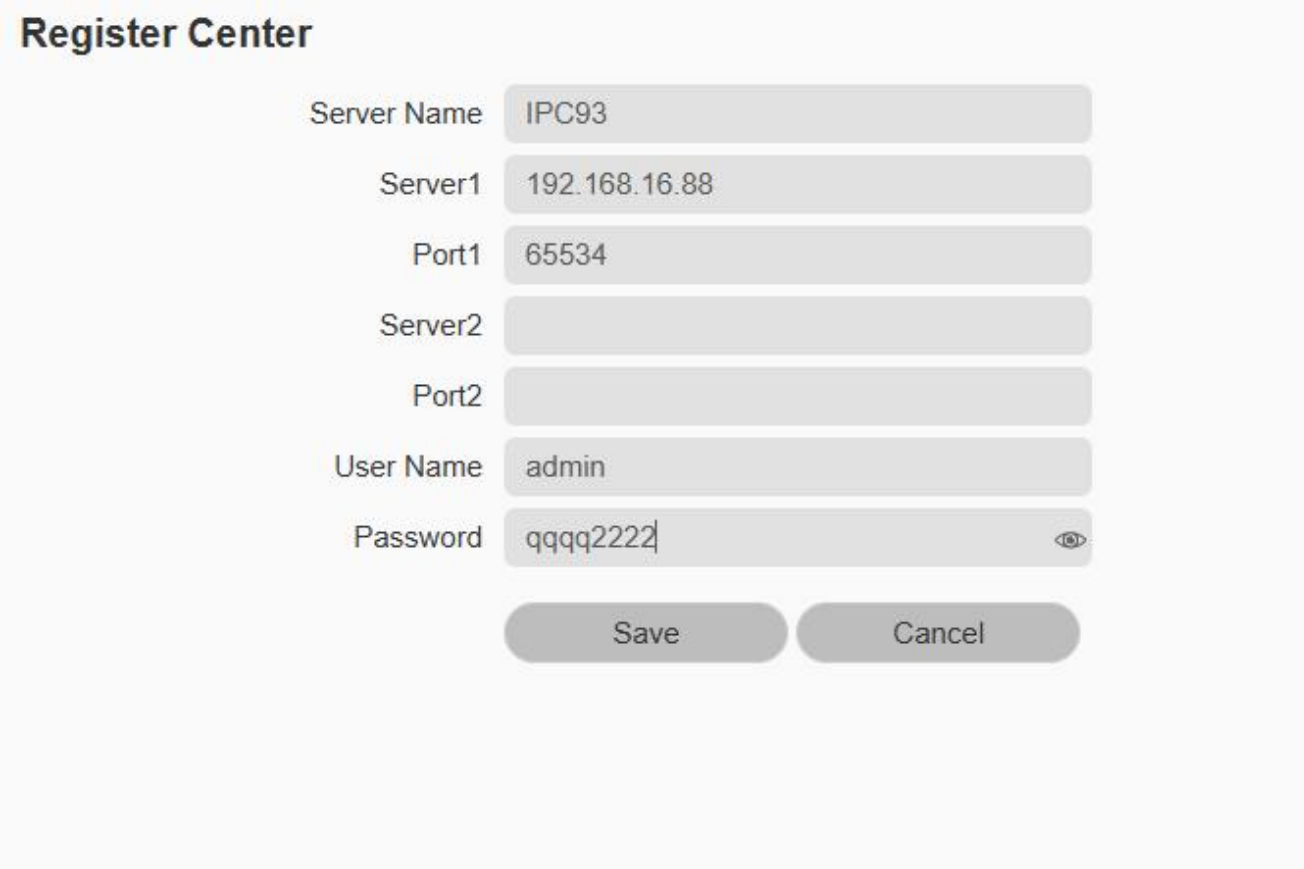
Click the "External Network Mapping" button to jump to the port mapping page, where you can configure the active registration port, as shown in the figure below.



Explain：

- After enabling "Allow auto-add cameras", cameras registered via active mode will be automatically added to the NVR.
- After completing the external network port mapping for the device, you can configure the device in active registration mode on the front end to register it with the NVR, thereby enabling cross-network segment camera addition.
- NVR active mode connection to NVR is not supported.

After completing the configuration of the active registration service, you can make corresponding settings on the camera's "Registration Center" page, as shown in the figure below.



Explain：

- The IP of Server 1 is the external IP address of the NVR's port mapping.
- Port 1 is the external port of the active registration port after successful NVR port mapping.
- The username is the username of the NVR's active registration service.
- The password is the password of the NVR's active registration service.

4 Audio and video parameters

Introduce the video, audio and image parameters and parameter settings of the equipment. Please refer to the actual equipment for specific parameters.

4.1 Video parameters

4. 1. 1 Video parameters

It is used to set video Parameters such as device stream type, encoding protocol and resolution.

Parameter	Explain
Channel	Select the channel whose video Parameter needs to be set.
Stream	Select the code stream type according to the use requirements. Main code stream: large code stream, high definition, large bandwidth, suitable for local storage. Substream: The image is smooth and occupies less bandwidth. It is suitable for low-bandwidth network transmission or standard definition storage. Other code streams: can be set according to the use requirements.
Stream type	Choose pure video or audio video according to your needs. Video-only: Contains only the video stream. Audio and video: including video stream and audio stream.

Resolution	Set the resolution of the video. Different models are compatible with different maximum resolutions. The higher the resolution, the higher the bandwidth requirements for the network.
Bit Rate	Set the bit rate of the video in kb/s. When the [compression mode] is [constant code rate], [code rate] represents the actual code rate of the code stream; when the [compression mode] is [variable code rate], [code rate] represents the maximum code rate allowed by the code stream. (The code rate supported by different models is slightly different, please refer to the actual situation.)
Frame Rate	Sets the frame rate of the current video. The frame rate represents the number of frames per second of the video. The higher the video frame rate, the smoother and more realistic the picture. However, the more bandwidth and storage space are required, please set according to the actual bandwidth.
Priority mode	Set to [Frame Rate Priority] for smoother video; set to [Quality Priority] for sharper video.
I-Frame Interval	The number of frames between every two I frames can be set, and the settable range is 10 ~ 100. The larger the I frame interval is, the smaller the bit stream is, but the image quality is relatively poor; conversely, the larger the bit stream is, the better the image quality is.

Ecoding Mode	Set fixed rate or variable rate compression. Under constant bit rate, it means that the bit rate is maintained at the average bit rate for transmission, the fluctuation of video data is small, the bandwidth occupied in network transmission is stable, and the compression speed is fast, but it may cause video mosaic phenomenon. Under the variable code rate, it means that the code rate is adjusted on the basis of not exceeding the upper limit of the code rate. The amount of video data changes with the complexity of the video picture. The compression speed is relatively slow, but it can ensure the picture clarity in complex scenes. In the variable bit rate, there are several levels, if the better, the greater the average bit rate of the video.
Corridor mode	The display is rotated 90 degrees to accommodate the scene where the device is mounted horizontally on the wall, and is turned off by default.
Video Encoding	Sets the encoding method for the video. H.264 is a high-performance video encoding and decoding technology with high compression ratio, flexible processing and ultra-low bit rate, which saves network transmission bandwidth and storage space. H.265 is a high-performance video codec technology with high compression ratio, flexible processing and ultra-low bit rate. Compared with the current H.264, the compression performance is doubled, and the bandwidth and storage space are further saved. MJPEG is a kind of video coding and decoding technology, the compressed image quality is good, and there is no mosaic in the case of picture changes.

S+	You can switch S + on or off in the drop-down list. After S + is enabled, functions such as compression mode, video quality, I frame rate, and key areas will not be available.
SVC	When [SVC] is enabled, non-reference P frames can be encoded for frame extraction video recording to save storage space, and the video file after frame extraction still supports normal decoding. When the [Auto] mode is selected, the device will adapt to the current network environment and decide whether to transmit the frame to ensure that the preview image can be previewed normally.
The code stream is smooth	The ratio of I frame and P frame can be set, which can be used to alleviate the network impact caused by too large I frame. The closer to smoothness, the better the fluency of dynamic scenes, and the closer to clarity, the better the video clarity performance of static scenes. Drag the progress bar, the higher the value, the better the smoothness, but the image will be relatively unclear, otherwise the image smoothness is poor, the image is relatively clear.
Smooth display mode	Set whether to turn on the smooth display mode.

Encrypt Type	Depending on the situation, users can encrypt video data to improve the security of network transmission. [Encryption type] Select the required encryption algorithm (currently only the AES algorithm is available), [Encryption password] Set the encryption password, [Password confirmation] Enter the encryption password again to ensure that the passwords entered twice are the same, and click the [Save] button to take effect.
Digital Watermark	The anti-counterfeiting mark of the video data prevents the video data from being tampered. Recorded video verification can be performed using professional tools.

After setting, click the [Save] button to take effect. Click the [Reset] button to restore the last saved Parameter.

4. 1. 2 Key area

The image quality displayed in the focus area is higher.

Operation steps:

(1) Click the "Start Drawing" button to press and drag the left mouse button on the video to set the key area. Several key areas can be set. Click "Delete Area" to delete all the key areas that have been set.

(2) Click the [Save] button to save the corresponding Parameter settings. Click [Reset] to restore the last saved Parameter.

4.2 Audio Parameter

Set parameters such as audio encoding mode, audio sampling rate, and audio control type.

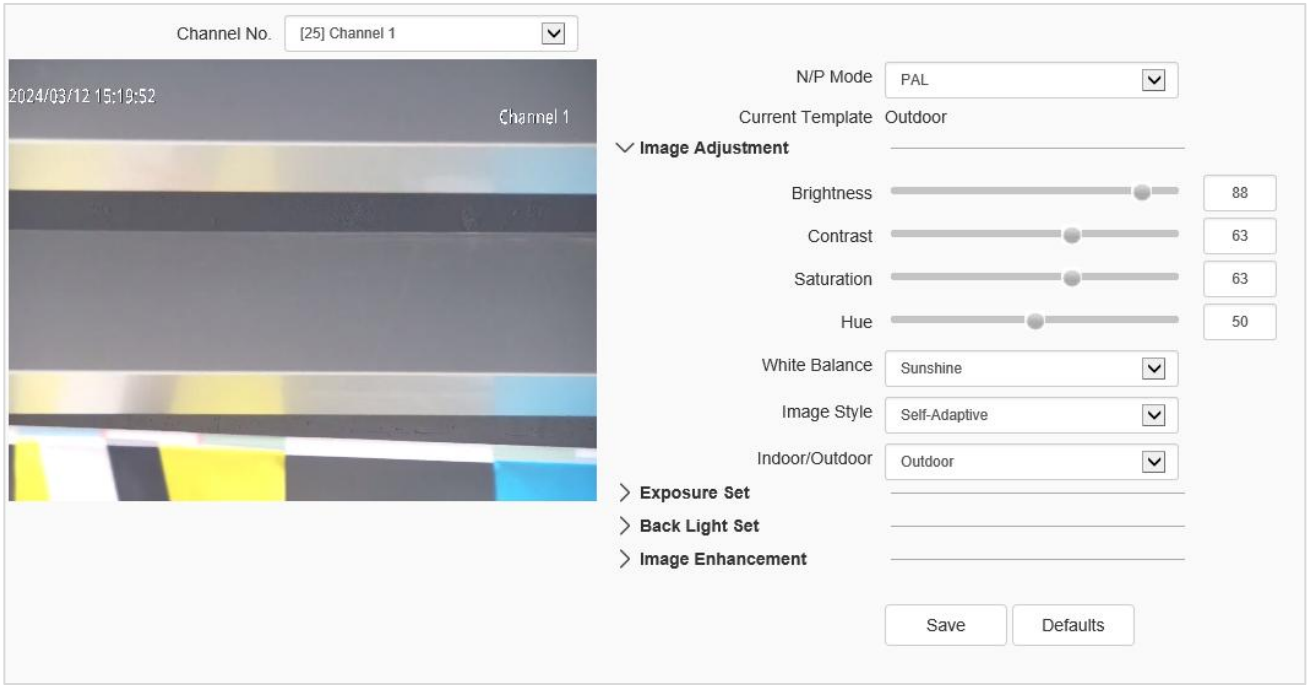
Parameter	Explain
Audio Encoding	Set the audio encoding mode of the code stream.
Audio Sample Rate	Set the audio sampling rate of the code stream.
Audio Control Type	Two modes, Line In and MicIn, are supported. The control mode shall be selected according to the output signal amplitude of the external audio equipment. For external MIC small signal (MV level signal), please select MicIn; for external active audio equipment (V level signal), please select Line In mode.
Audio Input/Output	The input sound can be adjusted within the range of 0 ~ 100. The smaller the value, the smaller the amplitude of the audio signal output by the device; the larger the value, the larger the amplitude of the audio signal output by the device.
Audio Output Type	Audio output types include internal speakers, external audio, and off. When internal speakers are selected, the output volume can be adjusted. (Speaker 1 and Speaker 2 can be turned on separately)
Audio noise reduction	You can set the filtering level of the ambient noise. The default level is 1. When the value is 0, the audio noise reduction function is turned off.

After setting, click the [Save] button to take effect. Click the [Reset] button to restore the last saved Parameter.

4.3 Image Setting

4. 3. 1 Image

The application of HD Parameter is embodied in the form of templates, and the system provides several sets of common templates for use. Because the HD Parameters of each template are mutually independent, modifying the HD Parameter of the first template will not affect the Parameter of the second template. Therefore, please confirm the current template before modifying the Parameter.



[HD Parameter] = > [Basic Settings]

Set the image display effect in [Format]. PAL and NTSC formats are supported. Different formats may lead to different resolutions. Please refer to the actual situation.

Select the image mirror display mode in [Image Position], which supports four image position display modes: horizontal mirror, vertical mirror, inverted flip and normal.

After opening [Smart Scene], the device will automatically adjust the code rate according to the scene.

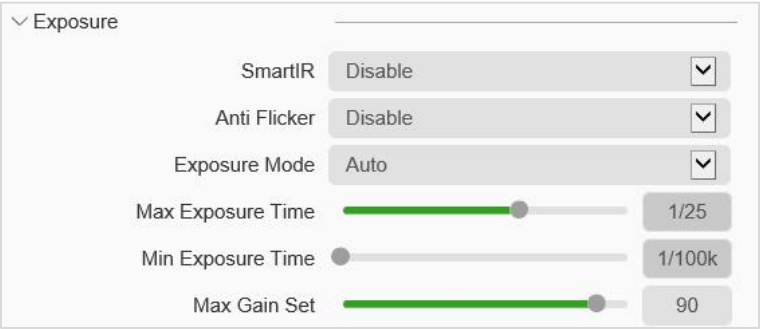
[Current Template] displays the currently selected HD template. You can switch the template in the [HD Template] interface.

[HD Parameter] = > [Picture adjustment]

Click the " > " button next to [Image Adjustment] to expand the [Image Adjustment] interface. Users can set the picture brightness, contrast, saturation, chroma, sharpness adjustment, white balance adjustment, image style, indoor and outdoor mode through the image adjustment menu.

[HD Parameter] = > [Exposure]

Click the " > " button next to [Exposure] to expand the [Exposure] setting interface.



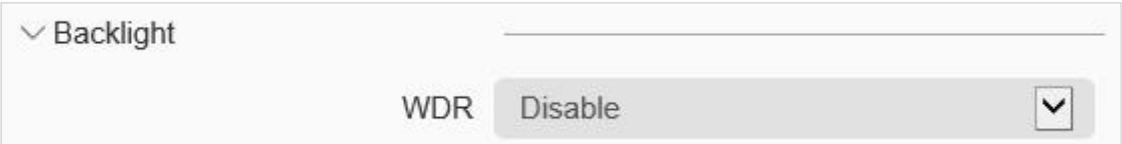
The interface Parameter is described as follows:

Parameter	Explain
SmartIR	It is mainly used for infrared night vision models. When there is an overexposed scene in the picture, if this function is turned on, the camera will automatically reduce the brightness to avoid unclear objects due to

	overexposure.
Anti-flash	It can effectively solve the problem of power frequency interference, including off, 50HZ, 60HZ, automatic, and off by default.
Max/Min Exposure Time	The longer the exposure time, the brighter the picture, but the more noise.
Maximum gain settings	You can set the maximum gain allowed, which affects image brightness. Excessive gain may cause more noise.
Brightness adjustment	Set the desired image brightness value.
AE adjustment	Adjust the scroll bar to set the exposure sensitivity. The higher the value, the faster the exposure response when the scene changes.

[HD Parameter] = > [Backlight]

Click the " > " button next to [Backlight] to expand the [Backlight] setting interface.



The interface Parameter is described as follows:

Parameter	Explain
Intense photoinhibition	It is mainly used for road monitoring scenes. After opening, it can suppress the strong light such as automobile headlights and reduce the influence of strong light. When there is strong light, turn on this function to properly suppress the strong light and see the video picture clearly. The level of strong light suppression can be adjusted according to the

	actual scene.
Ultra-wide dynamic strategy	The wide dynamic range is suitable for monitoring environments with large differences in light intensity. When the high brightness area under the illumination of strong light source (sunlight, lamp or reflection, etc.) and the relatively low brightness area such as shadow and backlighting exist in the monitoring picture at the same time, the wide dynamic function can be turned on and the level can be adjusted to see the monitoring picture clearly. Wide dynamic automatically balances the brightest and darkest parts of the surveillance screen to see more details of the surveillance screen. In the drop-down list, [Off], [Ultra Wide Dynamic Auto], [Ultra Wide Dynamic Manual], and [Backlight Compensation] are available. [Super Wide Dynamic Auto] or [Super Wide Dynamic Manual]: Display the [Super Wide Dynamic] slider. Drag the slider to set the wide dynamic level that meets the needs of the scene. The larger the value, the more obvious the effect. [Backlight compensation]: Fill light compensation can be set to improve the brightness in the setting area. Which is used for effectively compensating the defect that the main body of the picture is dark when the device shoots in a backlighting environment. The user can select the area to be compensated according to the actual scene.

[HD Parameter] = > [Image Enhancement]

Click the " > " button next to [Image Enhancement] to expand the [Image Enhancement] setting interface.



The interface Parameter is described as follows:

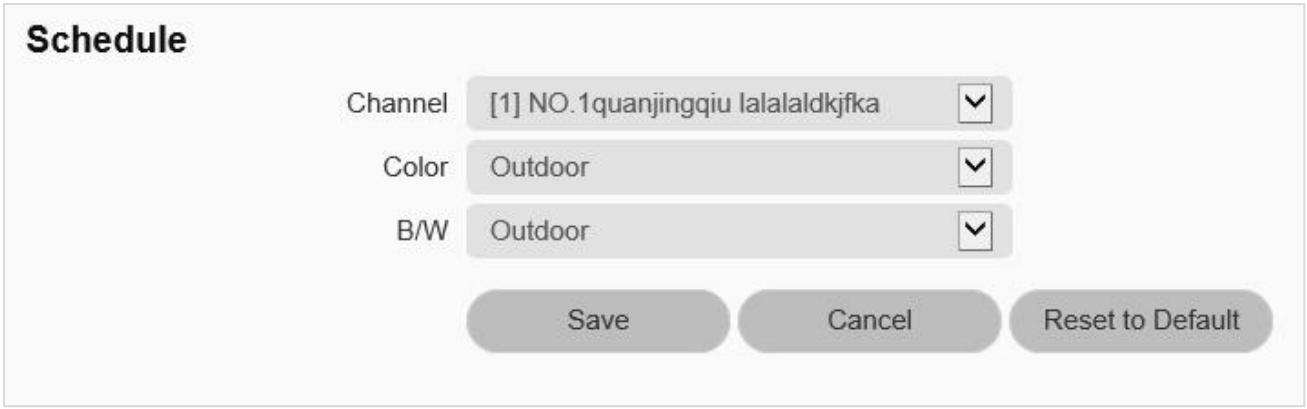
Parameter	Explain
Through the fog	Select [On], [Off], etc., according to actual needs.
Digital noise reduction	In the drop-down list, [Close], [Normal Mode] and [Expert Mode] are available for selection. Select [Normal Mode] to display the [Noise Reduction Level] slider. Drag the slider to set the noise reduction level. Select [Expert Mode], [Spatial Domain Noise Reduction Level] and [Time Domain Noise Reduction Level] sliders will pop up below, and drag the two sliders to set [Spatial Domain Noise Reduction Level] and [Time Domain Noise Reduction Level] respectively.

Notice:

- After HD Parameter is set, click the [Save] button to save it. Click the [Reset] button to restore the last saved Parameter. Click the [Restore Default] button to restore the Parameter of each template to the default setting.

- Different devices support different functions. Please refer to the actual situation.

4. 3. 2 Schedule



Two modes are supported: time mode and day and night mode;

Time period mode: select different HD templates according to the time period;

Day and night mode: Choose different HD templates according to day and night.

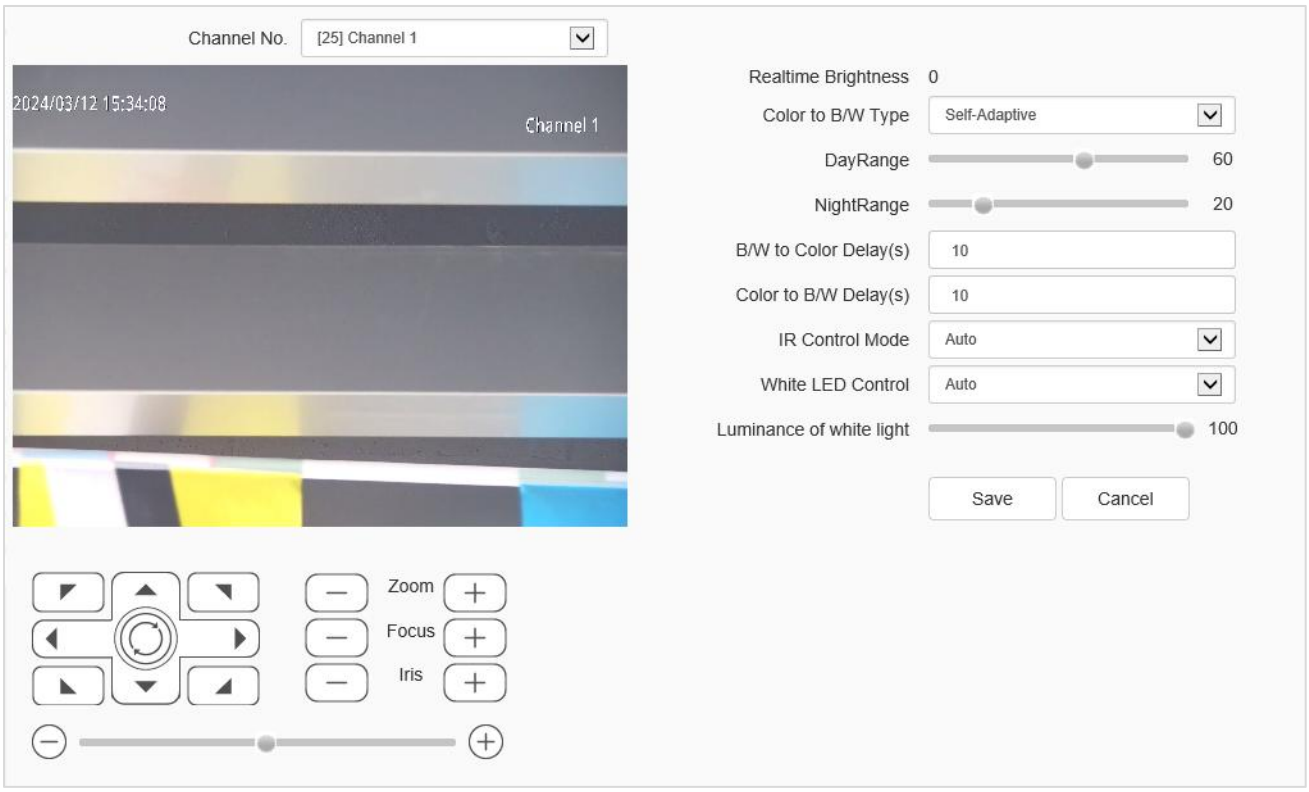
By using HD templates, the device can use different templates at different times to ensure that the video effect is the best in different time periods.

[Color]: Set the HD template in the daytime.

[Black and White]: Set the HD template at night.

Click the [Save] button to save and make it effective.

4. 3. 3 Day/Night



In the color to black interface, set the color to black type, that is, the equipment screen is switched to color or night black and white mode according to the specified conditions, and set the fill light.

[Internal synchronization]: In the internal synchronization mode, the [device] will automatically detect the brightness of the video picture. When the video brightness is higher than daytime brightness value, the video will turn from black to color. When the video brightness value is lower than night brightness value, the video will turn from color to black. The [real-time brightness value] at the top of the page is the current brightness value detected.

[External synchronization]: In the external synchronization mode, the photoreceptor detects the brightness of the external environment. When the external brightness is

higher than daytime brightness value, the video changes from black to color. When the external brightness is lower than night brightness value, the video changes from color to black.

[Black and white]: The device video is always in black and white mode.

[Color]: The device video is always in color mode.

[Timing]: In the timing mode, the user can specify the time to turn on the infrared lamp, that is, specify the time to enter the black and white mode. When entering the black and white mode, the infrared lamp will be turned on.

[Black-to-color delay (s)]: The delay time of the picture from black and white to color.

[Color to black delay (s)]: The delay time of the picture from color to black and white.

[Control mode of infrared lamp]: set the opening mode of infrared lamp, including automatic and manual modes.

[Infrared lamp brightness]: slide the slider to set the brightness value of the infrared lamp, the maximum value is 100, which can be set when the manual control of the infrared lamp is selected.

[White light control mode]: set the white light opening mode, including manual closing and automatic mode.

[White light brightness]: slide the slider to set the white light brightness value, the maximum value is 100, which can be set when the automatic control white light is selected.

Click the [Save] button to save and make it effective.

Click the [Reset] button to restore the last saved Parameter.

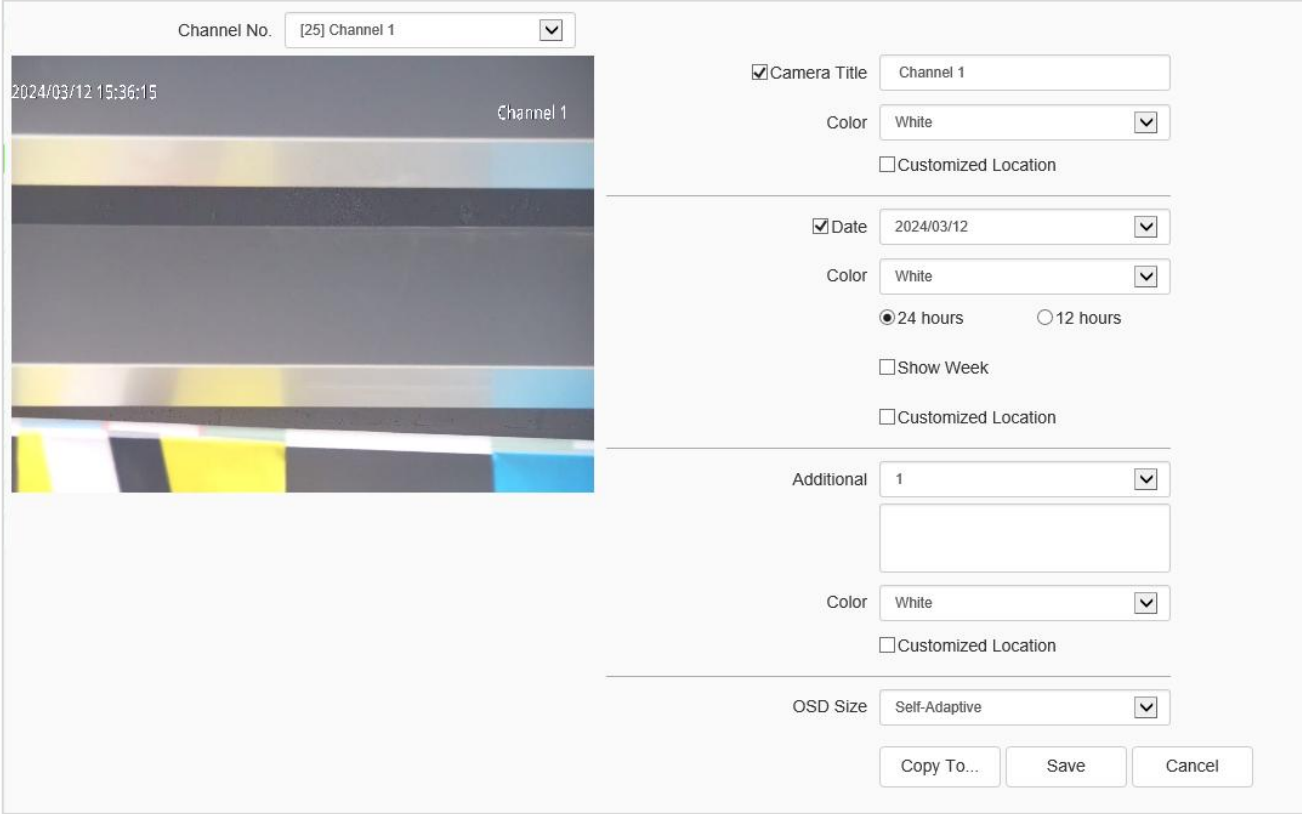
Notice:

- The supplementary lighting distance of the white light is 30 meters, and it is not recommended to manually turn on the white light for supplementary lighting after the zoom exceeds 30 meters.
- White light filling type. It is recommended to manually turn off the white light when it is used in the environment where there is a large area of reflective objects near the indoor and outdoor monitoring scene (2-3 meters), so as to avoid the image effect being affected by the repeated turning on/off of the filling light due to strong reflection.

Tiandy

4.4 OSD

4. 4. 1 OSD



[Code stream type]: Select the code stream to be superimposed with character information.

Overlay [channel name] operation steps:

(1) Select the [Channel Name] check box to superimpose the channel name on the screen.

(2) Enter the name in the input box on the right to set the channel name.

(3) Select a preferred color for the superimposed content from the [Color] drop-down list.

(4) If you need to change the position of the superimposed character, select the

[Custom Position] check box and click on the small screen with the mouse to specify a new position for the superimposed character.

Overlay [Date Time] operation steps:

(1) Select the [Date and Time] check box to superimpose the date and time on the screen.

(2) Select your preferred date format from the drop-down list on the right.

(3) If you want to include the day of the week in the displayed time and date, select the [Show Day of the Week] check box.

(4) The time can be displayed in 24-hour or 12-hour format as required. Select the appropriate option from the two radio buttons below.

(5) Select a favorite color for the superimposed content from the [Color] drop-down list.

(6) If you need to change the position of the superimposed character, select the [Custom Position] check box and click on the small screen with the mouse to specify a new position for the superimposed character.

Overlay [additional information] operation steps:

(1) The number of blocks supported by different devices is different. Please refer to the actual situation.

(2) Input the text content to be superimposed from the input box below, including Chinese characters, English and common punctuation marks. You can overlay more than one line of content in an area as needed. Select a preferred color for the overlay from the [Color] drop-down list.

(3) Select the [Custom Position] check box and click on the small screen with the mouse to specify a new position for the superimposed character.

[Character Size]:

The user can specify the size of the superimposed character, select the preferred character size (unit: pixel) in the [Character Size] drop-down list, or select [Adaptive] to let the system automatically adjust the character size.

[Font Type]:

Font types are divided into vector and dot matrix. Vector fonts are rendered by reading mathematical vectors and performing certain mathematical operations. The actual size of the font can be arbitrarily scaled without deformation. Dot matrix fonts are also called bitmap fonts, which are fast to display, but cannot be enlarged. Once enlarged, the jagged edges of the text will be found.

After setting all the above Parameters, click [Save] to save and make it effective; click [Reset] to restore the last saved Parameter.

Explain：

- The numb of additional information that can be superimposed on each channel is subject to that actual device.

4. 4. 2 Video occlusion



A shielding area is set on a video picture accord to that requirement of a user to protect privacy information. (This function is only supported by fixed-point channels)

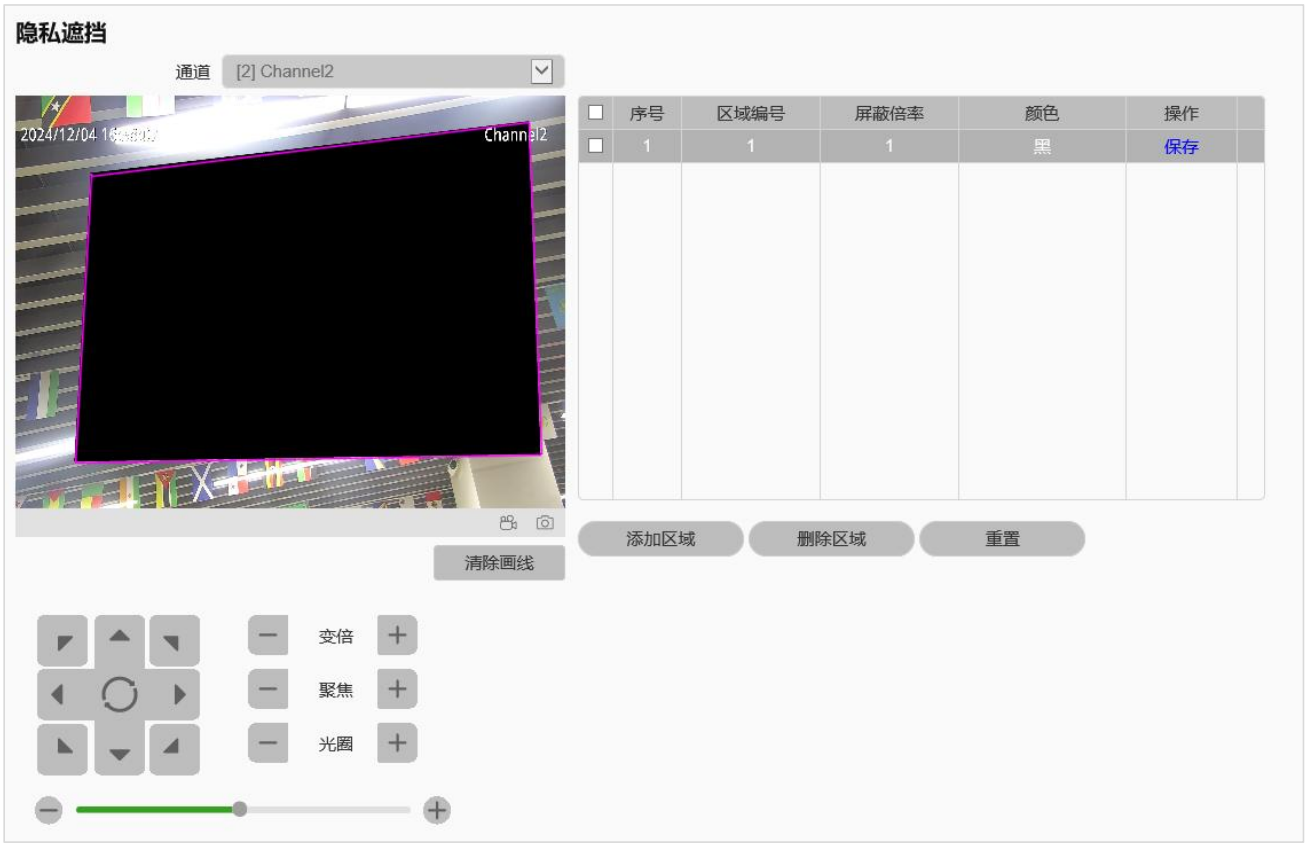
Operation steps:

(1) Drag the mouse to draw the occlusion area on the video screen, allowing multiple occlusion areas to be drawn.

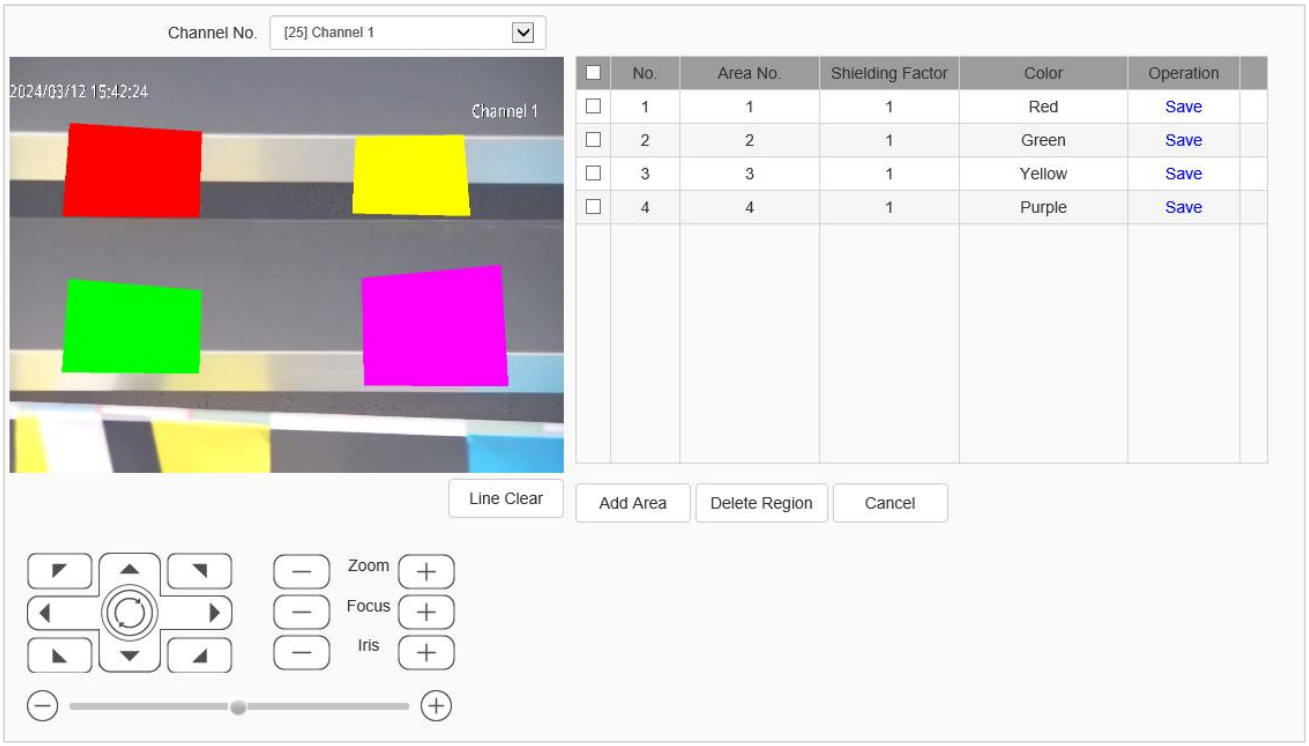
(2) If the drawn area needs to be deleted, click the [Delete Area] button to delete all the occlusion areas for redrawing.

(3) Click [Save] to save and take effect.

4. 4. 3 Dynamic Privacy Masking



According to the user's needs, a shielding area can be set on the screen to protect he key information from being seen.



Operation steps:

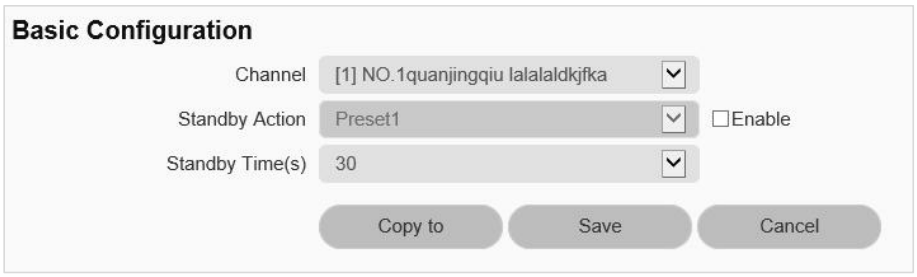
(1) Draw the area to be blocked in the small preview window.

(2) Click the [Add Area] button.

(3) If the user wants to delete the occlusion area, click the box in front of the serial number, select the corresponding occlusion area, and click the [Delete Area] button to delete the area.

4.5 Dome Setting

When a dome is connected to the NVR device, the standby action of the dome can be set. Enter [Configuration- > Dome Settings- > Basic Configuration], as shown in the following figure.



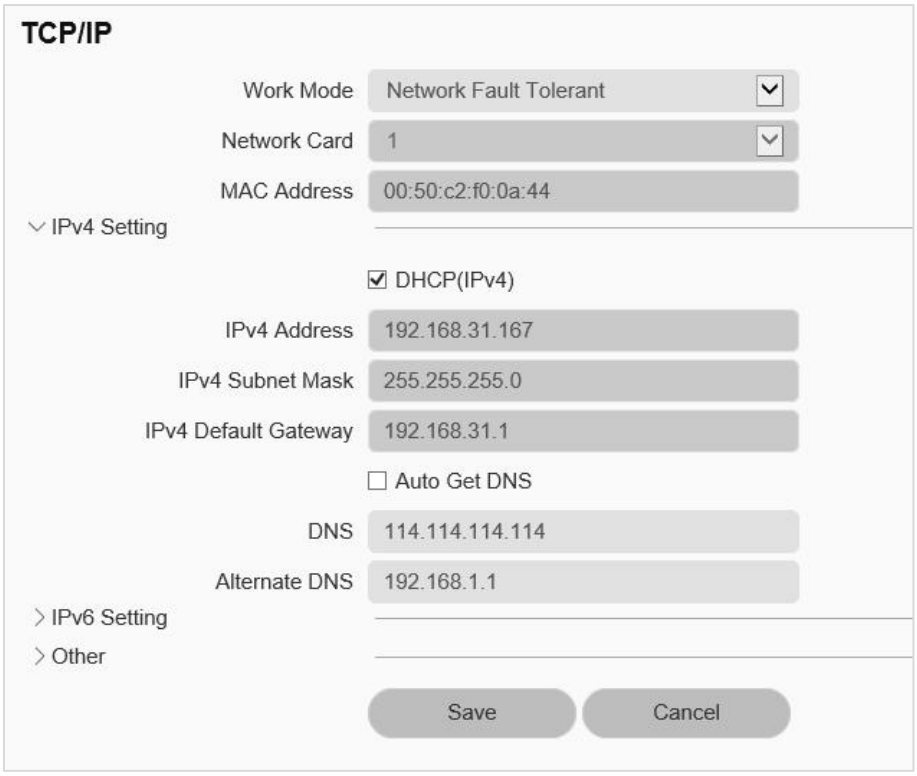
Select the channel to be set and check the [Enable] check box. Set the standby action of dome camera, including preset position, automatic scanning, automatic cruise and simulated path. Set the standby time of the dome camera.

Click [Copy to ···] Button to synchronize the setup information to other channels. Click the [Save] button to save the corresponding Parameter settings. Click [Reset] to restore the last saved Parameter.

5 Network

5.1 Basic settings

5. 1. 1 TCP/IP



Configure the TCP/IP Parameters of the device so that the device can be used normally in the network.

Operating mode:

1. Multiple access setting and network redundancy mode are available.

Multi-address setting: In this mode, network card 1 and network card 2 work independently, and each network card needs to set a separate network address.

Network redundancy: In this mode, one network card works and the other network card is in the standby state. Once the working network card fails, the standby network

card is immediately started to complete the seamless conversion of the network.

2. When selecting the multiple access mode, select the network card to be configured.

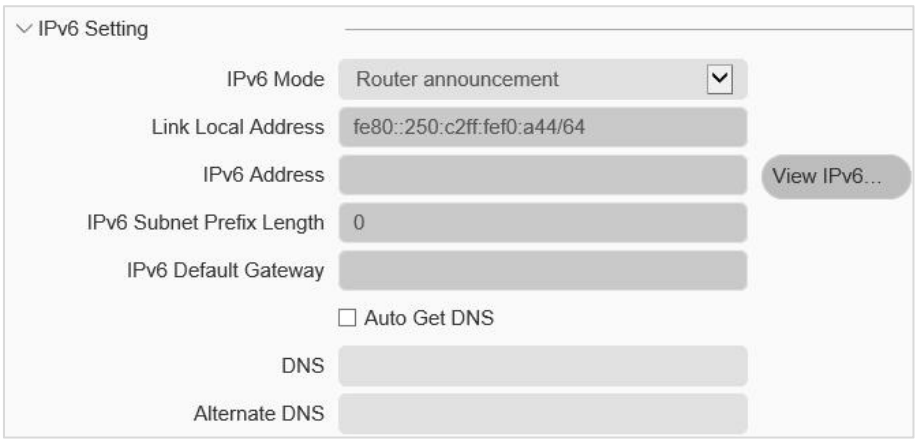
3. Different network cards have different physical addresses.

IPv4：

1、Enable [Obtain IP address automatically], and the device will obtain network Parameters automatically according to the network environment.

2、Do not enable automatic acquisition, and manually fill in LAN Parameter information such as device IPv4 address, IPv4 subnet mask and IPv4 default gateway.

3、[Obtain DNS automatically] can be checked only after [Obtain IP address automatically] is enabled. Otherwise, you need to fill in the DNS information manually.



IPv6：

1. Please fill in the IPv6 network Parameter as required. If it is not clear, please consult the network personnel.

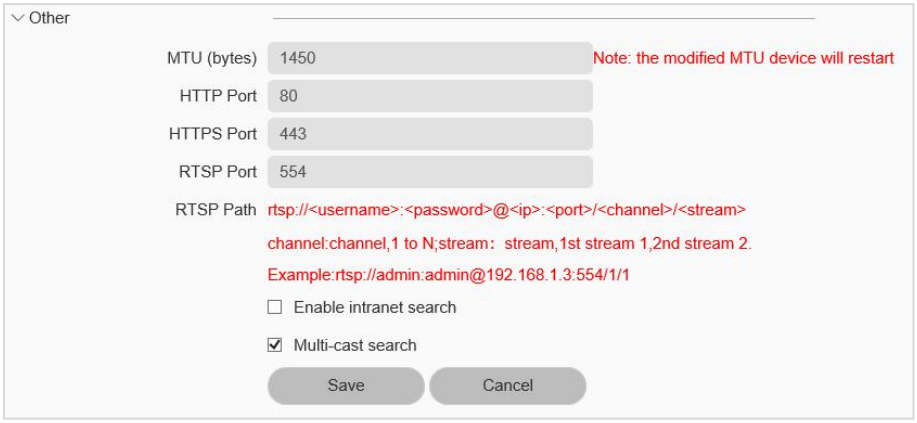
2. IPV6 mode is divided into manual mode, DHCP mode and route announcement mode.

(1) The manual mode is configured according to the actual network requirements. If it is not clear, please consult the network administrator.

(2) In the automatic acquisition mode, the IPv6 address is issued by the corresponding server, router or gateway.

(3) The route announcement mode uses the announced IP prefix and the physical address of the device itself to generate an IPv6 address.

Other:



[MTU]: refers to the maximum transmission unit, which is the size of the largest data packet passed through the TCP/UDP protocol network transmission. The range of MTU size is 500 ~ 1500, and the default is 1500. After the setting is completed, click the [Save] button to save the setting, which will take effect after the device is restarted.

[HTTP port]: input [HTTP port number] in the input box on the page and restart the device to modify the HTTP port number.

[RTSP port]: input [RTSP port number] in the input box on the page and restart the device to modify the RTSP port number.

[HTTPS port]: Enter [HTTPS port number] in the input box on the page and restart the device to modify the HTTPS port number.

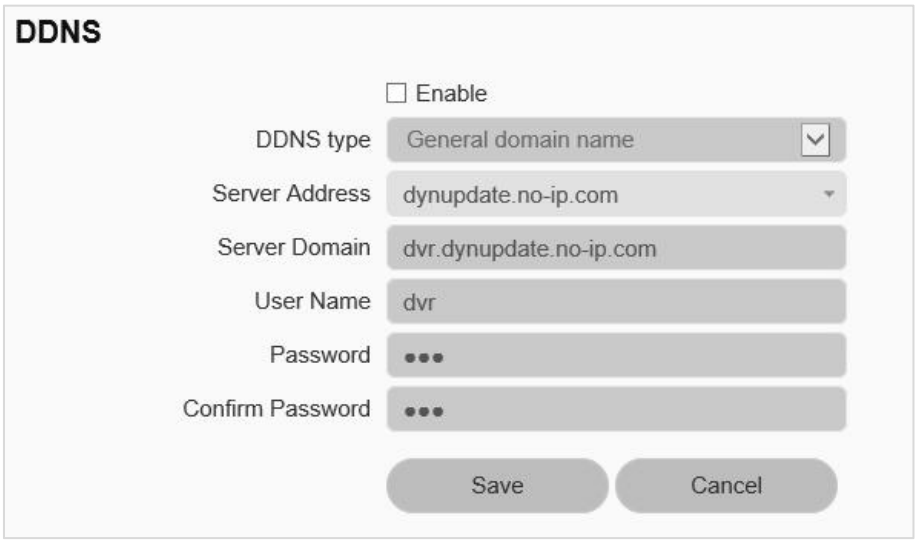
[RTSP Path]: An example path of the reference interface.

[Connect cameras across network segments]: When enabled, cameras across network

segments can be connected.

[Multicast Search]: The device will send specific information to the clients or devices within the multicast group via private protocol.

5. 1. 2 DDNS



Using DDNS (dynamic domain name resolution) to access the equipment, the dynamic IP address of the equipment can be mapped to a fixed domain name resolution server, thus effectively solving the problem of Internet access for network equipment. Users are required to apply for relevant domain names by themselves.

Normal domain name operation steps:

1. Complete the port mapping configuration.

2. Select [DDNS Type], and you can select common domain name and EasyDDNS. Common domain names include 3322.org, no-ip and dyndns, which require users to apply for domain names on relevant websites.

3. Select the common domain name, enter the domain name information and save it.

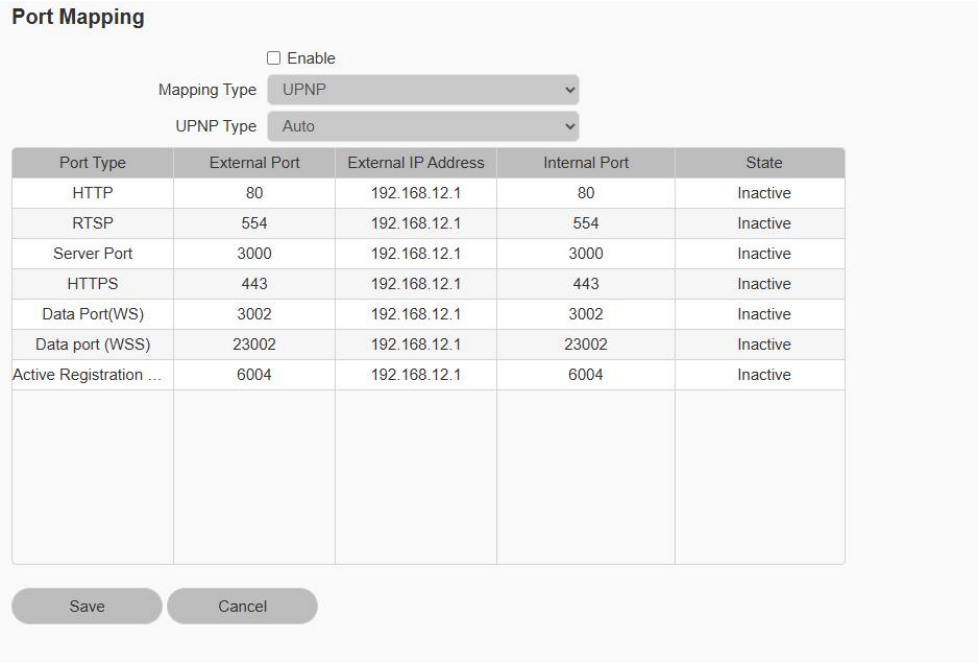
4. After the configuration is completed, enter the domain name and port number in the

browser address bar to access the device.

Notice:

- Connect the product to the Internet at your own risk, including but not limited to the product may be subject to network attacks, hacker attacks, virus infections, etc. The company will not be responsible for the problems caused by the abnormal work of the product, information disclosure, etc., but the company will provide you with product-related technical support in a timely manner.

5. 1. 3 Port Mapping



By setting the port mapping, you can access the devices of the specified port. The mapping types are UP, NP, and manual.

UPNP mapping operation steps:

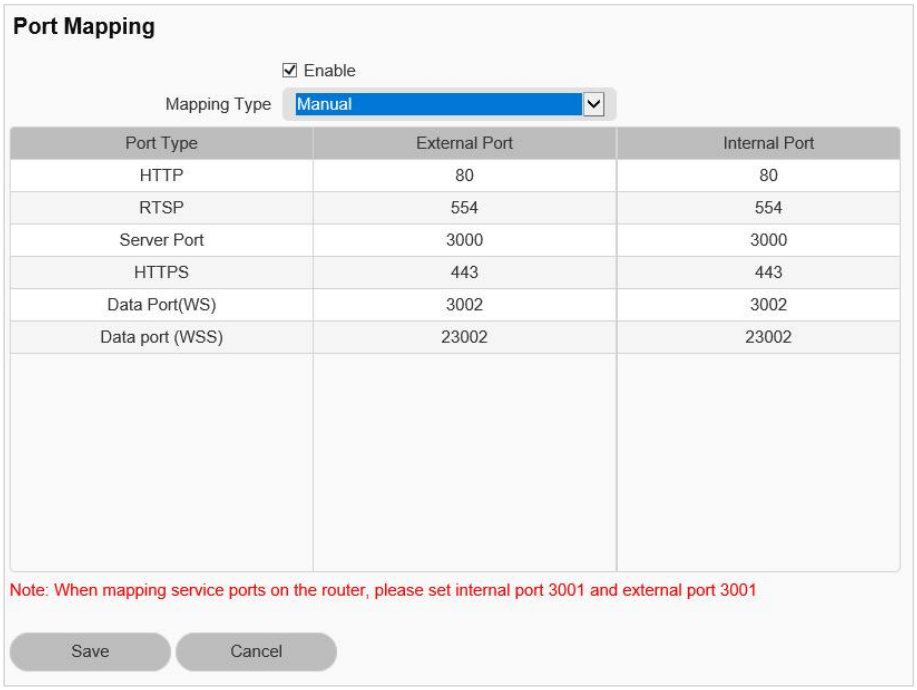
(1) Enable UPNP and select the "Automatic" type. The user only needs to enable the UPNP function on the router. After waiting for a period of time, the external port

and external address IP will be automatically generated, and the status will change to "Effective". The external IP address is the public IP address of the router.

(2) Enable UPNP and select the "Manual" type. The user needs to enable UPNP on the router and manually modify the external port on the device web interface without modifying the external IP address. Wait for the status to take effect.

(3) After the port mapping, the status column will display whether it is valid or not. At the same time, the external port under the currently mapped public network IP will be displayed in the external port. If the user needs to access the network device through the public network, he needs to use the currently mapped external port to access.

Manual mapping operation steps:



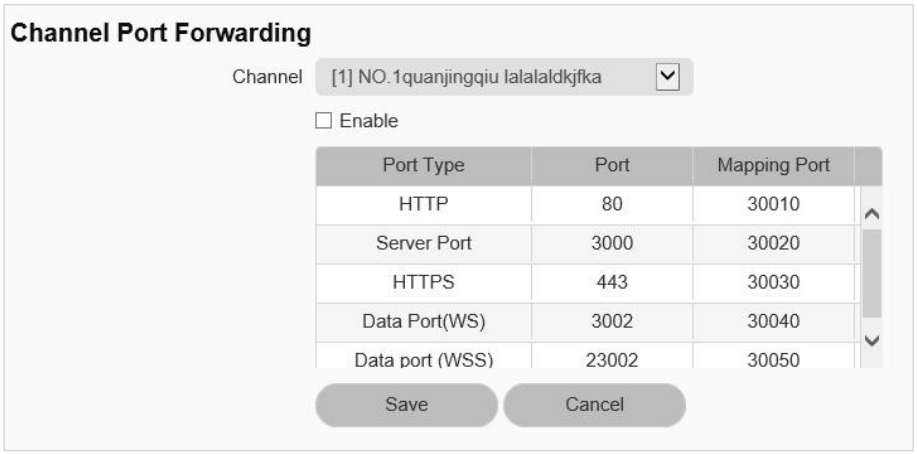
(1) Enable port mapping and select manual. The user needs to perform manual port mapping on the router and configure the same external port as the router on the device web interface.

(2) Take a router as an example: configure one-to-one port mapping in Advanced Settings-Virtual Server. Wherein the internal and external ports are consistent with the internal and external ports in the device web interface, and the internal server IP is the device IP.

(3) If you want to access the device on the public network, enter the router IP (public network IP) and the external port number in the browser.

5. 1. 4 Channel Port Mapping

Enter [Configuration- > Network Settings- > Basic Settings], and select the Channel Port Mapping tab, as shown in the following figure.

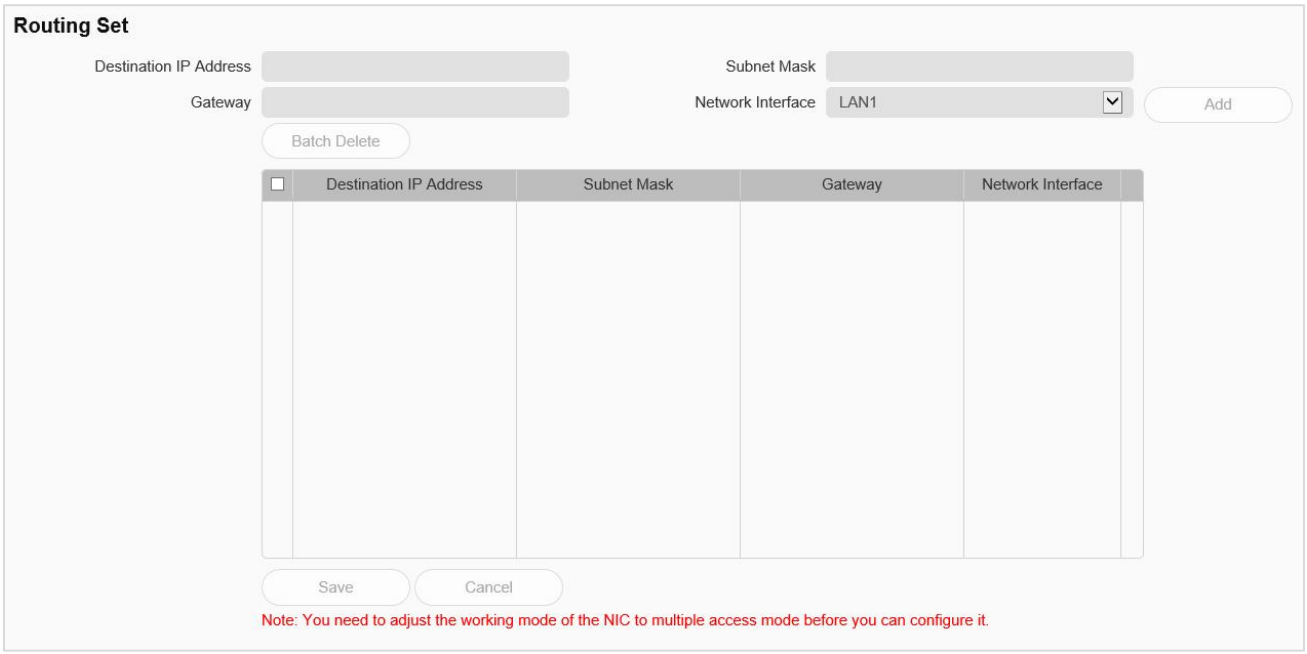


Select the channel number to be mapped, check [Enable] HTTP port mapping, set [HTTP port] and [Mapping port], check [Enable] data port mapping, set [Data port] and [Mapping port], and click [Save] to set the port setting information. Click the [Reset] button to restore the last saved Parameter.

5. 1. 5 Routing Settings

Enter [Configuration- > Network Settings- > Basic Settings], and select the Routing

Settings tab, as shown in the following figure.



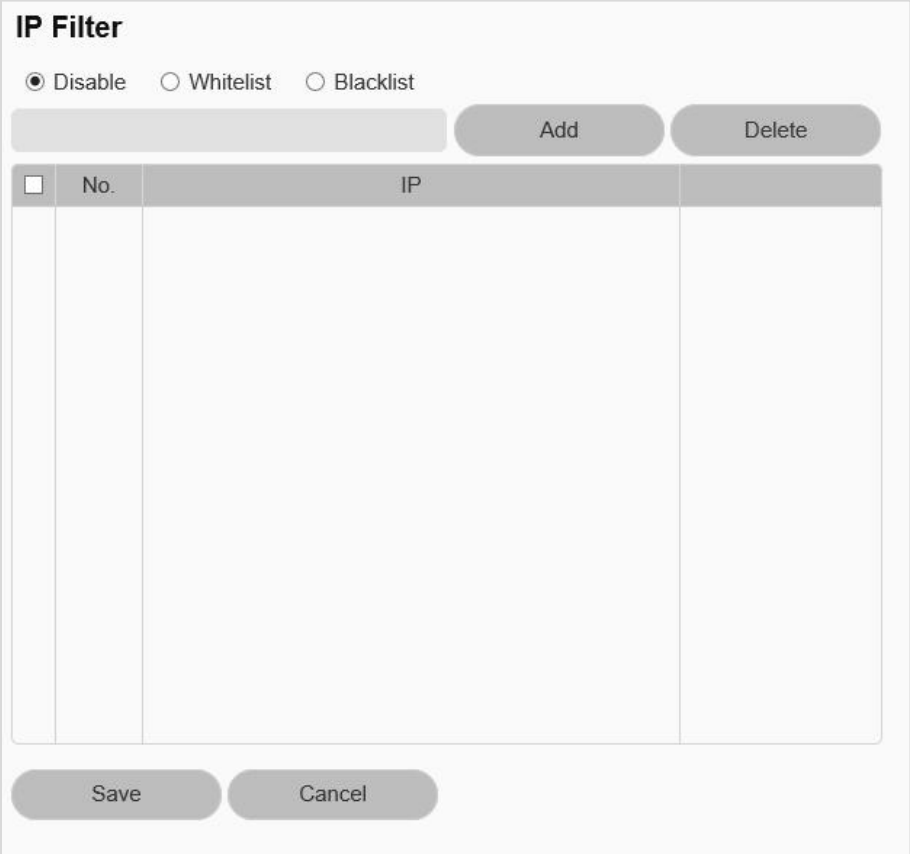
Select the network interface, fill in the destination IP address, subnet mask and gateway, and select the network interface to search for the cross-network device of the corresponding route.

Notice:

- You need to adjust the working mode of the network card to the multiple access mode before configuration.

5.2 Advanced Settings

5. 2. 1 Black and white list



Black and white lists, also known as IP firewalls, are provided to allow users more flexibility in managing access rights.

[Unlimited]: Select [Unlimited] to cancel the restriction of the black and white list. All IP addresses can be accessed, not just the IP addresses in the list.

[Whitelist]: If the user wants to allow only a small number of trusted IP access devices, he can select the [Whitelist] radio button, enter the trusted IP addresses one by one, click the [Add] button to add them to the list, and finally click the [Save] button to make the whitelist take effect. At this point, only the IPs specified in the list can successfully log in to the device, and login requests from other IPs will be rejected,

regardless of whether their user names and passwords are correct. Users can specify up to 16 trusted IP addresses in the whitelist.

Notice:

- When adding the whitelist, please confirm whether to add the IP of the current user.

[Blacklist]: If the user wants to shield some IP addresses and prohibit them from accessing the device, he can select the [Blacklist] radio button, enter the IP addresses he wants to shield one by one, click the [Add] button to add them to the list, and finally click the [Save] button to make the blacklist effective. At this point, login requests from any IP in the list will be rejected, regardless of whether the username and password are correct.

Notice:

- When adding the blacklist, please confirm whether the IP address of the current user is added.

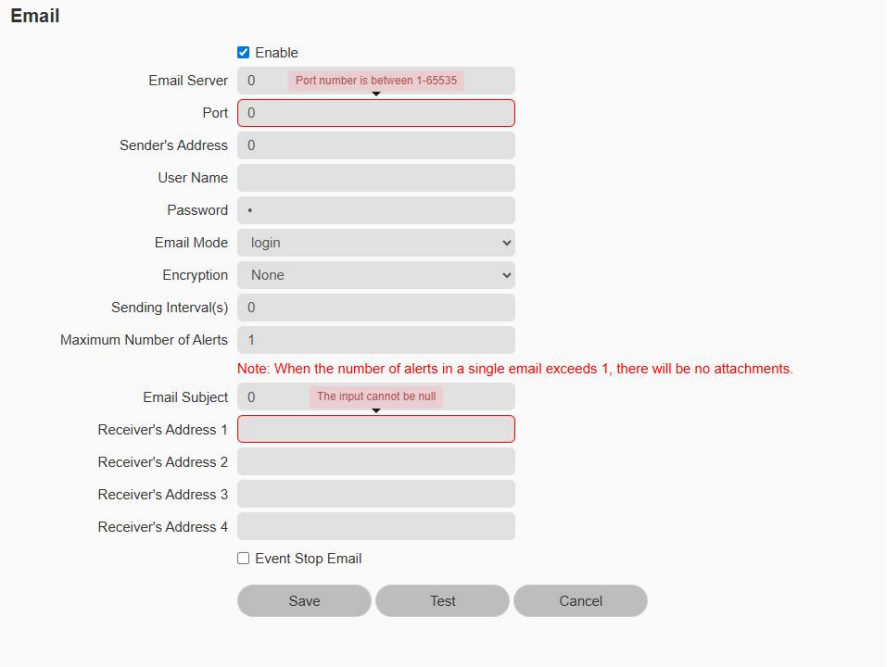
[Delete]: If you need to delete some IPs from the list, you only need to select the check boxes on the left of these IPs, and then click the [Delete] button. Note that all IPs cannot be deleted when deleting the whitelist, otherwise the device will not be able to log in successfully.

Notice:

- IP filtering can only be judged when the user is newly logged in, and the IP that has been logged in cannot be filtered. It is strongly recommended to restart the device in time after configuring the blacklist each time to shield the illegal IP.

5. 2. 2 Mail

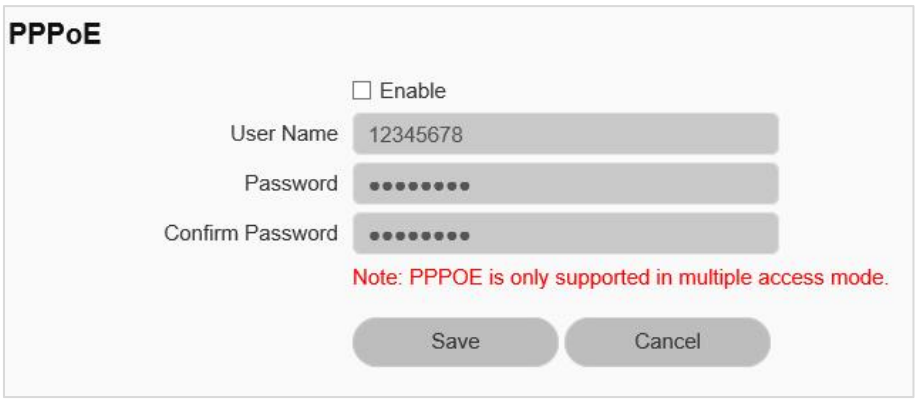
Go to [Configuration- > Network Settings- > Advanced Settings] and select the Mail Settings tab, as shown in the following figure.



1. After the user enables the mail, the alarm server will automatically send the alarm mail to the mailbox address set by the user when an alarm occurs.
2. Email server address input format is SMTP. XX. Com, where XX represents the mailbox server, which is the login mailbox of the account, for example, smtp.163.com.
3. The account is the user name of the SMTP server mailbox, and the password is the 16-digit password generated by the mailbox, not the mailbox login password, which needs to be configured and generated on the mailbox side.
4. The encryption mode can be None, SSL or TLS.
5. After setting the subject and CC email address, click [Test] to test whether the mail

server functions normally, and click [Save] to save the current settings. Click the [Reset] button to restore the last saved Parameter.

5. 2. 3 PPPoE



Connect to the network through the PPPoE dial-up method. After successful dial-up, it will automatically obtain a dynamic IP address of the Internet to realize Internet access.

Operation steps:

1、Enable PPPOE.

2、Fill in the PPPOEParameter. The user name is the broadband account for dial-up Internet access, and the password is the broadband password.

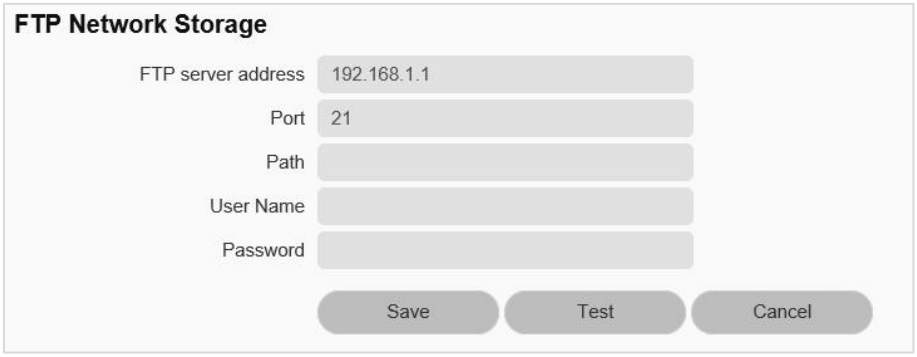
3、Enter the Internet dynamic IP address and port number in the browser address bar to access the device.

Notice:

- If the public network IP address is allocated by the operator, please consult the operator for detailed IP information.

5. 2. 4 FTP Network Storage

Enter [Configuration- > Storage Settings- > Network Storage], and select the FTP network storage tab, as shown in the following figure.



After filling in [Server address], [Port], [Path], [User name] and [Password], [Save] can set the FTP server information. [Reset] Restore the last saved Parameter.

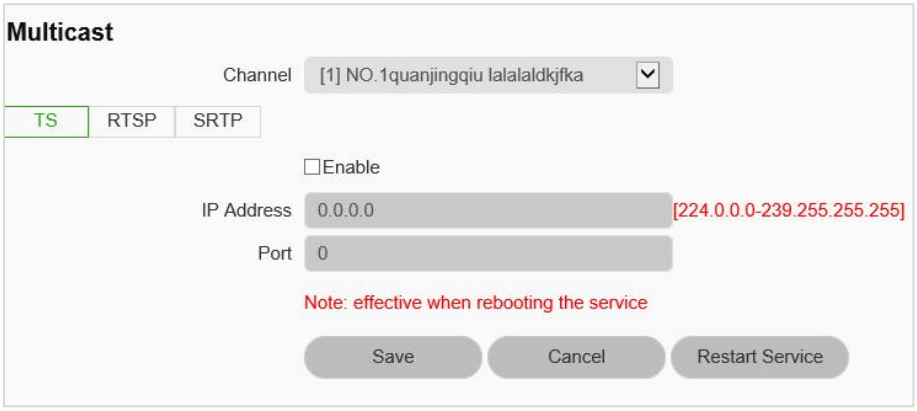
Notice:

- After configuring the FTP server, record the corresponding information and fill in the relevant interface of the device.

5. 2. 5 Multicast

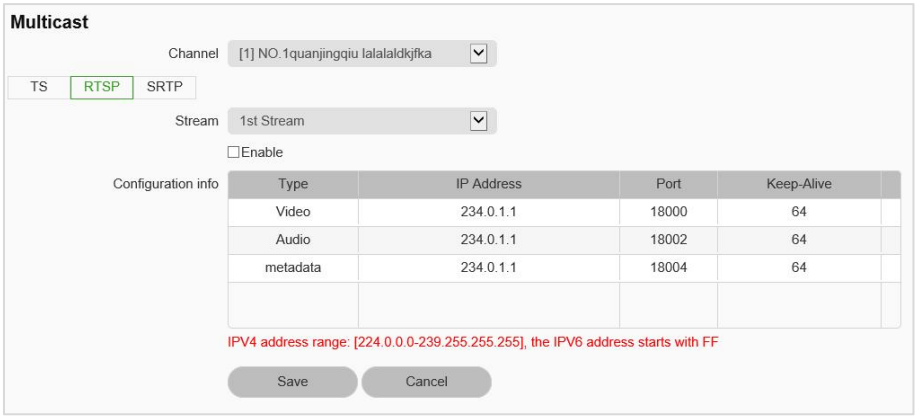
Through multicast, the audio and video of the channel can be pushed to the multicast address, and then the software can be used to pull the stream from the set multicast address. Multicast can solve the repeated copy of data and the repeated occupation of bandwidth in the case of unicast, and also solve the waste of bandwidth resources in the case of broadcast.

Multicast-> TS



Input the multicast [IP address] (range: 224.0.0.0-239.255.255.255), input the port number (range: 1-65535), and click Save to restart the device.

Multicast-> RTSP



The RTSP function can push the RTSP stream data to the IP address and port set by the user through multicast.

[Channel No.]: The channel number of the device (supported by some models).

[Code stream type]: related Parameters of main code stream, auxiliary code stream and third code stream can be modified.

[IP address]: Multicast destination IP address, supporting IPV4 and IPV6.

[Port]: The receive port of the destination address.

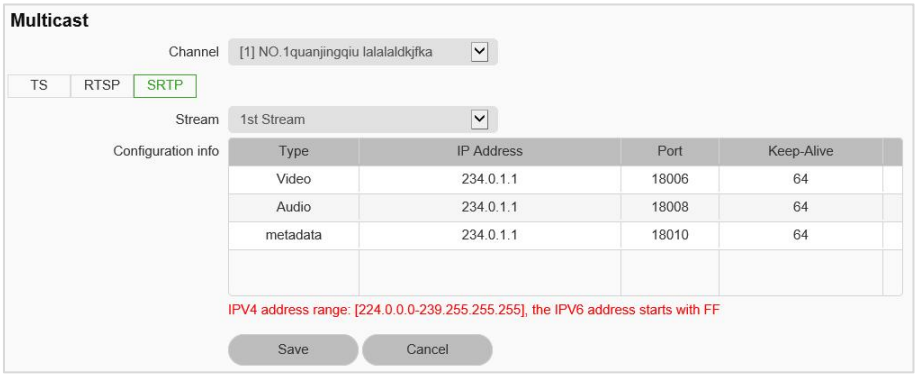
[Keepalive time]: It is the TTL value of the socket, specifying the maximum number of network segments that the IP packet is allowed to pass through before

being discarded by the router. The allowable range is 0-255.

Click the [Enable] check box to enable audio, video and metadata data transmission under the current channel and code stream type.

Click the [Save] button to save the current Parameter setting.

Multicast-> SRTP



The SRTP function can push the secure RTP stream to the IP address and port set by the user through multicast.

[Channel No.]: Select the channel number of the device (supported by some models).

[Code stream type]: related Parameters of main code stream, auxiliary code stream and third code stream can be modified.

[IP address]: Multicast destination IP address, supporting IPV4 and IPV6.

[Port]: The receive port of the destination address.

[Keepalive time]: It is the TTL value of the socket, specifying the maximum number of network segments that the IP packet is allowed to pass through before being discarded by the router. The allowable range is 0-255.

Click the [Save] button to save the current Parameter setting.

Notice:

- The same multicast address cannot be set for different devices and different streams of the same device, otherwise cross-screen may occur.

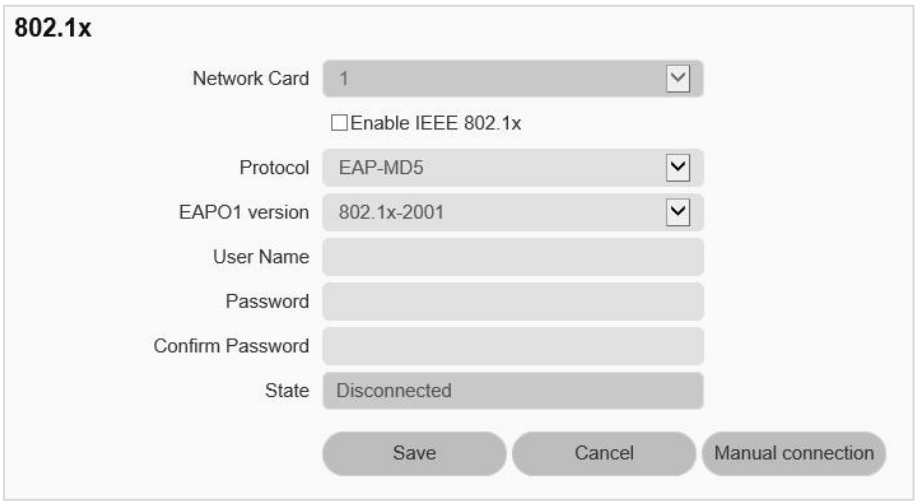
5. 2. 6 QoS Settings



By configuring the QoS Parameter, the problem of network delay and network congestion can be effectively solved.

Enter the DSCPParameter in the input box and click [Save] to save the Parameter. The network can determine the priority of data transmission according to the DSCP weight. The higher the DSCP value, the higher the priority, and the same value needs to be set on the router side during configuration.

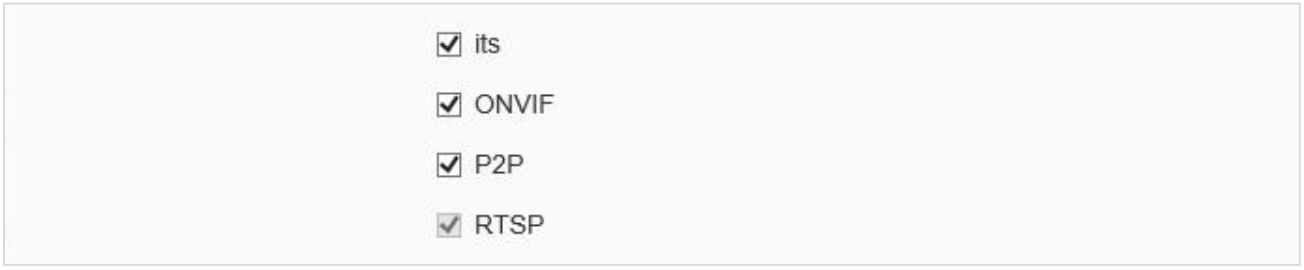
5. 2. 7 802.1X



The 802.1X protocol can be configured to authenticate the user of the connected device.

Select [EAPO Version] to be consistent with the connected network device, and set [User Name], [Password], and [Password Confirmation] to be consistent with the 802.1X server. [Current Status] displays the current connection status. Click [Save] to save the Parameter. [Reset] displays the current Parameter. After the Parameter is saved, the device can be automatically connected. [Manual Connection] can immediately initiate an authentication connection.

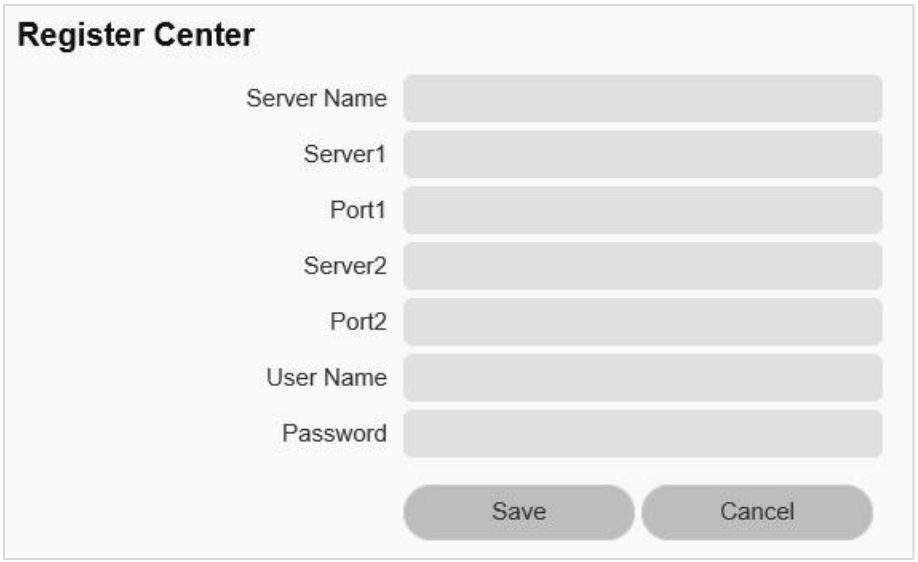
5. 2. 8 Platform access



Support the enabling and disabling of ONVIF docking protocol, RTSP, P2P, etc.

After setting, some devices will automatically restart and take effect.

5. 2. 9 Registration Center



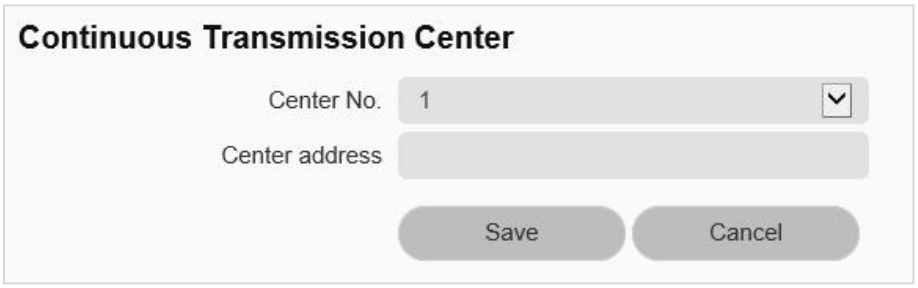
1. Map the 6004 port of the computer accessing the web interface of the device to the public network.

2. Fill in the information of [Server Name], [User Name] and [Password], which can be customized. [Server] is the mapped public network IP, and [Port] is the external port mapped to port 6004.

[Save]: Save the current settings.

[Reset]: Restore the last saved Parameter.

5. 2. 10 Transmission center



Set the [center number] and [center address] information of the resume center, and receive the image stream of the device.

[Save]: save the current setting;

[Reset]: Restore the last saved Parameter.

Notice:

- After opening, the intelligent structured algorithm needs to synchronously configure the continuous transmission center to prevent network fluctuations from causing map loss.

5. 2. 11 HTTPS



The HTTPS certificate can be imported and installed as required.

[Enable]: Enable HTTPS. When opening the webpage of the device, a pop-up window will pop up to let the user choose to jump to HTTPS or HTTP.

[Auto jump HTTPS]: Auto jump HTTPS without user selection.

[Server certificate]: Click the drop-down box and select the type of server certificate to be installed. (Certificates can be managed from Security Management-> Certificate Management)

[Save]: save the current setting;

[Reset]: Restore the last saved Parameter.

5. 2. 12 SRTP



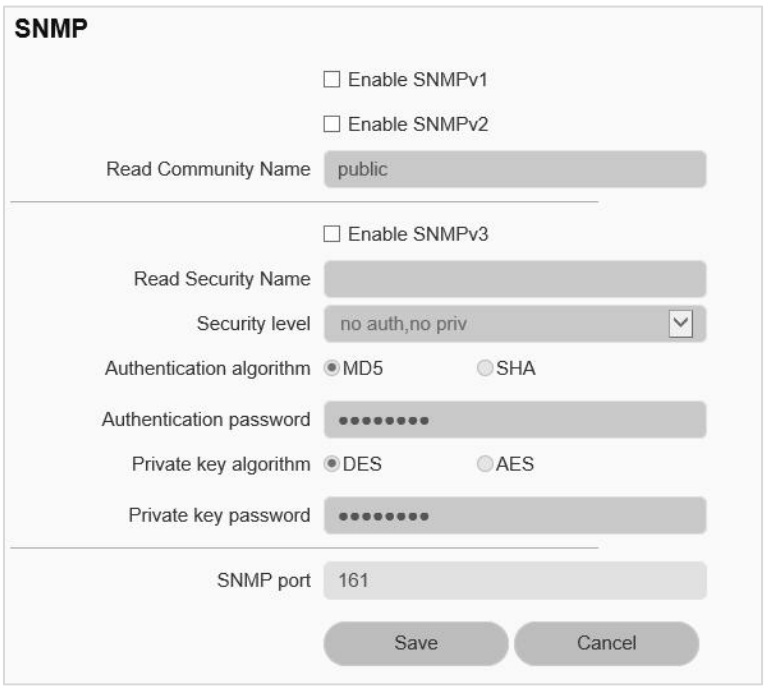
The SRTP function can provide users with a set of secure real-time transmission protocols with encryption, message authentication, integrity protection and Chinese protection to realize the secure transmission of data.

[Server certificate]: configure the server certificate used by the SRTP protocol.

[Encryption algorithm]: Configure the encryption algorithm used by the SRTP protocol.

[Port number]: Configure the service port used by the SRTP protocol.

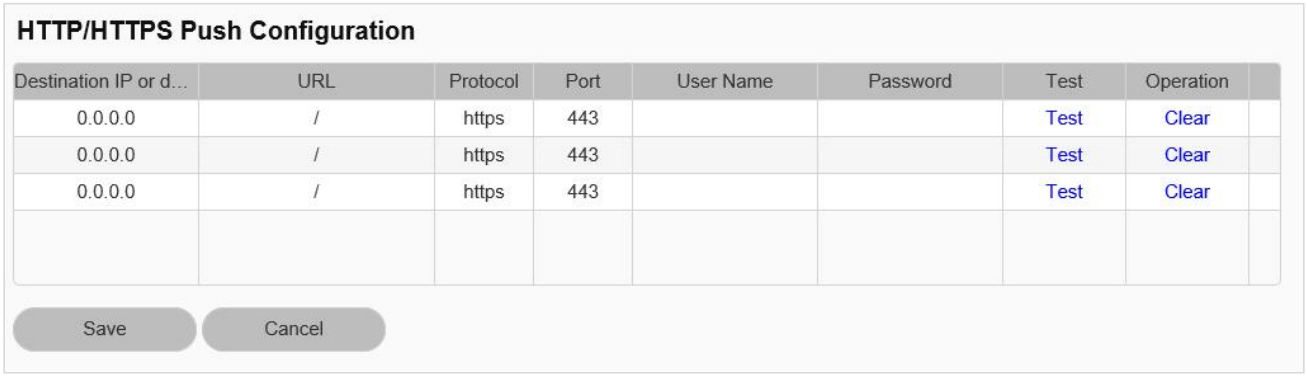
5. 2. 13 SNMP



SNMP is the abbreviation of Simple Network Management Protocol, which can realize the acquisition of basic status information of equipment and is mostly used for operation and maintenance management. Different devices support functions of different versions of V1 and V2.

[Enable]: Enable the SNMP function.

5. 2. 14 HTTP/HTTPS Push Configuration



Push the picture to the set website or platform.

Prerequisites:

Get the HTTP/HTTPS server address first.

Operation steps:

1. Click Configuration → Network Settings → Advanced Settings → HTTP/HTTPS Push Configuration Settings.

2.Set parameters.

Destination IP or domain name

Indicates the HTTP server address or domain name.

URL and protocol

Represents the server path and protocol.

User name and password

Indicates the user name and password with upload permission.

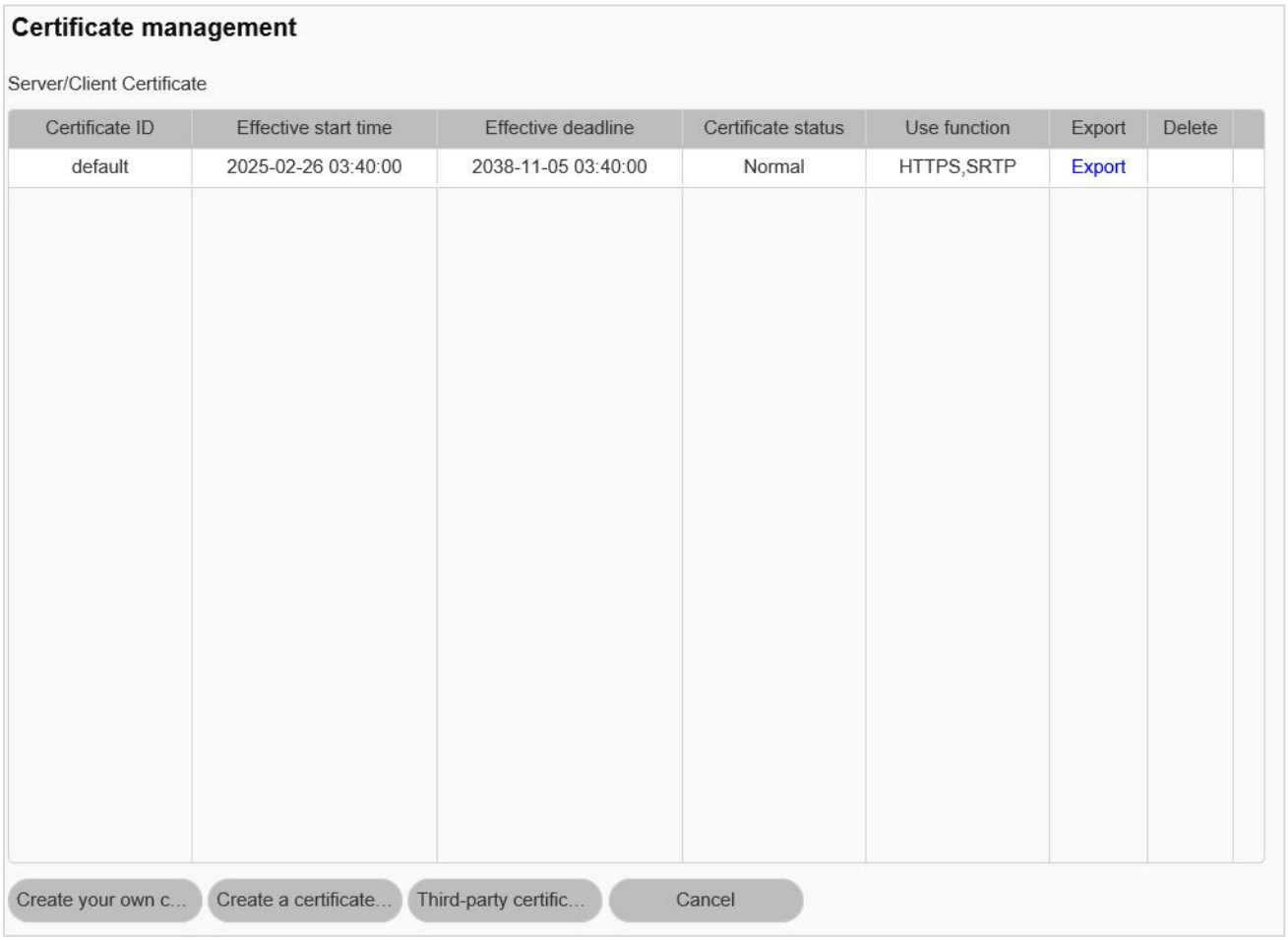
Test

The test button is used to test whether the link is smooth.

Tiandy

5.3 Safety management

5. 3. 1 Certificate management



Certificate management is used to manage all the certificates of the server and the client. This certificate is mainly used to provide a more secure connection for users to log on to the device.

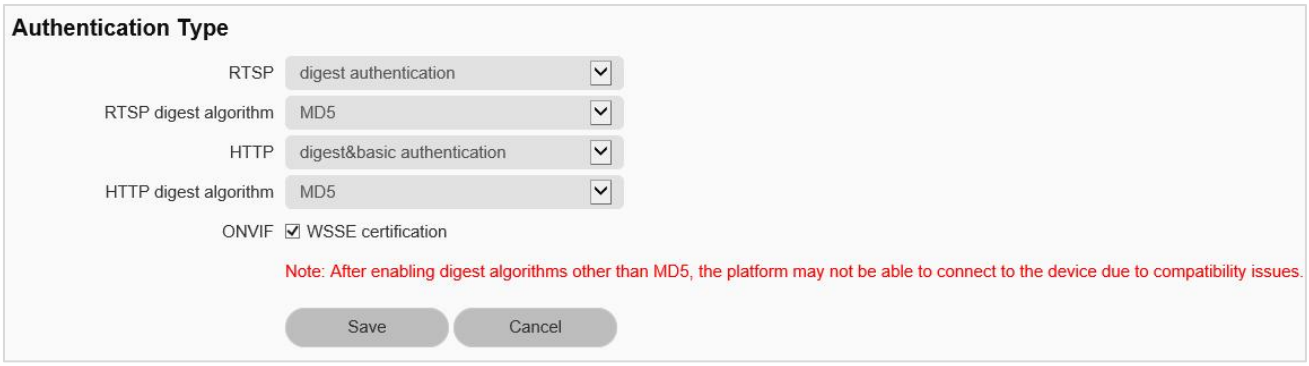
[Independently create certificate]: The device autonomously generates and uses the certificate.

[Create a certificate request and import it]: The device applies for a certificate from the CA authority and automatically imports it into the device for use.

[Third-party certificate import]: Users can import their own certificates for the

device.

5. 3. 2 Type of certification

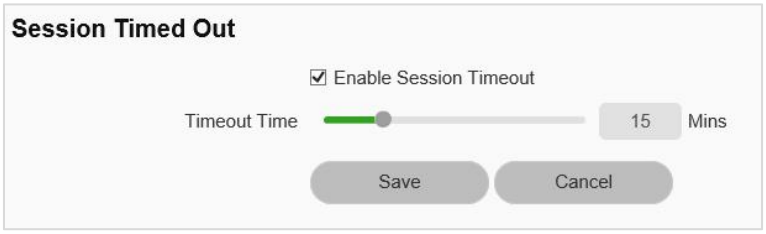


Authentication types provide users with the ability to set authentication and digest algorithms used by RTSP, HTTP, and ONVIF. The authentication types of RTSP and HTTP support "digest" and "digest & basic" respectively; the digest algorithm supports "MD5", "SHA256" and "MD5/SHA256" respectively. ONVIF supports "WSSE" certification.

[Save]: Save the current settings.

[Reset]: Restore the last saved Parameter.

5. 3. 3 Session Timeout



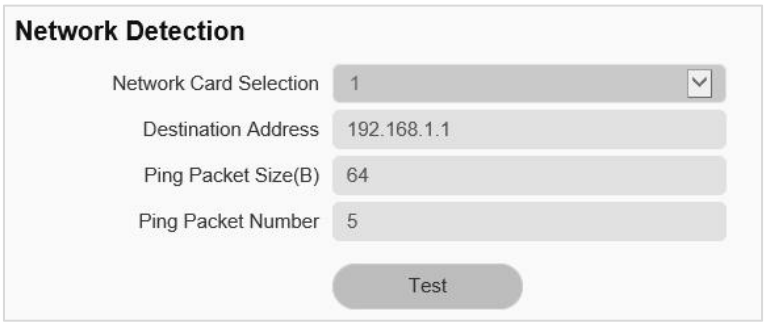
The session timeout function can provide the user with the setting operation of the timeout exit of the current interface in the case of no operation, so as to improve the security of device access.

[Enable]: provide a switch for this function.

[Timeout time]: set the upper time limit of the timeout exit interface, ranging from 1 to 60 minutes.

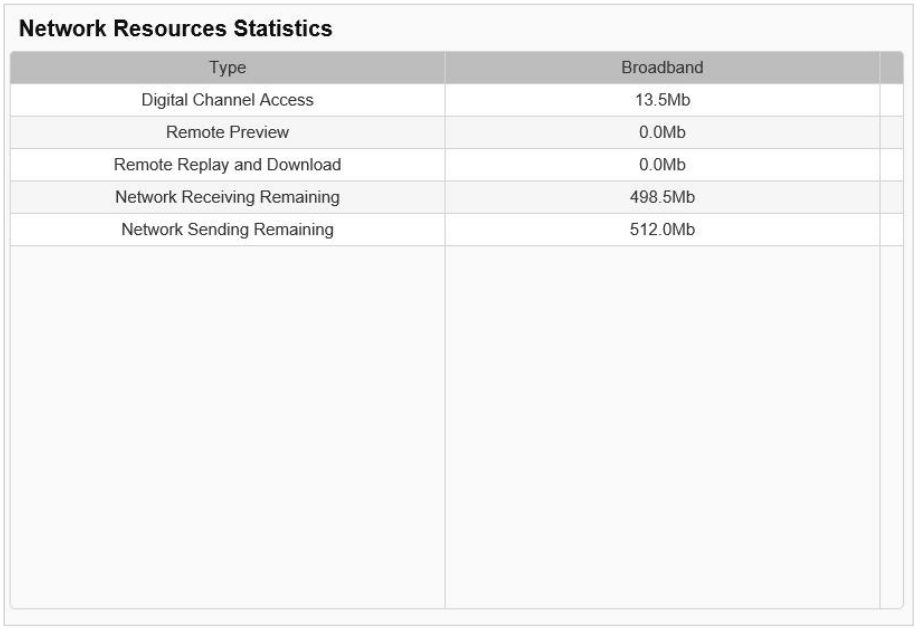
5.4 Network detection

5. 4. 1 Network detection



Select the network card to be tested, enter the destination address, and click the [Test] button to test the network. When the network is smooth, you can view the average delay and packet loss rate. When the network is not smooth, you will be prompted that the destination address is unreachable.

5. 4. 2 Network Resources Statistics



Network Resources Statistics

Type	Broadband
Digital Channel Access	13.5Mb
Remote Preview	0.0Mb
Remote Replay and Download	0.0Mb
Network Receiving Remaining	498.5Mb
Network Sending Remaining	512.0Mb

You can view the network resources occupied by each type of function.

Tiandy

6 Event Schedule

6.1 Alarm Management

6. 1. 1 Event Input



Set the port alarm detection related Parameter.

When the external alarm detection equipment detects an abnormal situation, it sends a signal (the signal refers to the opening or closing of the line) to inform the IPC equipment, and the IPC immediately takes corresponding measures to deal with it.

There are many types of commonly used external detectors, such as sound detectors, infrared detectors, smoke detectors, etc., which are connected to the ALARM IN interface of the IPC.

(1) Select the alarm input port and check the [Enable] check box to enable the port alarm detection function. Uncheck it to disable the port alarm detection function.

(2) [Mode setting] is normally open and normally closed, where [Normally open] refers to the normal state, the port line and the ground line are kept disconnected, and the alarm occurs when the disconnected line is closed (short circuit); [Normally closed] refers to the normal state, the port line and the ground line are kept closed, and the alarm occurs when the connected line is disconnected. For example, when the normally open mode is set, a smoke alarm is connected to the input port. When the alarm detects smoke, and then the control circuit of the alarm is short-circuited (IPC), the IPC device will trigger the alarm. Notice: The selection of normally open or normally closed mode depends on the connection mode of the peripheral, and the connection mode of the peripheral depends on the type and model of the peripheral.

(3) The user sets [Effective Time] as required, and the equipment will detect the case within the set date and time period.

(4) Set [Linkage Action] to realize the alarm linkage after the alarm is triggered, such as [Linkage Output], [Linkage Snapshot], [Linkage Video], etc., as shown in the following figure.



(5) Click the [Save] button to save the corresponding Parameter settings, and click [Copy to] to copy the Parameter of the current port number to other port numbers. Click [Reset] to restore the last saved Parameter.

6. 1. 2 Event Output



The camera can realize the specific alarm function through the external alarm. The IPC generates an alarm and transmits the signal to the alarm, and then the alarm takes effect. Commonly used alarms, such as external alarm lights, alarm bells, buzzers and other equipment, are connected to the ALARM OUT interface of IPC.

The user can select two modes of mode setting [Normally Closed] and [Normally Open]. By selecting the output port, the delay time of the alarm state can be set by [Delay Time] and [Delay Alarm].

Click the [Save] button to save the corresponding Parameter settings, and click [Copy to] to copy the Parameter of the current port number to other port numbers. Click [Reset] to restore the last saved Parameter.

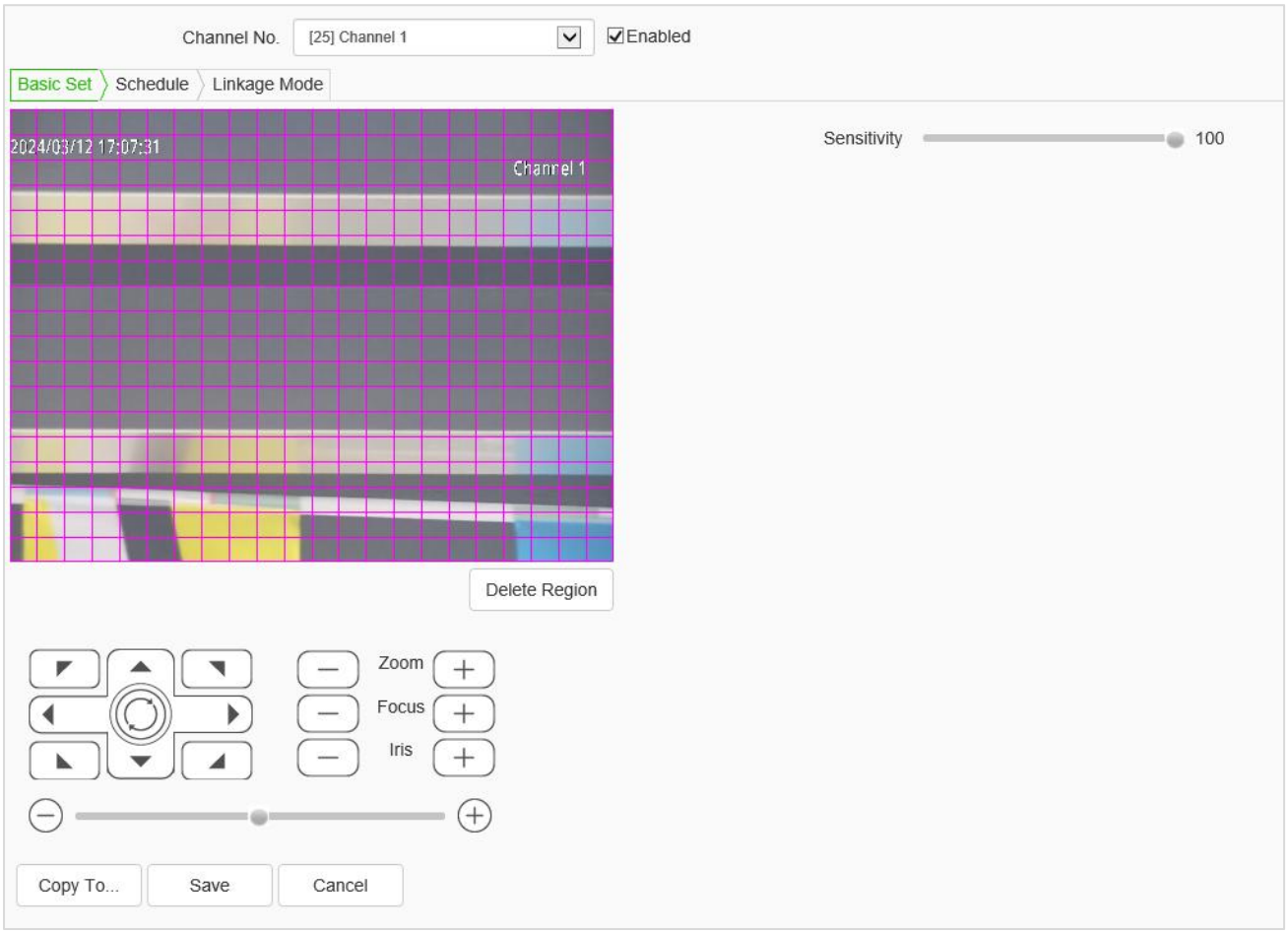
[Normally Closed]: Set the non-alarm state of the output port to be closed, that is, the output port is open when the alarm is generated.

[Normally open]: set the non-alarm state of the output port to open, that is, the output port is closed when the alarm is generated.

[Delay time]: the delay time from alarm elimination to output port recovery to non-alarm state.

[Delay alarm]: The delay time from the alarm to the output port turning into the alarm state.

6. 1. 3 Motion



(1) The user sets the mobile alarm area. When an object moves in the set area, the

video preview interface will prompt the video mobile alarm, and the corresponding alarm linkage will be carried out according to the setting.

(2) Check the [Enable] check box to enable the mobile alarm detection function, and drag the left mouse button on the video screen to sketch the area where the mobile alarm is detected. Click [Delete Area] to delete the mobile alarm detection area.

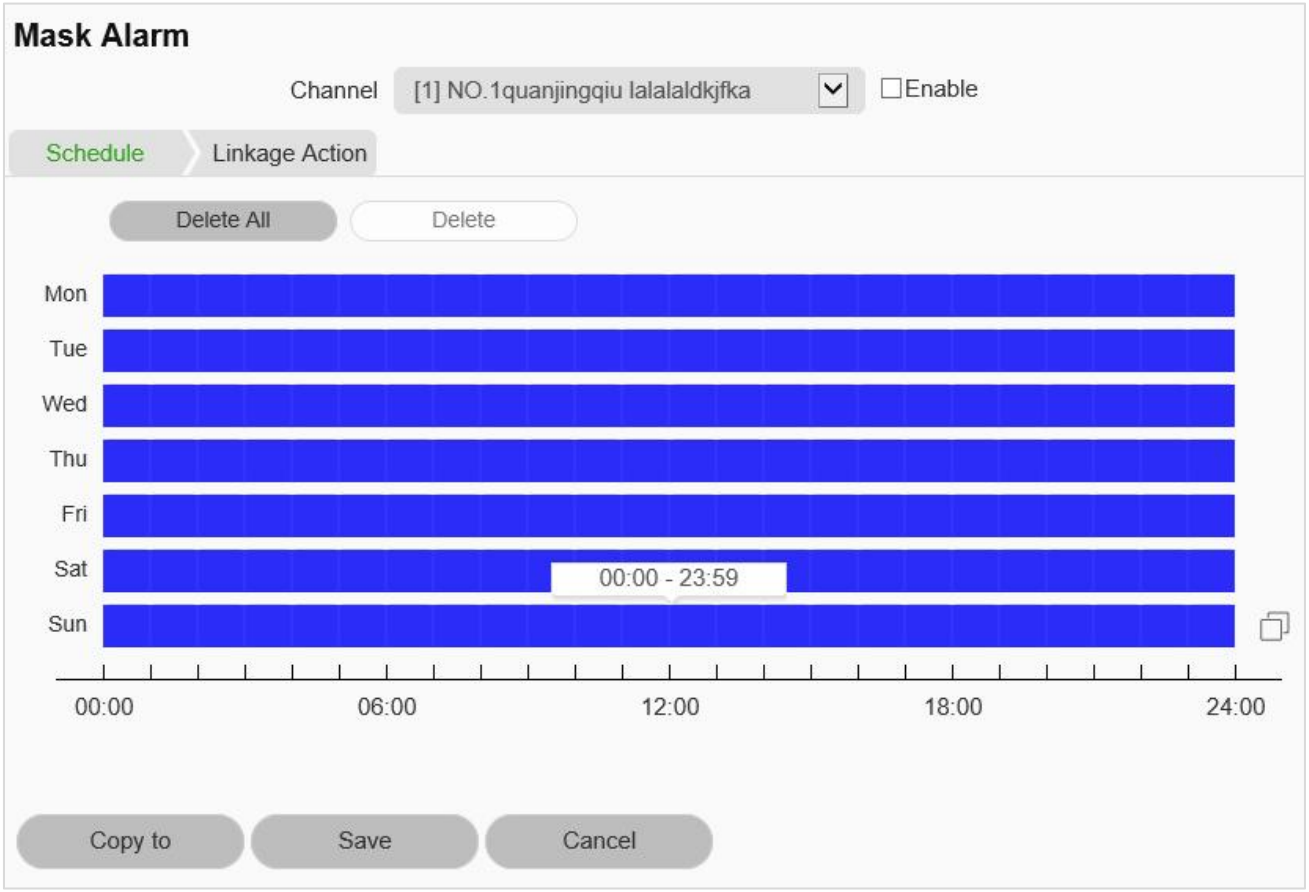
(3) Set the mobile alarm sensitivity. The larger the value is, the more sensitive the mobile alarm detection is.

(4) The user can set [Valid Time] as required, and the case will only be detected within the set date and time period.

(5) Set [Linkage Action] to realize the alarm linkage after the alarm is triggered, such as [Linkage Output], [Linkage Snapshot], [Linkage Video], etc.

(6) Click the [Save] button to save the corresponding Parameter settings, and click [Copy to] to copy the Parameter of the current port number to other port numbers. Click [Reset] to restore the last saved Parameter.

6. 1. 4 Mask



(1) After the occlusion alarm is enabled, when the image in the video screen is occluded, the alarm will be detected according to the sensitivity.

(2) Check the [Enable] check box to enable the video occlusion alarm detection function. Uncheck it to disable the video occlusion alarm detection function.

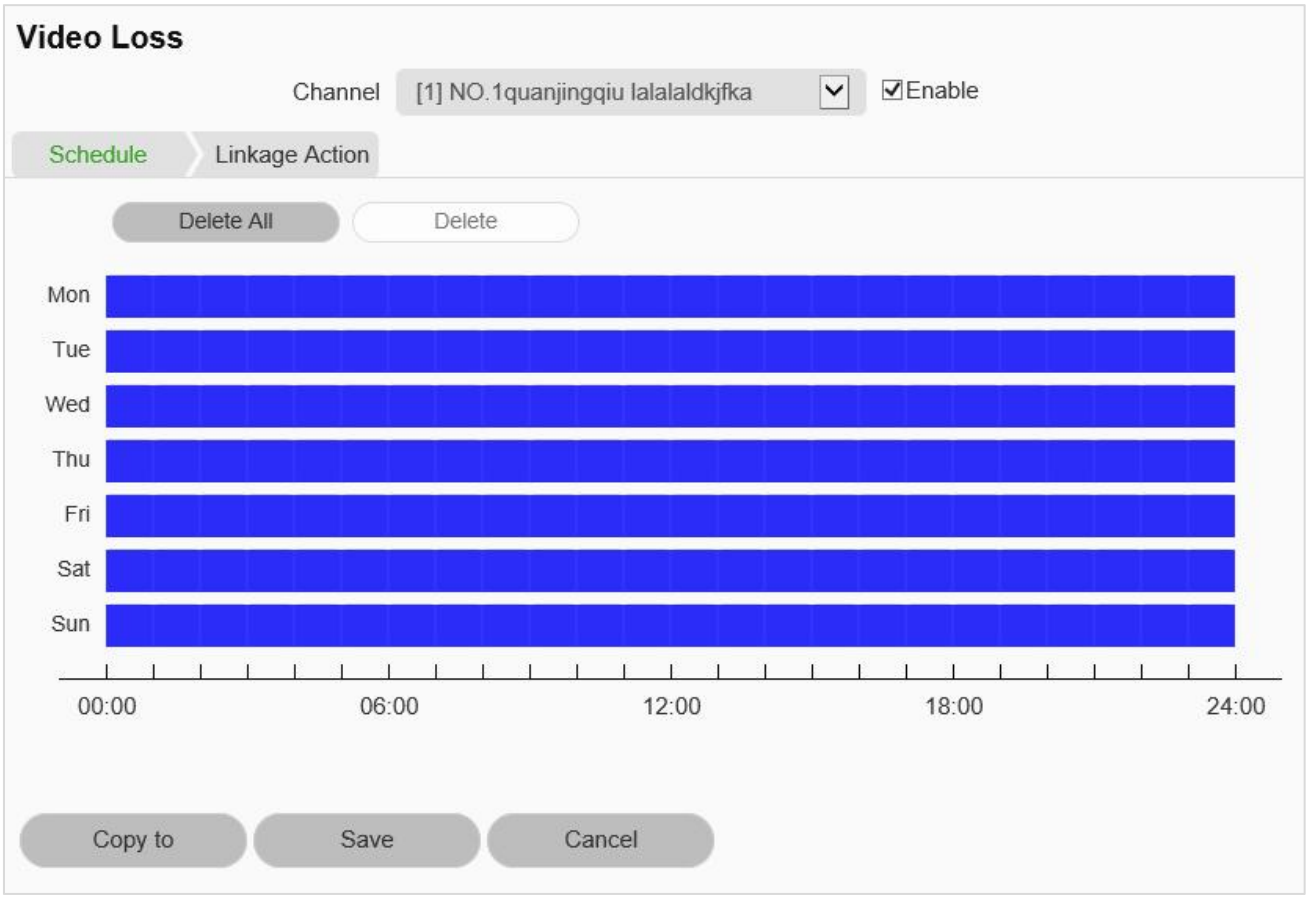
(3) Set the video occlusion alarm sensitivity. The larger the value is, the more sensitive the video occlusion alarm detection is.

(4) The user can set [defense deployment time] as required, and the case will only be detected within the set date and time period.

(5) Set [Linkage Type] to realize the alarm linkage after the alarm is triggered, such as [Linkage Output], [Linkage Snapshot], [Linkage Video], etc.

(6) Click the [Save] button to save the corresponding Parameter settings, and click [Copy to] to copy the Parameter of the current port number to other port numbers. Click [Reset] to restore the last saved Parameter.

6. 1. 5 Video Loss



After enabling the loss alarm, the system will detect an alarm condition when the channel video is lost.

1. Check the 【Enable】 checkbox to activate the video loss alarm detection function; uncheck it to deactivate the video loss alarm detection function.

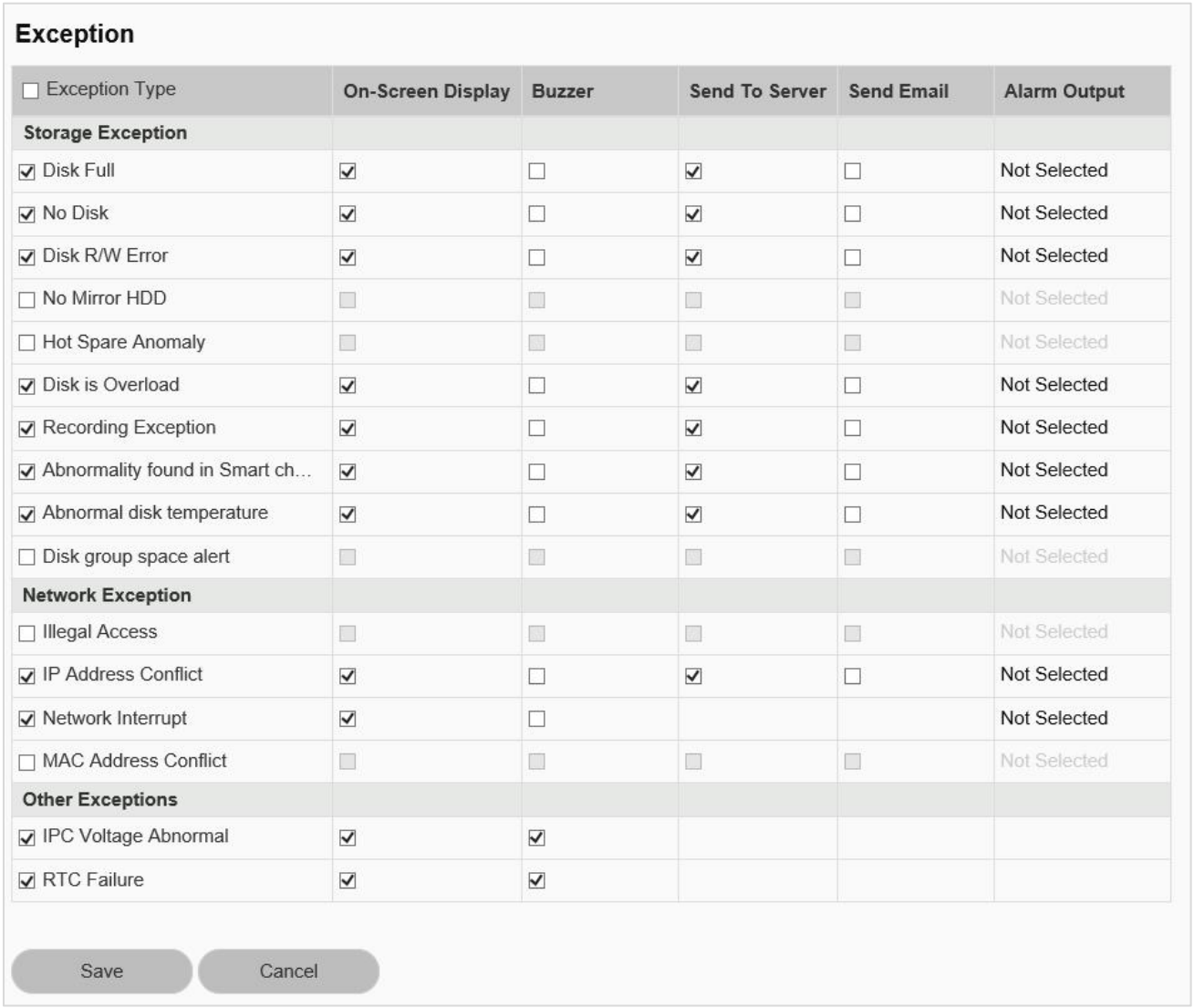
2. Set the【Arming Time】as needed, and the system will only detect alarm conditions

during the specified dates and time periods.

3. Configure the 【Linkage Type】 to achieve alarm linkage after an alarm is triggered, such as 【Linkage Output】, 【Linkage Snapshot】, 【Linkage Recording】, etc.

4. Click the【Save】button to save the corresponding parameter settings. Click【Copy to】to copy the current port number's parameters to other port numbers. Click【Reset】to restore the last saved parameters.

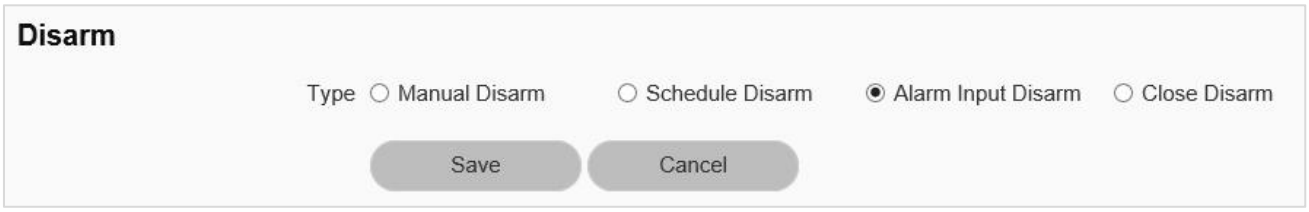
6. 1. 6 Exception



The equipment supports abnormal alarm. The exception type supports [storage

exception], [network exception], [other exception], and so on. You can set [screen display], [sound prompt], [upload center], [send mail] and other linkage modes, and select the port number of the alarm output terminal in [linkage output].

6. 1. 7 Disarm



Select the disarming type in the one-key disarming interface, and provide four options for the user to select: [Manual disarming], [Periodic disarming], [Alarm input disarming], and [Close disarming].

Manual disarming and periodic disarming need to select disarming linkage items, including voice prompt, screen display, sending email, single screen, text plan, local voice broadcast, linkage output, linkage snapshot and uploading APP. At the same time, periodic disarming also needs to set disarming time, as shown in the following figure.



6.2 Plan Management

1. Enter [Configuration- > Alarm Settings- > Contingency Plan Management], as shown in the following figure. When a case occurs, it will be displayed in the preview interface according to the set linkage plan, and the on-duty personnel will deal with it according to the prompt of the plan, such as alarm, notification, help, etc.

Plan Management

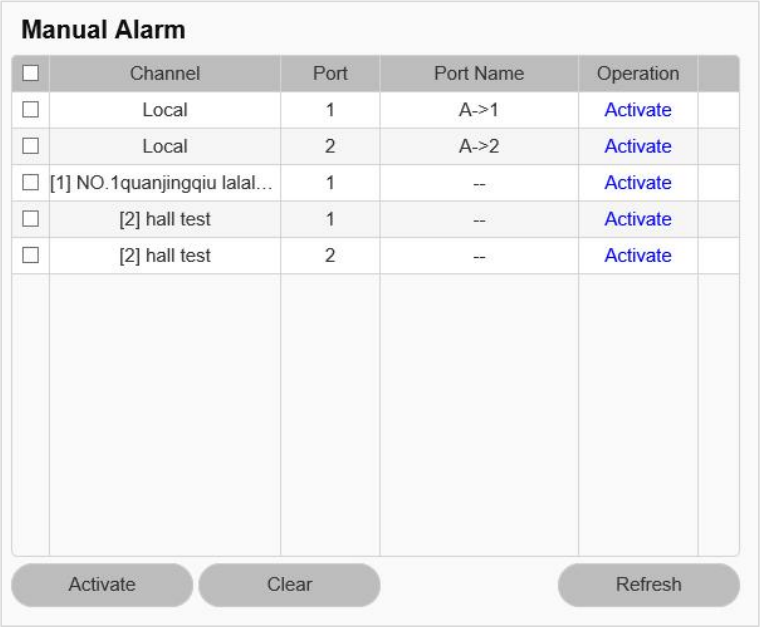
Number	Plan Name	Plan Information	Operation
1	Alias1		Edit
2	Alias2		Edit
3	Alias3		Edit
4	Alias4		Edit
5	Alias5		Edit
6	Alias6		Edit
7	Alias7		Edit
8	Alias8		Edit
9	Alias9		Edit
10	Alias10		Edit
11	Alias11		Edit
12	Alias12		Edit
13	Alias13		Edit
14	Alias14		Edit
15	Alias15		Edit
16	Alias16		Edit

2. Click the [Edit] button to directly edit the plan name and plan content, as shown in the following figure.



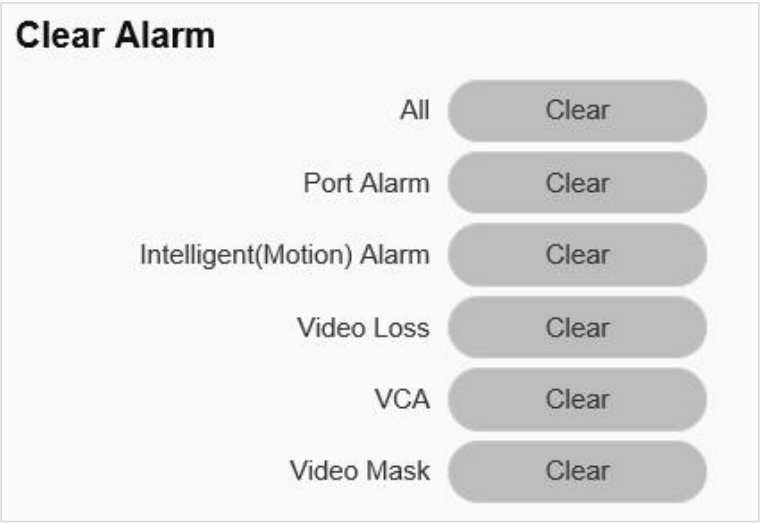
3. Modify the plan name and plan information as required, and click [Save] to save the plan information.

6.3 Manual Event



Select a certain alarm output port and click the [Trigger] or [Clear] button to trigger or clear it. The status bar of the alarm output port displays the current status of the port; Check multiple alarm output ports, click [Trigger] or [Clear] to trigger or clear all the checked alarm output ports in the list, and click [Refresh] to obtain the current attributes and status of the alarm output ports.

6.4 Clear Event



Select the alarm type to be eliminated in the manual alarm elimination interface, and select [All], [Video Loss], [Port], [Smart (Mobile) Alarm], [Video Occlusion] and [Smart Analysis]. Click the corresponding button to eliminate the alarm of this type.

7 Temperature measurement settings

7.1 Human body temperature measurement

7. 1. 1 Human body temperature measurement

Enter [Configuration- > Temperature Settings- > Human Body Temperature Measurement], and select the human body temperature measurement label.

Users can set the temperature scale, blackbody correction, body temperature conversion and so on according to their needs.

Operation steps:

1. 1.Select the channel to be configured.

2. Check the [Enable] check box to enable the human body thermometry function. Uncheck it to disable the human body thermometry function.

3. Start marking the blackbody position. Mark the blackbody position in the video for correction.

4. Set [Temperature Scale Selection], [Blackbody Correction], [Body Temperature Conversion] and [Intelligent Correction] Parameter information as required.

5. After the setting is completed, click the [Save] button to save the Parameter setting and synchronize it to the front-end device. To reset the Parameter information, click the [Reset] button to restore the last saved Parameter.

Explain：

- [Temperature scale selection]: The equipment supports two temperature scales: Celsius and

Fahrenheit. The system defaults to Celsius.

- [Blackbody Correction]: The device supports temperature correction by comparing the set constant temperature source (blackbody) with the temperature. The user can realize this function by setting [blackbody temperature], [blackbody distance] and [calibration method] Parameter information.
- [Blackbody temperature]: Set the blackbody temperature for temperature correction.
- [Blackbody distance]: The device supports temperature correction within a certain range. Explain: The blackbody is a constant temperature source, and the distance will cause thermal radiation loss. The farther the distance, the greater the loss, and the worse the correction effect;
- [Calibration mode]: The equipment supports manual calibration and continuous calibration for temperature calibration:
- [Manual correction]: The user clicks the manual correction button to perform a temperature correction.
- [Continuous correction]: The equipment will continuously correct the temperature.
- [Body temperature conversion]: The device supports the conversion between the internal temperature of the human body and the body surface temperature. The user realizes this function by setting [Compensation Factor].
- [Compensation coefficient]: The compensation coefficient range is 0 ~ 100, and the compensation coefficient can be set according to the actual environment.
- [Intelligent correction]: The device supports large data temperature correction. The user implements this function by setting [Sensitivity].

- [Sensitivity]: The sensitivity range is 0 ~ 100. The sensitivity range can be set according to the actual environment.

After setting, click the [Save] button to save the Parameter setting. If you need to reset the Parameter information, click the [Reset] button to restore the last saved Parameter.

7. 1. 2 Alarm on unacceptable body temperature

Enter [Configuration- > thermometry Settings- > Human thermometry], and select the abnormal body temperature alarm label.

Operation steps:

1. Select the channel to be configured and check [Enable] to enable the abnormal body temperature alarm.

2. In the [Basic Settings], set the [Upper Temperature Limit]. When the upper temperature limit is exceeded, an alarm will be activated.

3. Set the detection time period within [defense deployment time].

4. In [Linkage Mode], set sound linkage, front-end white light linkage, front-end sound linkage, linkage output, linkage snapshot, PTZ linkage, etc.

5. Click the [Save] button to save the Parameter setting and synchronize it to the front-end device. Click the [Reset] button to restore the last saved Parameter.

7. 1. 3 Black Body Abnormal Event

Enter [Configuration- > Temperature Measurement Settings- > Human Body

Temperature Measurement], and select the black body abnormal alarm label.

Operation steps:

1. Select the channel to be configured, and check [Enable] to enable the blackbody exception alarm.

2. Set the sensitivity of detection. The higher the sensitivity, the more sensitive it is.

3. Set the debounce time. In order to reduce the false alarm caused by blackbody jitter, set the time interval for alarm, which supports 0-100 seconds.

4. Set the detection time period within [defense deployment time].

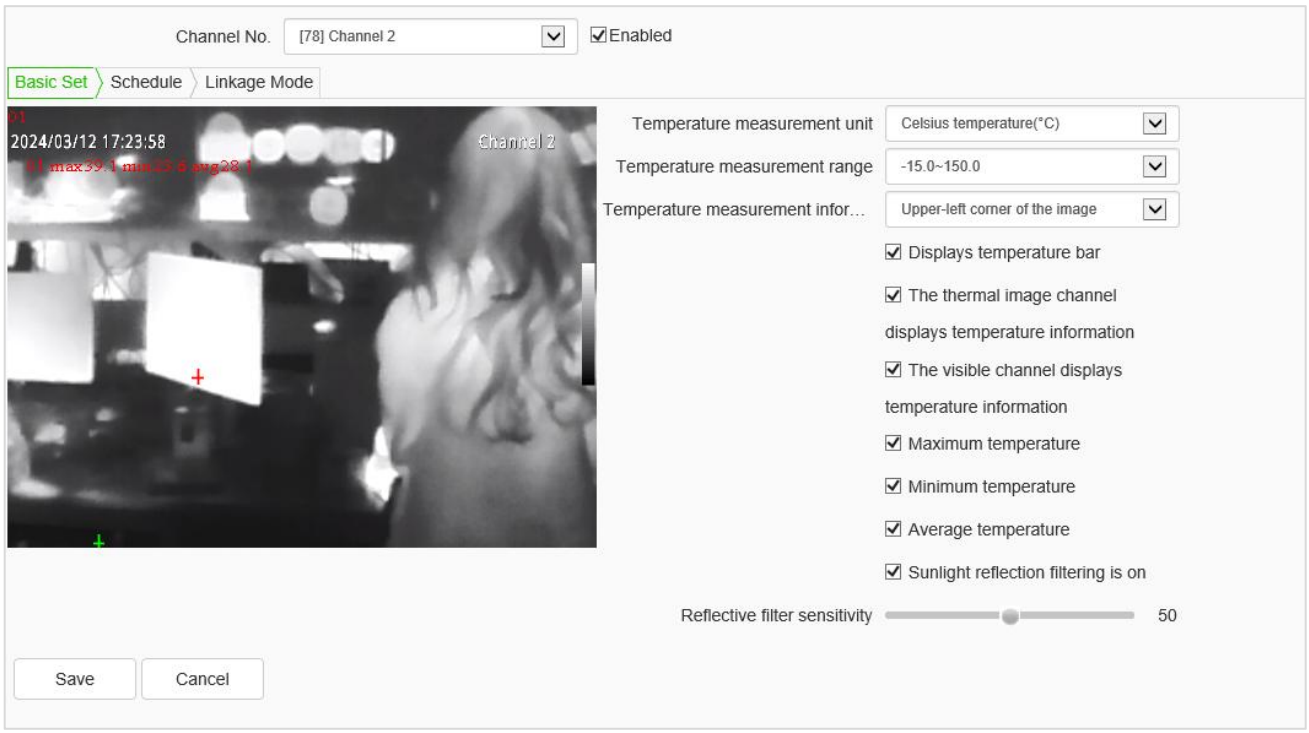
5. In [Linkage Mode], set sound linkage, front-end white light linkage, front-end sound linkage, linkage output, linkage snapshot, PTZ linkage, etc.

6. Click the [Save] button to save the Parameter setting and synchronize it to the front-end device. Click the [Reset] button to restore the last saved Parameter.

7.2 Environment Temperature Measurement

7. 2. 1 Basic Config

Enter [Configuration- > Temperature Settings- > Ambient Temperature Measurement] and select the Basic Configuration tab, as shown in the following figure.



Set the thermometry unit, thermometry range, and thermometry information display as required.

Operation steps:

1. Select the channel to be configured.

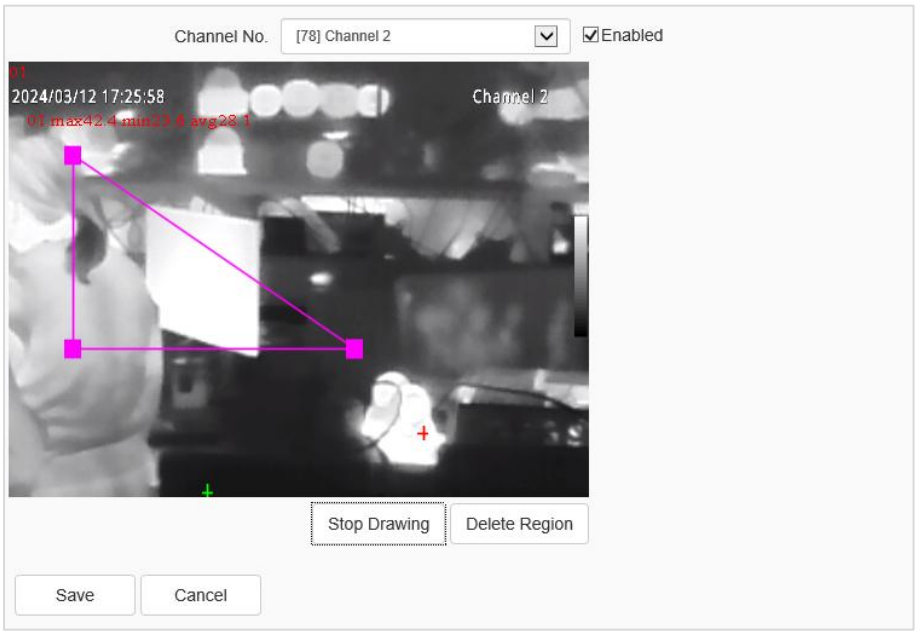
2. Check the [Enable] check box to enable the environmental thermometry function. Uncheck it to disable the environmental thermometry function.

3. Set [thermometry Unit], [thermometry Range], [Position Display of thermometry Information] and [thermometry Information] Parameter information as required.

4. Check the [Sunlight Reflective Filtration On] check box to turn on sunlight reverse filtration to effectively filter strong light, reduce glare, and improve visual clarity. Reflective filter sensitivity can be set as desired.

7. 2. 2 Shield Area

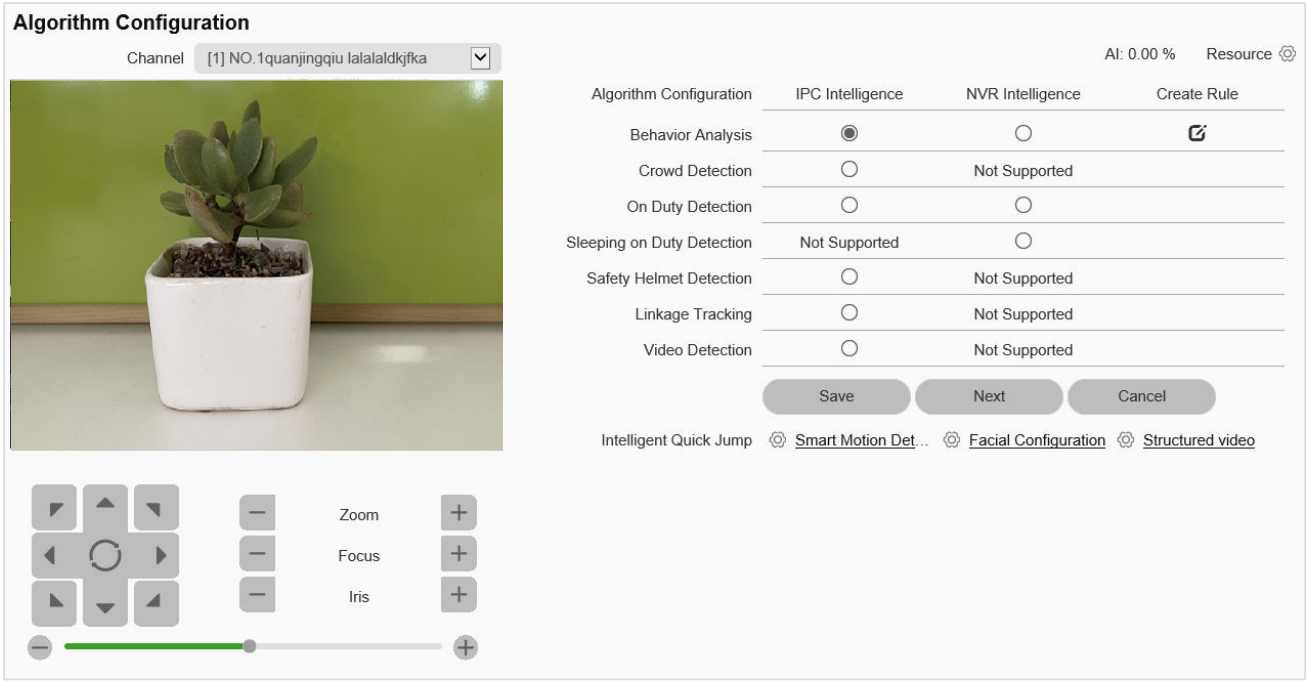
Enter [Configuration- > Temperature Settings- > Environmental Temperature Measurement], and select the shielded area label, as shown in the following figure.



By selecting [Start Drawing] to start setting the region for line drawing, the environment thermometry in the line drawing region does not take effect. Click [Delete] to clear the set sideline in the channel screen.

8 VCA

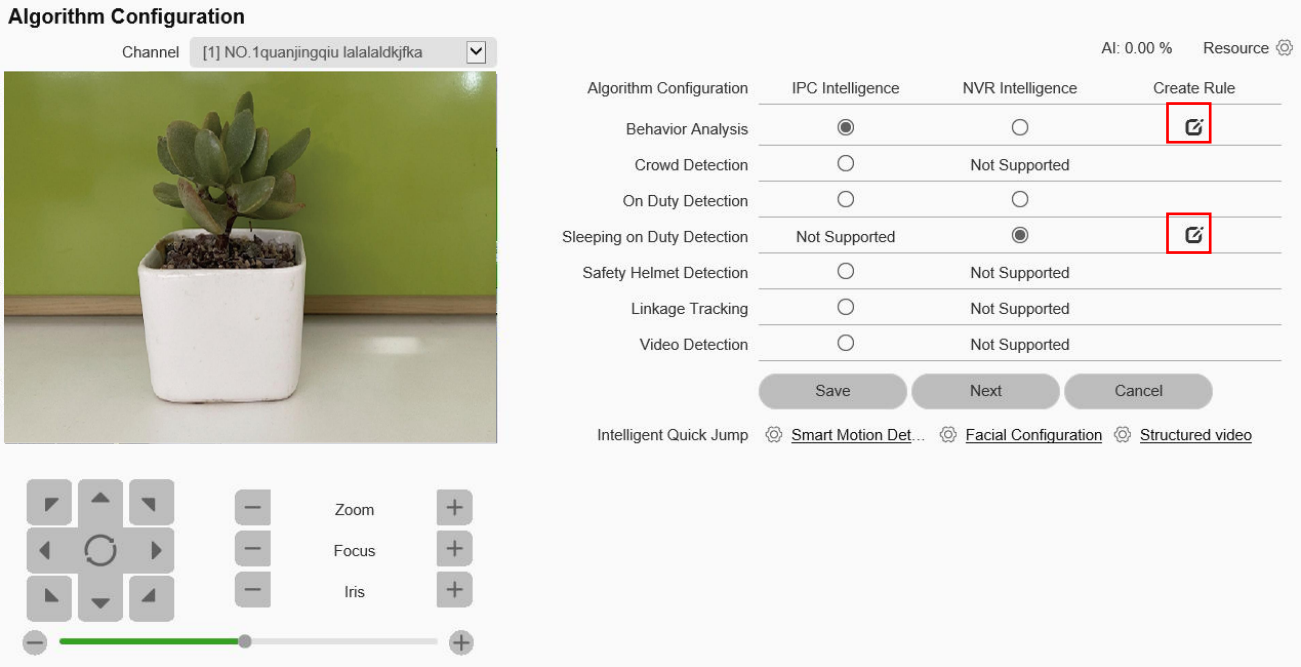
8.1 Algorithm configuration



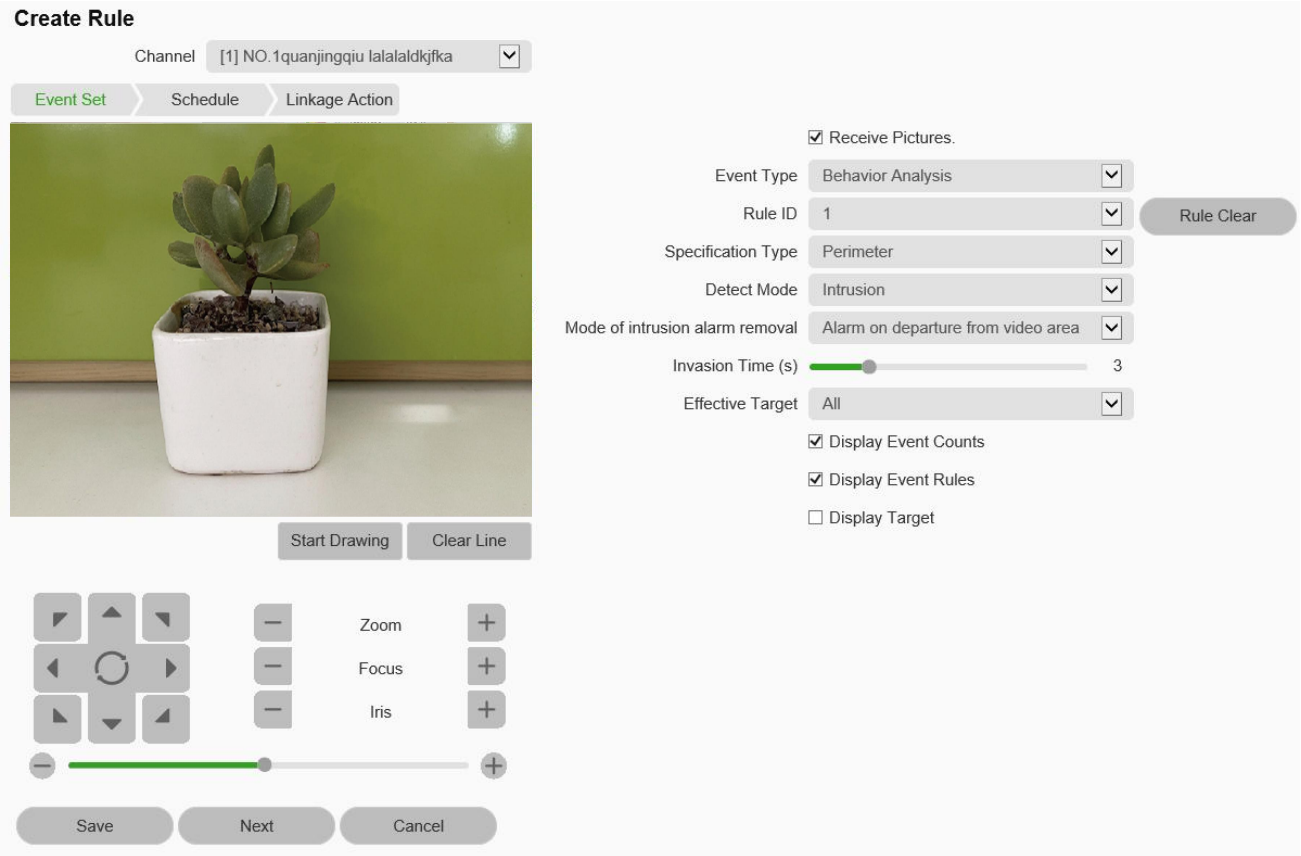
Select the corresponding channel to view the algorithms supported by the IPC channel and the NVR device.

[Calculation power occupation]: Only when NVR intelligence is enabled, the calculation power will be occupied. When IPC intelligence is enabled, the calculation power will not be occupied.

For the same algorithm, IPC intelligence and NVR intelligence are mutually exclusive, and only one can be enabled. After an algorithm of IPC intelligence or NVR intelligence is selected, the event Parameter can be edited.



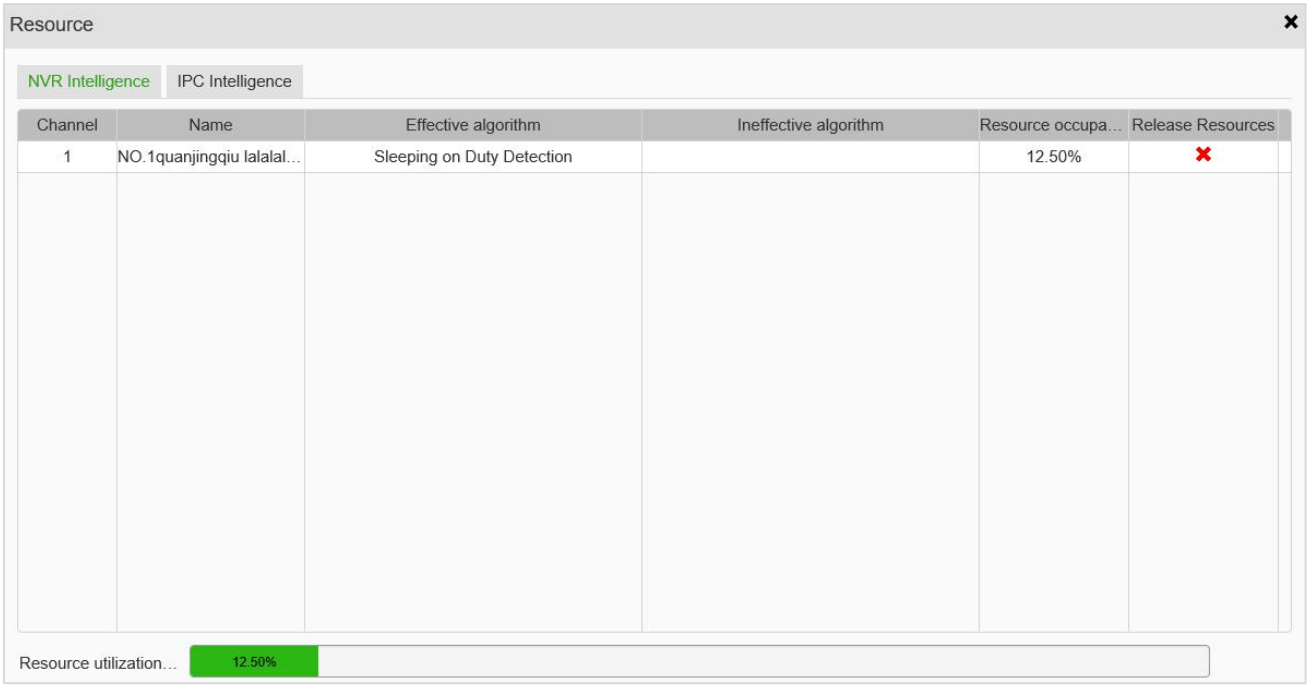
Click " " Icon to jump to the [Event Parameter] interface to set the event. For details of event Parameter setting, see 8.2 Event Parameter.



8. 1. 1 Resource allocation

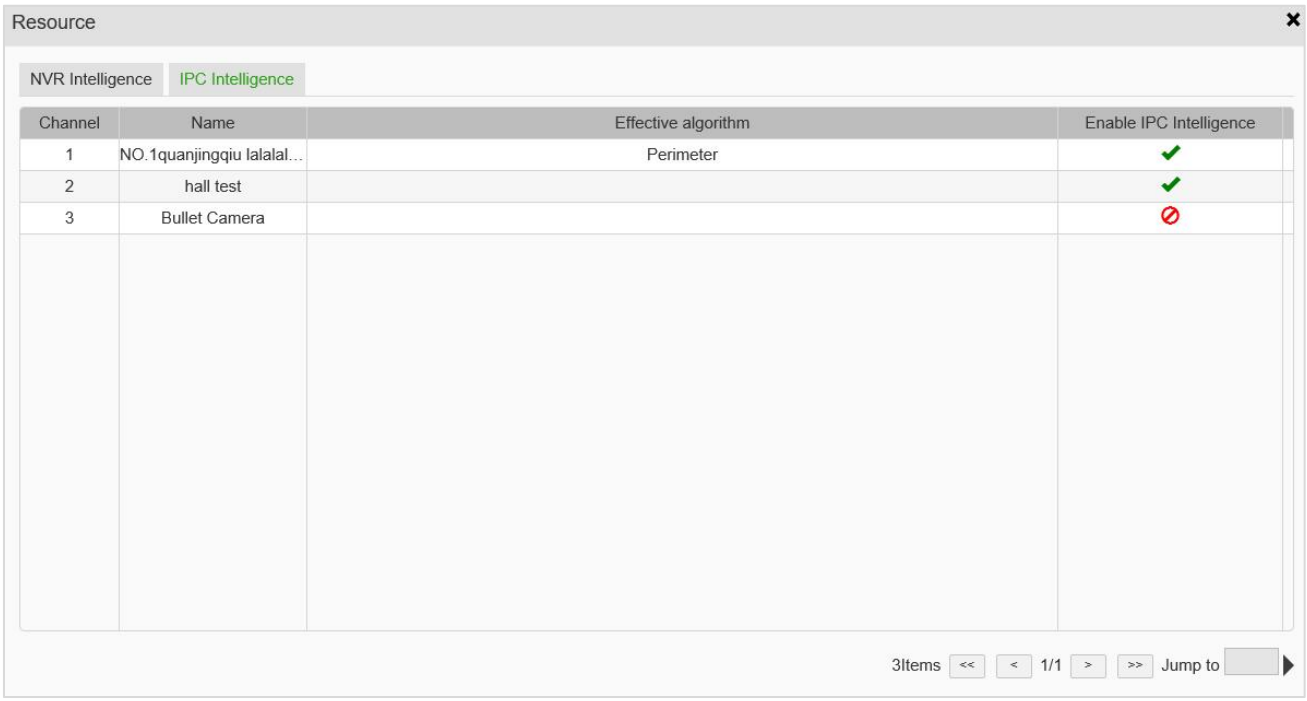
The resource allocation of NVR and IPC can be viewed.

NVR Intelligence:



Click " ✖ " Icon to release the resource, that is, close all NVR intelligent algorithms of the channel.

IPC Intelligence:



Click " " Icon to close all IPC intelligent algorithms of the channel.

Click " " Icon to enable the IPC intelligent algorithm selected in the algorithm configuration interface of the channel.

8. 1. 2 Smart Quick Jump

Intelligent dynamic inspection: Jump to the [Intelligent dynamic inspection] interface. For details, refer to Chapter 10 Intelligent Dynamic Inspection.

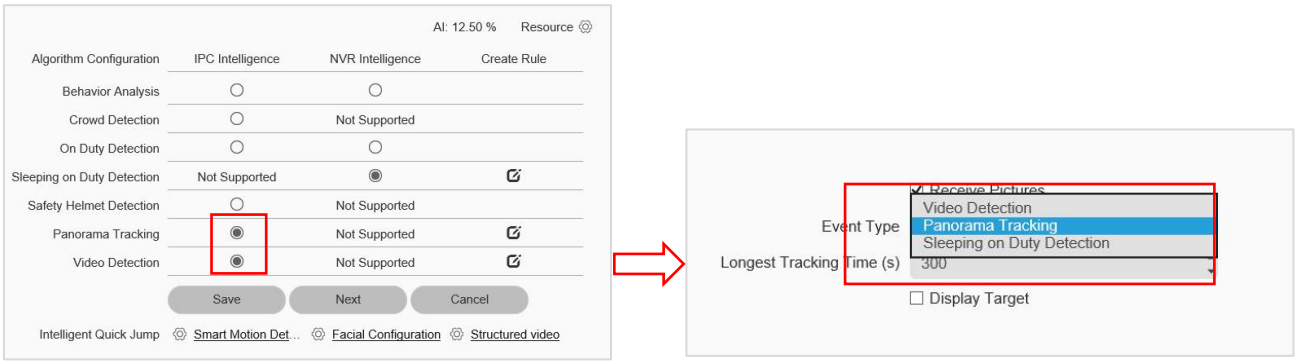
Face Configuration: Jump to the [Face Configuration] interface. For details, see 9.2 Face Configuration.

Video structuring: Jump to the [Video structuring] interface. For details, see 9.3 Video structuring.

8.2 Event Parameter

Enter [Configuration- > Intelligent Analysis- > Event Parameter], as shown in the

following figure. The event type of behavior analysis is dynamically changed according to the algorithm supported by the front end. IPC intelligent algorithm or NVR intelligent algorithm needs to be selected in the algorithm configuration before it can be selected in the event type.



Explain：

- Some algorithms are mutually exclusive. Please refer to the actual situation.

8. 2. 1 Event settings

[Receive Picture]: When enabled, the picture captured by the front-end device will be received.

[Event Selection]: Select the corresponding event algorithm according to the usage.

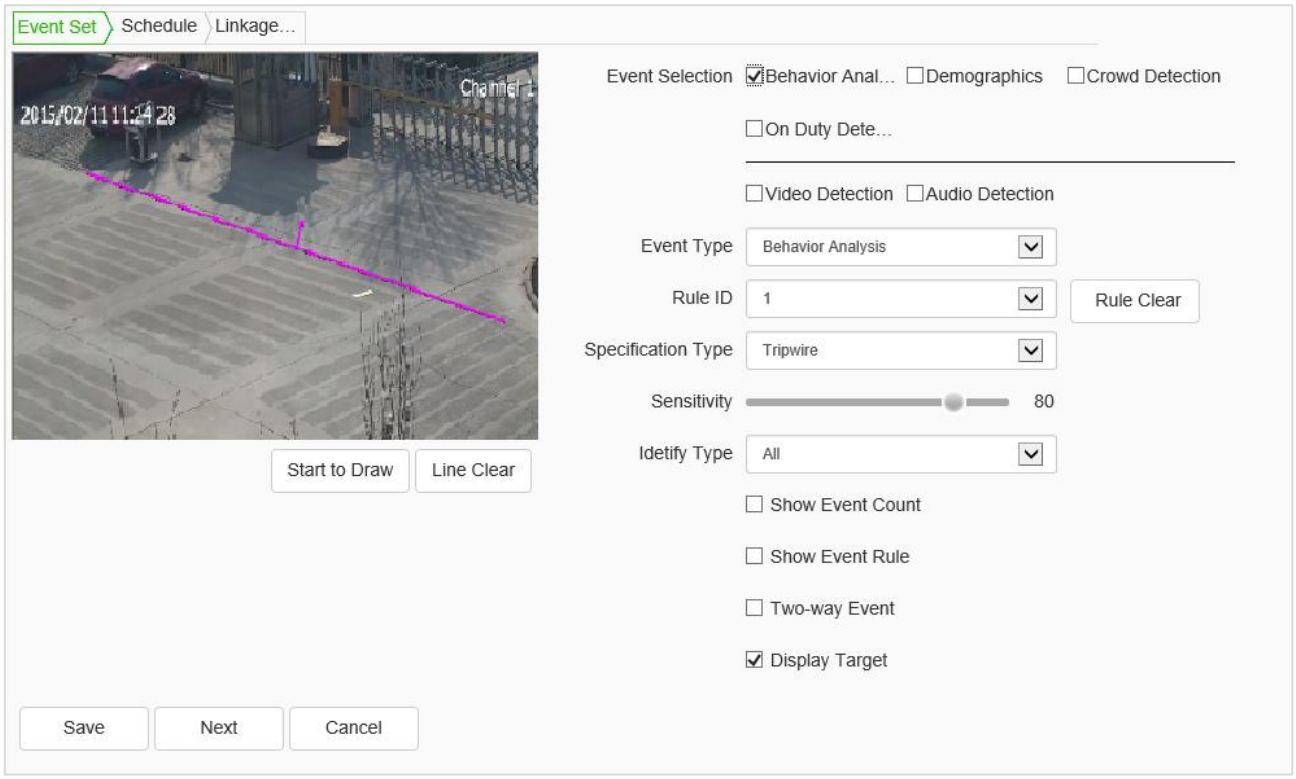
Explain：

- Different models support different algorithms. Please refer to the actual interface.
- Some algorithms are mutually exclusive with other algorithms. Other algorithms can be enabled at the same time. Please refer to the actual situation.
- Select the corresponding algorithm in [Algorithm Configuration].

Event Settings-> Event Type

[Behavior analysis]: The algorithm includes tripwire, double tripwire, perimeter, item left, item lost, wandering, running, heat map, etc., mainly based on the front-end equipment algorithm.

Behavior Analysis-Trip Wire



Tripwire: Refers to triggering an alarm when a target crosses the rule line.

1. Select the channel number and rule number, and set the rule type to Tripwire.

2. Draw the rule line, where the arrow on the rule line indicates the prohibited crossing direction.

3. Sensitivity is used to control the minimum detection target to filter out small targets. The higher the sensitivity, the smaller the size of the minimum detectable target. The higher the sensitivity, the easier it is to detect objects.

4. Alarm recognition types include person, vehicle, person and vehicle, and all, which are used to distinguish detection targets.

5. Display alarm statistics: Refers to displaying the statistical count of this alarm on the video screen.

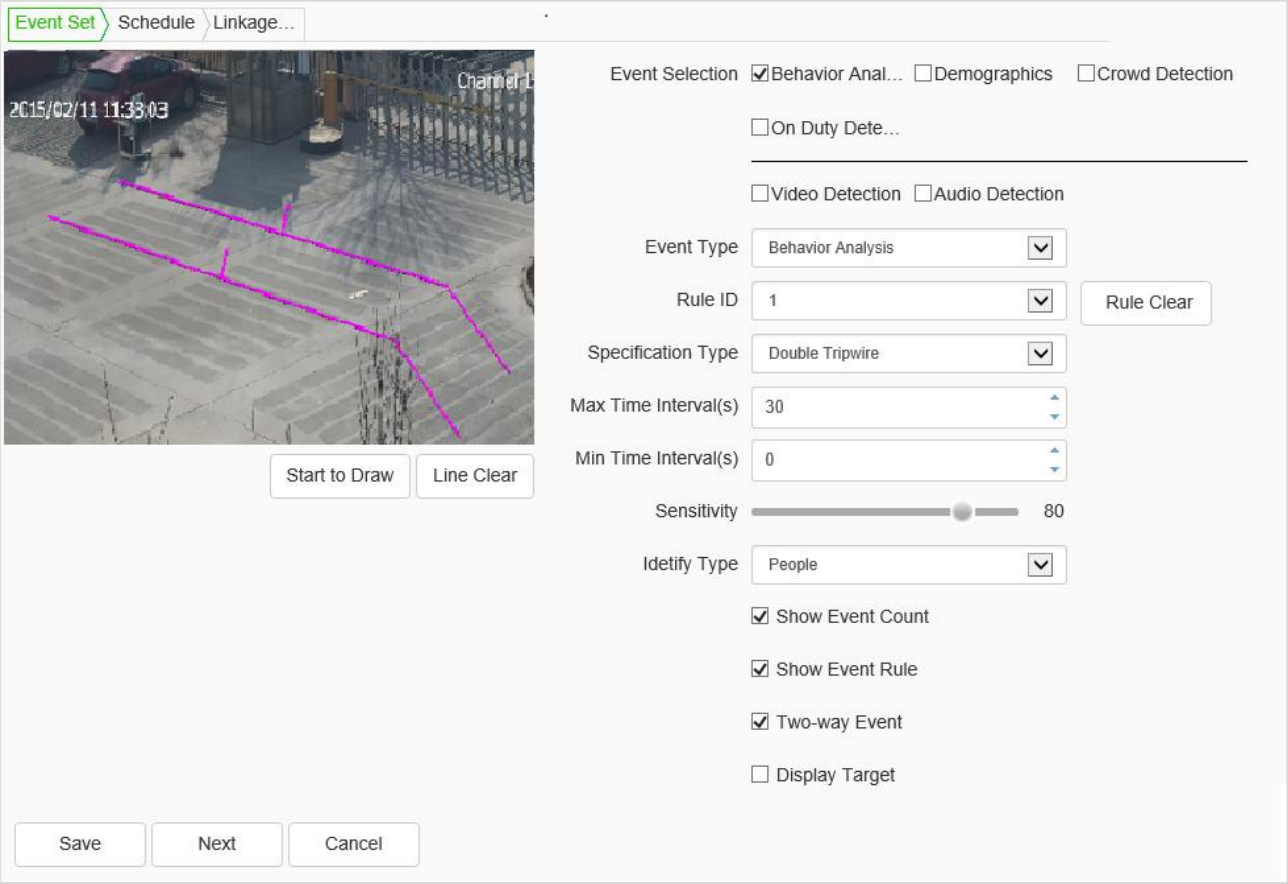
6. Display alarm rules: Refers to displaying the rule box of this alarm on the video screen.

7. Display target: Refers to marking detected objects, such as a person, with a bounding box within the video screen.

8. Bidirectional alarm: If bidirectional alarm is not checked, an alarm will only be triggered when the target crosses the rule line and its movement direction is consistent with the arrow direction of the rule line. If bidirectional alarm is checked, an alarm will be triggered when the target crosses the rule line from both directions.

9. Click save after completing the setup.

Behavior Analysis-Double Trip Wire



Double Tripwire: An alarm will be triggered when a moving target consecutively crosses two tripwires, and the time interval between crossing the two lines falls within the set time interval range.

1. Select the channel number and rule number, and set the rule type to Tripwire.

2. Draw two rule lines, where the arrows on the rule lines indicate the prohibited crossing direction. The directions of the two rule lines should be consistent. An alarm will be triggered when the target consecutively crosses both lines within the specified time.

3. Set the maximum and minimum time intervals, which represent the time range for consecutively crossing the two rule lines. Maximum crossing time interval: The maximum time limit for a moving target to stay between the two lines. Timing starts

when the target crosses the first line and ends when it crosses the second line. If the time exceeds the maximum crossing time interval, no alarm will be triggered. Minimum crossing time interval: The minimum time limit for a moving target to stay between the two lines. Timing starts when the target crosses the first line and ends when it crosses the second line. If the time is below the minimum crossing time interval, no alarm will be triggered.

4. Sensitivity is used to control the minimum detection target to filter out small targets. The higher the sensitivity, the smaller the size of the minimum detectable target. The higher the sensitivity, the easier it is to detect objects.

5. Alarm recognition types include person, vehicle, person and vehicle, and all, which are used to distinguish detection targets.

6. Display alarm statistics: Refers to displaying the statistical count of this alarm on the video screen.

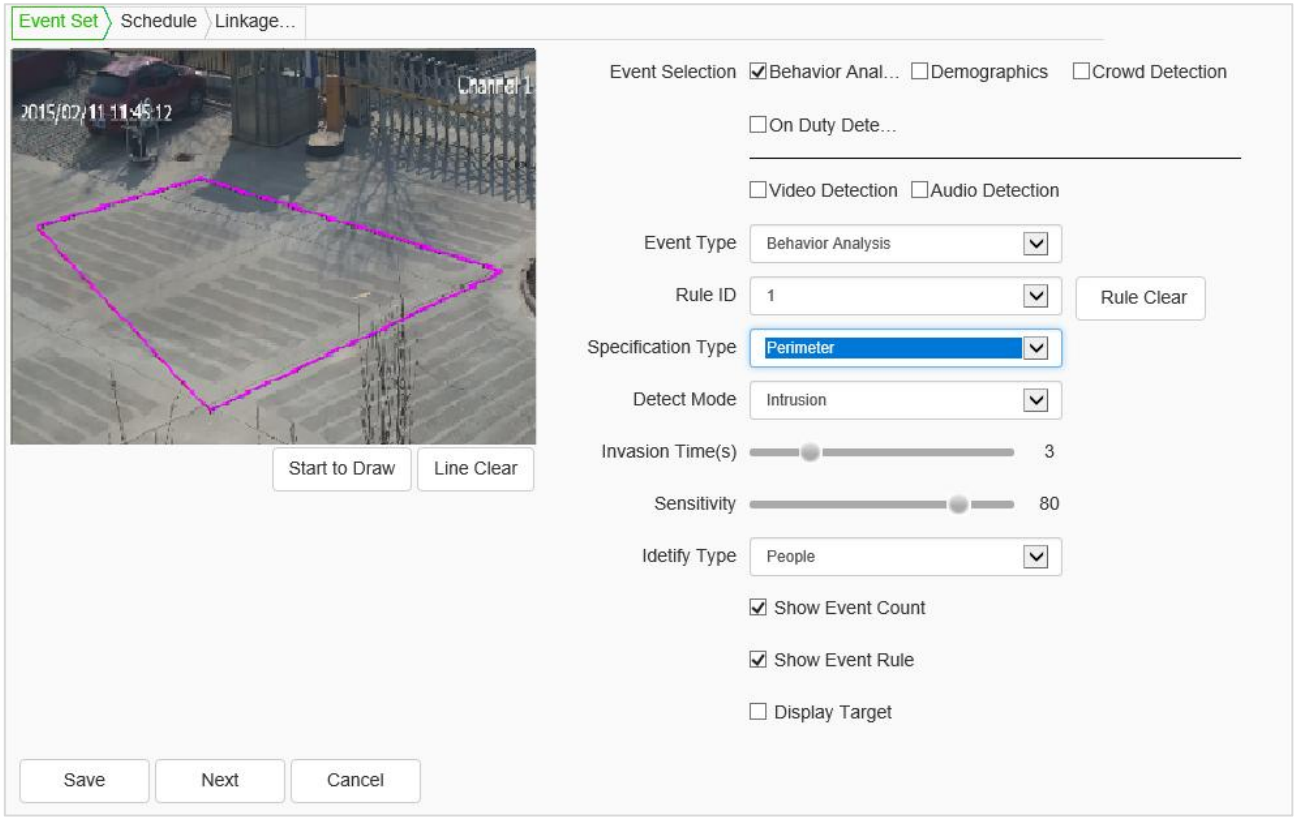
7. Display alarm rules: Refers to displaying the rule box of this alarm on the video screen.

8. Display target: Refers to marking detected objects, such as a person, with a bounding box within the video screen.

9. Bidirectional alarm: If bidirectional alarm is not checked, an alarm will only be triggered when the target crosses the rule line and its movement direction is consistent with the arrow direction of the rule line. If bidirectional alarm is checked, an alarm will be triggered when the target crosses the rule line from both directions.

10. Click save after completing the setup.

Behavior Analysis-Perimeter



Perimeter: refers to the scope of safety protection, which triggers the alarm according to different detection modes. There are three modes of invasion, entry and departure.

1. Intrusion: the moving target appears in the detection area, and the duration meets the set intrusion time alarm.

2. Entry: The alarm is triggered when the moving object enters the detection area from outside the detection area, and the action of crossing the boundary line is required.

3. Departure: The alarm is given when the moving target departs from the detection area, and the action of crossing the boundary line is required.

4. Select the channel number and rule number, set the rule type to perimeter, and select the mode.

5. Select the intrusion alarm elimination mode: leave the detection area to eliminate

the alarm, that is, leave the rule box to eliminate the alarm; leave the video area to eliminate the alarm, that is, leave the video screen to eliminate the alarm.

6. Intrusion time: set the intrusion time, and the alarm will be triggered only after the intrusion time stays in the detection area for the set time.

7. Sensitivity is used to control the minimum detection target to filter small targets. The greater the sensitivity, the smaller the size of the smallest target that can be detected. The higher the sensitivity, the easier it is to detect the object.

8. The identification alarm type includes person, vehicle, person and vehicle, and all, which are used to distinguish the detection target.

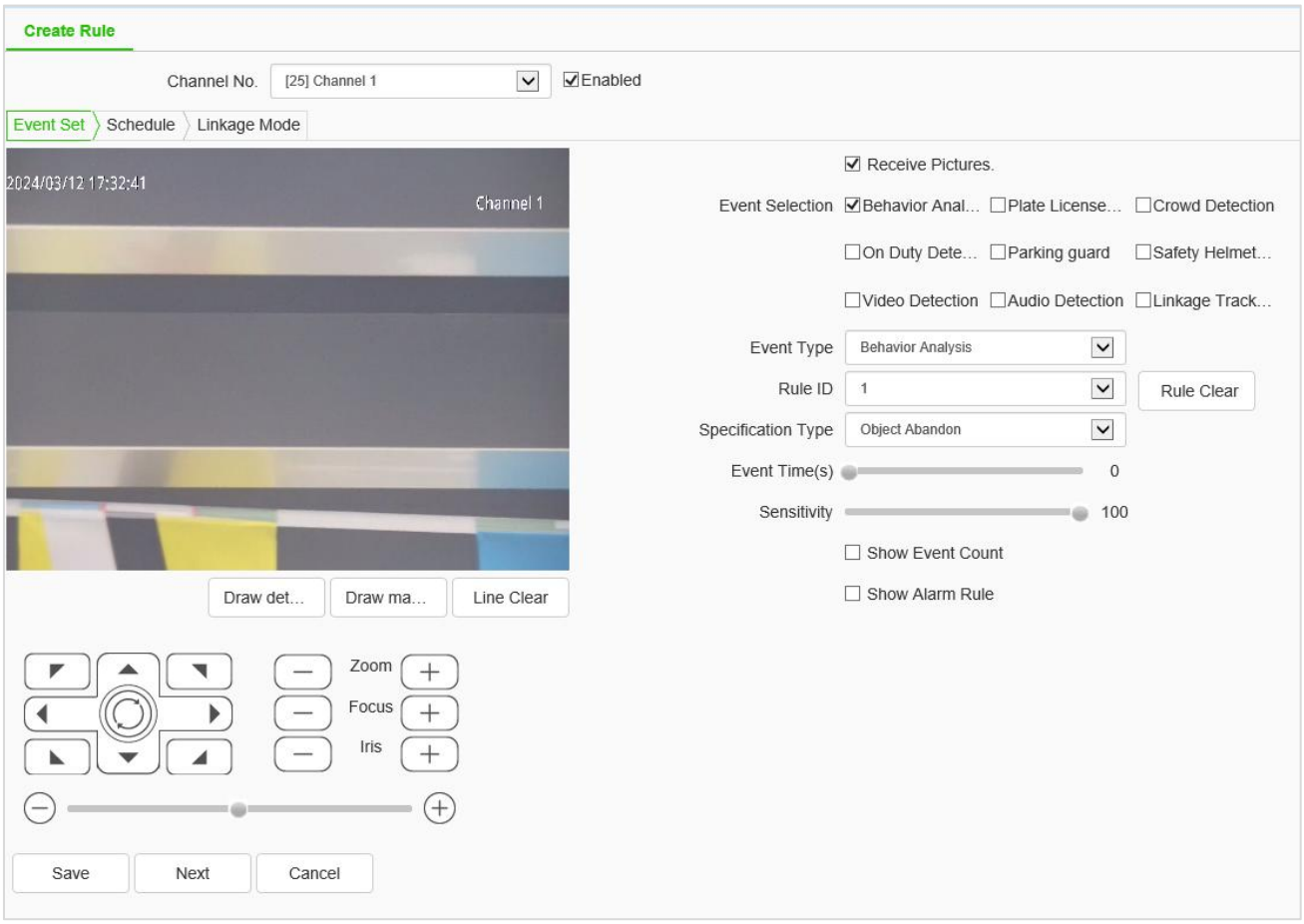
9. Display alarm statistics: refers to the statistical times of the alarm displayed on the video screen.

10. Display alarm rule: refers to the rule box that displays the alarm on the video screen.

11. Display target: It means that in the video frame, the detection object will be marked, such as a person.

12. Click Save after setting.

Behaviour Analysis-Items Left Behind



Item Left Behind: Refers to an alarm being triggered when an item is placed in the scene and remains there for a duration exceeding the set alarm time.

1. Select the channel number and rule number, and set the rule type to Item Left Behind.

2. Draw the detection area for item left behind and the masking area. When both item left behind and item removal are enabled simultaneously, the detection areas should not overlap.

3. Set the alarm time, which indicates that an alarm condition will be triggered if the target remains in the left-behind state in the scene for the specified duration. The maximum supported alarm time is 8 seconds.

4. Sensitivity is used to control the minimum detection target to filter out small targets.

The higher the sensitivity, the smaller the size of the minimum detectable target. The higher the sensitivity, the easier it is to detect objects.

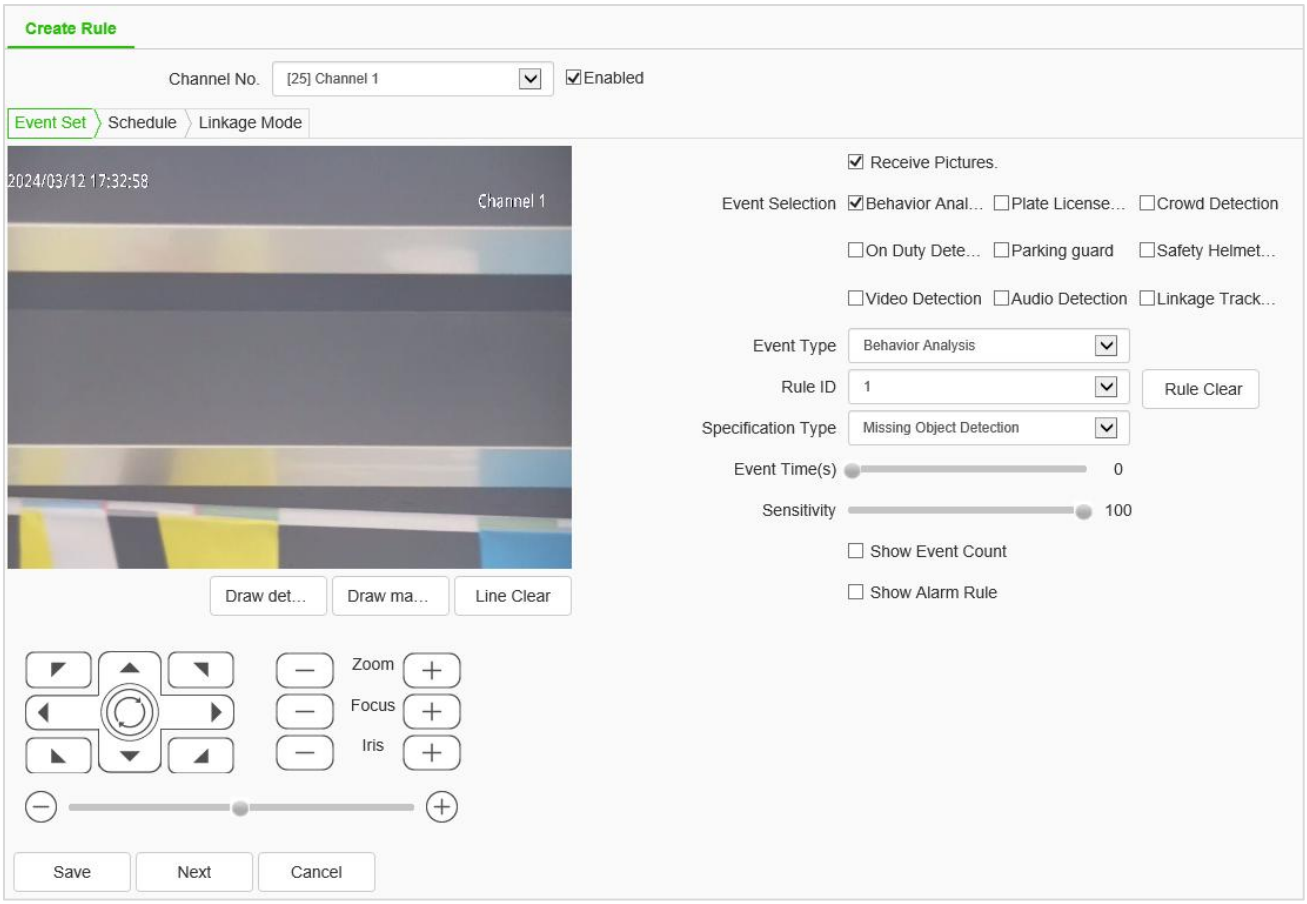
5. Display alarm statistics: Refers to displaying the statistical count of this alarm on the video screen.

6. Display alarm rules: Refers to displaying the rule box of this alarm on the video screen.

7. Display target: Refers to marking detected objects, such as a person, with a bounding box within the video screen.

8. Click save after completing the setup.

Behavioural Analysis-Missing Items



Item Removal: Refers to an alarm being triggered when an item is taken away from the

scene and remains missing for a duration exceeding the set alarm time.

1. Select the channel number and rule number, and set the rule type to Item Removal.

2. Draw the detection area for item removal and the masking area. When both item removal and item left behind are enabled simultaneously, the detection areas should not overlap.

3. Set the alarm time, which indicates that an alarm condition will be triggered if the target remains in the removed state in the scene for the specified duration. The maximum supported alarm time is 8 seconds.

4. Sensitivity is used to control the minimum detection target to filter out small targets. The higher the sensitivity, the smaller the size of the minimum detectable target. The higher the sensitivity, the easier it is to detect objects.

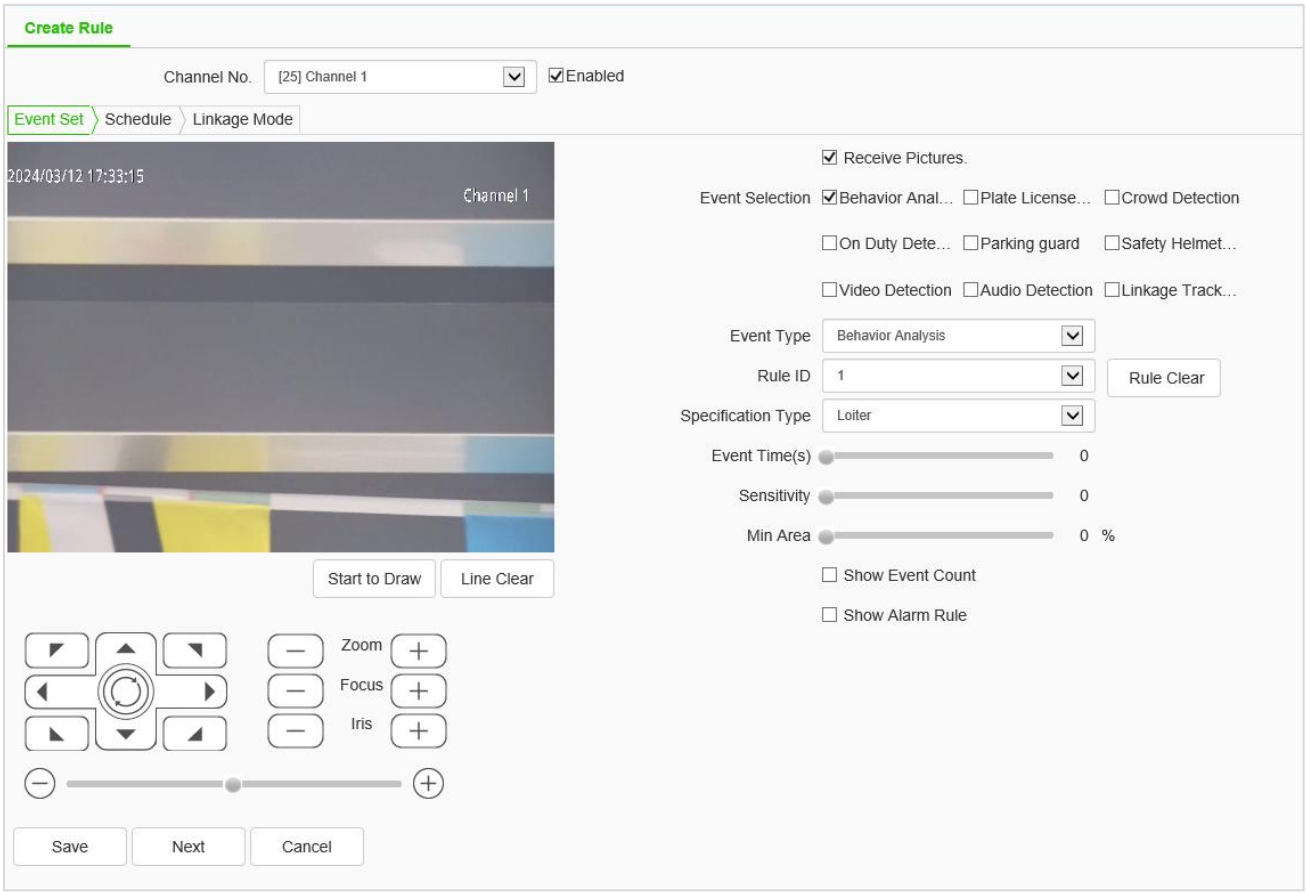
5. Display alarm statistics: Refers to displaying the statistical count of this alarm on the video screen.

6. Display alarm rules: Refers to displaying the rule box of this alarm on the video screen.

7. Display target: Refers to marking detected objects, such as a person, with a bounding box within the video screen.

8. Click save after completing the setup.

Behavior Analysis-Wandering



Wandering: refers to the alarm when the pedestrian meets the set wandering conditions in the area, which is only effective for the target whose target type is human.

1. Select the channel number and rule number, and set the rule type to hover.

2. Draw the wandering detection area.

3. Set the alarm time, indicating that the alarm will be triggered after the target stays in the wandering state in the screen for this time.

4. Set the minimum area, indicating that the alarm will be triggered when the movement range (area percentage) of the target in the detection area reaches the area.

5. Set the sensitivity, which is used to control the minimum detection target to filter the small target. The greater the sensitivity, the smaller the size of the smallest target that can be detected. The higher the sensitivity, the easier it is to detect active spots.

6. Display alarm statistics: refers to the statistical times of the alarm displayed on the video screen.

7. Display alarm rule: refers to the rule box that displays the alarm on the video screen.

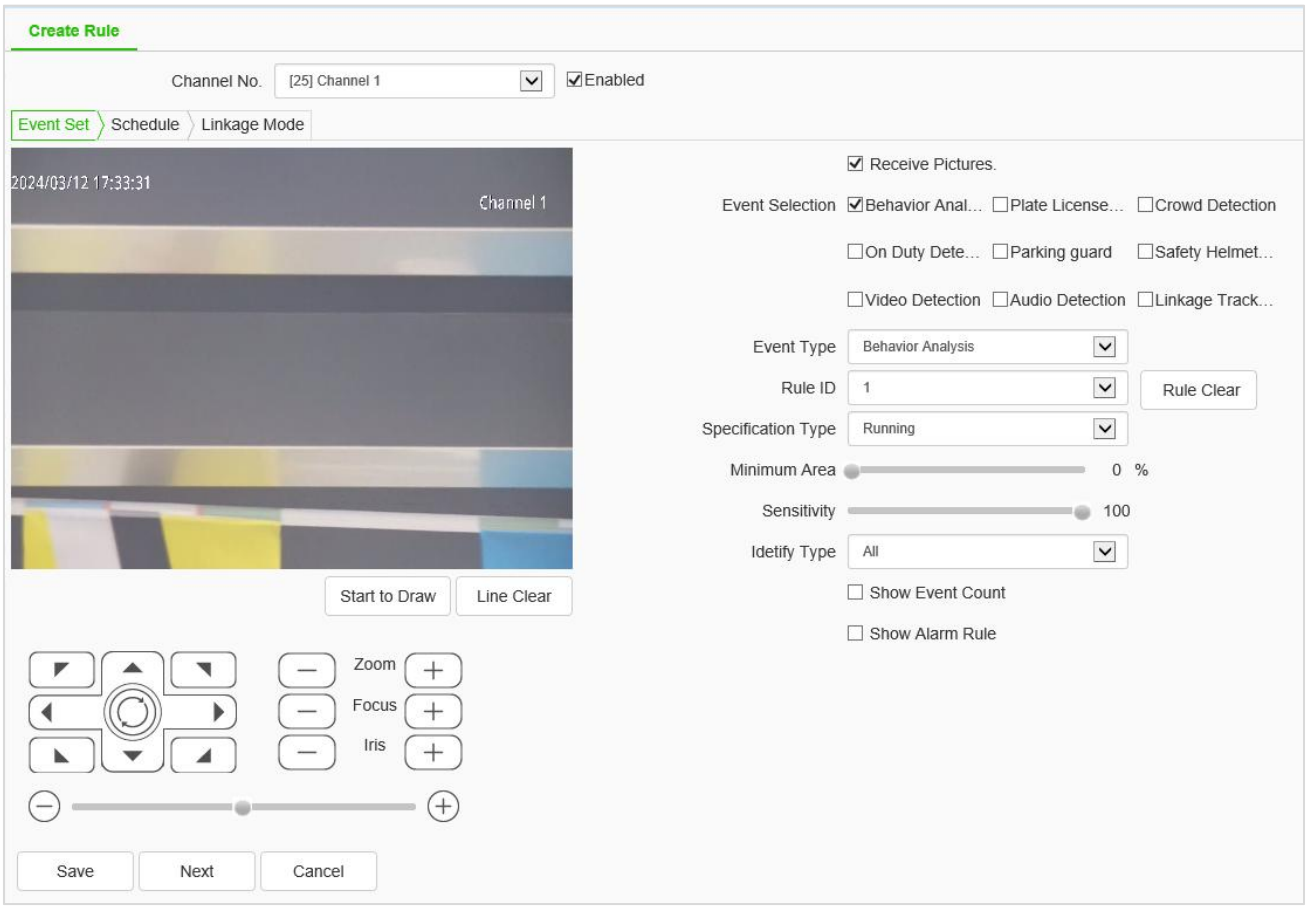
8. Display target: It means that in the video frame, the detection object will be marked, such as a person.

9. Click Save after setting.

Notice:

- If the wandering meets any of the following conditions, an alarm will be given: (1) If a person exceeds the time threshold in the area, an alarm will be given. (2) If the area covered by the trajectory exceeds the area threshold and the sensitivity is satisfied, an alarm will be given (the sensitivity controls the number of times the target turns back).

Behavior Analysis-Running



Running: refers to the alarm when the moving target meets the running conditions in the area.

1. Select the channel number and rule number, set the event to run, and select Valid to enable the rule.

2. Draw the run detection area.

3. Set the minimum moving distance per second, which refers to the percentage of the number of pixels moved by the moving target per second in the pixel width of the picture in the detection area. When the moving distance per second of the moving target is greater than this value, it will be considered as running and will give an alarm. If it is set to 0, it means that the alarm will be given if the target is not stationary; if it is set to 100, it means that the alarm will be given if the moving distance per second is

greater than image width of the detection area;

4. Set the sensitivity, which is used to control the minimum detection target to filter the small target. The greater the sensitivity, the smaller the size of the smallest target that can be detected. The higher the sensitivity, the easier it is to detect active spots.

5. The identification alarm type includes person, vehicle, person and vehicle, and all, which are used to distinguish the detection target.

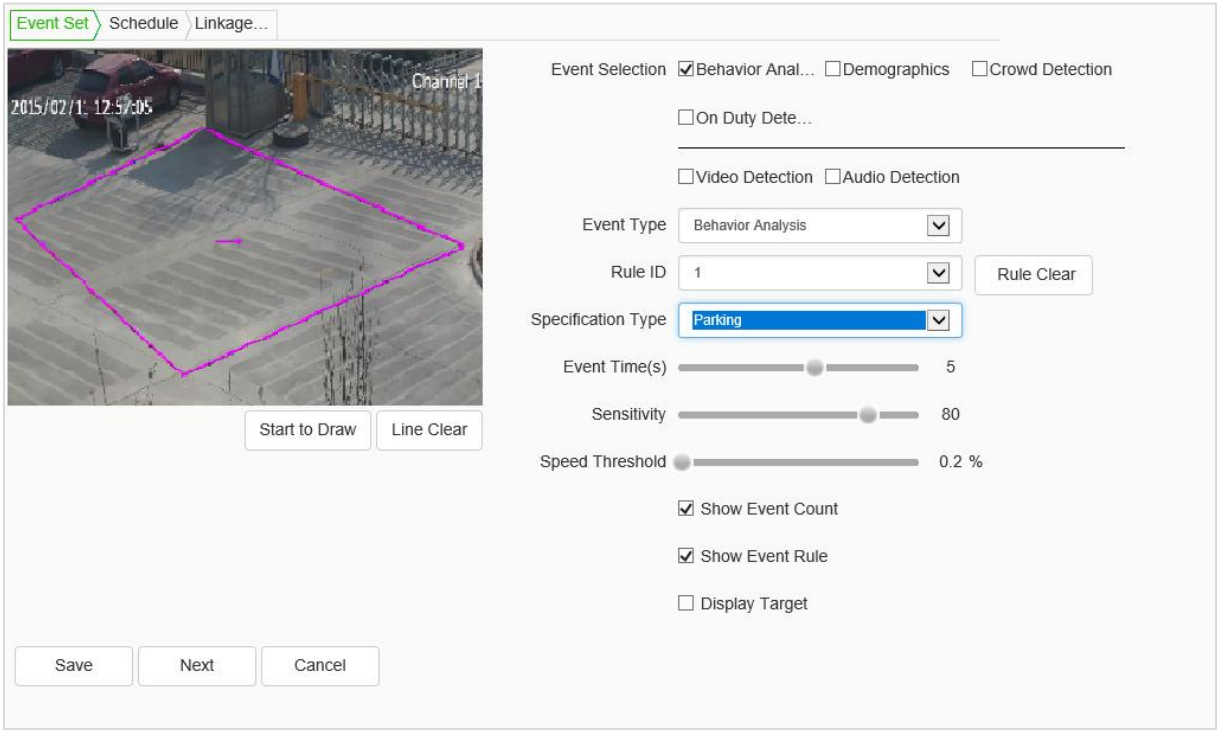
6. Display alarm statistics: refers to the statistical times of the alarm displayed on the video screen.

7. Display alarm rule: refers to the rule box that displays the alarm on the video screen.

8. Display target: It means that in the video frame, the detection object will be marked, such as a person.

9. Click Save after setting.

Behavior Analysis-Parking



Parking: refers to judging the running speed of the moving vehicle and giving an alarm to the vehicle that is lower than speed threshold and reaches the alarm time. Parking only detects vehicles, not pedestrians.

1. Select the rule number and set the rule type to Stop.

2. Draw the parking detection area.

3. Set the alarm time, indicating that the alarm will be triggered after the target is kept in the parking state in the screen for this time.

4. Set the speed threshold, and the vehicle speed threshold is equal to the product of the pixel width of the detection area and the set percentage. When the vehicle speed is lower than speed threshold, it is considered to be in the parking state, and the parking timing is started. If the timing time exceeds the alarm time, the parking alarm is triggered.

5. Set the sensitivity, which is used to control the minimum detection target to filter the small target. The greater the sensitivity, the smaller the size of the smallest target that can be detected. The higher the sensitivity, the easier it is to detect active spots.

6. Display alarm statistics: refers to the statistical times of the alarm displayed on the video screen.

7. Display alarm rule: refers to the rule box that displays the alarm on the video screen.

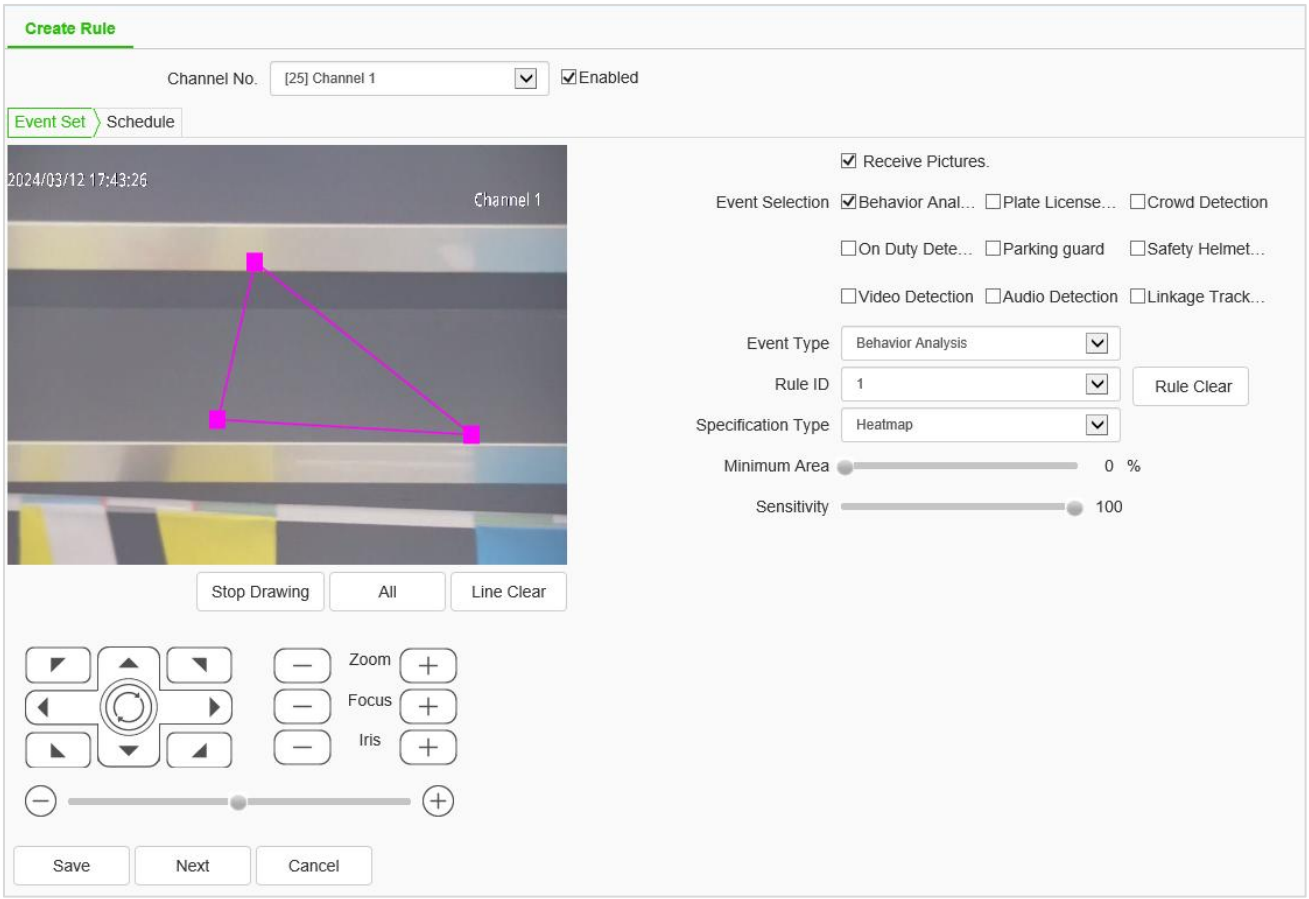
8. Display target: means that in the video screen, the detection object will be marked with a frame, such as a car.

9. Click Save after setting.

Notice:

- Parking algorithm, the default type is car.
- The speed threshold refers to the number of pixels that the vehicle moves in one second, which accounts for the proportion of the number of pixels in the width of the screen. If the speed is less than this proportion, it is considered that the speed is low enough to meet the parking conditions.
- The purpose of judging the speed of the vehicle is to avoid the situation that the vehicle is actually moving, but for some reasons it is slow and overtime, which does not require an alarm.
- The target size detection capability range is the same as the vehicle detection range requirement in the Perimeter function.

Behavior Analysis-Heat Chart



Heat chart: set a detection area to detect the active information of personnel in the

specified area. Through the heat chart report, the personnel distribution can be visually presented in terms of time or space. You can view the space heat map and time heat map in the statistical report.

1. Select the rule number, set the event as the heat chart, and select Valid to enable the rule.

2. draw that detection area of the heat map.

3. Set the minimum movement distance per second, indicating that the target will enter the active state if the movement speed (area percentage/second) in the screen is greater than this speed. When entering the active state, an active point is recorded. In the spatial heat map, the more active points, the redder the area, and the less active points, the blue the area.

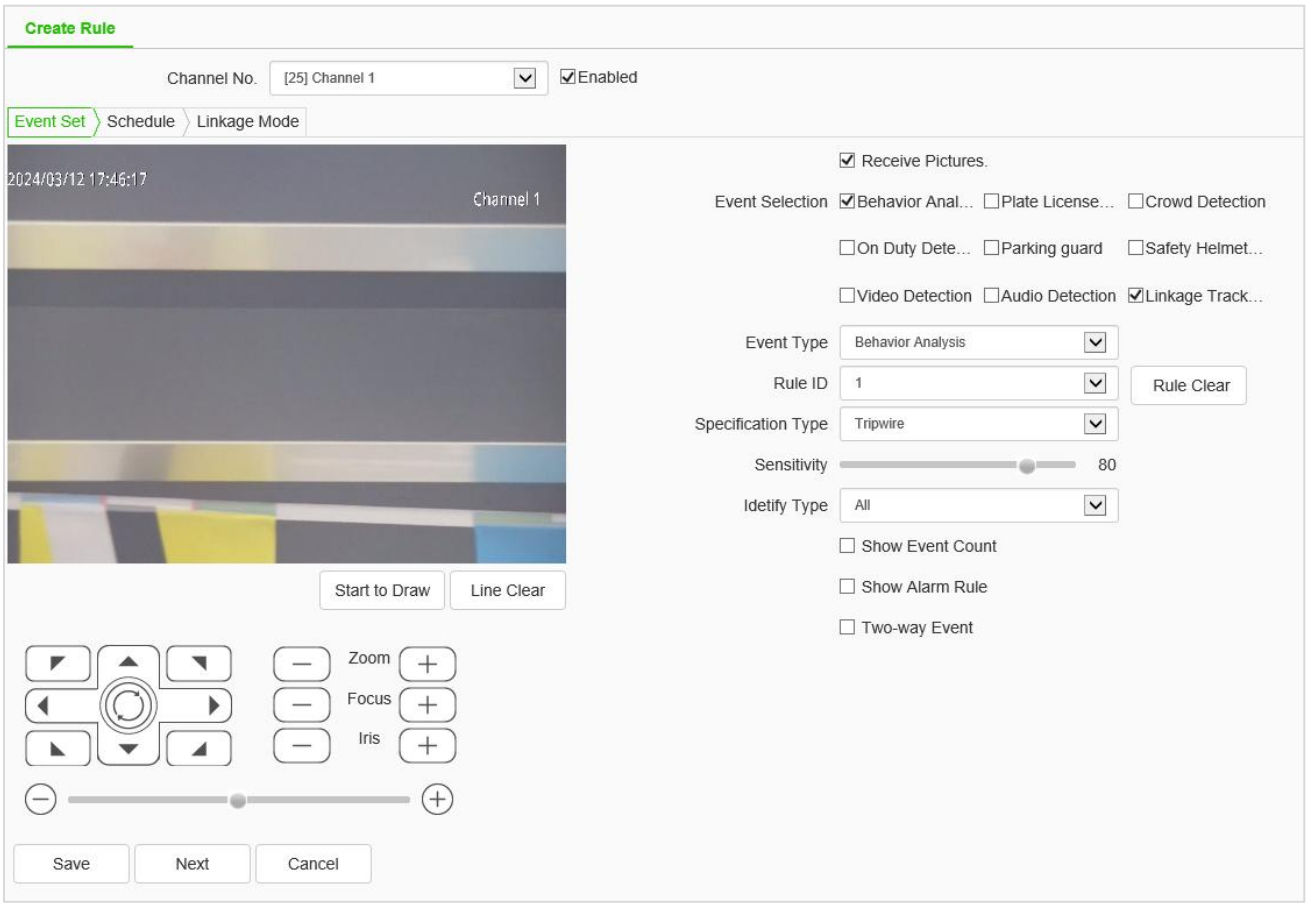
4. Set the sensitivity, which is used to control the minimum detection target to filter the small target. The greater the sensitivity, the smaller the size of the smallest target that can be detected. The higher the sensitivity, the easier it is to detect active spots.

5. Click Save after setting.

6. Spatial heat map: the activity of people in different areas of the screen. Red is the densest area, that is, the most active area, and blue is the least dense area.

7. Time heat map: personnel activities at different times in the screen. The ordinate value is the index calculated according to the number of people, stay time, etc. The larger the value, the higher the activity, which does not represent the number of people.

Behavior analysis-linkage tracking



1. Check the behavior analysis and linkage tracking at the same time. When a target triggers the behavior analysis alarm, the linkage tracking action will be taken. Select behavior analysis and intelligent tracking in the algorithm configuration, and then make corresponding settings. The behavior analysis settings are the same as above, and the intelligent tracking settings are as follows.

2. Set the maximum tracking time (seconds), indicating the time length for the dome to track the target. The default maximum time is 300 seconds. When set to 0 seconds, the ball will track until the target disappears.

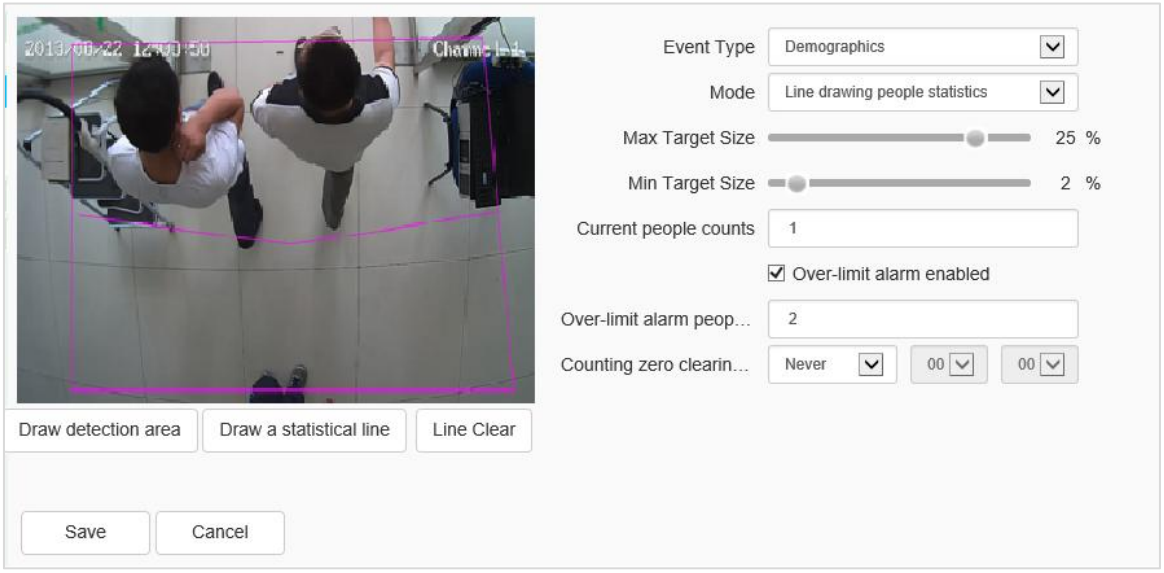
3. Set whether to display the target.

4. After clicking Save, click Next to link to the alarm setting interface.

Event Type-> People Count

Supports four headcount modes: Vertical Headcount, Area Headcount, Queue Headcount, and Line Headcount.

Vertical people counting: the equipment is required to be installed right above the monitoring area, vertically overlooking the monitoring area, and the pedestrians in the monitoring area are not blocked when passing through.



1. Draw the people counting area. Click the "Start Drawing" button to draw the area. Double-click to automatically connect the boundaries end to end.

2. Detection area: the area where the algorithm takes effect. When a person walks into the area in the screen, the detection result of the person is judged and the trajectory is tracked. After the person walks out of the area, the detection result is not processed and the trajectory is disconnected.

3. Statistical line: It can be a straight line or a broken line as a mark of counting. When a person's trajectory passes through a regular line, it is counted according to the direction in which it passes. When the rule line is drawn, there will be a red arrow. The direction of the red arrow is the direction of entry, and the opposite direction is the

direction of exit. The regular line should be drawn in the middle of the detection area as far as possible to ensure that there is a certain area on both sides of the line. The detection line is not suitable to be drawn at the boundary of the picture.

4. Set the maximum and minimum target size, mainly to limit the size of the target, to filter some interfering items that may appear in the actual scene, to avoid the impact on the actual detection results.

5. The minimum size of the target: when the adult is in the center of the screen, the percentage of the number of pixels of the shoulder width and the number of pixels of the screen width is less than this value, the target is not counted, and it is recommended to use the default value;

6. The maximum size of the target: when the adult is in the center of the screen, the percentage of the number of pixels of the shoulder width and the number of pixels of the screen width is greater than this value, the target is not counted, and it is recommended to use the default value;

7. Set the current number of people, that is, the fixed number of people that always exist in the area. (Vertical headcount and underlined headcount support)

8. Enable the over-limit alarm as required, set the number of over-limit alarms, and trigger the alarm when the number of people exceeds the limit.

9. Set the count clearing time to support daily clearing or non-clearing. (Vertical headcount and underlined headcount support)

10. Set the sensitivity and control the threshold of the detection model. The higher the sensitivity, the lower the requirements for the model, the easier it is to detect the target,

and the more likely it is to produce false detection. The lower the sensitivity, the higher the requirements for the model, the more difficult it is to detect the target, and the less false positives.

11. Click Save after setting.

Notice:

- The rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line. If the target.

Area headcount: Count the people in the area. The regional headcount function uses the head of a person as the basis for counting.

1. Draw the detection area: when the number of people is counted, the result is the number of people in the drawn area.

2. Set the maximum and minimum target size, mainly to limit the size of the target, to filter some interfering items that may appear in the actual scene, to avoid the impact on the actual detection results. The target size is counted for participation between the maximum and minimum sizes, and is not counted for participation beyond the range.

3. Sensitivity: the sensitivity of target detection, the default value is 40. When the number of people is large or the number of people detected is inconsistent with the

actual number, theoretically, the number of people actually detected will increase if the sensitivity is increased, and the number of people actually detected will decrease if the sensitivity is decreased.

4. Enable the over-limit alarm as required, set the number of over-limit alarms, and alarm when the number of people exceeds the limit.

Counting the number of people who draw a line: It is applicable to the ordinary monitoring scene. It counts the targets crossing the line. At the angle of the ordinary monitoring scene, multiple targets are easy to block each other. The counting accuracy is worse than vertical number of people. It is not suitable for the scene with too many people.

1. Detection area: the area where the algorithm takes effect. When a person walks into the area in the screen, the detection result of the person is judged and the trajectory is tracked. After the person walks out of the area, the detection result is not processed and the trajectory is disconnected.

2. Statistical line: It can be a straight line or a broken line as a mark of counting. When a person's trajectory passes through a regular line, it is counted according to the direction in which it passes. When the rule line is drawn, there will be a red arrow. The direction of the red arrow is the direction of entry, and the opposite direction is the direction of exit. The regular line should be drawn in the middle of the detection area as far as possible to ensure that there is a certain area on both sides of the line. The detection line is not suitable to be drawn at the boundary of the picture.

3. Set the maximum and minimum target size, mainly to limit the size of the target, to

filter some interference items that may appear in the actual scene, to avoid the impact on the actual detection results.

4. The minimum size of the target: when the adult is in the center of the screen, the percentage of the number of pixels of the shoulder width and the number of pixels of the screen width is less than this value, the target is not counted, and it is recommended to use the default value;

5. The maximum size of the target: when the adult is in the center of the screen, the percentage of the number of pixels of the shoulder width and the number of pixels of the screen width is greater than this value, the target is not counted, and it is recommended to use the default value;

6. Set the sensitivity and control the threshold of the detection model. The higher the sensitivity, the lower the requirements for the model, the easier it is to detect the target, and the more likely it is to produce false detection. The lower the sensitivity, the higher the requirements for the model, the more difficult it is to detect the target, and the less false positives.

7. Enable the over-limit alarm as required, set the number of over-limit alarms, and alarm when the number of people exceeds the limit.

Notice:

- The rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as

the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line. If the target.

Queue headcount: It is applicable to the headcount of the queue.

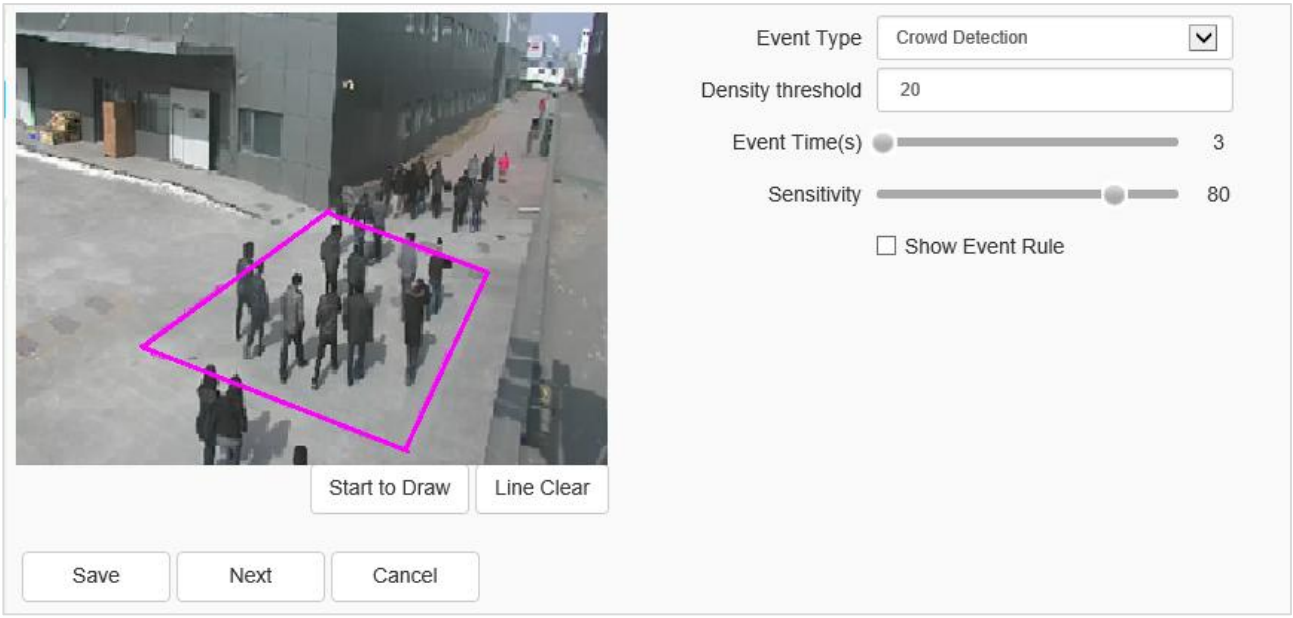
1. Detection area: the effective area for counting the number of people, and the result is the number of people in the drawn area.

2. Set the maximum and minimum target size, mainly to limit the size of the target, to filter some interfering items that may appear in the actual scene, to avoid the impact on the actual detection results. The target size is counted for participation between the maximum and minimum sizes, and is not counted for participation beyond the range.

3. Sensitivity: the sensitivity of target detection, the default value is 40. When the number of people is large or the number of people detected is inconsistent with the actual number, theoretically, the number of people actually detected will increase if the sensitivity is increased, and the number of people actually detected will decrease if the sensitivity is decreased.

4. Enable the over-limit alarm as required, set the number of over-limit alarms, and alarm when the number of people exceeds the limit.

Event Type-> Crowd Gathering



Crowd gathering: count the number of people in the area, and give an alarm when the alarm condition is exceeded.

1. Draw the crowd gathering detection area.

2. Set the density threshold, that is, when the number of people in the area exceeds this value, the alarm will be triggered.

3. Set the alarm time, and start the alarm when the number of people detected exceeds the set threshold and the duration is greater than alarm time.

4. Set the sensitivity. The sensitivity controls the threshold of the detection model. The higher the sensitivity, the easier it is to detect the target.

5. Display alarm rule: refers to the rule box that displays the alarm on the video screen.

6. Click Save after setting.

Event Type-> Duty Detection

Duty Detection: Detects whether personnel are on duty in the scene. Once the time that personnel are absent from their posts exceeds the set time, an alarm is triggered.

1. Draw the duty detection area.

2. Set the number of personnel on duty, supporting single-person and dual-person duty.

3. Set the absence alarm time. Timing starts when the detected number of people is less than the number of personnel on duty, and an alarm is triggered if the timing exceeds the set absence alarm time.

4. Set the sensitivity, which controls the detection threshold of the model. The higher the sensitivity, the greater the possibility of detecting the target.

5. Minimum target size: If the target width divided by the scene width is less than the minimum target size, the target is filtered out and not counted.

6. Maximum target size: If the target width divided by the scene width is greater than the maximum target size, the target is filtered out and not counted.

7. Targets with sizes between the minimum and maximum sizes are counted, while those outside this range are not counted.

8. Click save after completing the setup.

Event Type-> Helmet Detection

Safety helmet detection: In the detection area, the target that does not wear the safety helmet according to the rules will trigger the alarm.

1. Sensitivity: control the threshold of the detection model. The higher the sensitivity is, the easier it is to detect the target; however, the higher the sensitivity is, the easier it is to misdetect. It is best to use the default sensitivity.

2. Detection area: the area where the target is detected, and the target outside the area is not processed.

3. Calibration box: select the actual size of the head and shoulder of the target in the middle of the detection area. The algorithm will judge the size of the target in the picture according to the size of the calibration box, so as to adjust the algorithm to achieve the optimal detection (the large box in the figure is the detection area, and the small box is the calibration box).

4. Monitoring area: The monitoring area includes the entrance and exit and the construction area (during the test, there is no difference between the two options, which are only used as a reminder).

5. Detection of safety helmet color: when it is not enabled, the target without safety helmet will be alarmed; when it is enabled, for example, if red is checked, the target without safety helmet in the area will be alarmed, and the target with red safety helmet will also be alarmed, indicating that the personnel with red safety helmet should not appear in the area;

6. Blue, white and yellow have the same logic as red. For "Other" in the alarm color, there is no difference whether it is checked or not. The algorithm does not output other colors except the four colors for the time being.

7. Click Next to set the deployment time and linkage mode.

Notice:

- When the illumination is low, it will affect the recognition rate of the algorithm. Please keep the illumination of the application site. In black and white mode, the algorithm is automatically turned off.
- The safety helmet detection function is used to detect the head and shoulders of a person. The

camera is installed at a normal monitoring angle. The height of the camera is not less than 2 meters, and the depression angle is 10 degrees to 50 degrees. The drawing of the detection area should ensure that the head and shoulders of a person are intact in the area.

Event Type-> Smoke Detection

1. [Detection mode]: Specify fire point, specify smoke, fire point or smoke, fire point and smoke, smoke detection.
2. [Fire point detection sensitivity]: Set the fire point detection sensitivity.
3. [Smoke detection sensitivity]: Set the smoke detection sensitivity.
4. [Display Target]: Check whether to display the target.

Event Type-> Sleeping Guard Detection

1. Sleeping on duty: detect and alarm the long-term immobility of personnel in the designated area. When the duration of the personnel's static state exceeds the set value of the "Sleeping Time" Parameter, an alarm will be generated.

2. Draw the detection area: circle the area to be detected (multiple areas can be drawn). This area must be drawn.

3. Draw the shielding area: circle the area to be excluded from the detection area (multiple areas can be drawn). If there is no area to be excluded, the invalid area may not be drawn.

4. Maximum sleep time: It can be set according to the user's needs, and is used to set the maximum time for the monitored personnel to remain in a static state.

5. Sensitivity: The greater the sensitivity, the easier it is to generate an alarm. If the sensitivity is too high, it is easy to generate a false alarm. If the sensitivity is too low, it

is easy to generate a missed alarm. In general, the default value can be used.

6. Maximum/minimum target size: draw the maximum/minimum target size, that is, the maximum/minimum value of the allowable ratio of the target width to the image width. Generally, the default value can be set, and special scenes need to be adjusted.

Event Type-> Video Diagnostics

1. Set whether to enable virtual focus diagnosis and scene change diagnosis.

2. Virtual focus diagnosis: Check virtual focus diagnosis to diagnose whether there is virtual focus in the current camera video. The lower the sensitivity, the more serious the virtual focus is required to trigger the alarm;

3. Check the scene change to diagnose whether there is a sudden change in the current camera video picture, mainly when the camera is suddenly turned to a meaningless angle, or when the picture is seriously blocked. The higher the sensitivity, the easier it is to trigger the alarm;

4. Set the sensitivity. The higher the value, the more sensitive it is.

5. Click Save after setting.

Event Type-> Audio Exception Detection

1. 1.Set whether to enable signal loss detection and signal anomaly detection.

2. Set the sensitivity. The larger the value, the more sensitive it is.

3. Click Save after setting.

Event Type-> Panoramic Tracking

1. Set the maximum tracking time (seconds), which indicates the time length for the dome to track the target. The default is 300 seconds. When set to 0 seconds, the ball

will track until the target disappears.

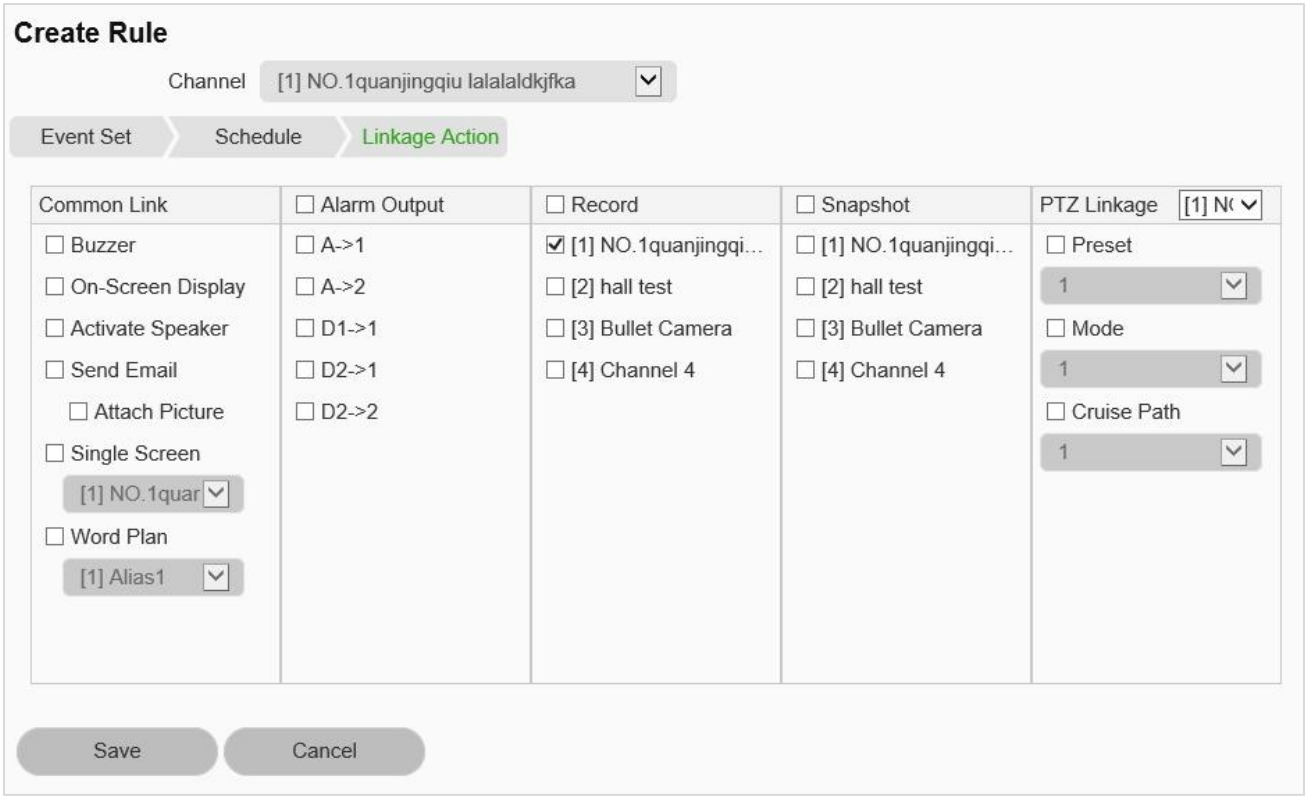
2. Set whether to display the target.

8. 2. 2 Time of defense deployment



Set the effective time of the rule, and the defense is deployed 24 hours a day by default. Click the blue bar to modify the deployment time, and click Save after setting. Click [Next] to enter [Linkage Mode] setting.

8. 2. 3 Linkage mode



Set the alarm linkage function when an alarm occurs. Such as: [Linkage Output], [Linkage PTZ], [Linkage Video], [Linkage Snapshot], [Regular Linkage], etc.

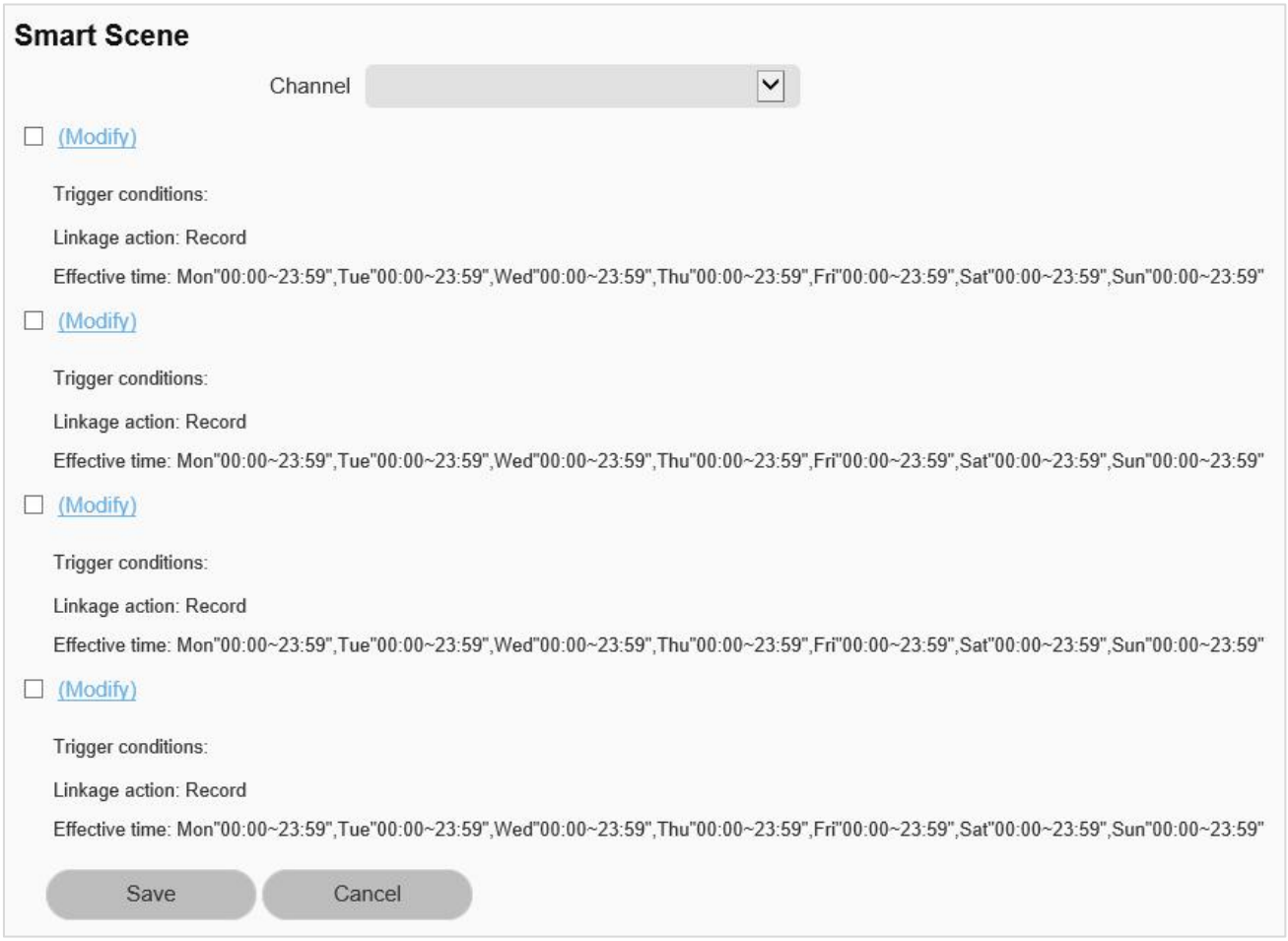
Click the [Save] button to save and validate the Parameter setting. Click the [Reset] button to restore the last saved Parameter.

8.3 Smart Scenarios

A plurality of trigger conditions are set to form an intelligent scene.

8. 3. 1 Smart Scenario

1. Enter [Main Menu-> Intelligent Analysis-> Intelligent Scenario] and select the Intelligent Scenario tab, as shown in the following figure.



2. Select the channel you want to set.

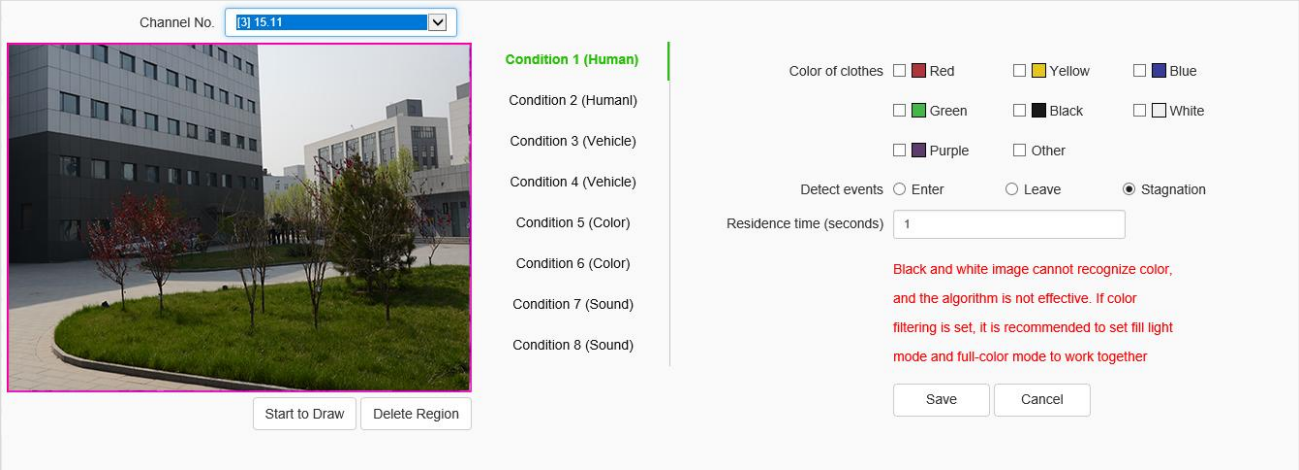
3. Select whether to enable the scene by checking the checkbox in front of the scene name.

4. Click [Modify] to modify or edit the scenario strategy. You can modify the scenario name and select the scenario trigger condition.

5. Click [Save] to save the setting Parameter.

8. 3. 2 Condition setting

1. Enter [Main Menu-> Intelligent Analysis-> Intelligent Scenario] and select the Condition Setting tab, as shown in the following figure.



2. Select the channel you want to set.

3. Select the condition to be set. There are eight conditions available, including two for personnel, two for vehicle, two for color, and two for sound.

Explain：

- Personnel and vehicles can choose to set the three events of entering, leaving and staying, and can start to set the line drawing area by checking [Enable Line Drawing], and click [Clear Line Drawing] to clear the set sideline in the video.
- Color can be set to red, green, yellow, blue, purple, black, white and other colors, and can take the color of the picture.
- The sound sensitivity can be adjusted from 0 to 100.

Notice:

- The black and white image cannot recognize the color, and the algorithm does not work. If the color filter is set, it is recommended to set the fill light mode to work with the full color mode.

4. Click [Save] to save the setting Parameter.

8. 3. 3 Shielded area

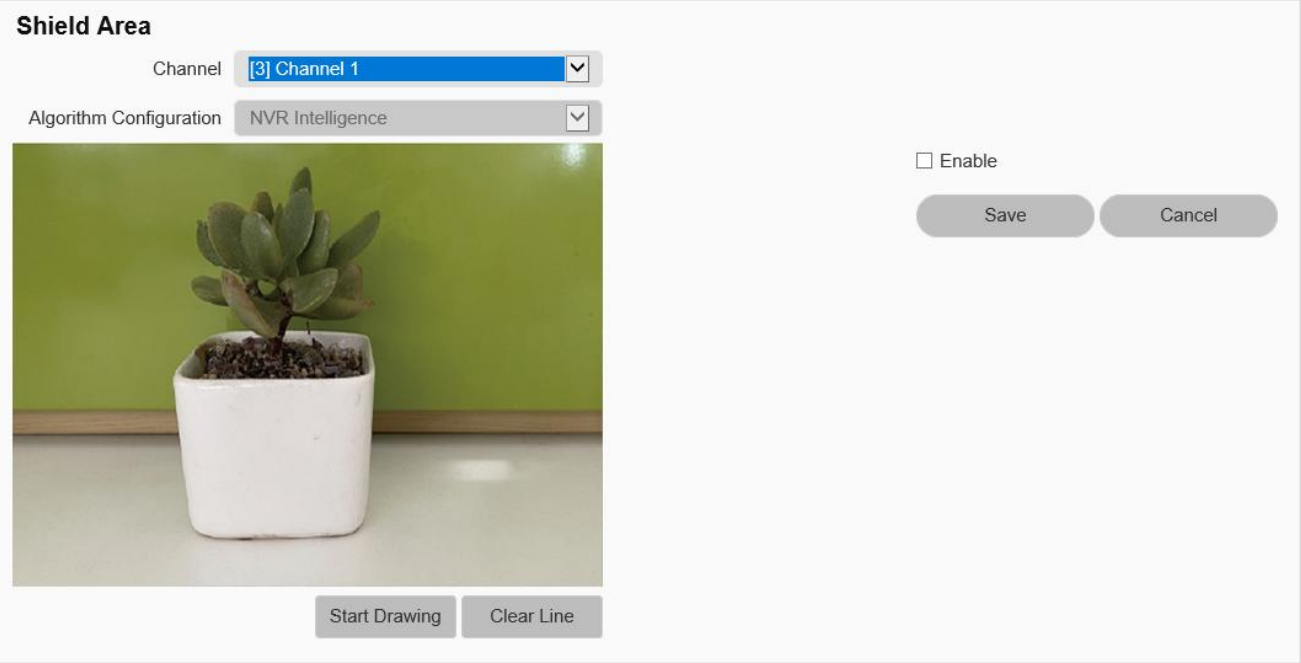
1. Enter [Main Menu-> Intelligent Analysis-> Intelligent Scene], and select the shield area label.

2. Select the channel you want to set.

3. Turn on the shielding area by checking [Enable], and click [Start Drawing] to start setting the line drawing area. The intelligent scene in the line drawing area does not take effect. Click [Clear Line Drawing] to clear the edge lines set in the video.

4. Click [Save] to save the setting Parameter.

8.4 Shielded area



Shielding area means that the false alarm rate is reduced by drawing an area in the scene and not taking the target in the drawn area as the alarm target. For example: lights, branches, etc. Each scene supports up to 8 blocks. The user can click the [Start Drawing] button to draw the shielding area as required. The area shielding range

between different scenes can be set through [Scene No.].

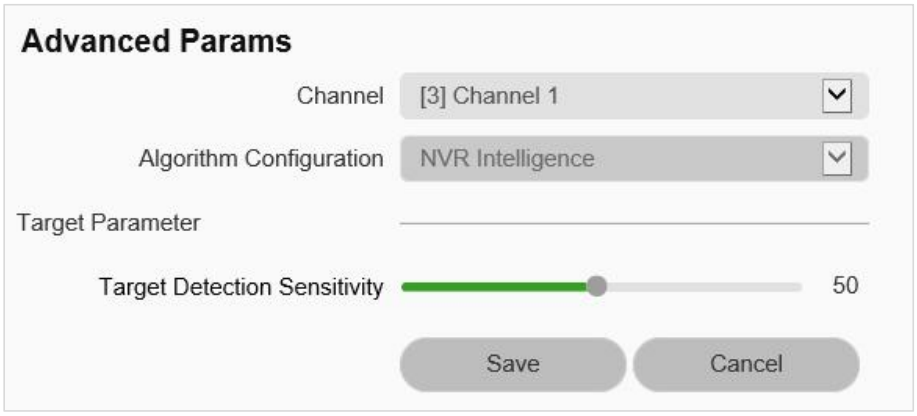
Click the [Save] button to save the parameter settings.

Click the [Reset] button to restore the last saved parameters.

Notice：

- If the original monitoring scene changes, the shielding area will automatically fail and need to be reconfigured.

8.5 Advanced Parameters



Notice：

- The target detection sensitivity can adjust the target detection sensitivity of people and vehicles in the perimeter, tripwire, double tripwire, wandering, running and parking algorithms in the behavior analysis. The greater the sensitivity, the easier it is to detect the target, which is used to reduce the situation of missing alarm. The smaller the sensitivity, the more difficult it is to detect the target, which is used to reduce the situation of false alarm. The target detection sensitivity of advanced parameters controls the pedestrian and vehicle detection model, which is not effective for other algorithms such as on-duty and number of people statistics.

8.6 Statistical statement

8. 6. 1 Passenger flow statistics

Enter [Configuration- > Intelligent Analysis- > Statistical Report], and select the passenger flow label, as shown in the following figure.



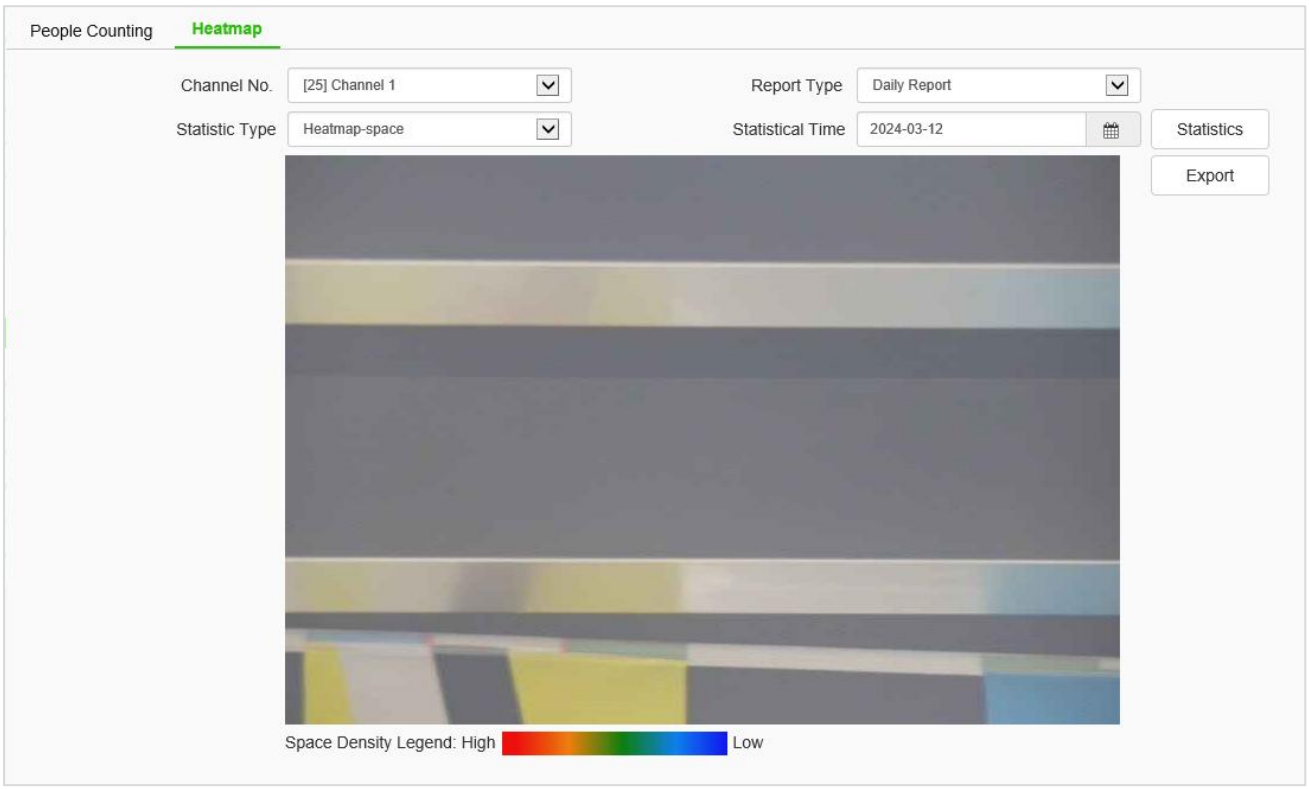
This interface is used to export the data of passenger flow statistics. Click the [Export] button to export the statistical results from the device to the computer disk.

The export effect is shown in the following figure:

Date	Time	Channel	Enter	Pass
2024/03/12	01:00:00	3	0	0
2024/03/12	02:00:00	3	0	0
2024/03/12	03:00:00	3	0	0
2024/03/12	04:00:00	3	0	0
2024/03/12	05:00:00	3	0	0
2024/03/12	06:00:00	3	0	0
2024/03/12	07:00:00	3	0	0
2024/03/12	08:00:00	3	0	0
2024/03/12	09:00:00	3	0	0
2024/03/12	10:00:00	3	0	0
2024/03/12	11:00:00	3	0	0
2024/03/12	12:00:00	3	0	0
2024/03/12	13:00:00	3	0	0
2024/03/12	14:00:00	3	0	0

8. 6. 2 Heat map statistics

Enter [Configuration- > Intelligent Analysis- > Statistical Report], and select the Heat Chart Statistics tab, as shown in the following figure.



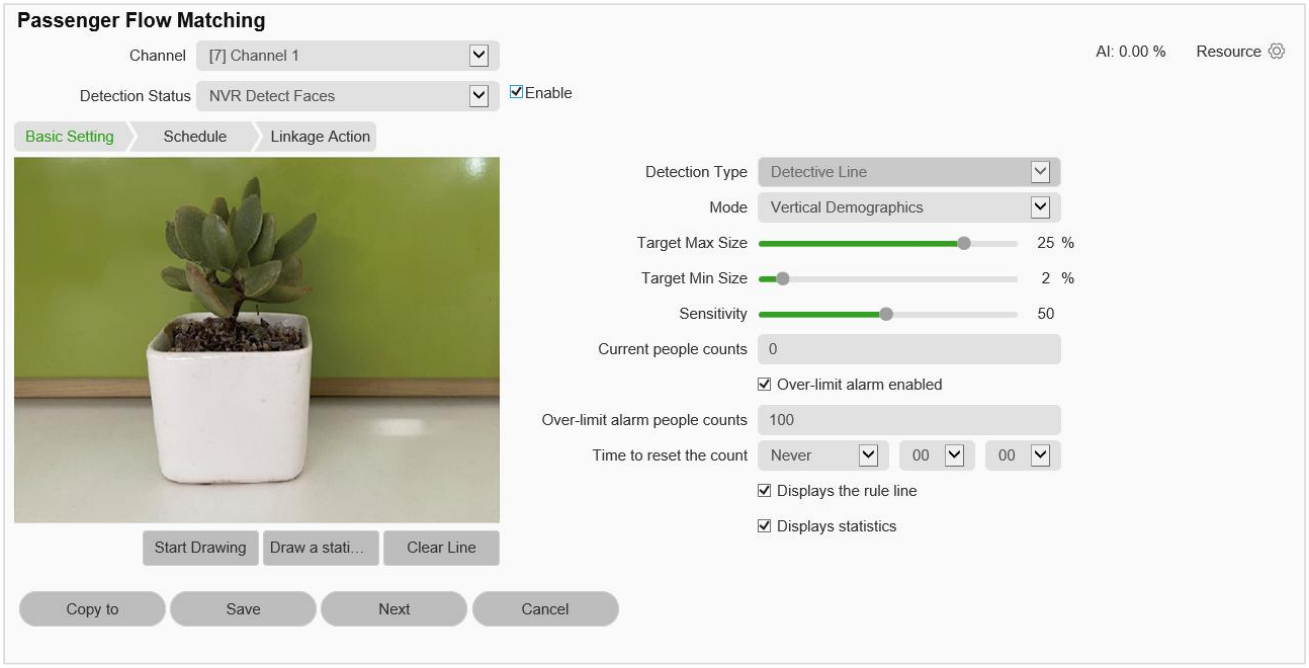
Select the channel number, report type and statistics time, and click the [Statistics] button to perform heat chart statistics on space or time respectively, and display the imaging chart or broken line chart. Click [Export] to export the corresponding picture or report.

8.7 Passenger flow

This function is mostly used in crowded areas such as restaurants and supermarkets.

8. 7. 1 Front-end configuration

Enter [Configuration- > Intelligent Analysis- > Passenger Flow], select the front-end configuration tab, select the front-end channel to be configured, check the Enable check box, and enable the algorithm, as shown in the following figure.



Click [Start Drawing] to draw the detection area and the detection direction, and click [Clear Line] to clear the page lines.

Set the detection mode, target maximum/minimum size, and sensitivity.

Click the [Save] button to save and synchronize the data to the front end, and click the [Reset] button to restore the last saved data.

Vertical headcount

Instructions for using the algorithm:

Project	Explain
Functional description	It is used right above the entrance and exit of a general place to count the number of people entering, leaving and passing through the entrance of the place through video.
Instructions for use	The installation height of the camera is 3.5 ~ 2.5m, the angle of depression is 85 ° ~ 95 °, the light in the field of view is stable, there is no strong light interference, the image is clear; the width of the target head and shoulder is

	not less than 220 pixels (2 million).

If the use scene, camera installation, field of view and imaging effect cannot meet the above requirements, the detection effect of this function may be affected.

Algorithm configuration parameters:

Parameter	Explain
Draw the detection area	Draw a polygon box according to the range of the detection area
Draw a statistical line	The arrow direction of the statistical line is to enter, and the statistical line is drawn according to the requirements.
Sensitivity	Sensitivity controls the difficulty of alarm. The greater the sensitivity, the easier it is to generate an alarm. If the sensitivity is too high, it is easy to generate a false alarm. If the sensitivity is too low, it is easy to generate a missed alarm. In general, the default value can be used.
Minimum size	The minimum value of the ratio of the allowable target width to the image width. Generally, the default value can be set. Special scenes need to be adjusted.
Maximum size	The maximum value of the ratio of the allowed target width to the image width. Generally, the default value can be set. Special scenes need to be adjusted.
Enable the out-of-limit alarm	Over-limit alarm when the number of people counted exceeds the set threshold

Restrictions on use:

When setting the counting line, try to draw it in the middle of the monitoring area, which can be adjusted according to the actual scene. The direction of the detection line should be perpendicular to the direction of the target movement as far as possible. If

the equipment installation can not meet the above requirements, it may affect the detection effect of this function.

Statistics of the number of people who draw lines

Instructions for using the algorithm:

Project	Explain
Functional description	It is used in general monitoring places to count the number of people passing through the line drawing area set by the user through video.
Instructions for use	The installation height of the camera is 3.5-2.5 meters, the angle of view is 30-50 degrees, the light in the field of view is stable, there is no strong light interference, and the image is clear. The width of the head and shoulder area is not less than 120 pixels (2 million).

If the use scene, camera installation, field of view and imaging effect cannot meet the above requirements, the detection effect of this function may be affected.

Algorithm configuration parameters:

Parameter	Explain
Draw the detection area	Draw a polygon box according to the range of the detection area
Draw a statistical line	The arrow direction of the statistical line is to enter. Draw a statistical line as required.

Sensitivity	Sensitivity controls the degree of difficulty of alarm. The higher the Sensitivity is, the easier it is to generate an alarm. If the Sensitivity is too high, it is easy to generate a false alarm. If the Sensitivity is too low, it is easy to generate a missed alarm. In general, the default value can be used.
Minimum size	The minimum value of the ratio of the allowable target width to the image width. Generally, the default value can be set. Special scenes need to be adjusted.
Maximum size	The maximum value of the ratio of the allowed target width to the image width. Generally, the default value can be set. Special scenes need to be adjusted.
Enable the out-of-limit alarm	Over-limit alarm when the number of people counted exceeds the set threshold

Restrictions on use:

When setting the counting line, try to draw it in the middle of the monitoring area, which can be adjusted according to the actual scene.

Notice：

- The rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line is the same as the rule for counting the number of people who draw a line. If the target.

Regional headcount

Algorithm Instructions for use:

Project	Explain
Functional description	Indoor (unblocked environment), count the number of people in the area drawn in the current scene through video
Instructions for use	The installation height of the camera is 3.5-2.5 meters, the angle of view is 30-50 degrees, the light in the field of view is stable, there is no strong light interference, and the image is clear. The head is not blocked, and the head pixel is greater than 40 pixels (2 million).

If the use scene, camera installation, field of view and imaging effect cannot meet the above requirements, the detection effect of this function may be affected.

Algorithm configuration Parameter:

Parameter	Explain
Draw the detection area	Draw a polygon box according to the range of the detection area
Sensitivity	Sensitivity controls the degree of difficulty of alarm. The higher the Sensitivity is, the easier it is to generate an alarm. If the Sensitivity is too high, it is easy to generate a false alarm. If the Sensitivity is too low, it is easy to generate a missed alarm. In general, the default value can be used.
Minimum size	The minimum value of the ratio of the allowable target width to the image width. Generally, the default value can be set. Special scenes need to be adjusted.
Maximum size	The maximum value of the ratio of the allowed target width to the image width. Generally, the default value can be set. Special scenes need to be adjusted.
Enable the	Over-limit alarm when the number of people counted exceeds the set threshold

out-of-limit alarm	

Queue headcount

Algorithm Instructions for use:

Project	Explain
Functional description	It is used in general monitoring places to count the number of people passing through the user setting area through video.
Instructions for use	The installation height of the camera is 3.5-2.5 meters, the angle of view is 30-50 degrees, the light in the field of view is stable, there is no strong light interference, and the image is clear. The width of the head and shoulder area is not less than 120 pixels (2 million).

If the use scene, camera installation, field of view and imaging effect cannot meet the above requirements, the detection effect of this function may be affected.

Algorithm configuration Parameter:

Parameter	Explain
Draw the detection area	Draw a polygon box according to the range of the detection area
Sensitivity	Sensitivity controls the degree of difficulty of alarm. The higher the Sensitivity is, the easier it is to generate an alarm. If the Sensitivity is too high, it is easy to generate a false alarm. If the Sensitivity is too low, it is easy to generate a missed alarm. In general, the default value can be used.

Minimum size	The minimum value of the ratio of the allowable target width to the image width. Generally, the default value can be set. Special scenes need to be adjusted.
Maximum size	The maximum value of the ratio of the allowed target width to the image width. Generally, the default value can be set. Special scenes need to be adjusted.
Enable the out-of-limit alarm	Over-limit alarm when the number of people counted exceeds the set threshold

8. 7. 2 Regional configuration

Enter [Configuration- > Intelligent Analysis- > Passenger Flow] to enter the regional configuration information interface, as shown in the following figure.



[Area]: Set the serial number of the detection area and enable the area configuration algorithm.

[Zone Name]: Set the zone name corresponding to each zone, and set the supported channels.

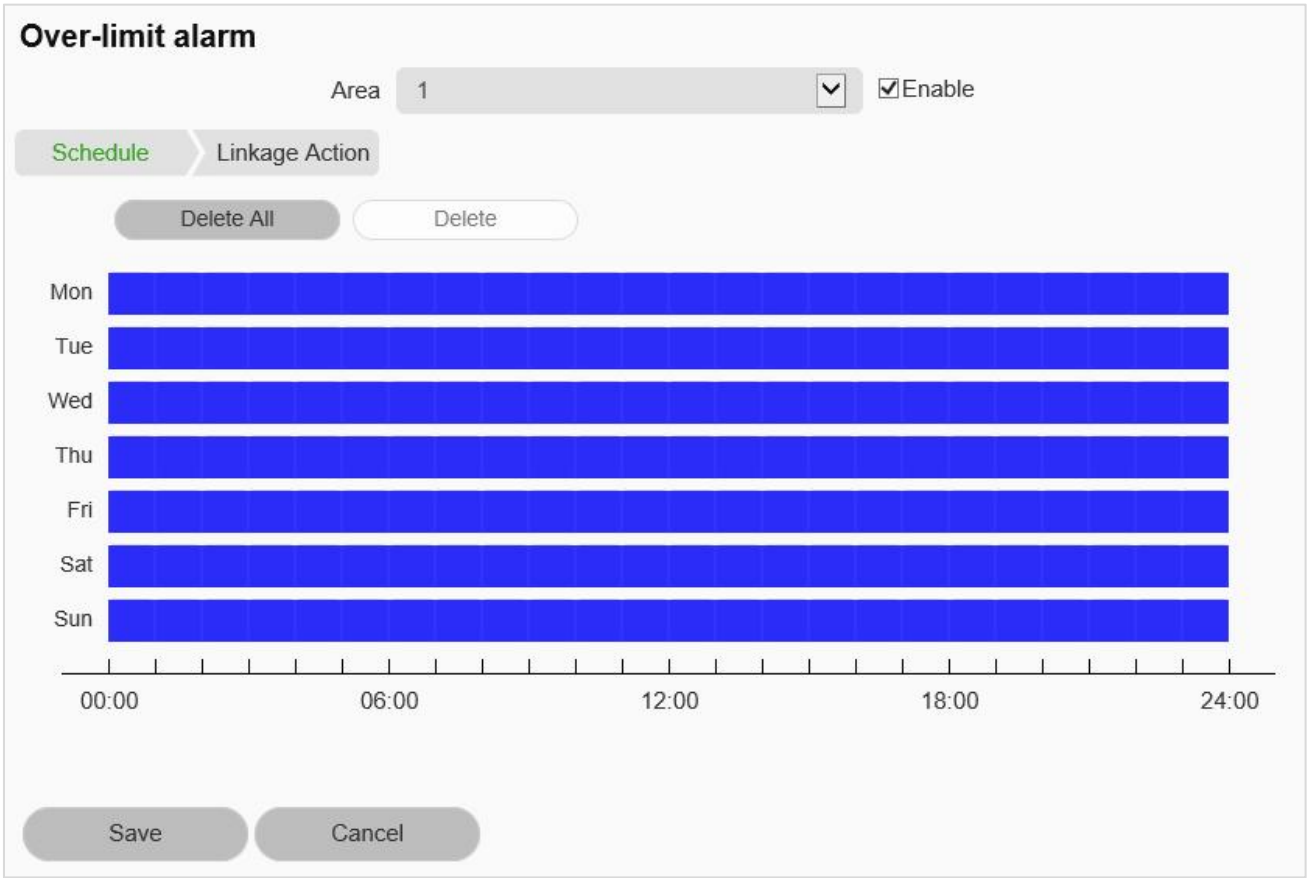
[Existing number of people]: set the number of people allowed in this area.

[Over-limit alarm number]: This number includes the existing number of people. When the number of people is exceeded, an over-limit alarm will be given.

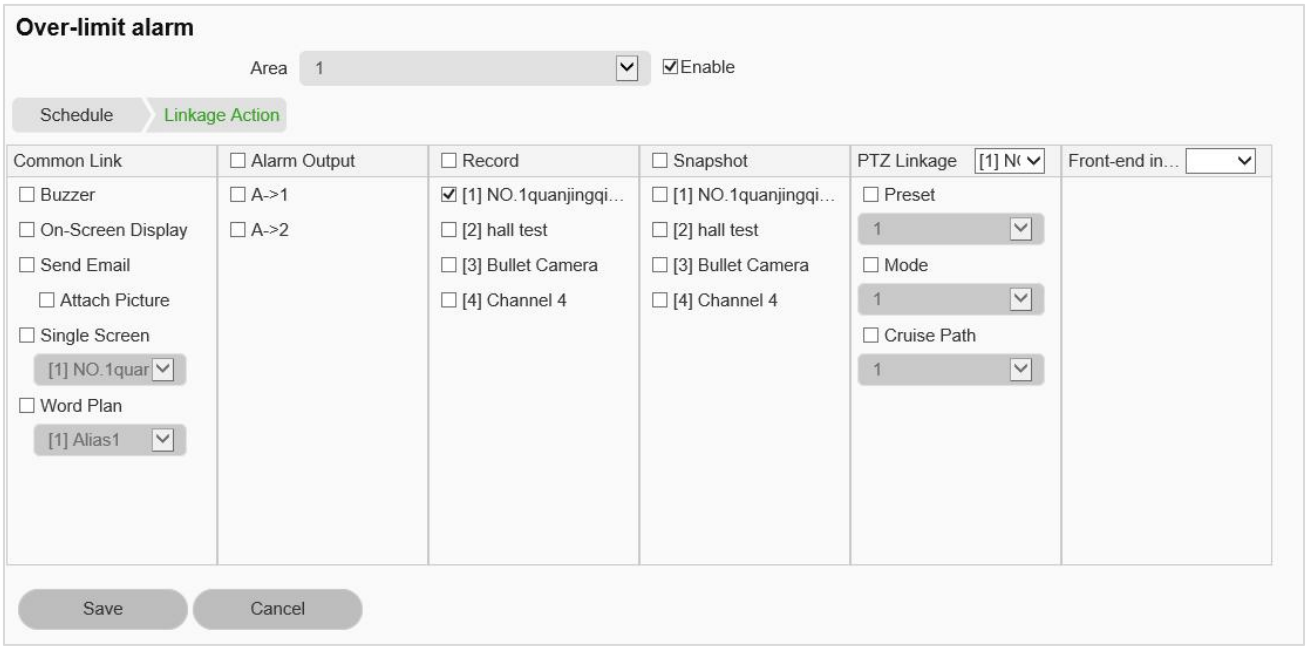
[Counting clearing time]: Set the counting clearing time, and support daily counting clearing or never clearing.

8. 7. 3 Over-limit Alarm

Enter [Configuration- > Intelligent Analysis- > Passenger Flow] and select the overrun alarm label, as shown in the following figure.



Select the detection area to set the defense deployment time and linkage mode. The linkage mode supports the sound alert and output port of the linkage front end, as shown in the following figure.



8. 7. 4 Display configuration

Enter [Configuration- > Intelligent Analysis- > Passenger Flow], and select to display the configuration tab, as shown in the following figure.



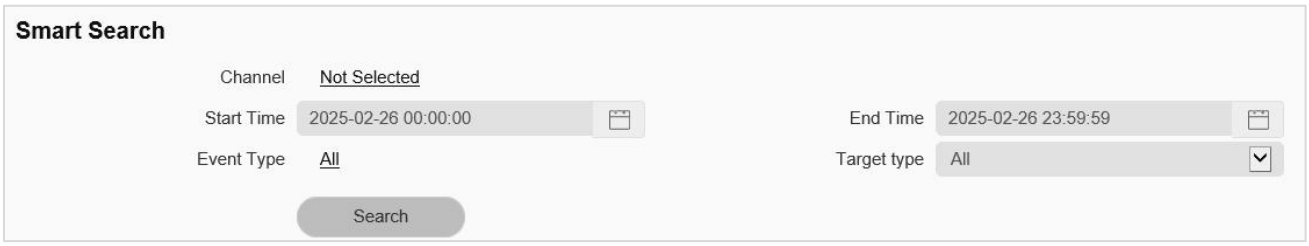
When the [Enable this display] check box is checked to select the display area, click the [Save] button to display the passenger flow statistics on the UI interface.

Switch [Display Area] and click [Save] to update [Area] of passenger flow statistics in the UI interface.

Tiandy

8.8 Intelligent Retrieval

8. 8. 1 Intelligent search



Retrieve by event type.

[Target Channel]: Select the channel to retrieve.

[Start Time/End Time]: Select the time range to retrieve.

[Event type]: select that event type to be analyze intelligently.

[Target Type]: Select the target to be retrieved, including person or vehicle.

Click to search and display the result according to the event. Click on the left to display the channel number, snapshot time, event type and target type in list mode, display the channel number, snapshot time, event type and target type in picture mode, or display or hide the search conditions.

[Picture]: Display the snapshot picture.

[Video]: Display the video at the time of capture. You can perform [Play/Pause] [Stop] [Fast Forward] [Step] operations on the video.

[Select all]: Select all picture results.

[Export]: Export the selected picture to the local.

8. 8. 2 Intelligent scene retrieval



Retrieve by event type.

[Target Channel]: Select the channel to retrieve.

[Start Time/End Time]: Select the time range to retrieve.

[Event type]: select that event type to be analyze intelligently.

[Target Type]: Select the target to be retrieved, including person or vehicle.

Click to search and display the result according to the event. Click on the left to display the channel number, snapshot time, event type and target type in list mode, display the channel number, snapshot time, event type and target type in picture mode, or display or hide the search conditions.

[Picture]: Display the snapshot picture.

[Video]: Display the video at the time of capture. You can perform [Play/Pause] [Stop] [Fast Forward] [Step] operations on the video.

[Select all]: Select all picture results.

[Export]: Export the selected picture to the local.

9 AI

Deep analysis function can be used to capture, identify and analyze vehicles, faces, human bodies, etc. Please understand the following items before use.

1、Explanation of terms

Terms	Explanation
Road	It refers to the ordinary surveillance camera installed outdoors, on the roadside and on the side.
Bayonet/electric alarm	It refers to a traffic camera installed above the road and used with a fill light.
Import and export	It refers to the entrances and exits with access roads and gates installed in residential areas, schools, office buildings, etc.
Indoor	Refers to the indoor monitoring equipment IPC installed on the indoor wall or roof.

2、Capture requirements

Terms	Explanation
Vehicles	Target width greater than 200 pixels (1080P)
Face	Face target width 60 pixels (1080P)
Face Recognition	Face target width 80 pixels (1080P)
Body	The width of the human target is 70 pixels (1080P).
Non-motor	Non-motor vehicle width greater than 90 pixels (1080P)

vehicle	
Other	1. Vehicle target width is greater than 200 pixels (1080P), human target width is greater than 70 pixels (1080P), and non-motor vehicle width is greater than 90 pixels (1080P); 2. Support up to 8 motor vehicles or 16 human or non-motor vehicles to output at the same time 3. Target detection stays in the visual field for more than 2 seconds. 4. The vehicle target is clear and unobstructed. 5. The image shall be in color 6. Original resolution video input is required

3、Instructions for algorithm

Algorithm	Instructions for use
Capture rate	1. Vehicle target width is greater than 200 pixels (1080P), human target width is greater than 70 pixels (1080P), and non-motor vehicle width is greater than 90 pixels (1080P); 2. Support the simultaneous output of up to 8 motor vehicles or 16 human bodies or non-motor vehicles; 3. that target detection stay in the visual field for more than 2 seconds; 4. that target of the vehicle is clear and unobstructed; 5. The image shall be in color; 6. require original resolution video input.

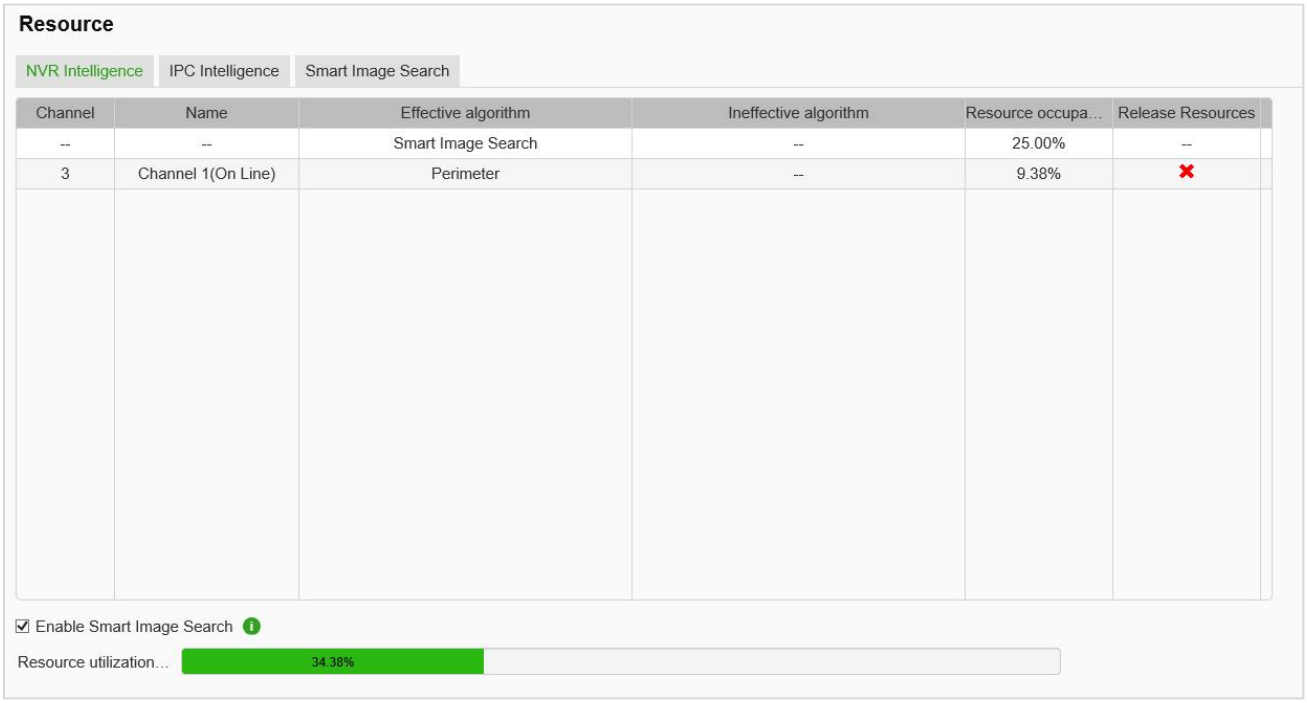
License plate	1. The width of the license plate is greater than 100 pixels, and the horizontal and vertical angles of the license plate are less than 45 degrees; 2. The vehicle stays in the field of vision for more than 2 seconds; 3. that license plate target is clear and unobstructed; 4. The image shall be in color.
Human body attribute (non-motor vehicle)	1.The target width is greater than 90 pixels 2. The target stays in the field of vision for more than 2 seconds; 3. that target is clear and unobstructed; 4. that image need to be colored, and the color cast image is output accord to the color of the image; 5.For low quality images, the output is unknown.
Face attribute	1. Face target width is greater than 70 pixels 2. that face target stay in the visual field for more than 2 seconds; 3. that face target is clear without occlusion; 4. that image need to be colored, and the color cast image is output accord to the image presentation result; 5.For low quality images, the output is unknown. 6. There is no index requirement for human face and human body in the cab of the vehicle.
Human attributes	1. that width of the human body target is more than 70 pixel; 2. that target of the human body stay in the visual field for more than 2 seconds;

	3. that human body target is clear and unobstructed; 4. that image need to be colored, and the color cast image is output accord to the color of the image; 5.For low quality images, the output is unknown. 6. There is no index requirement for human face and human body in the cab of the vehicle.
Vehicle properties	1. Vehicle target width is greater than 200 pixels 2. The vehicle stays in the field of vision for more than 2 seconds; 3. that target of the vehicle is clear and unobstructed; 4. that image need to be colored, and the color cast image is output accord to the color of the image; 5. For low-quality images, the output result is unknown. 6. Only daytime is supported.

9.1 Resource

The resource allocation of NVR, IPC and intelligent map search can be viewed.

9. 1. 1 NVR Intelligence



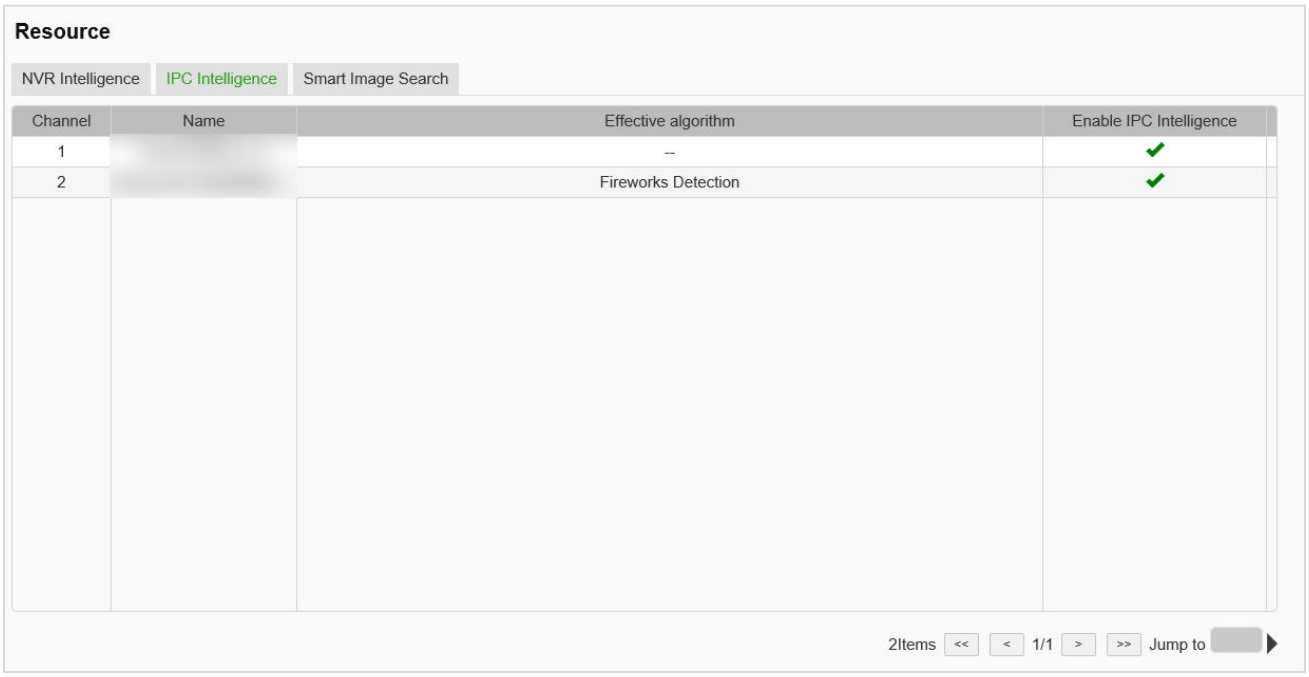
The NVR intelligent interface only displays the channel that enables the NVR intelligent algorithm and the effective algorithm. If [Enable intelligent image search] is checked, the IPC intelligent algorithm of the channel is automatically turned off and occupies 25% of the computing power.

Click the " ✖ " icon to release the resource, that is, close all NVR intelligent algorithms of the channel.

Notice：

- Intelligent image search supports face, structured, NVR behavior analysis (perimeter, trip line, double trip line) and NVR intelligent dynamic detection algorithms.

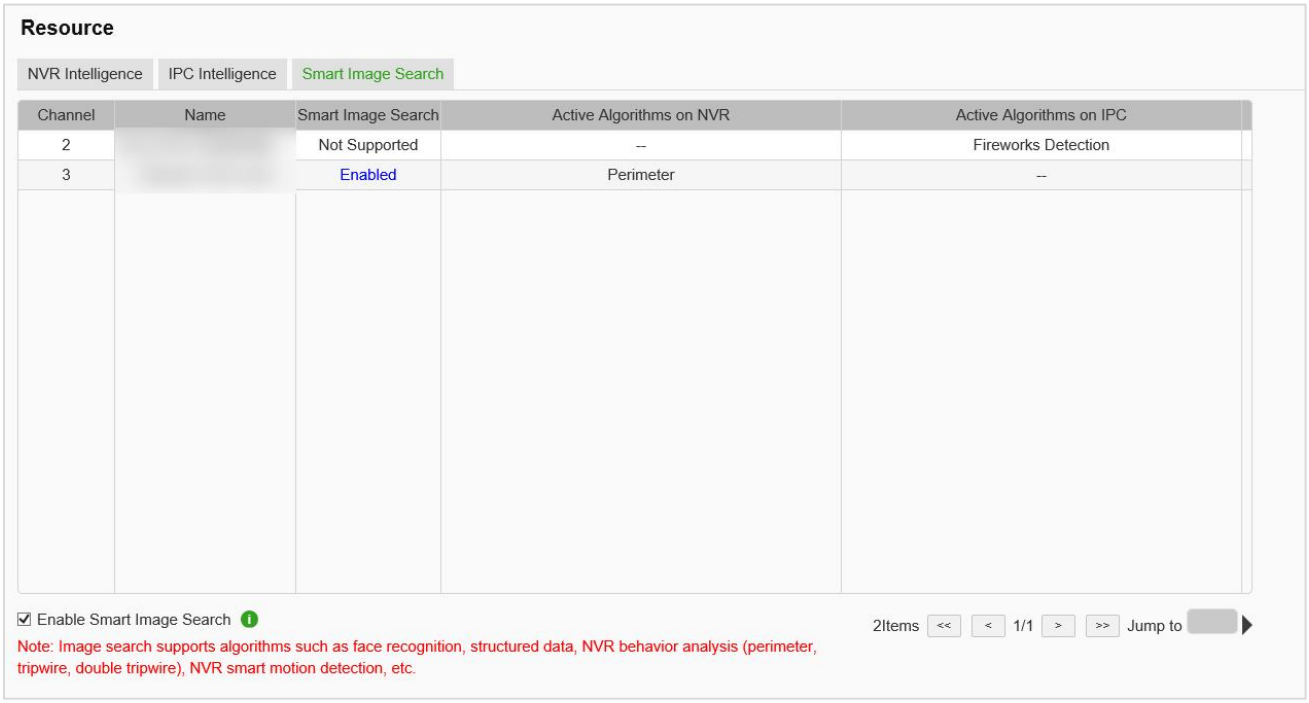
9. 1. 2 IPC Intelligence



" " Indicates that the channel has the IPC smart algorithm enabled. Click the " " icon to close all IPC intelligent algorithms of the channel.

" " Indicates that the channel has the IPC smart algorithm disabled. Click the " " icon to enable the IPC intelligent algorithm selected by the channel in the algorithm configuration interface.

9. 1. 3 Intelligent image search



The intelligent image search interface displays the channel that enables the intelligent algorithm and the effective algorithm, and displays whether the algorithm supports the intelligent image search.

Notice：

- Smart Map Search can only search the data when [Enable Smart Map Search] is checked, and cannot search the data when Smart Map Search is not enabled.

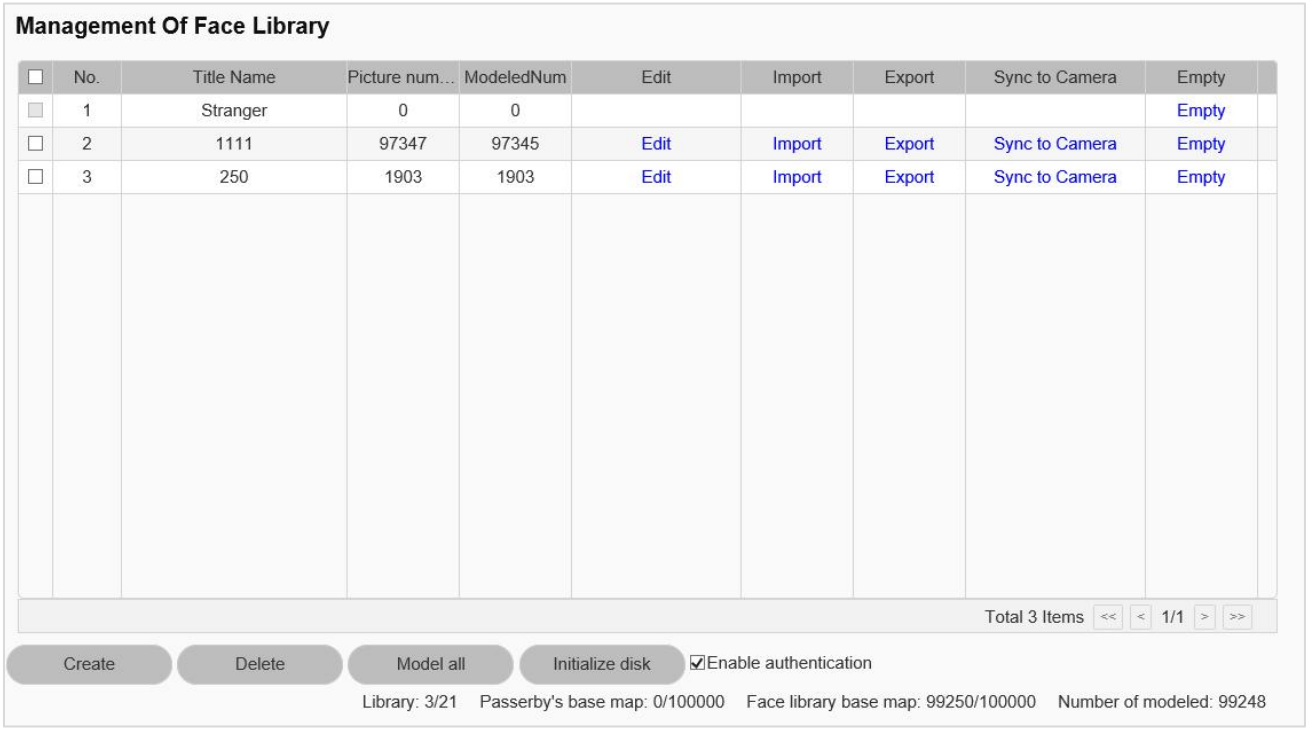
9.2 Face Library

Face database management is used to group and manage the face base map. The table displays the existing face database. You can import and export the face database on the web side, synchronize the front end, and query, import, export, and delete the base map of the face database.

9. 2. 1 Management Of Face Library

The face database is used to group and manage the face base image. The existing face database data can be queried, and the face base image database can be managed through the [Add] and [Delete] buttons.

1. Enter [Configuration- > In-depth Analysis- > Face Library], and select the Face Library Management tab, as shown in the following figure.



2. Check [Enable Authentication]. A prompt box will pop up during the operation, as shown in the following figure. Enter the correct user name and password to proceed to the next step. Only the administrator user can operate the face database.



3. Click the [Edit] button to modify the name and description of the face library, as

shown in the following figure.



4. In the face library list, click the [Import] button to import a box file containing the face library. Note that the imported file format is.box, and you need to enter the password of the box file when importing, as shown in the following figure.

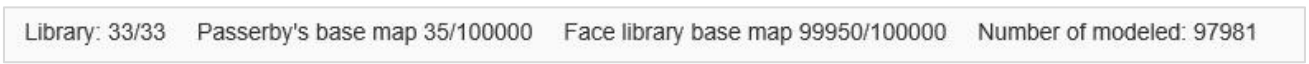
5. In the face library list, click the [Export] button to export a box file containing the face library. Set the box file password to import the file into the computer disk, as shown in the following figure.

6. Click the [Synchronize to Front End] button to synchronize the NVR face database to the selected IPC channel, as shown in the following figure. You can choose to overwrite synchronization (overwrite the original IPC face database) or add synchronization (add the NVR face database on the original IPC face database).

7. Click the [Create] button and enter the name and description of the new face library to complete the addition of the face library, as shown in the following figure.

8. Select the face database you want to delete and click the [Delete] button to delete the face database, as shown in the following figure.

9. Click the [Modeling All] button to model the base map of all libraries. The modeled quantities can be viewed in the lower right corner, as shown in the following figure.



9. 2. 2 Face Library Management

Notice:

Image requirements:

(1) The image size is not less than 100 * 100 and not more than 1080 * 1920;

(2) The image shall be color image, JPG, PNG format, etc.;

(3) The distance between the two eyes should be greater than or equal to 60 pixels, preferably greater than or equal to 90 pixels;

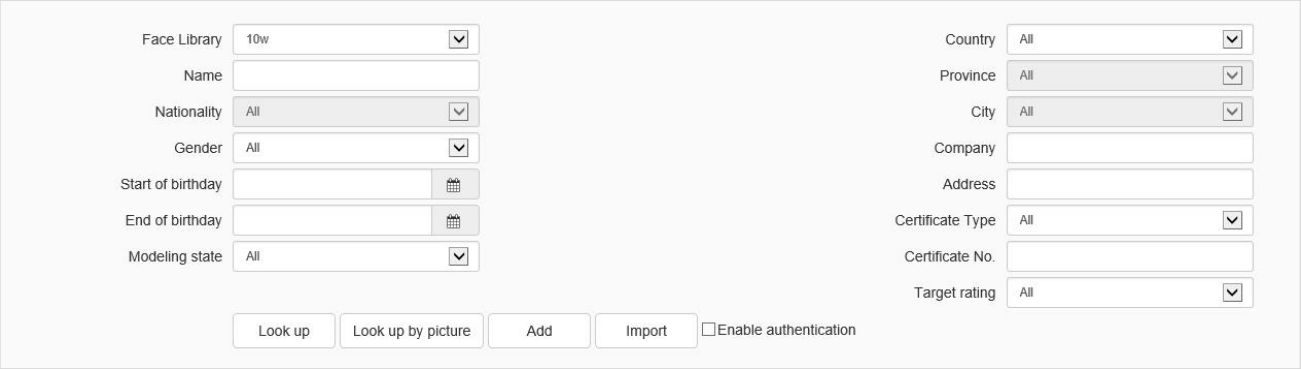
(4) Require the integrity of the face, clear and unobstructed images, such as not wearing masks, not wearing sunglasses, glasses frames can not cover the eyes;

(5) The facial expression of the image is neutral or smiling, and the expression should not be exaggerated;

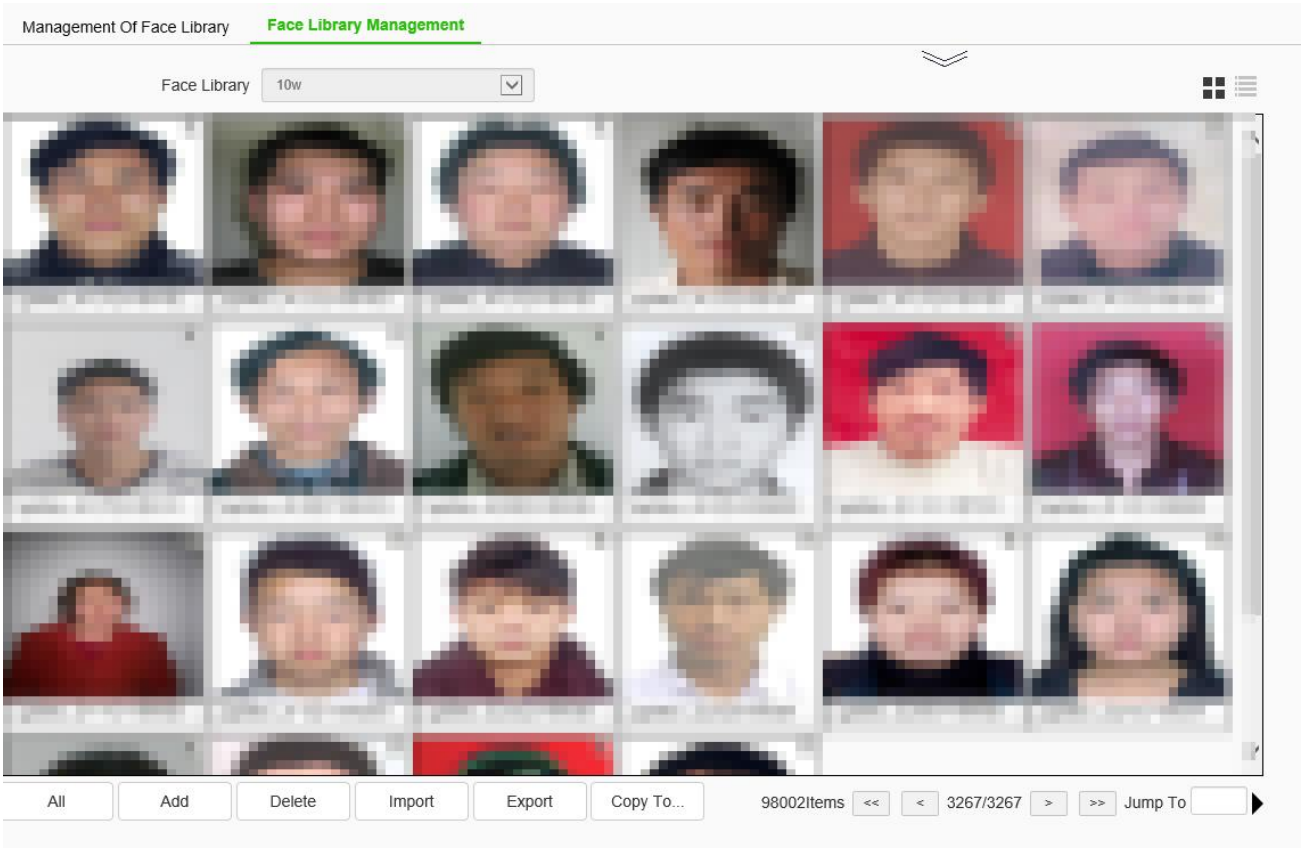
(6) The horizontal rotation angle, pitch angle and tilt angle of the face are all within ± 10 degrees.

Face base image is the basis of face recognition algorithm. You can perform [Search], [Search by Image], [Add] face base images, or [Import] face base images in batches.

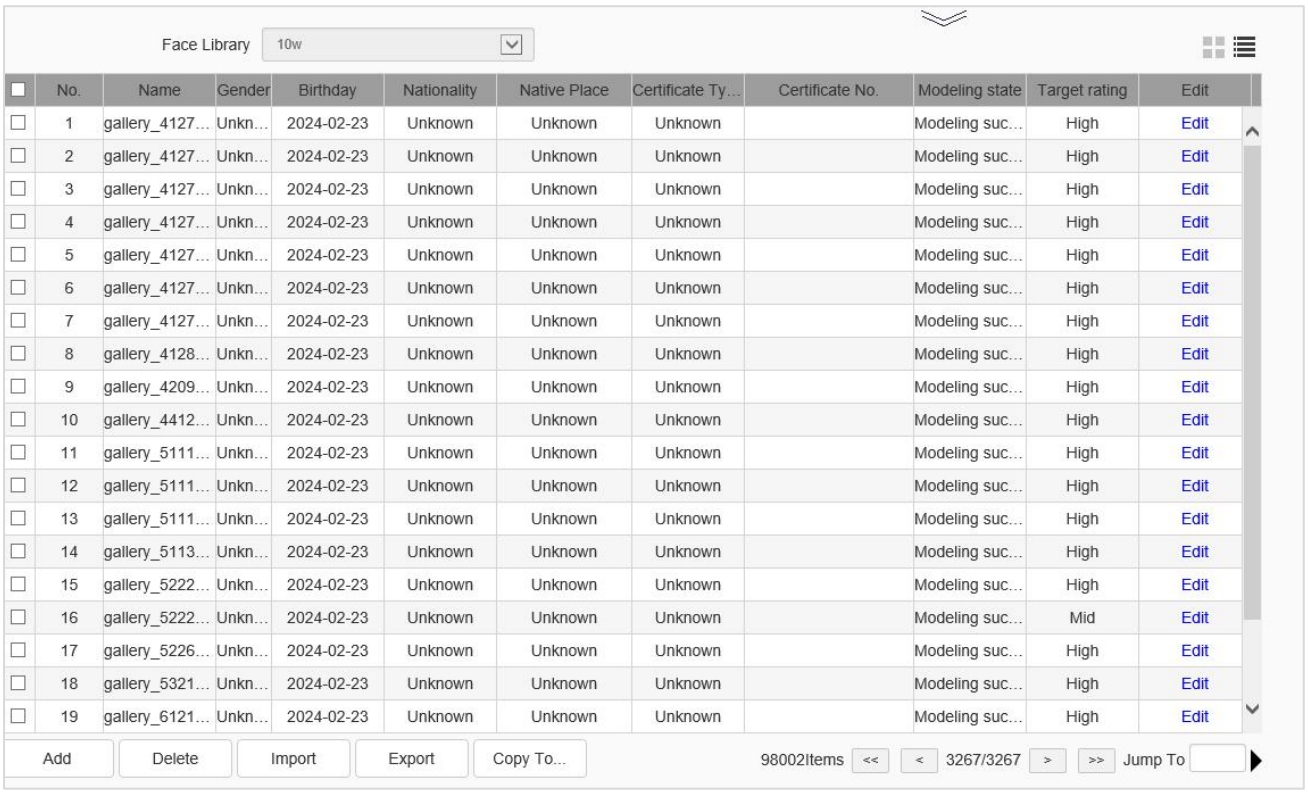
1. Enter [Configuration- > Depth Analysis- > Face Library], and select the Face Base Library Management tab, as shown in the following figure.



2. [Search Method]: Set the search condition first, and then click the [Search] button. Click or to show hide the search criteria. After the base image is searched, operations such as deleting, exporting, and copying the base image of the current face database to other people's face database can be performed. , as shown in the following figure.



3. Click the button to display the search results by details, as shown in the following figure.



4. Click the [Search by image] button to select the image from the USB disk or computer disk, and then search the corresponding base image in the face database,.

4. Click the [Import] button to select a picture from the U disk or local storage and add it to the face library. When you select a folder, you can add pictures that match the entire folder.

After the import is completed, a prompt box pops up.

5. After the query is completed, click the [Export] button to export the picture and its information. The picture information is shown below.

6. Click [Copy to ⋯] Button, you can copy the selected base image to other people's face library, as shown in the following figure.

9.3 Facial Configuration

Notice:

- Installation requirements of face detection and recognition camera:

（1）The installation height is about 2.5m, and the installation is front or side.

（2）Angle: pitch angle ∈ [-30, 30], yaw angle ∈ [-45, 45], subject to the target capture pixel.

（3）Effect: When configuring face detection and face recognition, pay attention to the video effect of access, and the face pixels shall meet the use requirements, so as to ensure the clarity of the face as far as possible.

- Instructions for use:

（1）Face target width is greater than 60 pixels (1080P)

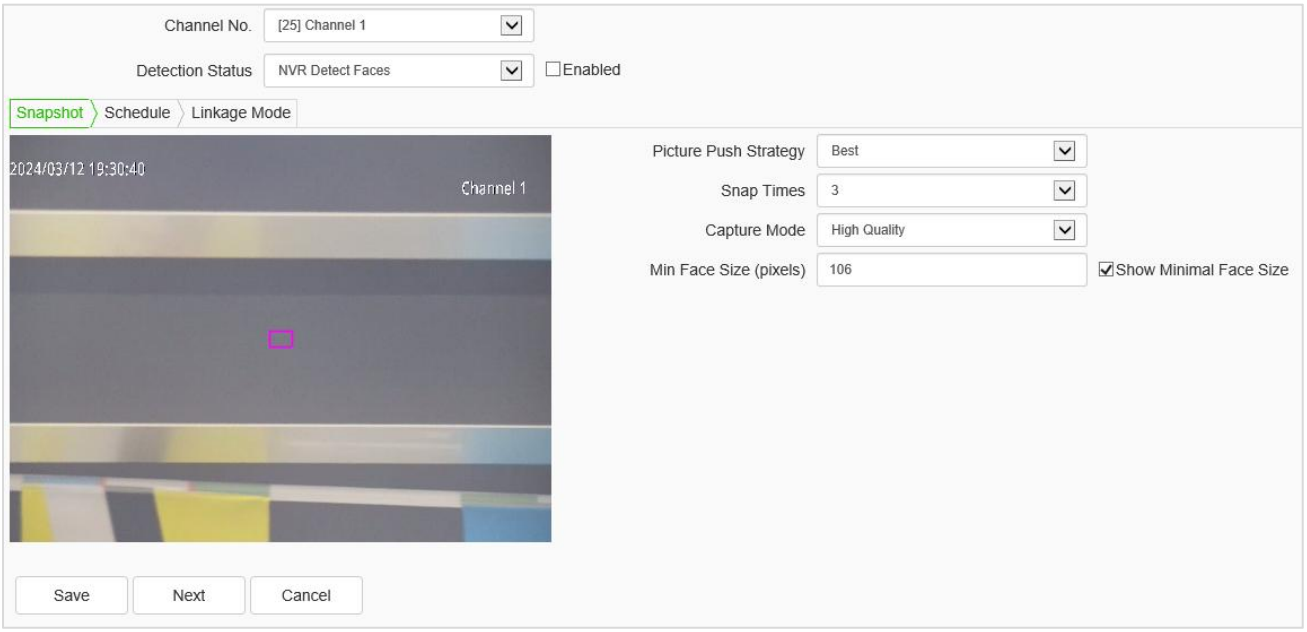
（2）The face target stays in the visual field for more than 2 seconds.

（3）The face target is clear without occlusion.

（4）Requires native resolution video input.

9. 3. 1 Face Detection

1. Enter [Configuration- > In-depth Analysis- > Face Configuration] and select the Face Detection tab, as shown in the following figure.



2.Select the algorithm type of face detection.

IPC detection means that the front end is connected to the capture camera, and the capture camera detects and captures the face. NVR detection means that the NVR detects and captures the face. When the front-end IPC is a face recognition machine, only the IPC detection can be enabled. When the IPC does not support the face detection function, only the NVR detection can be enabled.

3. Set the capture Parameter.

(1) Draw the face detection area: during IPC detection, the detection area can be set on the screen.

Pushing graph strategy: including the optimal strategy and the fastest strategy. The [optimal strategy] is the clearest picture that a person captures from entering to leaving. [The fastest strategy] is to capture the face immediately when it is detected.

[Number of snapshots]: the number of snapshots when a face is detected. 1, 2, 3 can be set.

[Capture mode]: Support full capture mode, high quality mode and custom mode.

[Full capture mode]: refers to that the target appearing in the field of vision will be captured without being controlled by the security boundary and filtered by the security boundary threshold.

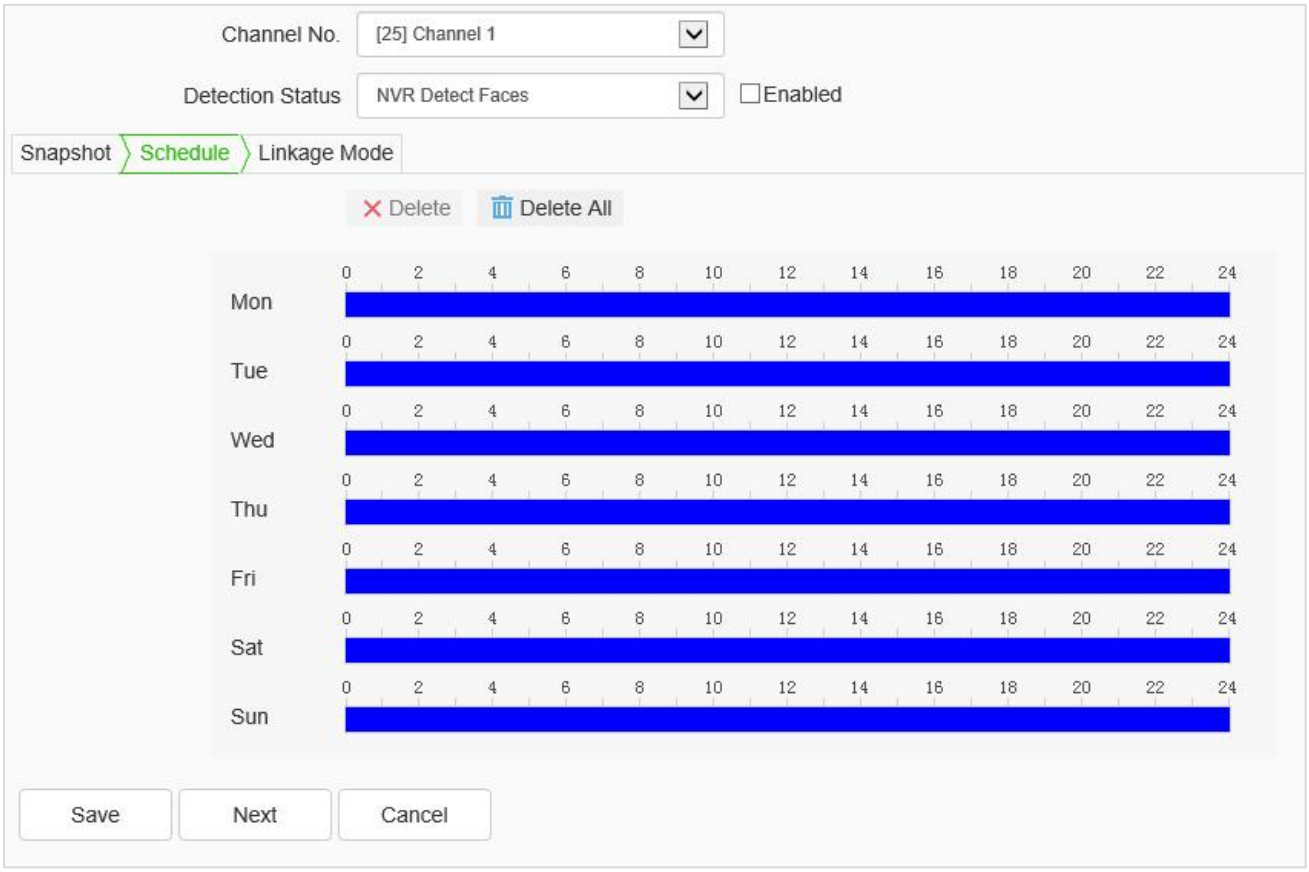
[High-quality mode]: refers to filtering according to the security boundary threshold configured by the system by default, that is, only capturing the target with better quality.

[Custom mode]: refers to filtering according to the safety boundary value set by the user to capture the corresponding target.

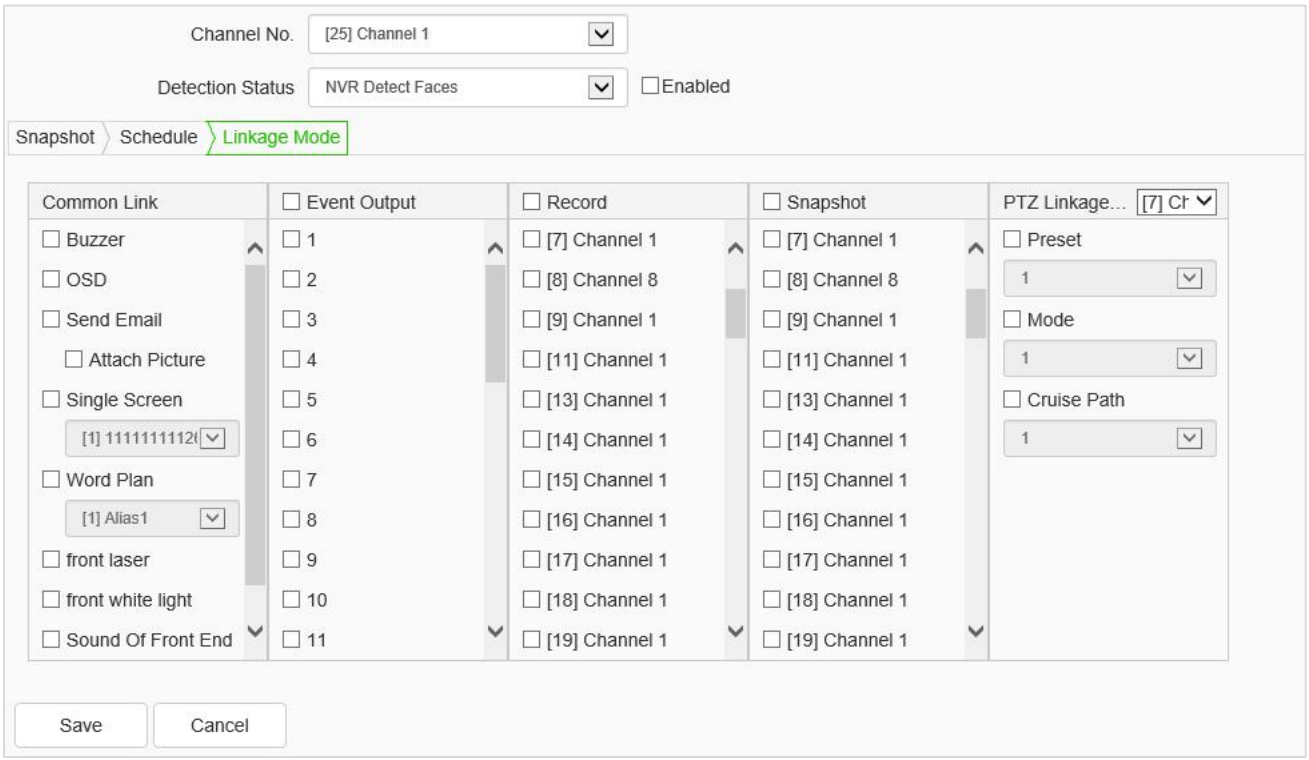
(2) Set the maximum and minimum face size, which represents the percentage of the target width in the picture.

(3) Set the sensitivity. The larger the value is, the more sensitive it is. The detection rate will increase, and the false detection will also increase.

4. Set the deployment time, as shown in the figure below.



5. Set the linkage mode. Set the local alarm linkage of NVR detection, including linkage output, linkage video recording, linkage snapshot, PTZ linkage channel, etc., as shown in the figure below.



6. Click the [Save] button to save the corresponding Parameter settings. Click [Reset] to restore the last saved Parameter.

9. 3. 2 Face Recognition

Notice:

- Using Explain:

(1) The width of the face target is greater than 80 pixels (1080P);

(2) The bottom library picture is a full-face photo within one year, without beauty effect;

(3) that identification photo is clear without the influence of light and is a color picture;

(4) Do not support special circumstances such as long bangs covering the face in a

large area;

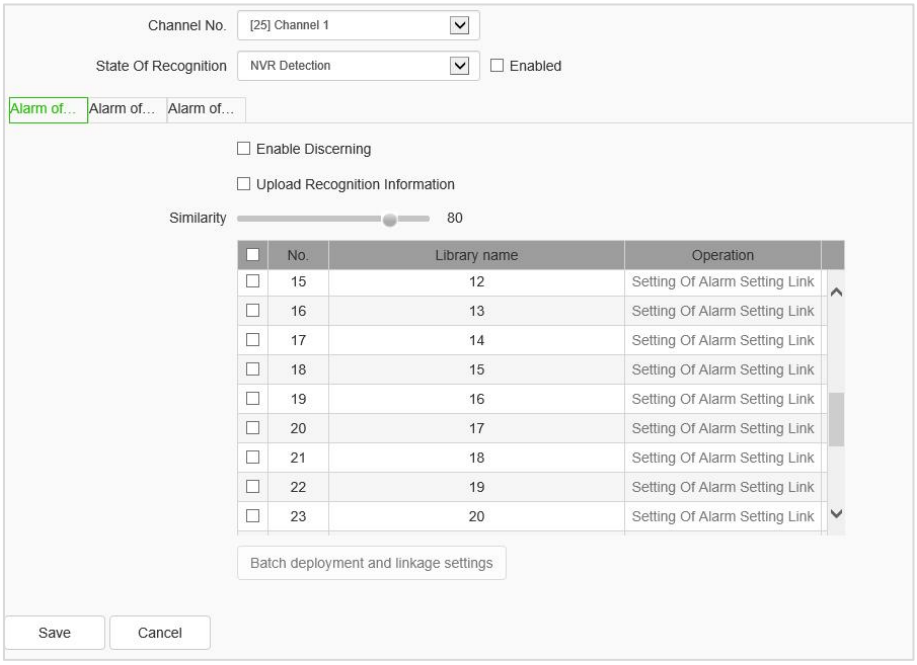
(5) Requires native resolution video input.

1. Enter [Configuration- > In-depth Analysis- > Face Configuration] and select the face recognition tag to realize functions such as comparison alarm and stranger alarm.

2. Select the algorithm type of face recognition and select to enable IPC recognition/NVR recognition.

IPC recognition means that the front end is connected to the recognition camera, and the recognition camera recognizes and compares the captured face. NVR recognition means that the NVR recognizes and compares the captured face.

3. Comparison alarm: Select the [Comparison Alarm] tab to set the Parameter of the comparison alarm, as shown in the following figure.



（1） Enable comparison, enable/disable the current channel comparison alarm function.

（2） Upload identification information and enable/disable the function of

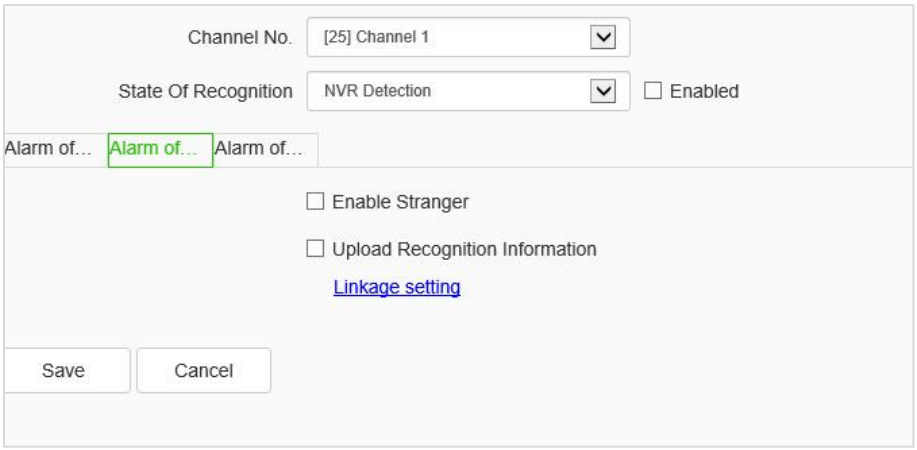
transmitting identification information.

（3） Similarity. Set the similarity. The larger the value is, the more similar it is.

（4） After selecting the face library in the face library table, click [Defense Linkage Settings] to pop up the prompt box of defense linkage settings of the face library. If the face database is not selected, the status of [Defense Linkage Settings] will be grayed out and cannot be set.

（5） Click the [Batch Defense Deployment Linkage Setting] button to pop up the defense deployment linkage setting window. Alarm linkage voice prompt, screen display, linkage local voice broadcast, linkage alarm output, linkage video recording, linkage snapshot, linkage PTZ, etc. Can be set. As shown in the following figure.

4. Stranger alarm: Select the [Stranger alarm] tab to set the Parameter of the stranger alarm, as shown in the following figure.

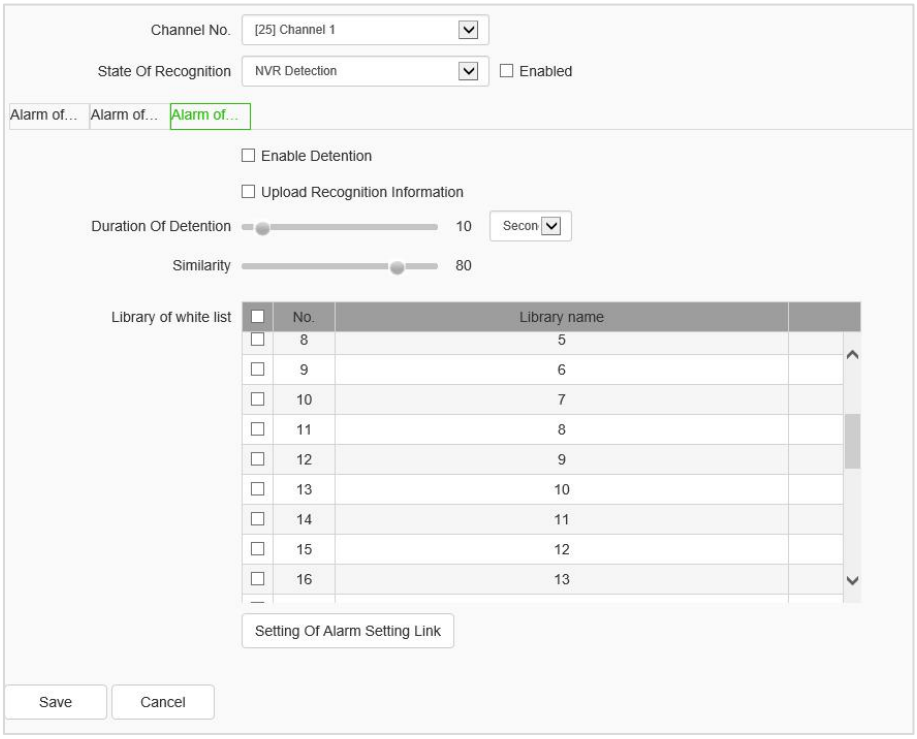


（1） Enable Stranger: Enable or disable the stranger alarm function for the current channel.

（2） Upload Recognition Information: Enable/disable the function of uploading recognition information.

（3） Click Linkage Settings to configure the linkage parameters for the stranger alarm.

5. Detention alarm: Select the [Detention Alarm] tab to set the Parameter of the detention alarm, as shown in the following figure.



(1) Enable detention, enable/disable the current channel detention alarm function.

(2) Upload identification information, enable/disable the function of uploading identification information.

(3) Similarity. Set the similarity. The larger the value is, the more similar it is.

(4) Retention time, set the retention time range as 1-99, and the unit includes minute and second.

(5) When the white list library is checked, the detention alarm will not be triggered.

(6) Click the linkage setting to set the deployment linkage Parameter of detention alarm. The interface is consistent with the comparison alarm.

(7) Click the [OK] button. The data is only temporarily stored. Return to the face recognition interface and click the [Save] button to take effect.

9. 3. 3 Personnel frequency

1. Enter [Configuration- > In-depth Analysis- > Face Configuration], select the personnel frequency label, and set the frequency alarm Parameter.

2. Select the statistical group from 1 to 16.

3. Check the enable frequency to enable the frequency alarm.

4. Check Upload Identification Information to enable the function of uploading identification information.

5. Time range: set the time range as 1-23 hours or 1-366 days.

6. Frequency, set the frequency range as 1-99.

7. Similarity. Set the similarity. The larger the value, the more similar it is.

8. Set the associated channel. All channels can be selected.

9. Check the white list library, and the personnel in the white list library will not trigger the frequency alarm.

10. Click the linkage setting to set the defense deployment linkage Parameter of the frequency alarm. The interface is consistent with the comparison alarm.

9.4 Video structuring

Notice：

Structured Camera Mounting Requirements:

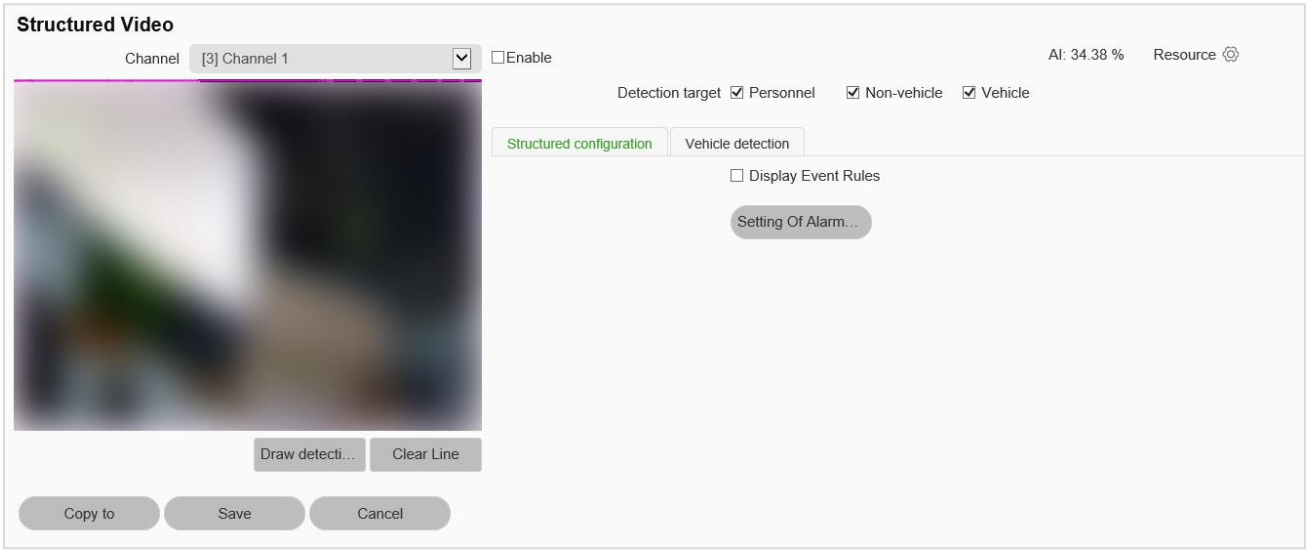
- Outdoor: height 3.5m ~ 6m, front or side mounted.
- Indoor: Height 2.5m ~ 3m, formal or side-mounted.
- Angle: pitch angle ∈ [15, 60], yaw angle ∈ [0, 45], roll angle ∈ [0, 5], subject to the target capture pixel.
- Special: identify the license plate and ensure that the horizontal and vertical angles of the license plate are less than 45 degrees.
- Effect: When configuring the face, human body and vehicle structure, pay attention to the video effect of the access. The face and human body should be clear, and the pixels should meet the use requirements. At the same time, it is also necessary to ensure that the vehicle capture is clear, the license plate characters are clear, and the pixels meet the requirements. If not, adjust the image effect to meet the requirement.

Notice:

- After opening, the intelligent structured algorithm needs to synchronously configure the continuous transmission center to prevent network fluctuations from causing map loss.

9. 4. 1 Video structuring

1. Enter [Configuration- > In-depth Analysis- > Video Structuring], and select the video structuring tab, as shown in the following figure.



2. There are three kinds of [detection targets], including [personnel], [non-motor vehicle] and [motor vehicle].

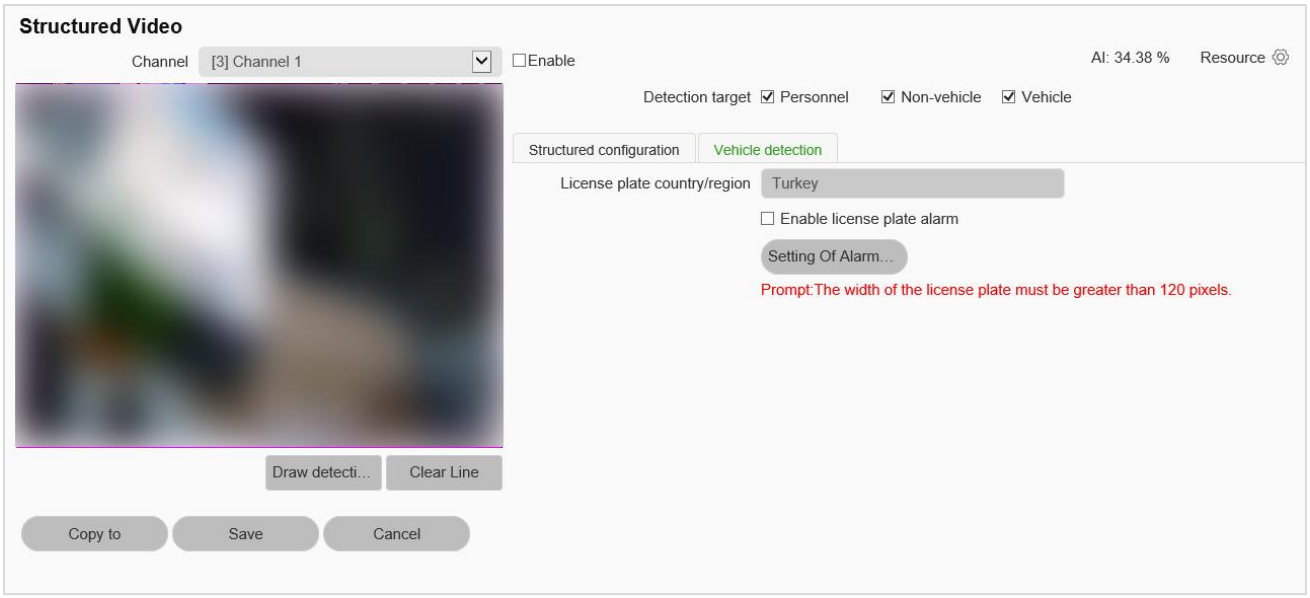
[Personnel]: output the face and its attributes, and the human body and its attributes.

[Non-motor]: output of non-motor vehicles and their attributes; and human bodies on non-motor vehicles and their attributes.

[Motor vehicle]: output the motor vehicle and its attributes.

Each algorithm can be enabled separately or simultaneously. After drawing the detection area and setting the corresponding parameters, click Save, and then click Next to proceed to [Dispatch Linkage Configuration].

3. Vehicle detection



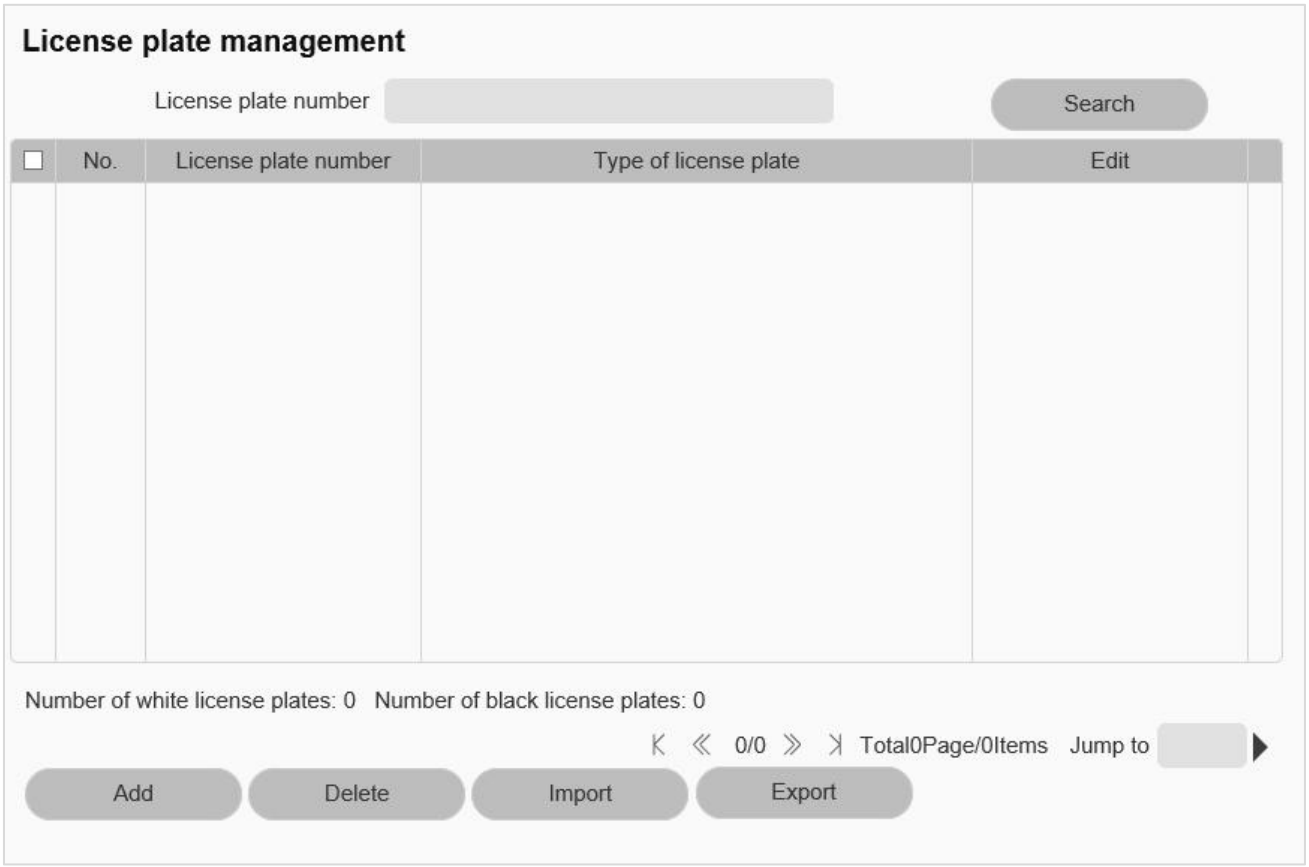
[License Plate Country/Region]: Displays the country/region of the current license plate. It can be set in [Deep Analysis-Video Structuring-Advanced Parameters].

[Enable license plate alarm]: Enable the license plate alarm after checking. When the license plate is detected in the screen, the alarm will occur.

[Deployment Linkage Configuration]: Set the deployment time and linkage mode.

9. 4. 2 License plate management

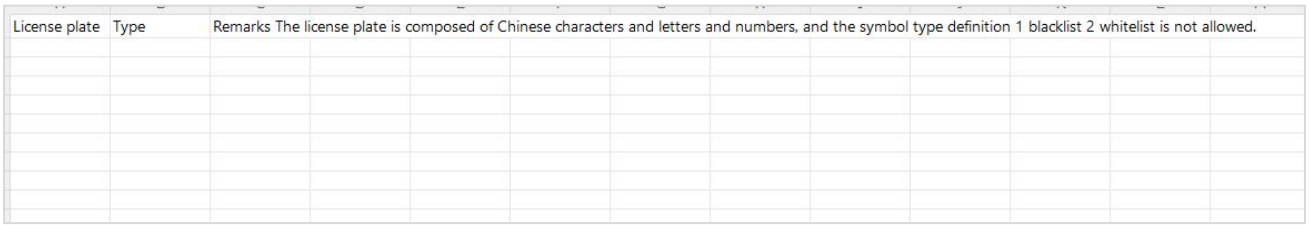
1. Enter [Configuration- > In-depth Analysis- > Video Structuring], and select the license plate management tab, as shown in the following figure.



2. If you want to add a small number of license plate numbers, you can add a single one. Click the [Add] button, enter the license plate number and select the license plate type.

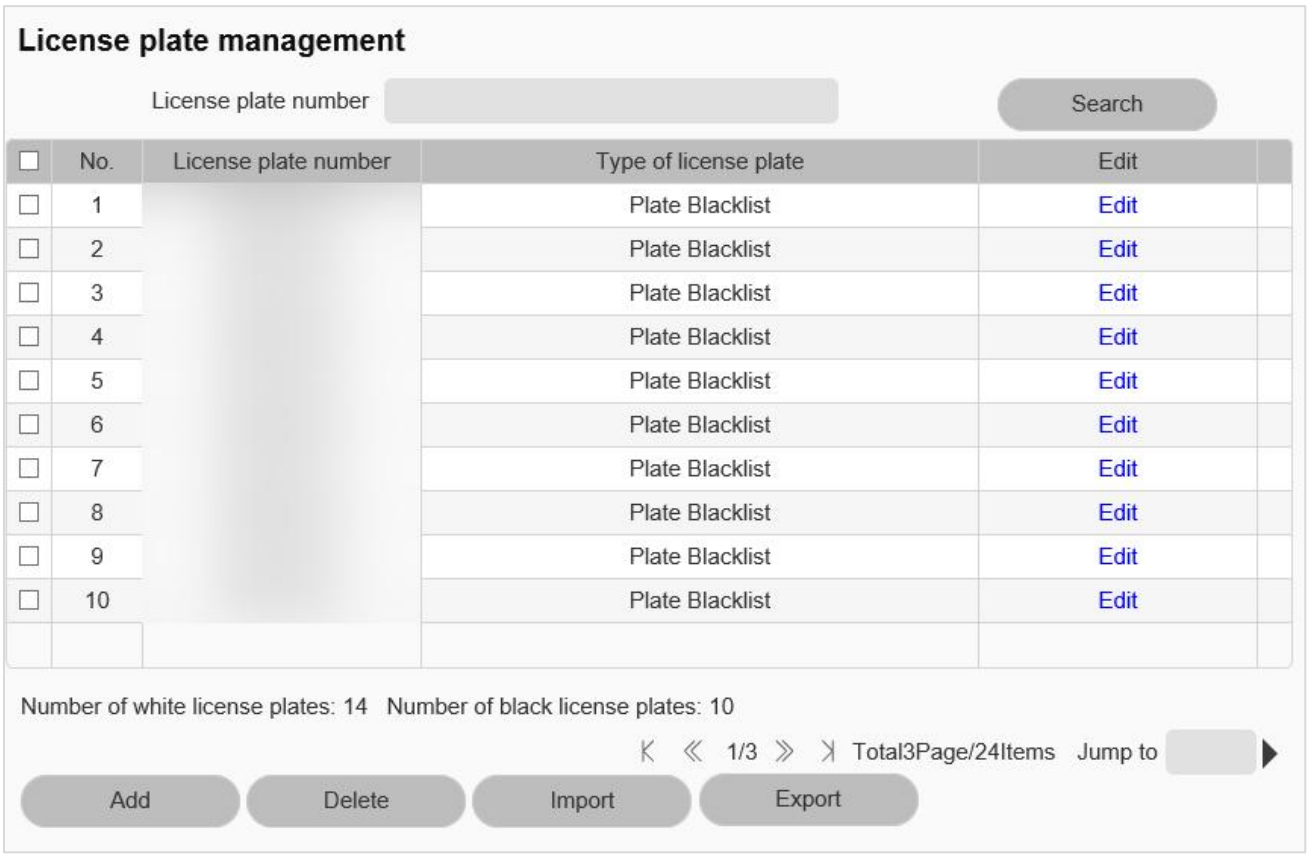


3. If importing a large number of license plates, please export the license plate library template first, as shown in the following figure.



4. After filling in the information, import the file. After successful import, the number of black and white license plates will be displayed.

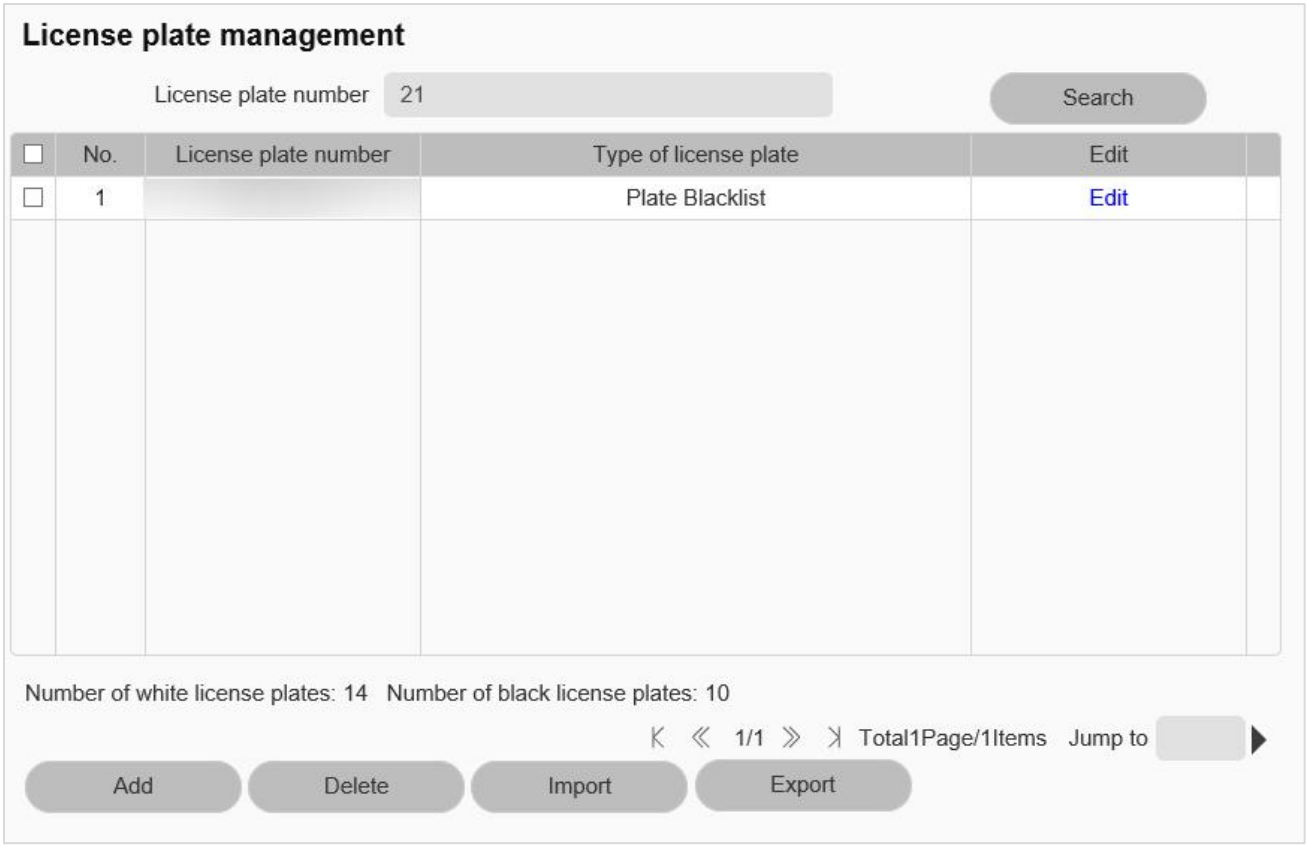




5. Select the license plate number to be deleted and click the [Delete] button to delete the license plate number.

6. Select the license plate number to be edited and click the [Edit] button to modify the license plate number or license plate type.

7. Enter the keyword of the license plate number you want to query in the input box, and click Query to query the details of the license plate number.



9.4.3 Advanced Parameters



Setting the country/region where the license plate is located can improve the license plate recognition effect in harsh environment.

9.5 Vehicle Retrieval

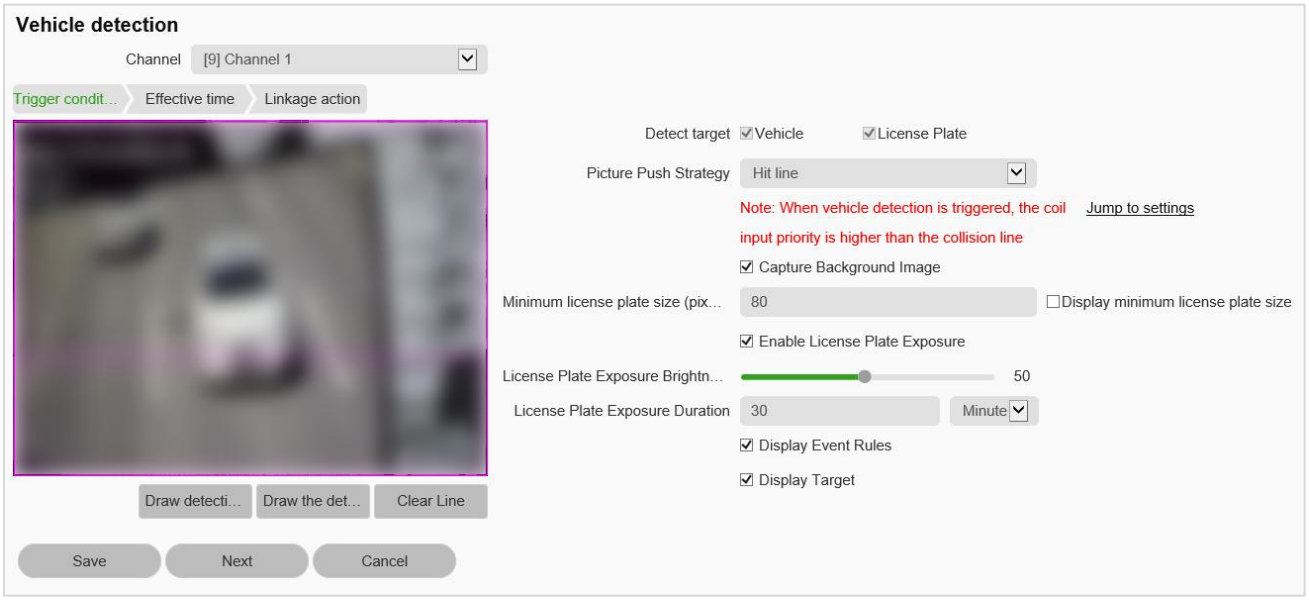
Notice:

- Camera installation requirements:
- Outdoor: height 3.5m ~ 6m, front or side mounted.

- Indoor: Height 2.5m ~ 3m, formal or side-mounted.
- Angle: pitch angle ∈ [15, 60], yaw angle ∈ [0, 45], roll angle ∈ [0, 5], subject to the target capture pixel.
- Special: identify the license plate and ensure that the horizontal and vertical angles of the license plate are less than 45 degrees.
- Effect: When configuring, it is necessary to pay attention to the video effect of access, and the pixels meet the use requirements. At the same time, it is also necessary to ensure that the vehicle capture is clear, the license plate characters are clear, and the pixels meet the requirements. If not, adjust the image effect to meet the requirement.

9. 5. 1 Vehicle detection

1. Enter [Configuration- > In-depth Analysis- > Vehicle Retrieval] and select the vehicle detection label, as shown in the following figure.



2、There are two kinds of [detection targets], including [non-motor vehicle] and [license

plate].

[Motor vehicle]: output the motor vehicle and its attributes.

[License Plate]: Output the license plate and its attributes.

Each algorithm can be enabled separately or simultaneously.

3、Draw the detection area and detection line on the screen. The detection area is the area where the algorithm takes effect, and the detection line is the rule where the algorithm takes effect.

4、After [Capture background image] is checked, when the vehicle collision line is detected in the detection area, it will be captured and sent to the image pushing module.

5、Filter small targets by setting [Minimum License Plate Size (pixels)].

6、Check [Display minimum license plate size], and a rectangle with the minimum license plate size will be displayed on the left screen.

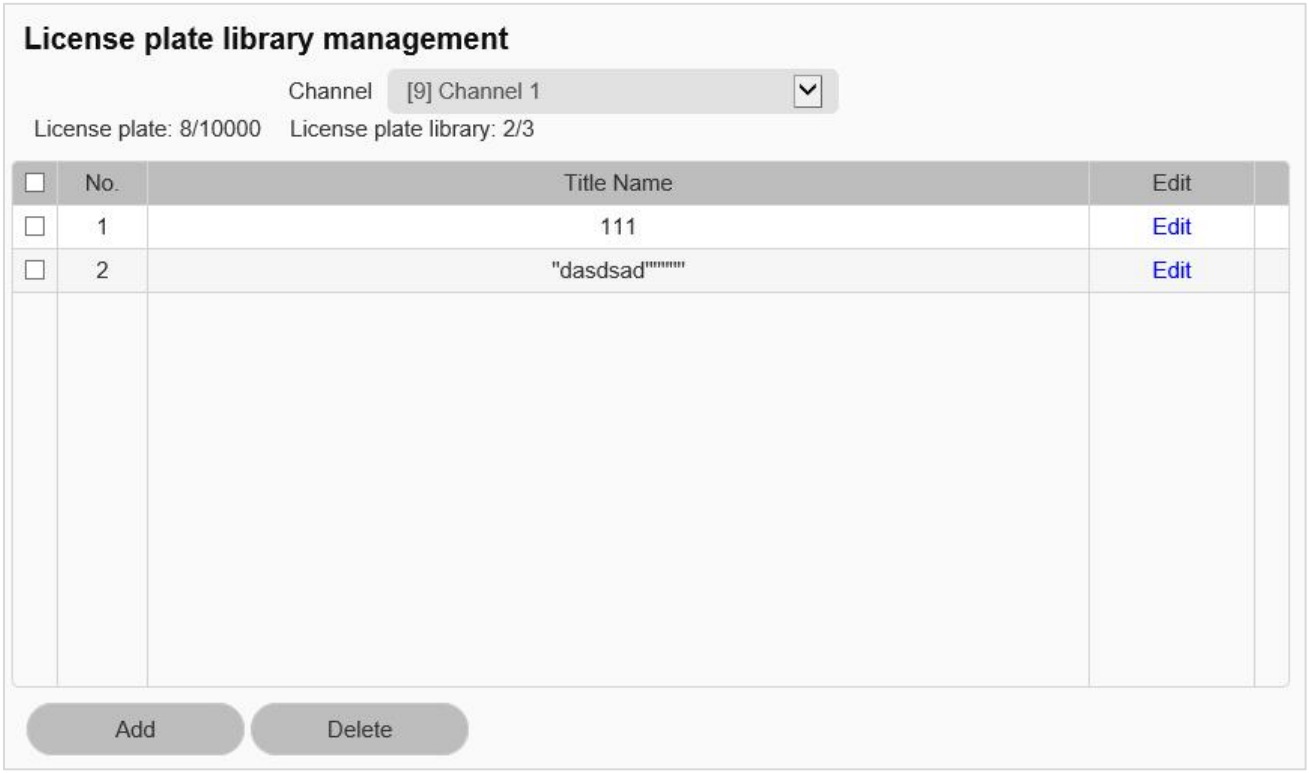
7、Check [Enable License Plate Exposure] to set the license plate exposure brightness and time. [License plate exposure brightness] refers to the reference brightness of the license plate exposure. When the license plate is identified in the preview screen, the device automatically adjusts the license plate brightness according to the reference brightness value. The larger the license plate brightness value is, the brighter the whole preview screen is. The parameter should not be set too low or too high.

8、Display alarm rule: refers to the rule box that displays the alarm on the video screen.

9、Display target: means that in the video frame, the detected object will be marked, such as a motor vehicle.

9. 5. 2 License plate library management

1、Enter [Configuration- > In-depth Analysis- > Vehicle Retrieval] and select the license plate library management tab, as shown in the following figure.



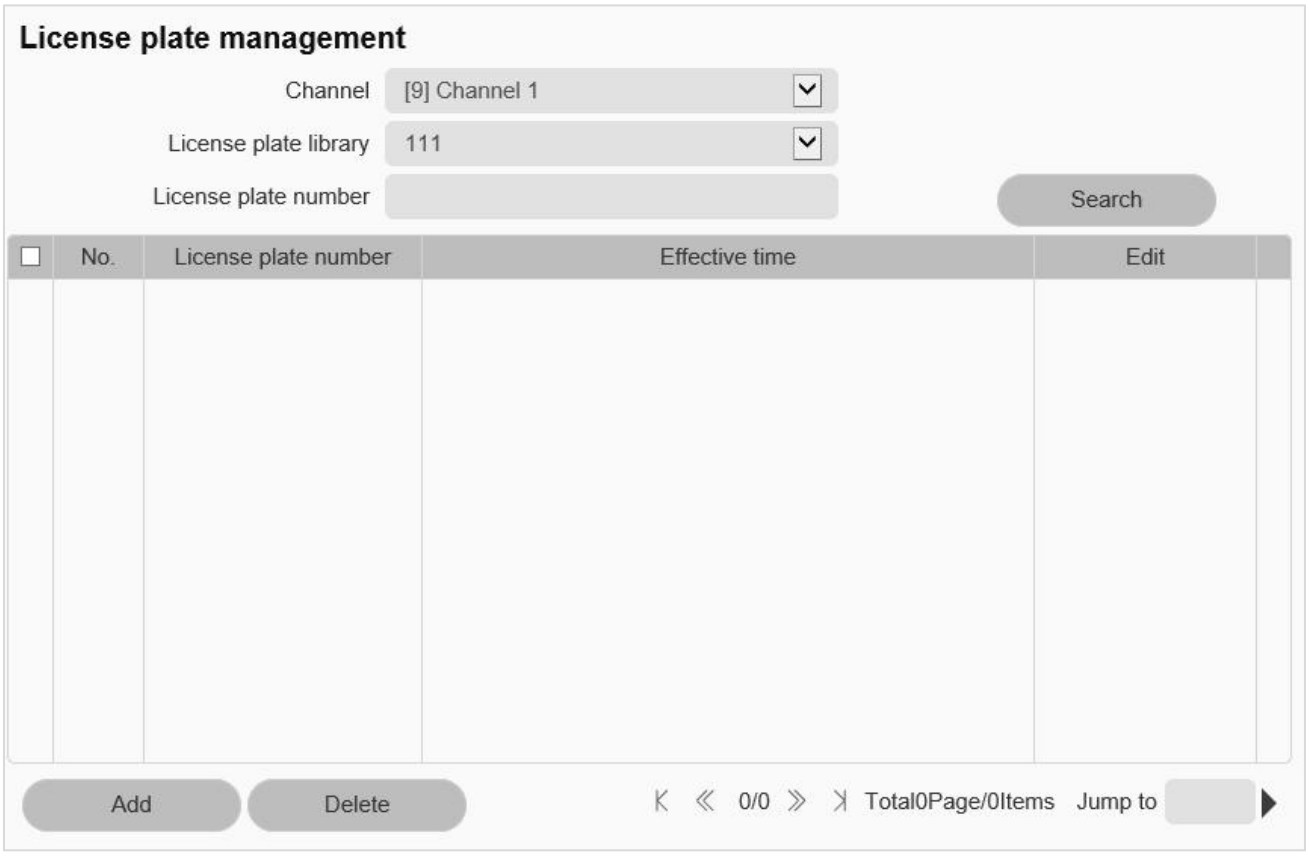
2、Click [Add] to add a license plate library.



3、Click [Edit] to modify the name and description of the license plate library.

9. 5. 3 License plate management

1、Enter [Configuration- > In-depth Analysis- > Vehicle Retrieval] and select the license plate management tab, as shown in the following figure.

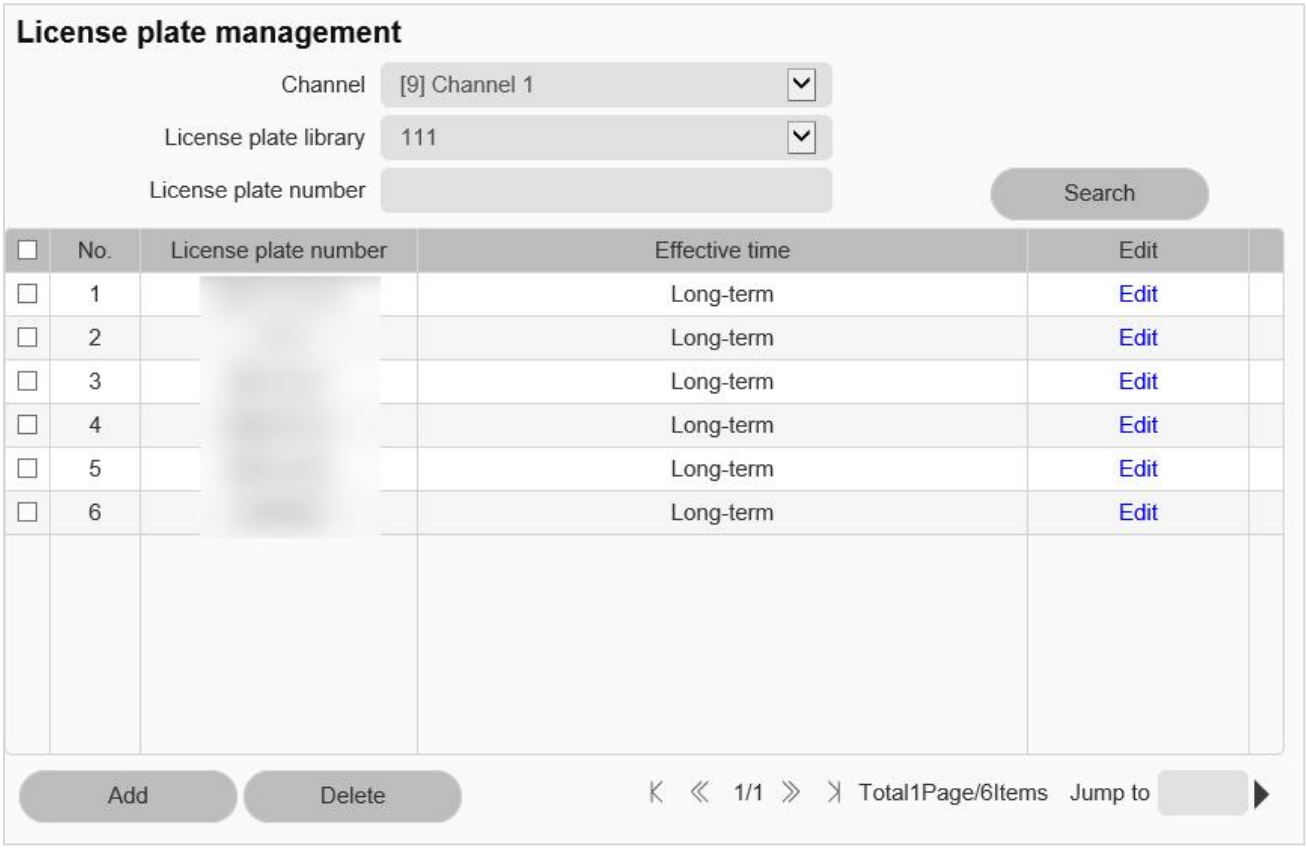


2、Select the corresponding channel and license plate library, and click [Add] to add a license plate in the license plate library. You can select a long-term or temporary license plate.



3、Select the corresponding channel and license plate library, and click [Query] to view

the added license plate.



4、Select the license plate to be modified and click [Edit] to modify the license plate and the effective time.

9. 5. 4 Image Overlay

Image Overlay-> Basic Settings

You can set [Font Size], [Font Color], [Overlay Position], [Time Style] and other parameters as required.

[Font size]: supports 16 * 16, 24 * 24, 32 * 32, 48 * 48, 64 * 64 and other font sizes.

[Font color]: After clicking the text box, the color setting interface will appear below. Slide the mouse to select the appropriate color, and click another position to exit the font color setting.

[Overlay position]: supports within the picture, above the picture and below the picture.

[Automatic sorting]: Turn on/off the automatic sorting function, which is valid when the superposition position is "inside the picture".

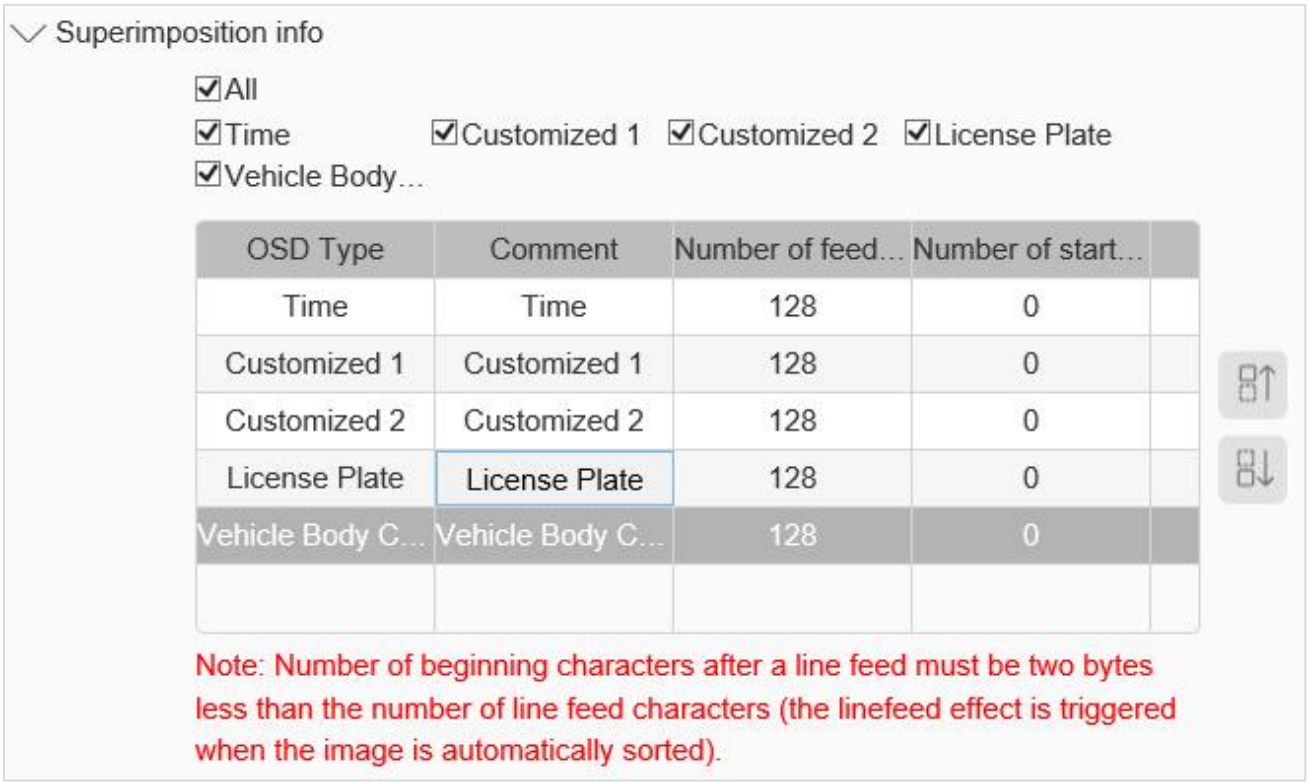
[Shadow function]: Set the shadow effect, which is valid when the overlay position is "inside the picture".

[Time Style]: Set the time style. See the effect in [Time Style Preview] below.

Click the [Save] button to save the corresponding parameter settings.

Click [Reset] to restore the last saved parameters.

Image Overlay-> Overlay Information



The user sets [overlay information] as needed. Overlay information supports multiple selections. Select [Select All] to select all overlay information.

[Overlay content]: modify according to the user's requirements.

[Number of newline characters]: Set the maximum number of characters per line.

[Starting number of spaces after line wrapping]: Set the starting position of the superimposed content text after line wrapping.

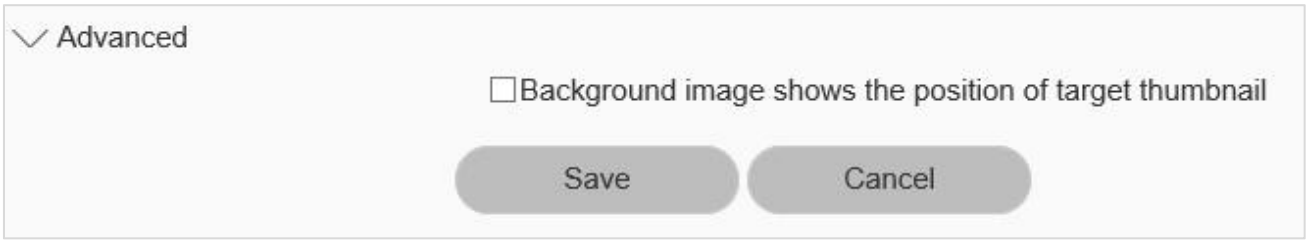
The following table describes the functions of the icon buttons on the interface:

Icon	说明
	Move up: Select the overlay information and click this button to move the overlay information up by one position.
	Move down: select the superimposed information and click this button to move the superimposed information down by one position

Click the [Save] button to save the corresponding parameter settings.

Click [Reset] to restore the last saved parameters.

Image Overlay-> Advanced Settings



[The background image displays the position of the target small image]: Select whether to superimpose the background image in the picture to display the position of the target small image (displayed when the face is captured).

Click the [Save] button to save the corresponding parameter settings.

Click [Reset] to restore the last saved parameters.

9. 5. 5 Snapshot parameters



[Picture resolution]: Set the picture resolution and support multiple resolutions.

[Background image quality]: Set the quality of the background image. The higher the value, the higher the quality.

[Close-up image quality]: Set the close-up image quality. The higher the value, the higher the quality.

Click [Save] to save the corresponding parameter settings.

Click [Reset] to restore the last saved parameters.

9. 5. 6 Advanced Parameters



Select the corresponding channel and set the country/region/province where the

license plate is located to facilitate license plate detection and identification.

9.6 Smart Map Search

1. Enter [Configuration- > In-depth Analysis- > Intelligent Image Search], as shown in the following figure.

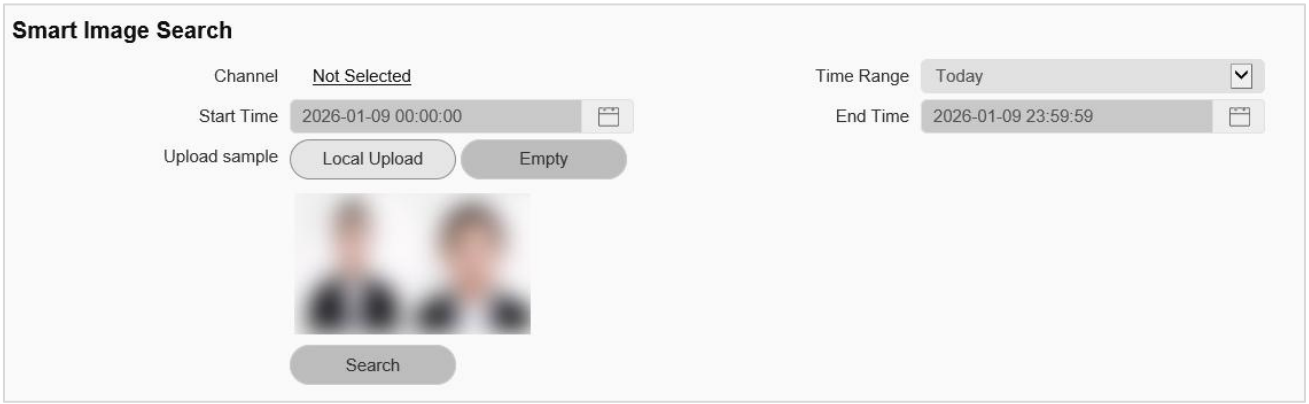


Target Channel: The channel to be retrieved.

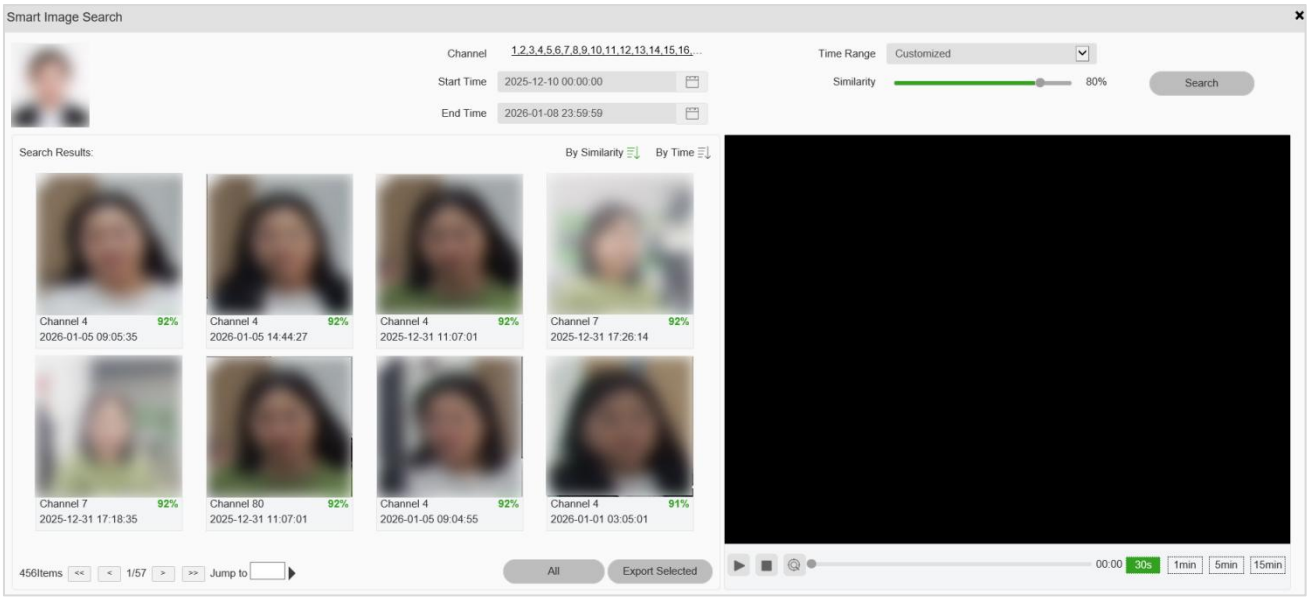
Start time: today, yesterday, last week, last month, and custom. If you choose to customize, you need to set the specific start time and end time below.

Upload sample: Upload the face image you want to retrieve from the local, and the data similar to the person's face will be retrieved from the video and snapshot.

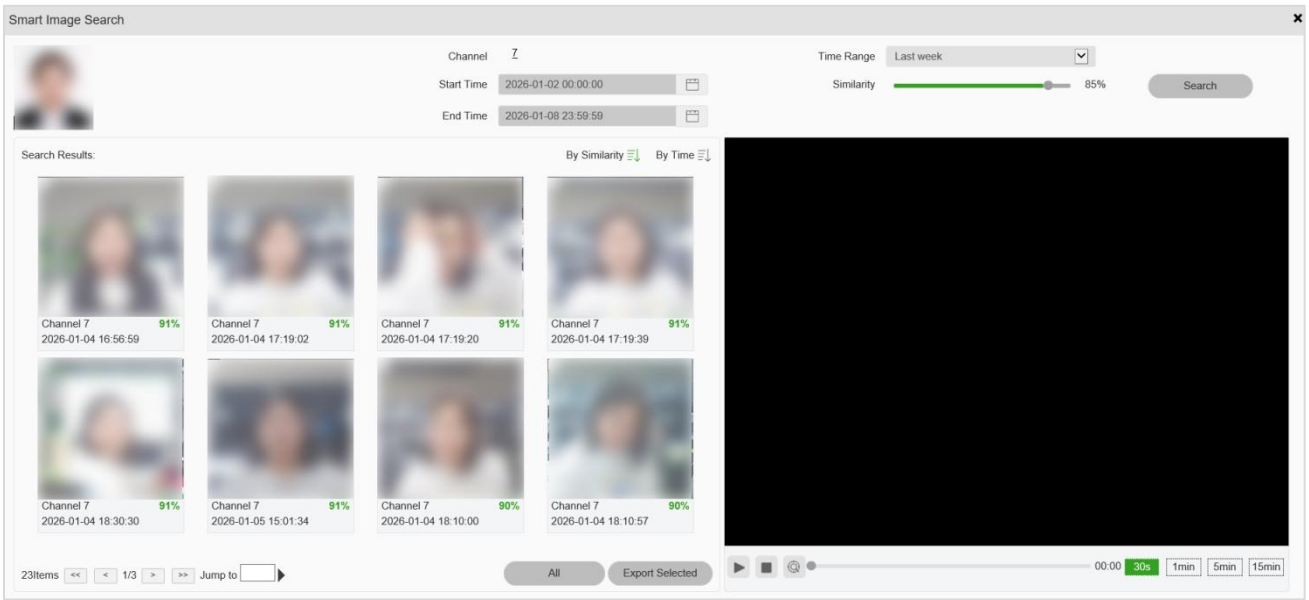
2. Select the target channel and start/end time, upload local sample photos, select a sample photo, and click the [Search] button.



3. After the retrieval is completed, display the picture, snapshot time, channel, similarity and other information.



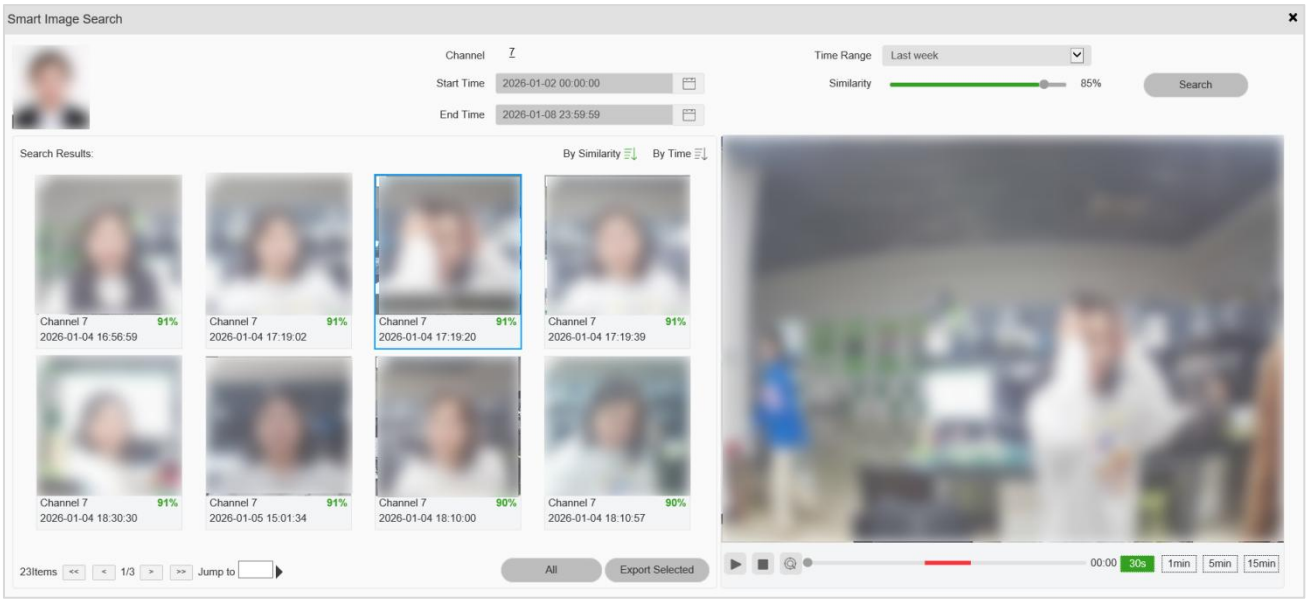
4. Select the target channel, start time, end time, time period, similarity and other conditions in the search result interface for secondary search.



Explain：

- Set the similarity, that is, set the minimum similarity.

5. Select a picture, and the panorama of the face picture will be displayed on the right side. Click the "" button below to play the message video.



Notice：

- Smart Map Search can only search the data when [Enable Smart Map Search] is checked, and cannot search the data when Smart Map Search is not enabled.

9.7 Face Retrieval

9. 7. 1 Face Retrieval

1、Enter [Configuration- > Depth Analysis- > Face Retrieval], select the face retrieval tab, and support retrieval by event type and retrieval by feature, as shown in the following figure.



2、Select the target channel. You can select multiple or all channels.

3、Select the start and end time.

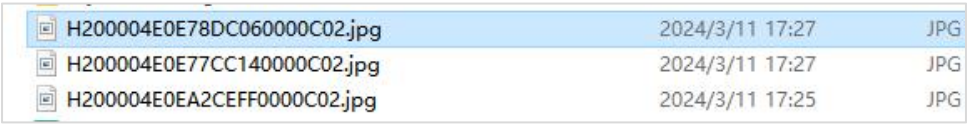
4、Select the event type. There are 4 types, as shown in the following figure.



5、Query result interface

（1）Click to switch the search results to picture display or record display.

（2）After selecting the record, click [Export] to export the selected face image to the computer or U disk, as shown in the following figure.



（3）Click Select All to select all the query results.

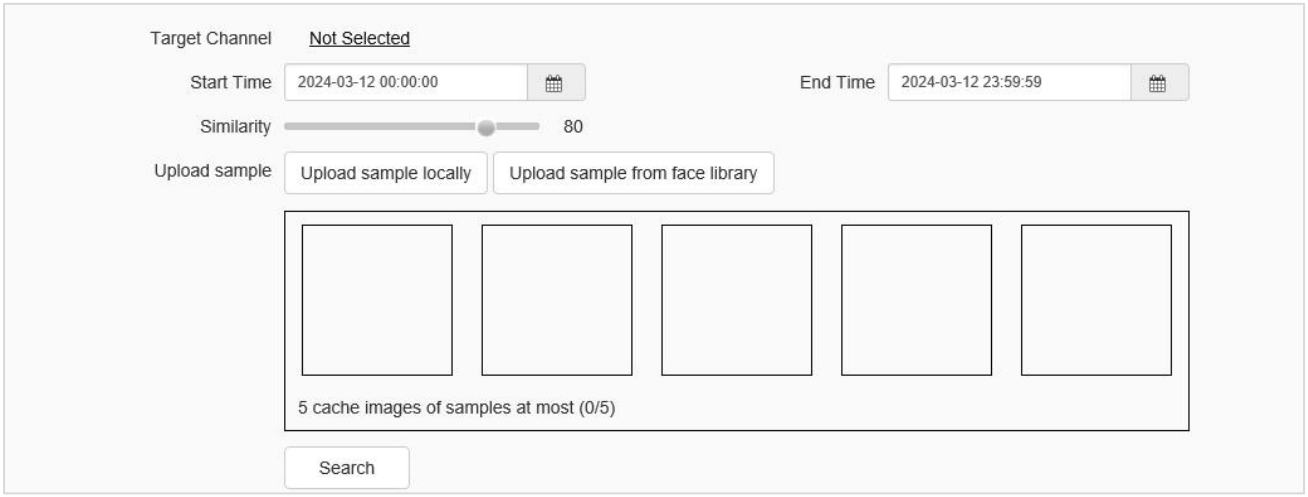
（4）Click [Query Total] to query all data information quantities.

（5）[Picture]: The snapshot picture is displayed, the target is framed by a green rectangle, and attributes such as [age] [gender] [glasses] [mask] are displayed. The face image can be added to the face database, and information such as name and gender can be set.

（6）[Video]: Display the video captured. You can perform [Play/Pause] [Stop] [Fast Forward] [Step] and other operations on the video, and display [Age] [Gender] [Glasses] [Mask] [Beard] and other attributes.

9. 7. 2 Search by Picture

1、Enter [Configuration- > Depth Analysis- > Face Retrieval], and select the tab of retrieval by image, as shown in the following figure.



2、Select the target channel. You can select multiple or all channels.

3、Set the start and end time.

4、Upload sample pictures, which can be uploaded locally or from the face database, but the maximum number of sample pictures is 5.

5、After uploading the sample, click Search to view the search results.

9. 7. 3 Search by frequency

1、Enter [Configuration- > Depth Analysis- > Face Retrieval], and select the retrieval by frequency tab, as shown in the following figure.



2、Select the target channel. You can select multiple or all channels.

3、Set the start and end time.

4、Set the frequency range, and then click Search to view the search results.

9.8 Human retrieval

1、Enter [Configuration- > Depth Analysis- > Human Retrieval].

2、Select the target channel. You can select multiple or all channels.

3、Set the start and end time.

4、Set the search conditions, and then click Search to view the search results.

9.9 Vehicle Retrieval

1、Enter [Configuration- > In-depth Analysis- > Vehicle Retrieval].

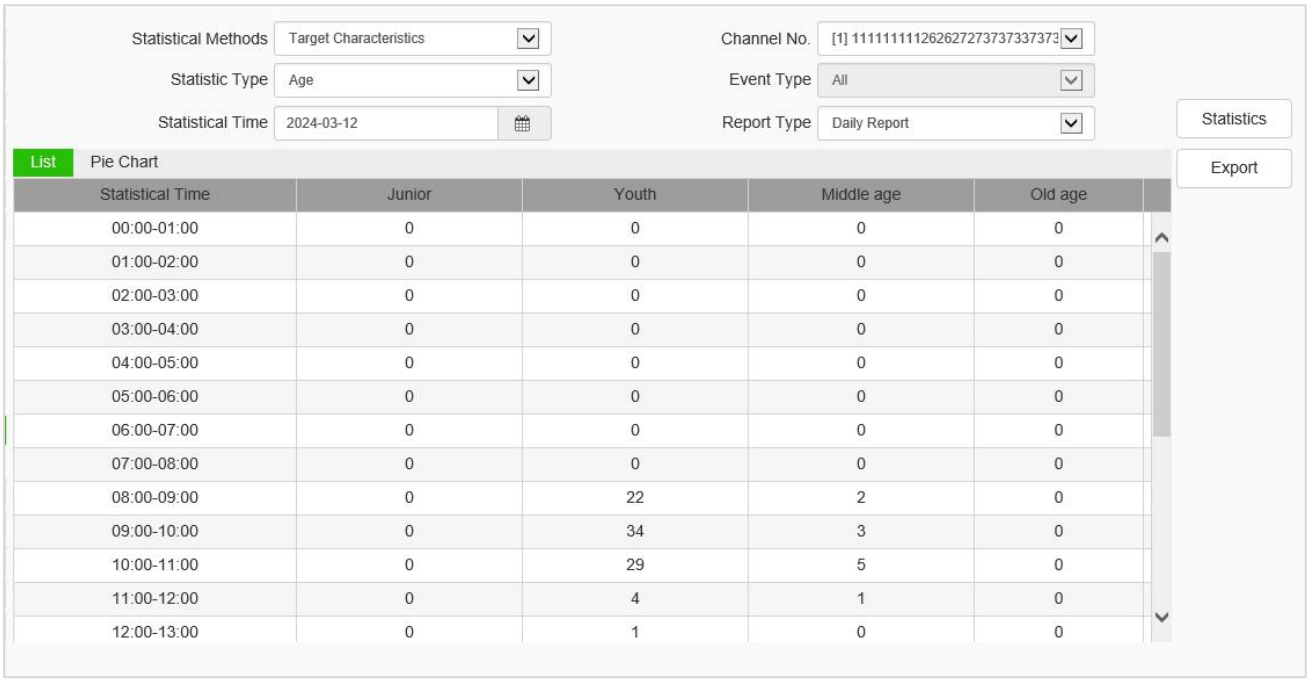
2、Select the target channel. You can select multiple or all channels.

3、Set the start and end time.

4、Set the search conditions, and then click Search to view the search results.

9.10 Face Statistics

1、Enter [Configuration- > Depth Analysis- > Face Statistics], as shown in the following figure.



2、Set statistics methods, including 4 types, as shown in the following figure.



3、Select the target channel.

4、Select the statistics type and event type.

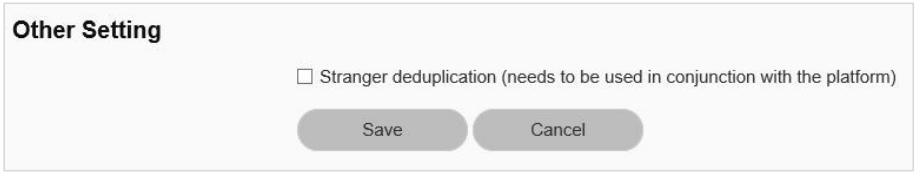
5、Select statistics time and report type. Report types include daily report, weekly report, monthly report and annual report.

6、After clicking Statistics, the results will be displayed in the form of table. You can also select pie chart, column chart and line chart to display.

Explain：

- All statistical types support list display, age, gender, nationality, wearing glasses and wearing masks support pie chart display, and the number of people and abnormal body temperature support histogram and line chart display.

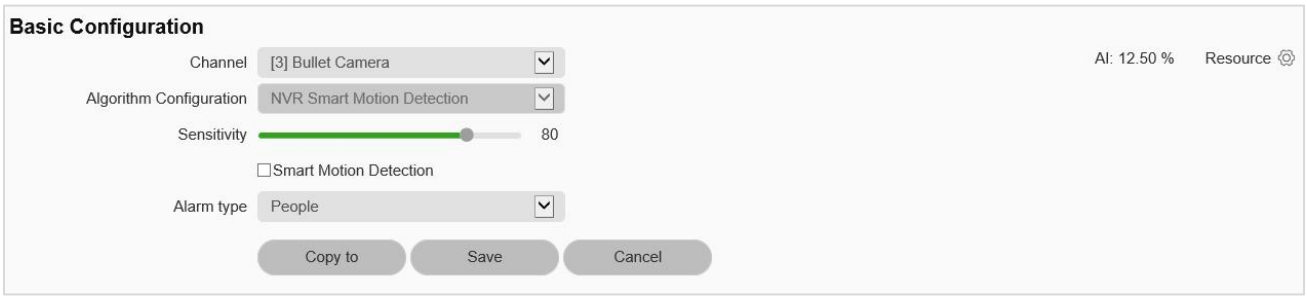
9.11 Other settings



Select whether to enable the [Duplicate Removal by Strangers] function. This function needs to be used with the platform. Please connect to the platform in [Configuration-Network Settings-Advanced Settings-Platform Access].

10 Intelligent dynamic inspection

10.1 Basic configuration



[Algorithm configuration]: IPC intelligent alarm or NVR intelligent alarm can be selected, and only one of them can be selected. IPC smart alarm requires IPC device support.

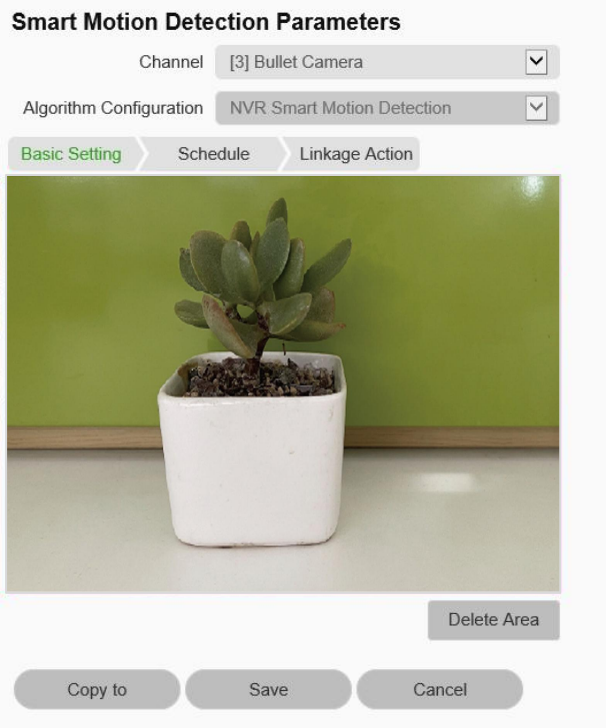
[(IPC) Intelligent Alarm]: Check to enable the intelligent alarm algorithm, and the camera will automatically detect whether there is a human body or a vehicle in the scene. If there is, the alarm will be triggered. When the fill light mode of the IPC device is the alert mode and the intelligent alarm is enabled, an alarm type must be selected, otherwise the fill light mode needs to be changed.

[(NVR) intelligent dynamic detection]: Check to enable the intelligent alarm algorithm. NVR will automatically detect whether there is a human body or vehicle in the scene. If there is, the alarm will be triggered.

[Alarm type]: You can select person, vehicle, person and vehicle.

[Intelligent scene]: After checking, the camera will automatically judge the image change in the scene.

10.2 Intelligent dynamic inspection Parameter



1. Select IPC intelligent alarm or NVR intelligent dynamic test in [Basic Configuration].

2. In the basic setting interface, manually draw the detection area, and click [Delete Area] to clear the detection area drawn in the interface, which can be redrawn.

3. On the deployment time page, set the deployment time, and the detection can be carried out within this time, as shown in the following figure. If the alarm is triggered, [Linkage Mode] will be triggered.

11 Store settings

Configure automatic or manual mode for video recording or picture capture, which can realize playback, download and other operations of video recording or picture capture files.

11.1 Video recording strategy

11. 1. 1 Video recording strategy

1. Enter [Configuration- > Storage Settings- > Video Recording Strategy], select the video recording strategy tab, and the user can switch the drop-down box to select the target video recording type, set the deployment time and retention time (days), and select the pre-recording time and delayed recording time, as shown in the following figure.



2. Select the channel you want to set.

3. Set the code stream type of video recording, including main code stream and auxiliary code stream. Some models also support dual code stream video recording.

4. Select whether to enable [Redundant Recording], whether to enable [Framing], whether to [Record Audio], and whether to [Enable ANR].

5. When there is a redundant disk in the system and the [Redundant Video Recording] function is enabled for the selected channel, the video recording and the captured picture files will be saved in the video disk and the redundant disk respectively.

6. After enabling [Framing], the system will frame the video file, which can greatly save the hard disk space for videos in non-key areas.

7. When [Record Audio] is not checked, only video data is saved in the video file.

8. When [Enable ANR] is checked, when the IPC is disconnected, the IPC will

automatically start the local video recording, and when the IPC is online again, it will automatically upload the locally saved video to the NVR.

9. Select the video type. There are [Timing and Alarm], [Alarm Video], [Port Alarm], [Mobile Alarm], [Lost Alarm], [Video Occlusion], [Detection or Port], [Detection and Port], and [Intelligent Analysis] available for selection in the template. Check [Cancel] to delete the set video type.

10. Press and hold the left mouse button and drag in the time period area, and the selected time area will be updated to the specified video type.

11. Set the maximum video retention time in days. A value of 0 indicates no limit. The maximum video retention time is 120.

12. Set the pre-recording and delay time of the alarm video.

13. Pre-recording: If the pre-recording time set by the user is 5S, the system will automatically save the video information of 5S before the occurrence of the case to the video file.

14. Delay recording: The delay time of the video recording is applied to the alarm video recording. Assuming that the delay time set by the user is 5S, the system will automatically save the video information 5 seconds after the end of the case to the video file.

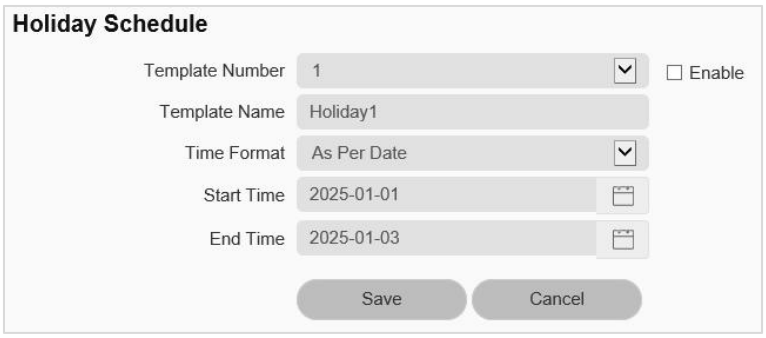
15. The pre-recording time and the video delay time can be used together to facilitate the user to analyze the monitoring information before and after the occurrence of the case.

16. Click [Save] to save the set [Video Policy] Parameter, click [Copy To] to copy the

Parameter of the current port number to another port number, and click [Reset] to restore the last saved Parameter.

11.1.2 Holiday planning

Enter [Configuration- > Storage Settings- > Video Strategy] to enter the holiday plan setting interface, as shown in the following figure.



Select a template number and set the name, time format, and start and end times for this template. Click the [Save] button to save the corresponding Parameter settings. Click [Reset] to restore the last saved Parameter.

11.2 Packaging Strategy



The device supports changing the video recording policy from the web side. Select the condition that triggers [Save Policy] in the edit box of [Pack by Time] or [Pack by Size]. When the remaining disk space reaches the set value, there are three [save strategies]:

1. Stop video recording: no more video packaging operation;

2. Cyclic deletion: delete the earliest video files to create space for new videos;

3. Cycle delete (except alarm file): delete the earliest video file (do not delete the alarm video) to create space for the latest video.

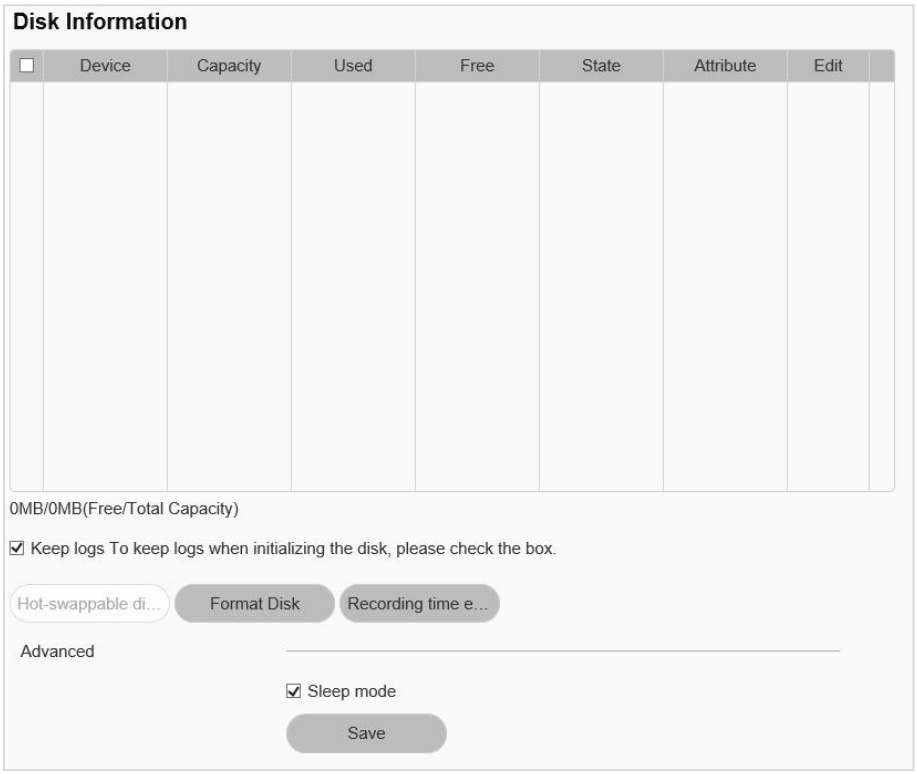
4. Click the [Save] button to save the corresponding Parameter settings. Click [Reset] to restore the last saved Parameter.

11.3 Disk Management

The device supports disk management from the WEB side in terms of disk information, disk policy, SMART, bad track detection, and index reconstruction. The specific operation is subject to the NVR device.

11. 3. 1 Disk Information

1. Enter [Configuration- > Storage Settings- > Disk Management] to enter the disk information interface, as shown in the following figure.



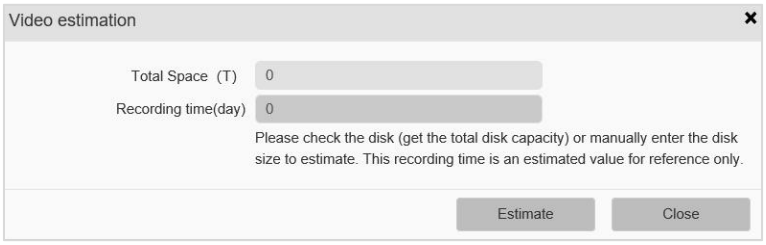
2. Format the disk: Initialize the selected disk. The U disk can select the initialization format.

3. Edit: You can modify the purpose of the disk.

4. The total remaining capacity and total capacity of the current hard disk and virtual disk can be displayed in the interface.

5. Hot-plug disk: After selecting a disk in the disk list, click the [Hot-plug] button, and the system will pop up the following prompt. Click the [OK] button to perform the hot-plug operation on the disk.

6. Video recording time estimation: Select the disk and estimate the video recording time according to the disk size.



11.3.2 NFS



1. [Disk number] Select the disk to be set.

2. [Status] Displays the status information of the current disk.

3. [Purpose] Displays the purpose of the current disk.

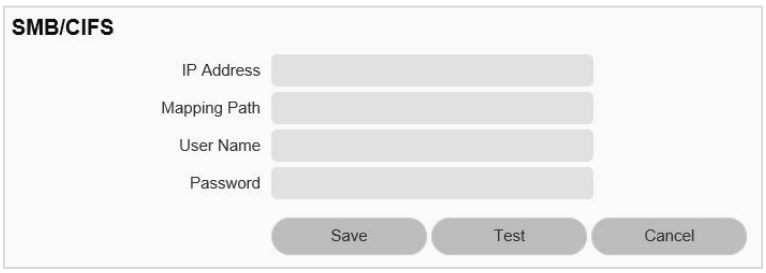
4. [IP Address] Set the NFS server IP address.

5. [Map Path] Sets the disk path for mapping.

6. [Disk Space] displays the free space and total size of the current network storage mapping disk.

7. [Save] Save the current settings.

11. 3. 3 SMB/CIFS



After filling in [IP address], [mapping path], [user name] and [password], [Save] can set the FTP server information, [Test] can test whether the connection between the device and the server is successful, and [Reset] restores the last saved Parameter.

11.4 Disk Policy

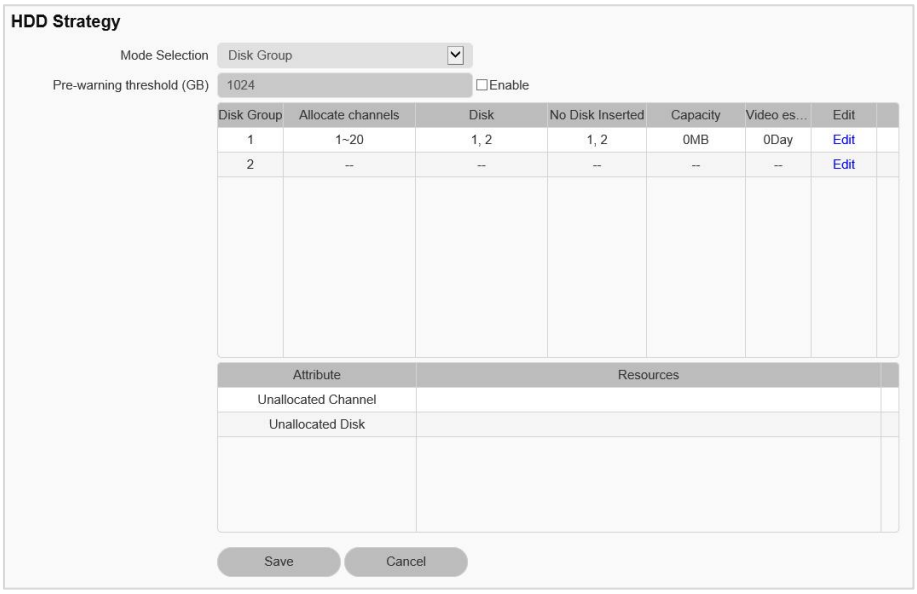
1. Set disk groups or quotas.

Disk group: The hard disk mounted on the NVR is divided into multiple disk groups, and the disk group where the video file is located can be specified for each channel.

Quota: Specify the maximum disk space that the video file of a certain channel can occupy. Different channels can be configured with different video space.

2. Disc set setting

（1）In [Mode Selection], select the disk pack, as shown in the following figure.



(2) Select a disk for the disk group. Set which disks belong to the disk group. Check [Select All] to select all available disks. A disk cannot belong to multiple disk groups at the same time.

(3) Select a channel for the disk stack. Selects which channels are recorded in the disc pack.

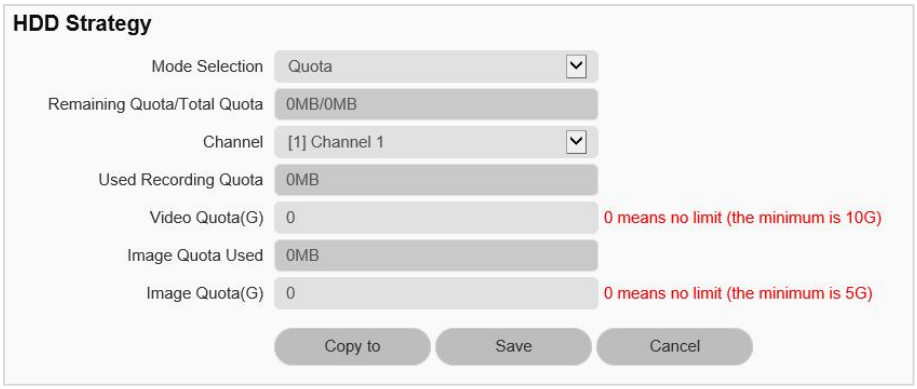
(4) Click the [Save] button to save the settings.

Explain：

- The storage bit rate of a single disk group is supported up to 128Mbps, otherwise there is a risk of video loss.

3. Quota configuration

（1）In [Mode Selection], select the quota, as shown in the following figure.



(2) Select the channel to set. Select the channel to set quota in the [Channel] drop-down box.

(3) Set the video quota. Set the maximum storage space occupied by the video file of this channel, the unit is GB, and 0 means that the size is not limited.

(4) Set the picture quota. Set the maximum storage space occupied by the picture file of this channel. The unit is GB. 0 means that the size is not limited.

(5) Save settings. Click the [Save] button to save your settings.

Tiandy

11.5 Disk detection

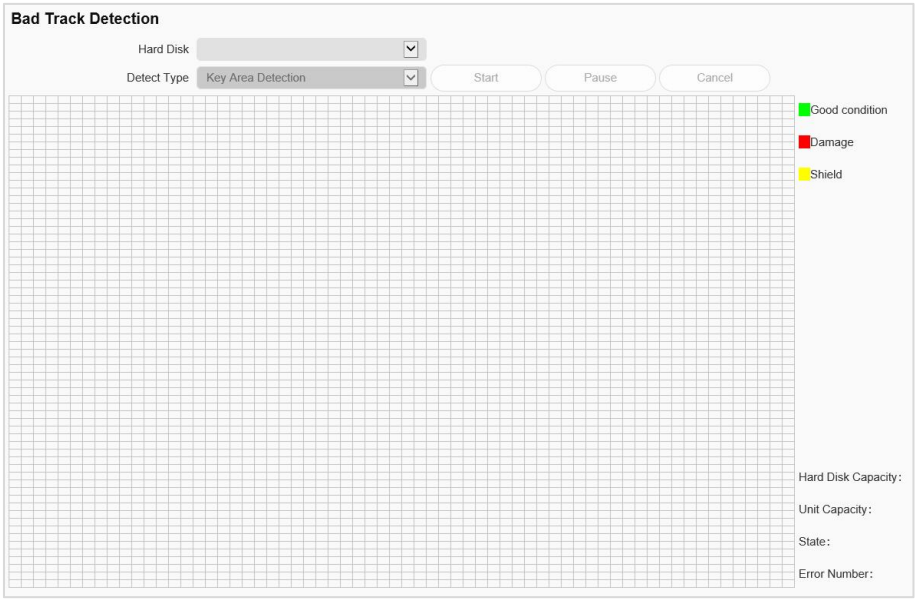
11. 5. 1 S.M.A.R.T



1. Select the disk to be detected and check [Enable S. M. A. R. T detection] to enable the S. M. A. R. T detection function of the disk. The S. M. A. R. T detection information is displayed in the corresponding interface.

2. When [Do not use the hard disk when the hard disk self-assessment fails] is selected, the hard disk will not be used if there is a problem with the self-assessment after the hard disk S. M. A. R. T is detected.

11. 5. 2 Bad track detection



1. Select the hard disk and the detection mode, and click the detection button to enter the detection state.



2. Click Pause to pause the bad track detection; click Resume to resume the bad track detection.

3. Click Cancel to cancel this bad track detection.

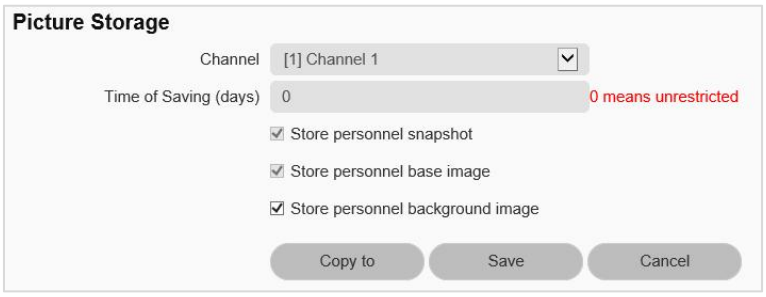
4. Click the error message to view the bad track of the hard disk.

Explain：

- The error information button can be clicked only when the number of errors of the hard disk is greater than 0; when the number of errors of the hard disk is equal to 100, the bad track detection is stopped.
- " " Indicates that the corresponding area of the hard disk is good, " " indicates that the corresponding area of the hard disk is damaged, and " " indicates that the corresponding area of the hard disk is shielded.

11.6 Picture Settings

11. 6. 1 Picture Storage

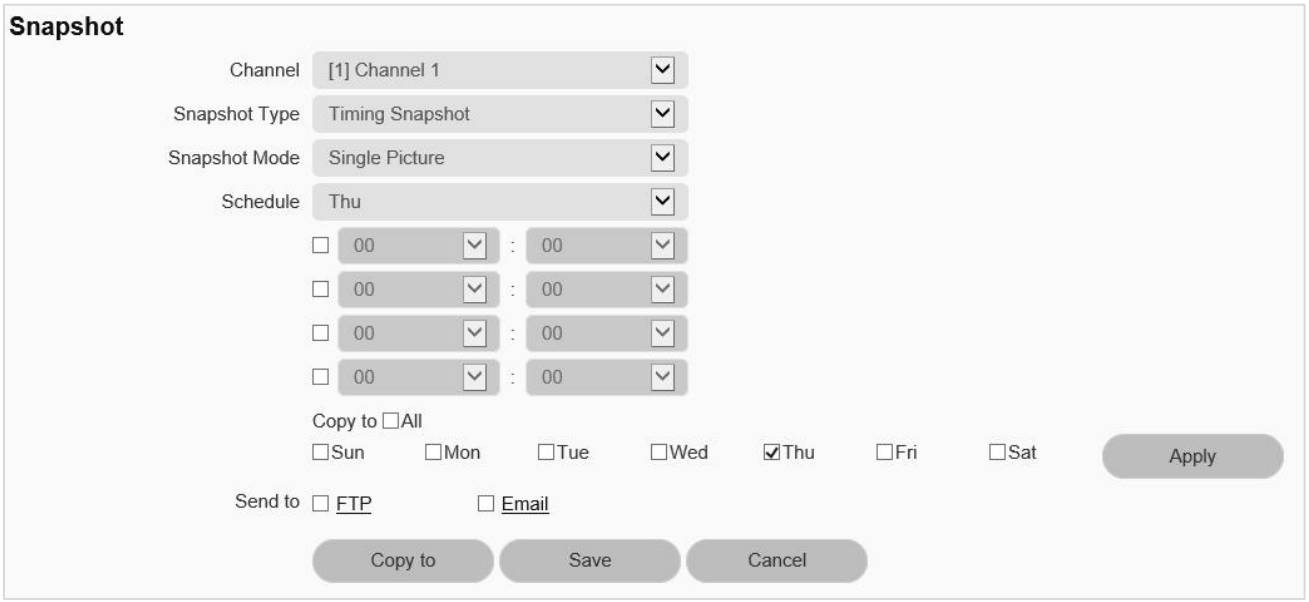


Select the channel number to be set, set the image retention time, and select whether to enable the face snapshot, face background image and face background image.

Click [Copy to ⋯] Button to synchronize the setup information to other channels. Click the [Save] button to save the corresponding Parameter settings. Click [Reset] to restore the last saved Parameter.

11. 6. 2 Snap Settings

The device supports snapshot configuration from the WEB interface. Based on the snapshot type, it can be categorized into regular snapshots and alarm snapshots, as illustrated in the figure below.



1. Select the target channel number for the snapshot setting operation.

2. Set the snapshot type, which is divided into two types: [regular snapshot] and [alarm snapshot]. When alarm snapshot is selected as the snapshot type, the snapshot setting interface is shown in the following figure.



3. Set the capture mode, which is divided into two modes: [single capture] and [multiple capture].

4. Set the snapshot interval in seconds. If it is set to [multiple snapshots], the time

interval should be greater than 5 seconds. (Interval between 5 ~ 9999)

5. Select whether to FTP upload the captured picture. Click the [FTP Setting] button to enter the FTP setting interface. See the corresponding chapters for the specific FTP setting method.

6. Select whether to upload the captured picture by SNMP. Click the [Email Setting] button to enter the Email setting interface. See the corresponding chapters for the specific setting method. In this interface, Email setting is not supported for alarm snapshot.

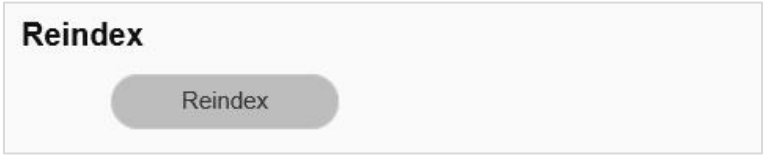
7. The snapshot setting Parameter of the current channel can be copied to the specified channel.

8. Click [Apply] to save the configuration.

11.7 Reindex

When the hard disk is abnormal or the video is lost, the lost video can be retrieved to the maximum extent by rebuilding the index.

1. Enter [Configuration- > Storage Settings- > Disk Management] and select the Rebuild Index tab, as shown in the following figure.



2. Click the [Rebuild Index] button to pop up a prompt box.

3. Click the [OK] button to start the reconstruction operation.

4. If the index is successfully rebuilt, a prompt box will pop up.

5. In the process of rebuilding the index, the user can exit the interface for other

operations, but cannot perform the video playback operation.

12 Playback

Used to query, play back, and download stored recordings. You can view the video file of the specified date, and capture and edit the video.

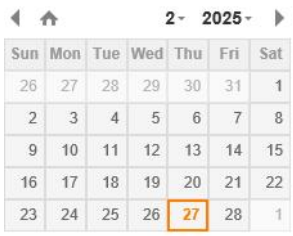
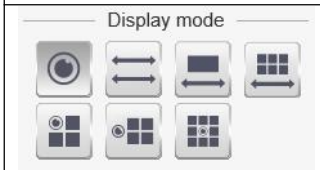
Notice:

- Configure the disk before using the playback feature.

12.1 Timeline mode

Icon	Explain
	Select a channel to view the corresponding channel video.
	1 * 1 split screen
	2 * 2 split screen
	Slow forward button. The double speed is 1/2 times speed, 1/4 times speed, 1/6 times speed, and 1/8 times speed.
	Play/Pause button. Click Start Play/Pause to play the video file. If it is played at double speed, the double speed will be cancelled.
	Stop playback button. You can stop playing the current file.
	Fast forward button. The double speed is 2 times speed, 4 times speed, 6 times speed and 8 times speed.

Icon	Explain
	Step button to play back the video in a single frame.
	Browse button to select the video file to be played locally from the computer.
	The video is displayed at a fixed scale.
	The video automatically adapts to the playback window display.
	Target search: search for people and vehicles on the playback screen.
	Intelligent retrieval, perform intelligent retrieval on the playback screen.
	Playback Smart Rules Show/Hide.
	Synchronous playback button, click to play back multiple channels synchronously.
	Playback snapshot button, file storage path can be modified, modify the page: configuration-system settings-local settings-playback snapshot save path.
	Video editing button, click to start editing, click again to complete editing, file storage path can be modified, modify the page: configuration-system settings-local settings-playback clip save path.
	Clip management, you can view the type of clip video, video clip progress, current status and other information.
	Volume adjustment button. Adjust the local output volume by adjusting the position of the slider.

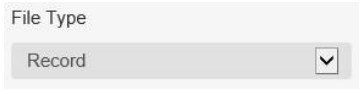
Icon	Explain
	Download management, query or download videos and pictures.
	Full-screen play button. In full-screen mode, double-click the mouse again at any position to exit full-screen mode.
	Click Enable to display the target.
	Electronic zoom in button. After clicking the button to enable this function, press the left mouse button for a long time on the preview screen to draw the area to be zoomed in. You can zoom in to view the area. Drag the mouse to move the screen. Click the button again to turn off the electronic magnification function.
	Select a date in the calendar, double-click the date, and search for files that meet the query criteria.
	Select the stream type
	Set the installation method of fisheye camera: top-mounted, wall-mounted, desktop. (Supported on select models)
	Set the display mode of fisheye camera: fisheye, 180, 360 + 1PTZ, 360 + 6PTZ, fisheye + 3PTZ, fisheye + 4PTZ, fisheye + 8PTZ

In the timeline mode, the user can drag on the timeline to view the video file of the corresponding time. After selecting the time point, click the play button to play. Click the button − above the timeline to zoom out the timeline, and click + to zoom

in the timeline.

12.2 Document mode

In the file mode, the user can operate according to the type of the file, the type of the video, and whether to query remotely.

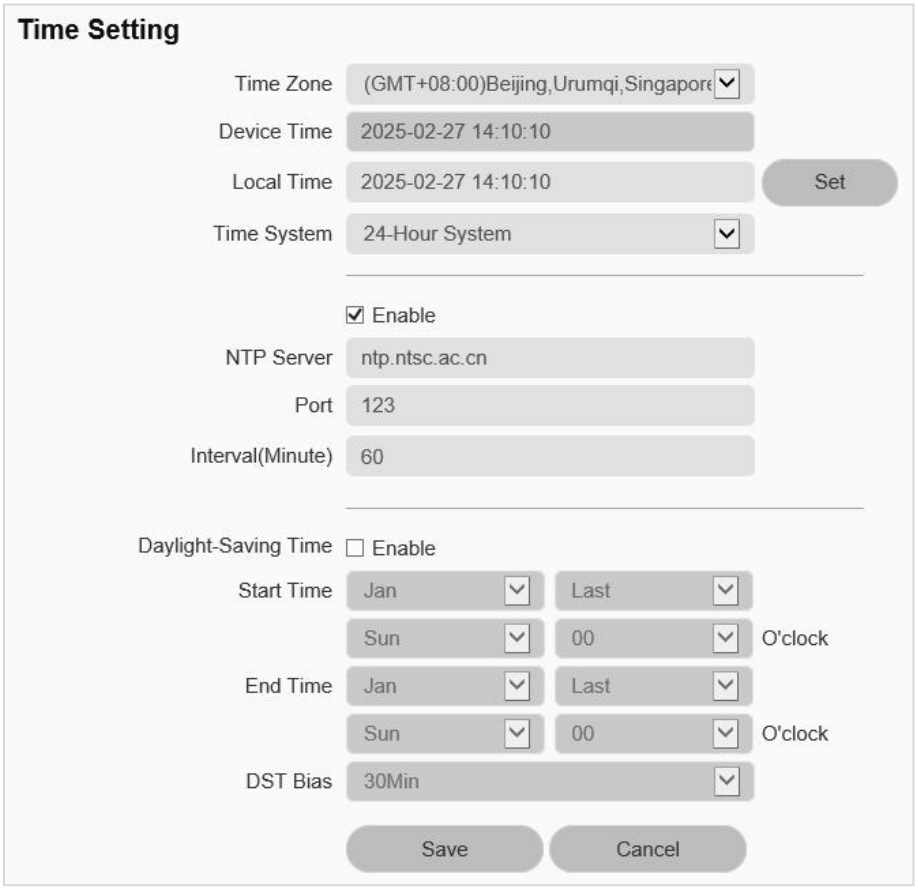
Icon	Explain
	Download by file or download by time period.
	Sets the channel for the query.
	Set the file type to be queried, such as [Video], [Picture], etc.
	Select the type of video file to be queried.
	Jump to the first page of the query result.
	Jump to the previous page of the current page.
	Jump to the next page of the current page.
	Jump to the last page of query results.
	Lock: The file can be locked and unlocked. Locked files are not deleted when the disk is full and files need to be deleted.
	Start downloading the selected video file.
	Stop the selected video file being downloaded.
	Jump to the specified page.
	Return to the playback interface.

Search	Query: Click to query the corresponding video information.

13 System settings

13.1 System Settings

13. 1. 1 Time setting



The user can set [time zone], timing mode and whether to enable daylight saving time as required.

[Time Zone]: Set the time zone information.

[Local time]: Displays the local time in real time.

[Synchronization]: The synchronization device time is consistent with the local time.

[DST]: Set whether to enable DST. Sets the time range and offset time for daylight

saving time.

[NTP server]: Enter the legal IP address of the server.

[Port]: Enter the corresponding port number.

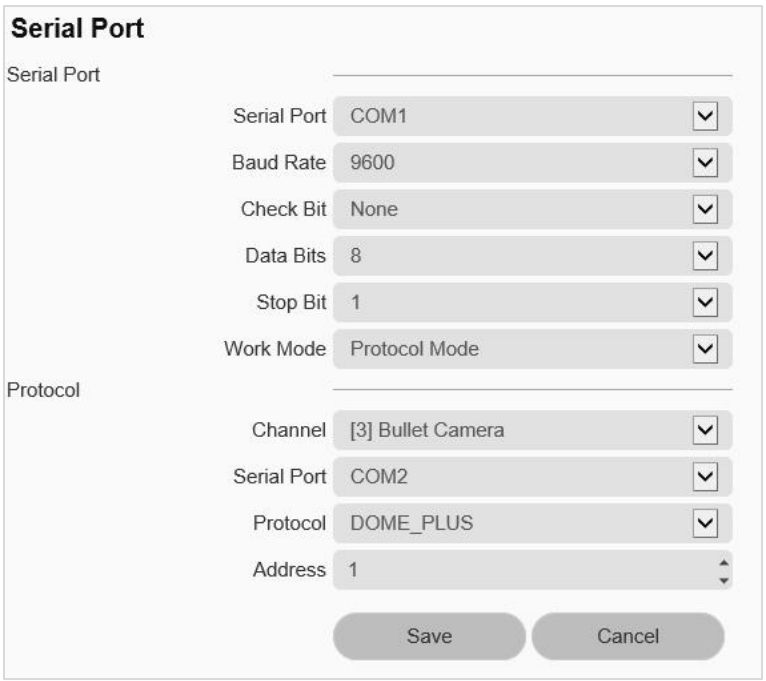
[Time interval]: input the interval time of automatic timing.

[Test]: Test NTP automatic timing.

Click the [Save] button to save the currently set Parameter.

Click the [Reset] button to restore the last saved Parameter.

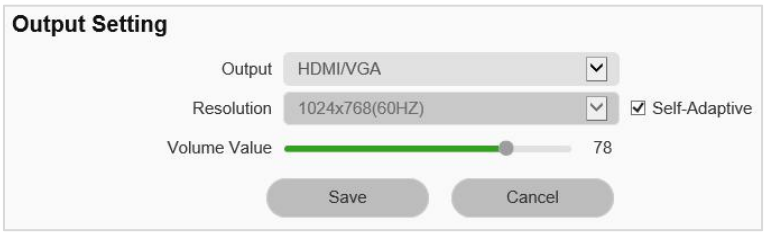
13. 1. 2 Serial port settings



[Serial Port Setting] requires the user to select [Serial Port Number], [Baud Rate], [Check Bit], [Data Bit], [Stop Bit] and [Working Mode].

[Protocol Setting] requires the user to select [Channel Number], [Serial Port Number], [Protocol] and [Address].

13. 1. 3 Output settings



1. Set the output device and resolution.

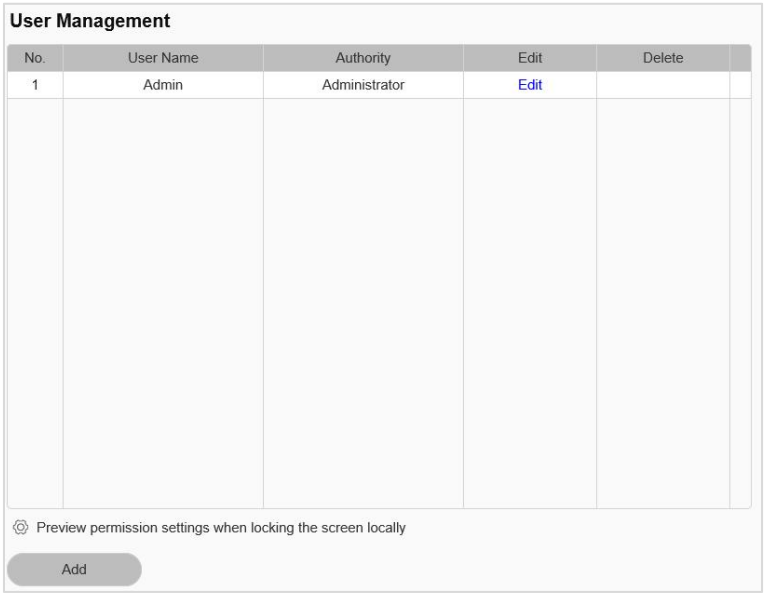
2. Click the [Save] button to save the currently set Parameter. Click the [Reset] button to restore the last saved Parameter.

Explain：

- When the resolution setting is saved on the Web side, the [Wizard Settings] prompt box will pop up synchronously on the UI interface.

13.2 User management

13. 2. 1 User management



Users can add users, delete users and modify user passwords as required.

[Add]:

User name, password and permission are required to add a new user, and only English letters and numbers can be input for the user name and password. After filling in the above three items, click the [Save] button.

Notice:

- Only users with administrator rights can add and modify users.

[edit]:

In the user list, click [Edit] to pop up a prompt box to modify the password. Enter the old password, new password and password confirmation respectively, and then click the [Modify] button.

Delete:

In the user list, click the [Delete] button to pop up a prompt box and click OK.

Notice:

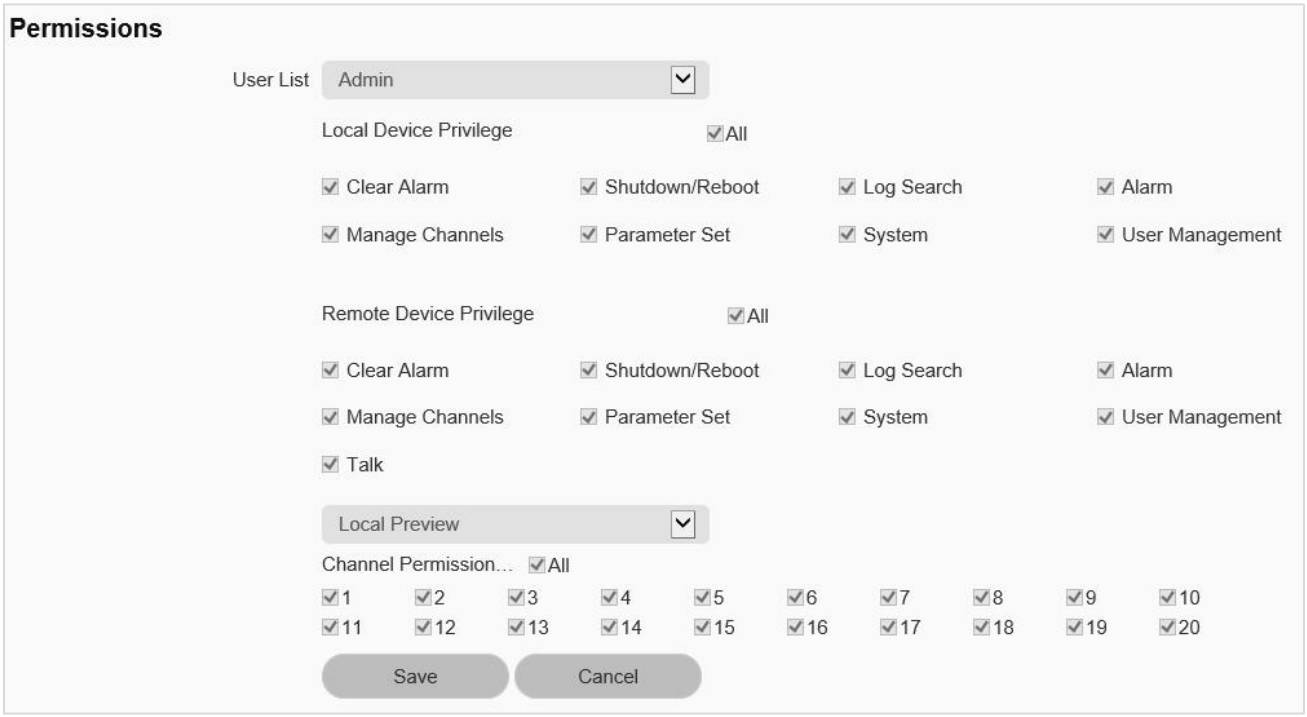
- Once the user permission is set, it cannot be modified again.
- Add up to 16 users.
- There are three user groups in the system, namely [Default User], [Normal User], and [Administrator]. The default permissions for each user group are as follows.

Default user: browsing video

Normal users: browsing videos

Administrator: browse video + device control + Parameter setting + user management

13. 2. 2 Configure Permissions



1、Permissions Explain:

(1) Local authority: local operation authority, including manual alarm elimination, shutdown/restart, log search, alarm setting, channel management, Parameter setting, system setting and user management.

(2) Remote authority: remote client operation authority, including manual alarm elimination, shutdown/restart, voice intercom, log search, alarm setting, channel management, Parameter setting, system setting and user management.

(3) Channel permissions: channel permissions for local preview, remote preview, local playback/snapshot image browsing, remote playback/snapshot image browsing, local PTZ control, remote PTZ control and other operations.

2、If the current user does not have the local preview permission of a channel, uncheck the channel. If the current user has the local preview permission of the channel, check

the channel.

13. 2. 3 Connection information



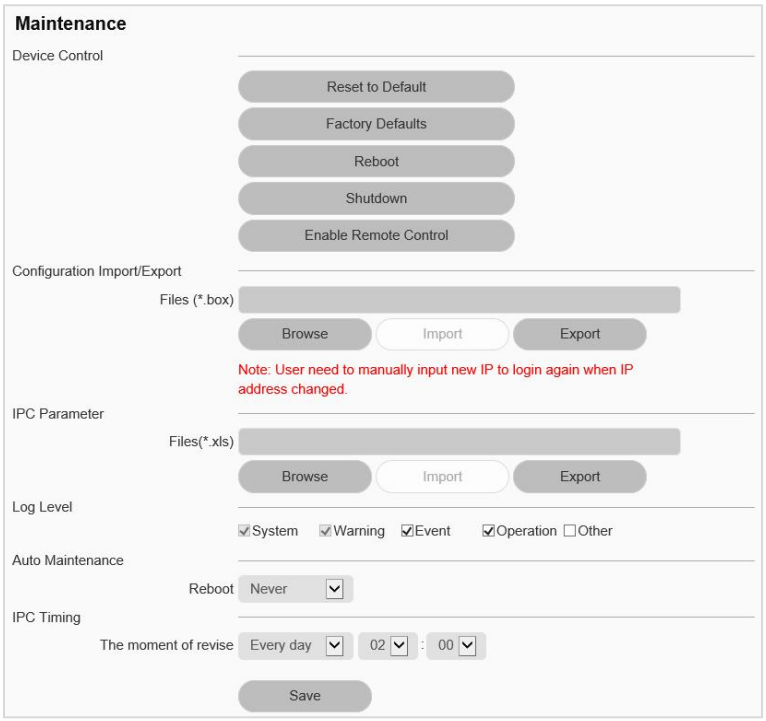
Displays a detailed list of connections/logins to the device, including channel type, network mode, client IP, and user name.

Click the [Refresh] button to update the list.

Tiandy

13.3 System maintenance

13. 3. 1 System maintenance



[System Maintenance] = > [Device Control]

The user can control the device as required, such as [Simple Recovery], [Factory Recovery], [Device Restart], [Lens Reset], [Remote Service On/Off], etc.

[Simple Recovery]: Recover the default Parameter of the device. (Critical information such as IP addresses will not be recovered)

[Factory Recovery]: Restore to the factory state.

[Restart the device]: After restarting the device, jump to the login interface. You need to re-enter the password to establish the link.

[Lens reset]: The lens can be reset when the equipment is bumped or the lens moves due to other reasons.

[Turn on remote service]: Turn on or off the remote service of the device. The remote service is used to enter the equipment background for debugging, and is only used by professional technicians.

Explain：

- As the functions of different models are different, please refer to the actual interface.

[System Maintenance] = > [Parameter Import/Export]

The user can maintain the Parameter information of the equipment as required through the [Parameter Import/Export] function.

[Import]/ [Export]: used for equipment maintenance, mainly divided into three categories:

(1) The [Alarm] option includes the alarm time period and linkage item setting information, and does not include the intelligent analysis class.

(2) The [Smart Analysis] option includes settings related to smart analysis, including rules, time periods, etc.

(3) [System setting] option includes all setting information except alarm, intelligent analysis, LOGO, storage strategy and local setting, including video Parameter, HD Parameter, character overlay, video recording strategy, network setting and other information.

(4) [Select all] Select all.

Click the [Browse] button and find the import file in the pop-up window.

Click the [Import] button to import the Parameter file.

Click the [Export] button to export the required information.

[System Maintenance] = > [IPC Parameter]

Support the import and export of front-end equipment information.

[System Maintenance] = > [Log Level]

Support log statistics for system, warning, alarm, operation and other types.

[System Maintenance] = > [Automatic Maintenance]

Set the device restart time, which can be set by year, month, week and day, and the device will be triggered to restart at this time point.

[System maintenance] = > [IPC timing]

Set the timing time, and support IPC timing by year, month, week and day.

13. 3. 2 System upgrade



[System Upgrade] = > [Version Information]

Users can view device information here, including [factory number], [serial number], [physical address], [hardware version], [kernel version], [web version], etc.

[System Upgrade] = > [Cloud Upgrade]

Users can detect cloud upgrades. Check [Automatically detect new NVR version], and when the device has a new version, it can be automatically detected.

[System upgrade] = > [Version upgrade]

Users can choose a local legal.box or.bin file to upgrade the device remotely. Relevant upgrade files can be queried and downloaded from our official website [Service and Support-Download Center-Upgrade Package Download]. The upgrade operation of kernel program shall be carried out under the guidance of the company's technicians.

Click the [Browse] button to find the upgrade file in the pop-up window.

Click the [Upgrade] button to upgrade to the latest version via Internet.

[System Upgrade] = > [IPC Upgrade]

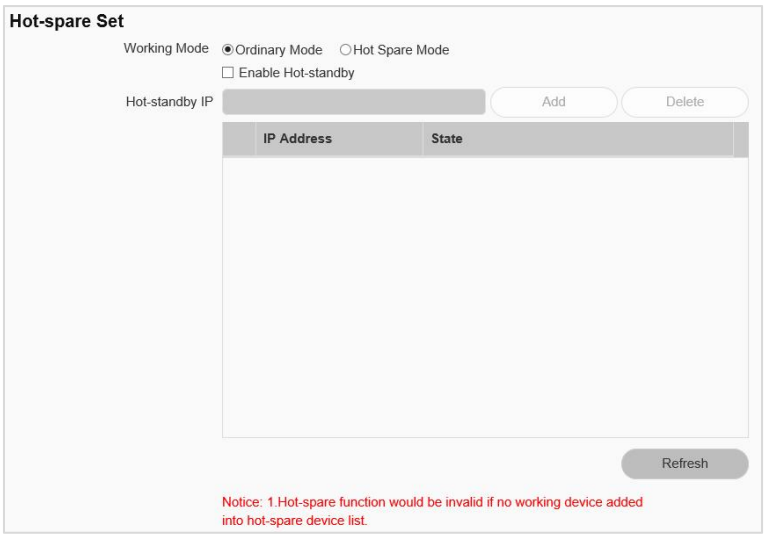
The user can select the local legal.box or.bin file to upgrade the IPC device remotely.

13.4 Hot standby setting

Enable the hot standby system (Note: 4-channel and 8-channel NVR and PSE series NVR do not support the hot standby function). When a device in the hot standby system fails, the system will automatically switch to the hot standby machine to work, so as to ensure the continuity of video recording.

A hot standby system consists of several working machines and several hot standby machines, and a working machine can be equipped with 16 hot standby machines at most. When the hot standby machine detects that the working machine is offline, the hot standby machine actively connects to the front-end IPC connected to the working machine and starts the video recording; when the hot standby machine detects that the working machine is online, the hot standby machine actively disconnects from the front-end IPC and uploads the previously backed up video to the working machine.

13.4.1 Normal mode



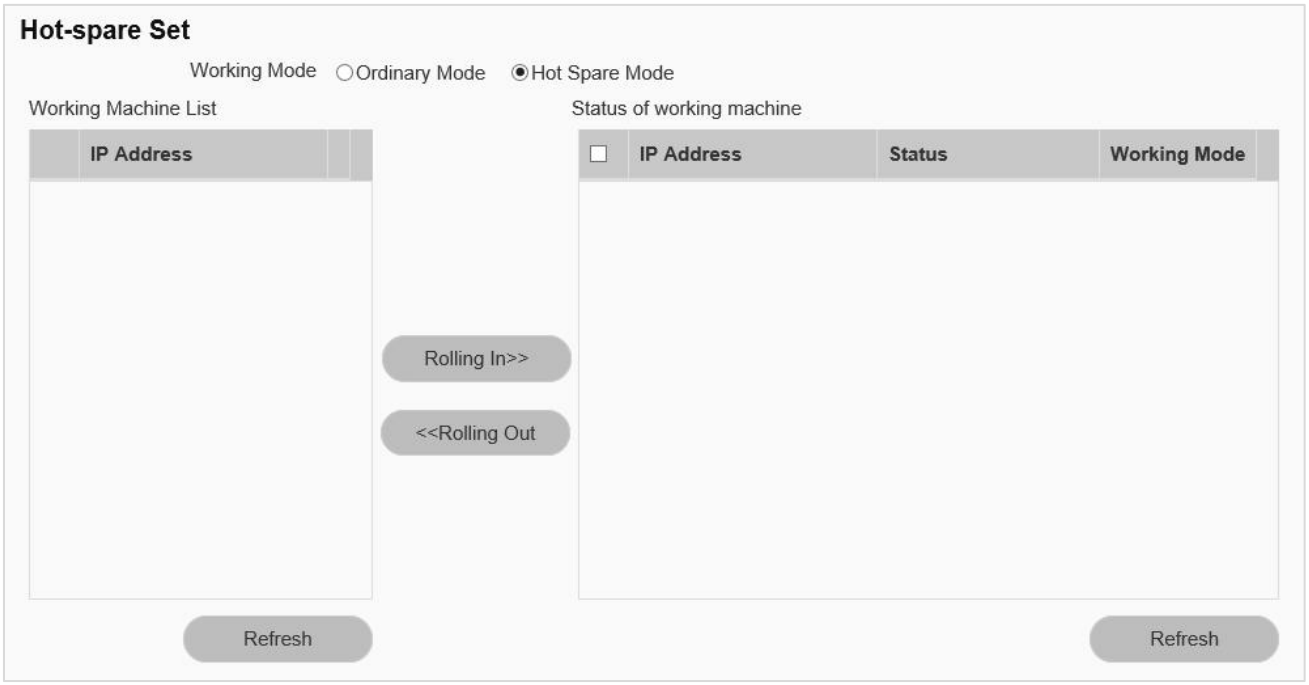
1. Select to enable the hot standby machine, set the IP address of the hot standby machine, and click [Add]; or select the IP to be deleted, and click [Delete].

2. When the designated hot standby machine is set successfully and is connected to the local machine, the working status will be updated to [Connection successful]; when the hot standby machine actively uploads the backup video file, the working status will be displayed as [Synchronizing], and the synchronization progress bar will display the

percentage progress of synchronization.

13. 4. 2 Hot standby mode

1. Enter [Main Menu-> System Settings-> Hot Standby Settings] and select the hot standby mode, as shown in the following figure.



2. Click the [Apply] button, and the system prompts that the device needs to be restarted to take effect.

3. After the device is restarted, it enters the hot standby working mode. At this time, the main interface of the system will change accordingly. It only supports hot standby settings, video settings, system settings, user management and shutdown.

4. Click the [Refresh] button to display the working machine with the hot standby function enabled in the working machine list, and select the working machine to be hot standby.

5. Click the [Add] button, and the system will prompt you to enter the login user name

and password of the working machine. After the verification is passed, the working machine status list will display the IP and connection status of the working machine; if the password verification is not passed, the working machine status list will also display the IP of the working machine, but the working machine will display the status of the hot standby machine as connection failure.

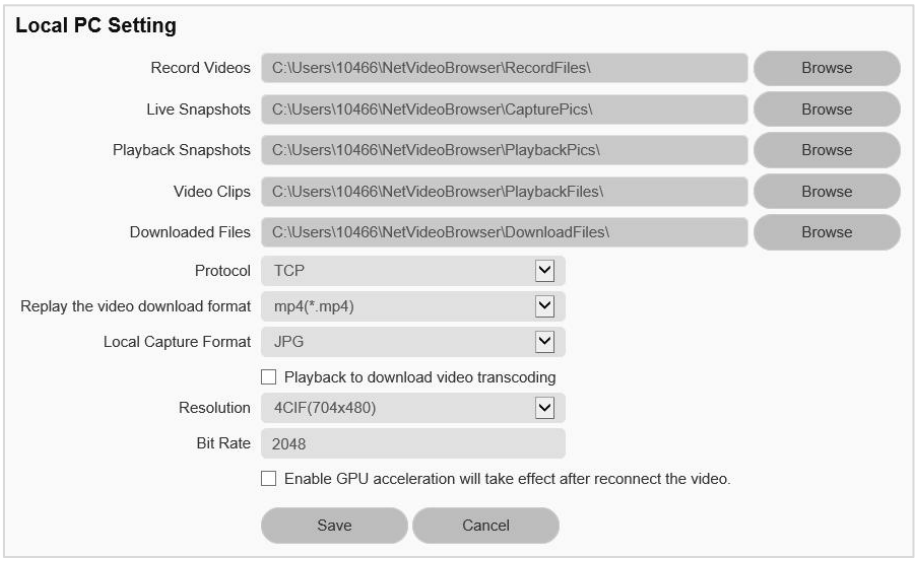
6. Click [Apply] to save the configuration.

7. In the hot standby configuration interface of the hot standby machine, select [Normal Mode] to switch the hot standby machine back to the working machine.

Explain：

- After the hot standby machine is changed to the working machine, the default Parameter needs to be restored manually.
- The system time of the working machine and the hot standby machine shall be consistent.

13.5 Local Settings



The user can set the storage path of [video file/preview snapshot/playback

snapshot/playback clip/playback download] and [local snapshot format] as required.

[Protocol type]: Set the network connection protocol of the device. If it is set to UDP, only one connection is supported.

[Playback video format]: Select the format of the playback video.

[Local capture format]: [JPG], [BMP] are optional. JPG must be selected for the device to send snapshots to FTP and Email.

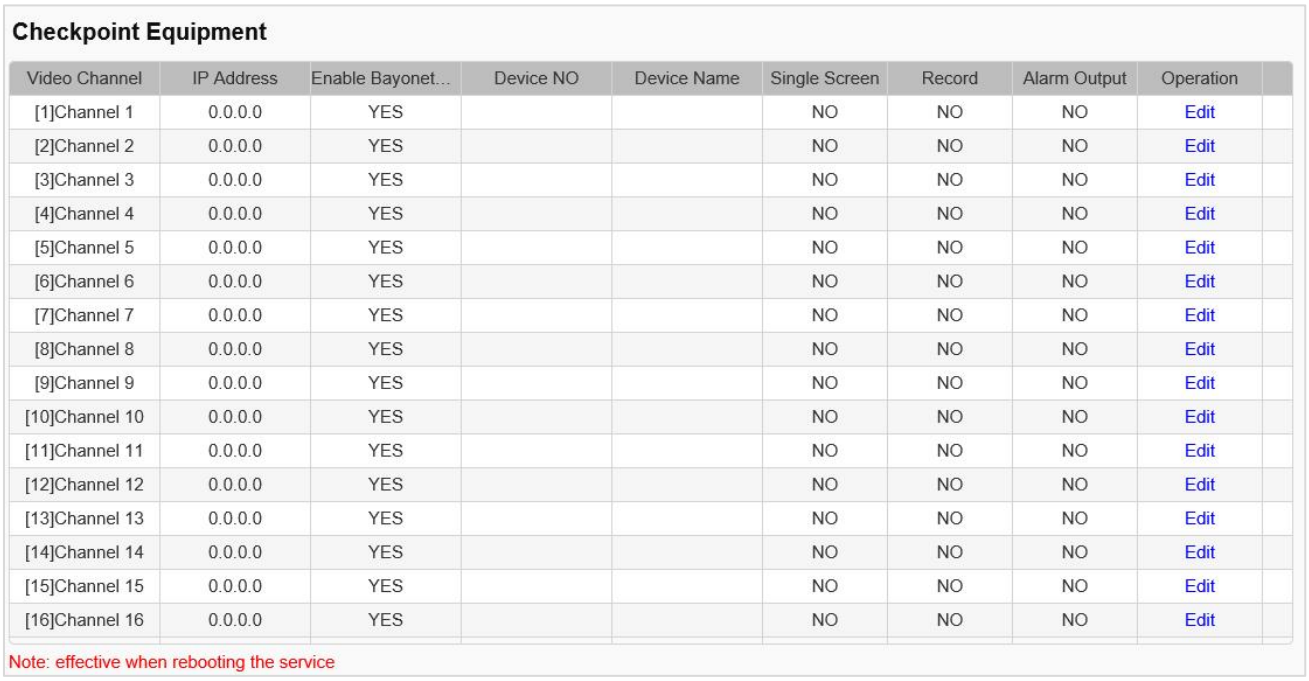
[Video playback transcoding]: After checking, the resolution and code rate can be set.

14 Bayonet management

Some models support bayonet management. In the bayonet setting interface, the user can set the bayonet Parameter according to the actual situation or preference on site.

14.1 Bayonet equipment

The user can perform basic Parameter setting and linkage operation setting on the bayonet device as required.

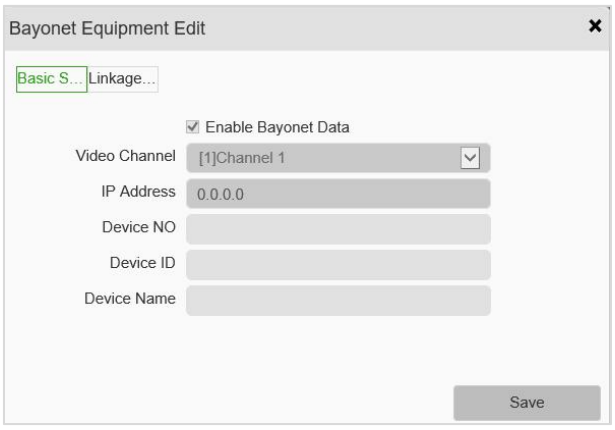


Checkpoint Equipment

Video Channel	IP Address	Enable Bayonet...	Device NO	Device Name	Single Screen	Record	Alarm Output	Operation
[1]Channel 1	0.0.0.0	YES			NO	NO	NO	Edit
[2]Channel 2	0.0.0.0	YES			NO	NO	NO	Edit
[3]Channel 3	0.0.0.0	YES			NO	NO	NO	Edit
[4]Channel 4	0.0.0.0	YES			NO	NO	NO	Edit
[5]Channel 5	0.0.0.0	YES			NO	NO	NO	Edit
[6]Channel 6	0.0.0.0	YES			NO	NO	NO	Edit
[7]Channel 7	0.0.0.0	YES			NO	NO	NO	Edit
[8]Channel 8	0.0.0.0	YES			NO	NO	NO	Edit
[9]Channel 9	0.0.0.0	YES			NO	NO	NO	Edit
[10]Channel 10	0.0.0.0	YES			NO	NO	NO	Edit
[11]Channel 11	0.0.0.0	YES			NO	NO	NO	Edit
[12]Channel 12	0.0.0.0	YES			NO	NO	NO	Edit
[13]Channel 13	0.0.0.0	YES			NO	NO	NO	Edit
[14]Channel 14	0.0.0.0	YES			NO	NO	NO	Edit
[15]Channel 15	0.0.0.0	YES			NO	NO	NO	Edit
[16]Channel 16	0.0.0.0	YES			NO	NO	NO	Edit

Note: effective when rebooting the service

1. Select the video channel and click [Edit] to enter the bayonet setting editing page.



2. Check the [Enable bayonet data] check box to enable the bayonet management function.

3. The user can customize [Device No.], [Device ID] and [Device Name] as required.

4. Set [Linkage Settings] to realize linkage operation after the event is triggered, such as [Linkage Video], [Single Screen], etc.

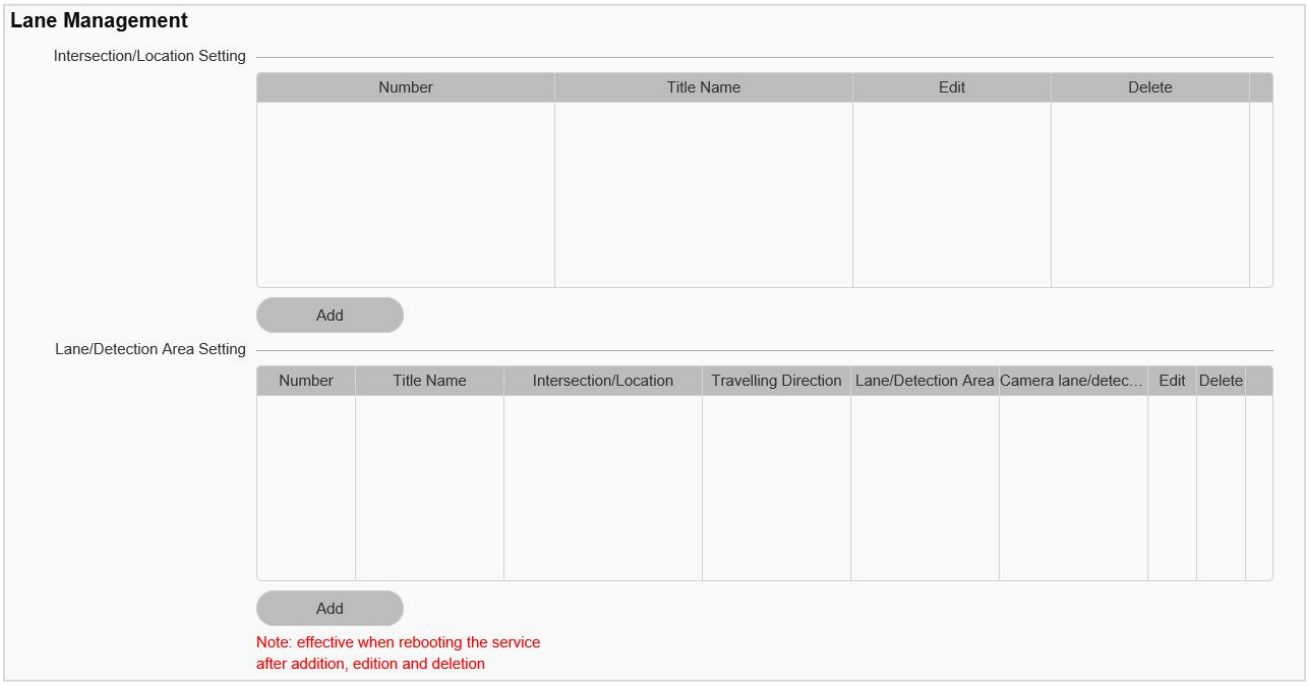
5. Click the [Save] button to save the corresponding Parameter settings.

Explain：

- The setting information of the bayonet device takes effect after restarting the service.

14.2 Lane management

The user sets the intersection/location, lane/detection area, etc. As required.



14. 2. 1 Intersection/Location Settings



1. Click the [Add] button to add intersection/location information. Explain: Enter at least 5 digits for the junction/location number.

2. Click the [Edit] button to edit the name Parameter information of the intersection/location.

3. Click the [Delete] button to delete the corresponding lane/detection area information, and the corresponding linkage operation will not be displayed.

14. 2. 2 Lane/Detection Area Settings



1. Click the [Add] button to enter the lane/detection area setting interface. The user can set relevant Parameter information such as [No.], [Name], [Intersection/Location], [Driving Direction], [Camera Name], [Camera Lane/Detection Area] as required.

2. Click the [Edit] button to edit relevant Parameter information such as [Intersection/Location], [Driving Direction], [Camera Name], [Camera Lane/Detection Area].

3. Click the [Delete] button to delete the setting content of the corresponding lane/detection area.

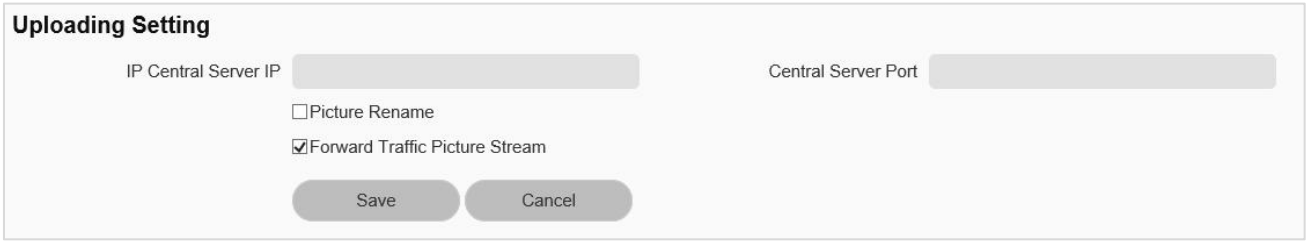
The relevant Parameter Explain is as follows:

Parameter	Explain
Number	Sets the number of the lane/detection area.
Name	Sets the name of the lane/detection area.
Junction/location	Select Junction/Place Info. Explain: You can add, delete, and edit operations from [Intersection/Location Settings].

Direction of travel	Select the form and direction of the vehicle, support multiple driving directions from east to west, from west to east, from south to north, from north to south, into the city, out of the city, from southeast to northwest, from southwest to northeast, from northwest to southeast, and from northeast to southwest.
Camera name	Set the snapshot camera. Explain: Add, delete and edit operations can be performed from [bayonet device].
Camera lane/detection area	Select camera lane/detection area, 128 lanes/areas are supported, and the lane/area selection is unique.

14.3 Upload Settings

The user sets the picture uploading server and the picture uploading name as required.



The relevant Parameter Explain is as follows:

Parameter	Explain
Central server IP	You need to enter an address in IP form.
Hub server port	The port number is a number between 1024 and the 65535.
Customize the name of uploaded pictures	Check to display the content of the picture name setting. If not checked, the content of the picture name setting will be hidden.

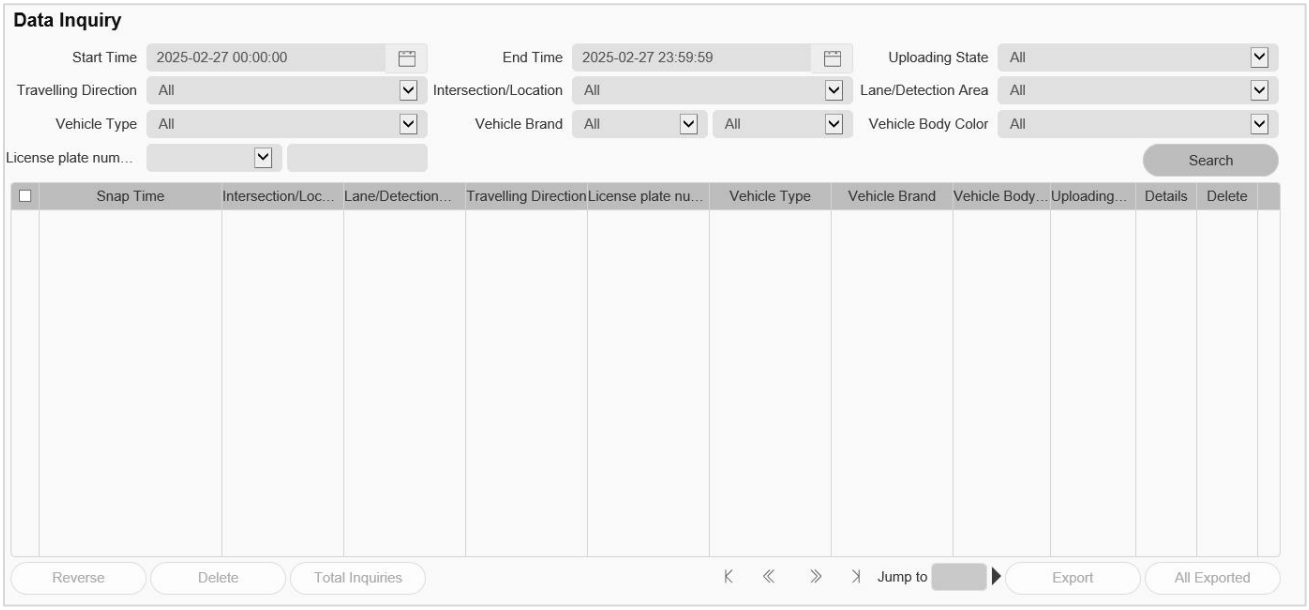
Separator	There is a default separator, and manual modification is not supported.
Picture name format	It can be modified manually to set a new picture name format.
Picture name preview	Displays the contents to the right of the picture name format.
Preservation	Click the [Save] button to save the corresponding Parameter settings.
Reset	Click the [Reset] button to restore the last saved Parameter.

The relevant Icon Explain is as follows:

Icon	Explain
>>	Move all right
>	Move right
<	Move left
<<	All to the left
^	Move up
v	Move down

14.4 Data query

Users can query vehicle information as needed. After setting the query information, click the [Query] button. Query results can be viewed in the list.



The relevant Parameter Explain is as follows:

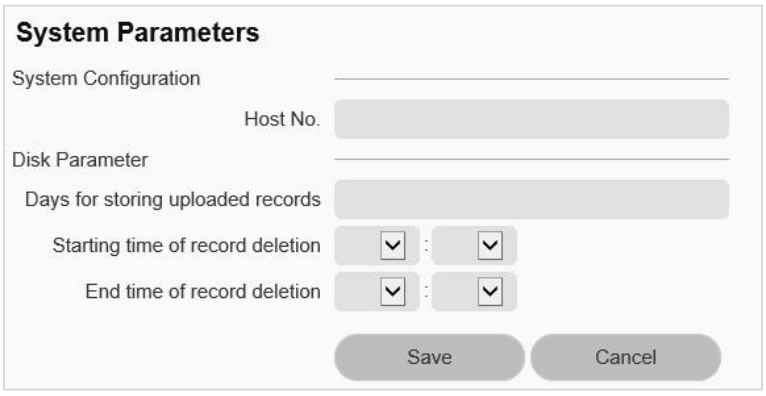
Parameter	Explain
Start time	Select the start time for the data query.
End time	Select the end time for the data query.
Upload status	Select the upload status of data, including Not Uploaded, Uploaded and All.
Direction of travel	Select the form and direction of the vehicle, support all, from east to west, from west to east, from south to north, from north to south, into the city, out of the city, from southeast to northwest, from southwest to northeast, from northwest to southeast, from northeast to southwest.
Junction/location	Select the junction/location information for the data query.
Lane/detection area	Select the lane/detection area for the data query.
Type of vehicle	Select the vehicle type for data query, and support the query of

	various vehicle types such as large passenger cars, sedans, and large trucks.
Vehicle brand	Select the vehicle brand for data query, and support multiple brands and series.
Body color	Select the body color for data query, and support multiple body color queries.
License plate number	Select the license plate number for data query.
Inquire	Click Enable to find the data information conforming to the query conditions.
Details	View details.
Reverse election	Click Enable, check the irrelevant information in the list as required, and click Display Inverted Information.
Delete	Click Enable, and select the data information to be deleted as required.
Total number of queries	Click Enable to query all data information quantities.
Export	Click Enable, select the data information to be exported in the list as required, and click Export Data in Device.
Export all	Click Enable to export the information of all the data that has been queried.

14.5 System Parameter

The user sets the system Parameter and snapshot quota as required. Enter [Configuration- > Checkpoint Management- > System Parameter], and select the System Parameter setting tab, as shown in the following figure.

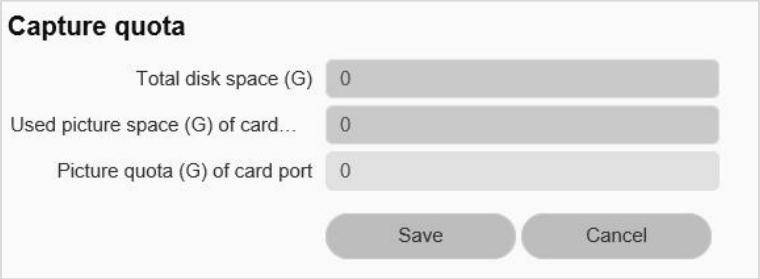
14. 5. 1 System Parameter



The relevant Parameter Explain is as follows:

Parameter	Explain
Host number	Users can customize the host number and support integers of 3 digits or more.
Upload record storage number	Set the Parameter time for saving the data in the disk.
Record deletion start times	Sets the start time of the on-disk data deletion.
End time of record deletion	Sets the end time for in-disk data deletion.

14. 5. 2 Capture Quota



The relevant Parameter Explain is as follows:

Parameter	Explain
Total Disk Space（G）	Displays the total disk space in the device.
Used space of bayonet image （G）	Displays the amount of space occupied by the bayonet device.
Bayonet picture quota（G）	Set the space size that the bayonet picture is allowed to occupy, and delete the data after exceeding the set size.

14.6 Operation management

The user can restart the service through this interface after setting the [Access Device] and [Lane Management] Parameters as required.

15 Logs

Operation steps:

Select the channel number to be queried from the [Channel] drop-down list.

Select the log type to be queried from the [Log Type] drop-down list.

Select the start date in the [Start Time] drop-down list, and enter the time in the edit box behind.

Select the end date in the [End Time] drop-down list, and enter the time in the edit box behind.

Click the [Query] button to query the logs within the specified time range.

When there are many logs, you can use [Home] [Previous] [Next] [Last] in the lower right corner to turn pages to view logs; or enter the page number to be viewed directly in [Jump to] to jump to the specified page.

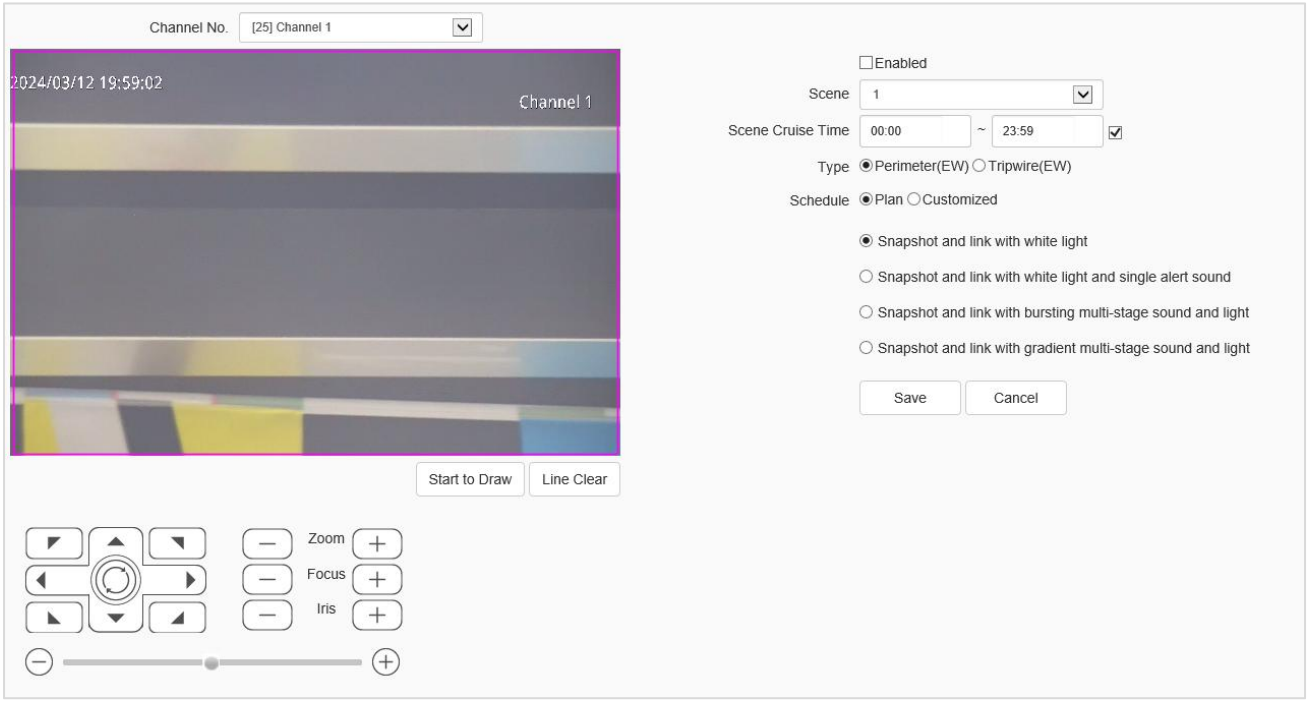
Click [Export Current Page Log] to export the current page log to the computer.

Click [Export All Page Logs] to export all the queried logs to the computer.

16 EW

In the alert setting interface, the user can set the alert Parameter according to the actual situation or preference on site.

16.1 Contingency Plan Settings



(1) Check Enable Active Alert Algorithm.

(2) Select [Alert Type], set perimeter alert or tripwire alert, and set the effective time of alert scenario.

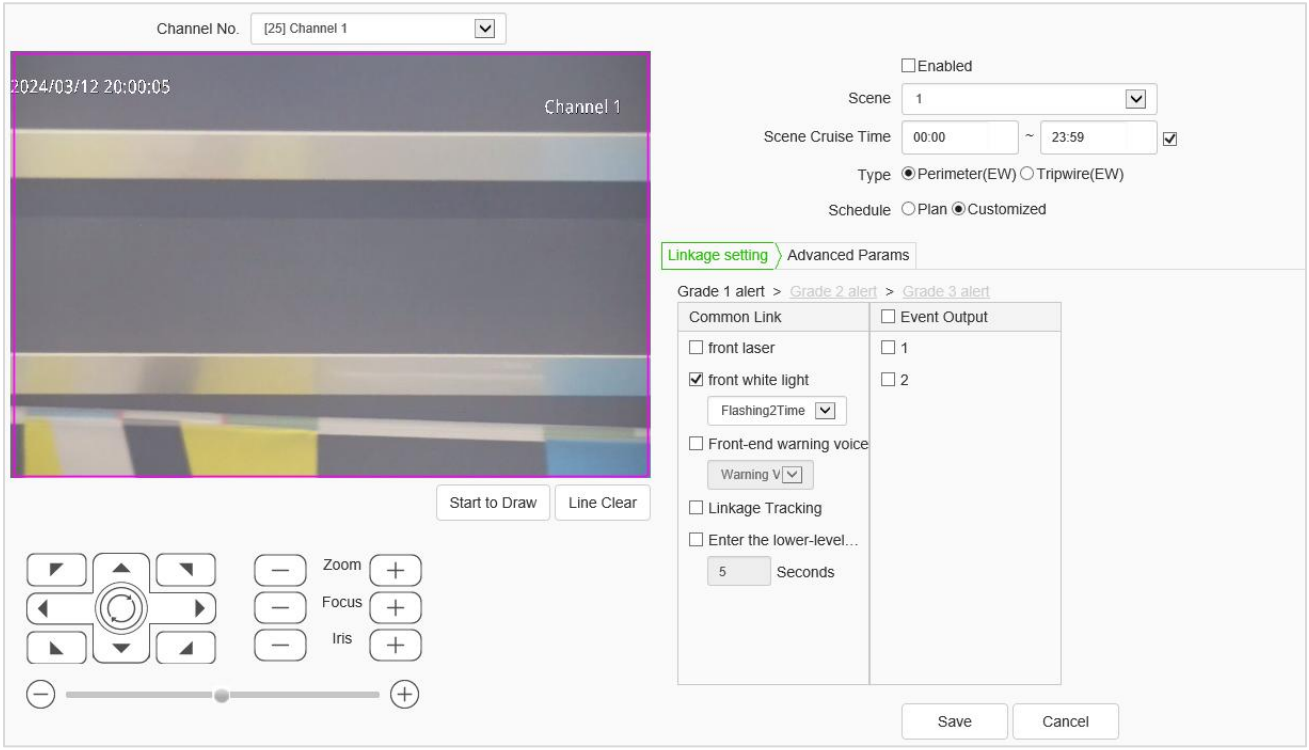
And (3) adjusting the scene and drawing a warning area or a warning line. By default, the full screen of the perimeter alert is the alert area. If you need to adjust it, you need to clear the line and draw it again.

(4) Select a preset alert plan.

(5) Click the "Save" button to complete the algorithm setting, and exit the alert

setting interface to take effect.

16.2 Custom Settings



(1) Check Enable Active Alert Algorithm.

(2) Select the alert type: perimeter alert or tripwire alert, and set the effective time of the alert scenario.

(3) adjusting the scene and drawing a warning area or a warning line.

(4) Alert template selection is user-defined.

(5) Set the linkage item or advanced Parameter. Linkage items can be set up to three levels of warning, and each level of warning effect can be set separately.

(6) Click the "Save" button to complete the algorithm setting, and exit the alert setting interface to take effect.

Explain：

- The device supports setting multiple scenes. Different scenarios can be set up through the

above steps.

- In the perimeter alert, the plan of [burst multi-level acousto-optic alert] is: after the target intrudes into the alert area, the white light flashes strongly and the voice shouts.
- [Progressive multi-level acousto-optic warning] The plan is divided into three levels by default, and the warning effect is enhanced step by step. When the dwell time in the previous state is greater than set value, it will enter the next state.
- Linkage settings in user-defined templates can set up to three levels of linkage, and linkage items can be set in each level of settings.
- In the linkage setting, the constant light option of the linkage white light indicates that the white light is turned on when an alarm occurs and automatically turned off after the alarm is cleared.
- The advanced Parameters of the user-defined template include: deployment week, detection mode, trigger alarm target, trigger sensitivity, longest tracking time, display rules and target box settings.
- The alert type is divided into perimeter alert and tripwire alert, and the alert is carried out for intrusion area, departure area and cross-border behavior. The perimeter alert is the intrusion area alert by default, and the user can modify the detection mode in the advanced settings of the user-defined template.
- The alert detection targets are people and vehicles by default. Users can customize the advanced settings according to their specific needs.
- The longest tracking time takes effect during linkage tracking, indicating that the tracking action is stopped and the alert monitoring scenario is returned when the time is reached.

- The custom alert tone can be set by the following 2 methods:

(1) downloading AudioMaker. Exe software, recording a warning sound according to a help document of the software, making an upgrade package, and downloading the upgrade package to a video camera in a web page upgrade mode of the video camera.

(2) Download the mobile phone client through the QR Code button on the preview interface, and record and upload the alert tone through the mobile phone client for the equipment connected to the Internet and supporting the custom alert tone.