Tiandy

Network Video Recorder Series

User Manual

ISO 9001
ISO 14001
ISO 45001

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Liability statement

- This manual may contain inaccuracies, discrepancies in product functionality, or printing errors.
- Our company will update the content of this manual based on enhancements and changes to product features, and will regularly improve the software and hardware products described herein. Updated information will be reflected in the latest version without prior notice. If you require the latest version of the document, please visit our official website.
- Due to our continuous adoption of new technologies, changes to product specifications may occur without prior notice.
- This manual is provided for reference purposes only and does not guarantee complete consistency with the actual product. Please refer to the physical product for accuracy.
- The parts, components, and accessories mentioned in this manual are for illustrative purposes only and do not represent the configuration of the purchased model.
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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 Overview of Product Functions

Describes the main features that users need to know when using the NVR.

1.1 Basic Features

- Support for network device access, including network cameras, IP domes and network video servers, as well as third-party network cameras.
- Support for the standard Onvif protocol.
- Each channel supports the preview of primary and secondary code streams.
- Each channel supports adjustable encoding parameters, including resolution, frame rate, code rate, image quality.
- Each channel supports regular functioning and alarming, custom 1, custom 2 and other intelligent video template parameters.
- Support for fast addition of IP channels.

1.2 Local Monitoring

- Support for VGA and HDMI displays.
- Support for multi-screen video preview.
- Support for the preview of up to 1/3/4/6/8/9/10/13/16/20A/20B/25/32/36/40/64/80 screens.
- Support for the preview of shortcut menu operations.
- Support for front-end intelligent analysis.

- Support for video motion detection, video loss detection, video occlusion detection and port alarm detection.
- Support for a variety of mainstream PTZ control protocols, and also setting and recalling of preset position, cruise path and trajectory.

1.3 Hard Disk File Management

- Support for hard disk SMART information display.
- Support for bad track detection.
- Support for setting of hard disk property: redundant, read-only, read-write and backup.
- Support for hard disk sleep.
- Support for hard disk pack quota, which can be divided into disk pack or different channels to allocate different video storage space.

1.4 Video recording and playback

- The video trigger mode includes: timer and port alarm, motion detection alarm, detection or port alarm, detection and port alarm, video loss alarm, video occlusion alarm, intelligent analysis alarm and other alarm situations.
- Support for pre-recording and delay of linkage videos of all alarm types.
- Support for querying of video files by general conditions/events.
- Support for local redundant recording.
- Support for locking/unlocking of video files.

- Up to 4 video recording periods can be set a day, and the recording trigger mode in different periods can be set independently.
- Support for holiday plans.
- Support for querying of videos by channel number, video type, start and end time and file type.
- Support for several playback modes including regular playback, event playback, label playback, intelligent playback, video summary playback, time-phased playback, picture playback and external file playback.
- Support for video snapshot function. Different types of videos are distinguished with different colors.
- Support for pause, fast forward, slow, forward 30S, reverse 30S, step, step back, stop, one day before, one day after, as well as dragging your mouse for locating.
- Support for rolling your mouse wheel to zoom in and out the playback timeline.
- Support for digital zooming of any area.
- Support for video file playback function.
- Synchronous playback of up to 16 channels is possible for devices with 16 channels and above.

1.5 Data Backup

- Support for backup of videos, pictures and other data via USB devices.
- Support for bulk backup by file range and type.
- Support for playback, clipping and backup of videos.

- Support for fast backup by channel and time.
- Support for management and maintenance of backup devices.

1.6 Alarm and Abnormality Management

- Support for setting of the arming time of alarm inputs/outputs.
- Support for video loss, motion detection, video occlusion, port, intelligent analysis, detection or port, detection and port and other alarm detections. All the alarms can be linked to single-screen display, text plan, sound alert, email and alarm output, and can trigger the recording of any channel.
- Support for disk full, no disk, disk read/write error, illegal access, IP address conflict, MAC address conflict, no redundant disk available, network disconnection, abnormal hot standby, abnormal array, disk overloaded, abnormal recording, disk SMART abnormality, disk temperature abnormality and other abnormality detections. In addition, the POE device also supports the POE overload detection. Various exceptions can trigger screen prompt, sound alert, upload center, email alarm and port alarm.
- When the system runs abnormally, the software watchdog can restart.

1.7 Other Local Features

- Five-level user permission management allows an administrator to create more than one operation user and allocate them with proper permissions, which can be accurate to a certain channel.

- Complete logging and retrieval of operation, alarm, exception and information logs.
- Support for manual triggering and clearing of alarms.
- Support for import/export of device configuration information.

1.8 Network Features

- Support for TCP/IP protocol cluster, and also PPPoE, DHCP, DNS, DDNS, NTP, SADP, NFS, HTTPS and other protocols.
- Embedded WEB server.
- Support for unicast and multicast. For unicast, TCP, UDP, and RTP protocols are supported.
- Support for remote search, playback, download, locking and unlocking of video files.
- Support for remote fetching and configuration of parameters, as well as remote export and import of device parameters.
- Support for remote fetching of device running state, system log and alarm state.
- Support for system maintenance operations such as remote formatting, updating and rebooting of hard disk.
- Support for alarm port expansion through alarm host.
- Support for remote manual triggering and stopping of video recording.
- Support for remote manual triggering and stopping of alarm outputs.

- Support for remote PTZ control.
- Support for voice intercom or voice broadcast.

1.9 Development Support

- Provides SDK software development kits under Windows and Linux-based systems.
- Provides application software source code for demonstration.
- Provides development support and development training services for application systems.

Explain：

- The product functions list the main functions supported by our company's NVR. Different models have different functions due to different positioning and configuration. Please refer to the real object.

2 Need-to-Know

2.1 Mouse operation instructions

After your mouse is connected to the USB interface, you can use your mouse to operate the device. For information about available operations, refer to the following table:

Name	Action	Description
Left-click	Click	● Preview: select a screen, display the fast add IP channel interface (When IP device channel is not added). ● Preview: display preview shortcut menu (when IP device channel is added). ● Menu: select and confirm.
	Double click	● Single screen, full screen, multi-screen display switch in preview and playback states.
	Press&hold and drag	● Turn directions in PTZ control mode. ● Set the area range when setting occlusion, motion detection and video occlusion alarm area. ● Drag the scroll bar where channel and time is displayed.

		• Switch between two preview screens.
Right click	Click	• Preview: to display the right-click menu. • Menu: exit the current menu and return to the previous level
Mouse wheel	Swipe up	• Up and down selection box, scroll-up options • Scroll bar, scroll-up pages • Increasing the multiplying factor (+) for digital zoom
	Swipe down	• Up and down selection box, scroll-down options • Scroll bar, scroll-down pages • Decreasing the multiplying factor (-) for digital zoom
	Double click	• Mouse switches between primary and secondary screens

3 Installation and Connection

Introduce the installation methods and precautions that users need to know before using NVR.

3.1 Installation Precautions

Warning：

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.

NVR is a special monitoring device. Please pay attention to the following items during installation:

- 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 E16 in redundancy mode is + 20 ℃ ~ + 55 ℃).
- 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 after 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.
- Do not use volatile solvents such as alcohol, benzene or thinner when cleaning the equipment. Do not use strong or abrasive cleaning agents, which can damage the surface coating.
- Please purchase the monitor-level hard disk from regular channels to ensure the quality and use requirements of the hard disk. We recommend the use of Seagate monitor-level hard disk.
- 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.

Explain：

- When you receive this product, please count it according to the [Equipment Packing List] in the packing box. If you find that the items in the packing box are damaged or the accessories are missing, please contact the dealer in time.

3.2 Installing the hard disk

Our NVR devices are not supplied with hard disk. A hard disk needs to be configured and installed according to your recording plan. Disassembly of the chassis and installation of the hard disk must be completed by professionals.

Notice:

- Please use the NVR dedicated monitoring-level hard disk recommended by the hard disk manufacturer.
- For the maximum number of hard disks installed on the device, refers to the instructions in the hard disk document.
- Make sure that the power supply is cut off before installation commences.

3.2.1 Calculation Method of HDD Capacity

Calculate the total capacity required for a hard disk video recorder according to the requirements of video recording (video type, video storage time), as detailed in the Appendix of this Manual.

Example:

Bit Rate	File Size/Hour	Bit Rate	File Size/Hour
96 Kbps	42 m.	128 Kbps	56 M
160 Kbps	70 M	192 Kbps	84 M
224 Kbps	98 M	256 Kbps	112 M
320 Kbps	140 M	384 Kbps	168 M
448 Kbps	196 M	512 Kbps	225 M

640 Kbps	281 M	768 Kbps	337 M
896 Kbps	393 M	1024 Kbps	450 M
1280 Kbps	562 M	1536 Kbps	675 M
1792 Kbps	787 M	2048 Kbps	900 M
3072 Kbps	1350 M	4096 Kbps	1800 M
8192 Kbps	3600 M	16384 Kbps	7200 M

Notice:

- The data provided in the table above is for reference only. The estimation of "file size" in the table may deviate from the actual value, and any loss caused thereby shall be borne by the user.

3.2.2 HDD Installation Procedure

Prepare a Phillips screwdriver.

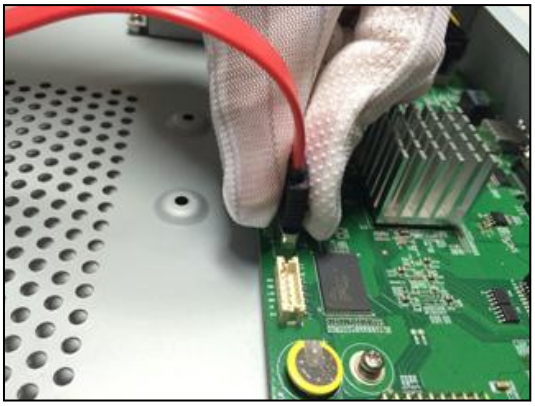
Installation diagrams (1):

1、Unscrew the screws on the back and side of the chassis, and remove the upper cover.



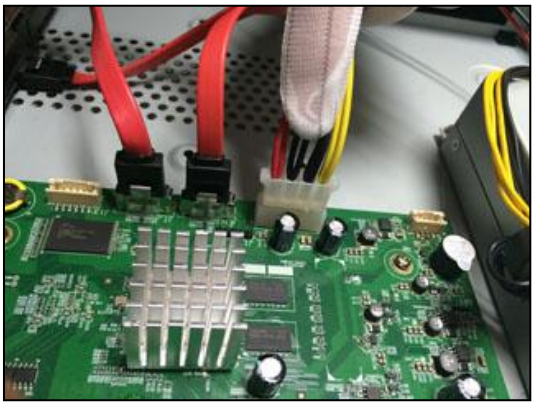


2、Connect one end of the HDD data cable to the SATA interface of the NVR master board Up, and the other end to the HDD.



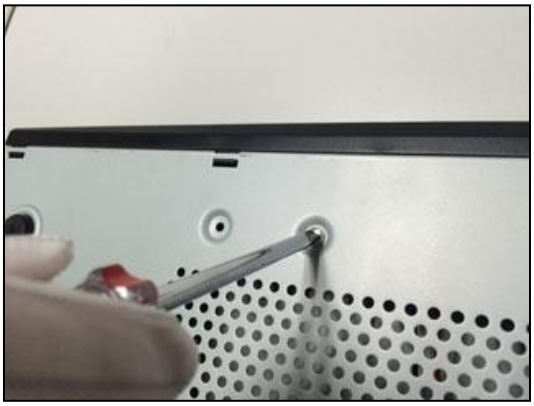


3、Connect one end of the HDD power cable to the SATA interface of the NVR master board, and the other end to the HDD.





4、Fix the HDD screws on the bottom of the NVR chassis, attach the top cover of the chassis and fix it with screws.





Installation diagrams (2) :

1、Remove the screws on the back of the chassis, remove the top cover, and fix the hard disk to the chassis HDD holder.



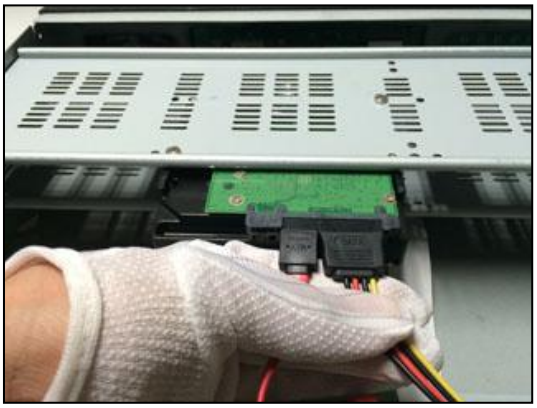


2、Connect one end of the HDD data cable to the SATA interface of the NVR master board, and the other end to the HDD.





3、Connect the power cable to the hard disk, attach the top cover of the chassis and fix it with screws.





Installation diagrams (3): (installation of the front HDD)

1、Attach the HDD mounting screws and insert it into the HDD slot on the front panel.





4 Local Configuration and Operation

Describe the local configuration and operation that users need to know when using NVR.

4.1 Switch ON/OFF

4.1.1 Switch ON

1. Connect the power supply and turn on the power switch on the rear panel. The device starts with a "beep" sound.

2. NVR displays the following screen at startup:



Notice:

- Make sure to use the power supply required by NVR before startup, and ensure that the NVR is well grounded.
- Make sure the NVR video output is properly connected to the monitor before startup.
- Abnormal power supply will result in malfunctioning of NVR or even damage. It is recommended to use stabilized power supply for power supply.

4.1.2 Switch OFF

1. Select "Main Menu->" to enter the logoff interface, as shown in the figure below.



2. Users can click logoff to restart or shut down system.

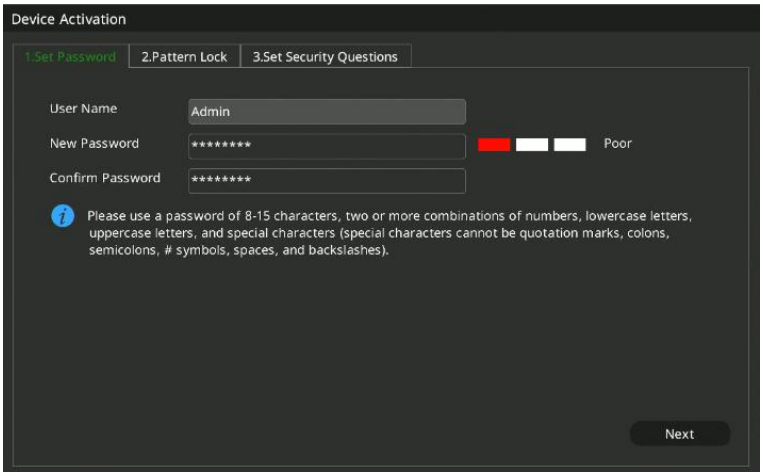
Notice:

- Please do not cut off the power supply when the system is displaying "The system is shutting down..."
- Do not cut the power supply off when the device is running.

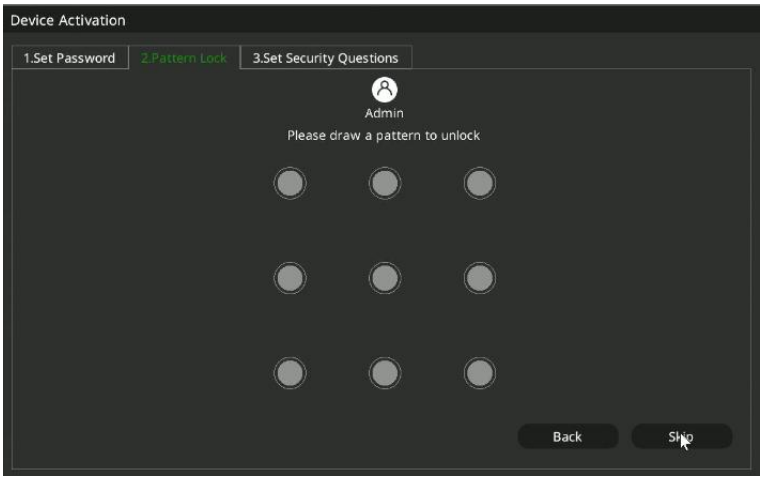
4.2 Device Activation

After the device is started, the device can be configured with password and secret protection through device activation to ensure the normal login and password security of the device.

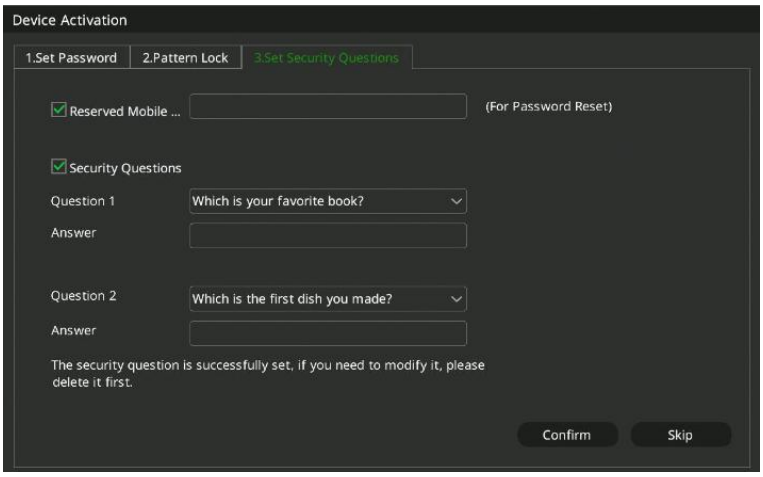
1、 First, enter the password setting interface, enter the password twice, and click Next to enter the next interface.



2、 Enter the graphic password setting interface, set the pattern to unlock, and then automatically enter the security setting interface. Click Back to return to the password setting interface, and click Skip to not set the graphic password.



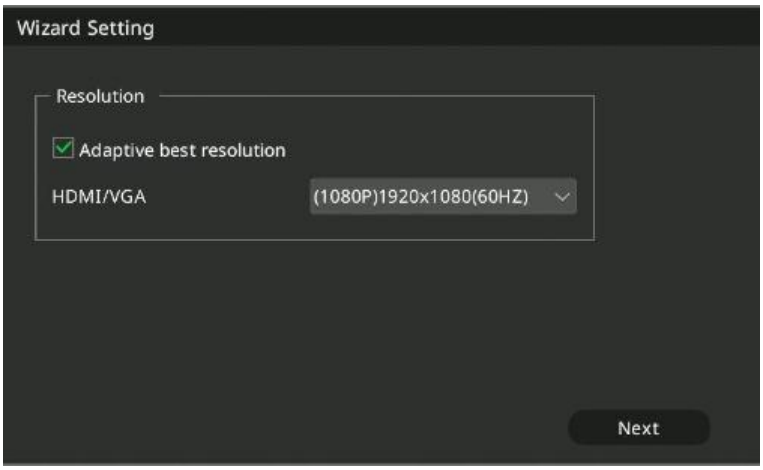
3、 Enter the setting security interface, set the reserved mobile phone number and set the security problem. You can directly skip to enter the boot wizard. The reserved mobile phone number and security questions are used to reset the password.



4.3 Boot Wizard

After the device is started, the device can be simply configured through the boot wizard to ensure the normal operation of the device.

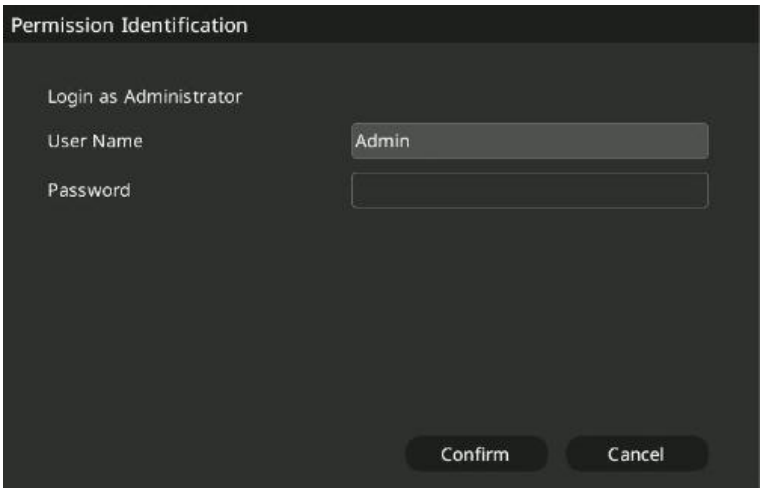
1. First, enter the wizard setting interface to set the resolution of the current output device. Click [Next] to enter the next screen.



2. Enter the setting wizard interface and select whether to run the boot wizard. Click [Yes] to enter the next interface, click [No] to skip the boot wizard, click [Never] to close the boot wizard, and the next boot will skip the boot wizard.



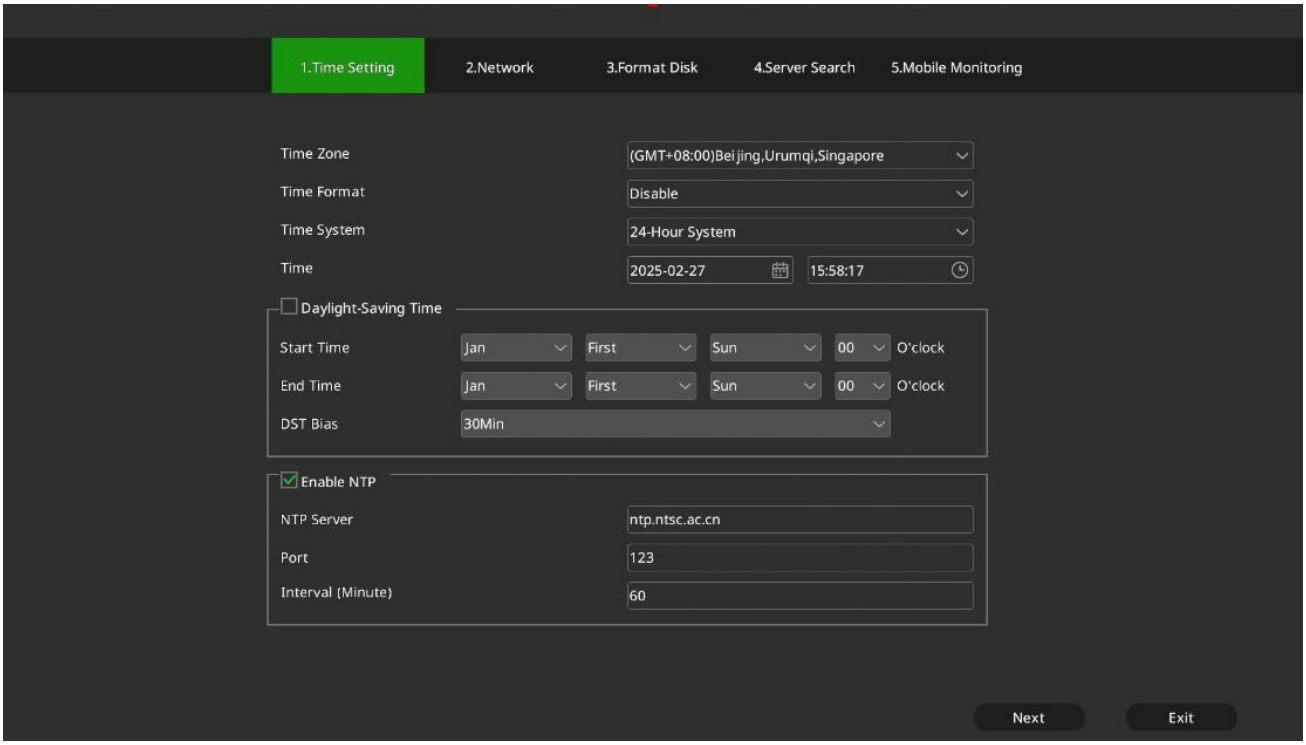
3. To enter the authority authentication interface, the user needs to log in as administrator [admin] for authentication. Click [OK] to confirm the account and enter the boot wizard after successful authentication. The device will be locked for 5 minutes if there are 5 consecutive errors. Click [Cancel] to skip the boot wizard.



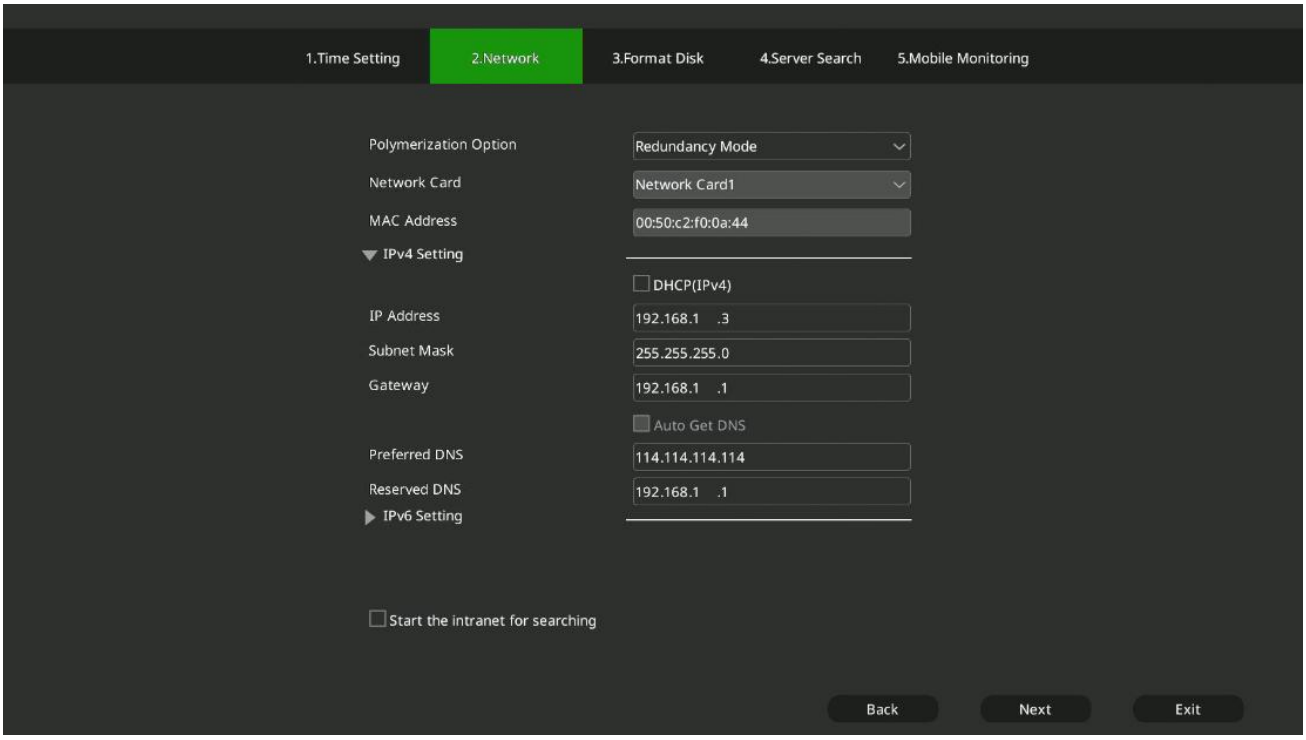
Explain：

- Default administrator: admin.

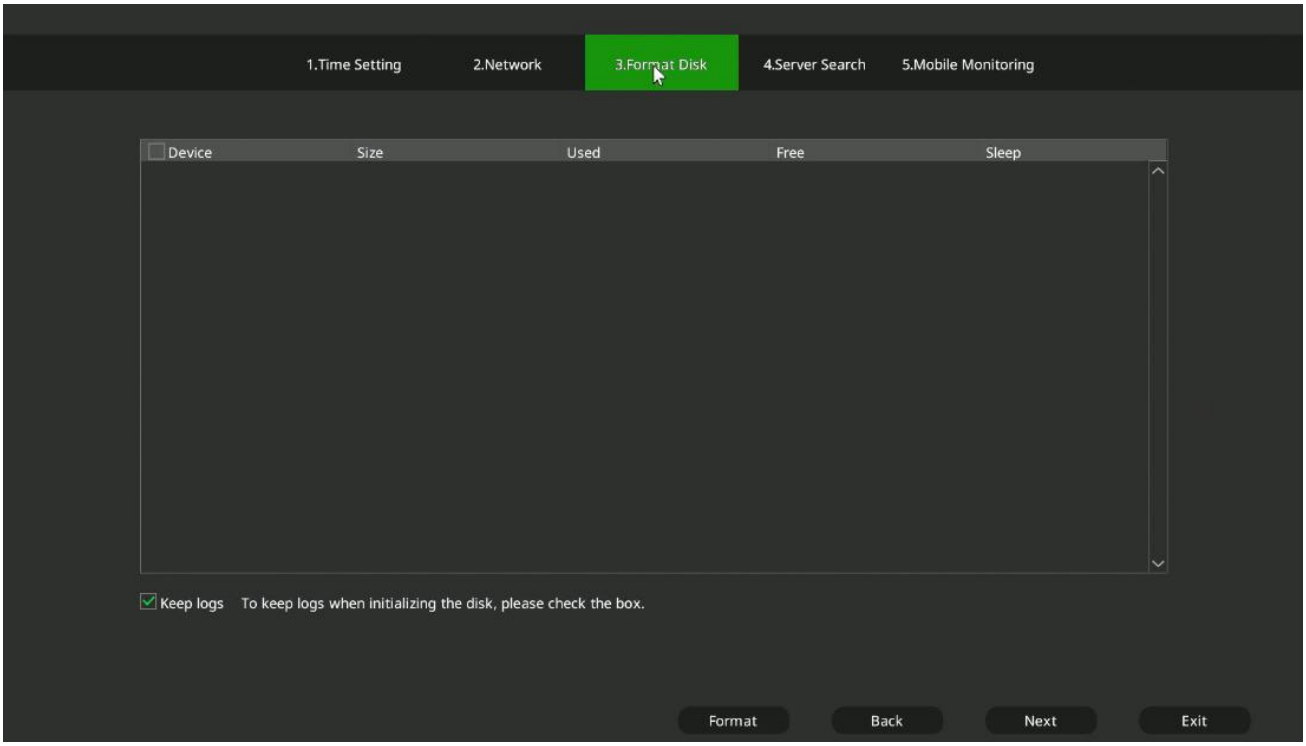
4. Enter the time and time zone setting interface, click [Apply] to set the time zone, time format and time; click [Next] to enter the next interface; click [Exit] to exit the boot wizard.



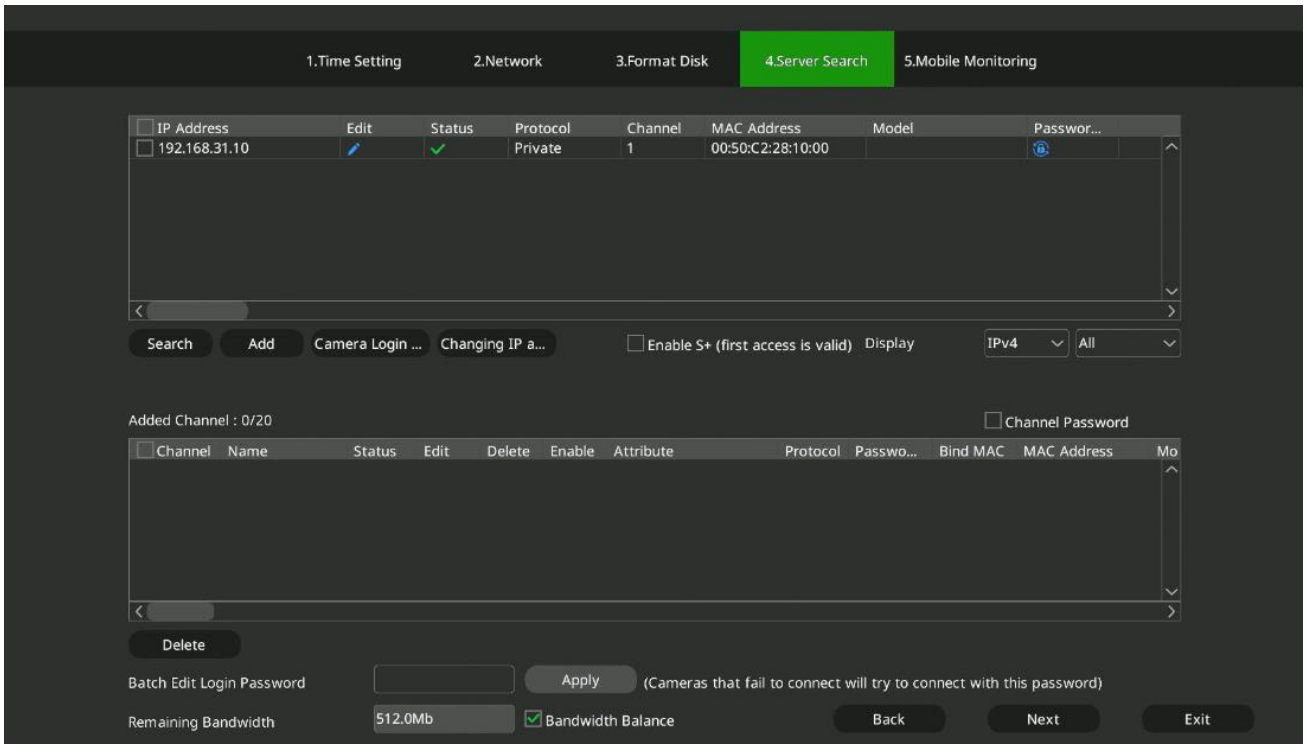
5.Enter the network setting interface; click [Previous] to return to the previous interface; click [Next] to set the network parameters and enter the next interface; click [Exit] to exit the boot wizard.



6. Enter the format disk interface and click [Initialization] to format the selected disk; click [Previous] to return to the previous interface; click [Next] to enter the next interface; click [Exit] to exit the boot wizard.



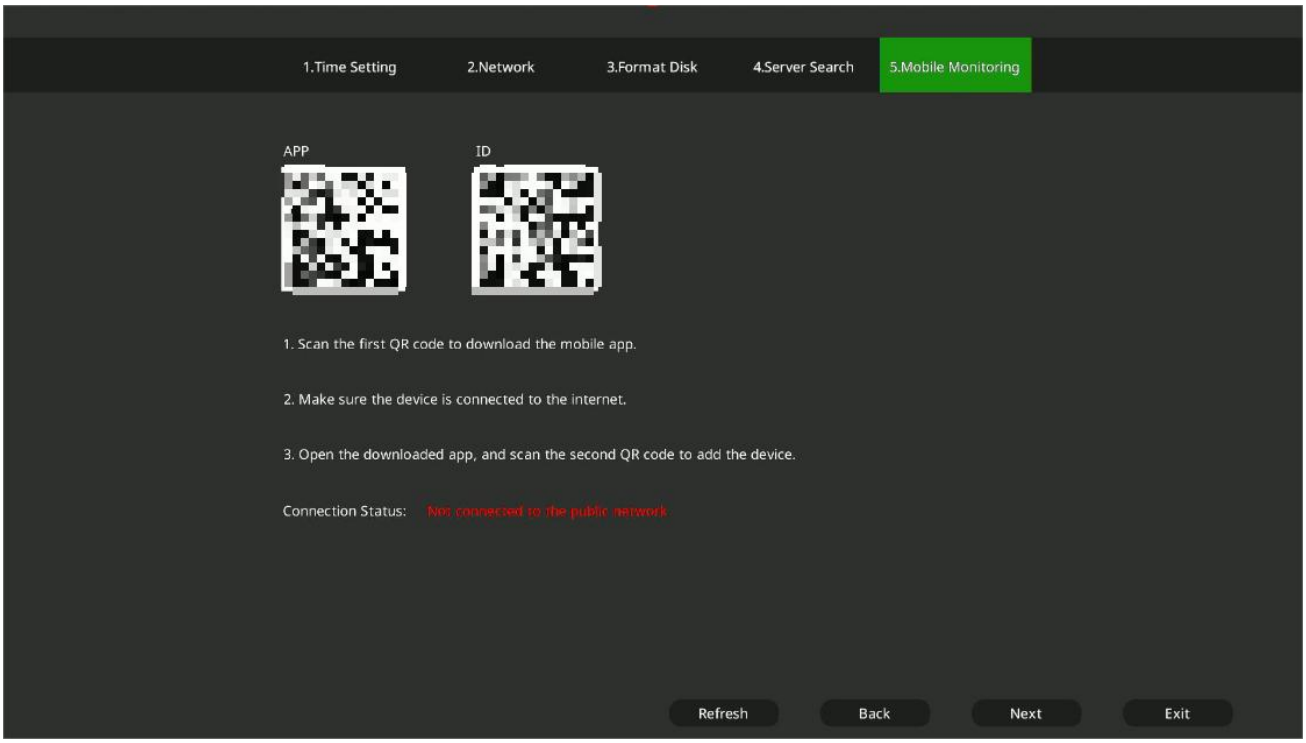
7. Enter the device search interface to configure the digital channel. Click [Search] to search for digital channels. Click [Previous] to return to the previous interface; click [Next] to enter the next interface; click [Exit] to exit the boot wizard.



Explain：

- The disk must be initialized before normal video recording.

8. Enter the mobile phone monitoring interface to configure the mobile phone control device. Click [Previous] to return to the previous interface; click [Next] to enter the next interface; click [Exit] to exit the boot wizard.



Explain：

- The above figure is only for illustration. Please scan, download and add in the device interface.

9. If there is still a hard disk that has not been formatted in the system, a prompt box will pop up. Click [Execute] to automatically format the unformatted disks in the system one by one; click [Return] to directly enter the preview screen.

4.4 Cameras

Used to manage the configuration of the NVR connection channel.

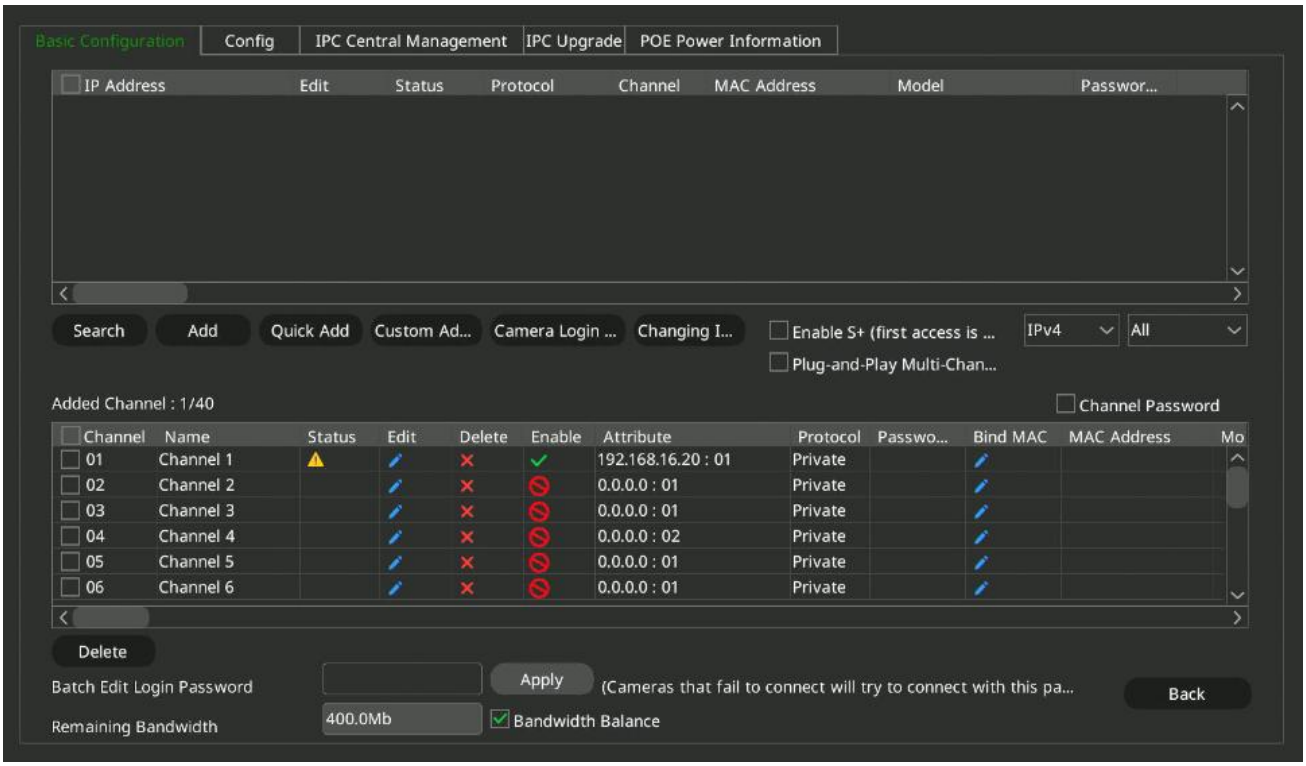
4.4.1 Channels

Add and delete channels, configure import and export operations, and manage IPC devices.

4.4.1.1 Basic Configuration

The user can manage the channel through the basic configuration.

1、Enter [Main Menu-> Channel Management-> Channel Configuration], and select the Basic Configuration tab, as shown in the following figure.



The interface function description is shown in the following table.

Function	Explain
Editor	After checking the device, click the "" icon to edit the IP information of the device.
Status	Displays the status of the device. ""Indicates that the device is

	activated, ""indicates that the device is not activated, and "indicates that the device is connected by another device.
Password reset	Device support is required to reset the device password through NVR.
Search	Click to search for devices in the same network segment.
Add	Select one or more devices and click to add a device.
Quick Add	Click to automatically search and add devices.
Customized Adding	Click to add custom devices.
Batch modify IP	Modify the IP addresses of the selected devices in batch. You can select DHCP or static IP addresses. The static IP is incremented from the starting IP. Notice: The user name and password of the device shall be consistent.
Camera login password	Set a common camera login password. If not set, the default NVR login password will be used.
Enable S+（first access is valid）	Check to enable S+ mode.
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.
Displays the filter	And filter and displaying that adde equipment channels according to different filtering condition. Filter criteria include IPv4, IPv6, and

	connection protocol type.
IP tunnel password visible	Check to display the login password of the device in the password strength column of the added device list.
Delete	Check the device and delete it.
Batch Edit Login Password	Set up batch login password and failed cameras in "Added Devices" will attempt to reconnect by using this password.
Bandwidth Remain	Display the remaining bandwidth. Check "bandwidth Balance"to allocate the same bandwidth to each channel.

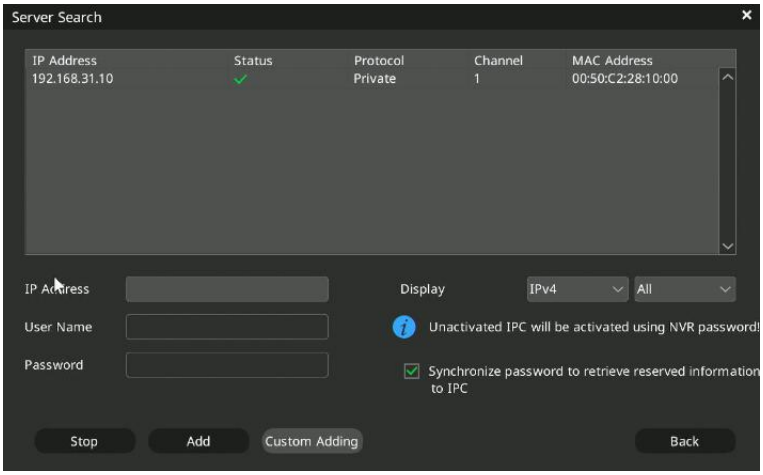
Here's how to add a channel:

Shortcut bar channel addition

1. The user can add an IP channel to the device through the preview interface. If the channel is not added, the preview status is shown in the following figure.



2. Enter the preview interface, click the channel to display the "+" sign, and the device search window pops up, as shown in the following figure.

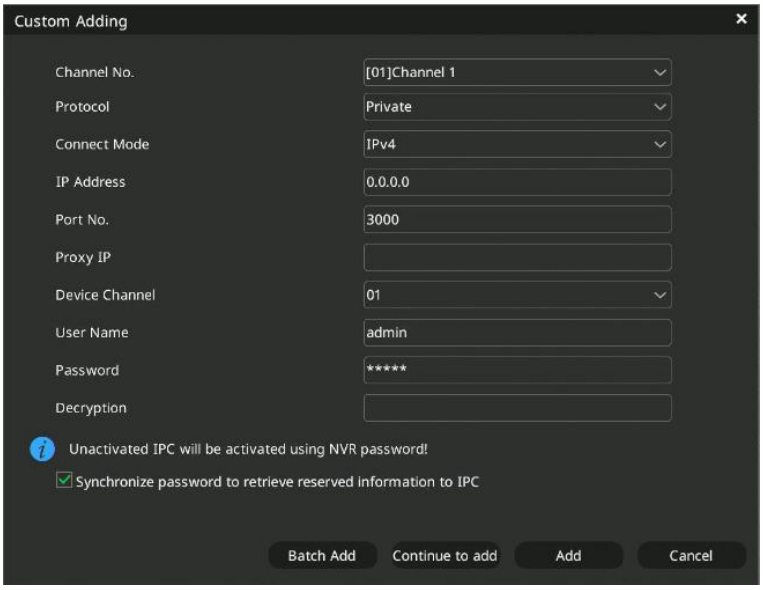


Explain：

- The added channel is added with default port, user name and password. If it is not consistent with the default information, you can edit [Custom Add] to add it.

3. After the search is completed, double-click in the search list or select the channel and click [Add] to complete the addition.

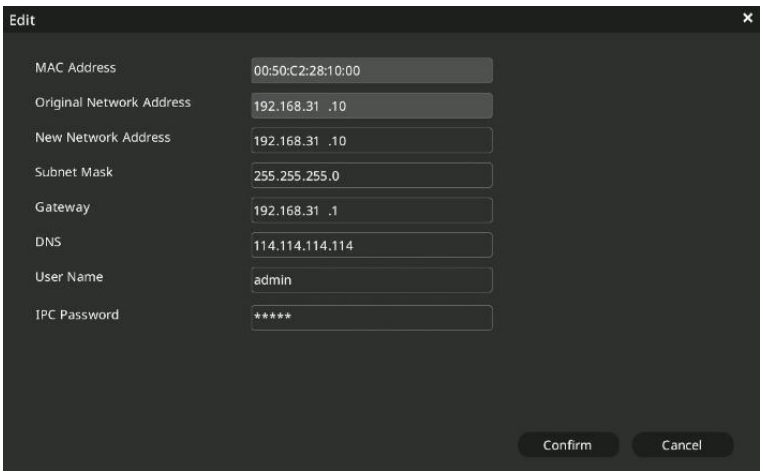
4. The user can also configure the parameters to add digital channels. Click Customize Add to pop up the Customize Add window, as shown in the following figure.



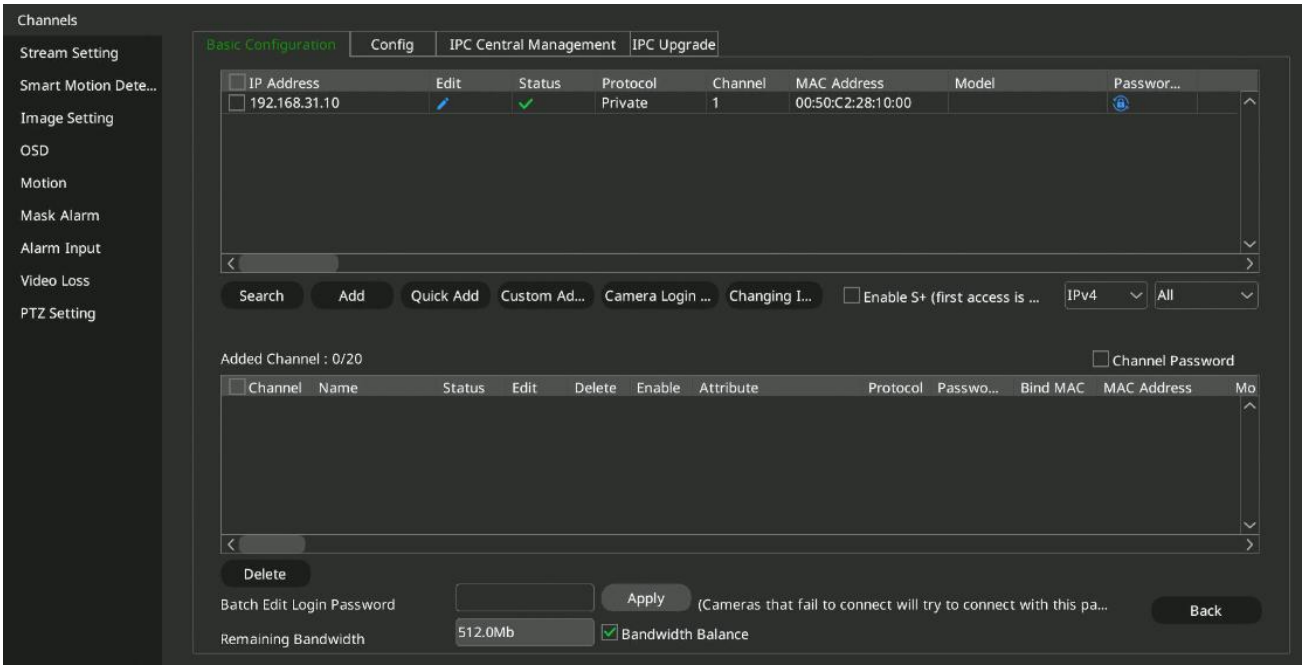
5. Enter the front-end IP address, port number, user name, password and other information to add successfully.

General Digital Channel Addition

1. Enter [Main Menu-> Channel Management-> Channel Configuration], select the Basic Configuration tab, and click [Search] to start searching for devices. Search results are automatically sorted based on IP address. You can modify the IP front end in the search results list. Click "✎" to pop up the interface for modifying IP address, as shown in the following figure.

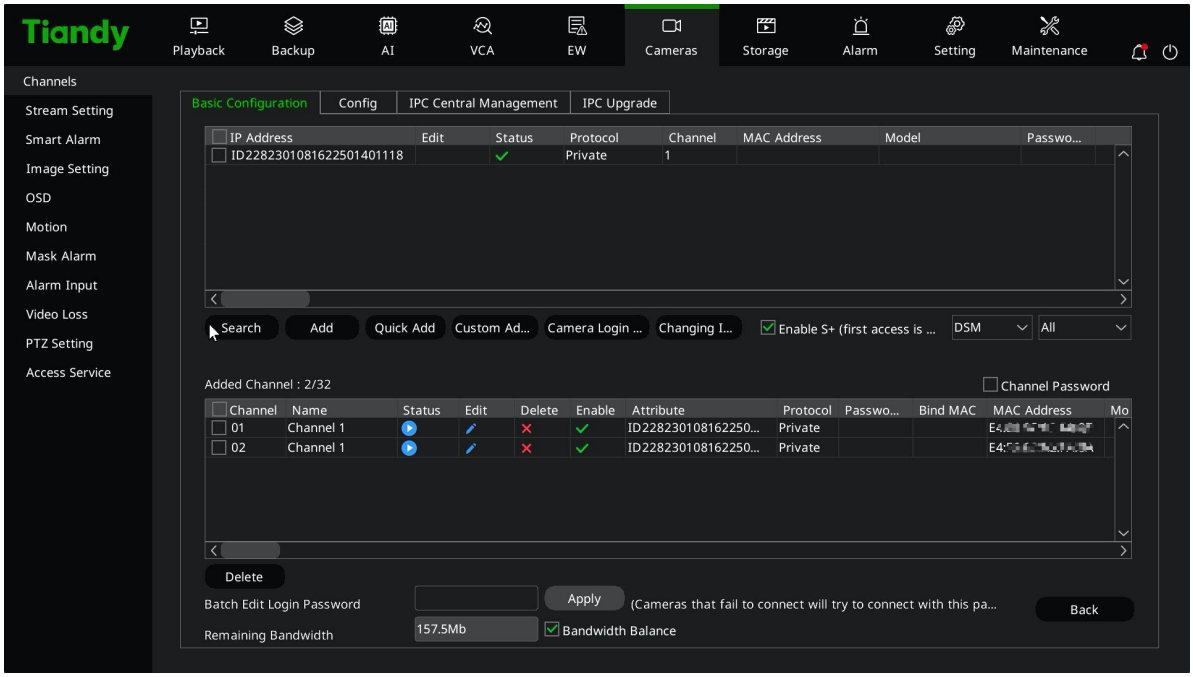


2. Select the IP channel in the search list, and click the icon to reset the password of the IPC device. Get the security code through the official account or APP, and then enter the new password. Before using this Function, you need to set a reserved mailbox on the device.
3. Select the IP channel to be added in the search list, and click [Add] or double-click the left mouse button to add the IP device to the idle channel of NVR. Multiple IP channels can be selected for addition. The channel search is shown in the following figure.

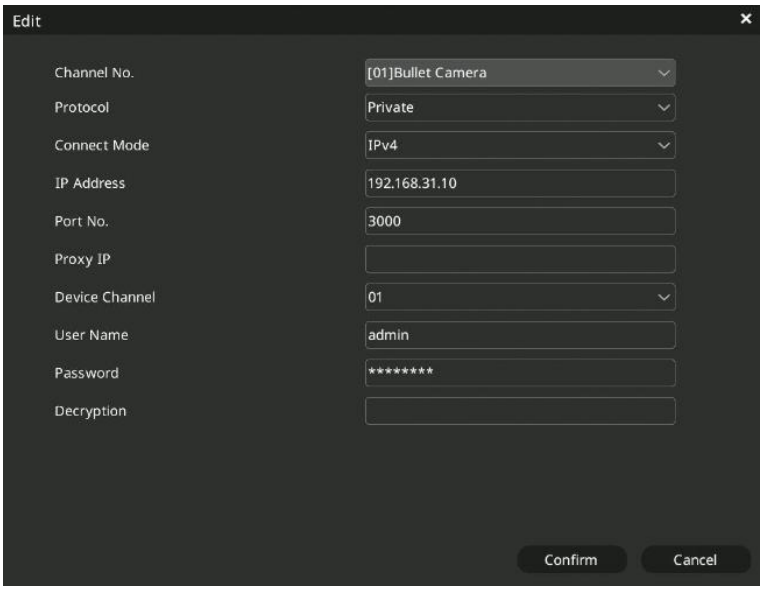


4. When adding an inactive IPC, an activation prompt box will pop up. If synchronous password retrieval is checked, the reserved information will be synchronized to the front end and activated.

5. 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.



5. " " In the edit bar of the device list has been added, and the device can be edited, as shown in the following figure.

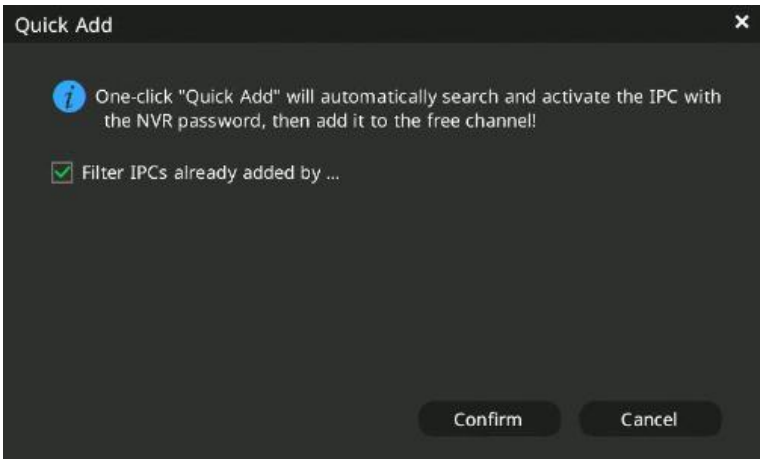


Explain：

- The tabs on this page are different for different models of equipment.
- Automatically log in with the default user name and the set camera login password when adding.
- After the addition is completed, you can view the addition result in the list of added devices.
- Click the connection status " " to directly preview the channel video.
- When the connection status is displayed as " ", move the mouse over the " " icon to display the reason for the connection failure.
- Click " " to delete the device of the channel.
- "" Indicates that the current channel is enabled. Click the icon to disable the channel. " " Indicates that the current channel is disabled. Click the icon to enable the channel.

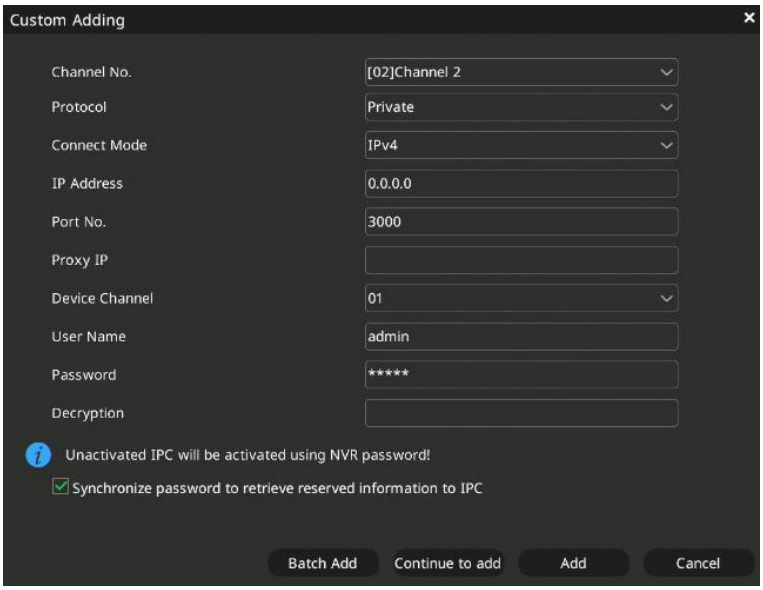
Quick Add

In order to facilitate the user to add the device quickly, the user can select [One-click Add] Function to add the channel, and the device will automatically search and use the NVR password to activate the IPC, and then add it to the idle channel, as shown in the following figure.



Custom add

1、 In the [Channel Configuration-> Basic Configuration] interface, click [Custom Add] to enter the digital channel interface; When the protocol type is a private protocol, as shown in the figure below.



2、 When the protocol type is RTSP, as shown in the following figure.



3、 When the protocol type is ONVIF, as shown in the figure below.



4、 Enter the IP address or URL address of the front-end equipment, enter the user name, password and other information, and then click [OK] to complete the addition of the digital channel. Repeat to complete the addition of additional digital channels.

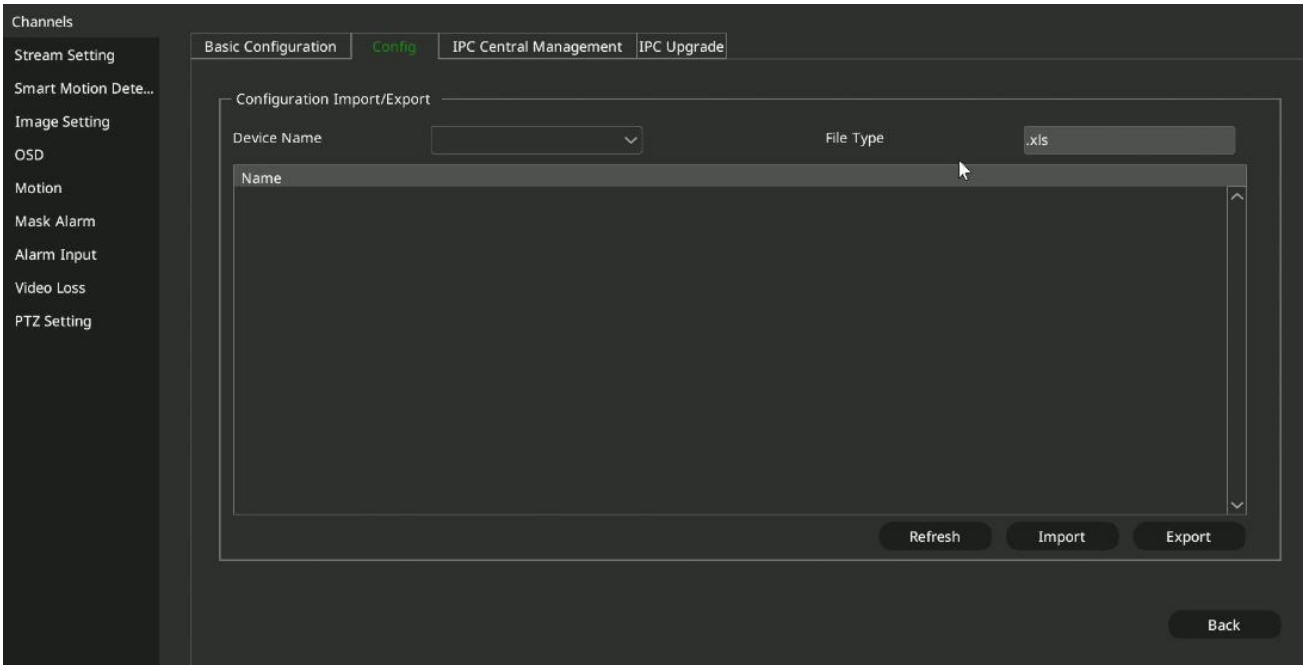
Explain：

- If the device to be added is a multi-channel NVR, you can select the channel number to be added in [Device Channel], and you can add multiple channels corresponding to one NVR at the same time.
- Continue to add, add in batch, add according to the adding rules and the target channel, and skip the current channel if the target channel includes the current channel. If you choose to increment the IP address, the last bit of IP does not increment after it reaches 255.
- When the device type is ONVIF, the port number defaults to 80 and the user name defaults to admin. The login account and password of equipment from different manufacturers may be different and need to be modified according to the actual situation.
- Some front-end devices contain two channels, so pay attention to the selection of channel number when manually adding device IP.

4.4.1.2 Config

Users can import and export all channel parameter configurations through configuration management.

1. Enter [Main Menu- > Channel Management- > Channel Configuration], and select the Configuration Management tab. If a removable storage device is connected, click Export to export all channel configuration parameters. The exported parameters are saved as.xls format files. The user can manually edit the exported parameters on the computer and use them as import parameters, as shown in the following figure.



2. The content of the.xls file to be imported and exported shall meet the following format.

Chn NO.	Enable	Server Type	Server Url	Server Proxy	Chn Type	Chn NO.	Net Mode	Connect Mod	Server Port	Mult IP	Mult Port	User Name	Password	Decrypt psw	rtspurl	Preview Mode	Plug Mode
1	1	Private	192.168.15.2		0	1	0	0	3000		0	admin	1111		192.168.15.2	0	1
2	1	Private	0.0.0.0		0	1	0	0	3000		0	admin	1111		0.0.0.0	0	1
3	1	Private	192.168.15.2		0	1	0	0	3000		0	admin	1111		192.168.15.2	0	1
4	1	Private	0.0.0.0		0	1	0	0	3000		0	admin	1111		0.0.0.0	0	1
5	0	Private	0.0.0.0		0	1	0	0	3000		0	admin	1111			0	2
6	1	Private	192.168.15.1		0	2	0	0	3000		0	admin	1111		192.168.15.1	0	1
7	1	Private	192.168.15.1		0	1	0	0	3000		0	admin	1111		192.168.15.1	0	1
8	1	Private	192.168.15.1		0	2	0	0	3000		0	admin	1111		192.168.15.1	0	1
9	0	Private	0.0.0.0		0	1	0	0	3000		0	admin	1111			0	2
10	0	Private	0.0.0.0		0	1	0	0	3000		0	admin	1111			0	2
11	0	Private	0.0.0.0		0	1	0	0	3000		0	admin	1111		0.0.0.0	0	1
12	0	Private	0.0.0.0		0	1	0	0	3000		0	admin	1111			0	2
13	0	Private	0.0.0.0		0	1	0	0	3000		0	admin	1111			0	2
14	0	Private	0.0.0.0		0	1	0	0	3000		0	admin	1111			0	2
15	0	Private	0.0.0.0		0	1	0	0	3000		0	admin	1111			0	2

Wherein:

(1) In "Enable", 0: channel not enabled, 1: channel enabled;

(2) In "Chn Type", 0: main stream, 1: secondary stream, 2: picture stream;

(3) In "Net Mode", 1: TCP, 2: UDP, 3: multicast;

(4) In "Connect Mode", 0: IP, 1: domain name, 2: active mode;

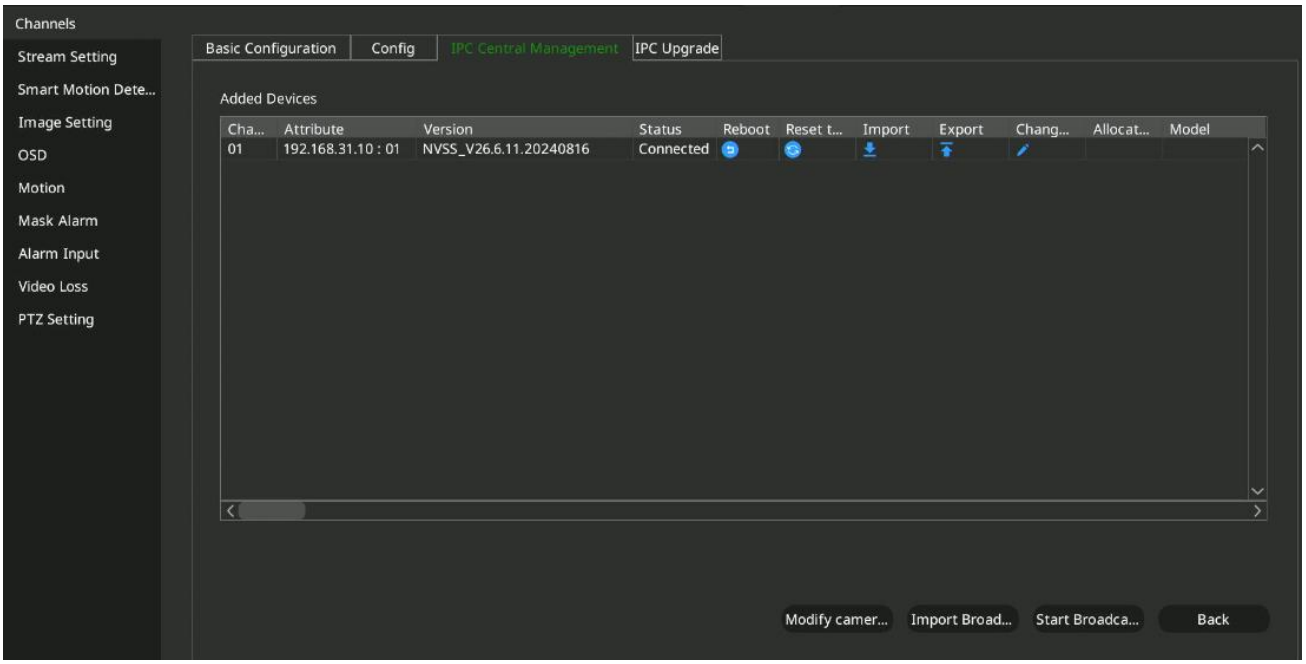
(5) In "Preview Mode", 0: tiled on the display area, 1: wide-screen proportional display is maintained.

3. Exported ".xls" files can be edited with Office 2003 and above and imported into the device.

4.4.1.3 IPC Central Management

The centralized management function of IPC allows users to import and export parameters of the added front-end devices, upgrade them remotely, and restart IPC.

1. Select "Main Menu->Cameras->Channels->IPC Central Management" to enter the IPC centralized management interface, as shown in the figure below.



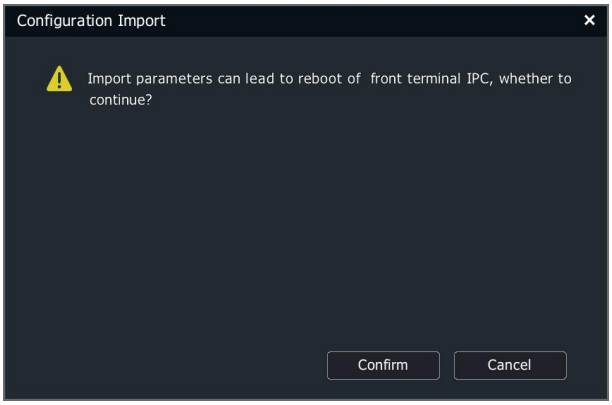
Explain：

- The interface can display the channel number, property, version number and connection status of the added front-end device, and allow perform cloud upgrade, parameter import and export, remote upgrade, IPC restart and other operations.

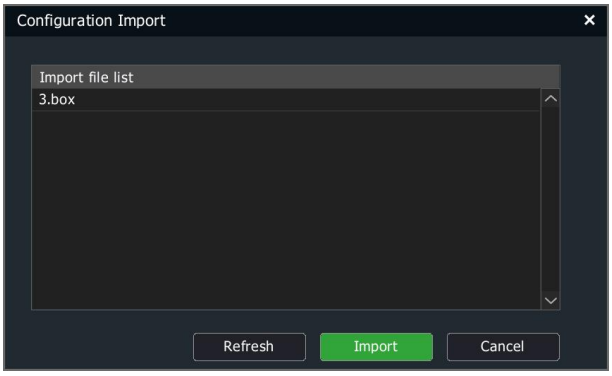
2. Configuration Import/Export

（1）Select the front end to operate from the added device list.

（2）Click "" to display the configuration import prompt box, as shown in the figure below.

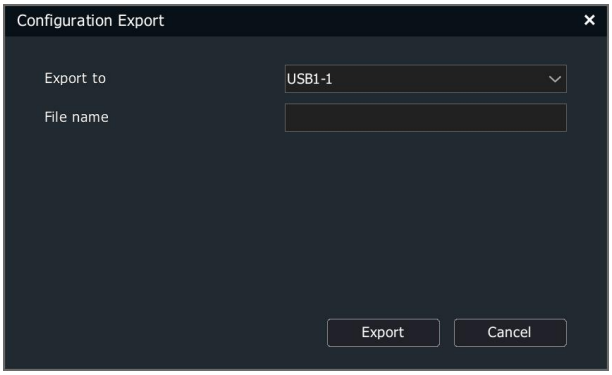


（3）Click "Confirm" to enter the configuration import interface, as shown in the figure below.

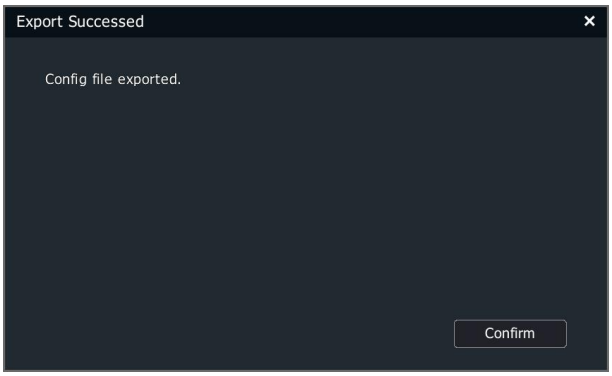


（4）Select the configuration file and click "Import" to quickly import the configuration into the front-end device.

（5）Export the front-end configuration parameters, and click ""to display the configuration export interface, as shown in the figure below.



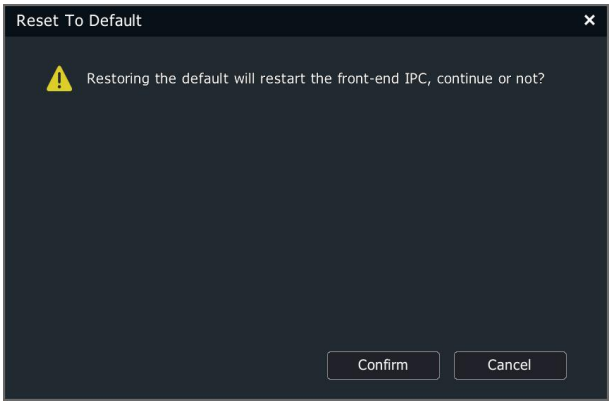
（6）Select the storage device, fill in the name of the export file and click "Export" to export the front-end configuration.The prompt form pops up after export is successful, as shown in the figure below.



3、Restart IPC/Restore Default

（1) Click "" to remotely reboot the selected device.

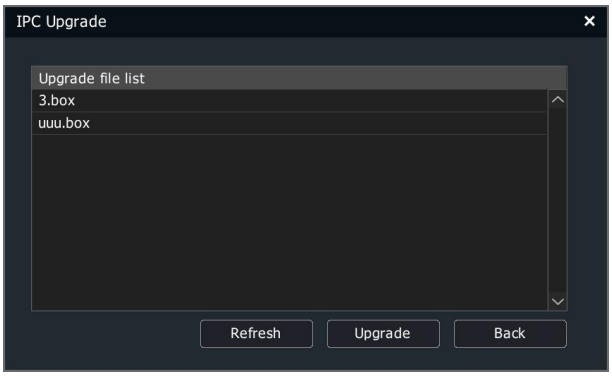
（2) Click "" to pop up a prompt box to restore the default, as shown in the following figure.



（3) Click Confirm. Selecting IPC will restore the default and restart IPC.

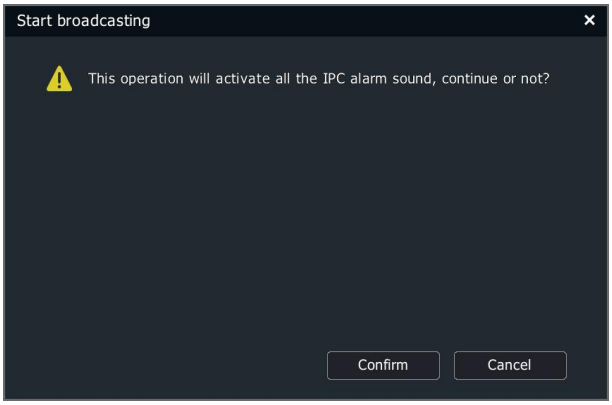
4、Import Broadcast Sound/Start Broadcast

（1)Click [Import Broadcast] to pop up the IPC upgrade interface, as shown in the following figure.



（2）Select the profile to upgrade and click [Upgrade] to complete the IPC upgrade.

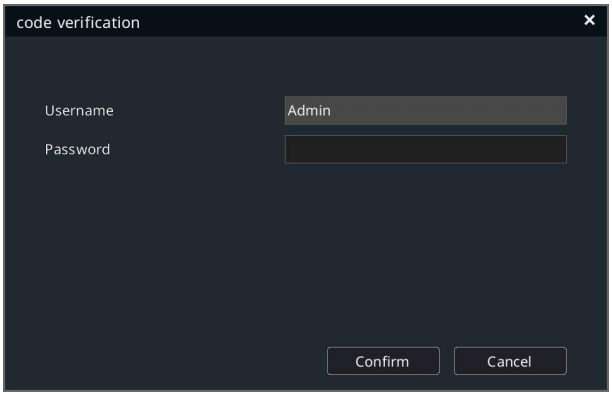
（3）After the upgrade is completed, click [Broadcast Start] to pop up a broadcast start prompt box, as shown in the following figure.



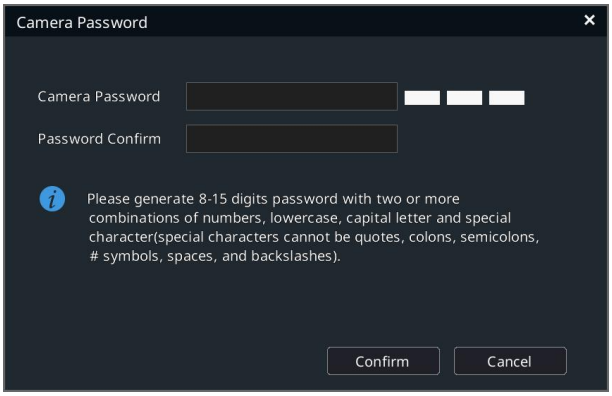
（4）Click OK, and all IPC will start to play the imported audio.

5、 Modify the device password

（1）Select the corresponding device and click "✎" to pop up the user password verification window, as shown in the following figure.



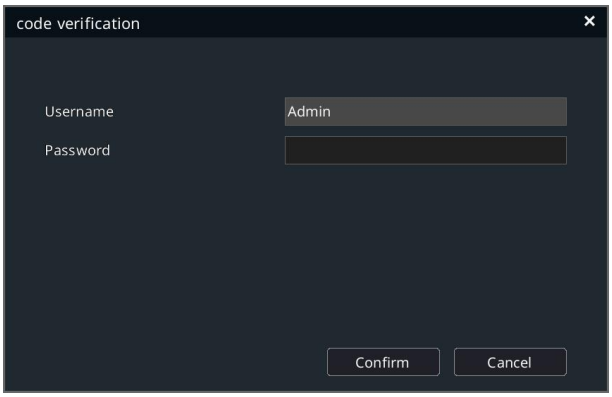
（2）After entering the NVR login password, the camera password window will pop up, as shown in the following figure.



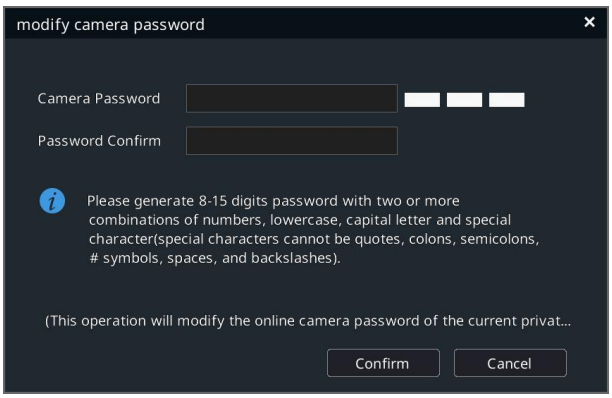
（3）Enter the password to be modified according to the password requirements, and click [OK] to modify the password of the device.

6、Change the password with one key

（1）Click [One-click password modification] to pop up the user password verification window, as shown in the following figure.



（2）After entering the NVR login password, the one-click password modification window will pop up, as shown in the following figure.



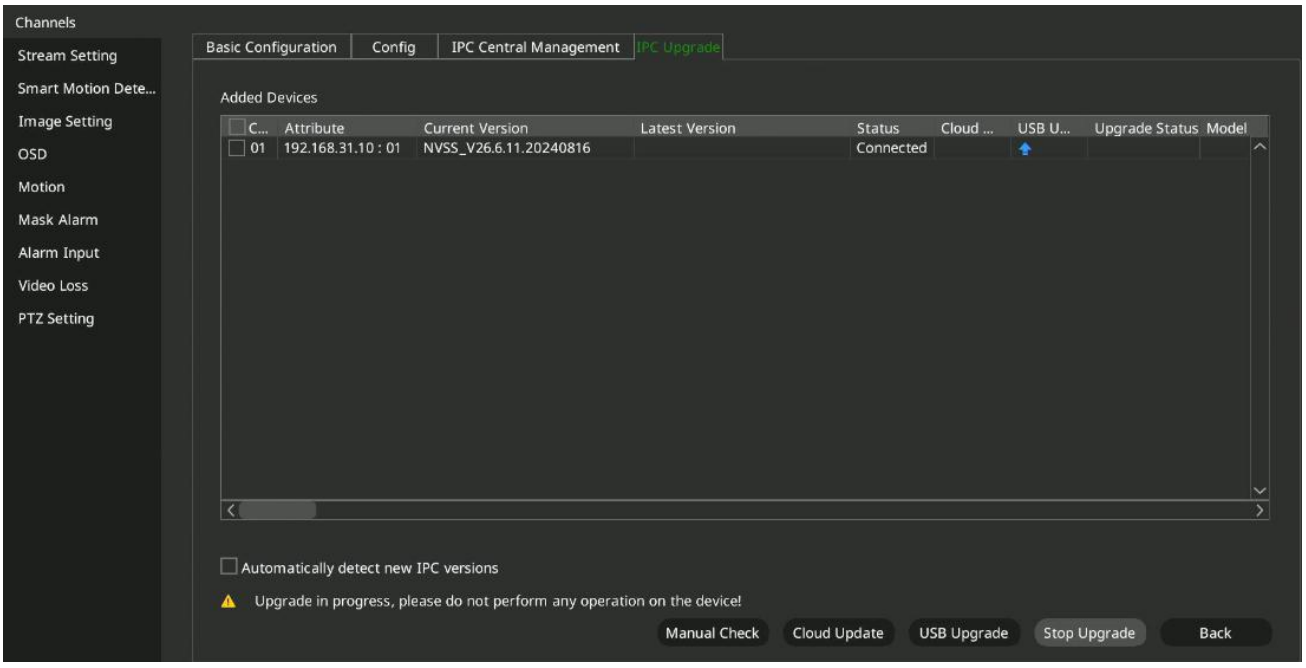
（3）Enter the password to be modified according to the password requirements, and click [OK] to take effect.

Notice:

- Changing the password with one click will change the password of all online cameras currently connected using the private protocol. Please use it with caution.

4.4.1.4 IPC upgrade

The user can upgrade the added and online front-end equipment through the centralized upgrading Function of IPC.



1. Select the channel to be upgraded in the list of added devices.

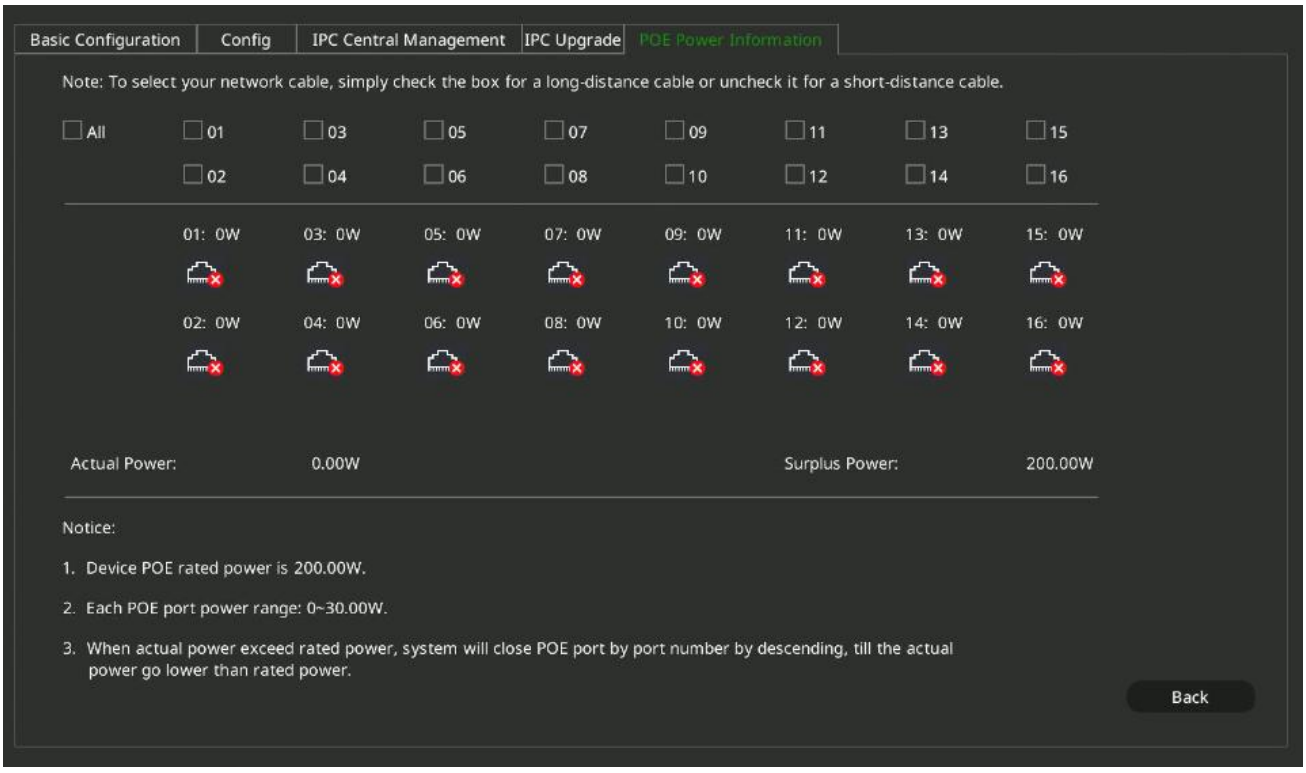
2.Click "" to pop up the U disk upgrade interface.

3.Select the configuration file to be upgraded and click [Upgrade] to complete the IPC upgrade.

4. Click "" to pop up the cloud upgrade prompt box, as shown in the following figure.

4.4.1.5 POE Power Information

1. Enter [Main Menu-> Channel Management-> Channel Configuration], and select the POE power information label, as shown in the following figure.



Explain：

- "" Indicates that the power supply of the POE port is normal. "" Indicates that the port is not connected to the camera or the power supply is not normal.
- Real-time power information of the POE port is displayed above the "" port.

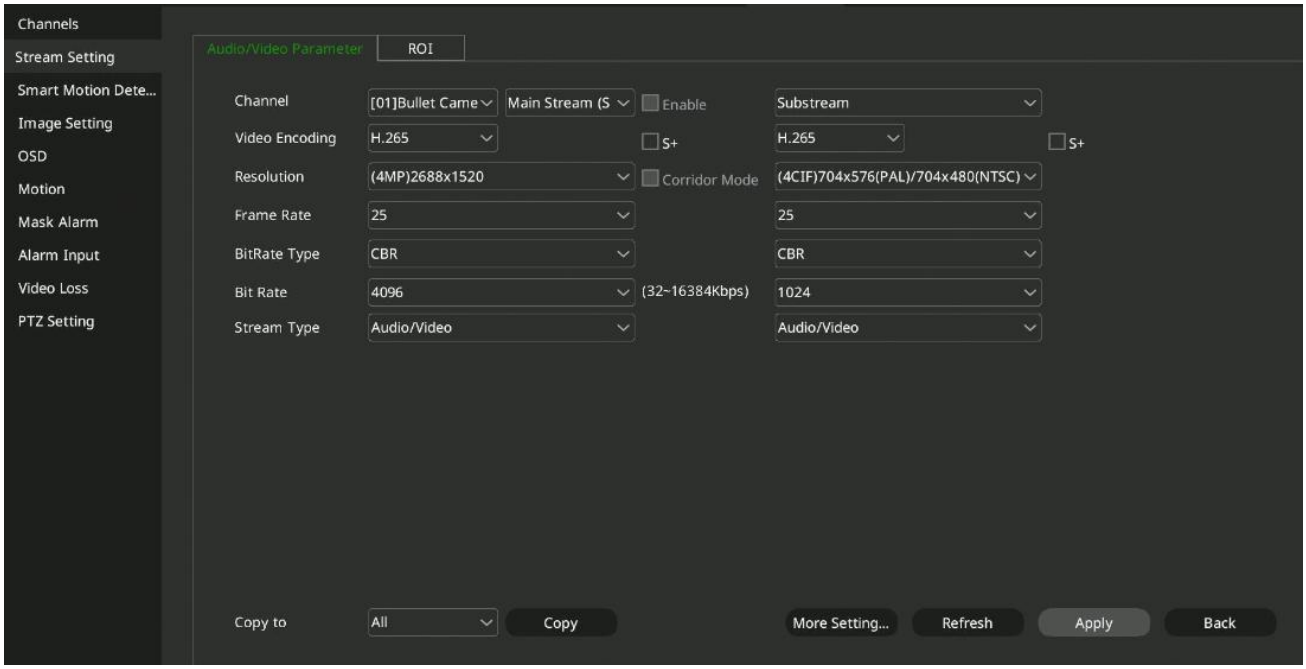
- Refer to the interface description for POE power considerations.
- PSE series NVR has this function, and other models do not have this function.

4.4.2 Stream Setting

Set and adjust the channel audio and video parameters according to the scene, and the adjusted parameters play a role in local preview, video recording, network preview, etc.

4.4.2.1 Audio and video parameters

1、Enter [Main Menu-> Channel Management-> Encoding Settings], and select the audio and video parameter tab, as shown in the following figure.



2、Select the channel to be set and set the audio and video parameters as follows.

- Channel: Select the channel to set the parameter. There are four types of video compression parameters: main stream (normal), main stream (time), custom 1 and custom 2.

- Encoding mode: The system supports H.264, H.265 and MJPEG encoding modes. H.264 can select three encoding modes: high profile, main profile and baseline.
- S +: S + is displayed according to whether it is supported by the front end to distinguish the primary and secondary streams. After S + is enabled, the compression mode, video quality, I frame rate and key areas will not be available. Some front ends also support the mutual exclusion of S + and intelligent analysis. After S + is enabled, intelligent analysis will be turned off.
- Resolution: Set the resolution of the front-end device.
- Corridor mode: Corridor mode is enabled when the resolution is 16:9 (e.g. 1080P). With the corridor mode enabled, the resolution of the video is adjusted to 9:16.
- Frame rate: The video frame rate refers to the number of video frames per second, which can be selected or edited through the drop-down list.
- Compression mode: [Variable code rate] and [Fixed code rate] can be selected. The variable code rate will change according to the scene, and the fixed code rate will be encoded according to the set code rate as far as possible.
- Code rate: can be selected or edited through the drop-down box, value range: 32-16384Kbps.
- Stream type: The composite type option provides 2 options: [Video Only] and [Audio Video]. [Audio-Video] means that it contains both video and audio information, and [Pure Video] contains only video information.

- Click [More Settings] to expand the picture quality, I frame rate, audio encoding, audio control type, and input volume setting options.
- Video quality: there are 5 options including best, better, good, average and poor. Image quality is proportional to the bit rate, the better the image quality, the higher the bit rate needs to be.
- I frame rate: I frame is the key frame. How many video frames contain an I frame. If the I frame rate is 100, there is one I frame in every 100 frames of video. The frame rate of the I frame is inversely proportional to the code rate, and the larger the frame rate of the I frame is, the smaller the code rate is. It is recommended that the frame rate of the I frame be set to the same value as the frame rate.
- Audio coding: The system provides 4 audio coding modes: ADPCM _ D (ADPCM _ DIV4), G.711a, G.711U, and ACC. At the same time, it provides three audio sampling rates of 8K, 32K and 48K.
- Audio control type: The audio control type used by the front end. Two types are supported, LineIn and MicIn.
- Input volume: the input volume of the corresponding channel, ranging from 0 to 100.
- Audio output type: Devices that support laser also support the selection of audio output type. Audio output types include built-in speaker, external audio source, and off. When the built-in speaker is selected, the output volume can be adjusted.

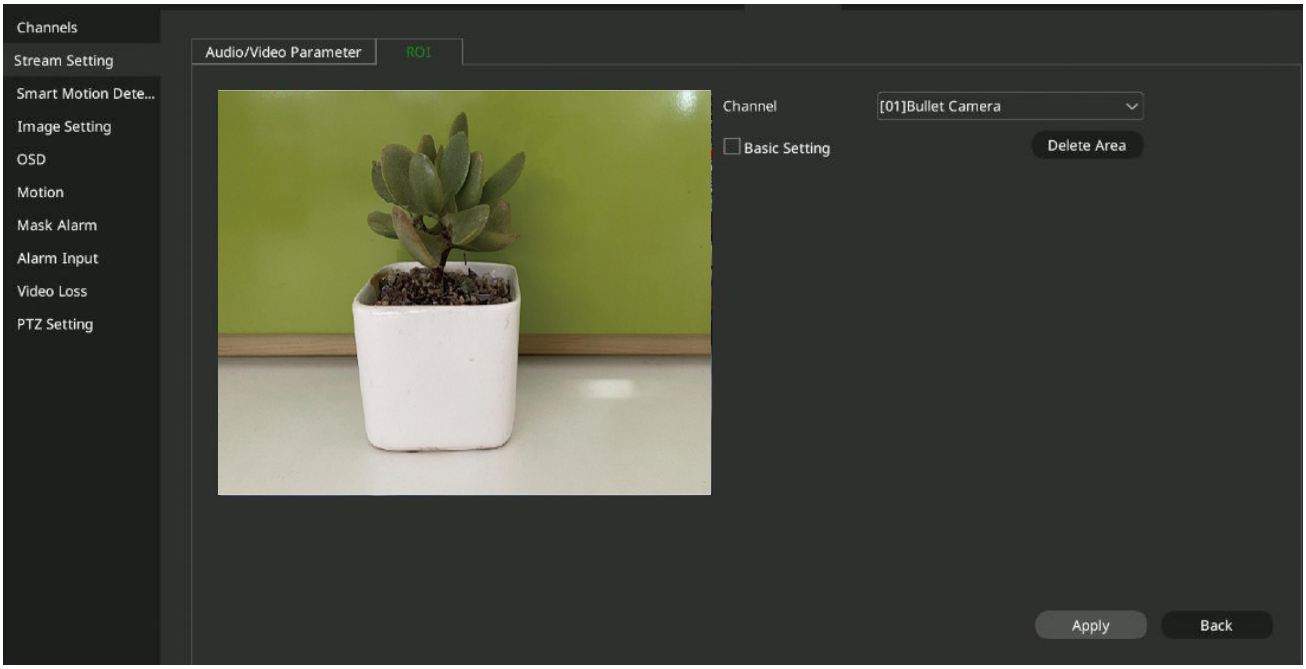
- The secondary code stream can be set separately. The setting mode can refer to the main code stream.

Explain：

- The video quality is not selectable when [Fixed Rate] is selected as the compression mode.
- The secondary stream parameters are used for network transmission. When the network environment is not ideal, the user can preview and store the secondary code stream to reduce the transmission bandwidth, and the secondary code stream is also suitable for mobile phone monitoring.
- Front-end IPC support is required to open the corridor mode.
- Different types of front-end IPC have different encoding parameter templates.
- Click the More Settings button to expand and collapse the settings options below the button.

4.4.2.2 ROI

1. Enter [Main Menu-> Channel Management-> Code Setting], and select the key area label, as shown in the following figure.



2. Select [Basic Settings] to enable this Function. Press and hold the left mouse button and drag on the video to set the key areas. Support up to four key areas. Click Delete Area to delete all set focus areas.

3. Click [Application] to save the settings.

Explain：

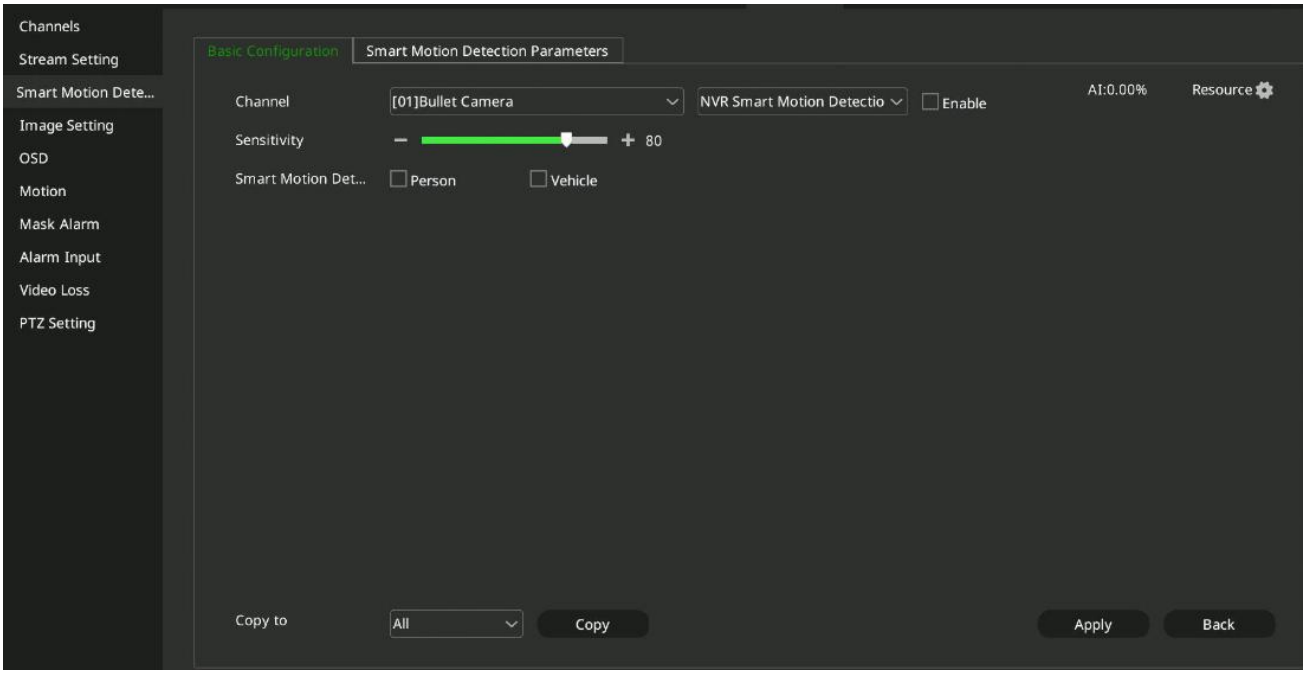
- Some front-end equipment supports Function in key areas.
- The image quality displayed in the focus area is higher.

4.4.3 Intelligent dynamic inspection

For cameras with advanced intelligent Function, intelligent motion detection settings can be used for motion detection. Advanced intelligent Function is a camera that supports intelligent coding, intelligent image, intelligent alarm and other functions, and can control parameters through the NVR platform. For cameras that do not support advanced intelligence, NVR can be enabled.

4.4.3.1 Basic configuration

1. Enter [Main Menu-> Channel Management-> Intelligent Dynamic Inspection] and select the basic settings tab, as shown in the figure below.



2. Select the channel and intelligent dynamic detection mode to be set, set the sensitivity, select to enable intelligent coding, intelligent image, intelligent alarm and intelligent dynamic detection, and click the [Apply] button.

3. IPC intelligent dynamic detection: The camera will automatically detect whether there is a human body or vehicle in the scene. If there is, it will trigger an alarm. 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.

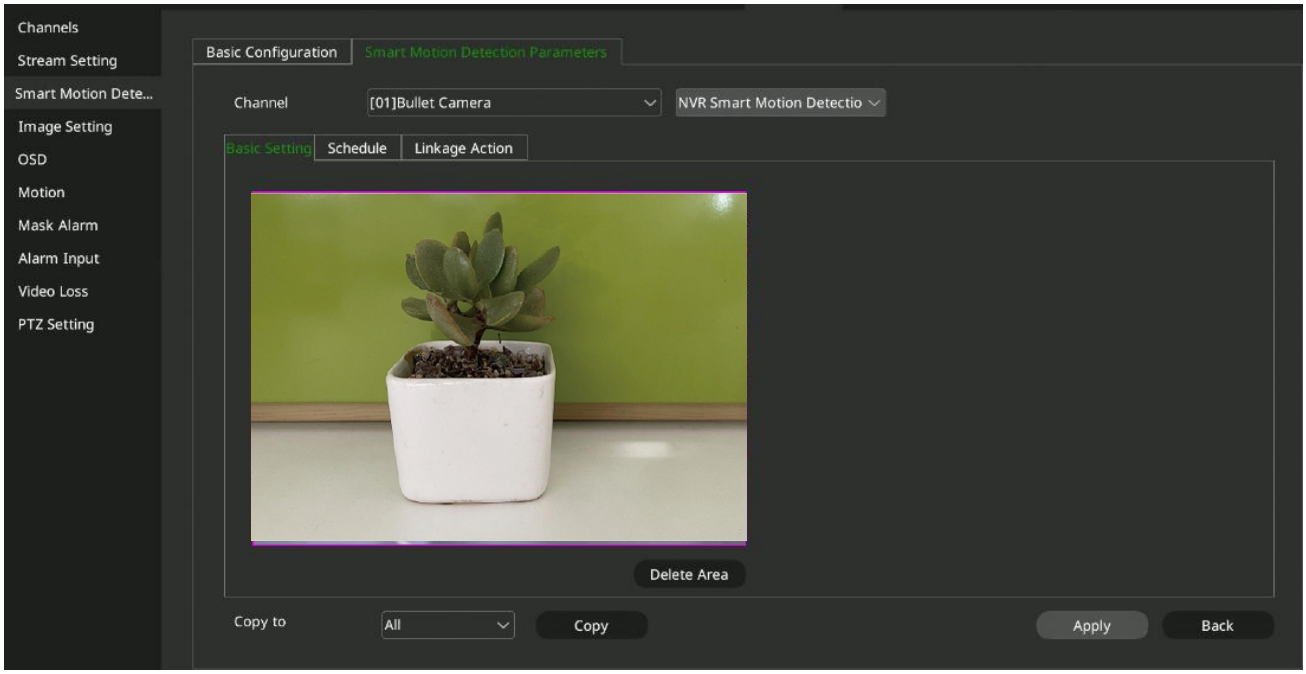
4. NVR intelligent dynamic detection: NVR will automatically detect whether there is a human body or vehicle in the scene. If there is, it will trigger an alarm.

Notice:

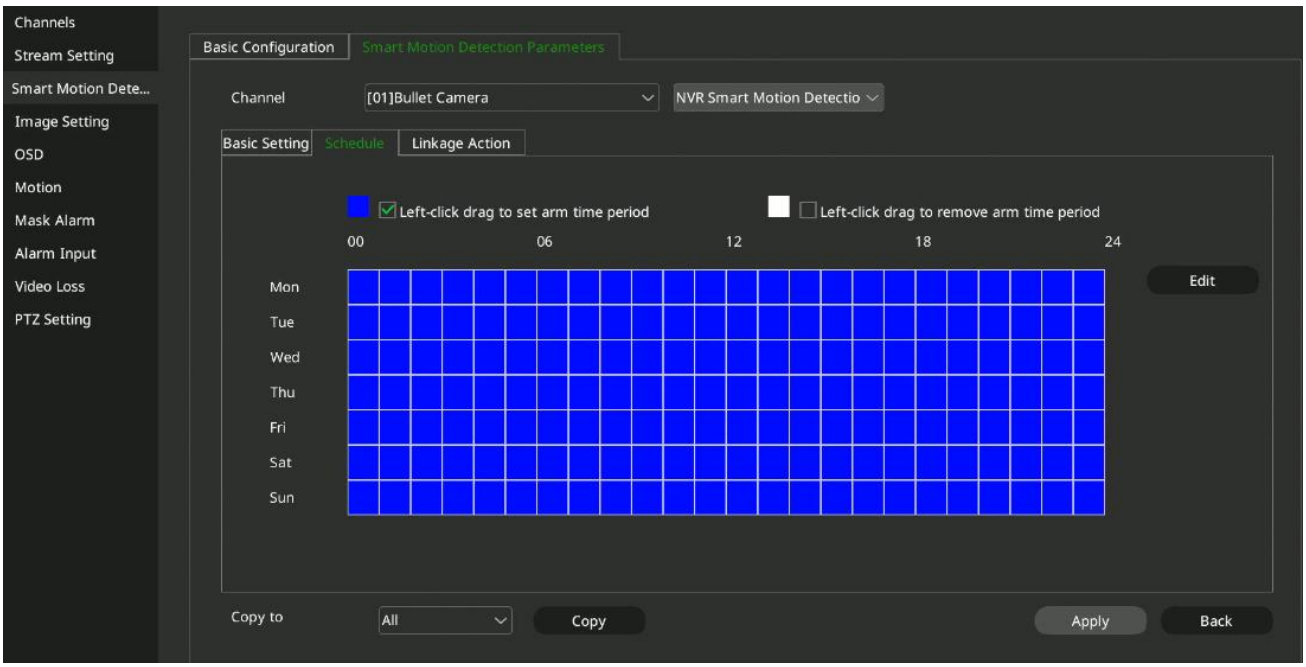
- Only one of IPC smart alarm or NVR smart alarm can be selected. IPC smart alarm requires IPC device support.

4.4.3.2 Intelligent alarm parameters

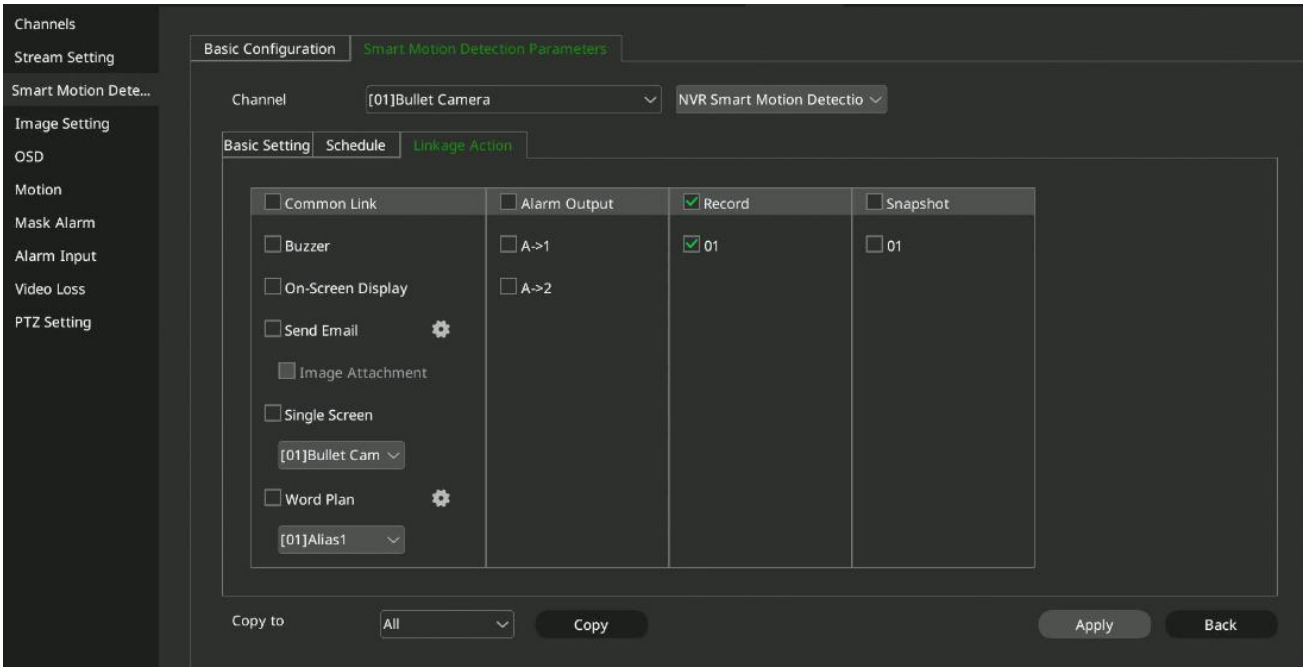
1、Enter [Main Menu-> Channel Management-> Intelligent Dynamic Inspection], and select the intelligent dynamic inspection parameter tab, as shown in the following figure.



2、Set the deployment time, as shown in the figure below.



3、 Enter [Linkage Settings] to set the alarm linkage, as shown in the following figure.



（1） Alarm linkage sound prompt, screen display, email sending, linkage single screen, linkage text plan, intelligent white light, sound, linkage video, linkage output, linkage snapshot, etc. Can be set.

（2）Check the check boxes in front of [General Linkage], [Linkage Output], [Linkage Video Recording] and [Linkage Snapshot] to select all options under each menu.

（3）After the setting is completed, the parameters of other channels can be copied.

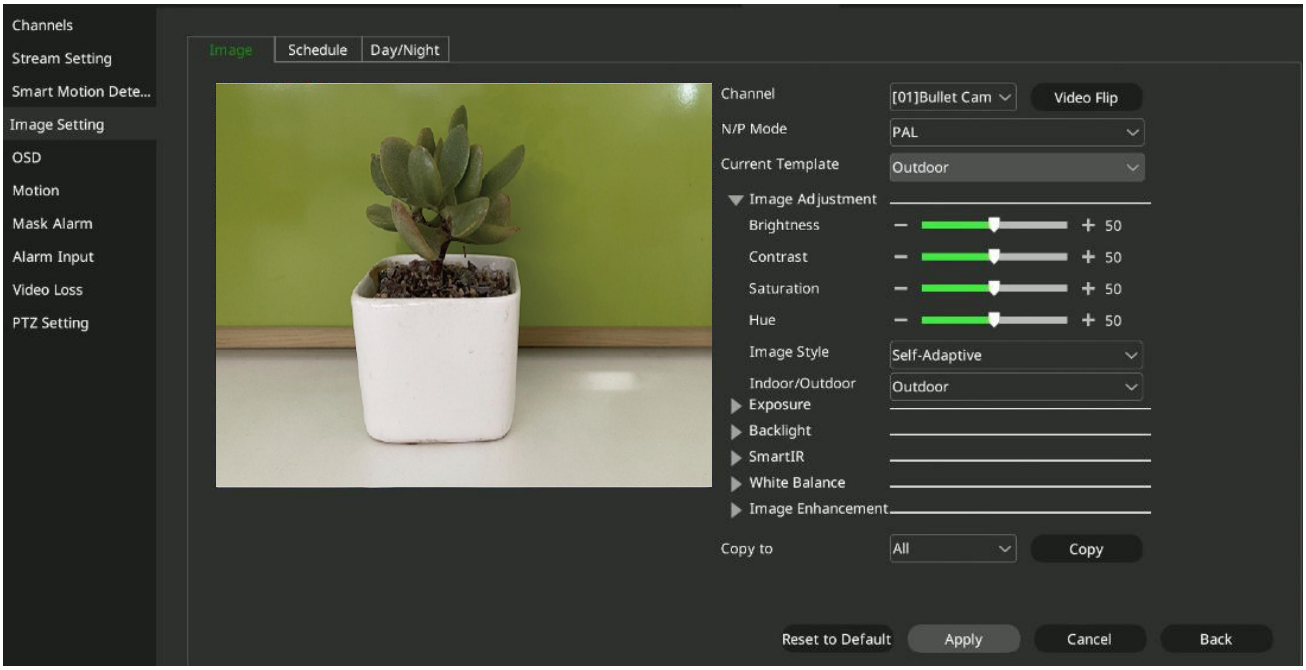
4、 Click [Application] to save the setting parameters.

4.4.4 Image Settings

In order to achieve a good visual effect, the user can adjust the parameters of the front-end video according to the scene. After adjustment, the local preview, video recording, network preview and so on will be affected.

4.4.4.1 Video parameters

1. Enter [Main Menu-> Channel Management-> Image Settings], and select the video parameter tab, as shown in the following figure.



2. Select the channel to be set.

3. Set the system, video flip, mode and other parameters.

[Video Parameters] = > [Exposure]

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



Interface parameters Explain as follows:

Parameter	Explain
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.
Automatic gain	You can set the maximum gain allowed, which affects image brightness. Excessive gain may cause more noise.

[HD Parameter] = > [Backlight]

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



The interface Parameter Explain is as follows:

Parameter	Explain
Ultra-wide dynamic	The wide dynamic range is suitable for monitoring environments with

strategy	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 opened 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, there are [Close], [Super Wide Dynamic Auto] and [Super Wide Dynamic Manual] for selection. [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.

[HD Parameter] = > [Image Enhancement]

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



The interface Parameter Explain is as follows:

Parameter	Explain
Digital noise	In the drop-down list, there are [Off], [Normal Mode], and [Expert Mode]

reduction	to choose from. Select Normal Mode to display the Noise Reduction Level slider and drag the slider to set the noise reduction level. Select [Expert Mode], and the [Spatial Domain Noise Reduction Level] and [Time Domain Noise Reduction Level] sliders will pop up at the bottom. 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 Function items. Please refer to the actual situation.

Explain：

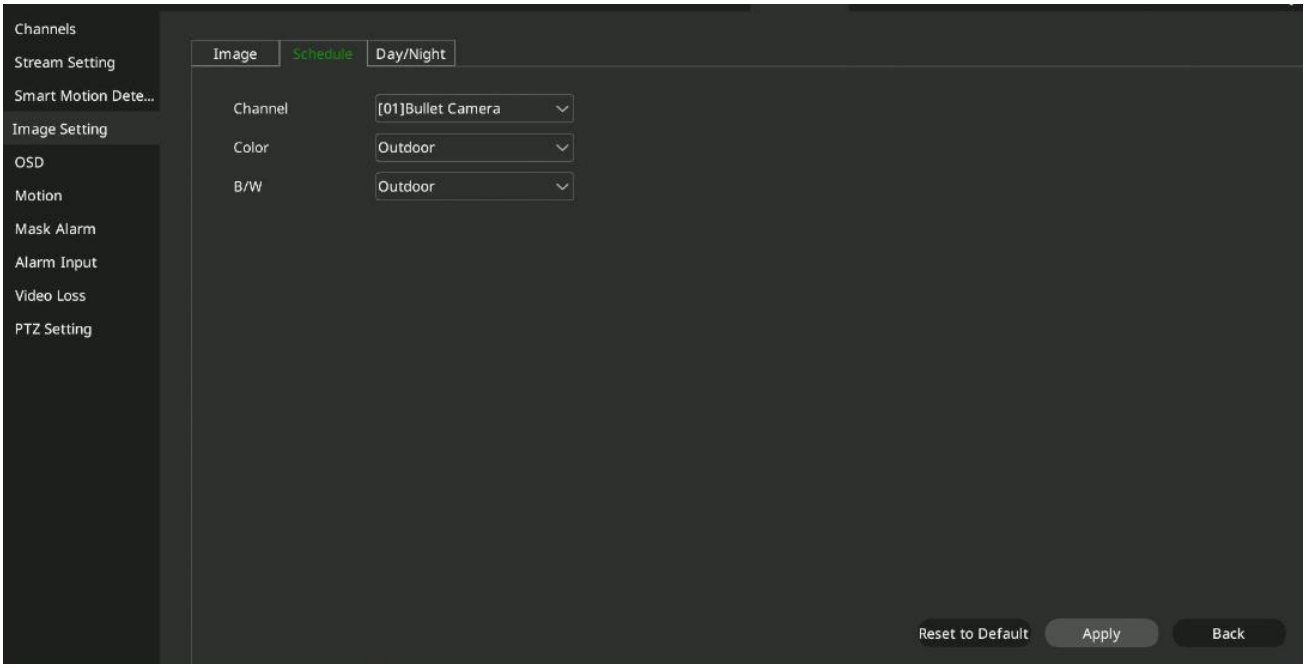
- You can select Copy to Channel Function to copy the set Parameter.
- Use the mouse wheel to adjust the video input Parameter, or click the "" and "" icons to increase or decrease the value.

3. After setting, click [Apply] to save the setting Parameter.

4. When restoring the default, the camera directly restores the default values of all Parameters on this page.

4.4.4.2 HD Template

1、Enter [Main Menu-> Channel Management-> Video Settings] and select the HD Template tab, as shown in the following figure.



2. Select the channel of the HD template to be set.

3. High-definition templates are divided into eight modes, including indoor, outdoor, sports, wide dynamic, low-light, highlight, bright and custom.

4.4.4.3 Color to black

1. Enter [Main Menu-> Channel Management-> Video Settings], and select the Color to Black tab.

2. Select the channel to set color to black.

3. The types of color to black conversion are divided into color, black and white, internal synchronization and timing modes.

Explain：

- The color to black mode depends on the front-end condition, and different types of front-end devices support different types of color to black.
- The daytime brightness value and the night brightness value are adjustable between 0 and 100.

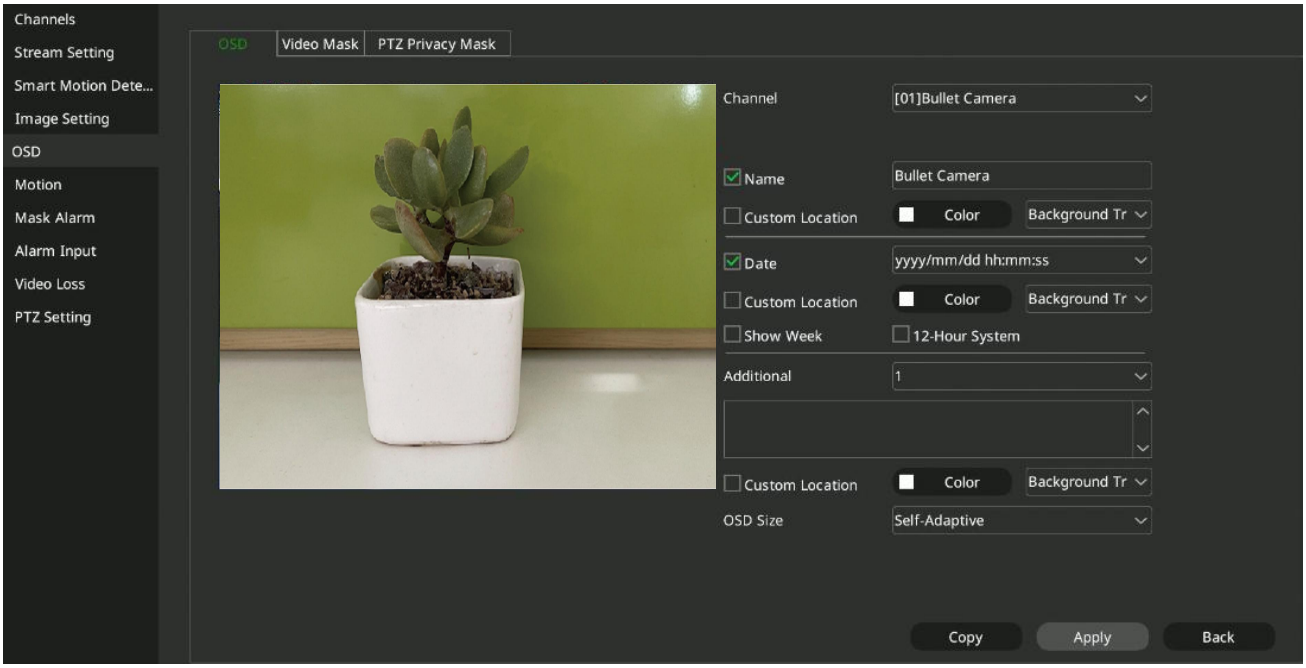
- Color to black delay and black to color delay are adjustable between 0 and 120.
- The brightness of the infrared lamp and the brightness of the white lamp can be adjusted between 0 and 100.

4.4.5 OSD

The picture or text information is superimposed on the video picture of the NVR connection channel and synchronized to the front-end equipment.

4.4.5.1 OSD

1. Enter [Main Menu-> Channel Management-> OSD Overlay] and select the OSD Overlay tab, as shown in the following figure.



2. Select the channel to be set.

3. Make OSD settings for the channel.

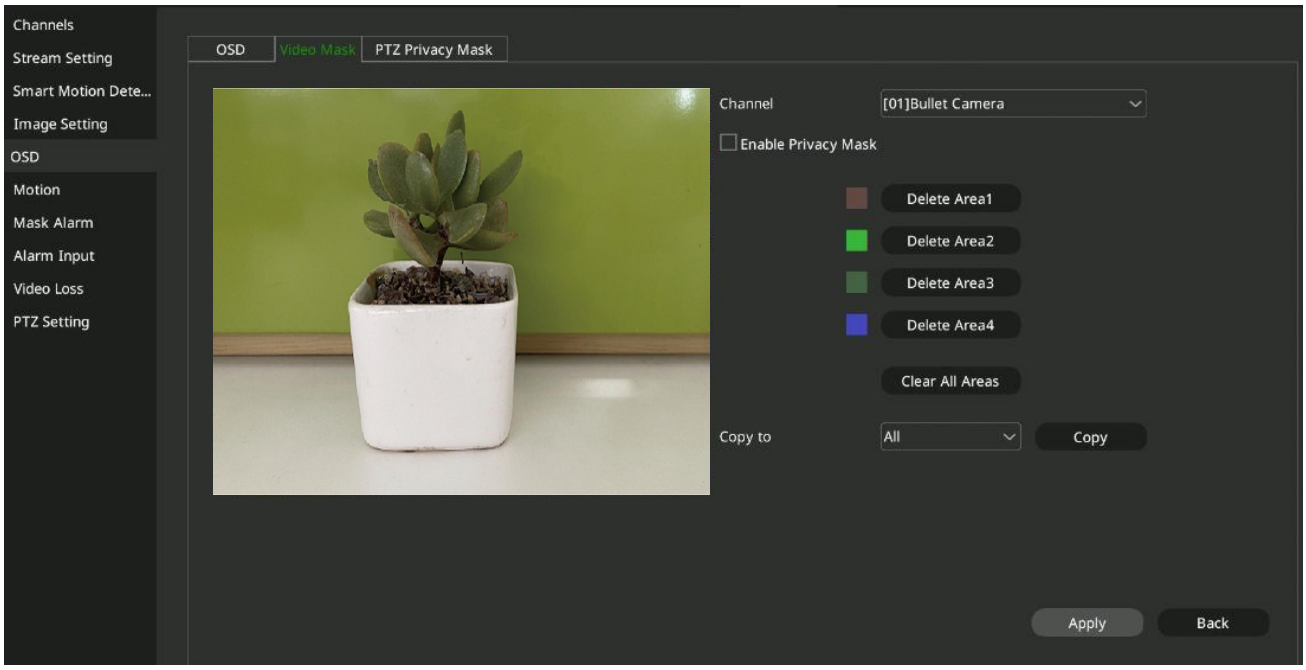
4. If you need to change the OSD position of the channel, you can directly drag the mouse OSD box to set it after checking the custom position.

Explain：

- OSD overlay includes channel name, date, star date, 12-hour clock, date format, time format, OSD color, background color, etc.

4.4.5.2 Video blocking

1、Enter [Main Menu- > Channel Management- > OSD Overlay] and select the Video Occlusion tab, as shown in the following figure.



2. Select the channel where you want to set video blocking.

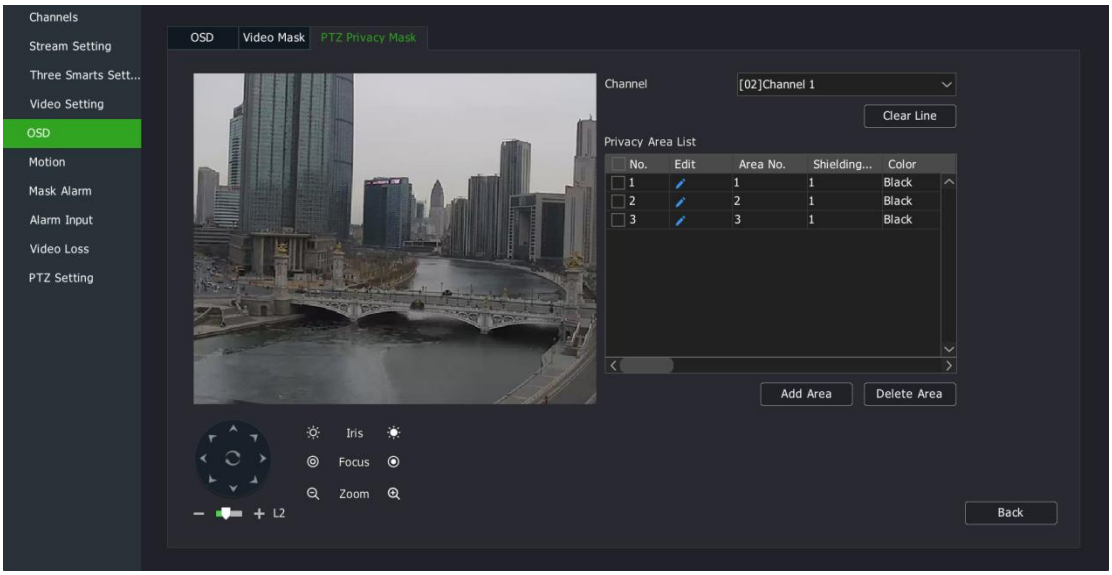
3. Drag the mouse mark to set the video blocking area.

Explain：

- Video Occlusion Function can cover some key areas on the video.

4.4.5.3 Dynamic privacy masking

1. Enter [Main Menu- > Channel Management- > OSD Overlay] and select the Dynamic Privacy Masking tab, as shown in the following figure.



2. Select the channel where you want to set dynamic privacy masking.

3. Control the pan/tilt through the quick PTZ control panel and switch to the picture you want to block.

4. Drag the mouse mark to set the video blocking area, and click [Add Area].

5. The added areas are displayed in the list on the right. You can click Delete Areas to delete them.

Explain：

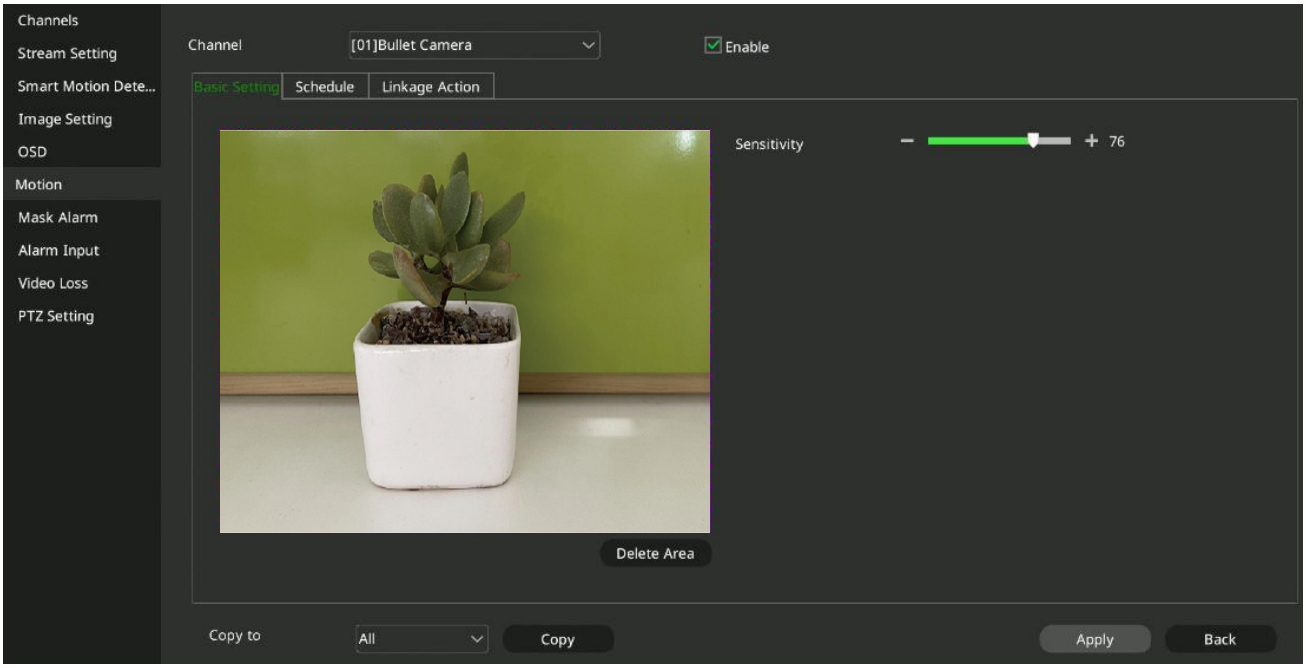
- This function needs to add a supported front-end device.

4.4.6 Motion

When the channel picture changes, such as someone walks by and the lens is moved, the NVR equipment is linked to prompt and record.

The specific operation steps are as follows:

1. Enter [Main Menu-> Channel Management-> Motion Detection], and select the Regional Settings tab, as shown in the following figure.



2. Select the channel for which you want to set motion detection.

3. Set the motion detection area, deployment time and sensitivity as follows:

(1) Check [Enable motion detection].

(2) Enter [Deployment time] to set the deployment time of motion detection.

(3) Use the mouse to draw the area to be detected on the channel video.

(4) Adjust the sensitivity on the sensitivity slider. The greater the value of the sensitivity, the more sensitive the motion detection.

4. Enter [Linkage Settings] to set the motion detection alarm linkage.

(1) Alarm linkage sound prompt, screen display, email sending, linkage video recording, linkage output, linkage snapshot, linkage text plan, linkage single picture, linkage double lights, etc., can be set.

(2) After setting, you can copy the Parameter of other channels.

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

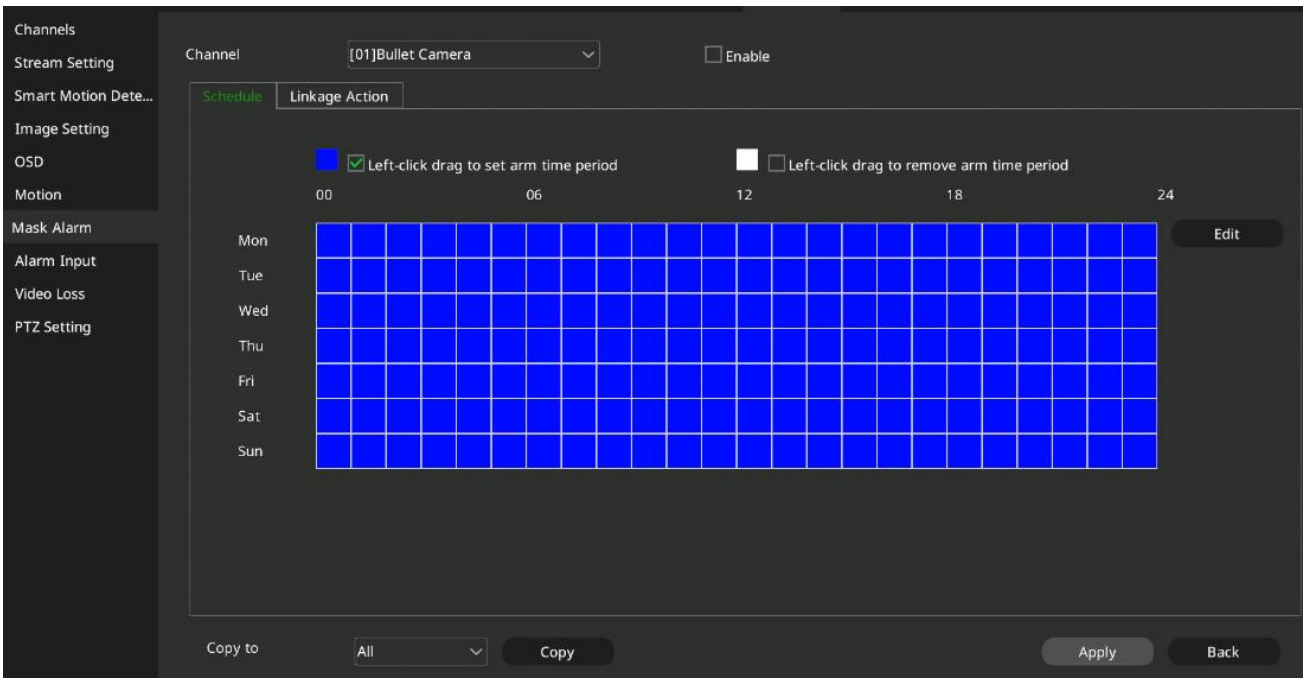
Tiandy

4.4.7 Mask Alarm

When the video picture of the equipment is blocked, the NVR equipment will be linked for prompt and video recording.

The specific operation steps are as follows:

1、 Enter [Main Menu-> Channel Management-> Blocking Alarm], as shown in the figure below.



2、 Select the channel where you want to set video blocking.

3、 Select [Process Video Blocking] to enable blocking alarm processing.

4、 Select [Left key cast to set the deployment period] or [Left key cast to eliminate the deployment period] to set the deployment time. You can quickly edit the deployment time of other channels with Copy to Channel.

5、 Select [Linkage Settings]. When an alarm occurs, you can link sound prompt, screen display, email sending, video recording, output, capture, text pre-plan, single screen, etc.

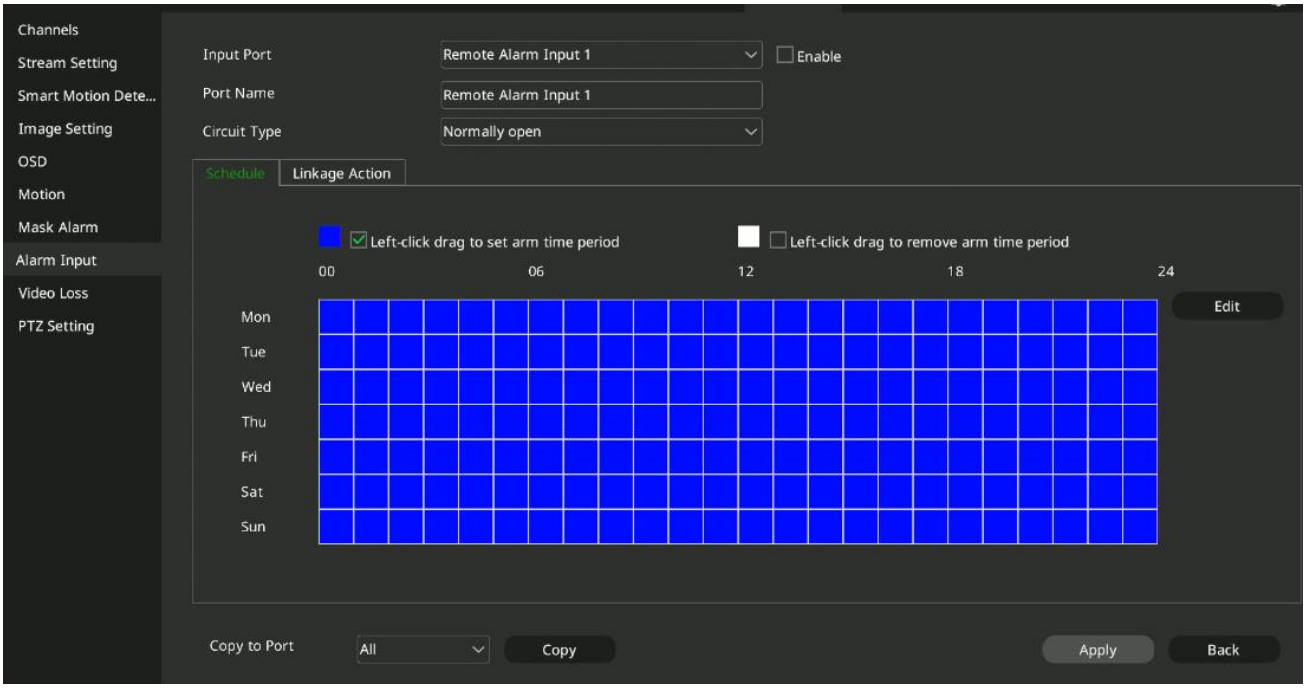
6、 After the setting is completed, you can copy the parameters of other channels. After clicking [Apply], you can save the set parameters.

4.4.8 Alarm Input

By setting alarm inputs, when input alarm occurs in the front-end IPC, the NVR device can be linked to provide prompt, video, etc.

The specific operation steps are as follows:

1. Enter [Main Menu-> Channel Management-> Alarm Input], as shown in the following figure.



2. Select the input port number to be set.

3. Select the type of alarm.

Explain：

- Normally open alarm: alarm when the front-end IPC alarm input port is closed.
- Normally closed alarm: alarm when the front-end IPC alarm input port is open.

4. Check [Handle alarm input] to set the alarm input deployment time.

5. Enter [Linkage setting] to set alarm linkage.

(1) Alarm linkage sound prompt, screen display, email sending, linkage video recording, linkage output, linkage snapshot, linkage PTZ, linkage text plan, linkage single screen, etc., can be set.

(2) After setting, you can copy the Parameter of other channels.

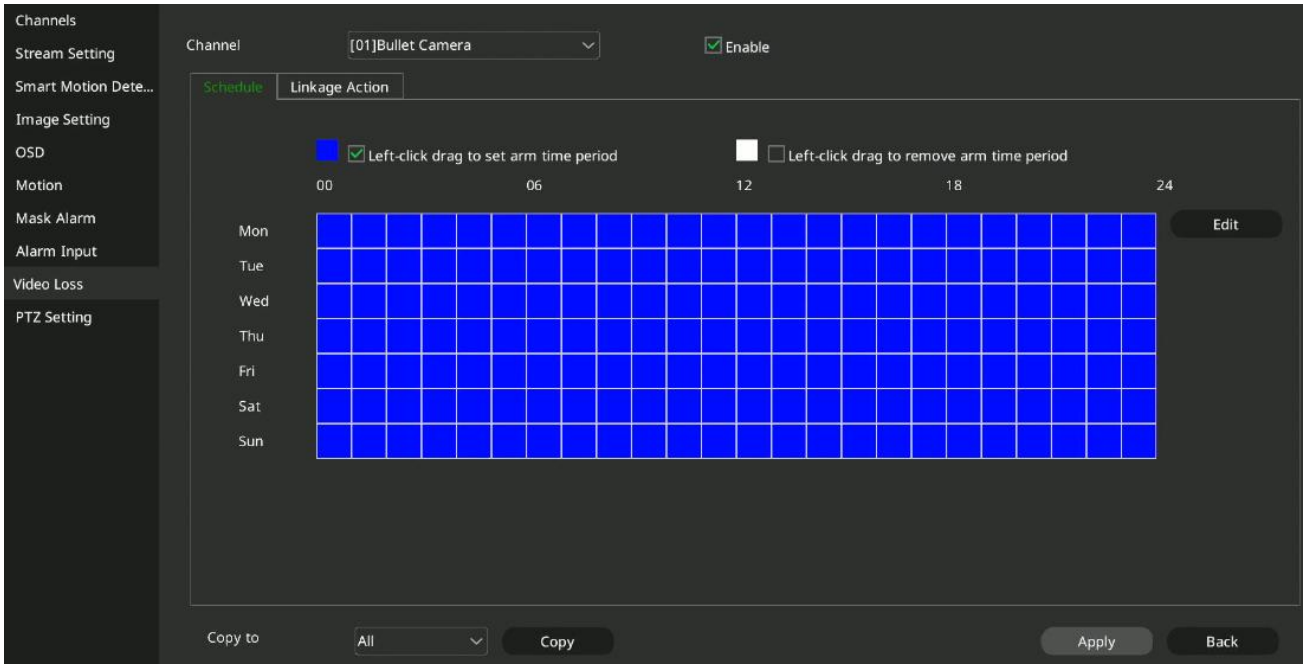
6. Click [Apply] to save the setting Parameter.

4.4.9 Video Loss

Video loss alarm shall be set, and NVR equipment shall be linked for prompt and video recording in case of channel video loss.

The specific operation steps are as follows:

1. Enter [Main Menu-> Channel Management-> Video Loss], as shown in the following figure.



2. Select the channel for which you want to set video loss.

3. Check [Handle Video Loss] to set the defense time for video loss.

4. Enter [Linkage setting] to set alarm linkage.

(1) Alarm linkage sound prompt, screen display, email sending, linkage video recording, linkage output, linkage snapshot, linkage PTZ, linkage text plan, linkage single screen, etc. can be set.

(2) After setting, you can copy the Parameter of other channels.

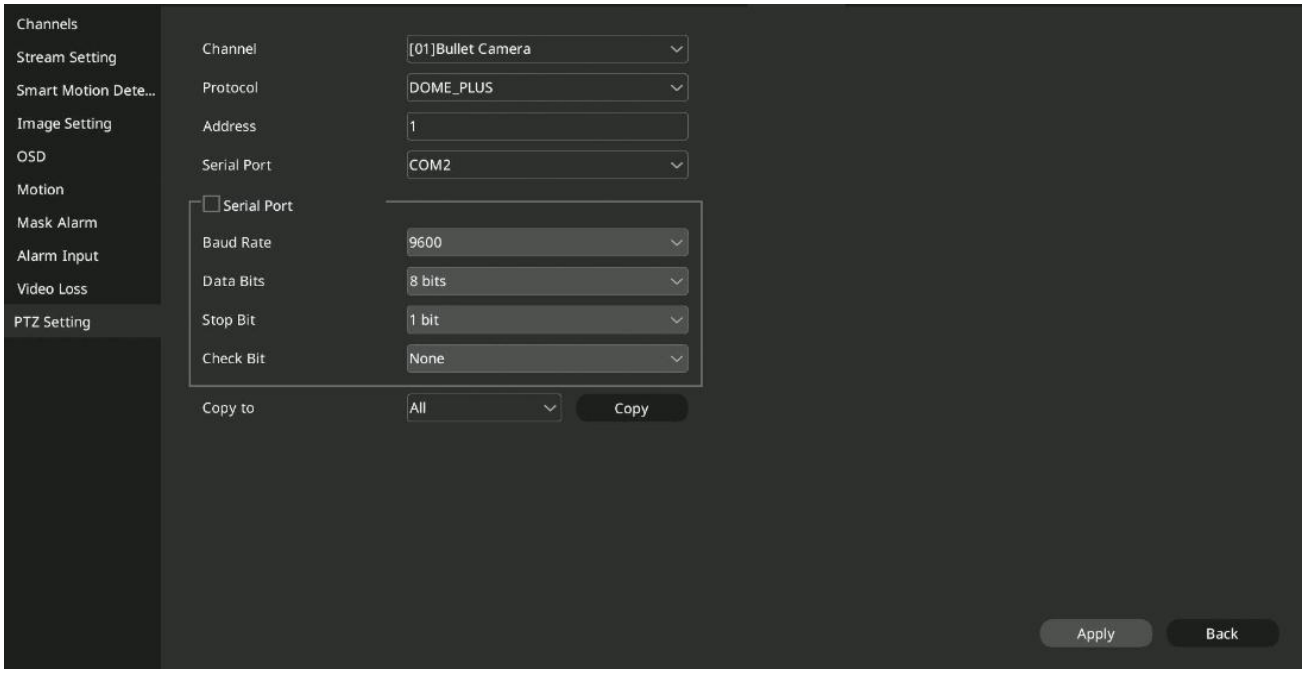
5. Click [Apply] to save the setting Parameter.

4.4.10 PTZ Setting

You can set the front-end control protocol, serial port attributes, etc.

The specific operation steps are as follows:

1. Enter [Main Menu-> Channel Management-> Cloud Mirror Settings], as shown in the following figure.



2. Select the channel to be set.

3. Select the PTZ control protocol, address and serial port of the channel. After the setting is completed, you can copy the Parameter of other channels.

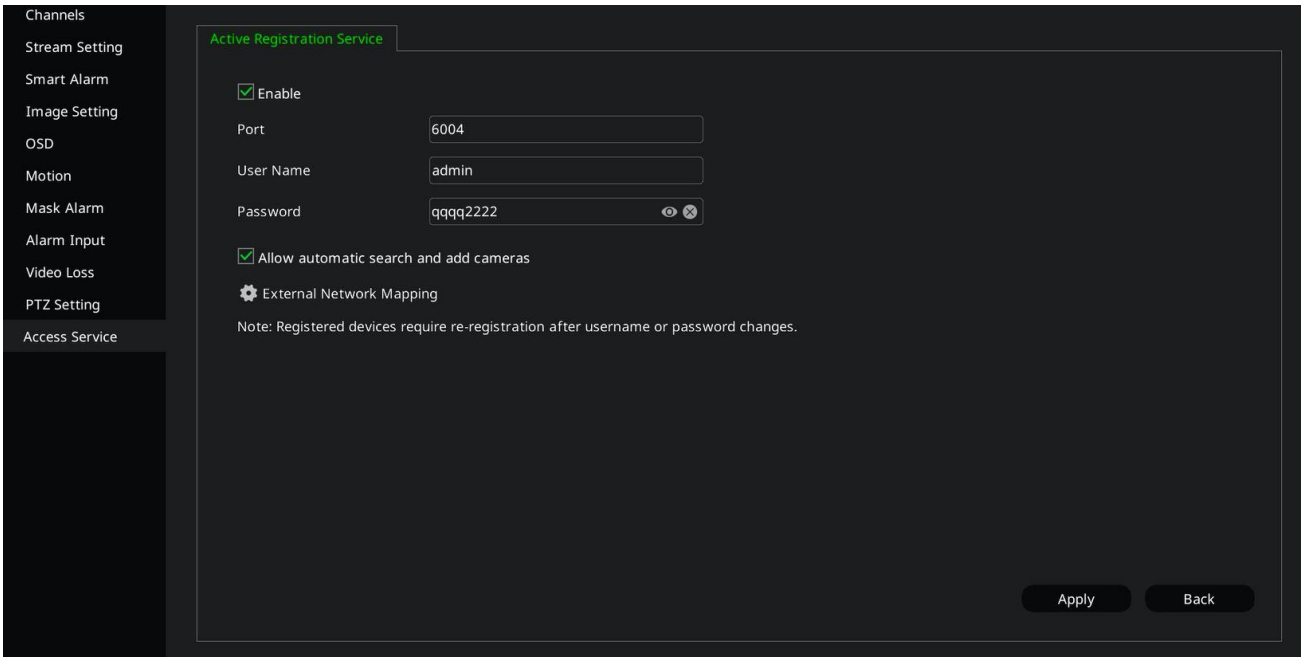
4. Click [Apply] to save the setting Parameter.

Explain：

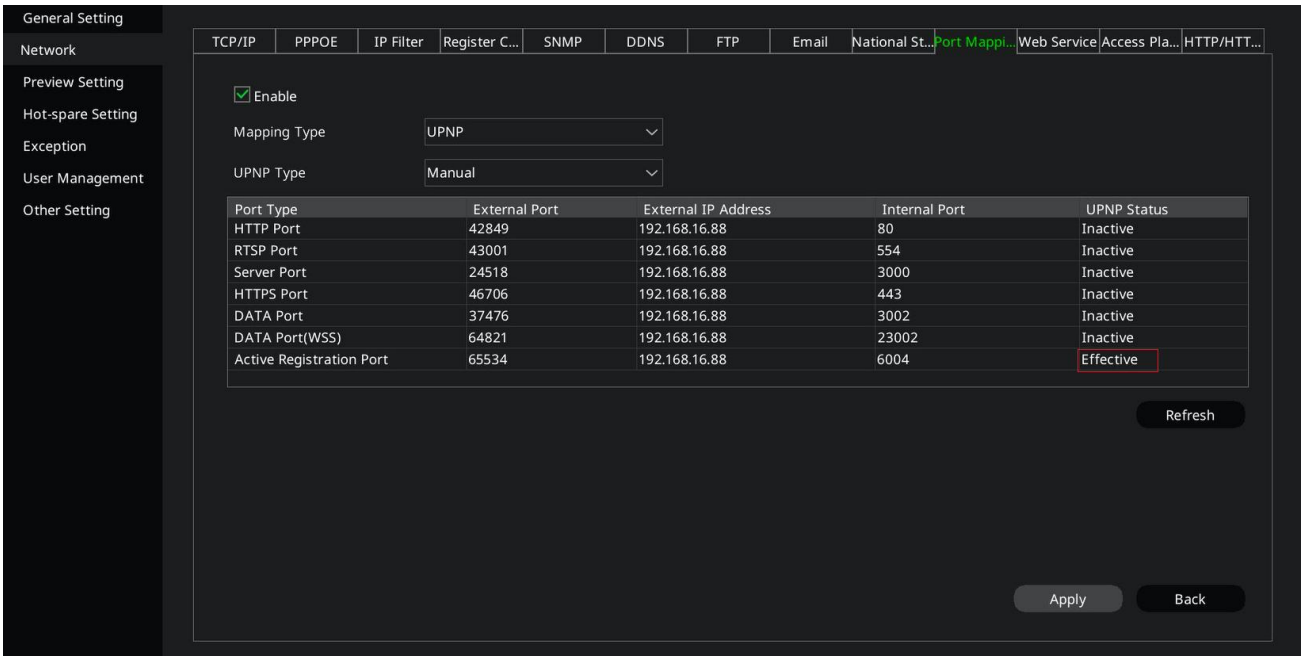
- The user can customize the serial port attribute, set the baud rate, data bit, stop bit and check bit of the serial port, and select to copy to other channels after setting the Parameter.

4.4.11 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.

Parameter configuration instructions for the camera registration center interface:

- 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.

4.5 Preview

4.5.1 Interface Status

In the preview interface, the video recording and alarm status of each channel can be distinguished by the icon display on the upper right of each channel. The preview status is shown in the following table.

Icon	Explain
	Alarm (including motion detection alarm, video occlusion alarm, port alarm, video loss alarm, intelligent analysis alarm, etc.)
	Video recording (including timer, manual and various types of alarm

	linkage videos)
	Face recognition: This channel has enabled face recognition
	The channel is recording and an alarm occurs
	Start talking
	Talk with the channel where the alarm occurs / start talking and the icon turns green
	The IPC voltage alarm for this channel

4.5.2 Task Bar Menu

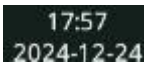
In the preview state, you can switch the preview screen, set the preview, output mode, eliminate the alarm, view the alarm information, set the network, monitor the mobile phone, set the time and other operations on the device through the taskbar. As shown in the following figure.



The taskbar item Explain is shown in the following table:

Icon	Explain
	Split screen, change the preview mode through the drop-down menu option. Modify the display mode of the output device and select multi-picture preview, that is, preview according to the number of pictures.
	Previous screen/next screen, switch the previous/next screen.
	Start/stop polling, switch to the next screen according to the preview

	settings, and start from the first screen when the last screen is reached.
	For channel management, click to jump to the device search interface.
	Network settings, click to jump to the network settings interface.
	Encoding setting, click to pop up the audio and video Parameter setting interface
	Dual light setting, set fill light mode, different devices have different modes to choose from, up to infrared mode, alert mode, full color mode, custom mode four options.
	Mobile phone monitoring, downloading the QR Code of the mobile phone monitoring client and the connected equipment.
	Alarm information, view the abnormal alarm and normal alarm.
	Cloud upgrade, automatic detection of new version, can jump to IPC upgrade or NVR upgrade.
	One-key detection, one-key detection of network, channel and disk.
	Target detection, displaying the face photo captured by the channel and the comparison similarity with the face database; if no similar photo is found in the face database, the face information is displayed.
	Man-vehicle inspection, number of inspectors and number of vehicles.
	Playback, click to jump to the playback interface.

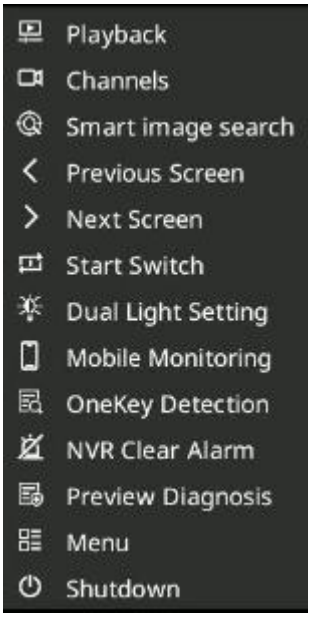
	Menu, click to enter the main menu of the system.
	Time setting, click to enter the time setting interface.
	Hide or lock the toolbar.

Explain：

- If you need to use the [Custom Preview] operation, please set the [Custom Preview] configuration in the preview settings in advance.
- If you need to use the [Start Switching] operation, set [Cruise Interval] in the preview settings in advance.
- Mobile phone monitoring can not only provide Android and Apple IOS version client download, but also check the public network connection status.

4.5.3 Convenient operation by right-clicking the channel screen

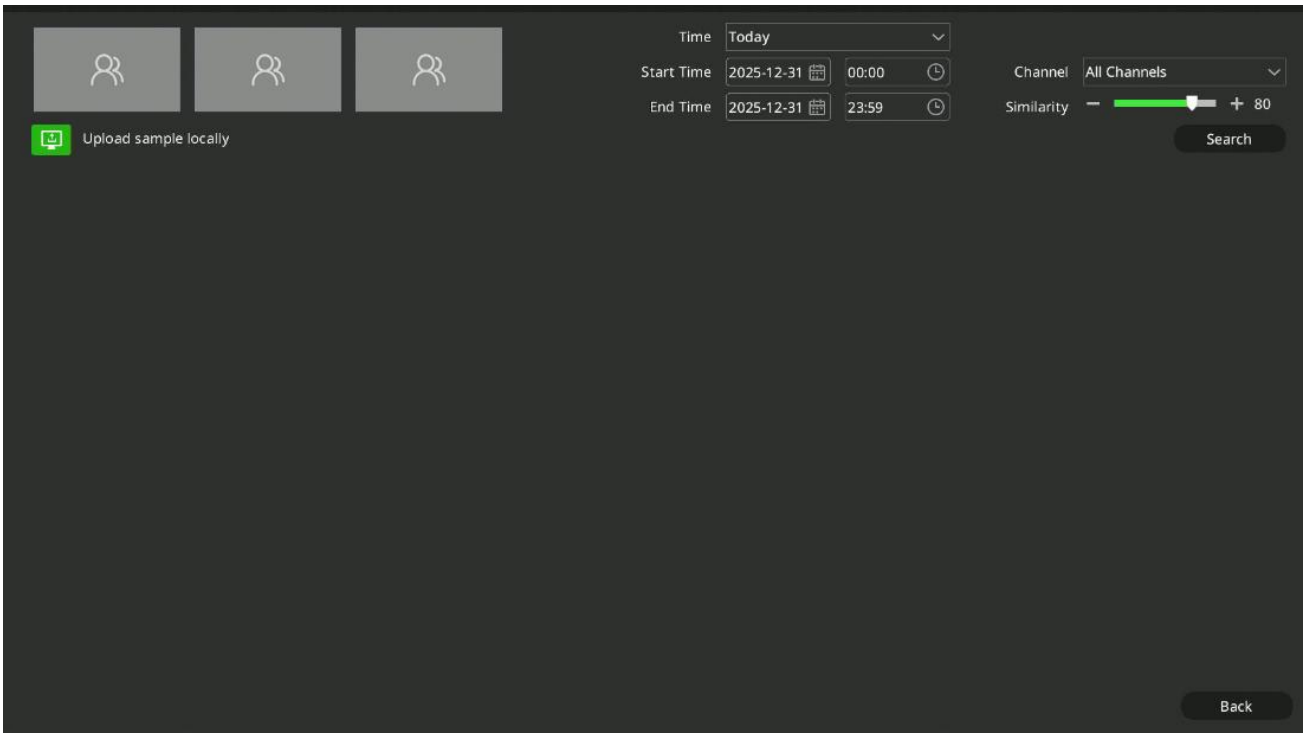
1. Enter the preview state, select the channel to be operated with the right mouse button, and the convenient operation box will pop up, as shown in the following figure.



2. Channel management, dual-light setting and other operations can be carried out by using the convenient menu, as shown in the following table.

Name	Explain
Playback	Jump to the playback interface.
Channel management	Jump to the device search interface.
Smart image search	Support accurate retrieval of targets in preview and playback.
Pedestrian and vehicle detection	Number of inspectors and vehicles.
Previous Screen/Next Screen	Switch to the previous/next screen.
Dual light setting	Set the fill light mode. Different devices have different modes to choose from. There are up to four modes to choose from: infrared mode, alert mode, full color mode and custom mode.
Cell phone surveillance	Download the QR Code of the mobile phone monitoring client and the connected equipment.
Quick detection	One-click detection of networks, channels, and disks.
NVR disarm	Clear NVR Alarms.
Preview the diagnostics	Automatically adjust the preview or manually adjust the resolution according to the preview.
Menu	Enter the main menu of the system.
Shutdown	Turn off the NVR device.

4.5.3.1 Smart image search



Target Channel: The channel to be retrieved.

1. 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.

2.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.

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

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

5.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.

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.

4.5.4 Preview Convenient Operation

1、Enter the preview state, click the left mouse button to select the channel to be operated, and the shortcut bar will be displayed below, as shown in the following figure.



2、Cloud mirror control, instant playback, manual snapshot, manual video recording, electronic amplification, intercom, channel information editing and other operations can be performed by using the convenient menu. The specific operations are shown in the following table.

Icon	Explain
	Cloud mirror control
	OSD
	Instant replay
	Manual capture
	Manual recording
	Electronic amplification
	Talk back

	Adjust the volume
	Low latency/high smoothness
	Manual alarm elimination
	Current primary/secondary stream
	Smart image search

4.5.4.1 Instant playback

Play back the video of the channel within 5 minutes. If there is no video in the channel, prompt [Instant Playback Failed].

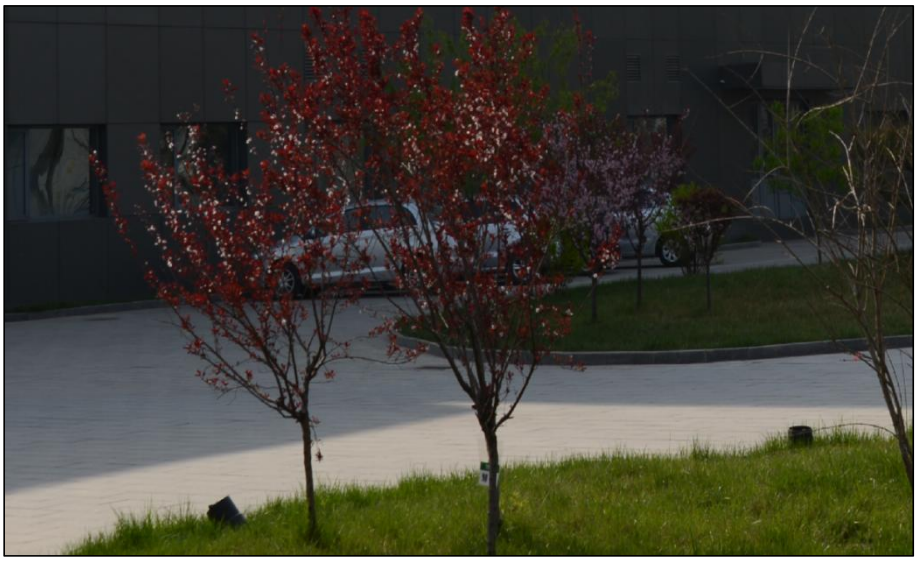
4.5.4.2 Electronic amplification

1、 Click “ ” . Enter the electronic amplification interface, as shown in the figure below.

Original Video:



Screenshot of electronic magnification effect:



2、 2. Roll the mouse wheel to zoom in or out. The zoom-in or zoom-out area is centered on the current position of the mouse.

3、 3. You can also click "+" in the upper left corner of the screen to zoom in and "-" to zoom out. Zooming in or out is done around the center of the current screen.

4、 4. When zooming in, the left mouse button can still drag the image to change the zoomed in area.

5、 5. Click the right mouse button to exit the electronic zoom.

Explain：

- The maximum magnification is 8x or 16x depending on the processing capacity of the equipment.

4.5.4.3 High smoothness/low latency

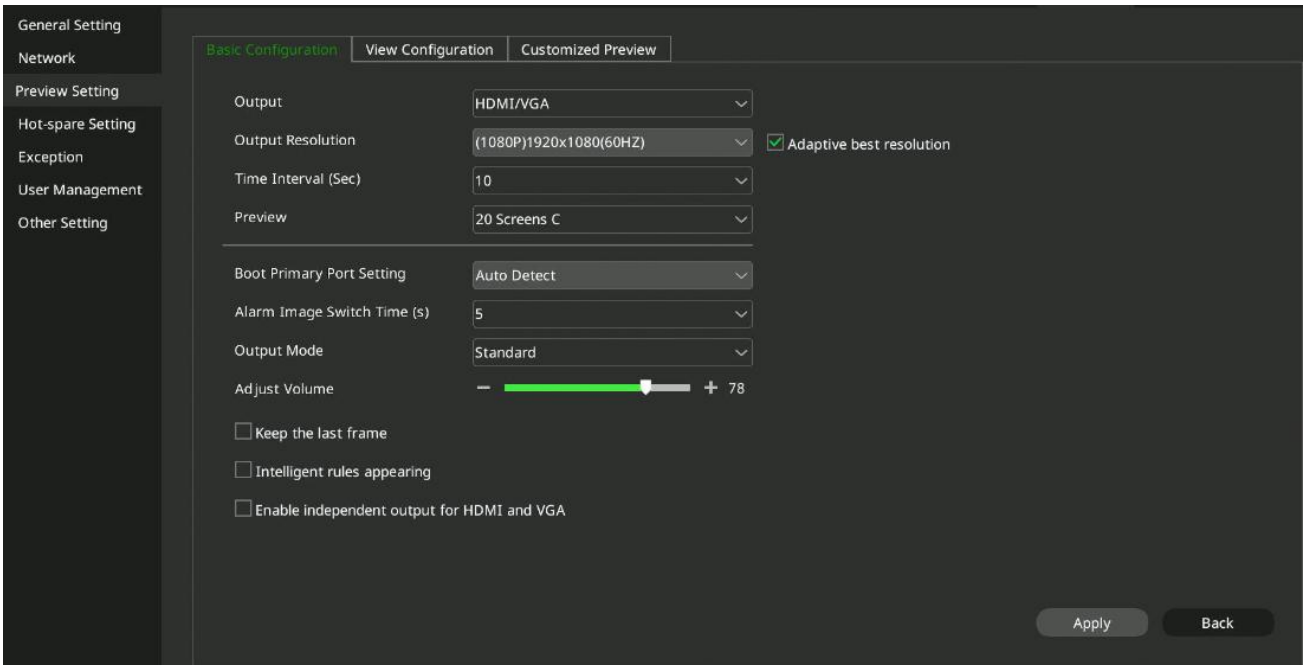
Choose high fluency, and the NVR device will ensure fluency according to the network conditions. Select low latency mode to reduce video latency.

4.5.5 Preview Settings

Perform basic configuration and view configuration on the preview interface, and perform custom preview configuration operations.

4.5.5.1 Basic configuration

1. Enter [Main Menu-> System Settings-> Preview Settings] and select the Basic Configuration tab, as shown in the following figure.



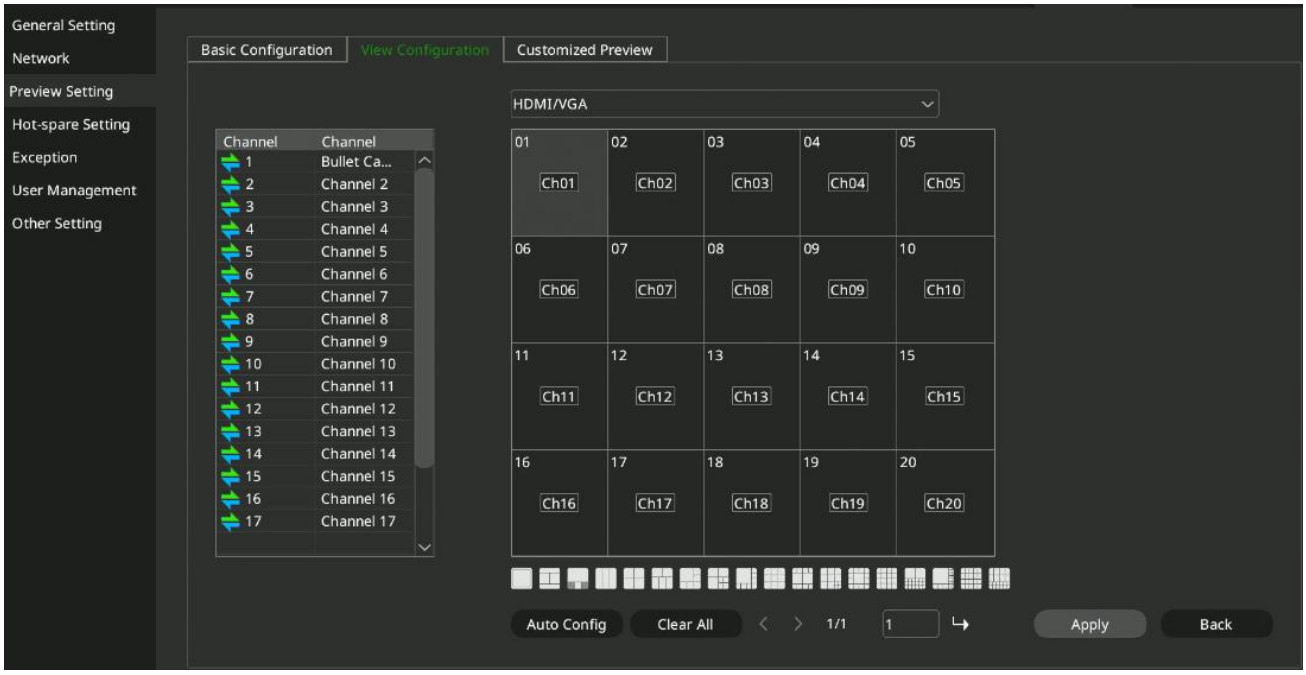
2. Select the corresponding settings according to the interface prompts. The specific Parameters are as follows.

- Output device: Select a video output device in the [Output device] drop-down list, HDMI 2/BNC, VGA/HDMI, VC (when the last channel is set as the virtual synthesis channel, VC is displayed here).

- Output resolution: 800 * 600, 1024 * 768, 1366 * 768, 1440 * 900, 1280 * 800, 1280 * 720, 1920 * 1080, 2560 * 1440, 2560 * 1600, 3840 * 2160, etc. The list items are different due to equipment differences.
- Adaptive Optimal Resolution: Adapts to the optimal resolution of the display.
- Cruise interval: Set the preview automatic switching time interval. There are 8 intervals available, including no cruise, 2 seconds, 3 seconds, 5 seconds, 10 seconds, 15 seconds, 30 seconds and 60 seconds.
- Preview mode: set the configuration of the number of pictures, including single picture, two pictures, three pictures, four pictures, six pictures, eight pictures, nine pictures, ten pictures, thirteen pictures, sixteen pictures, twenty pictures A, twenty pictures B, twenty-five pictures, etc. The list items are different due to equipment differences.
- Alarm screen switching interval: set the time interval of alarm linkage single screen display. There are 8 intervals available, including 2 seconds, 5 seconds, 10 seconds, 15 seconds, 20 seconds, 30 seconds, 45 seconds and 60 seconds.
- Keep the last frame: configure this option so that the preview stays on the last frame when the front-end camera is disconnected. Otherwise, [No Video] is displayed.
- Smart Rule Display: Displays the smart analysis algorithm for the settings.
- Enable independent output of HDMI and VGA: HDMI and VGA interfaces can be output separately.

4.5.5.2 View Configuration

1. Enter [Main Menu-> System Settings-> Preview Settings] and select the View Configuration tab, as shown in the following figure.



2. Select the screen number on the right and double-click the screen to close the preview channel.

3. Select the screen number on the right and double-click the channel number in the table on the left to configure the channel number to the specified position.

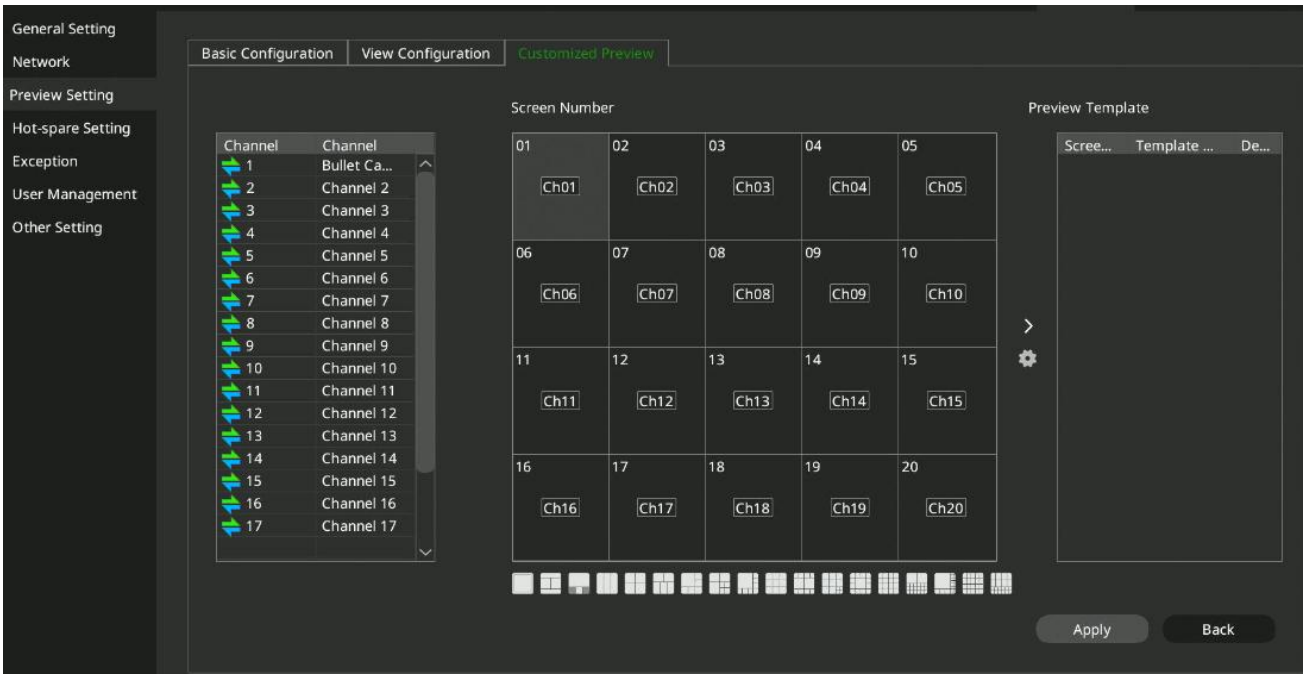
4. Click [Auto Configuration] and [Clear All] to open or close all preview channels.

Explain：

- When the maximum preview performance is switched from the main stream to the secondary stream, the secondary stream does not compound audio by default, so there may be no sound in the UI preview at this time. Due to the limitation of equipment performance, when the access code stream reaches the upper limit of equipment performance, other code streams cannot be continuously connected.

4.5.5.3 Custom Preview

1. Enter [Main Menu-> System Settings-> Preview Settings] and select the Custom Preview tab, as shown in the following figure.



2. The left and middle parts of the interface are used in the same way as [View Configuration]. When the channel is configured, click the arrow between the middle and right to add the configuration to the preview template. The maximum number of supported templates is 8. After configuration, click [Apply] in the lower right corner to take effect. Select the preview template to change the channel and screen quantity configuration, and double-click to change the template name. Contingency plan application is used in the right-click menu of the preview interface.

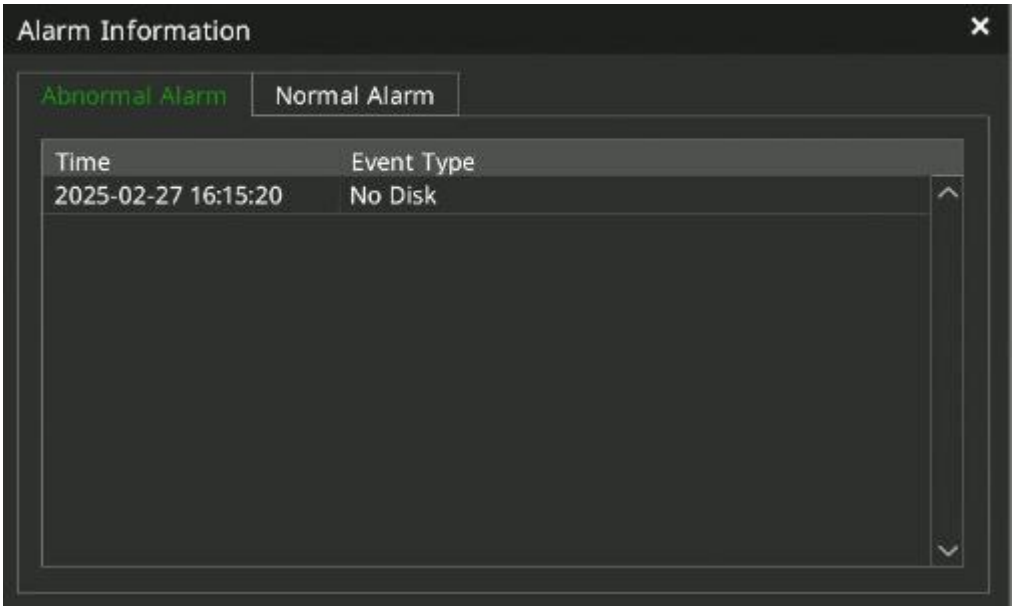
4.5.6 Preview interface information prompt

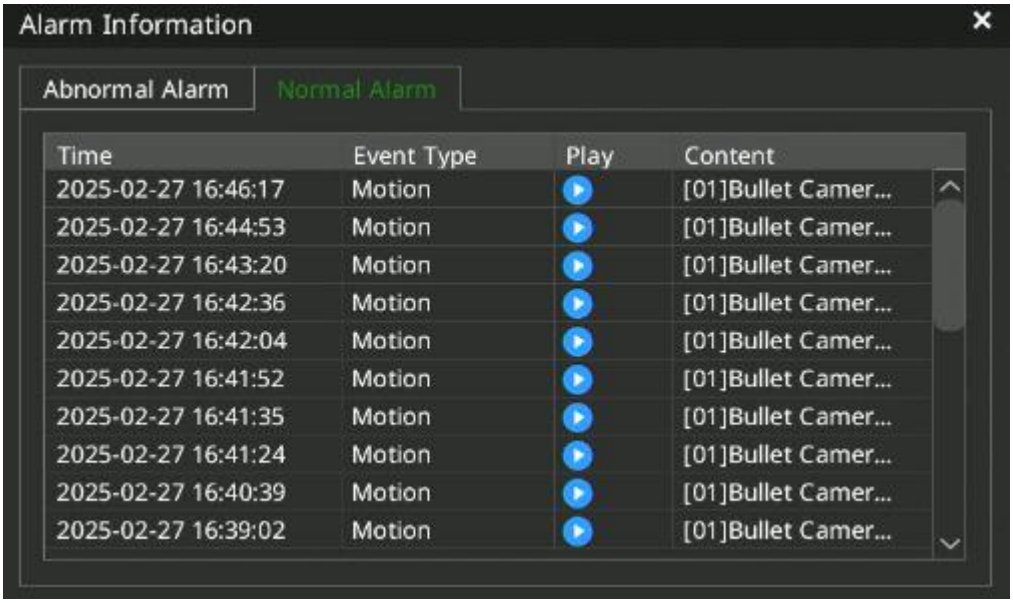
4.5.6.1 Limited Decoding Performance

When the decoding performance of the device reaches the upper limit, the device will give the following prompt [decoding performance reaches the upper limit, please disable some channels manually]. You can configure whether to enable this prompt. See System Settings- > General Settings for details. It is not turned on by default.

4.5.6.2 Prompt of system abnormal information

When the related options in [System Settings- > Routine Maintenance- > Network Exception \ Storage Exception] are enabled and related abnormal events occur, the  in the upper right corner of the screen will become . Double-click the Icon to open the system notification interface, as shown in the following figure.





Explain：

- The user can choose not to be prompted for this message, or click [Next] to view the next prompt.

When an abnormal alarm with the risk of video loss occurs, a red warning window will pop up to prompt the user to handle the abnormal alarm in time.

4.5.6.3 Alarm information prompt

In the intelligent analysis, after the channel has been set for linkage calling, when an alarm occurs, the single screen of the corresponding channel will pop up, and there is "" Icon flashing in the upper right corner of the screen. Click Icon to start calling, and the Icon will change to "". Click the right mouse button to exit the case.

4.5.7 Audio preview and intercom

4.5.7.1 Audio Preview

When a video channel is selected with the mouse, the system will automatically play the audio of the channel.

4.5.7.2 Voice intercom

The user can use the voice intercom interface of the equipment to realize the intercom Function between the remote control terminal and the equipment. Before intercom, please connect the pickup and speaker.

4.5.8 Right click to return to the preview interface

In the Parameter configuration class interface, right-click to return directly to the preview interface.

4.5.9 PTZ control

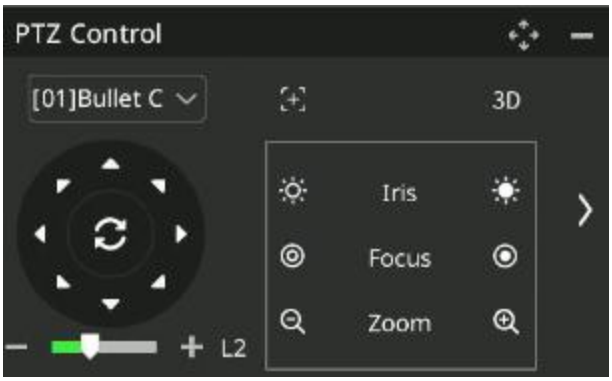
4.5.9.1 PTZ Parameter Settings

Explain：

- Before the user controls the dome or PTZ of the IP channel, first confirm that the network between the PTZ decoder and the NVR has been connected normally, and configure the PTZ decoder Parameter in the device.
- Refer to Section 4.13.9.1 Explain for front-end IPC serial port Parameter setting.
- Refer to System Settings Explain for NVR local serial port Parameter settings.

4.5.9.2 Cloud mirror control operation

1. In the login status, enter the preview status. Click the preview screen of the channel to be controlled by the cloud mirror, and click the [PTZ] button in the shortcut menu bar of the preview to enter the full-screen screen of the channel and pop up the cloud mirror control window, as shown in the following figure.



2. Select the channel to be PTZ controlled.

3. PTZ motion control Explain:

(1) PTZ control: Use the mouse to click the "" "" "" ""button to control the PTZ's up, down, left and right movements. Use the mouse to click the"" "" "" "" "button to control the PTZ's oblique movements. Click the ""button to start or stop the PTZ's horizontal automatic operation.

(2) Lens control: Click the ""button on the left side of [aperture] to close the lens aperture, click the"" button on the right side to open the aperture, click the ""button on the left side of"" focal length "to focus the lens far, click the"" button on the right side to focus the lens near, click the ""button on the left side of" zoom "to zoom the lens small, and click the" button on the right side to zoom the lens large.

(3) Speed setting: Click the progress bar to select the value or roll the mouse wheel to change the value, or click "" and "" Icon to increase or decrease the value. The larger the value is, the faster the PTZ action is. The default value of the system is L2.

(4) Click ""Icon to set the one-button focusing Function, click"" Icon to enter the 3D positioning Function interface, and click ""Icon to set the opening and closing of the front-end laser.

(5) Click "" and "" Icon to expand and collapse the control menu on the right side. The control menu on the right side is shown in the following figure.



(6) Drag the Icon to drag the Cloud Mirror control form.

(7) Click "" Icon to make the Cloud Mirror Control window smaller. In the PTZ reduced state, click "" Icon to return to the cloud mirror control form. Press and hold the left mouse button in the PTZ reduction state to control the PTZ direction of the dome camera according to the mouse movement direction.

4.5.9.3 Preset position, cruise, trajectory setting and call

Preset bit setting and calling

1、 Call preset bit: select the preset bit number in the [Preset Bit] drop-down list, or directly input the preset bit number and click the [Call] button to call the selected preset bit.

2、 Set the preset position: After controlling the PTZ to move to a specific position, select the preset position number in the preset position drop-down list or directly enter the preset position number, and click the [Set] button to complete the preset position setting operation of the number.

Track recording and presentation

Click the [Start Path] button, and the button's prompt message will change to [End Path], indicating that the system has entered the path recording mode. During this time, the system will automatically record all the pan-tilt operations performed by the user until the [End Path] button is clicked. Upon pressing the [End Path] button, the path recording is completed, and the system automatically exits the path recording mode. The user can then click the [Play Path] button to demonstrate the path that was just recorded.

Cruise path setting

1. Click the [Cruise Path] button to enter the cruise path setting interface.

2. Cruise path setting Explain, refer to the following:

（1）Cruise path information browsing

Select the number of the cruise route in the [Route No.] drop-down list. After a cruise point is selected, the system will automatically display the preset position corresponding to the cruise point and the stay time at the preset position.

（2）Edit the cruise path

Select the path number you want to edit from the [Path Number] drop-down list. If the path is currently disabled, press the [Enable] button to enable the cruise path. Select the preset bit number in the [Preset Bit] drop-down list, enter the time, and press the [Add] button to add the preset bit to the cruise point list of the endurance path. After selecting a cruise point in the [Cruise Point] list, click the [Delete] button to delete the cruise point from the cruise point list of the

cruise path. After a cruise point is selected, select a preset bit from the preset bit drop-down list, enter the time, and click the [Set] button to modify the configuration information of the selected cruise point.

（3）Enable/Disable Cruise Path

Select the cruise path number in the [Path Number] list to enable or disable the path.

（4）Invoke/Stop Cruise Path:

Click the [Call] button to cruise according to the set path, and click Stop to stop the current path.

（5）Exit the cruise path setting interface

Click the [OK] button to save all path editing operations done after entering the cruise path setting interface, and exit the path setting interface; press the [Cancel] button, the system will automatically ignore all editing operations, and exit the path setting interface.

（6）3D positioning

The user can use the mouse to select any area in the video screen, and the system will automatically control the PTZ lens action to achieve the zoom Function of the display scene (draw a rectangle from left to right to zoom in, and draw a rectangle from right to left to zoom out).

4.5.9.4 USB keyboard control cloud mirror

1. In the preview mode, use [↑] [↓] to select the channel that needs cloud mirror control operation, and press [P]. At this time, the system will display the selected

channel on a single screen, and [PTZ ChnXX] will be displayed in the upper right corner of the screen, prompting the user that the system is currently in the cloud mirror control state of XX channel.

2. Control the action of the cloud mirror.

- PTZ control: In the cloud mirror control mode, press the [↑] [↓] [←] [→] key to control the up, down, left and right movements of the PTZ; press the [OK] key to start the horizontal automatic movement of the cloud mirror, and press the [OK] key again to stop the horizontal automatic movement of the cloud mirror.
- Lens control: In the cloud mirror control mode, press I or G to open the aperture of the lens, press Ctrl + I or Ctrl + G to close the aperture of the lens, press Z or B to increase the zoom of the lens, and press Ctrl + Z or Ctrl + B to decrease the zoom of the lens; Press F or J to focus the lens far. Press Ctrl + F or Ctrl + J to focus the lens near.
- Preset bit call: In the cloud mirror control mode, press the [Backspace] key, press the [Number] key, and then press the [Enter] key, and the system will perform the corresponding preset bit call operation.
- Speed setting: In the cloud mirror control mode, press the number keys [1] ~ [4] to set the speed of the cloud mirror.
- Exit the cloud mirror control mode: Click the [ESC] key in the cloud mirror control mode to return to the preview mode.

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4.6 Playback

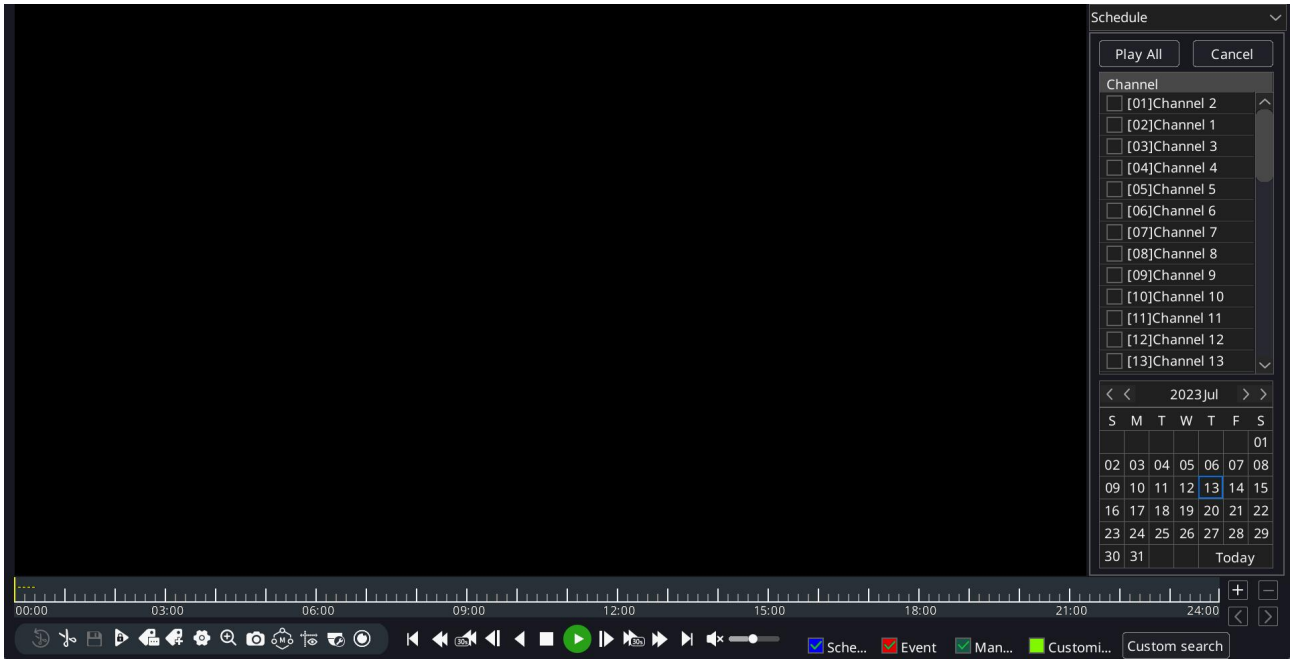
4.6.1 Instant playback

In the preview state, select the channel to be played back with the left mouse button, and click the "" button in the convenient operation menu to play back the video files of the selected channel within 5 minutes.

4.6.2 Playback interface

The composition of the playback interface and each Function module are introduced.

To enter the playback interface: (1) Right click on the channel screen and select [Menu- > Playback] to enter the playback interface. (2) Enter [Main Menu-> Playback] to enter the playback interface, as shown in the following figure.



4.6.3 General playback

The corresponding video files are retrieved according to the channel and the date, and the video files are sequentially played from the generated play bar meeting the conditions.

The specific operation steps are as follows:

1、 Enter [Main Menu- > Playback] to enter the [General Playback] interface.

2、 Select the channel for video playback, and the calendar will automatically display the video of the current month.

3、 Click the date to be played back.

4、 The system automatically plays eligible video files.

5、 Other playback operations.

- Use the [Full Screen] key in the upper right corner to enter full screen playback.
- If there is no operation for a period of time during the playback process, it will automatically enter the full-screen playback, and operate the mouse or keyboard again to exit the full-screen playback.
- Use the [Fast Forward] or [Slow Forward] key to play the video fast or slowly.

Explain：

- It supports 16-channel synchronous playback at most, and the playback performance is different according to different equipment models and video recordings.
- When playing back the thermal imaging device video, you can control whether to display the temperature and face frame by "/".

4.6.4 Event Playback

Query a video file in a certain time period by event type (port alarm, motion detection, video loss, video occlusion, intelligent analysis), and play the video from the generated list that meets the query criteria. The operation steps are as follows:

1、 Enter the playback interface, and select "Event" for the playback mode.

2、 Select event type in the upper right corner of the playback screen.

3、 Select the channel to play back.

4、 Click the date you want to play back.

5、 The system automatically plays the video files that meet criteria.

Explain：

- During event playback, the player will skip to the next segment based on the alarm time periods within the recording, automatically bypassing the segments without alarm recordings.

4.6.5 Slice Playback

The video slicing and playback feature enables rapid target positioning, effectively improving the efficiency of video retrieval and playback. This function supports slice-based preview of a single day's recording and allows filtering of the video slices by target types such as people and vehicles, as shown in the figure below.



Explain：

- Click the slice playback button to quickly slice the day's recordings. As shown in the figure below.



4.6.6 Tag Playback

Video tag Function helps the user to record the relevant personnel or field information at a certain time point when playing back the video, so that the information can be taken out at any time to search and locate the video.

4.6.6.1 Add/Manage Tags

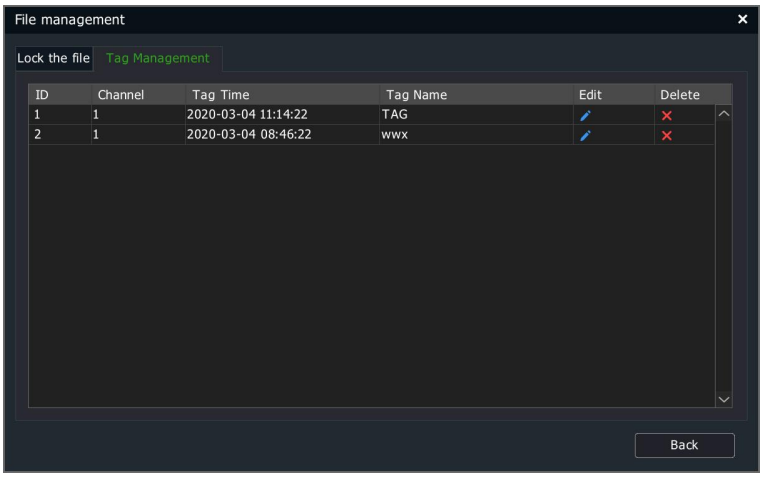
1、 Enter the video playback interface

Click to add the default label.

Click and enter a label name to add a custom label.

2、 Label management

Click to enter the [File Management-> Label Management] interface, as shown in the following figure. You can view, edit, and delete tags that have been added.



4.6.6.2 Playback operation by label

1、 Enter the playback interface and select [Label Playback] as the playback mode to enter the [Label Playback] interface.

2、 Select the channel.

3、 Enter the tag keyword. If you do not enter a keyword, all labels within the specified date of the selected channel are searched by default.

4、 Select the date.

5、A label marked with a green inverted triangle appears on the playback progress bar. When the mouse label is moved to the position marked by the inverted triangle, the name information prompt of the label will be automatically displayed.

Explain：

- The video is played back from the value set by [Playback Advance] before the time of adding tags to the value set by [Video Delay] after the time of adding tags. When finished, it automatically jumps to the next tab for playback.
- The playback advance time and playback delay time can be set by yourself.

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4.6.7 Intelligent playback

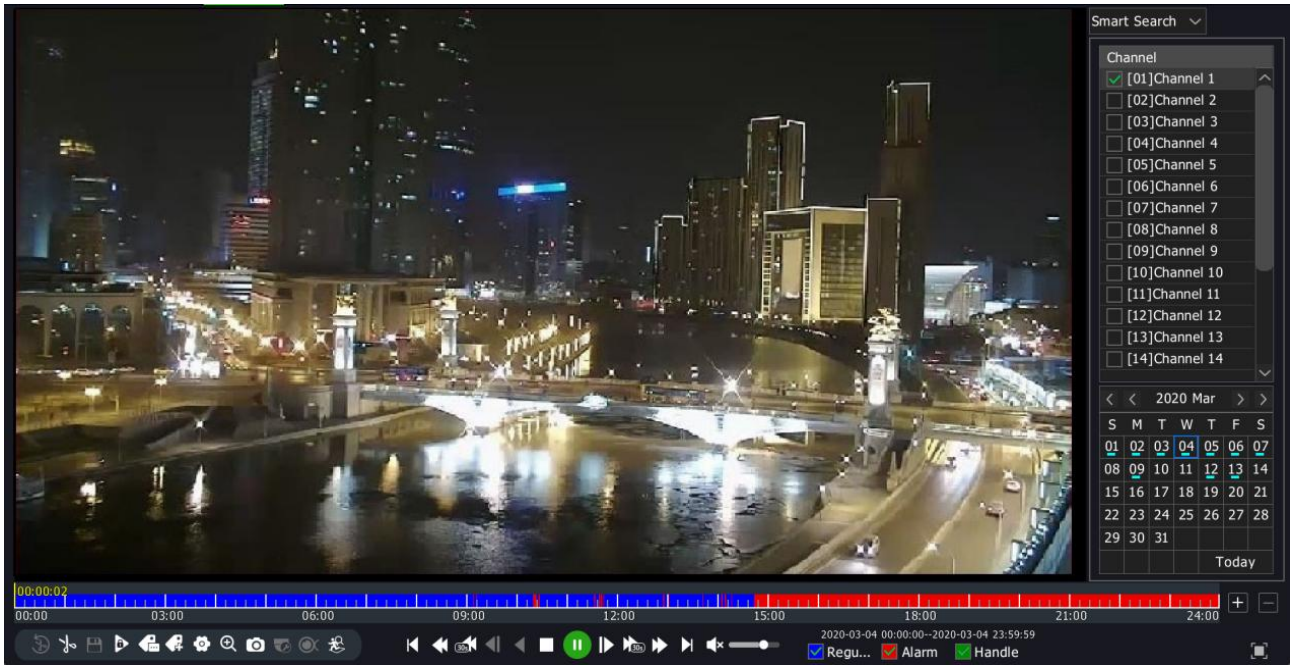
Intelligent playback refers to the intelligent analysis of video files. At present, it supports four intelligent analysis operations: [tripwire search], [perimeter search], [face detection] and [license plate recognition].

Explain：

- Only some devices support this Function. Please refer to the actual situation.

The specific operation steps are as follows:

1、 Enter the playback interface and select [Intelligent Playback] as the playback mode, as shown in the following figure.



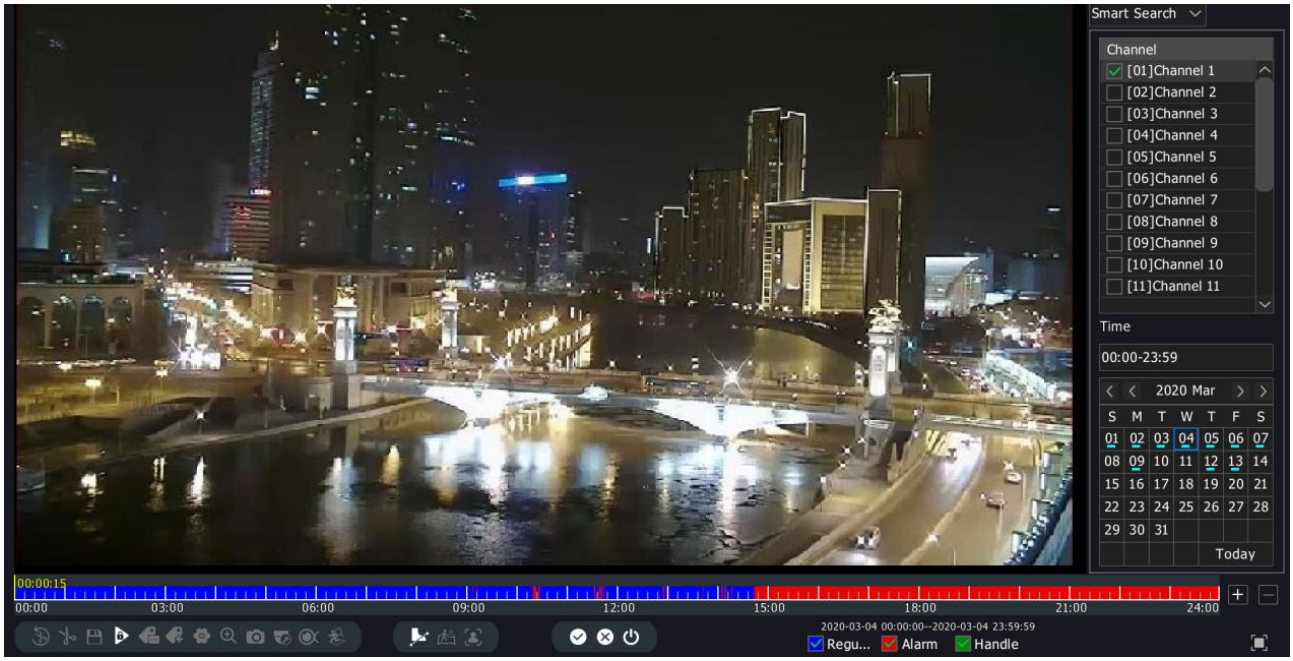
2、 After selecting the channel and date, start the playback operation.

3、Click "" in the lower left corner of the interface to enter the intelligent retrieval interface.

4、 Click the "" button at the bottom of the interface to select the retrieval type.

4.6.7.1 Trip wire and perimeter search

1、Click the "" or "" button to enter the line drawing interface of intelligent playback, and perform the line drawing operation on the video, as shown in the following figure.



2、 Click the "" button to start searching. During the search, [VCA SEARCHING ⋯] is displayed at the top left of the screen At the same time, the progress bar will show the progress and results of the search.

3、 In the search process, the system automatically jumps to the search result and starts playing.

4、 Click other channels or other dates in the search process, and the search will stop automatically. You can also click the Stop Search button or the Exit button to manually stop the search or exit the intelligent search.

4.6.7.2 Face detection

1、 Click "" to enter the [Face Detection] interface of intelligent playback, as shown in the following figure.



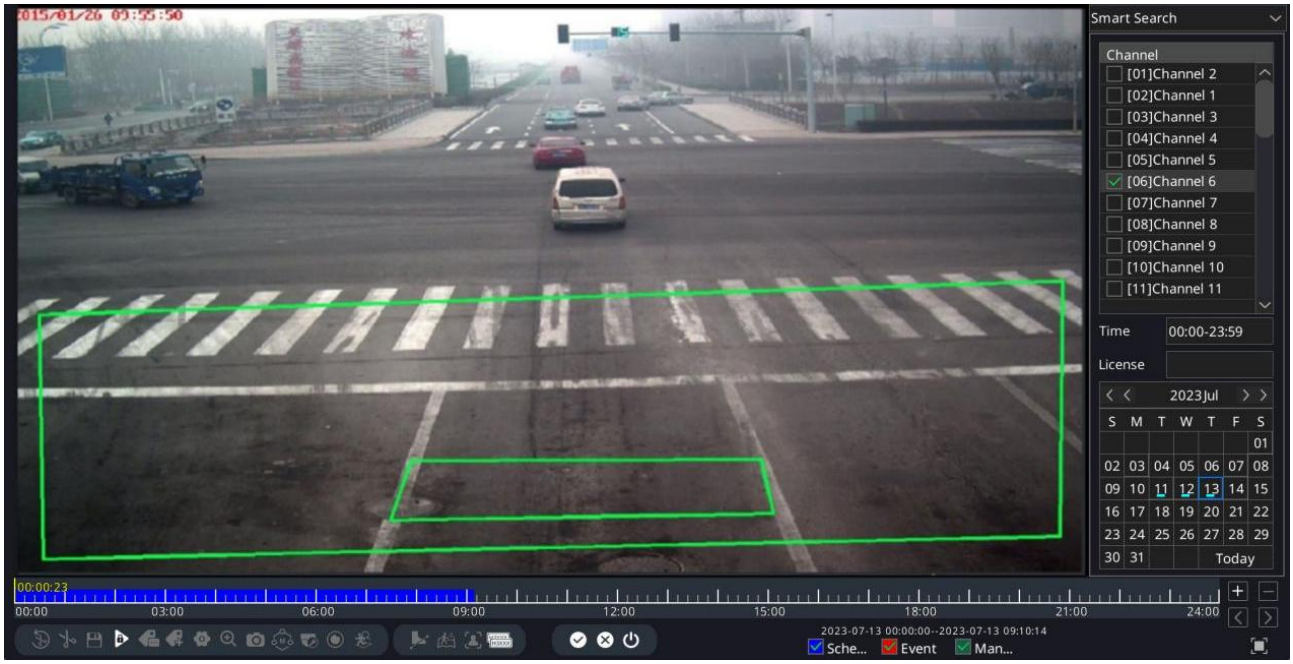
2、 Click the "" button to start searching. During the search, [VCA SEARCHING ⋯] is displayed at the top left of the screen At the same time, the progress bar will show the progress of the search, and the right side will show the search results of face detection.



3、 Click the Stop Search button during the search, and the search will stop. Click the search results on the right, and the video will be located in the corresponding position.

4.6.7.3 License plate recognition

1、 Click "" to enter the [License Plate Recognition] interface of intelligent playback, as shown in the following figure.



2、 Under the channel list on the right, set the search time period and the license plate to be searched (if the search license plate is empty, all license plates will be searched).

Explain：

- License plate retrieval supports single-channel search for all license plates and multi-channel search for a single license plate.

3、 Click the "" button to start searching. During the search, [VCA SEARCHING] will be displayed on the top left of the screen, the progress of the search will be displayed on the progress bar, and the search results will be displayed on the right.

4、Click the Stop Search button during the search, and the search will stop. Click the search results on the right, and the video will be located in the corresponding position.

Explain：

- Smart Playback works only with video files within the timeline.

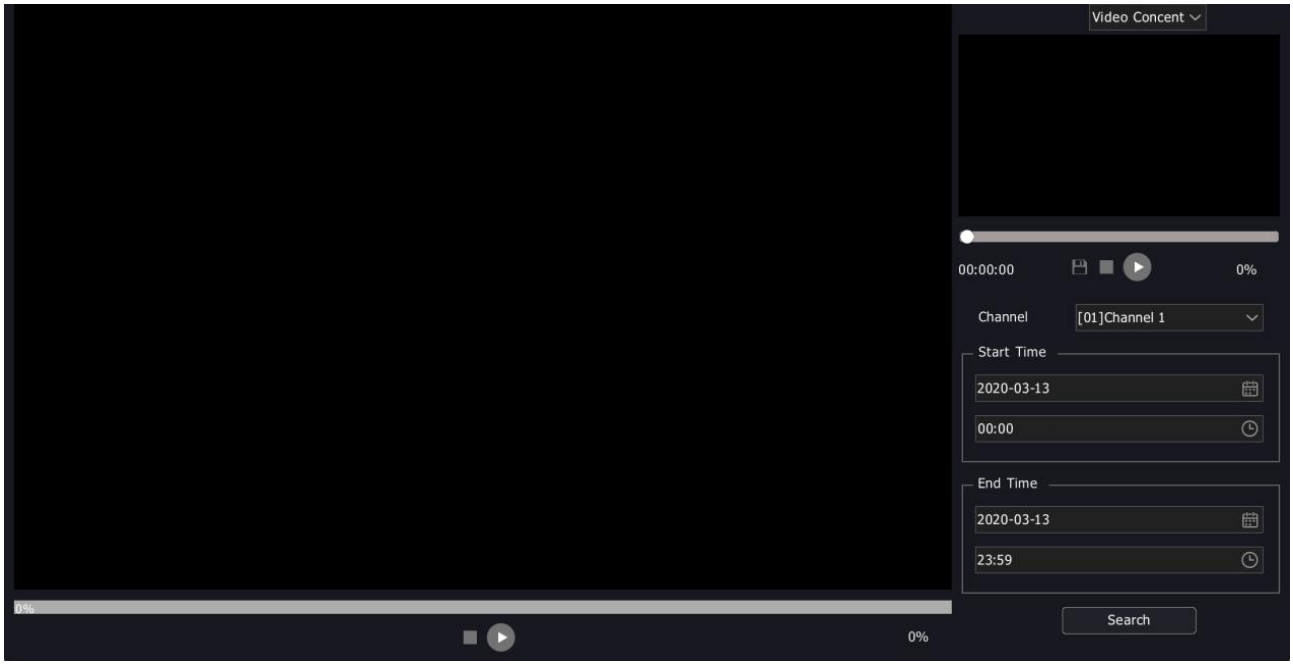
4.6.8 Video Summary Playback

Video summary playback Function is to superimpose multiple moving targets at different time points into the same background for simultaneous playback, which can condense a longer video into a shorter time and greatly improve the efficiency of video playback. Before playing back the video summary, make sure that the front-end device connected to the selected channel supports it and enable the Intelligent Analysis Function.

The specific operation steps are as follows:

1、 Enter the playback interface and select [Video Summary Playback] as the playback mode.

2、 Select the channel, set the start and end time, and click [Search] to play back the video summary file, as shown in the following figure.



3、 Double-click the rectangular box on the left side, locate the time at that time and play it in the small window on the right side. Play the video 30 seconds before and after the time point.

Explain：

- The large screen on the left supports pause and stop, supports progress bar display and percentage display, but does not support progress bar dragging.
- The small screen on the right side supports pause and stop, supports progress bar display and percentage display, supports progress bar dragging, and can also back up the current file.

- 4 decoding channels are supported to overlap targets at the same time, and the actual number of overlapping layers depends on the decoding capability. The real-time playback picture of the first channel is used as the superimposed background, and the targets of other channels are superimposed on the first channel.
- And that time segment of each decode channel is distributed equally accord to the time length of the target information.
- Video summary playback is only supported on select models.

4.6.9 Time-sharing playback

Time-sharing playback Function means that the video time of a channel in a day is averaged to multiple screens for asynchronous playback according to the number of split screens, which can effectively improve the playback efficiency.

The specific operation steps are as follows:

1. Enter the playback interface and select [Time-based Playback], as shown in the figure below.

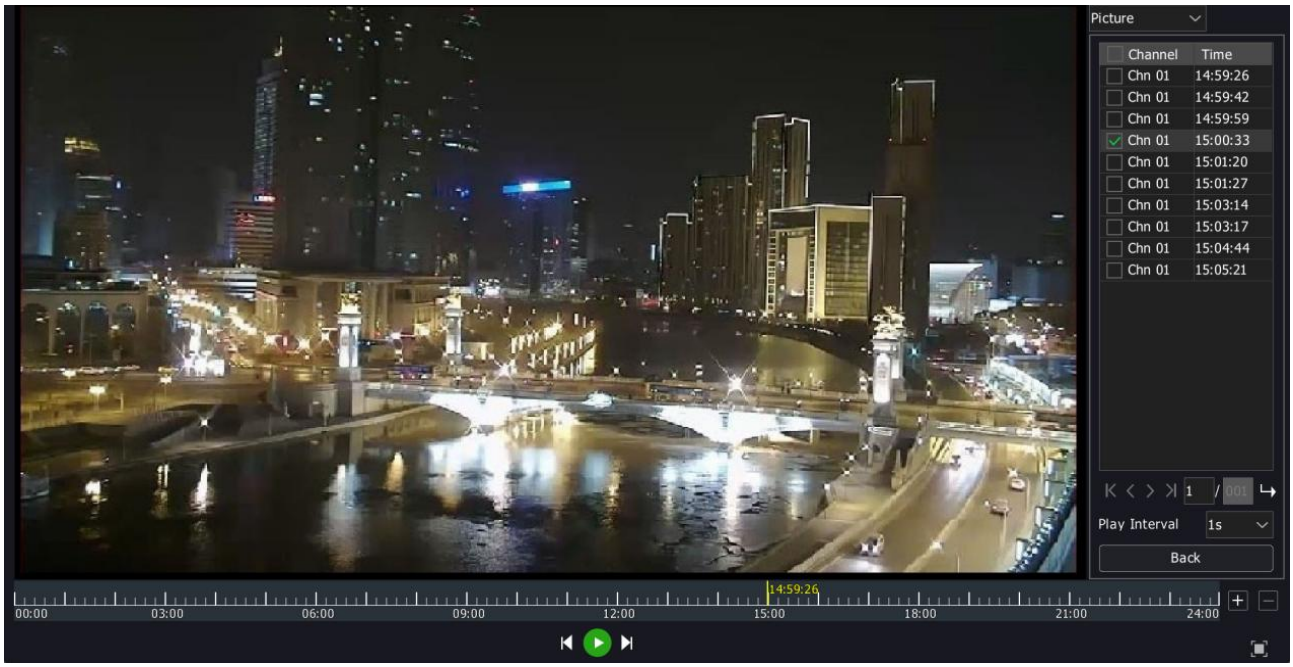


2. Select the playback channel and set the number of split screens. For example, set 4 split screens.

3. Select the date on the right side or click the play button for time-sharing playback.

4.6.10 Picture playback

Picture playback Function refers to the playback of pictures stored in the hard disk, as shown in the following figure.



Explain：

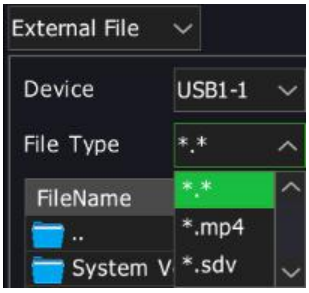
- The user can select the play interval to automatically play the picture.
- You can also pause the playback and click on the left and right sides of the picture to display the previous or next picture.

4.6.11 External file playback

External file playback Function refers to the playback of video files stored in external storage media such as U disk, mobile hard disk and CD.

The specific operation steps are as follows:

1. Enter the playback interface and select [External File Playback]. Device type and file type are optional, as shown in the figure below.



2. Select [Refresh] to read the external storage medium.

3. Click the file to be played to play back the external video file.

Explain：

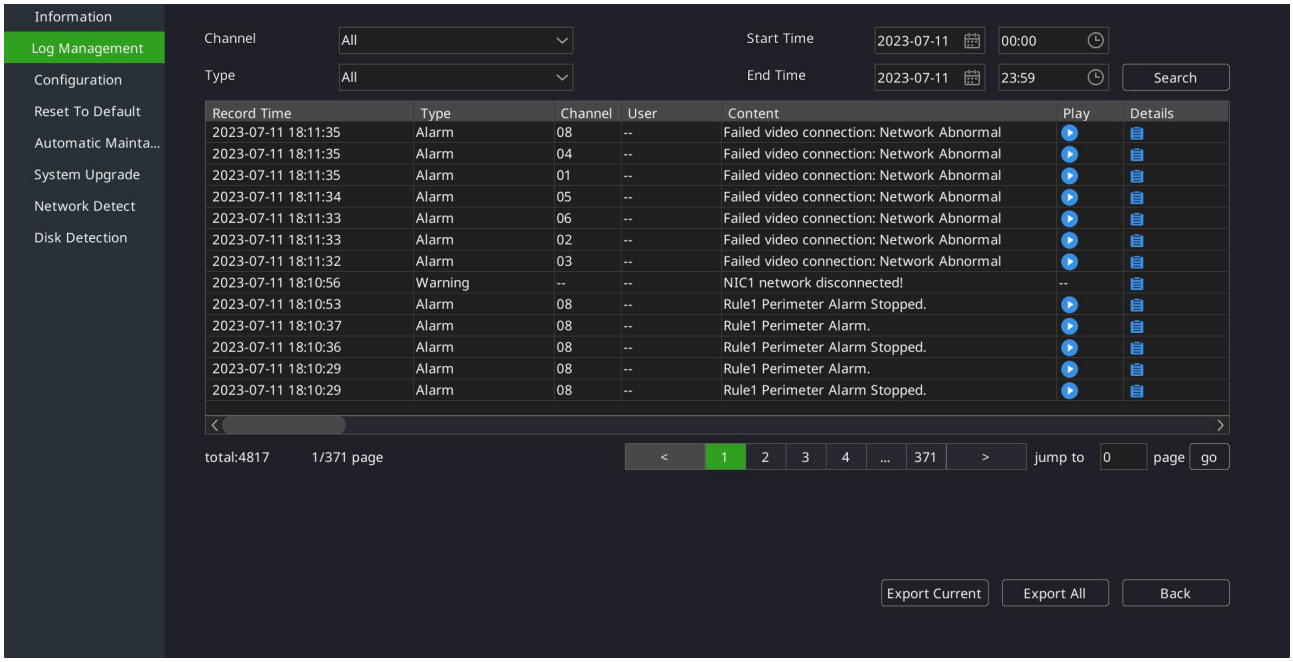
- Before playing back external files, please make sure that the USB flash disk or portable hard disk or USB optical drive has been connected to the device.

4.6.12 Playback according to log information

Play the video file corresponding to the log information.

The specific operation steps are as follows:

1、 Enter [Main Menu-> System Maintenance-> Log Management], as shown in the following figure.



2、 Select [Channel], [Type] and [Start and End Time], and click [Query].

3、Double-click a log in the log list to enter the [Playback] interface.

Explain：

- The playback progress can be controlled by the playback time bar below.
- The channel and time point corresponding to the selected log must have a video file before it can be played.

4.6.13 Playback Auxiliary Function

4.6.13.1 Single frame playback

When the video is played back, the detailed changes of the picture can be viewed through single frame playback.

The specific operation steps are as follows:

1、Enter the playback interface, and left-click "" or "" to adjust the playback speed to [single frame].

2、Click the "" button once to step forward one frame; click the "" button once to step backward one frame.

4.6.13.2 Electronic amplification

In the process of playback or playback pause, the partial picture of the video is enlarged to full screen display.

The specific operation steps are as follows:

1、Enter the playback interface.

2、Select the "" button on the playback control bar to enter the electronic magnification interface.

3、The drag bar in the upper left corner or the mouse wheel can adjust the magnification.

4、Press and drag the left mouse button to view different areas.

4.6.13.3 Capture

The snapshot operation is performed in the process of video playback.

The specific operation steps are as follows:

1、 Enter the playback interface.

2、 Select a screen and click the "" button on the playback control bar.

Explain：

- The pictures captured in the playback process need to be saved on the U disk. Please ensure that the USB flash drive is properly connected to the device when performing the capture operation.

4.6.13.4 Progress bar preview

In the playback interface, when the playback mode is regular playback, event playback, or tag playback and is single-screen playback, the system will automatically display the time point and the corresponding images before and after the time point when the mouse slides over the playback progress bar.

The specific operation steps are as follows:

1、 Select one of the playback modes described above to start playback.

2、 Hover the mouse over an area with video on the progress bar, and a preview image will appear. As shown in the following figure.

3、 Click any small screen to locate the time point for playing.

Explain：

- When you are prompted that the decoding performance has reached the upper limit, you cannot preview the progress bar.
- When the current channel is not recorded at the selected time point, the progress bar preview operation cannot be performed.
- There is no progress bar preview when the screen is not single.

4.6.13.5 Quick Drag Play

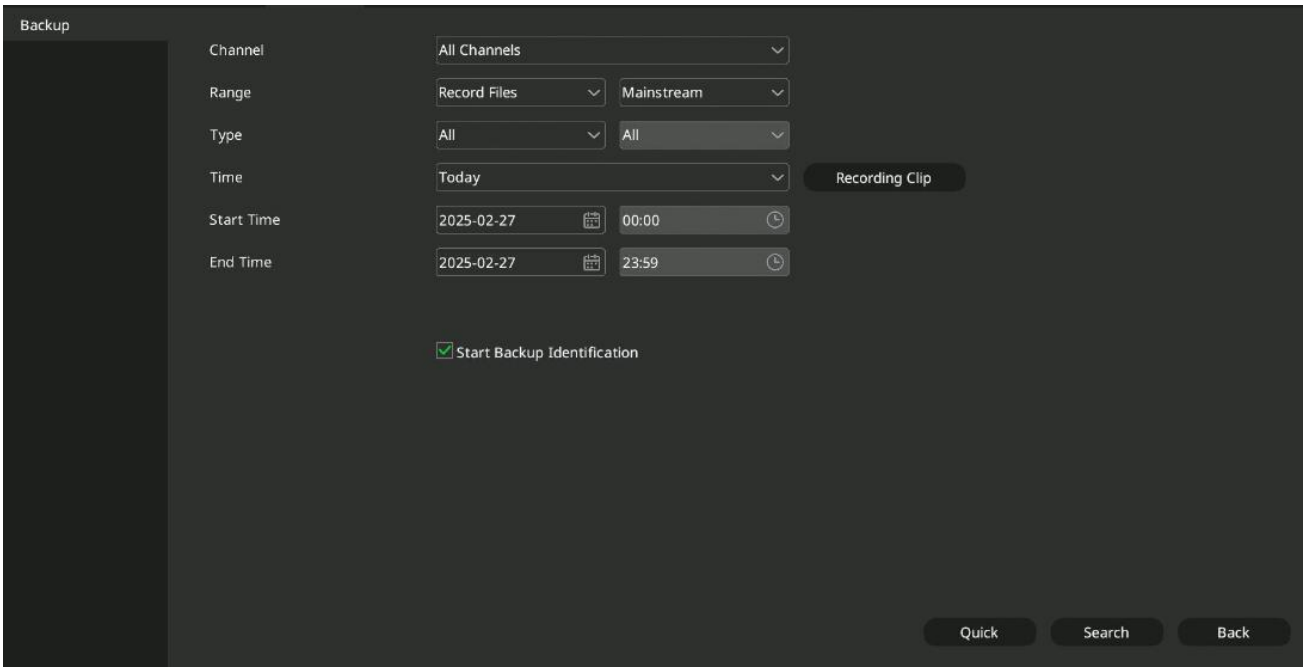
When playing a single screen, the progress bar playback progress supports fast drag operation. At this time, the playback will follow the drag of the progress bar for fast playback, which is convenient for viewing.

4.7 Backup

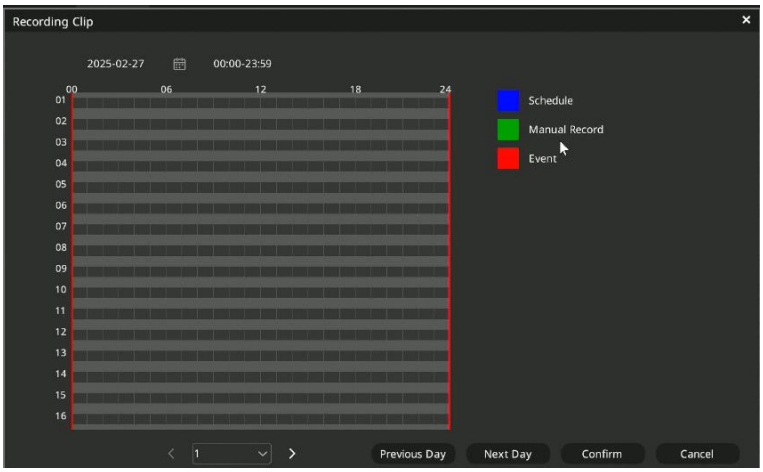
Backup can back up the video files in the system to a backup disk or USB storage device (U disk, mobile hard disk, eSATA).

The specific operation steps are as follows:

1. Enter [Main Menu-> Backup], as shown in the following figure.



2. Click [Video Snapshot] to display the video on the specified date. After selecting the date, click [OK] to help the user select the start and end time of video query according to the date. After returning to the interface of the first step, it can be seen from [Start Date], [Start Time], [End Date] and [End Time].



Explain：

- Video Snapshot Function is not supported for picture files.

3. After confirming the query conditions, if Enable Backup Authentication is checked, click the [Backup] or [Query Backup] button, and the authentication window will pop up. You need to perform identity authentication first, and then enter the next step.

4. After confirming the query conditions, click the [Backup] button. If the backup target is a USB storage device, it will enter the backup interface to select the target folder for backup. If the backup target is a backup disk, it will directly execute the backup operation.

5. After confirming the query conditions, click the [Query Backup] button to query the video file.

Video query results can be presented in a list or a chart.

List:

Click [Playback] Icon or double-click the line of the file to play the file.

Click [Lock] Icon to lock and unlock the file.

Chart:

Click to select a picture to play the 10s video after the time point. Double-click the preview image to play back.

6. Select the video file to be backed up in the list or chart, and click the [Backup] button. Enter the backup interface.

4.8 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 vehicle	Non-motor vehicle width greater than 90 pixels (1080P)
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;

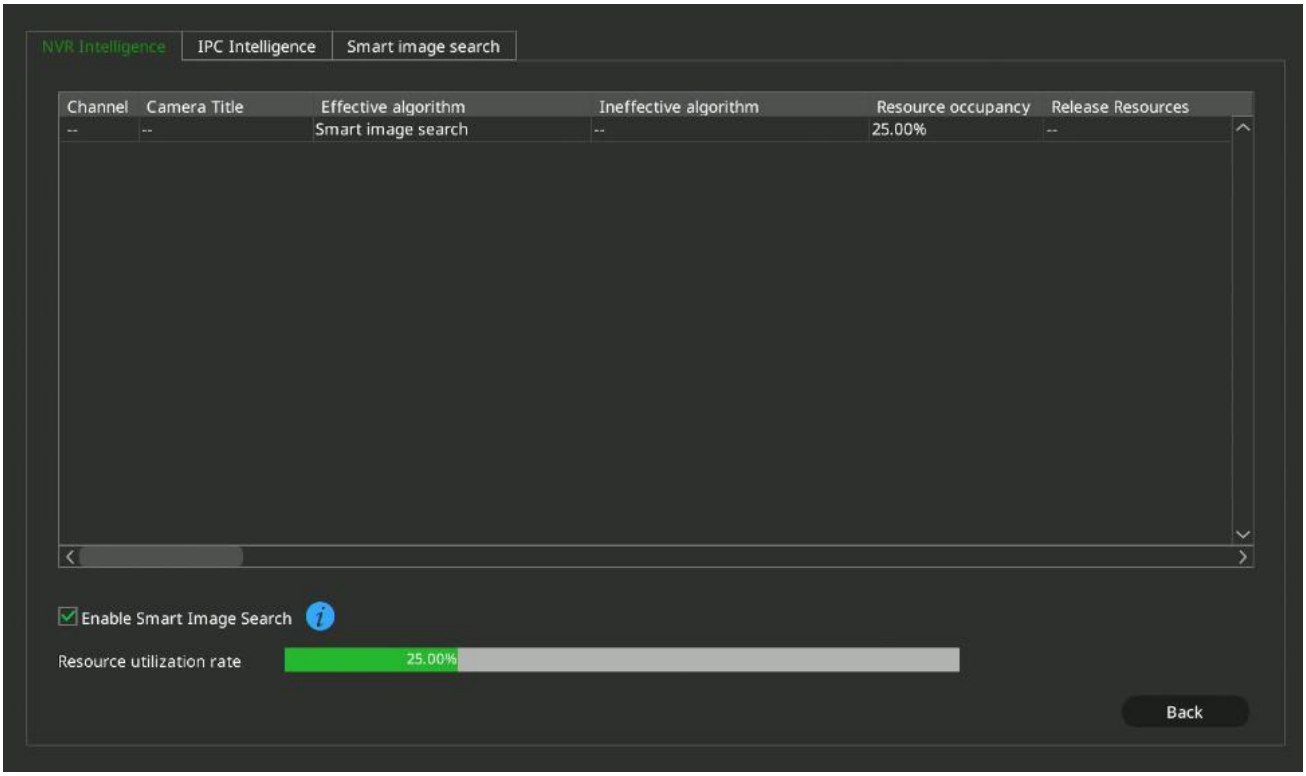
	2. The vehicle stays in the field of vision for more than 2 seconds; 3. that license plate target is clear and unobstructed; 4. The image shall be in color.
Human body attribute (non-motor vehicle)	1.The target width is greater than 90 pixels 2. The target stays in the field of vision for more than 2 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.

4.8.1 Resource allocation

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

4.8.1.1 NVR Intelligence



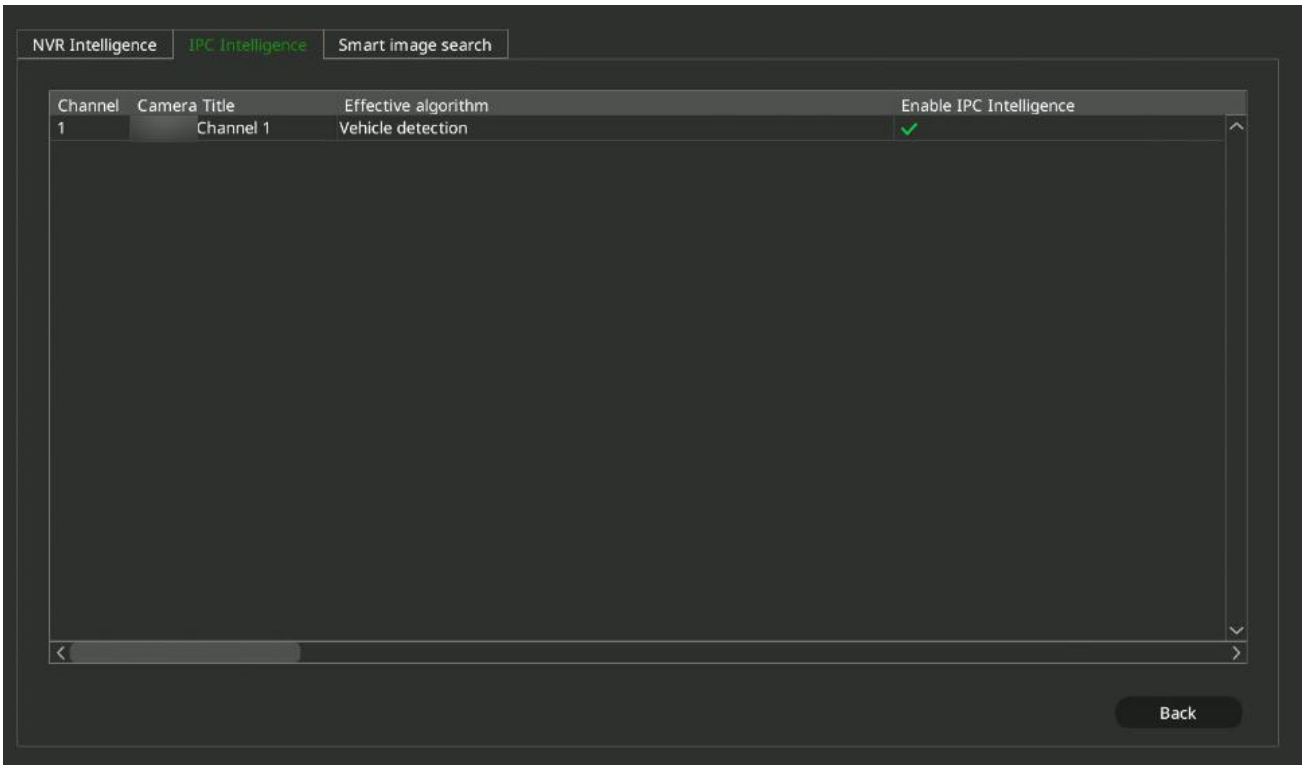
The NVR intelligent interface only displays the channel that enables the NVR intelligent algorithm and the effective algorithm. If [Enable intelligent image search] is checked, the IPC intelligent algorithm of the channel is automatically turned off and occupies 25% of the computing power.

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.

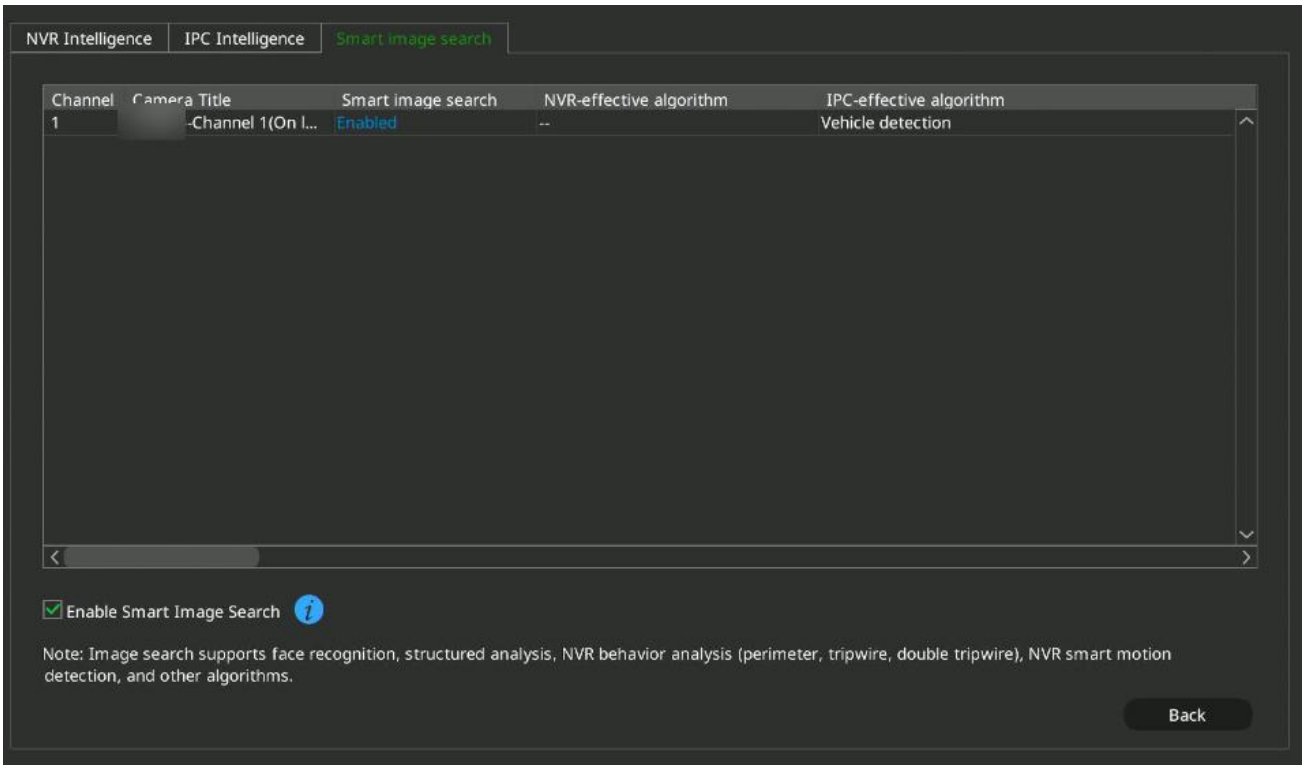
4.8.1.2 IPC Intelligence



" " 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.

4.8.1.3 Smart 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:

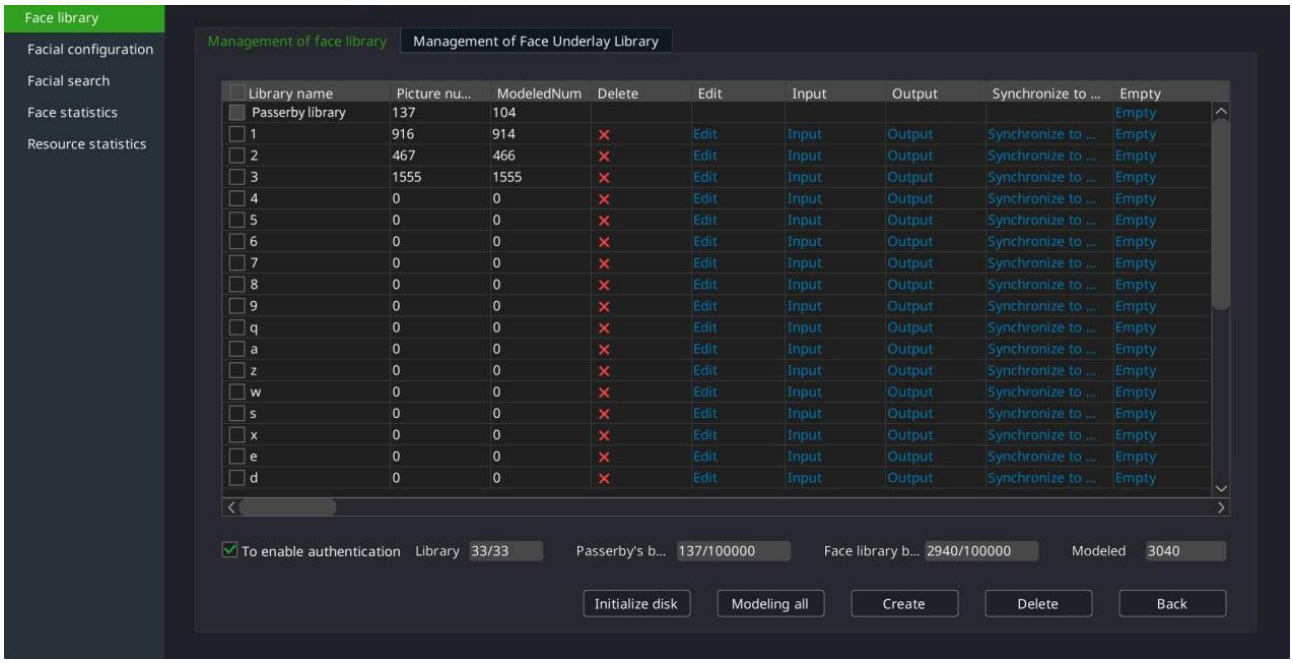
- Smart Map Search can only search the data when [Enable Smart Map Search] is checked, and cannot search the data when Smart Map Search is not enabled.

4.8.2 Face library

The face library is used for grouping and managing face templates, allowing for separate administration of the face library and the face template database.

4.8.2.1 Management of face library

1.Access the [Main Menu -> Deep analysis -> Face Library], select the Management of face library tab, as shown below.



2、In the face database management interface, you can query the existing face database data, perform [Create], [Delete] and [Edit] operations on the face database, and perform [Import], [Export] and [Synchronize to the front end] operations on the face database data.

Create: Click the [Create] button to pop up a prompt box for adding the name and description of the face library. After adding the name and description of the new face library, click the [OK] button after confirmation.

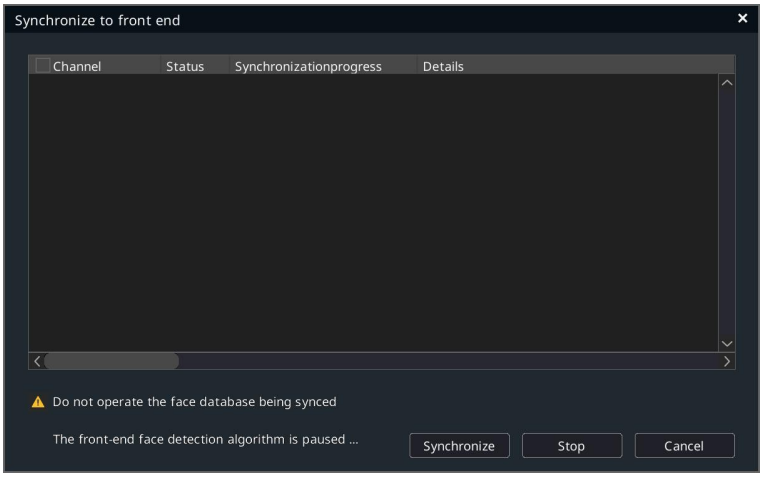
Delete: select the face library to be deleted in the face library list, and click the [Delete] button to modify the name and description of the face library.

Edit: In the face library list, select the face library to be edited, and click the [Edit] button to delete it.

Import: In the face library list, click [Import] to import a box file containing the face library.

Export: In the face library list, click [Export] to export a box file containing the face library.

Synchronize to the front end: The NVR face database can be synchronized 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).

3、Click the [Modeling All] button to re-model the base map of all current libraries.

4、Check Enable Authentication. Authentication is required before operating the face database. Only the administrator can operate the face database.

4.8.2.2 Management of Face Underlay Library

Notice:

- Storage image standard:

  (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.;

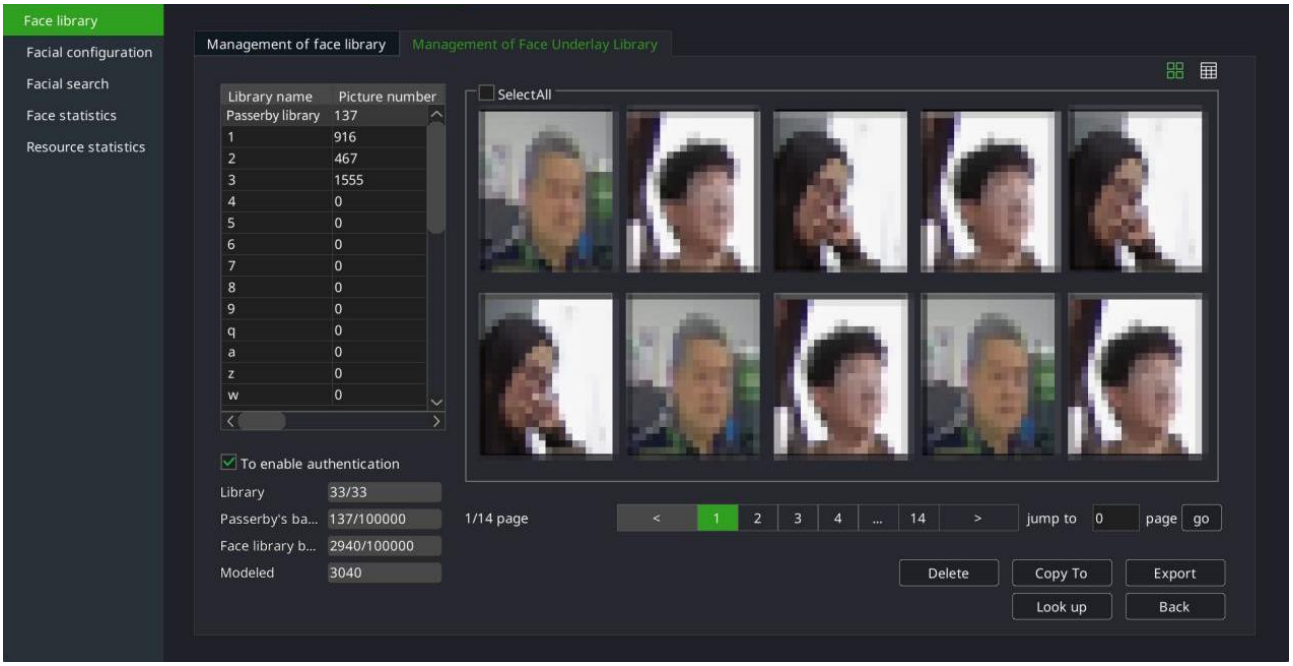
(3) The distance between the two eyes should be greater than or equal to 60 pixels, preferably greater than or equal to 90 pixels;

(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.

1、Enter [Main Menu-> Depth Analysis-> Face Library], and select the Face Base Library Management tab. The table displays the existing face library, and the picture displays the base image of the selected face library, as shown in the following figure.



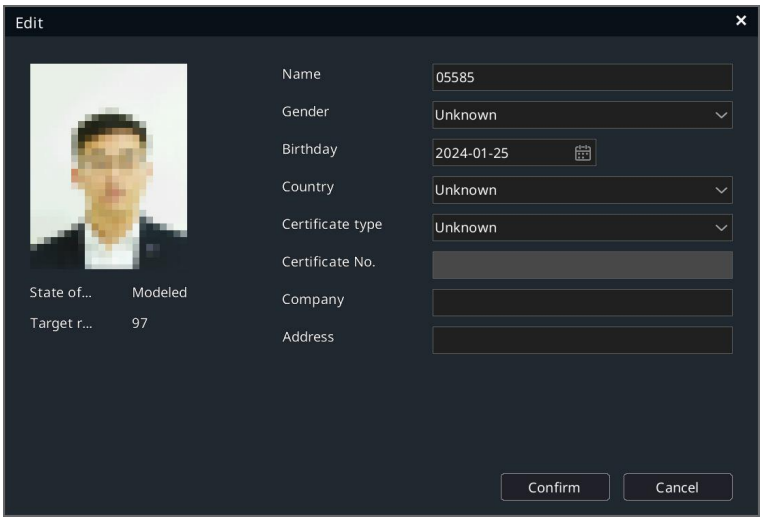
2. Base map management of face database. The face base image is the basis of the face recognition algorithm, and the user can manage the base image through the following buttons.

Search: The base map conforming to the information can be searched in the face database through the base map information.

Add: You can select pictures from mobile devices such as U disk to add to the face library. When selecting a folder, you can add a picture that meets the requirements of the entire folder;

Delete: The selected base image can be deleted from the face database.

Edit: Set the information of the selected base map. It contains information such as gender, nationality, birthday, native place, certificate type and certificate number. The modeling status indicates whether the base image has been retrieved and whether face recognition can be performed, as shown in the following figure.



Copy to: You can copy the selected base image to other people's face library.

Export: The selected base map can be imported to mobile devices such as U disk.

Notice:

- When the device is restored to the default, the face database remains unchanged.

- Face database management supports up to 300 face databases, and the maximum number of supported base maps is subject to the specific model.
- To import the base map, you need to connect the hard disk.
- It is recommended that the number of base images in a single face database should not exceed 5000.

4.8.3 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)

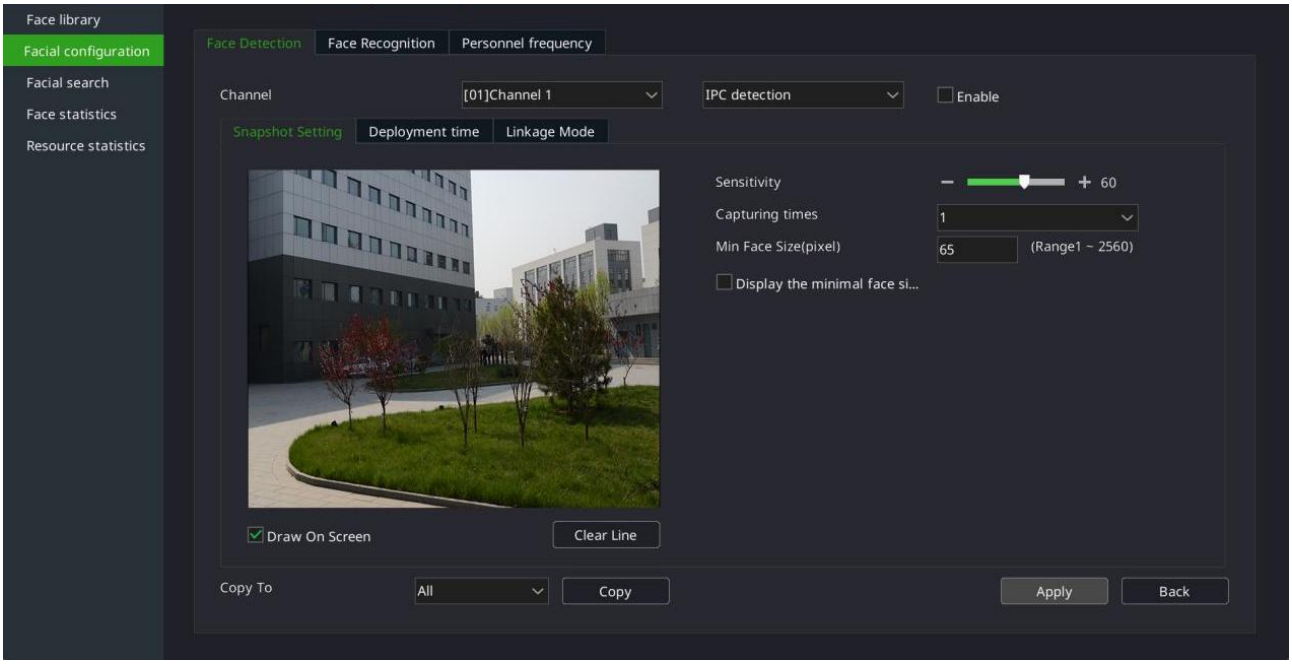
(2) The face target stays in the visual field for more than 2 seconds.

(3) The face target is clear without occlusion.

(4) Requires native resolution video input.

4.8.3.1 Face Detection

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



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

IPC detection refers to the face detection capture by the front-end camera, and NVR detection refers to the face detection capture by the NVR. Selecting IPC detection requires the camera to support face capture.

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, custom mode.

[Full capture mode] means that all pictures are sent to the push module by default 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, and sending the filtered results to the map pushing module.

[Custom mode] refers to filtering according to the safety boundary value set by the user, and sending the filtered results to the map pushing module.

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

(2) 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.

5. Set linkage settings. Set local alarm linkage for NVR detection, and set alarm linkage sound prompt, screen display, linkage video recording, linkage alarm output, linkage PTZ, linkage snapshot, etc.

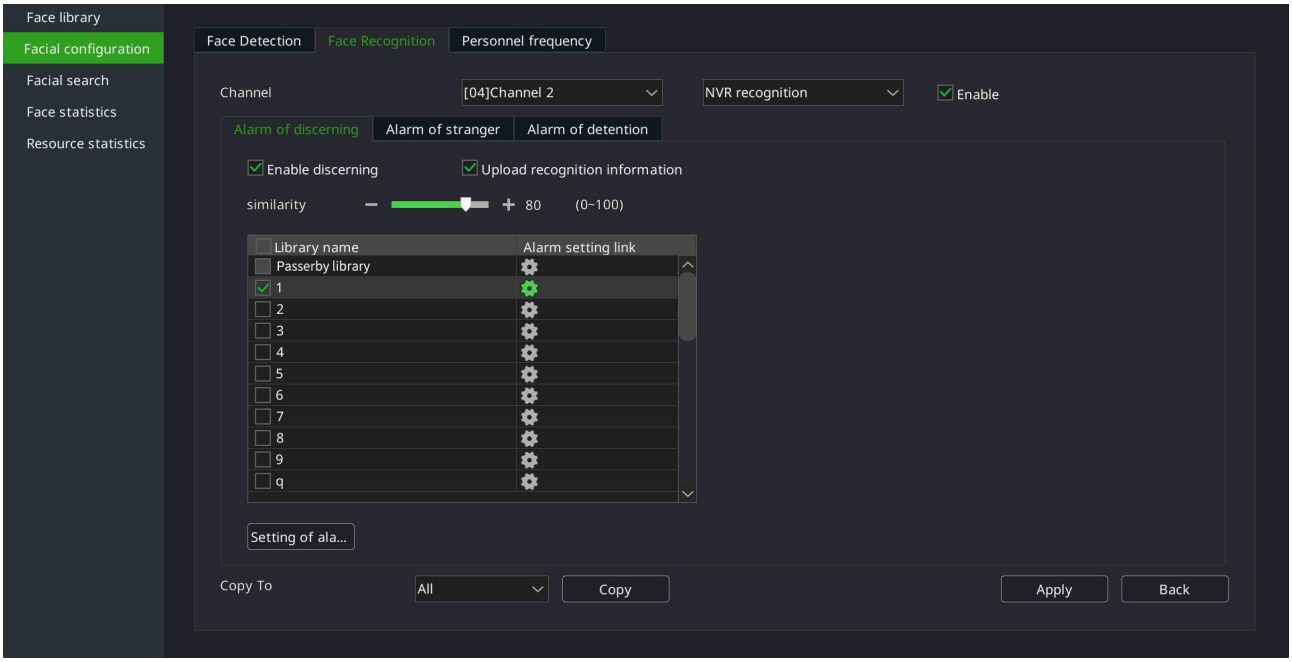
Explain：

- When the front end is a face recognition machine, only IPC detection can be enabled.

- NVR detection is based on 1080P video, and the number of channels decreases with the increase of resolution. The maximum number of routes supported is subject to the specific model.
- The capture Parameter of IPC detection is dynamically changed according to the algorithm supported by the front end.
- Some equipment supports mask identification linkage alarm.

4.8.3.2 Face Recognition

1. Enter [Main Menu-> Intelligent Analysis-> Face Configuration], and select the face recognition tag, as shown in the following figure.

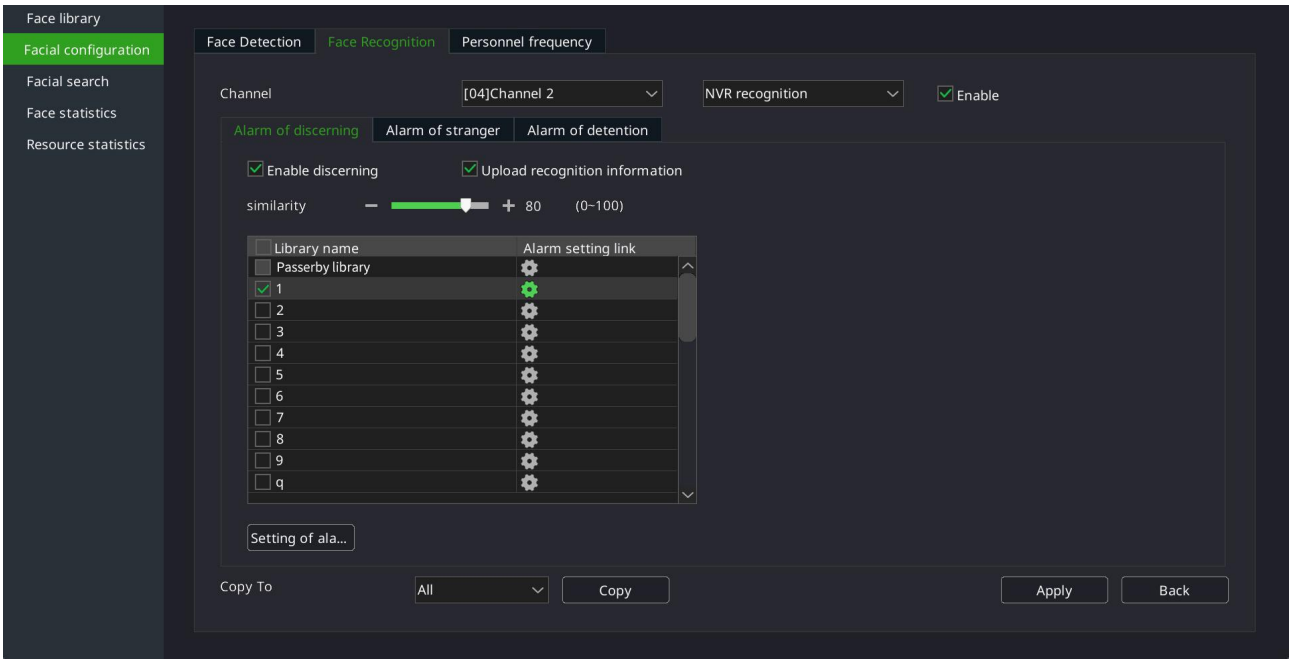


2. Select the algorithm type of face recognition and select to enable IPC recognition/NVR recognition.

[IPC recognition] refers to the recognition and comparison of the captured face by the front-end camera, and [NVR recognition] refers to the recognition and comparison of

the captured face by the NVR. Selecting IPC recognition requires the camera to support face recognition.

3. For comparison alarm, select the "Comparison Alarm" tab to set the Parameter for comparison alarm.



(1) Enable Comparison: Turn on/off the comparison alarm function for the current channel.

(2) Upload Recognition Information: Enable/disable the function to upload recognition information.

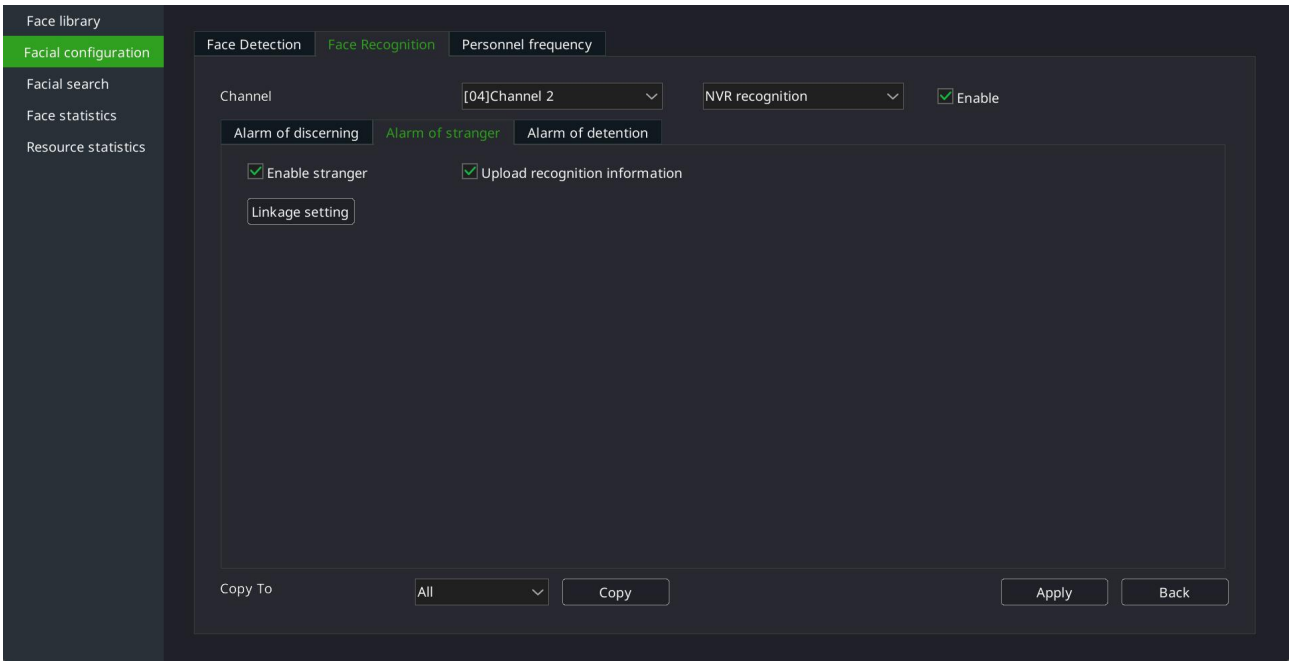
(3) Similarity: Set the similarity threshold; the higher the value, the greater the similarity.

(4) In the face database table, after selecting a face database, click on [Deployment Linkage Settings] to bring up the prompt box for setting the deployment linkage of that face database. If no face database is selected, the [Deployment Linkage Settings] will be greyed out and cannot be set.

[Copy to Library]: In comparison mode, for the selected face database in the face database table, you can use this button to copy this set of linkage configurations to other face databases.

Clicking the [OK] button will only temporarily store the data; you must return to the face recognition interface and click the [Apply] button for the changes to take effect.

4、Stranger alarm: select the [Stranger alarm] tab to set the Parameter of the stranger alarm.

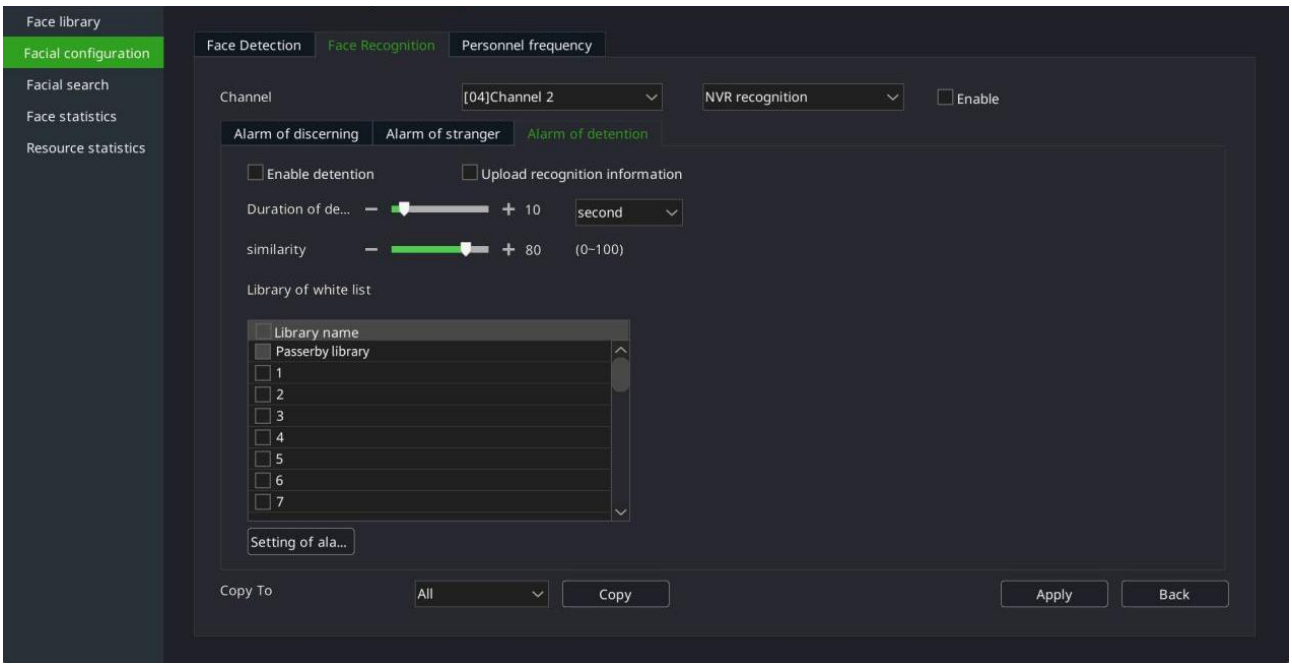


(1) Enable Stranger Detection: Turn on or off the stranger alarm function for the current channel.

(2) Upload Recognition Information: Enable or disable the function to upload recognition information.

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

5. For detention alarm, select the [Detention Alarm] tab to set the Parameter of detention alarm.



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

(2) Upload the identification information and enable/disable the function for uploading the identification information.

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

(4) Duration of detention. The range of duration of detention is set as 1-99. The unit includes minutes and seconds. If the duration of detention is exceeded, an alarm will be triggered.

(5) When the white list database is checked, the face in the white list database will not trigger the detention alarm.

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

Explain：

- When the selected channel is IPC detection, the maximum support is 16 channels of NVR identification; when the selected channel is NVR detection, the maximum support is 8

channels of NVR identification; the maximum number of supported channels is subject to the specific model.

4.8.3.3 Personnel frequency

1、Enter [Main Menu-> In-depth Analysis-> Face Configuration] and select the Personnel Frequency tab, as shown in the following figure.

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 Upload Identification Information Function.

5. Time range: set the time range as 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.

4.8.4 Video structuring

Notice：

Structured Camera Mounting Requirements:

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

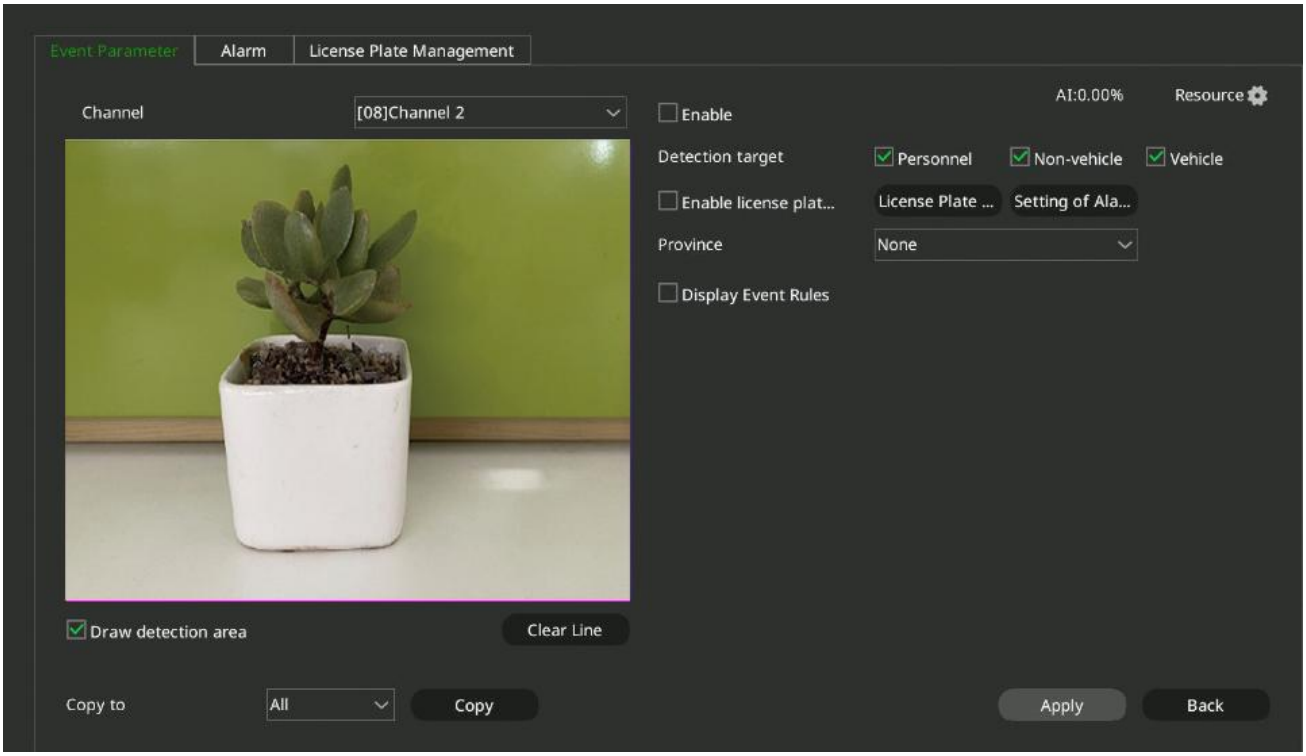
- Indoor: Height 2.5m ~ 3m, formal or side-mounted.
- Angle: pitch angle ∈ [15, 60], yaw angle ∈ [0, 45], roll angle ∈ [0, 5], subject to the target capture pixel.
- Special: identify the license plate and ensure that the horizontal and vertical angles of the license plate are less than 45 degrees.
- Effect: When configuring the face, human body and vehicle structure, the video effect to be connected shall meet the requirements of clear face and human body, and the pixels shall 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.

4.8.4.1 Event Parameters

1. Enter [Main Menu-> In-depth Analysis-> Video Structuring], and select the event parameter label, as shown in the following figure.



[Detection target]: 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].

[Province]: Empty by default. Select the corresponding area according to the location, which can improve the license plate recognition effect in harsh environment.

[Image pushing strategy]: the default is optimal, that is, when the target disappears in the field of view, a picture with the best position quality is captured; support

configuration: the fastest, that is, after the target appears, a target snapshot can be captured quickly.

[Capture mode]: including full capture mode and high quality 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.

[Display Alarm Rule]: It refers to the rule box that displays the alarm on the video screen.

[Display target]: It means that in the video frame, the detected object will be marked with a frame.

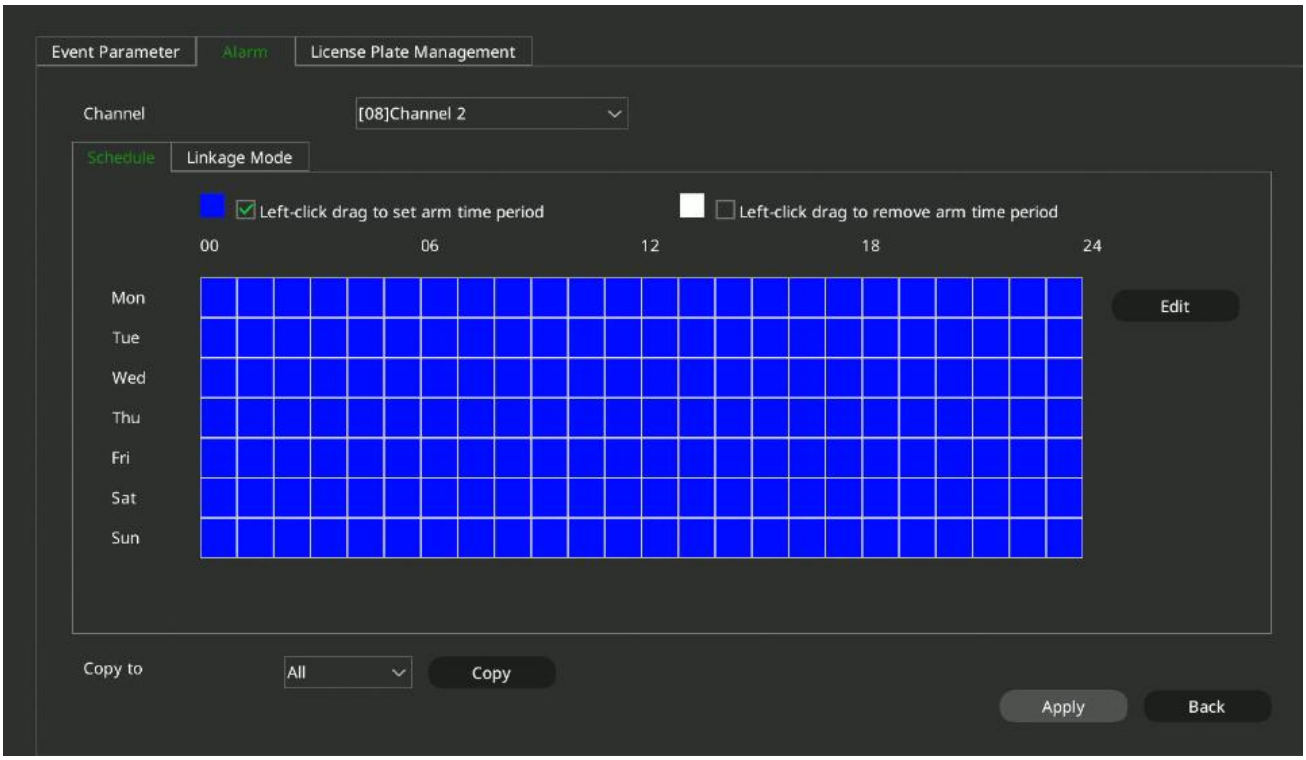
[Deployment Linkage Configuration]: Set the deployment time and linkage mode.

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

[License plate management]: Jump to the license plate management module.

4.8.4.2 Alarm settings

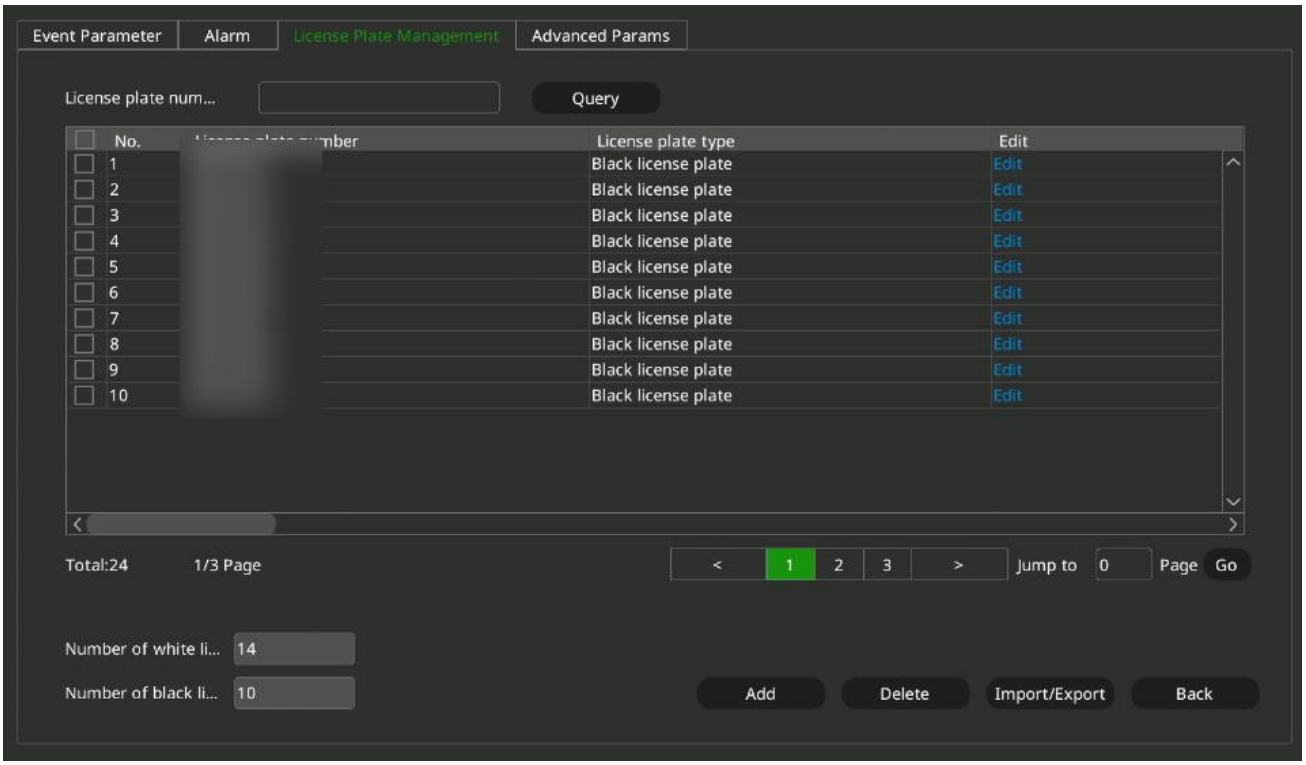
1. Enter [Main Menu-> In-depth Analysis-> Video Structuring] and select the Alarm Settings tab, as shown in the following figure.



Set defense deployment time and linkage mode.

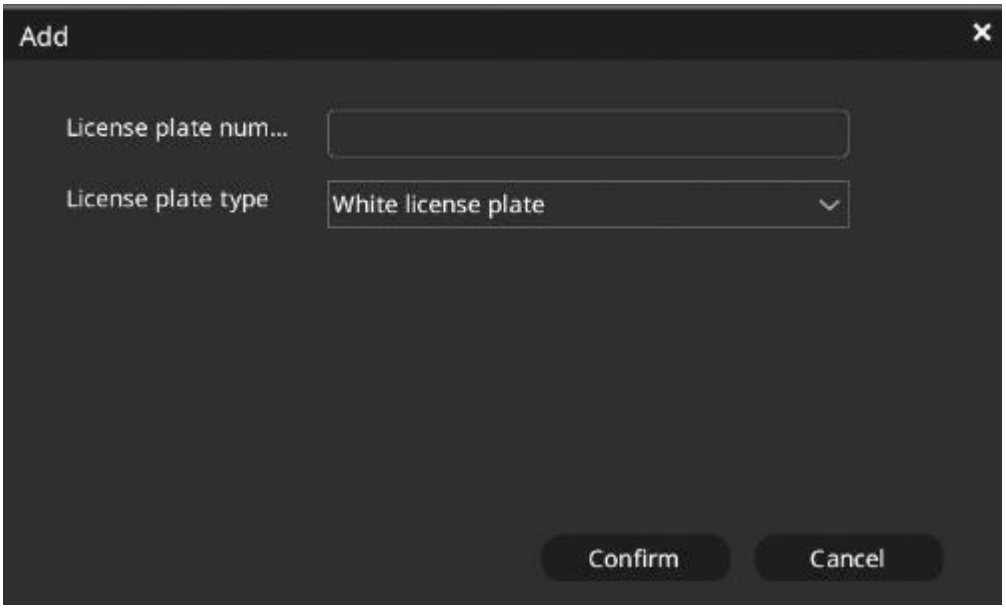
4.8.4.3 License plate management

1. Enter [Main Menu-> 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 a large number of license plates are imported, please export the license plate library template first.

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

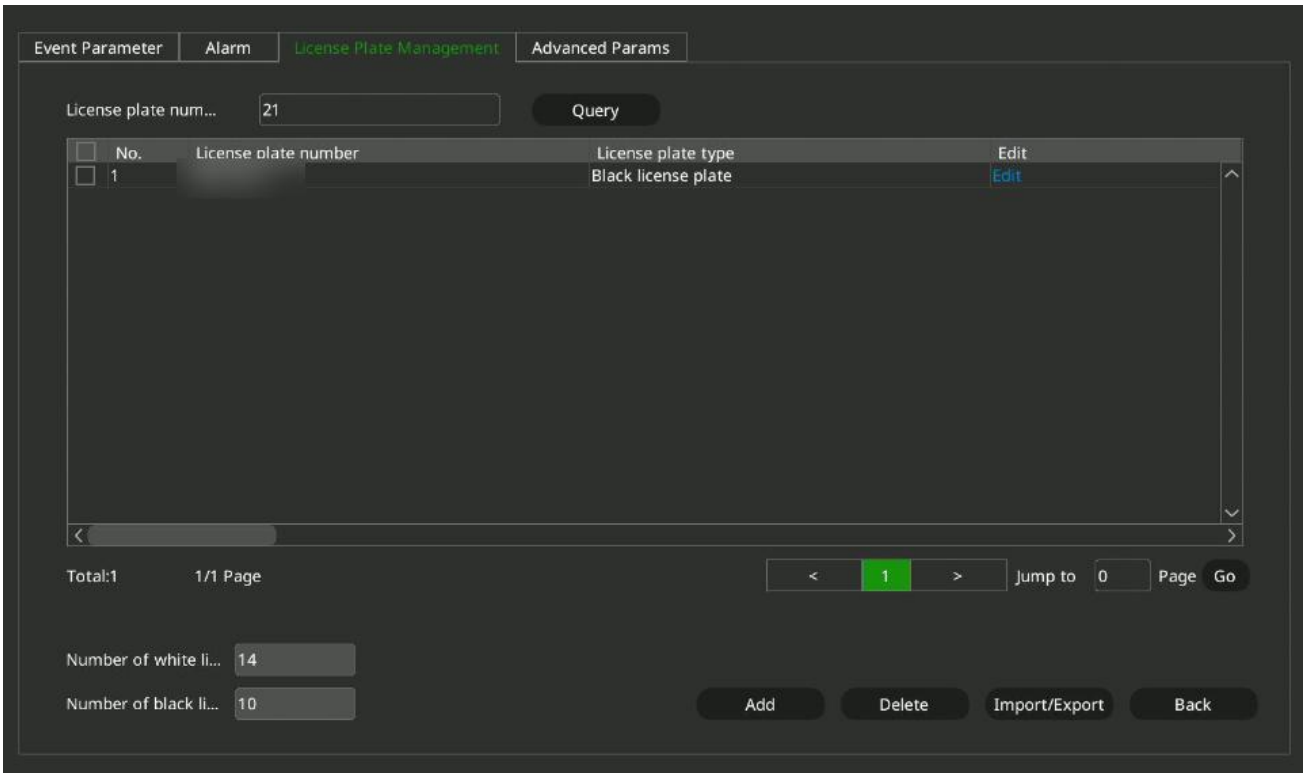
Notice：

- NVR is required to insert the removable media when importing/exporting files.

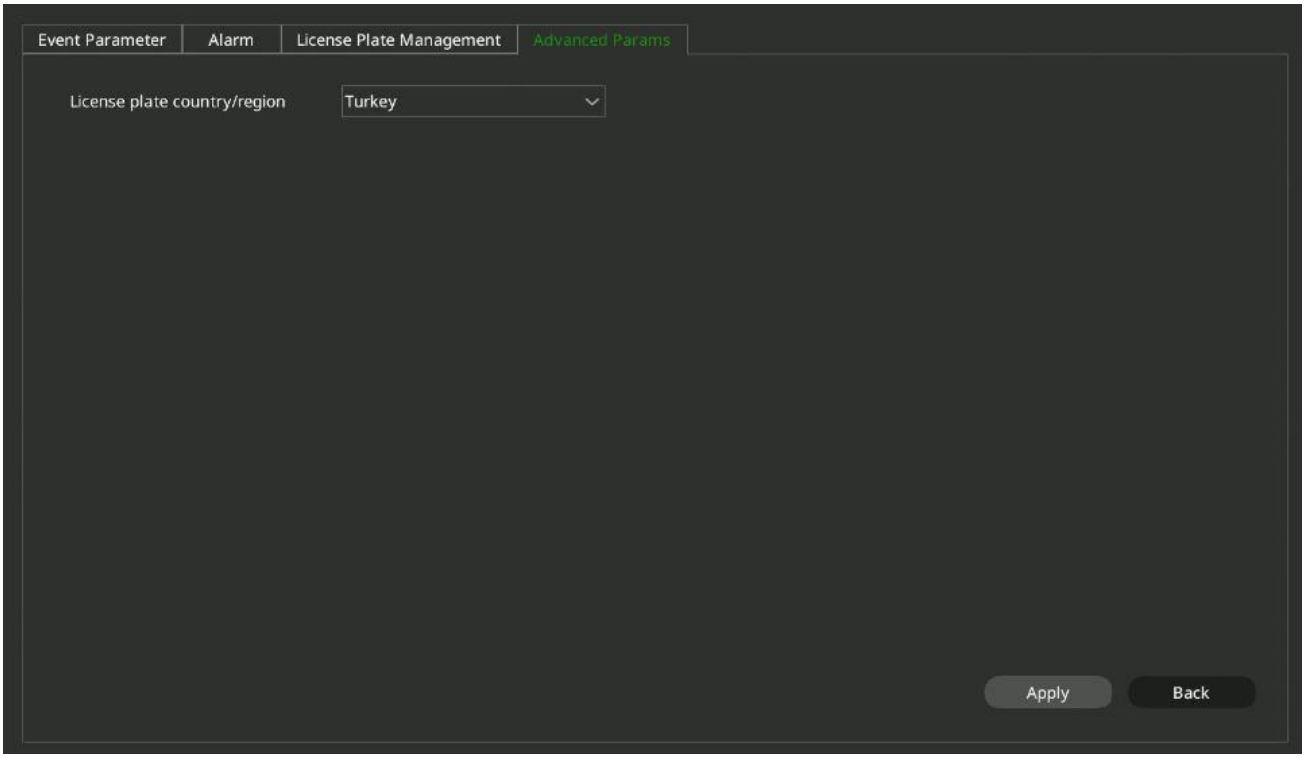
5. Select the license plate number to be deleted and click the [Delete] button to delete the license plate number.

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.



4.8.4.4 Advanced Parameters



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

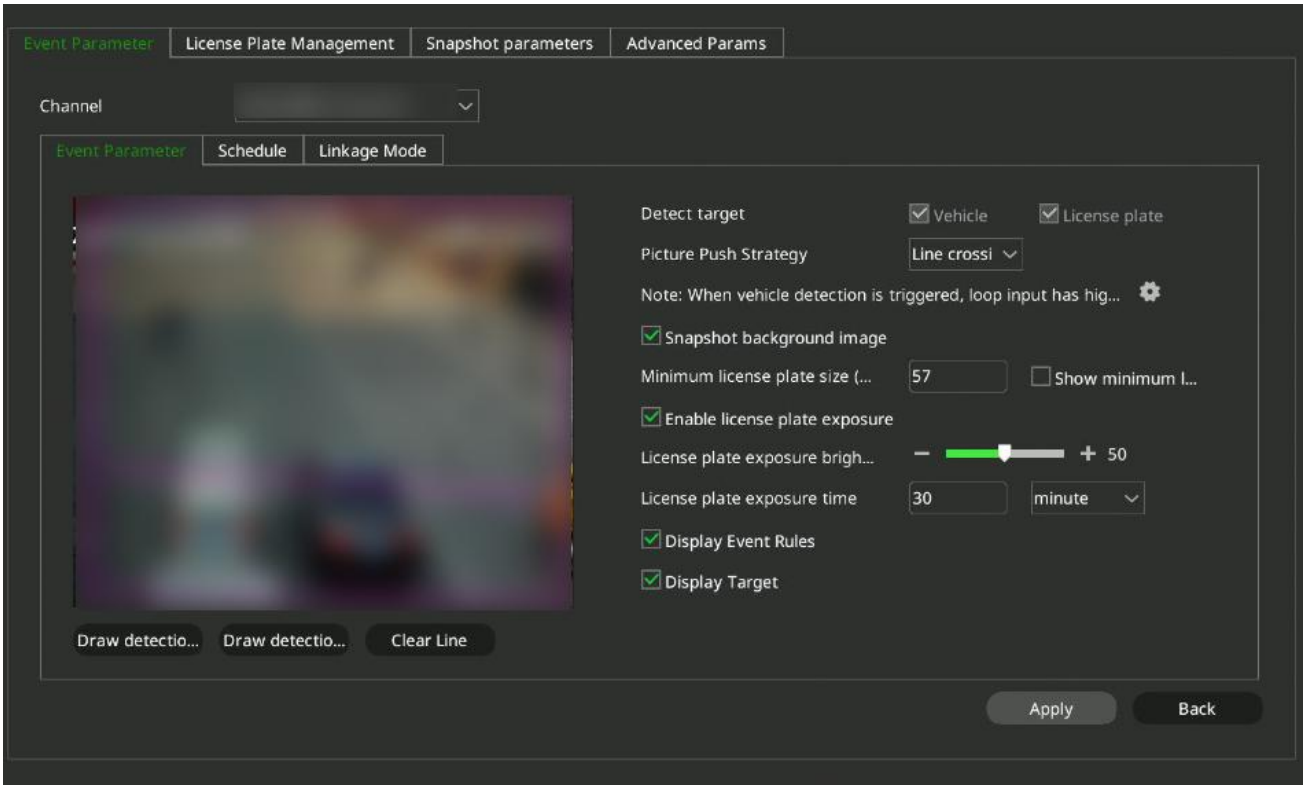
4.8.5 Vehicle detection

Notice：

- Installation requirements of the license plate recognition all-in-one machine: under 1080P, the license plate is larger than 120 pixels, the horizontal angle between the license plate and the camera is less than 45 degrees, the pitch angle is less than 45 degrees, and the license plate is clear and unobstructed. If not, adjust the image effect to meet the requirement.

4.8.5.1 Vehicle detection

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



2. [Detection target] includes 2 types, specifically 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 the 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.

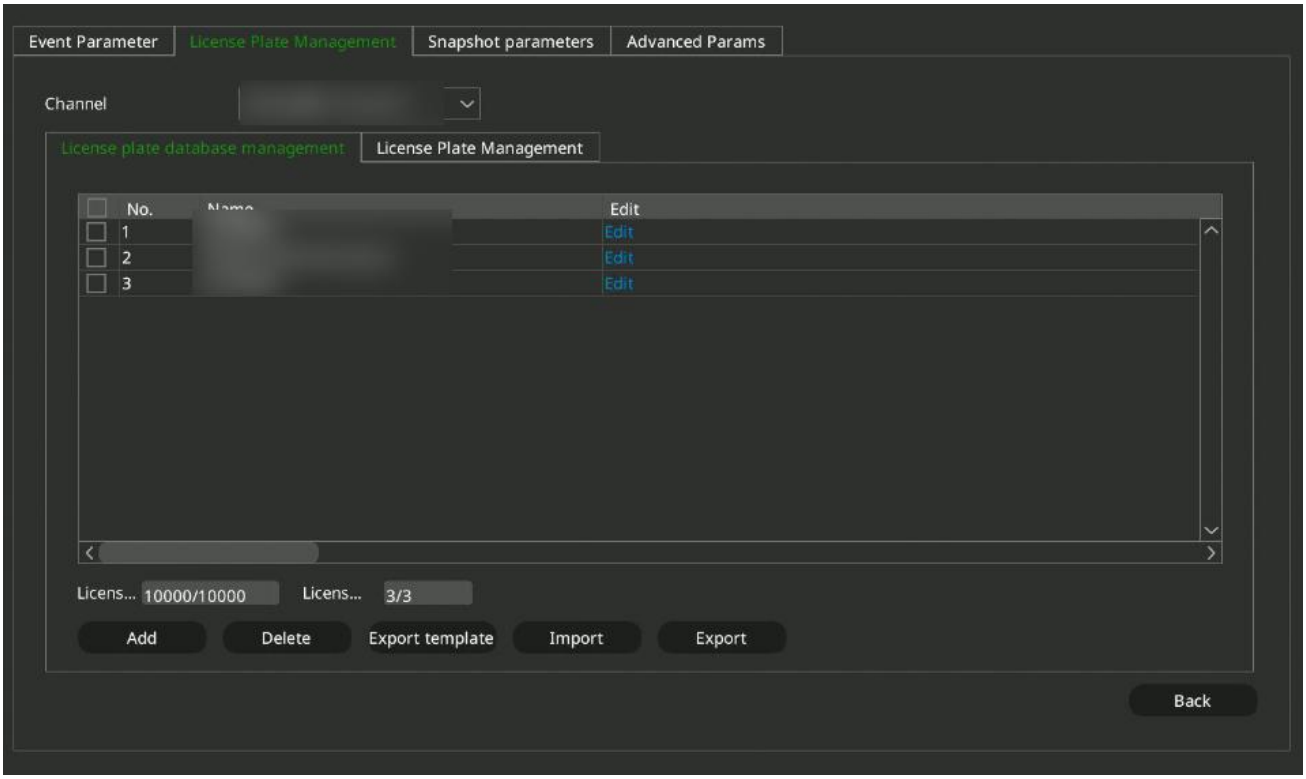
8. Display alarm rule: refers to the rule box that displays the alarm on the video screen.

9. Display target: It means that in the video screen, the detection object will be framed, such as a motor vehicle.

4.8.5.2 License plate management

License plate management

1. Enter [Configuration-> In-depth Analysis-> Vehicle Detection] and select [License Plate Management-License Plate Library Management], as shown in the following figure.

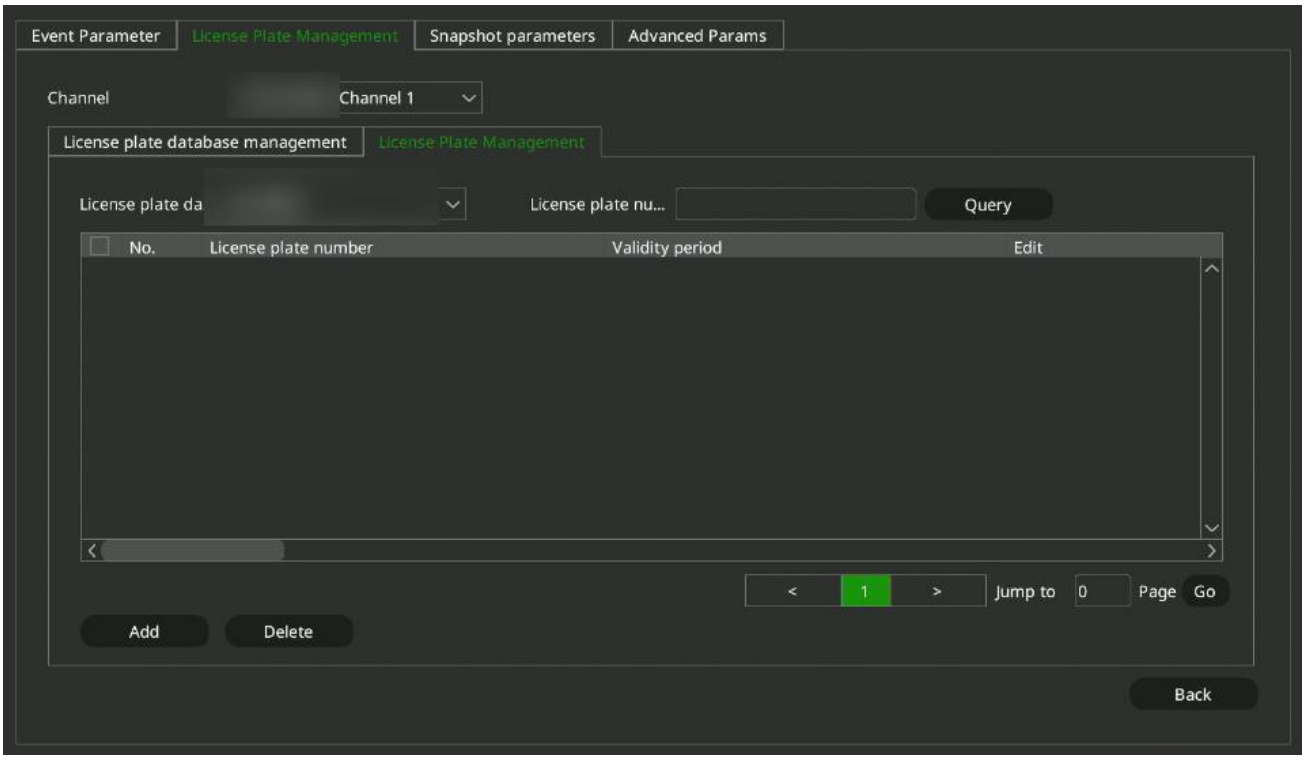


2. Click [Add] to add a license plate library.

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

License Plate Management- > License Plate Management

1. Select the license plate management label, 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.

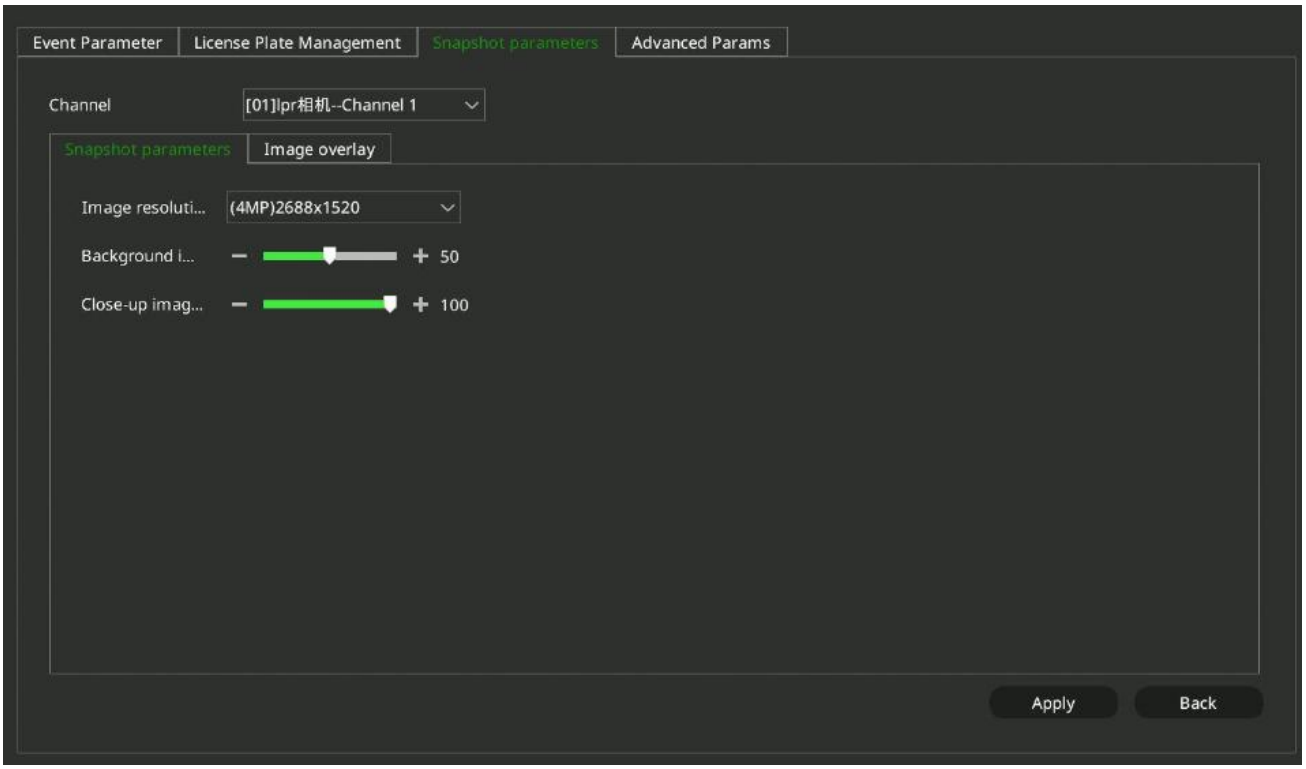
3. Select the corresponding channel and license plate library, and click [Query] to view the added license plate.

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

4.8.5.3 Snapshot parameters

Snapshot parameters

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



[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.

Capture Parameters-> 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".

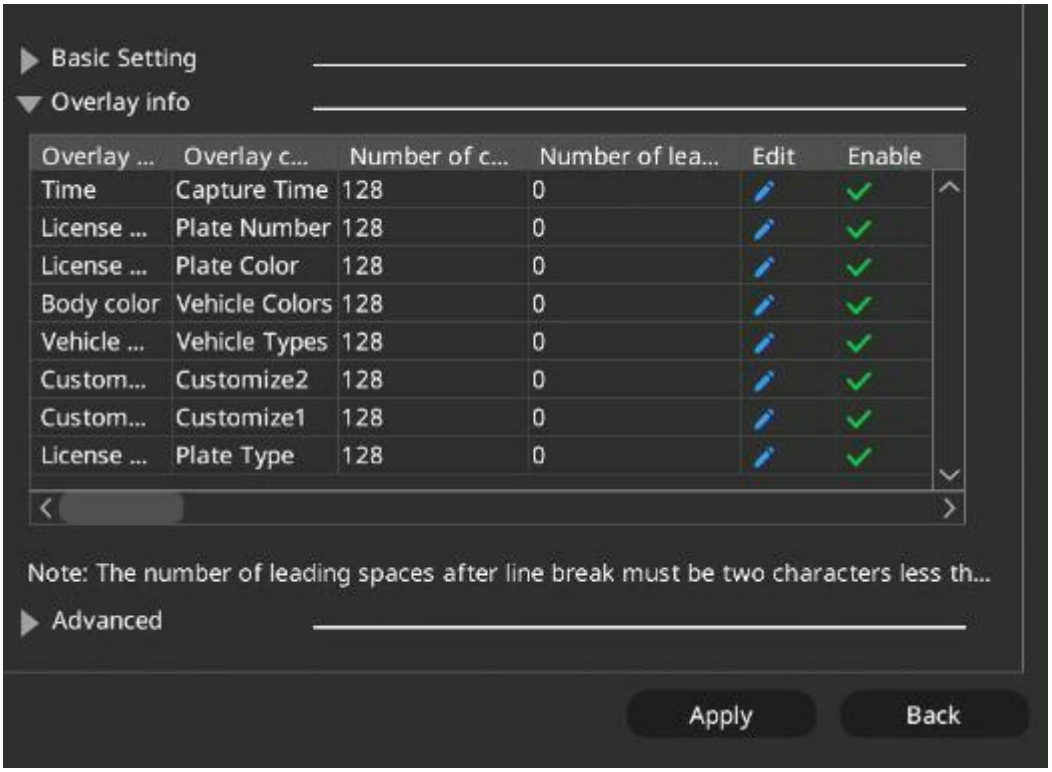
[Shadow function]: Set the shadow effect, which is valid when the overlay position is "inside the picture".

[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.

Capture Parameters-> Image Overlay-> Overlay Information



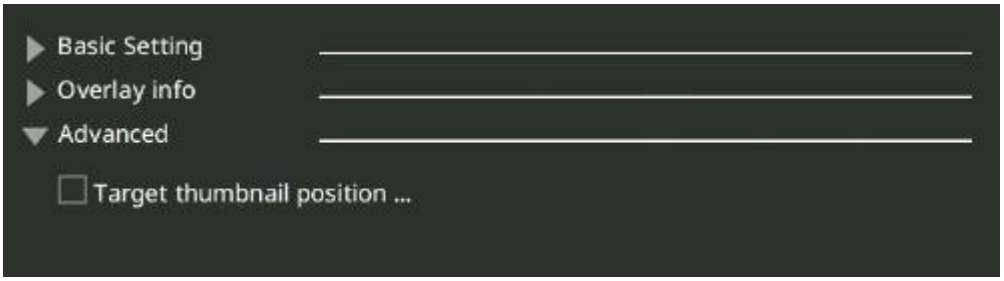
The user sets [overlay information] as needed. Overlay information supports multiple selections. Select [Select All] to select all overlay information.

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

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

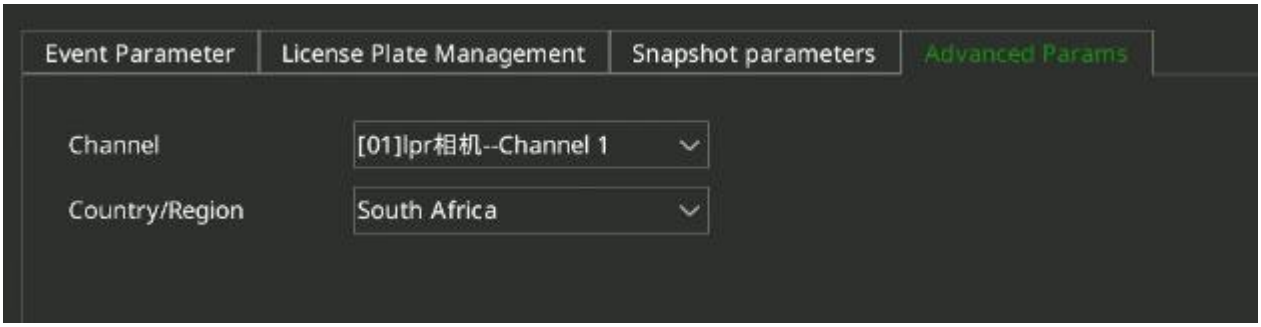
[Starting number of spaces after line wrapping]: Set the starting position of the superimposed content text after line wrapping.

Capture 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 snapping).

4.8.5.4 Advanced Parameters

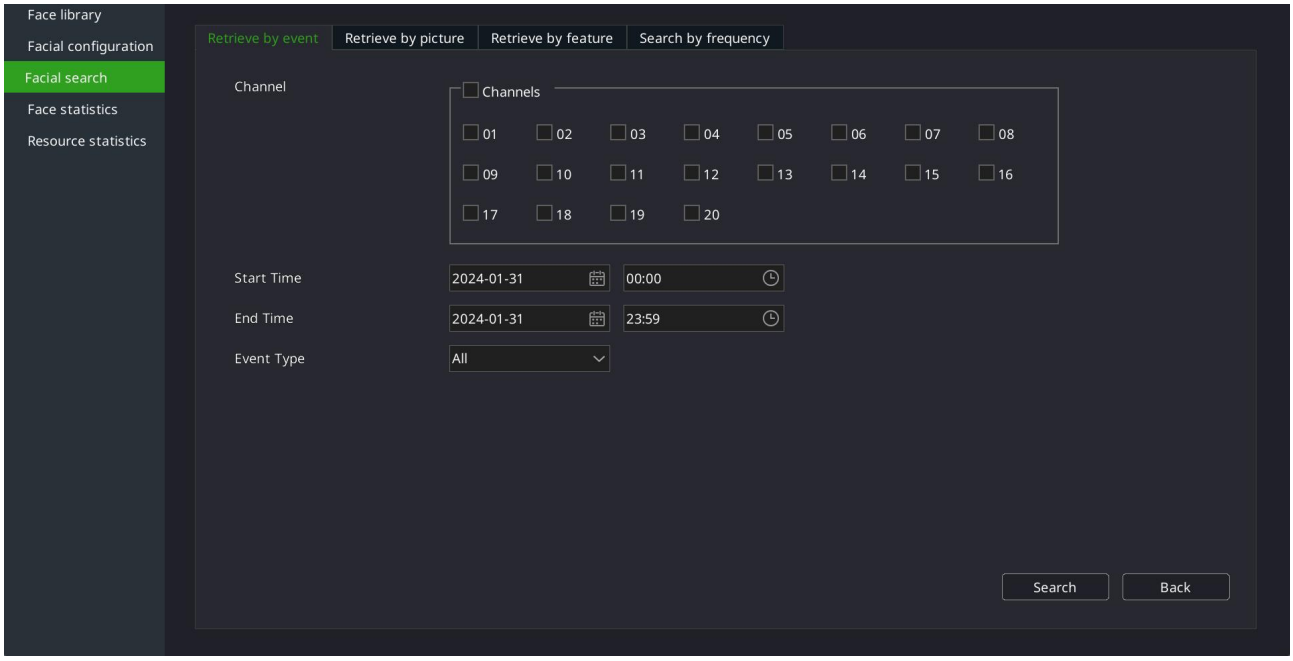


Select the corresponding channel and set the country/region/province where the license plate is located, which can improve the license plate recognition effect in harsh environment.

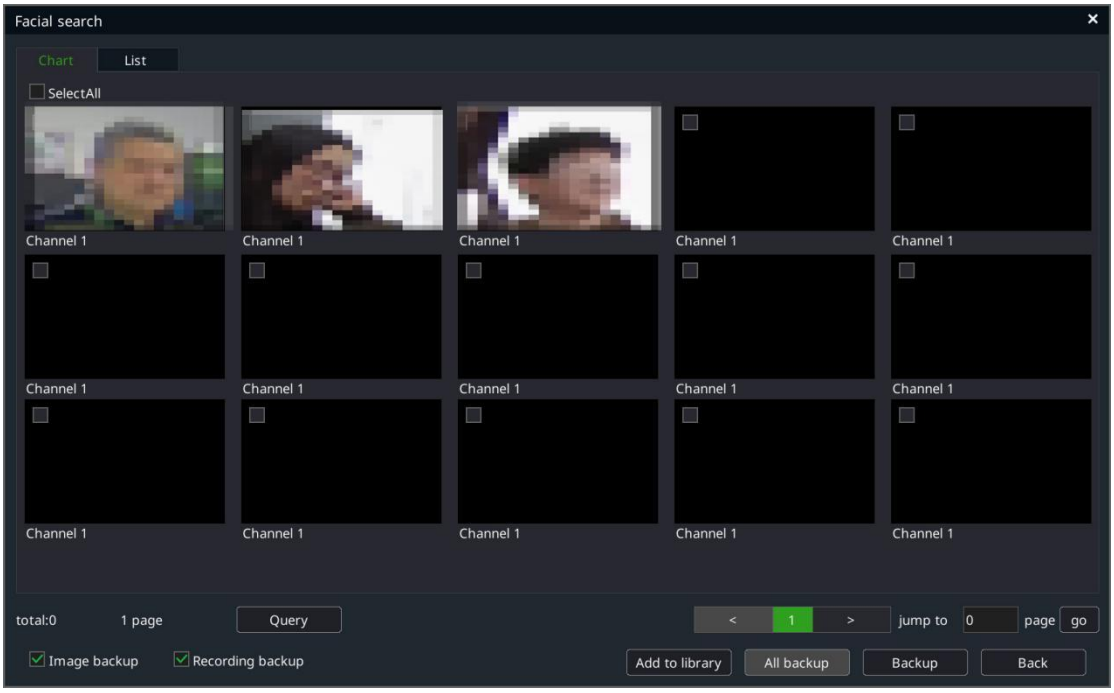
4.8.6 Face Retrieval

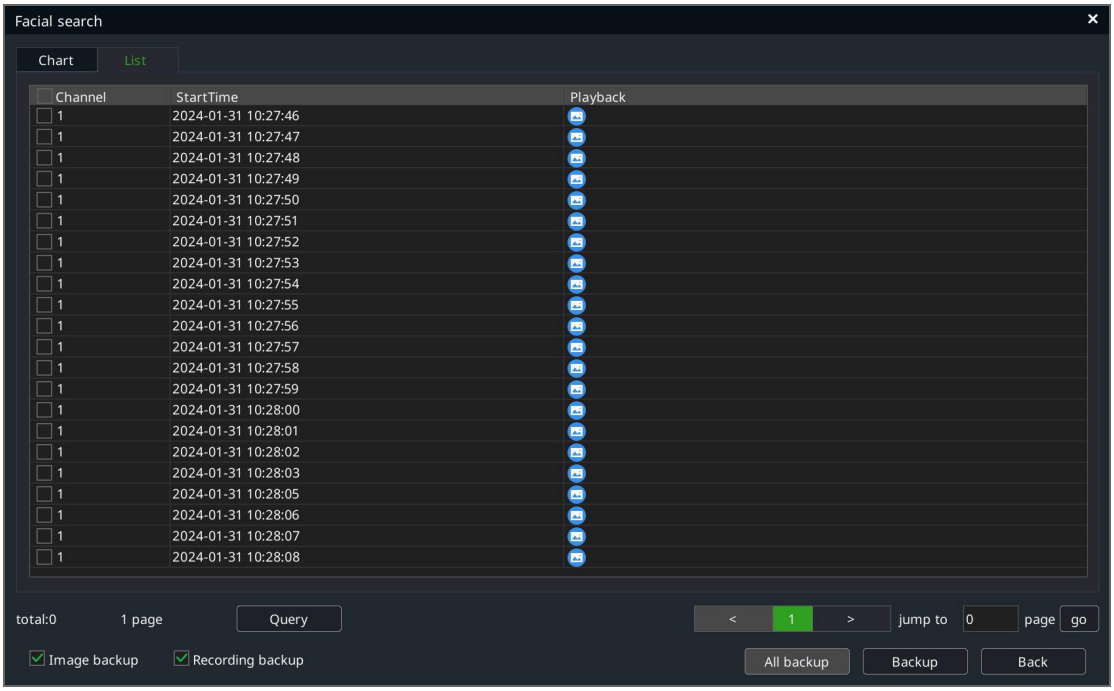
4.8.6.1 Retrieve by Event

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



[Retrieve by event]: The user can select the corresponding channel, and the channel setting statistics type is all, face detection, comparison alarm, stranger alarm, frequency alarm, detention alarm, and retrieve the data of the corresponding type. It can be displayed in the form of chart and list, as shown in the following figure.

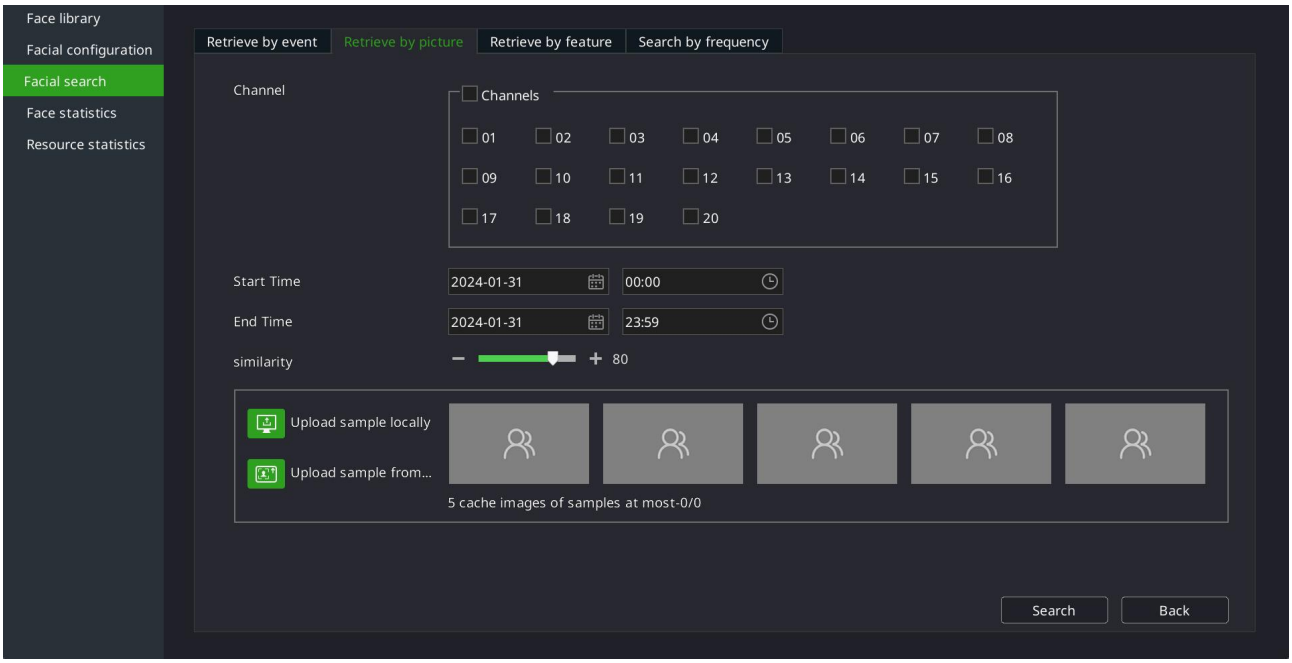




For the retrieved data, the captured face photo is displayed in the chart, and the time of face capture is displayed in the list. Double-click the corresponding photo or "" to see the large background image.

4.8.6.2 Search by Picture

1、Enter [Main Menu-> Intelligent Analysis-> Face Search], and select the Search by Image tab, as shown in the following figure.



Search according to the picture.

[Target Channel]: Select the channel to search.

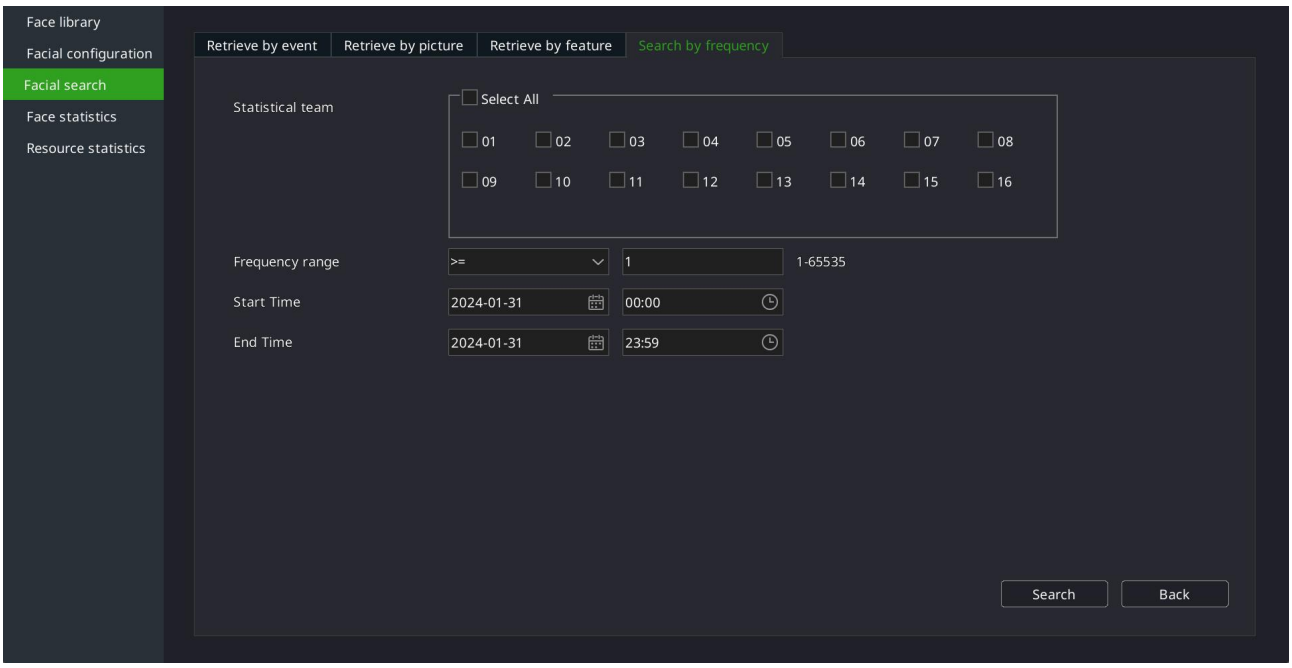
[Start Time/End Time]: Select the time range to be searched.

[Similarity]: Set the similarity of faces.

[Upload sample]: Upload face pictures, which can be uploaded locally or from the face library.

4.8.6.3 Search by frequency

1、Enter [Main Menu-> Intelligent Analysis-> Face Search], and select the Search by Frequency tab, as shown in the following figure.



Search by frequency.

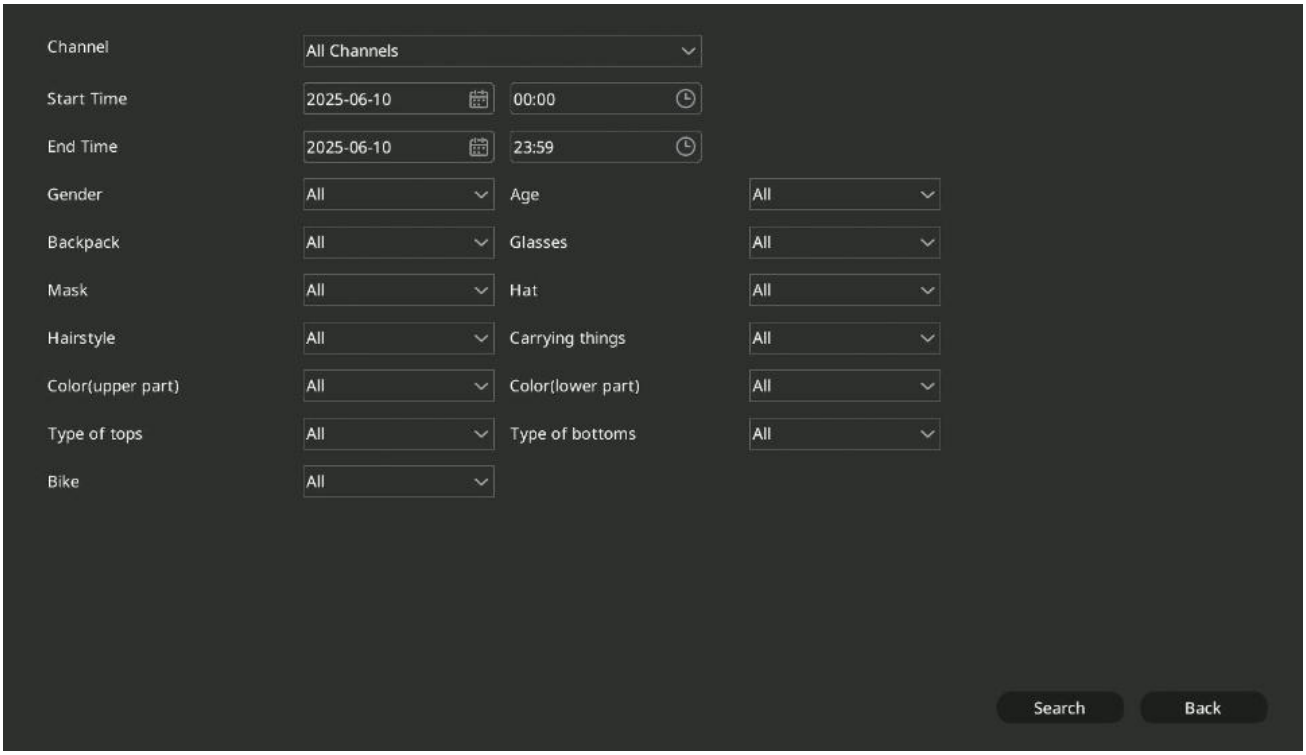
[Statistic group]: Select the statistic group to be retrieved.

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

[Frequency Range]: set the frequency range.

4.8.7 Human Retrieval

1. Enter [Main Menu-> Depth Analysis-> Human Retrieval], as shown in the following figure.



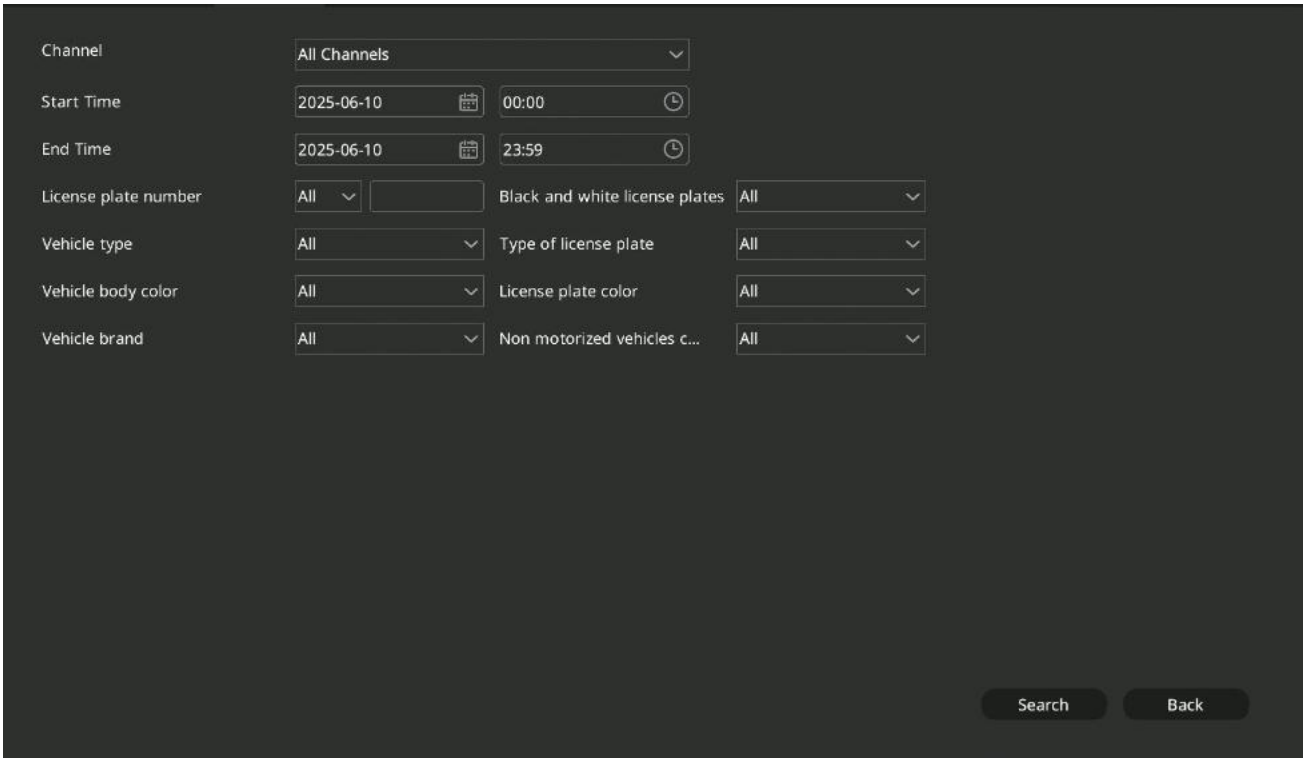
[Channel]: Select the channel to retrieve.

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

Set human body search conditions, including [gender] [age] [backpack] [glasses] [mask] [hat] [jacket color] [jacket color] [cycling], etc.

4.8.8 Vehicle retrieval

1.Enter [Main Menu-> In-depth Analysis-> Vehicle Retrieval], as shown in the figure below.



[Channel]: Select the channel to retrieve.

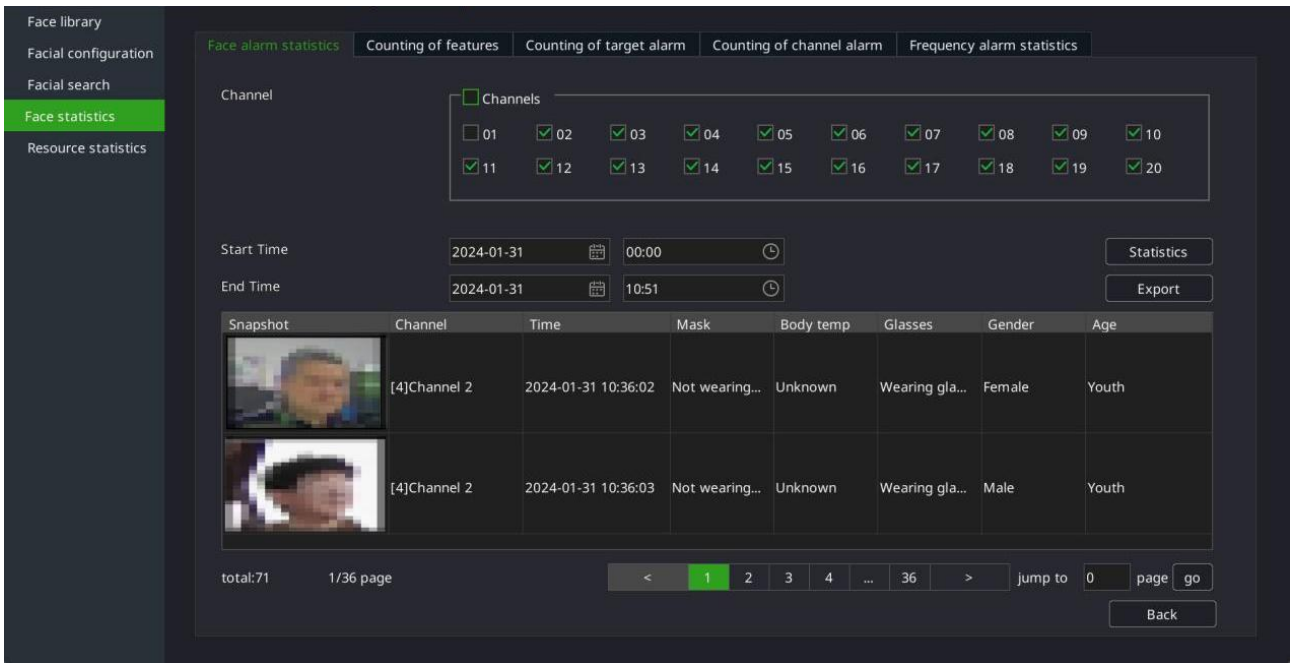
[Start Time/End Time]: Select the time range to retrieve.

Set vehicle retrieval conditions, including [license plate number] [black and white license plate] [vehicle type] [license plate type] [vehicle color] [license plate color] [vehicle brand], etc.

4.8.9 Face Statistics

4.8.9.1 Face alarm statistics

1、Enter [Main Menu-> Intelligent Analysis-> Face Statistics], and select the Face Alarm Statistics tab. In the [Face Alarm Statistics] interface, select the channel number, start time and end time, and click the [Statistics] button to perform face alarm statistics, as shown in the following figure.

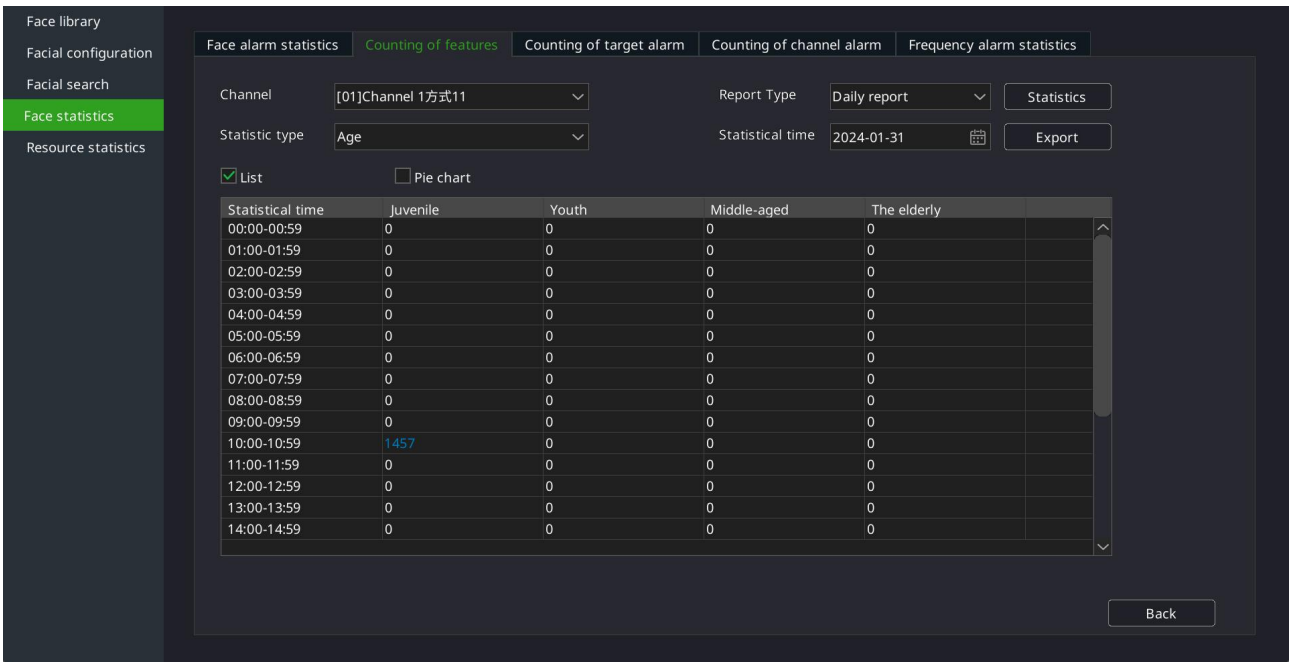


2、Statistical results show information such as snapshot, channel number, snapshot time, whether to wear masks, abnormal body temperature, whether to wear glasses, gender and age.

3、Click the [Export] button to export the statistical results to the U disk.

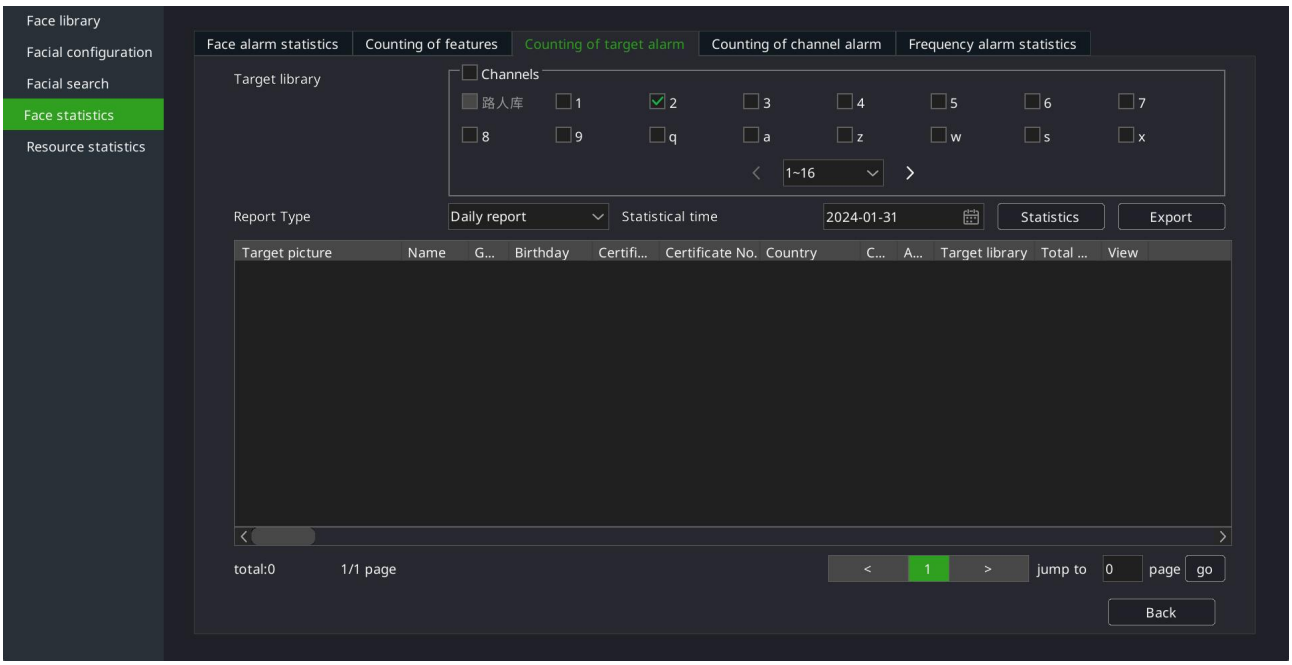
4.8.9.2 Characteristic statistics

1. Enter [Main Menu-> Intelligent Analysis-> Face Statistics] and select the Feature Statistics tab. In the [Feature Statistics] interface, select the channel number, report type, and statistics type, and click the [Statistics] button to perform face data statistics, as shown in the following figure.



4.8.9.3 Target Alarm Statistics

Enter [Main Menu-> Depth Analysis-> Face Statistics] and select the target alarm statistics label, as shown in the following figure.



According to the target alarm statistics, that is, according to the number of times that the face in the face database triggers the alarm, the specific operation is as follows:

(1) selecting a target face database.

(2) Select the sort type, including increasing by the number of alarms and decreasing by the number of alarms.

(3) Select the statistical time.

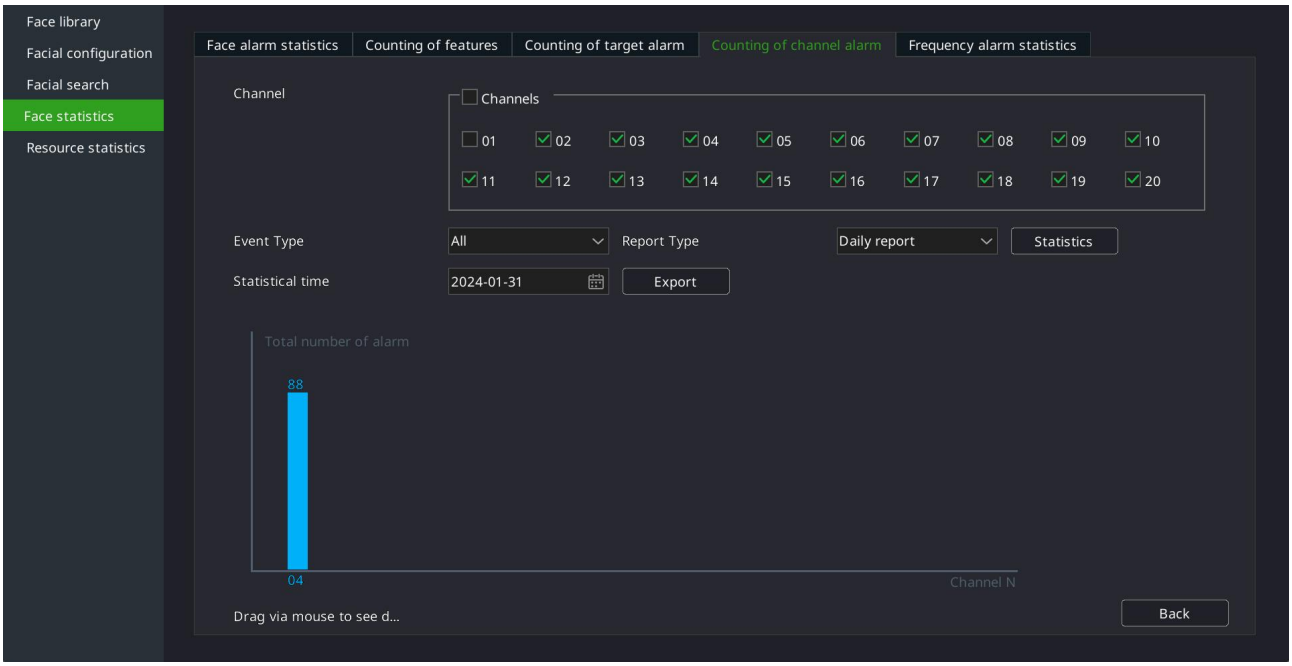
(4) Select the report type, including daily report, weekly report, monthly report and annual report.

(5) The statistical results are displayed in the form of a list, and [Name] [Sex] [Date of Birth] [Nationality] [Target Library] [Total number of alarms] and [Details] are displayed.

(6) After statistics is selected, the results will be displayed on the page. After selecting Export, the statistical results will be exported as.xls files to the local.

4.8.9.4 Channel alarm statistics

Enter [Main Menu-> Depth Analysis-> Face Statistics] and select the channel alarm statistics tab, as shown in the following figure.



According to channel alarm statistics, namely, according to channel and alarm category statistics, the specific operation is as follows:

（1）Select the target channel.

（2）Select the event type, including all, face detection, comparison alarm, stranger alarm and detention alarm.

（3）Select the statistical time.

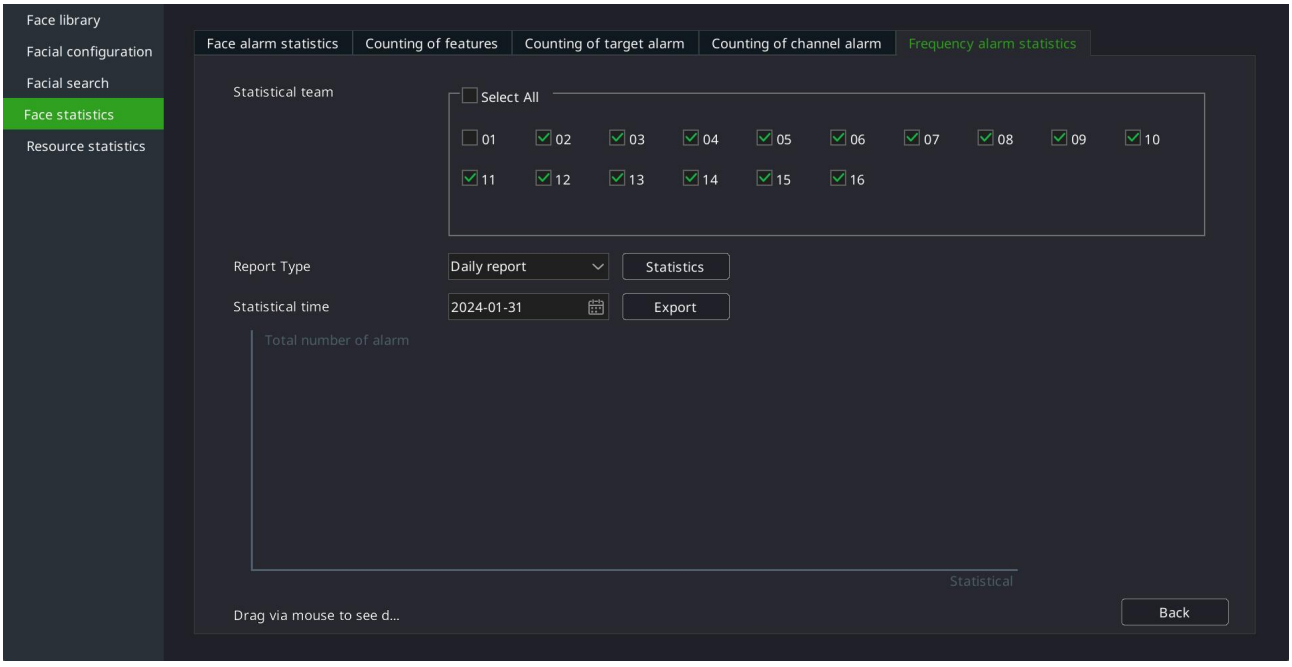
（4）Select the report type, including daily report, weekly report, monthly report and annual report.

（5）Statistical results can only be displayed in histogram.

（6）After statistics is selected, the results will be displayed on the page. After selecting Export, the statistical results will be exported as.xls files to the local.

4.8.9.5 Frequency alarm statistics

Enter [Main Menu-> Depth Analysis-> Face Statistics] and select the frequency alarm statistics tab, as shown in the following figure.



Alarm statistics based on the channel, that is, statistics based on the statistical group and time. The specific operations are as follows:

（1）Select a statistical group.

（2）Select report type: daily report, weekly report, monthly report and annual report.

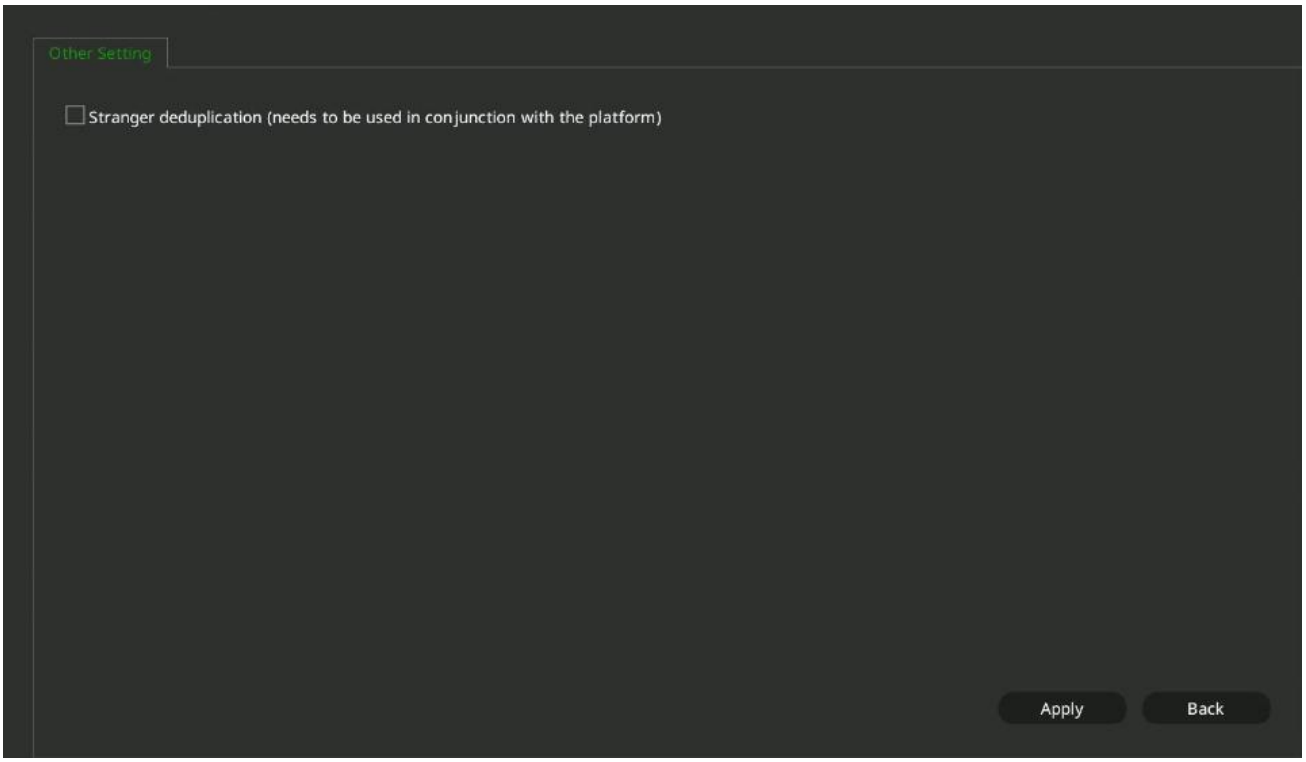
（3）Select the statistical time.

（4）Statistical results can only be displayed in histogram.

（5）After statistics is selected, the results will be displayed on the page. After selecting Export, the statistical results will be exported as.xls files to the local.

4.8.10 Other settings

1. Go to [Main Menu-> Depth Analysis-> Other Settings].



2. Select whether or not to enable the [Stranger De-duplication] function, which needs to be used in conjunction with the platform.

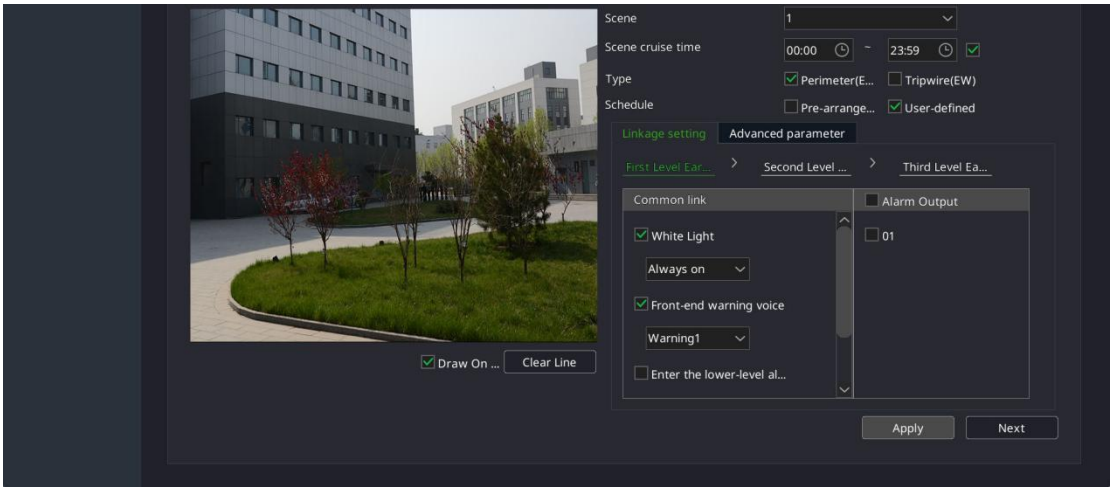
4.9 EW

Linkage front-end equipment carries out acousto-optic linkage for alert behavior.

4.9.1 Warning configuration

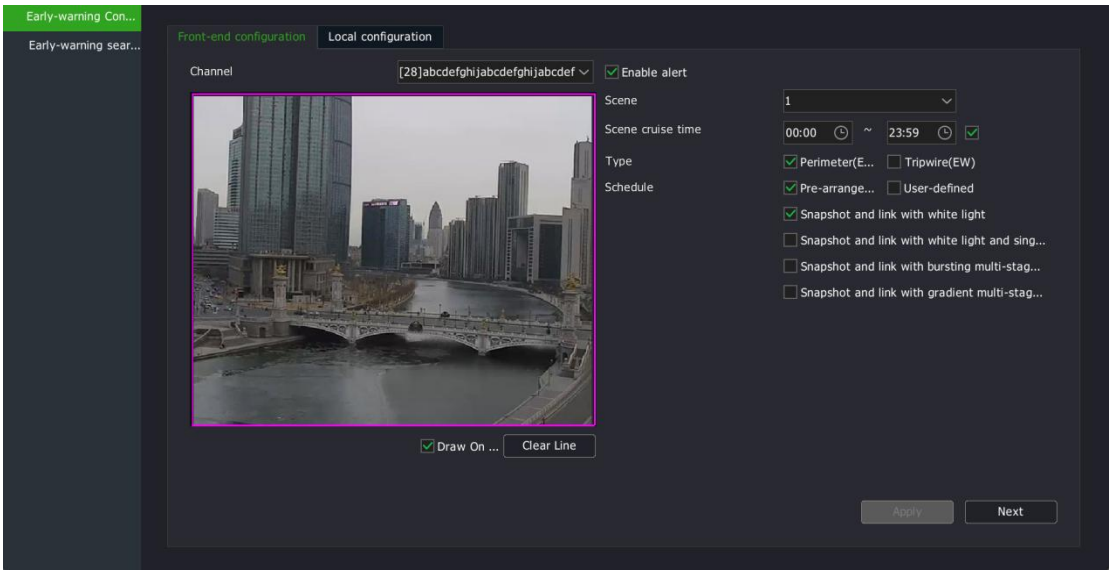
4.9.1.1 Front-end configuration

1. Enter [Main Menu-> Alert Management-> Alert Configuration], and select the front-end configuration tab, as shown in the following figure.



2. The user can set the alert Parameter according to the actual situation or preference on site.

3. Contingency plan setting is shown in the figure below.



(1) Check Enable Active Alert Algorithm.

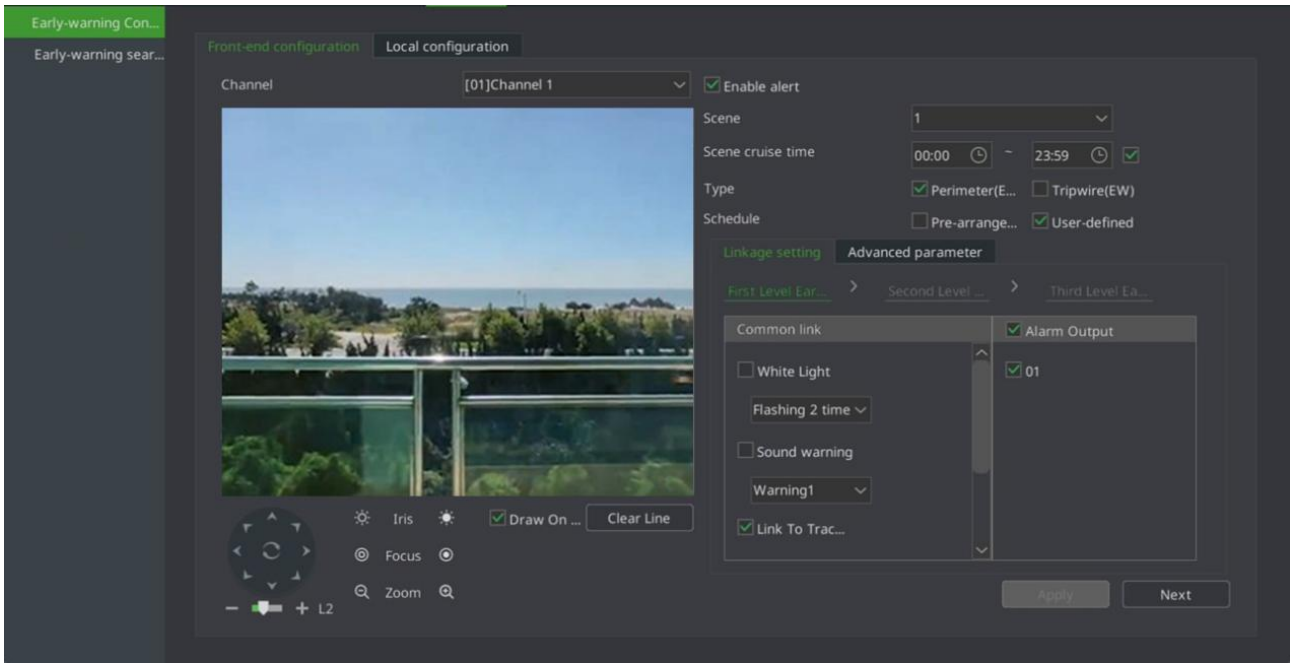
(2) Select the alert type: perimeter alert or tripwire alert, and set the effective time of the alert scenario.

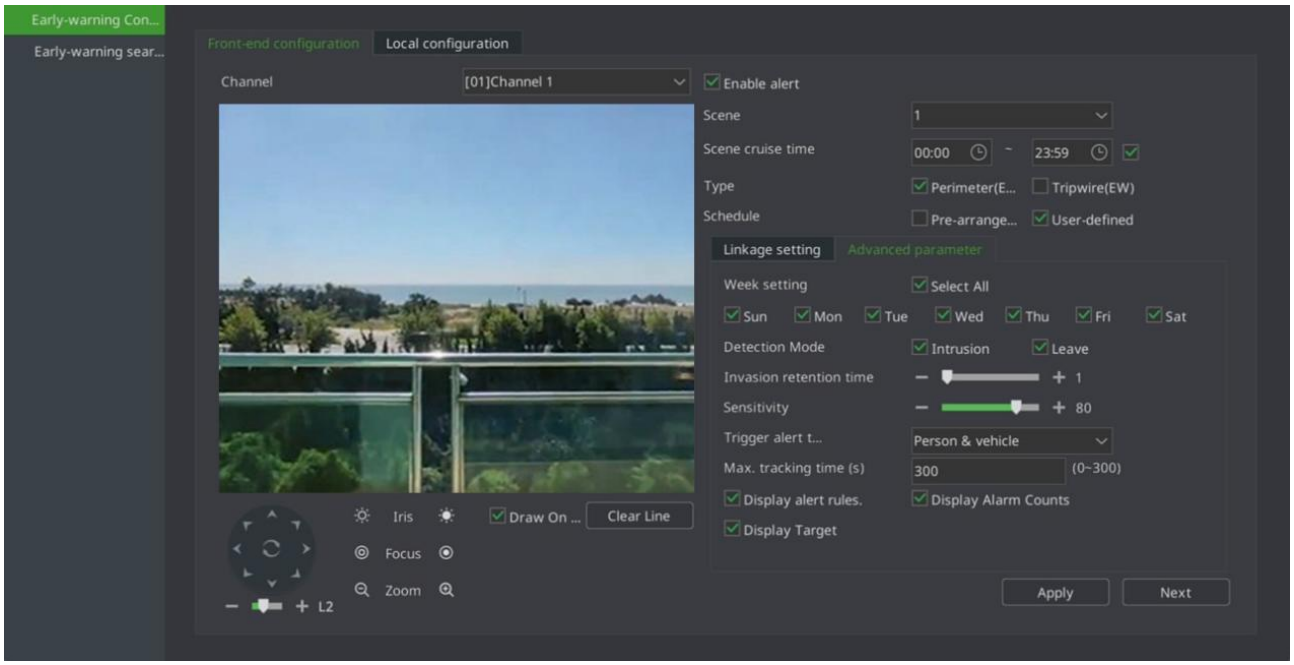
(3) Adjusting the scene and drawing a warning area or a warning line. By default, the full screen of the perimeter alert is the alert area. If you need to adjust it, you need to clear the line and draw it again.

(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.

4. The custom settings are shown in the figure below.





(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.

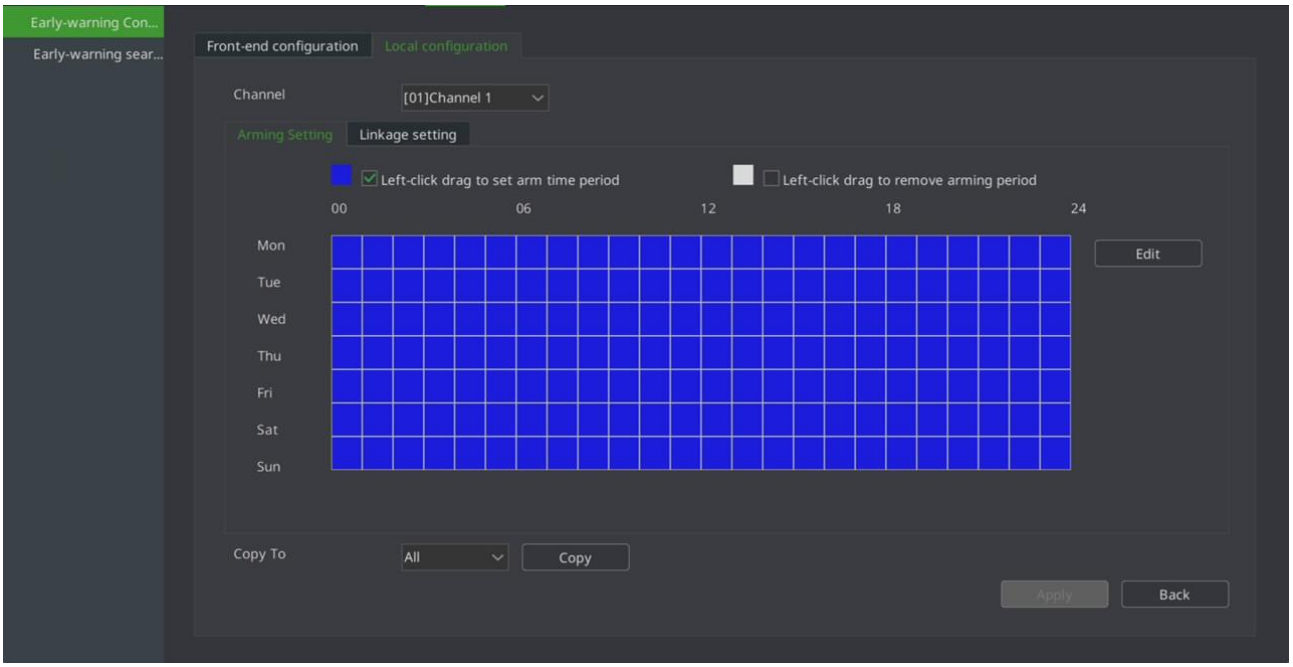
Explain：

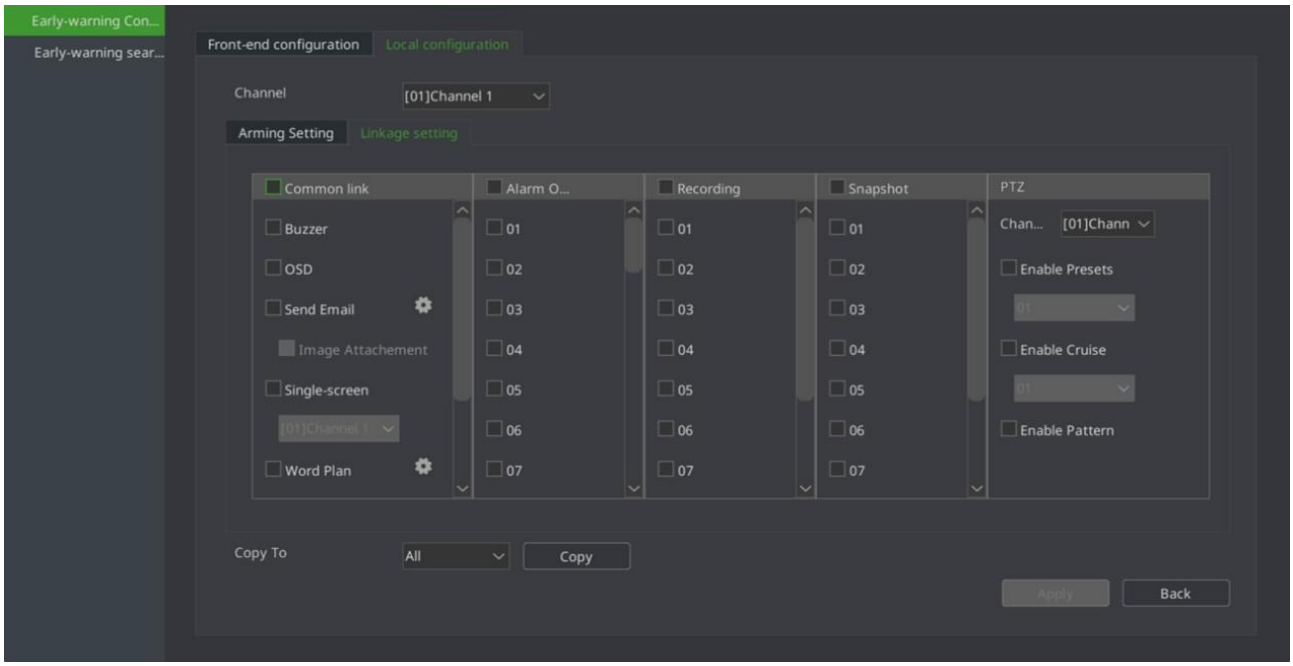
- The device supports the setting of 4 scenarios. A plurality of scenes can be set through the above steps, and the scene cruise of different alert types or different linkage items can be realized by setting different cruise time periods.
- In the perimeter alert, the plan of [burst multi-level acousto-optic alert] is as follows: after the target breaks into the alert area, the white light flashes strongly and the voice shouts. After the detention time is reached, the next mode is entered and the linkage laser is turned on.
- [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. Linkage tracking and entering the next alert level are mutually exclusive. When linkage tracking is selected, the next alert level will not be entered. When the linkage tracking is selected, the tracking magnification shall be set. Determine an appropriate proportion of the target in the farthest screen of the scene to be monitored by adjusting the angle and magnification. It is recommended that the target occupies more than 1/2 of the screen height. Click to set the tracking magnification.

- 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, etc.
- 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 target is human 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 default is 300 seconds. When set to 0 seconds, the ball will track until the target disappears.

4.9.1.2 Local configuration

Enter [Main Menu-> Alert Management-> Alert Configuration] and select the Local Configuration tab, as shown in the following figure.





(1) The deployment time can be set in the deployment setting interface.

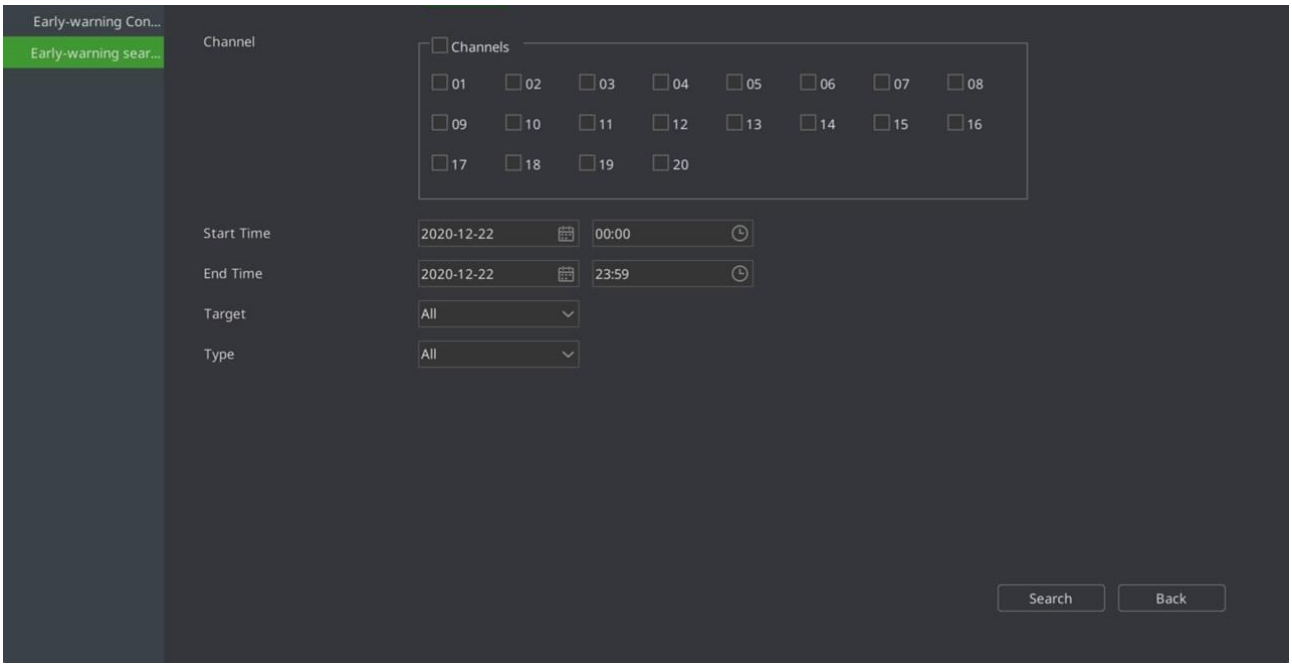
(2) Enter [Linkage setting], set alarm linkage of alert, and set alarm linkage sound prompt, screen display, linkage video, linkage alarm output, linkage PTZ, linkage snapshot, etc.

4.9.2 Warning retrieval

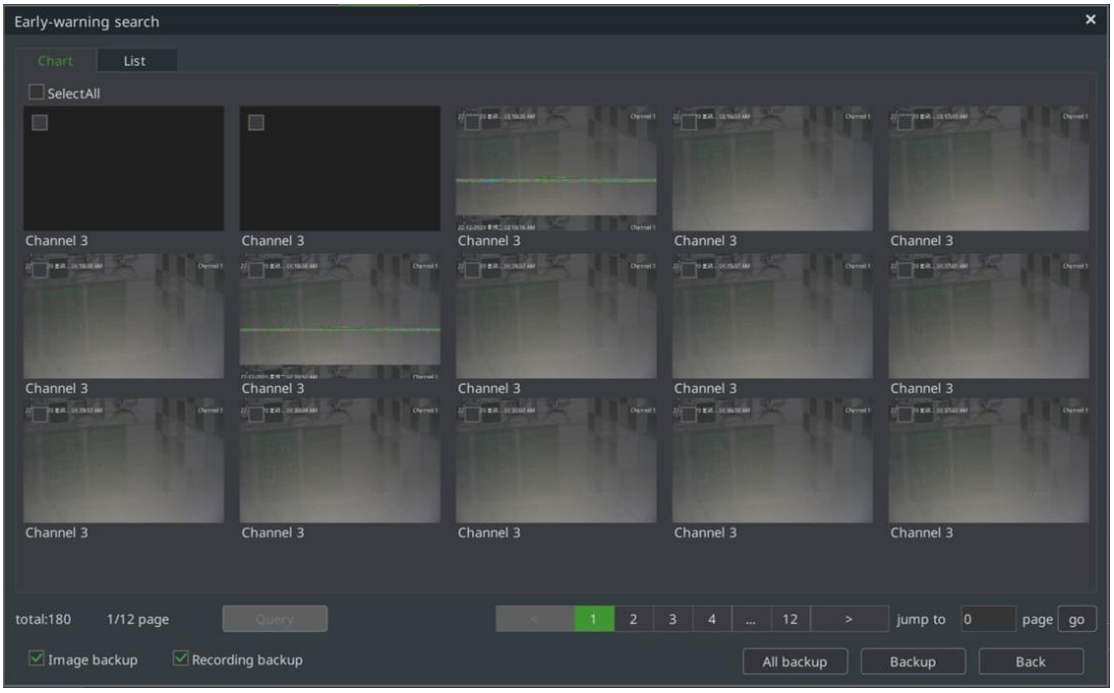
The alert behavior of each channel is retrieved according to time, type, etc.

The specific operation steps are as follows:

1. Enter [Main Menu-> Alert Management-> Alert Retrieval], as shown in the following figure.



2. Retrieval targets are divided into: all, people, vehicles, and others; the types are: all, tripwire, perimeter-invasion, and perimeter-departure. Select the corresponding target and type and click the retrieval button to retrieve the corresponding alert data.



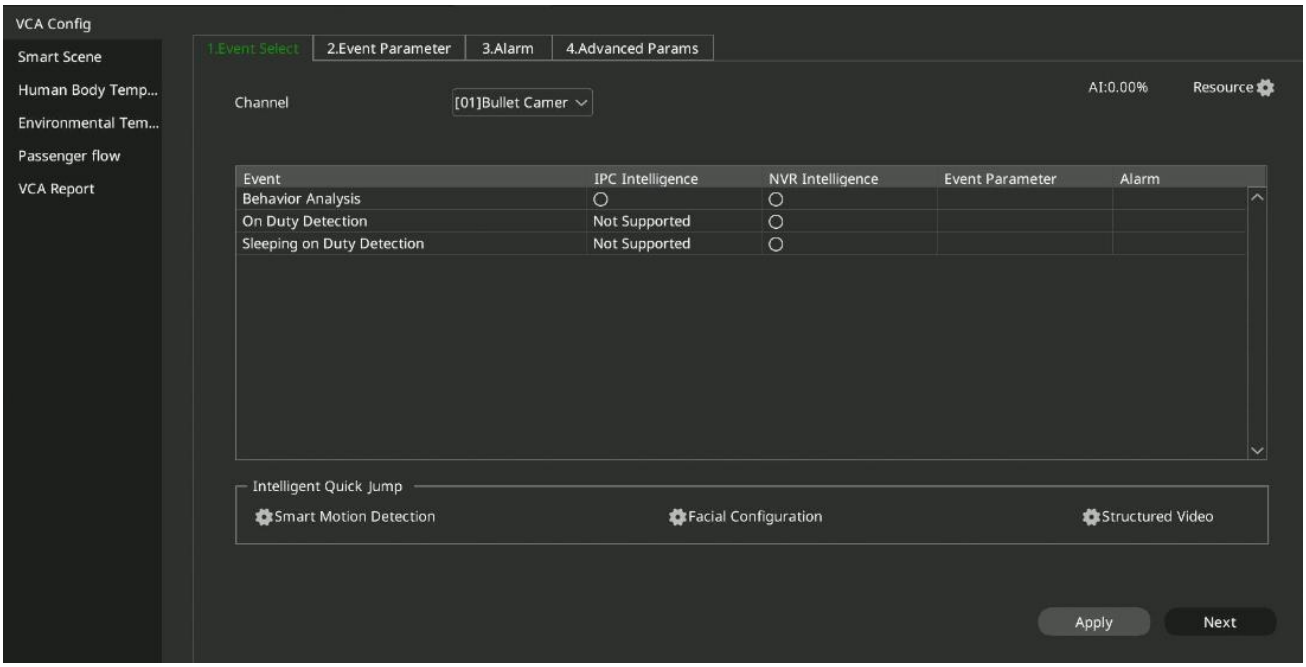
4.10 Intelligent Analysis

Configure and analyze smart devices.

4.10.1 Intelligent configuration

4.10.1.1 Event Selection

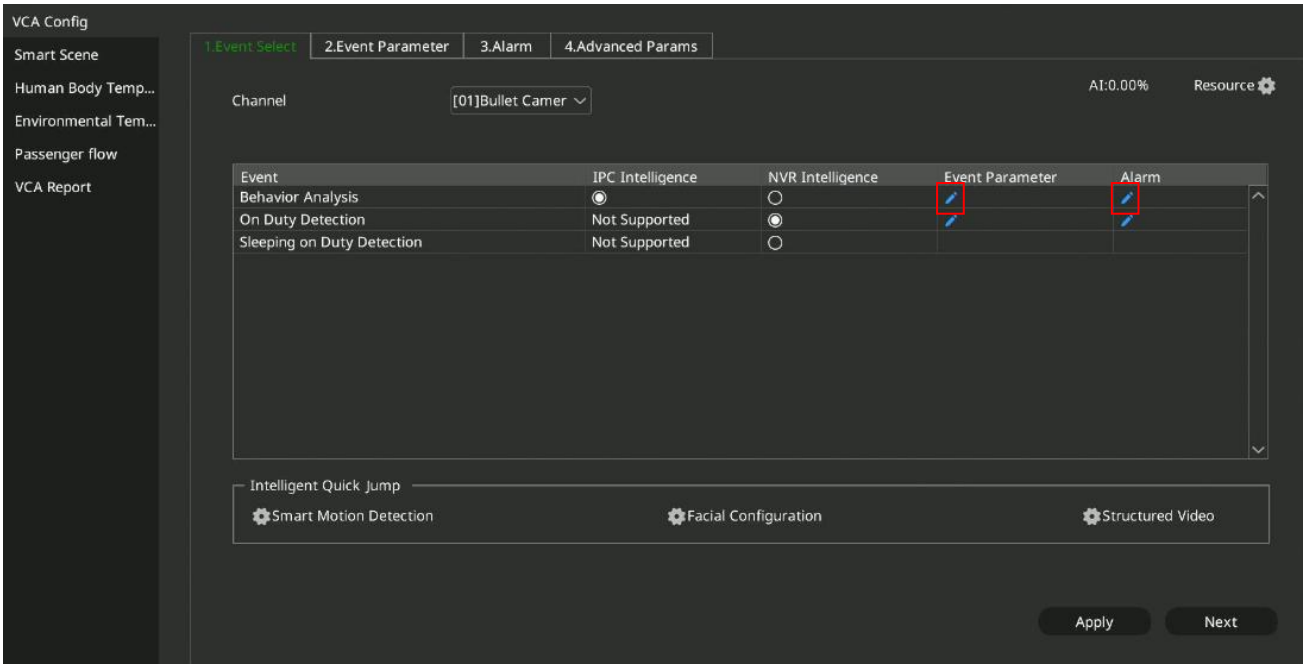
1. Enter [Main Menu-> Intelligent Analysis-> Intelligent Configuration], and select the event selection tab, as shown in the following figure.



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.

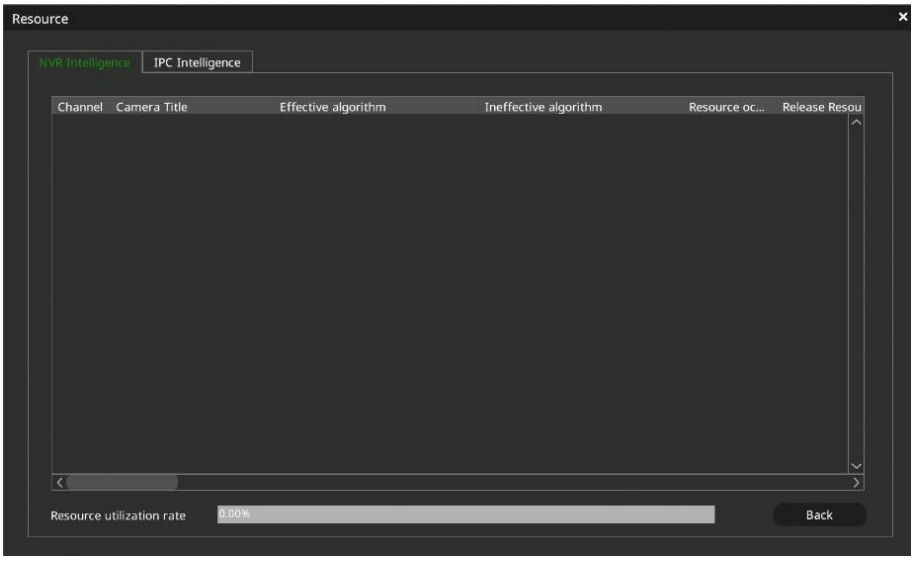


Click "" Icon under Event Parameter or Alarm Settings to jump to the [Event Parameter] interface or [Alarm Settings] interface for configuration. For detailed operation steps, refer to 4.10.1.2 Event Parameter and 4.10.1.3 Alarm Settings.

Event Selection-> Resource Configuration

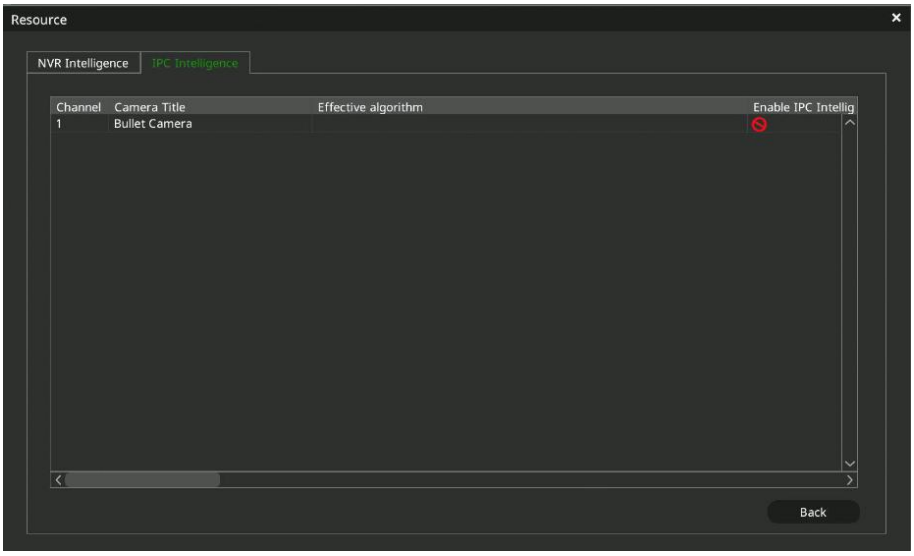
The resource allocation of NVR and IPC can be viewed.

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.

Event Selection-> Smart Jump

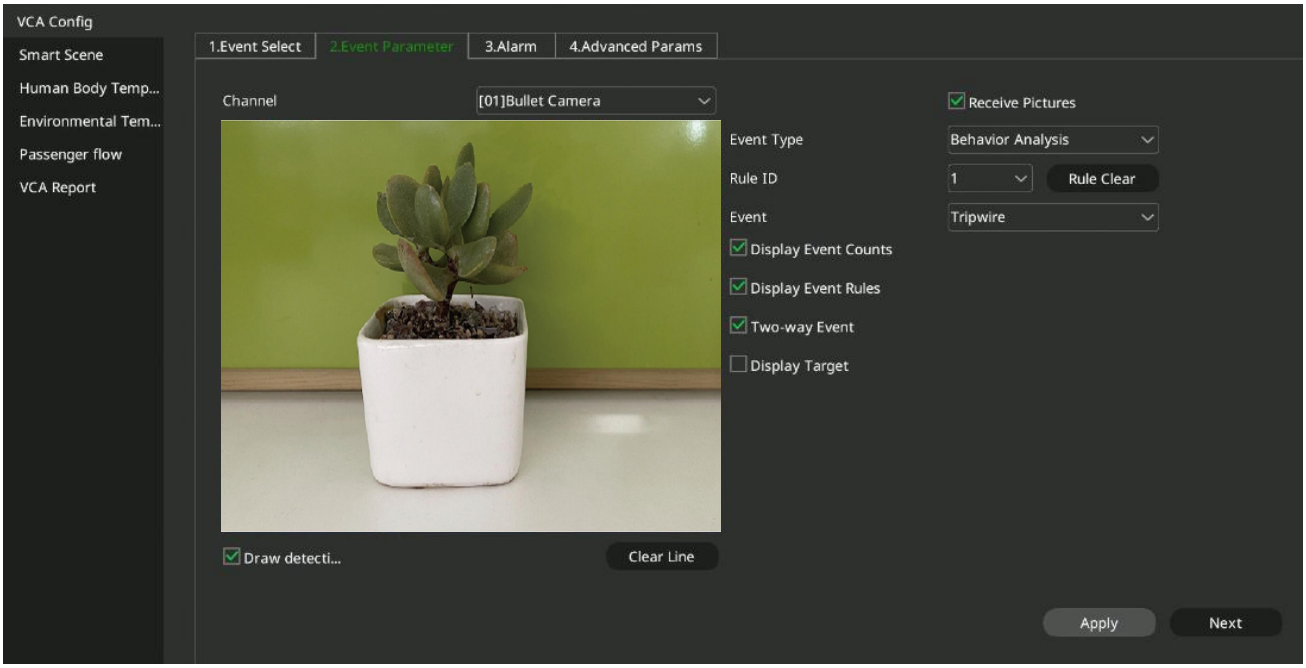
Intelligent dynamic inspection: Jump to the [Intelligent dynamic inspection] interface. For details, refer to 4.4.3 Intelligent dynamic inspection.

Face Configuration: Jump to the [Face Configuration] interface. For details, see 4.8.2 Face Configuration.

Video structuring: Jump to the [Video structuring] interface. For details, see 4.8.3 Video structuring.

4.10.1.2 Event Parameter

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



2. Intelligent analysis Parameter setting:

- Rule No.: Select intelligent analysis rules. Each channel supports up to 8 rules.
- Receive pictures: whether to receive pictures.
- Event: Select intelligent analysis event, support tripwire, double tripwire, perimeter, item left, item lost, wandering, running, parking, alert, heat map, etc.
- Sensitivity: When the target enters the alarm area as a whole and exceeds the set proportion, the alarm will be triggered. The sensitivity ranges from 0 to 100.
- Display rule: rule information is displayed on the video.
- Display alarm count: the alarm count is displayed on the video, and the alarm is accumulated once.

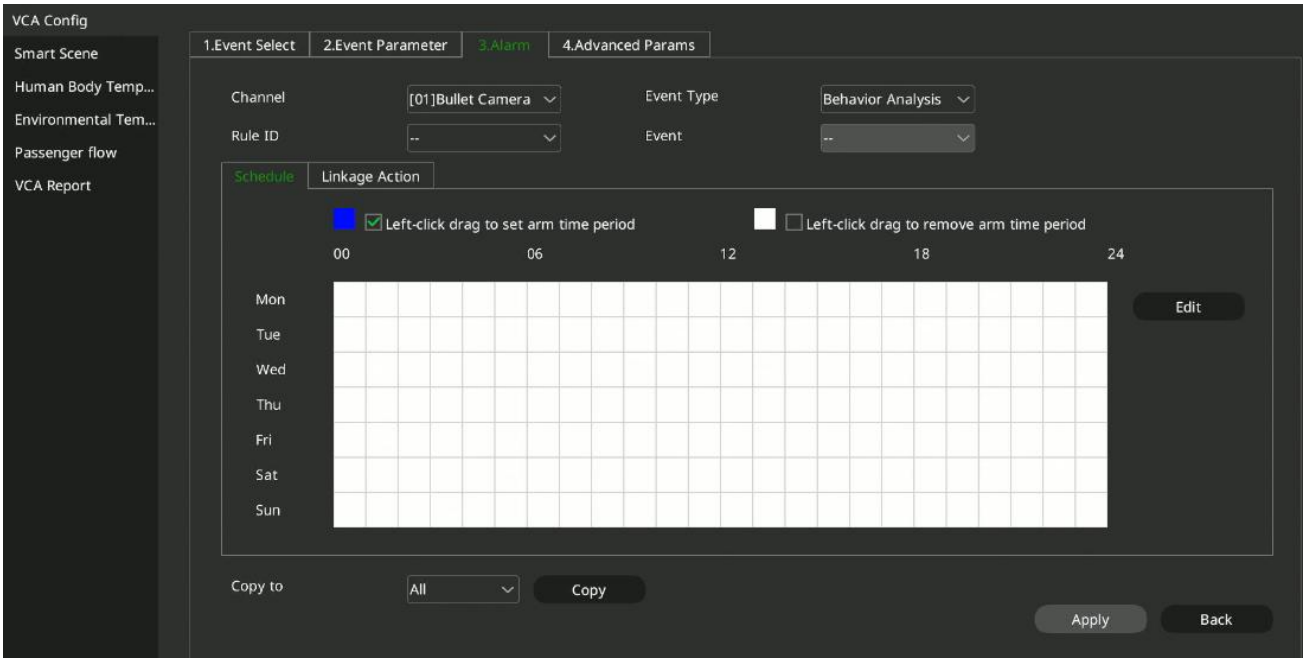
3. Select [Enable Line Drawing] to start setting the line drawing area for this rule, and click [Clear Line Drawing] to clear the edge line set on the video.

Explain：

- Event types for behavioral analysis, dynamically changing according to the algorithms supported by the front end. IPC intelligent or NVR intelligent algorithm needs to be selected in the algorithm configuration to be selected in the event type.

4.10.1.3 Alarm settings

1. In the event Parameter interface, click [Next] to set the alarm linkage, as shown in the following figure.

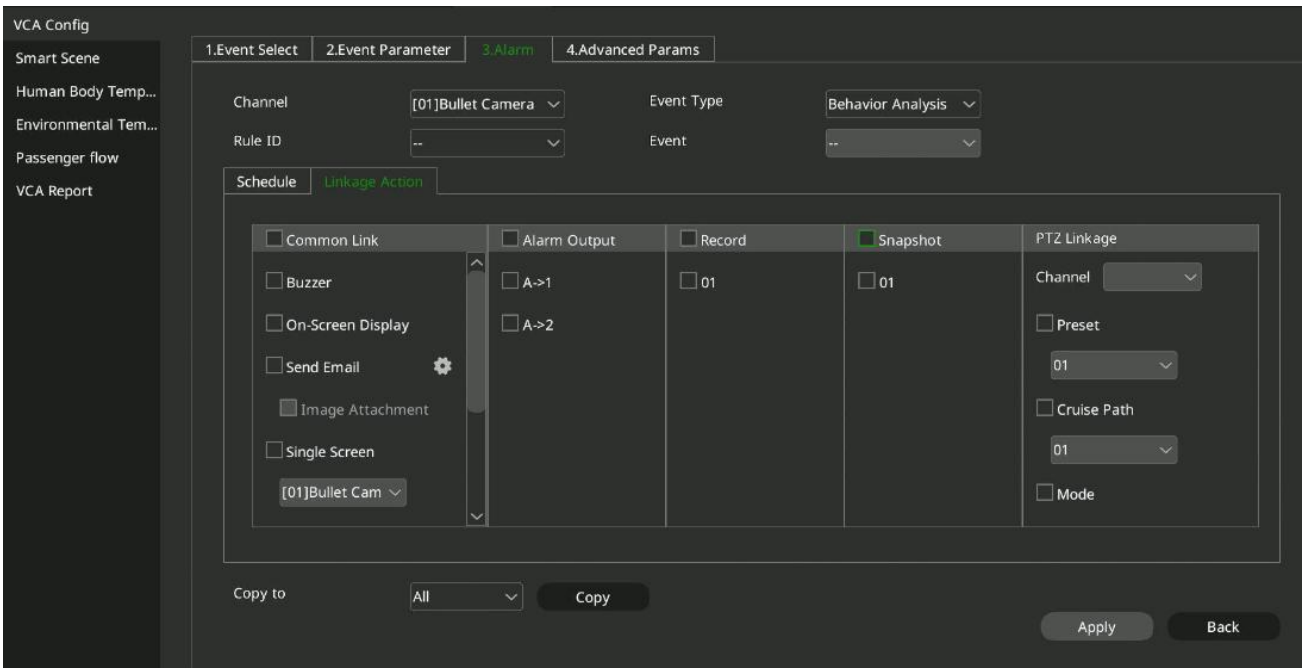


(1) Select the rule number to be set.

(2) Set the deployment time in the deployment setting interface.

2. Enter [Linkage Settings] to set intelligent analysis and alarm linkage. You can set alarm linkage sound prompt, screen display, linkage video recording, linkage alarm output, linkage PTZ, linkage snapshot, etc. When the algorithm is a heat chart, only the

deployment time can be set, and the linkage setting is not supported, as shown in the figure.



After the setting is completed, you can copy the Parameter of other channels.

3. Click [Apply] to save the setting Parameter.

4.10.2 Smart Scenario

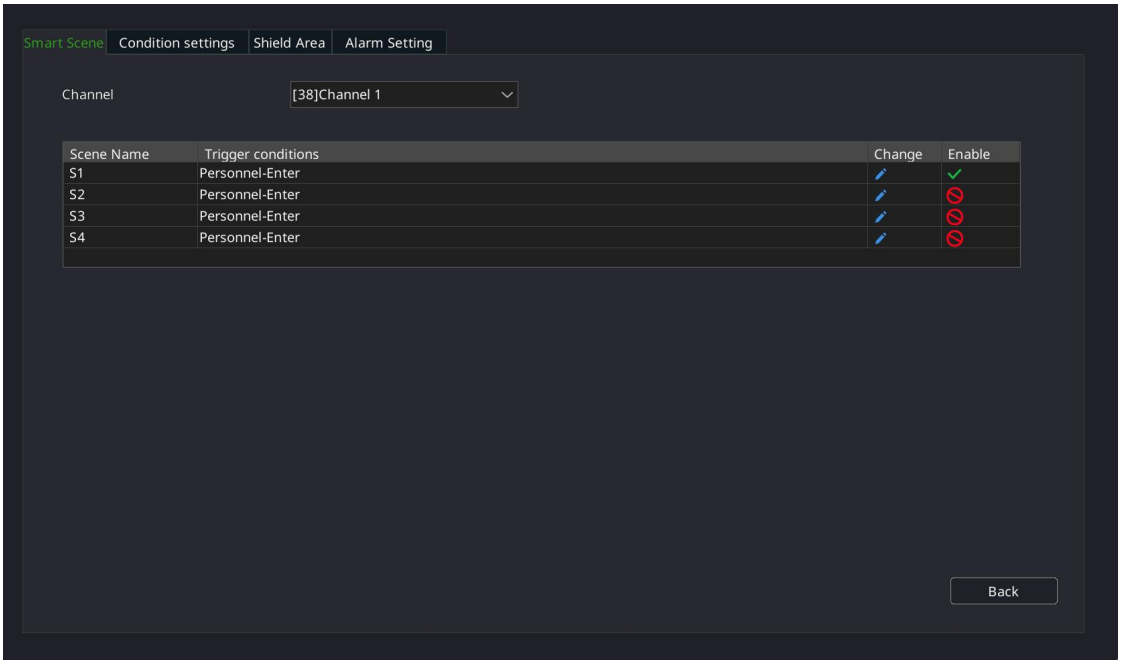
A plurality of trigger conditions are set to form an intelligent scene.

Explain：

- Only some devices support intelligent scenarios. Please refer to the real object.

4.10.2.1 Smart Scenario

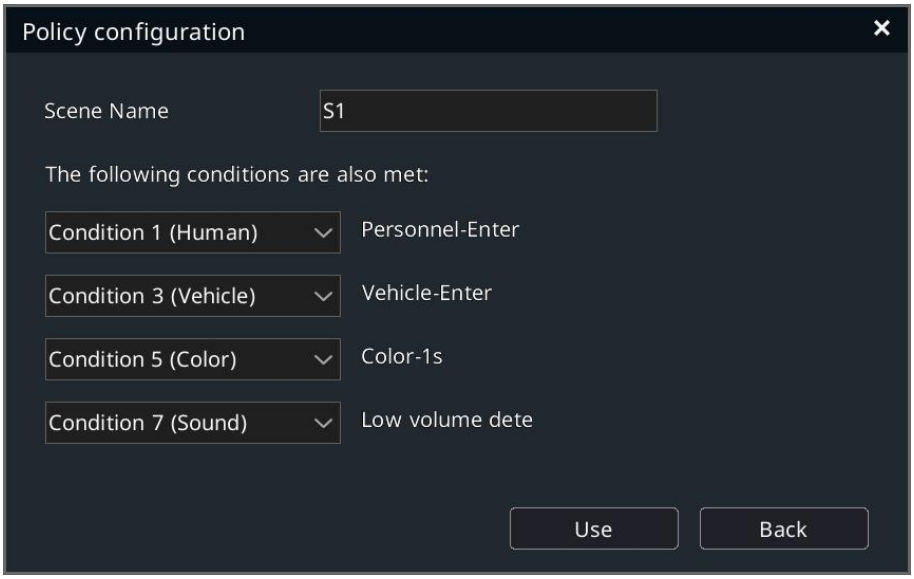
1、Enter [Main Menu- > Intelligent Analysis- > Intelligent Scenario], and select the Intelligent Scenario tab, as shown in the following figure.



2、Select the channel to be set.

3、Select the corresponding scene name, and select whether to enable the scene by clicking "" or "".

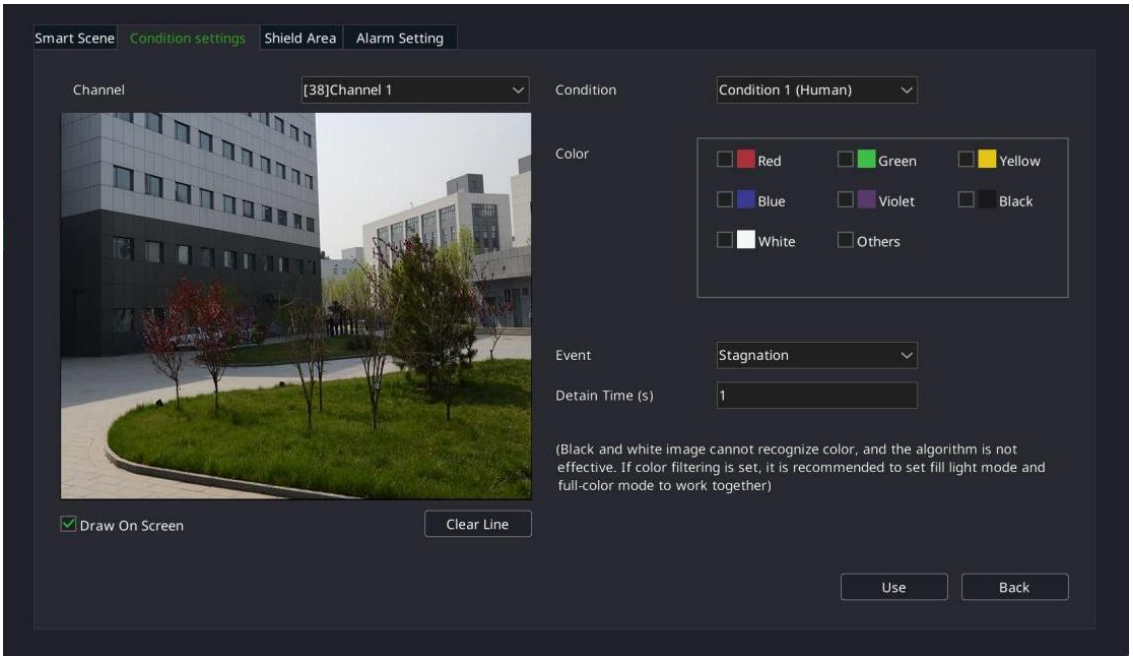
4、Click ""Icon to modify or edit the scenario policy. You can modify the scenario name and select the scenario trigger condition, as shown in the following figure.



5、Click [Apply] to save the setting Parameter.

4.10.2.2 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 to be set.

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

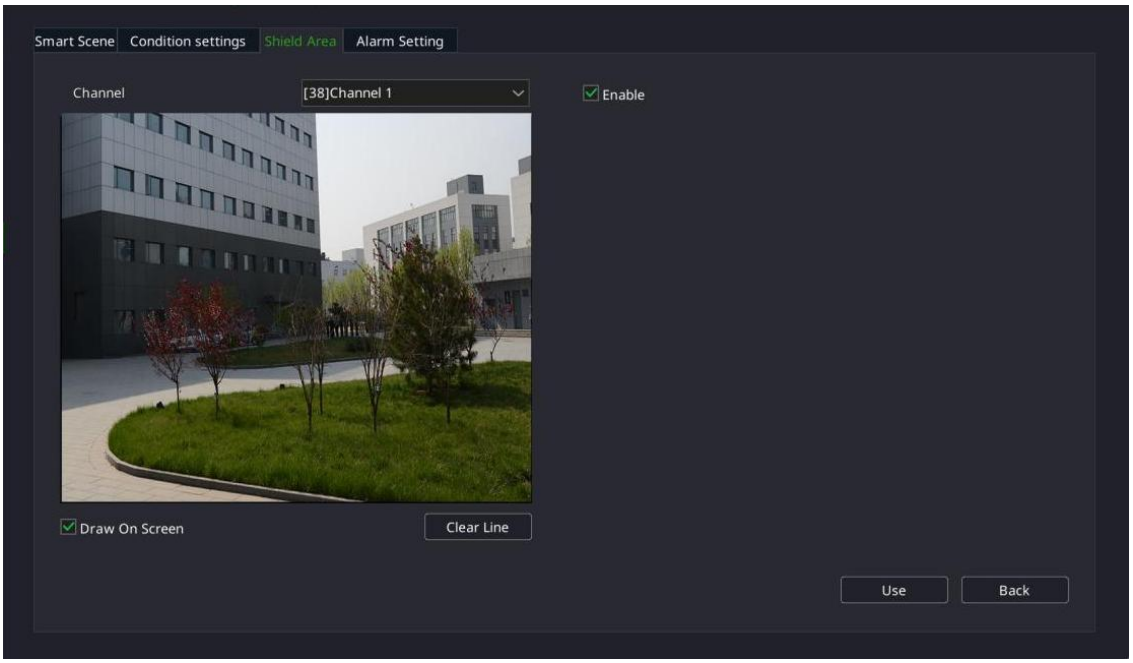
Explain：

- 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.

3. Click [Apply] to save the setting Parameter.

4.10.2.3 Shielded Areas

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



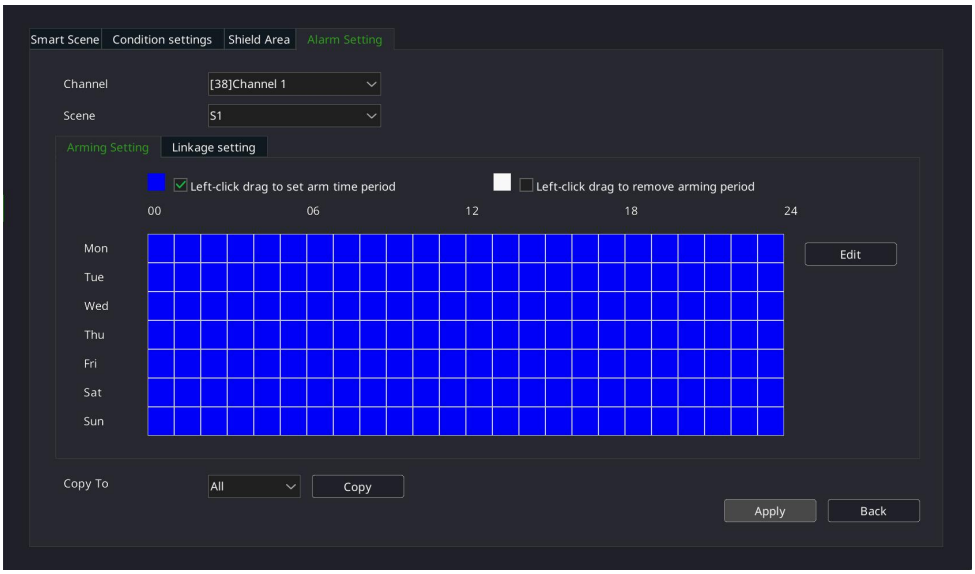
2. Select the channel to be set.

3. Turn on the shielding area by checking [Enable]. After checking [Enable Line Drawing], 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 [Apply] to save the setting Parameter.

4.10.2.4 Alarm settings

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



2. Select the channel to be set.

3. Select the scene to be set.

4. Set the deployment time in the deployment setting interface.

5. Enter [Linkage Settings] to set intelligent analysis and alarm linkage. You can set alarm linkage sound prompt, screen display, linkage video recording, linkage alarm output, linkage PTZ, linkage snapshot, etc.

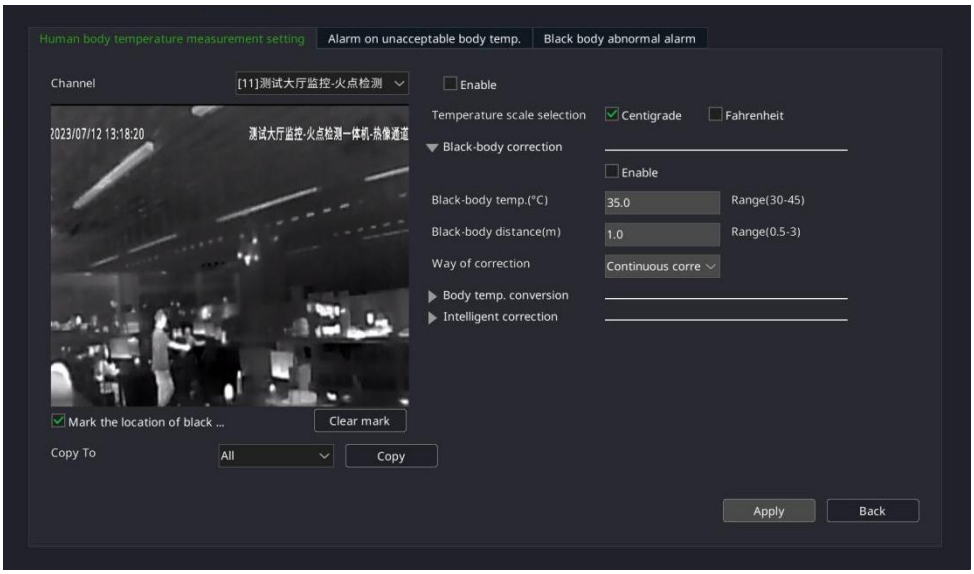
6. [Defense Setting] and [Linkage Setting] can be copied to other channels through [Copy to Channel].

7. Click [Apply] to save the setting Parameter.

4.10.3 Human thermometry

4.10.3.1 Human thermometry Settings

1、Enter [Main Menu-> Intelligent Analysis-> Human thermometry], select the human thermometry label, and set the basic information of human thermometry, as shown in the following figure.



2. Set the temperature scale, blackbody correction, body temperature conversion, etc. Of the thermometry of the human body as required.

The specific operation steps are as follows:

(1) Select the channel to be configured.

(2) Check the [Enable] check box to enable the human body thermometry Function, and uncheck it to disable the human body thermometry Function.

(3) Start marking the blackbody position, and mark the blackbody position in the video for correction.

(4) Set [Temperature scale selection], [Black body correction], [Body temperature conversion] and [Intelligent correction] Parameter information as required.

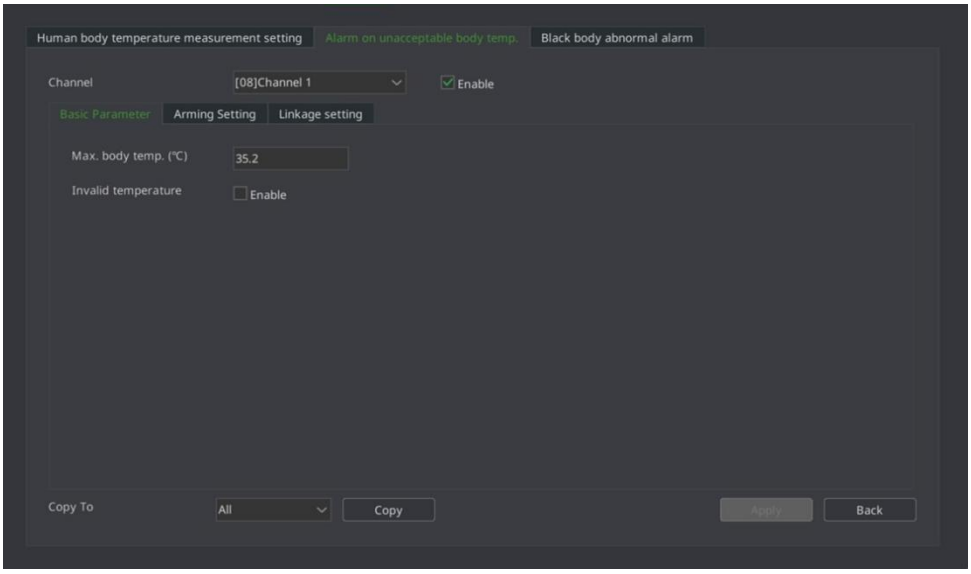
(5) After setting, click the [Save] button to save the Parameter setting and synchronize it to the front-end equipment. To reset the Parameter information, click the [Reset] button to restore the last saved Parameter.

Explain：

- The device supports both Celsius and Fahrenheit temperature scales, and the system defaults to Celsius.
- The device supports temperature correction by comparing the set constant temperature source (blackbody) to the temperature. The user can realize this Function by setting [blackbody temperature], [blackbody distance] and [calibration method] Parameter information.
- Sets the blackbody temperature for temperature correction.
- The device supports temperature correction within a certain interval. Blackbody is a constant temperature source, the distance will cause thermal radiation loss, the farther the distance, the greater the loss, the worse the correction effect.
- The device supports manual calibration and continuous calibration for temperature calibration.
- Click the manual correction button to perform a temperature correction.
- The temperature is continuously corrected by the device.
- The device supports the conversion of human body internal temperature and body surface temperature. The user implements this Function by setting [Compensation Coefficient].
- The compensation coefficient ranges from 0 to 100 and can be set according to the actual environment.
- The device supports large data temperature correction. This Function can be realized by setting [Sensitivity].
- The sensitivity range is 0 ~ 100, which can be set according to the actual environment.

4.10.3.2 Abnormal body temperature alarm

1、Enter [Main Menu- > Intelligent Analysis- > Human thermometry] and select the abnormal body temperature alarm label, as shown in the following figure.



The specific operation steps are as follows:

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

(2) In [Basic Parameter], set [Upper limit of body temperature]. When the upper limit of body temperature is exceeded, an alarm will be activated.

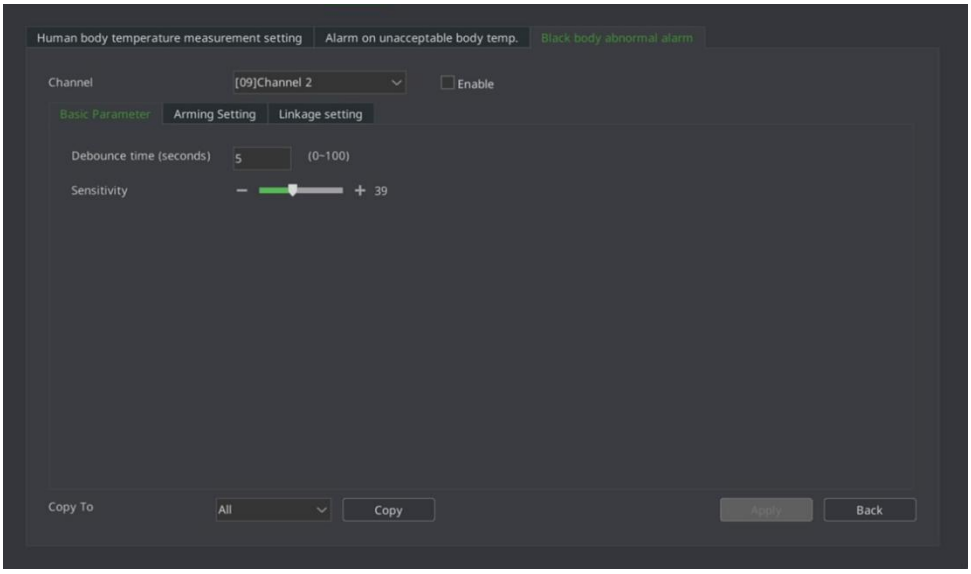
(3) In [Defense Setting], set the detection time period.

(4) Set sound linkage, front-end white light linkage, front-end sound linkage, linkage output, linkage snapshot, PTZ linkage, etc. In [Linkage Settings].

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

4.10.3.3 Black body abnormal alarm

1、Enter [Main Menu- > Intelligent Analysis- > Human thermometry] and select the black body abnormality alarm label, as shown in the following figure.



The specific operation steps are as follows:

(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 is, the more sensitive it is.

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

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

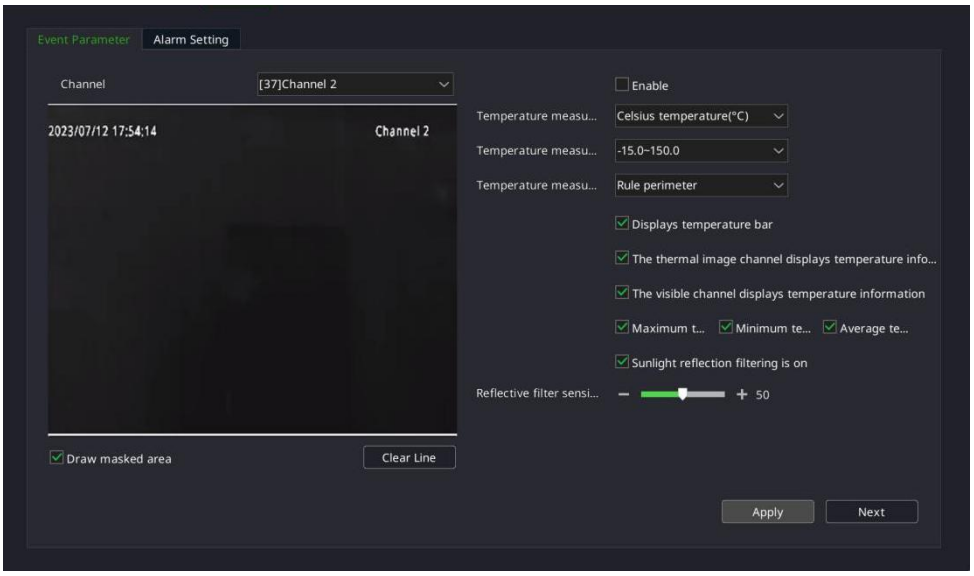
(5) In [Linkage Mode], set sound linkage, front-end white light linkage, front-end sound linkage, linkage output, linkage snapshot, PTZ linkage, etc.

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

4.10.4 Environmental thermometry

4.10.4.1 Event Parameter

1、Enter [Main Menu- > Intelligent Analysis- > Environment thermometry] and select the Parameter tag as shown in the following figure.



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

The specific operation steps are as follows:

(1) Select the channel to be configured.

(2) Check the [Enable] check box to enable the environment thermometry Function, or uncheck it to disable the environment thermometry Function.

(3) Set [thermometry unit], [thermometry range], [thermometry information position display] and [thermometry information] Parameter information as required.

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

(5) Start to draw lines to set the area by checking [Draw Shielding Area], and the environment thermometry in the line drawing area will not take effect. Click [Clear Line Drawing] to clear the edge line set in the channel screen.

(6) After setting, click the [Apply] button to save the Parameter setting and synchronize it to the front-end equipment.

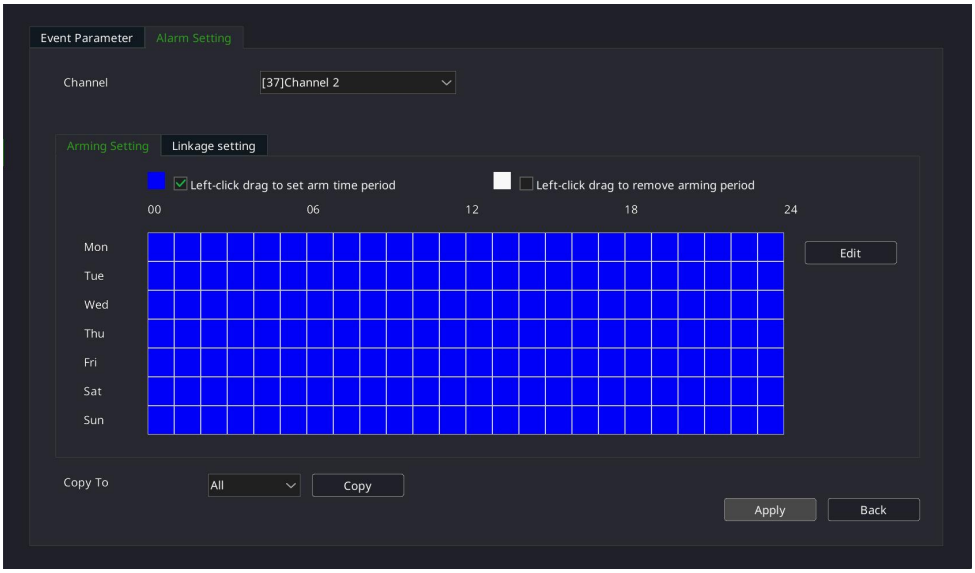
Explain：

- The device supports three thermometry units: Celsius, Fahrenheit, and Kelvin. The system defaults to Celsius.
- The device supports automatic, -15 ° C to 150 ° C and 50 ° C to 550 ° C thermometry ranges, automatic, 122 ° F 122 ° F to 1022 ° F 1022 ° F and 55 ° F to 302 ° F thermometry ranges, and automatic, 323.1 K to 823.2K and 258.1 to 423.1K Kelvin thermometry ranges.
- The device supports two thermometry information display positions: the upper left corner of the image and the regular periphery.
- The thermometry information includes temperature bar and temperature information. The temperature information includes the highest temperature, the lowest temperature and the average temperature. Select [Thermal image channel display temperature information] and [Visible light display temperature information] to display the temperature information on the corresponding channel.
- Reflective filter sensitivity ranges from 0 to 100 and can be set according to the actual environment.

- In the configuration interface, the channel screen does not display the temperature information.

4.10.4.2 Alarm settings

1、In the event Parameter interface, click [Next] to set the alarm linkage, as shown in the following figure.



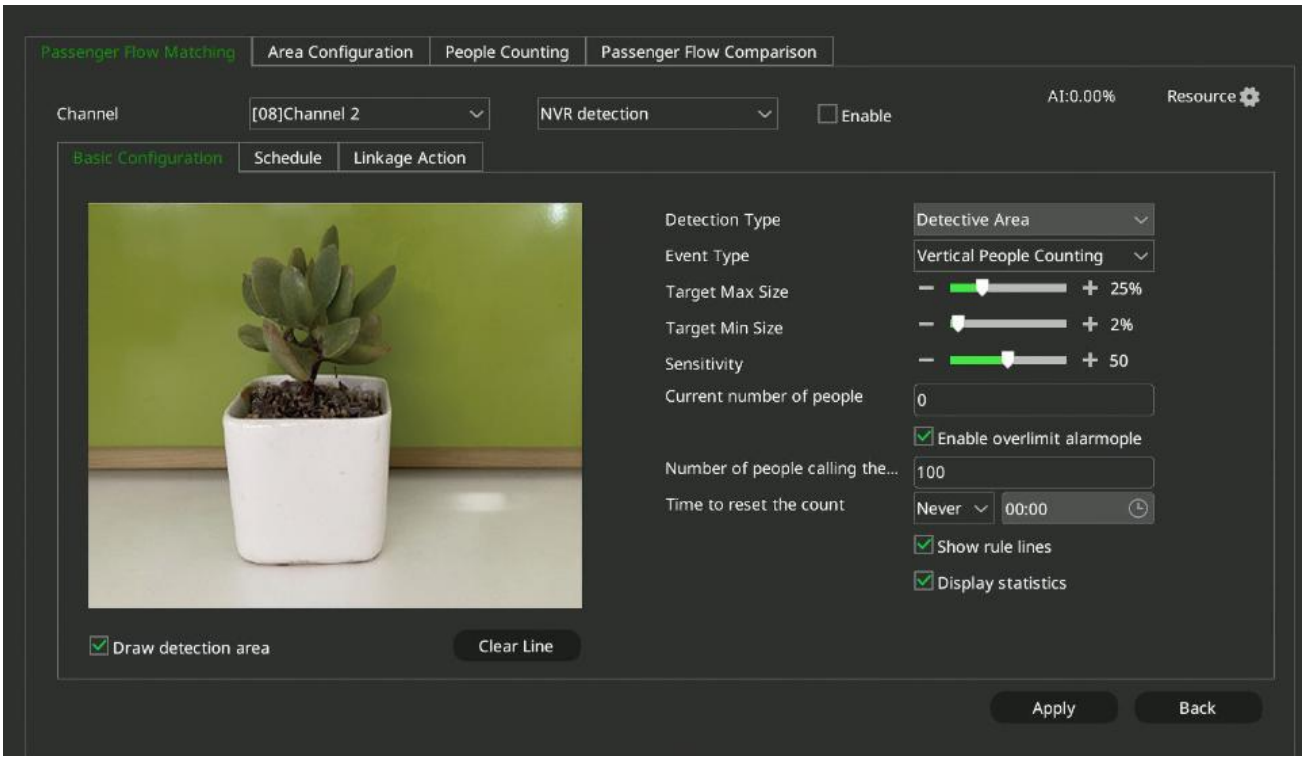
2. Set the deployment time in the deployment setting interface.

3. Enter [Linkage Settings] to set intelligent analysis and alarm linkage. You can set alarm linkage sound prompt, screen display, linkage video recording, linkage alarm output, linkage PTZ, linkage snapshot, etc.

4.10.5 Passenger flow

4.10.5.1 Configuration of passenger flow

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



2. Select the channel to be configured, check the Enable check box, and enable the algorithm. Draw the detection area and the detection direction, and click [Clear Line] to clear the line on the page.

3. Set the detection type, the maximum/minimum size of the target, and the sensitivity.

4. Click the [Apply] button to save the data, 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	The arrow direction of the statistical line is to enter. Draw a statistical line

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.

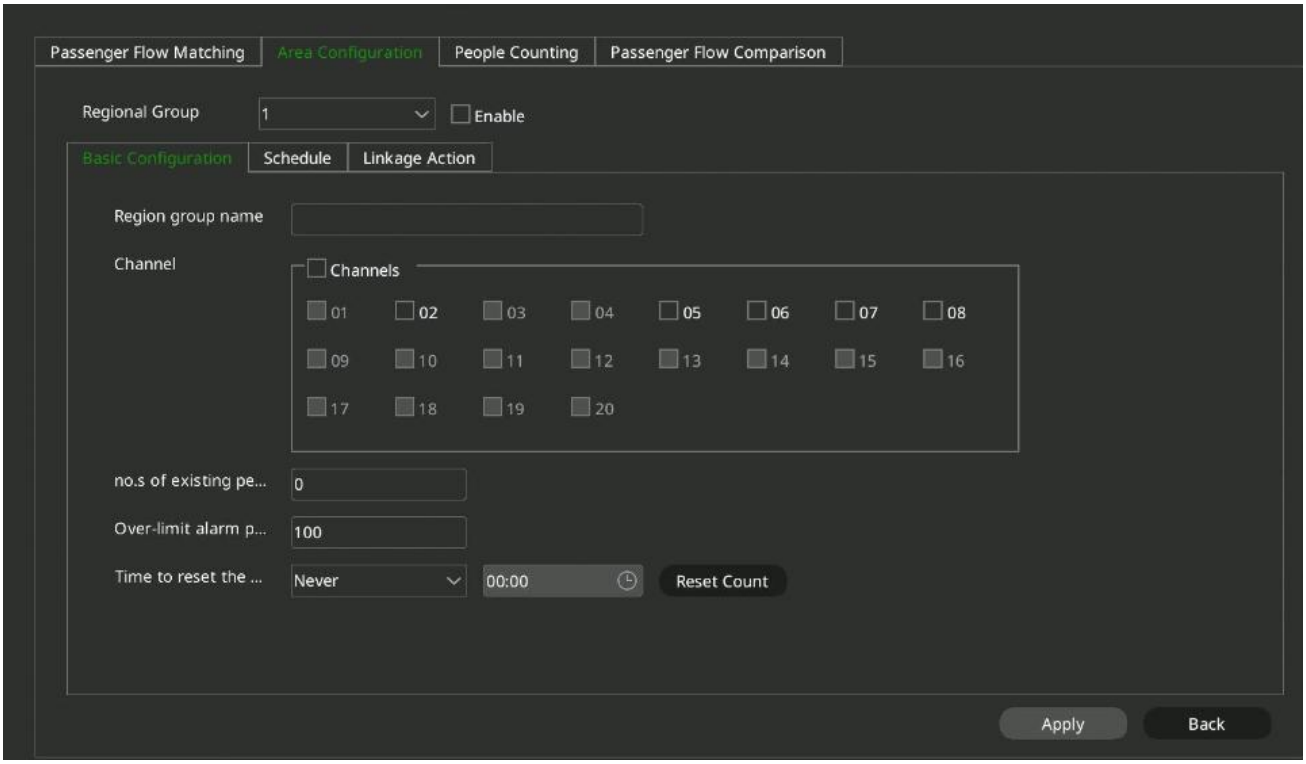
Algorithm configuration Parameter:

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

4.10.5.2 Regional configuration

1.Enter [Main Menu-> Intelligent Analysis-> Passenger Flow], select the Area Configuration tab, and enter the [Area Configuration] page, as shown in the following figure.



2. Check the Enable check box to enable the algorithm.

The interface Parameter Explain is as follows:

[Region]: Set the detection region sequence number and enable the region configuration algorithm.

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

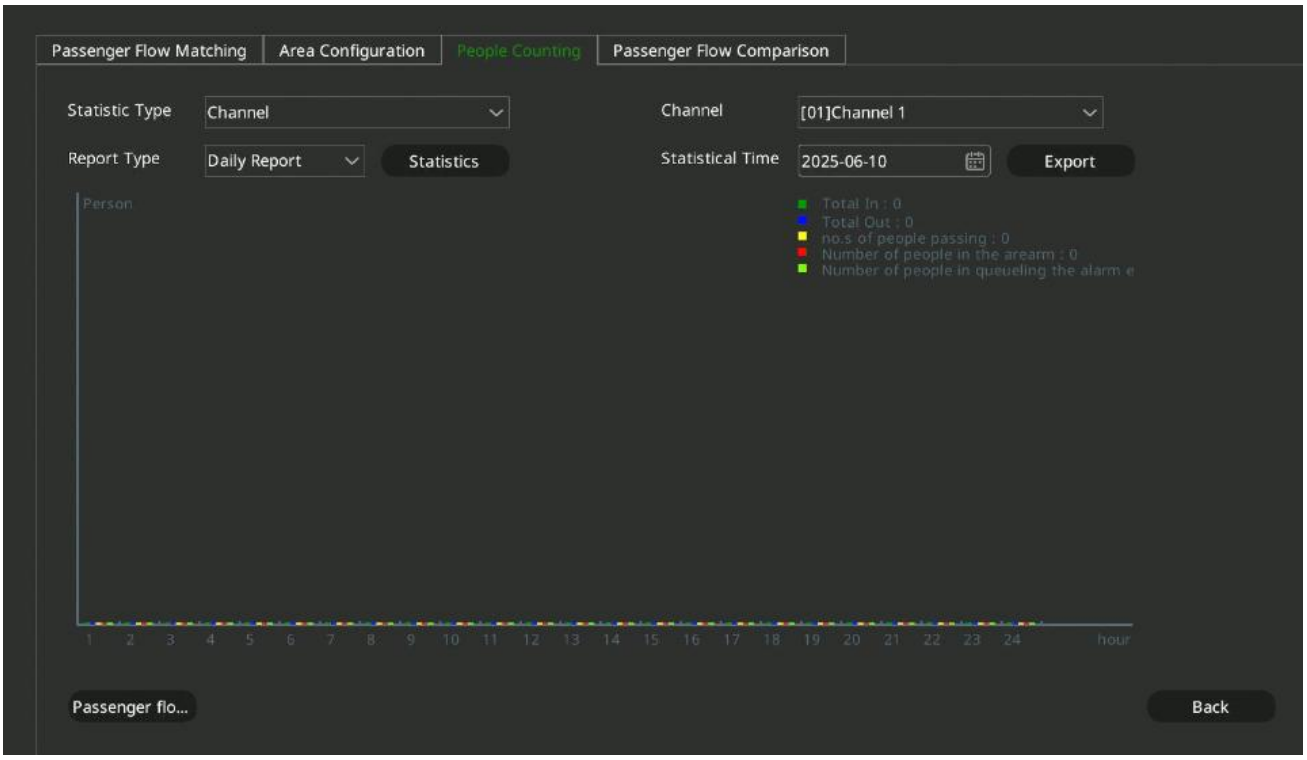
[Existing number of people]: set the number of people allowed in this area.

[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.

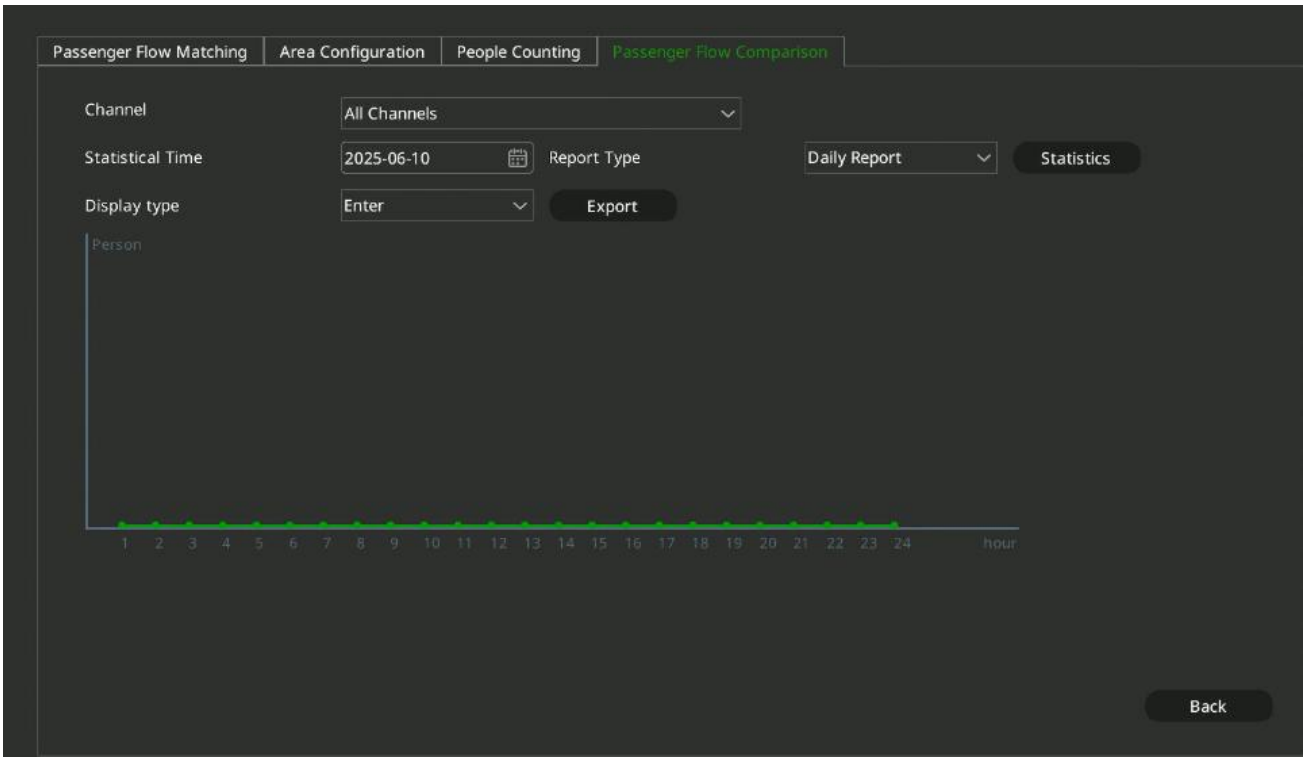
4.10.5.3 Passenger flow statistics

1. Enter [Main Menu-> Intelligent Analysis-> Passenger Flow], select the passenger flow statistics tab, support statistics by region or channel, select the channel or region to be counted, set the statistics type and time, and click the [Statistics] button, as shown in the following figure.



4.10.5.4 Comparison of passenger flow

1. Enter [Main Menu- > Intelligent Analysis- > Passenger Flow], select the passenger flow comparison tab, support the number of people in multiple channels according to the two types of entering or leaving, select the channel to be compared, set the statistical type and statistical time, and click the [Statistics] button, as shown in the following figure.



Explain：

- This function supports up to 5 channels for comparison.

4.10.6 Intelligent Retrieval

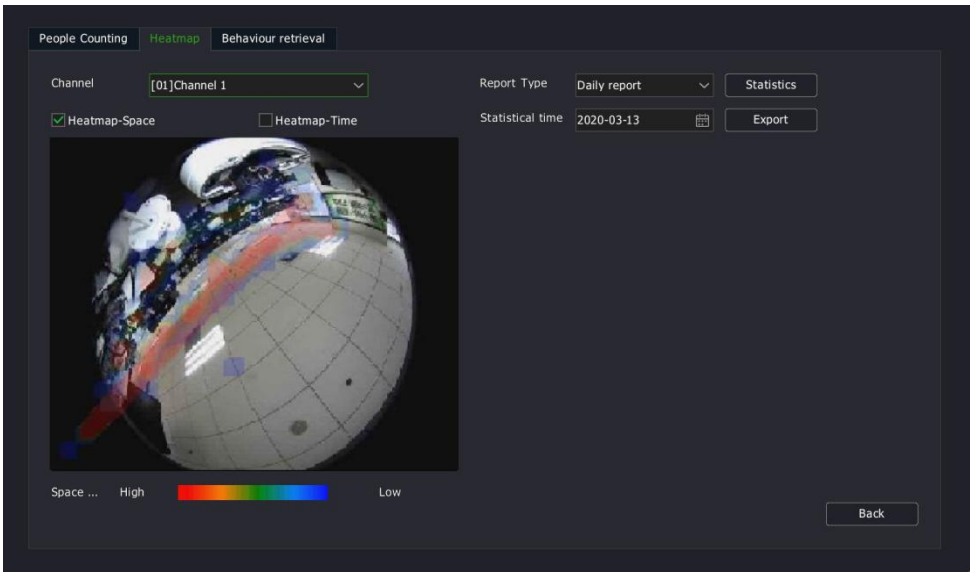
4.10.6.1 Intelligent search

1、Enter [Main Menu-> Intelligent Analysis-> Intelligent Retrieval], and select the Intelligent Retrieval tab. Select the channel number, time, type and target, and click the [Search] button to make statistics on the alarm type and alarm target respectively, and display the imaging chart or line chart. Click [Export] to export the corresponding picture or report.

4.10.6.2 Heat Map

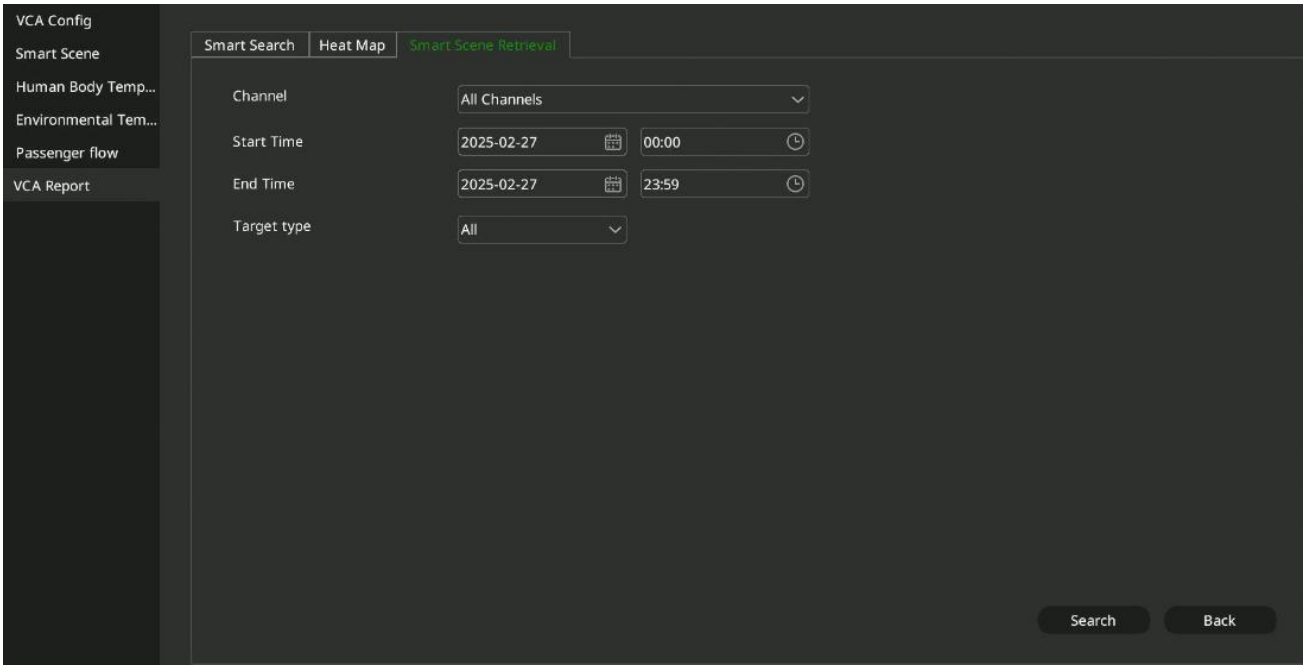
1. Enter [Main Menu-> Intelligent Analysis-> Intelligent Retrieval], and select the heat Icon tab, as shown in the following figure. Select the channel number and report type,

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.



4.10.6.3 Intelligent scene retrieval

1. Enter [Main Menu-> Intelligent Analysis-> Intelligent Retrieval], select the intelligent scene retrieval tab, select the channel number and retrieval time, support multi-channel retrieval at the same time, and click the [Retrieval] button to perform intelligent scene retrieval.



4.11 Bayonet management

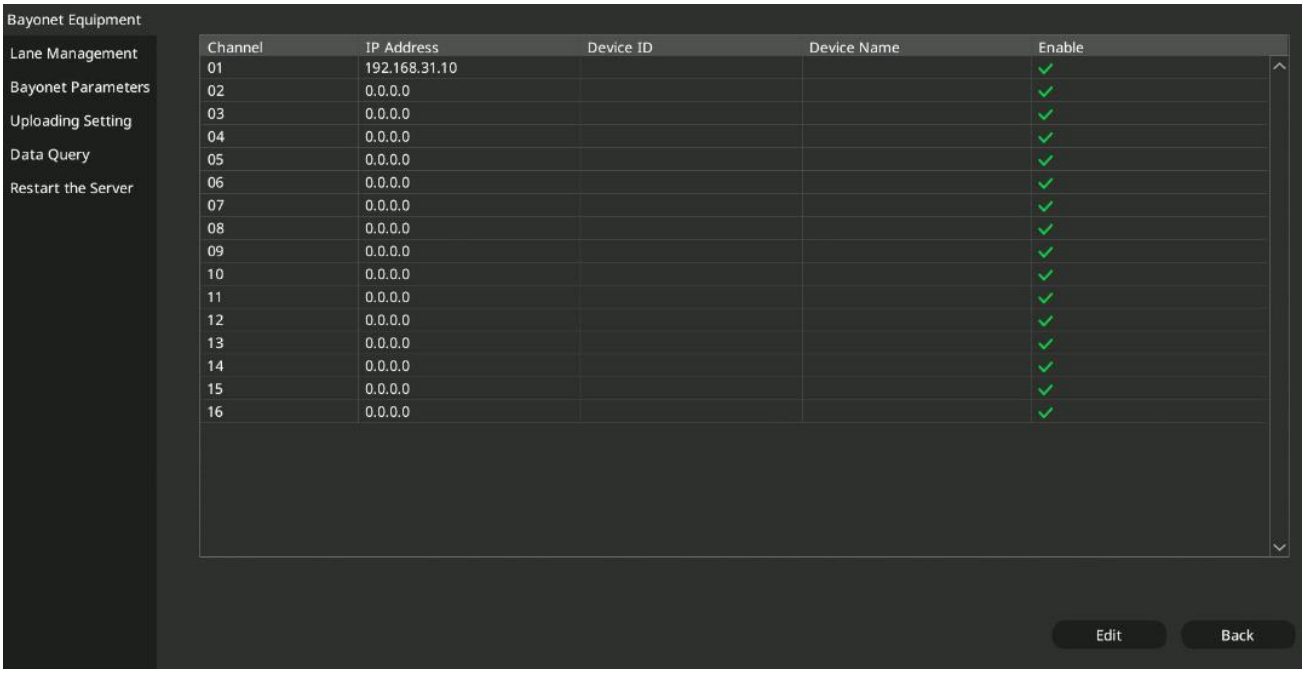
Explain：

- To use this Function, at least one hard disk must be connected between SATA 1 and SATA 4.
- Supports up to 16 lanes.

4.11.1 Bayonet equipment

Add and edit bayonet devices, etc.

1. Enter [Main Menu-> Checkpoint Management-> Checkpoint Device], as shown in the following figure.



2. Double-click an existing channel or select an existing channel and click the [Edit] button to enter the interface for adding bayonet devices.

3. Input the device number, device name and device ID, and check whether to link the single screen of the channel or the video of the channel.

4. Click the [Port Selection] button to select the output port to be linked.

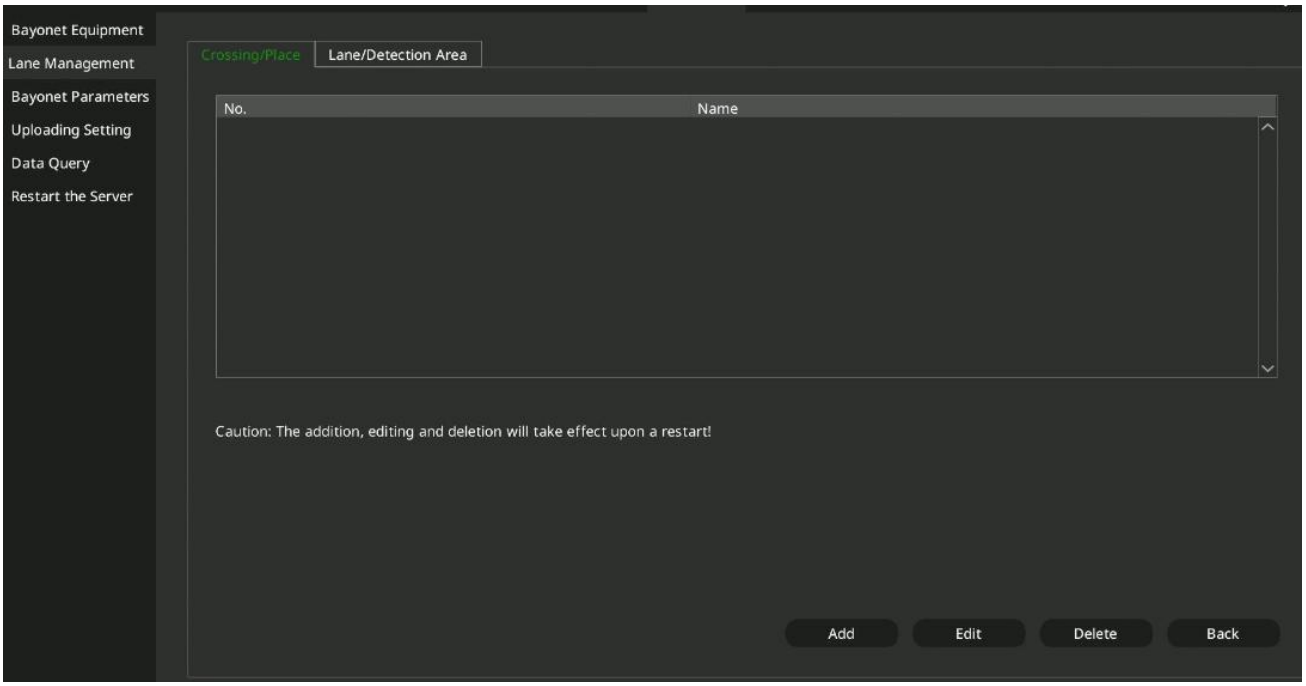
5. After modification, click OK. If the device number, device name, and device ID are modified, the service needs to be restarted to take effect. If only the check status related to linkage is modified, the service does not need to be restarted.

4.11.2 Lane management

4.11.2.1 Intersection/Location

Add, edit, delete junctions/locations, etc.

1. Enter [Main Menu-> Checkpoint Management-> Lane Setting] and select the intersection/location label, as shown in the following figure.

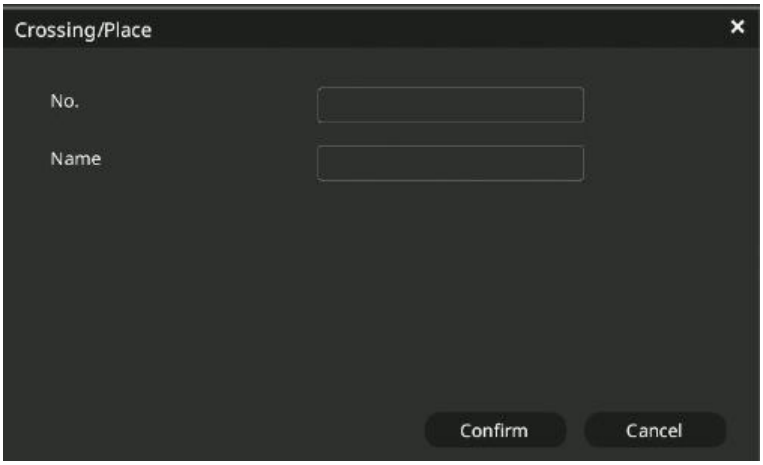


2. Click the [Add] button under the intersection/location setting to pop up the intersection/location addition interface. After entering the number and name, click [OK] to complete the intersection/location addition.

Notice:

- The number cannot be repeated, and the minimum number is five digits.

3. Click the [Edit] button under the intersection/location setting to pop up the intersection/location editing interface, where only the name can be edited.



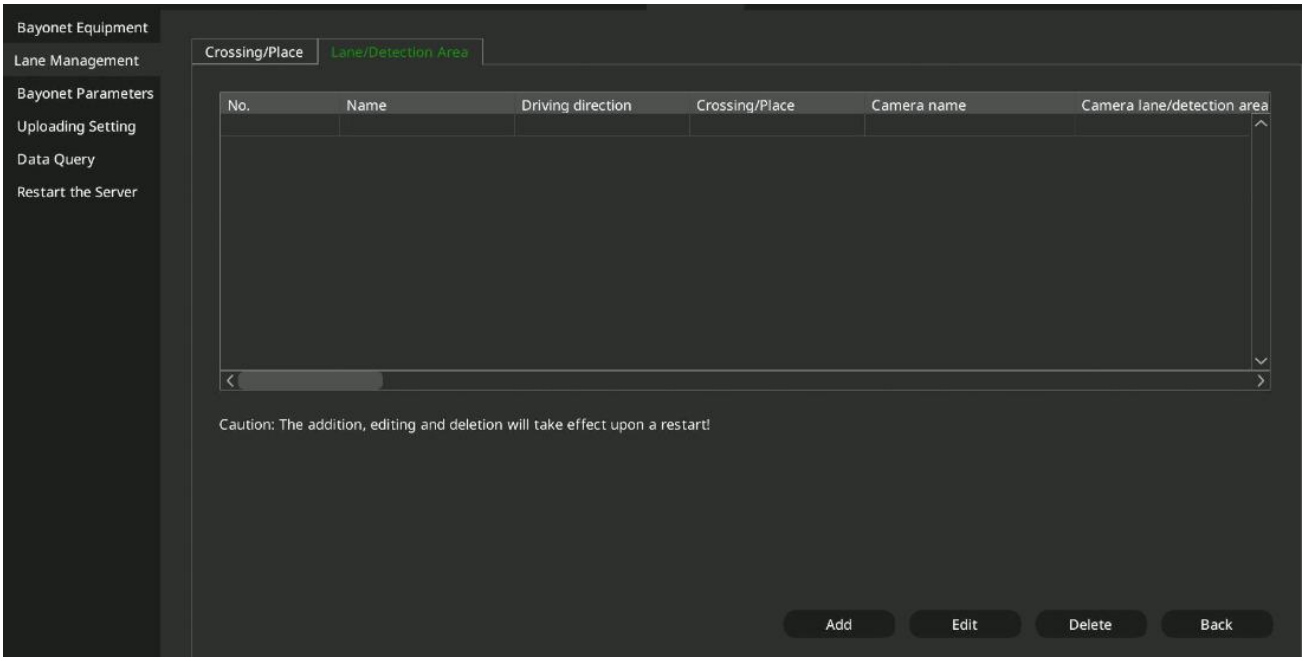
4. Click the [Delete] button under the intersection/location setting to pop up a confirmation box, and delete it after confirmation.

Notice:

- After adding, editing, or deleting a junction/location, the service needs to be restarted to take effect.

4.11.2.2 Lane/Detection Area

1. Enter [Main Menu- > Checkpoint Management- > Lane Setting] and select the lane/detection area label, as shown in the following figure.

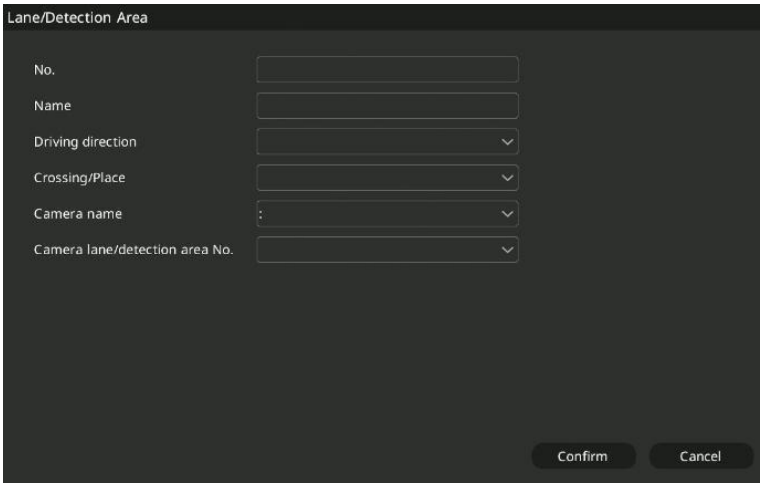


2. Click the [Add] button in the lane/inspection area interface to pop up the adding interface. Enter the number and name, select the driving direction, intersection/location, camera name, camera lane/detection area number, and click OK. The newly added lane/detection area will be displayed in the lane/inspection area list.

Explain：

- Each intersection can have 64 lanes, and the lane number of the same intersection can not be repeated.
- Intersections can be selected from the intersections added on the Intersection/Location page.
- The optional camera name is the device added in the bayonet device, and each camera has 128 optional camera lane/detection area numbers. In addition, the detection area of the same camera cannot be repeated, and the number of the used detection area of the camera will be automatically screened out.

3. Click the [Edit] button in the operation under lane/inspection area setting to pop up the editing interface, where you can modify the name, driving direction, intersection/location, camera name, and camera lane/inspection area number, as shown in the following figure.



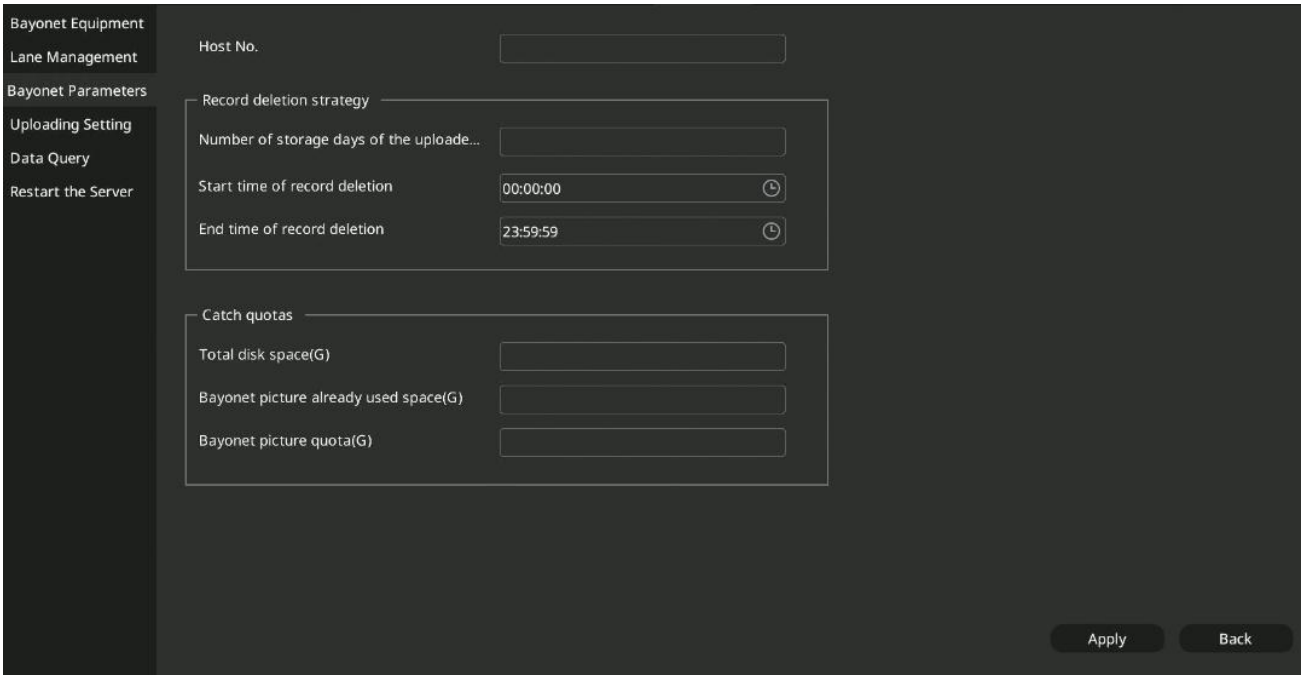
4. Click the [Delete] button in the operation under the lane/inspection area setting to pop up the confirmation box, and then delete it after confirmation.

Notice:

- After adding, editing, or deleting a lane/detection zone, the service needs to be restarted to take effect.

4.11.3 Bayonet Parameter

Enter [Main Menu- > Bayonet Management- > Bayonet Parameter], as shown below.



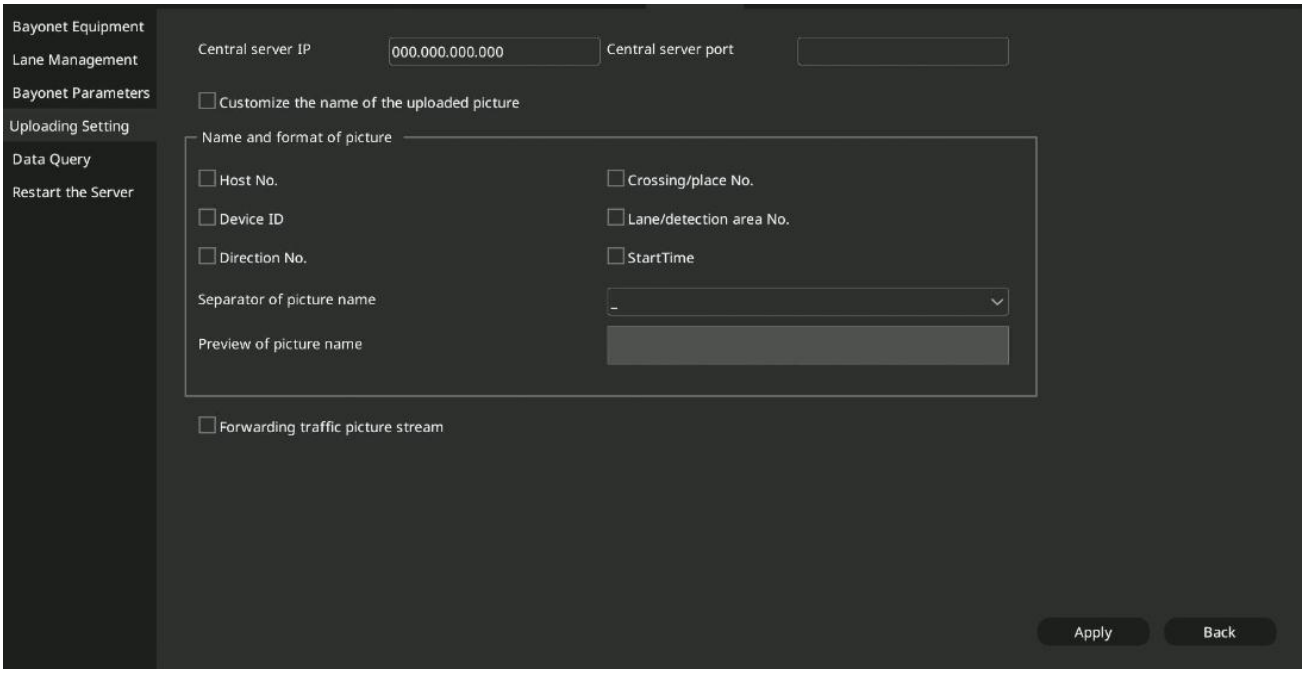
Explain：

- Host number: refers to the number used to establish connection with the platform when uploading the snapshot data to the superior platform, which shall be the same as the platform setting.
- Number of days to save uploaded records: the number of days to save uploaded records.
- Record deletion start and end time: the time when the disk policy is executed.
- Total Disk Space: Total NVR disk space.
- Used space of bayonet picture: the space occupied by the picture captured by the bayonet.

- Bayonet Image Quota: The total space allocated to images captured by the bayonet.

4.11.4 Upload Settings

Enter [Main Menu-> Checkpoint Management-> Upload Settings], as shown in the following figure.



Explain：

- IP address of central server: fill in the IP address of the central server that receives the snapshot.
- Central server port: fill in the port of the central server.
- Customize the name of the uploaded picture: After it is enabled, the user can flexibly set the name of the uploaded picture. The separator of the picture name includes "_".
- Picture name preview: The format of the picture name can be previewed in real time here by checking or unchecking the six check boxes of host number, intersection/location

number, equipment number, lane/detection area number, direction number and capture time.

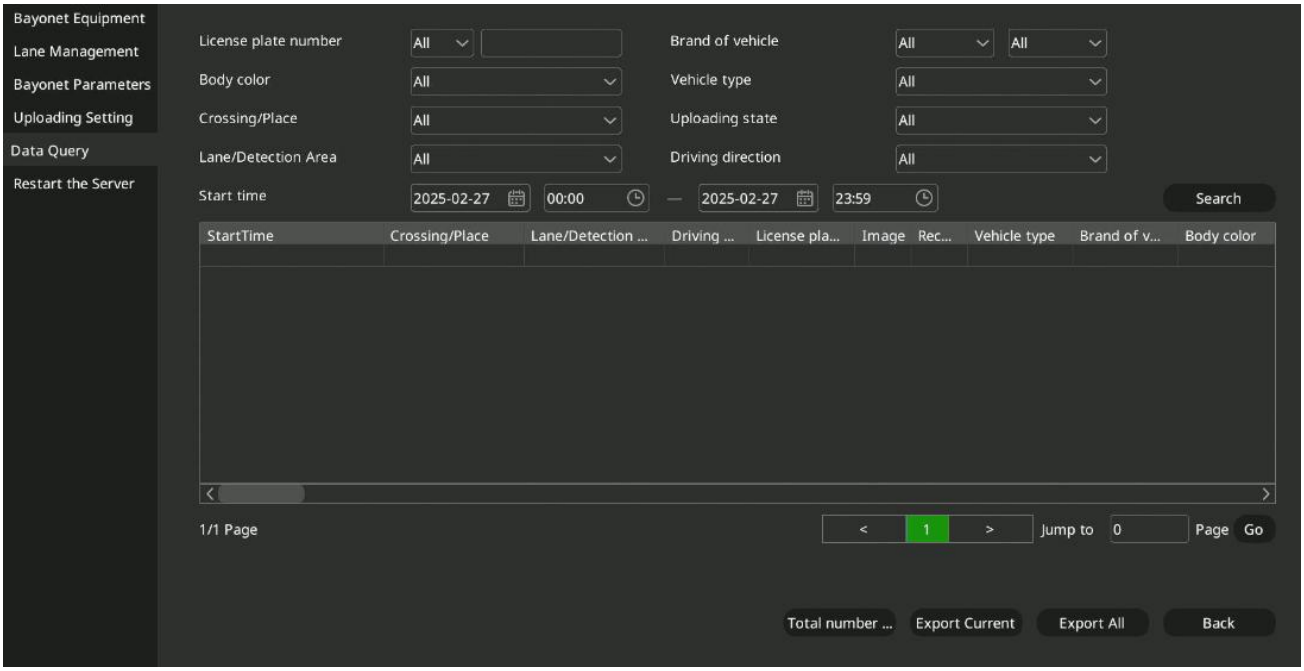
- Forward traffic picture stream: upload the snapshot to the central server by checking the Enable Upload setting.
- Apply: After the user clicks [Apply], [Parameter is set successfully, and it will take effect after restarting the service!] will pop up. Prompt message for.

Notice:

- After modifying any Parameter on the interface, the service needs to be restarted to take effect.

4.11.5 Data query

1. Enter [Main Menu-> Checkpoint Management-> Data Query], as shown in the following figure.



2. Query

The query conditions include license plate number, vehicle brand, vehicle body color, vehicle type, intersection/location, upload status, lane/detection area, driving direction, starting and ending time, etc. After selecting the corresponding query conditions, click [Query], and the qualified snapshot records will be displayed in the list below.

3. First page, previous page, next page and last page

Provide page turning Function.

4. Total number of queries

Click [Total Query Items] to display the query progress bar.

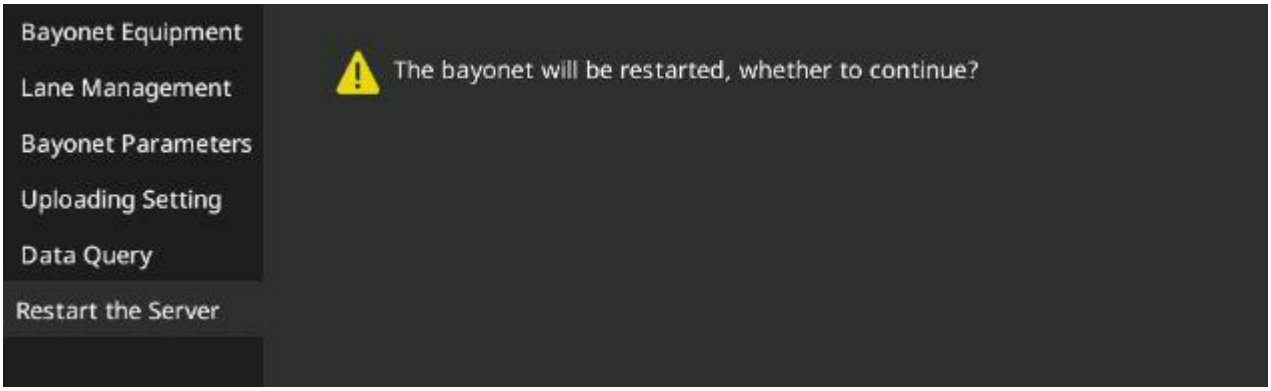
At the end of the query, the total number of pages and entries of the query results will appear at the bottom left of the list.

5. Export the current page and export all pages

Query results can be exported.

4.11.6 Restart Service

Enter [Main Menu- > Checkpoint Management- > Restart Service], as shown below.



Restart the service interface, click [Continue] to pop up the restart bayonet service progress bar, and it will end in 10 seconds.

After restarting the service, the checkpoint management interface will be closed, and the checkpoint management will be re-entered to view the status after the service takes effect.

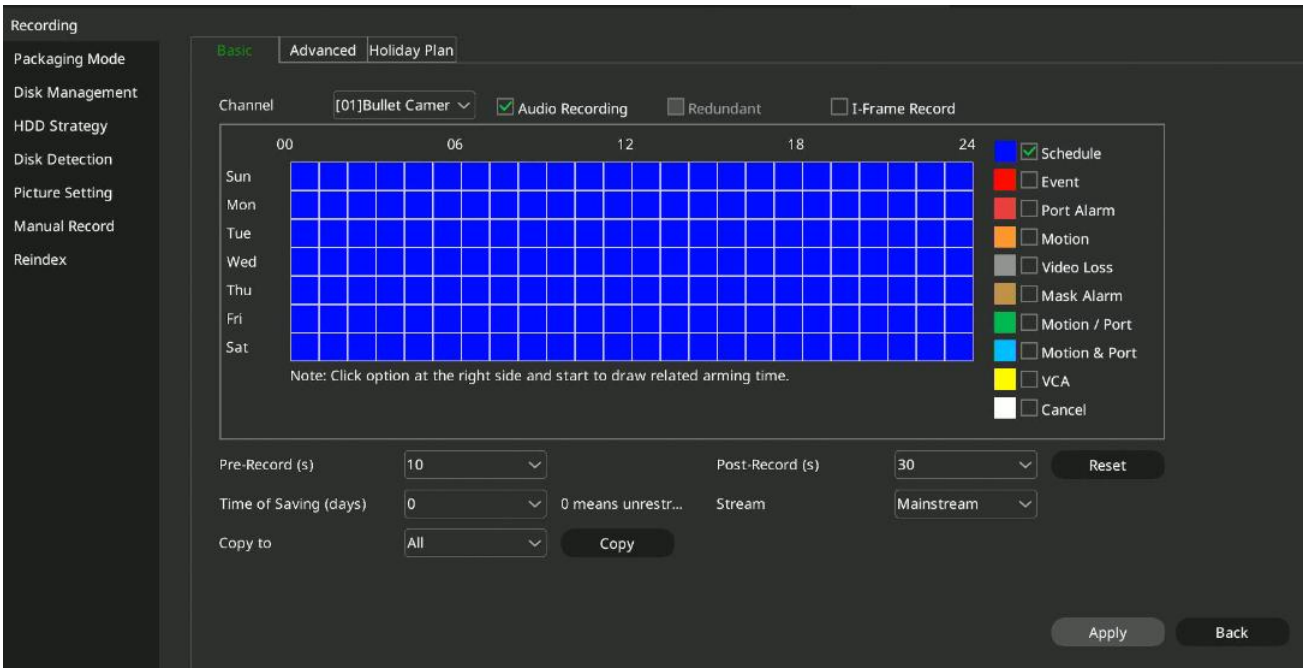
4.12 Storage Settings

Configure the storage of videos and pictures.

4.12.1 Video recording strategy

4.12.1.1 Basic Settings

1. Enter [Main Menu-> Storage Settings-> Video Strategy], and select the Basic Settings tab, as shown in the following figure.



2. Select the channel to be set.

3. Select whether to [Record audio], whether to enable [Redundant video recording/snapshot], and whether to enable [Frame extraction video recording].

- When [Record Audio] is not checked, only video data is saved in the video file.
- When there is a redundant disk in the system and the [Redundant Video/Snapshot] Function is enabled for the selected channel, the video and snapshot image files will be saved in the video disk and the redundant disk respectively.
- After enabling [Framing Video], the system will perform framing processing on the video file, which can greatly save the hard disk space for the video in the non-key area.

4. 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.

5. 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.

6. Set the pre-recording and delayed recording time of the alarm video.

- Pre-recording time: 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.
- Delay recording time: the delay time of the video recording is applied to the alarm video recording. If 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.

- 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.

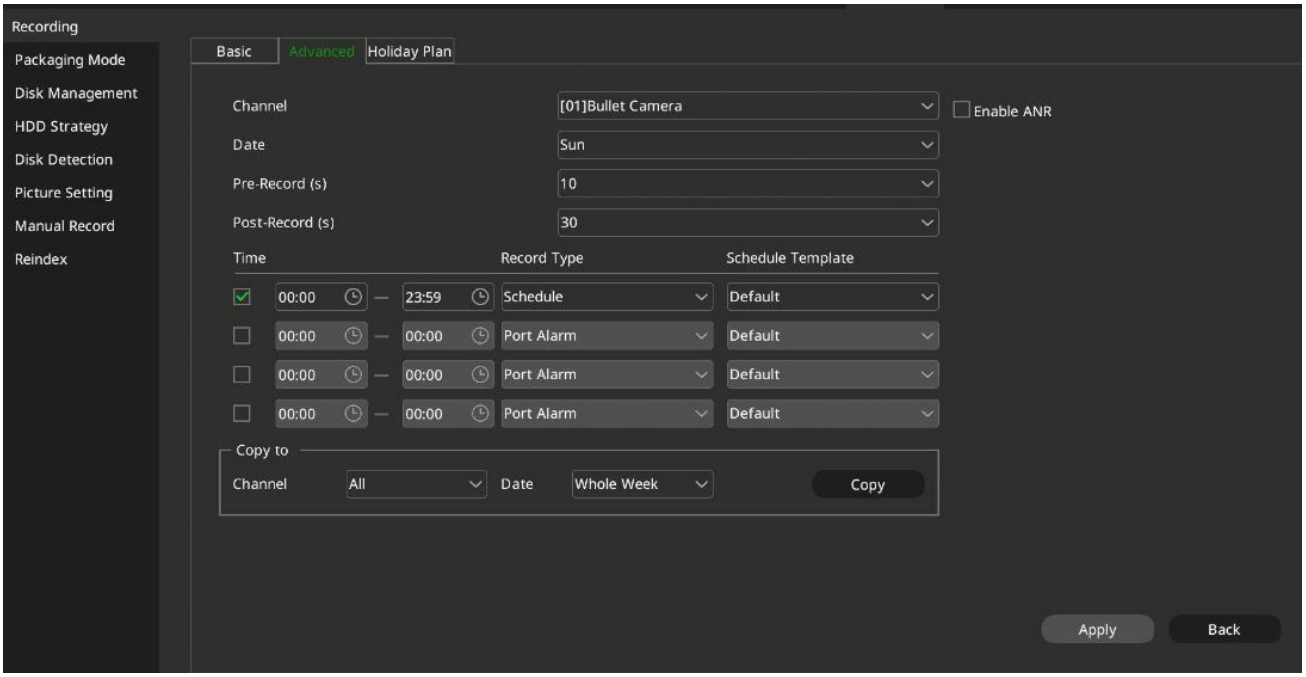
7. Set the maximum video retention time in days. A value of 0 indicates no limit. The maximum video retention time is 120.

8. Set the bit stream type of video recording, including main bit stream and auxiliary bit stream. Some models also support dual-bit stream video recording.

9. Click [Apply] to save the configuration.

4.12.1.2 Advanced Settings

1、Enter [Main Menu-> Storage Settings-> Video Strategy], and select the Advanced Settings tab, as shown in the following figure.



2. Select the channel to be set.

3. Set whether to enable the ANRFunction of the front-end IPC. If it is enabled, 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.

4. Select the pre-recording time in the [Pre-recording] drop-down list.

5. Select the delay time of video recording in the [Delay] drop-down list.

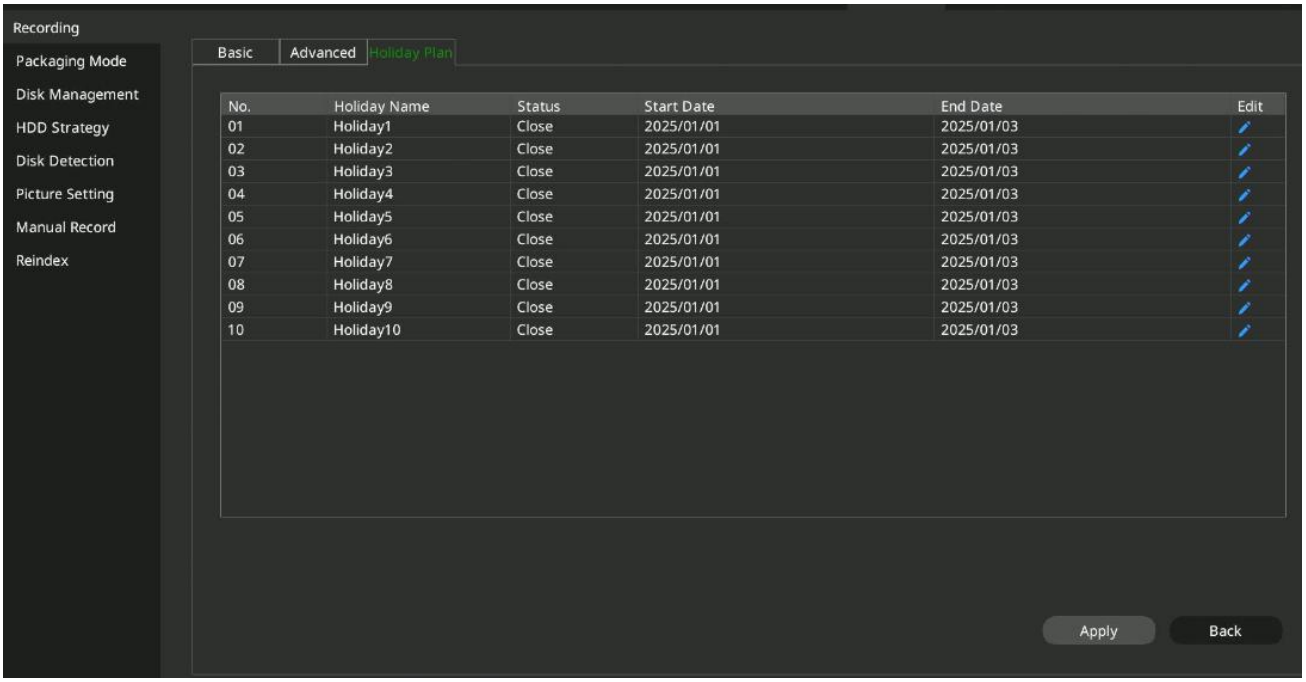
6. Set the time period and the video type in the time period. Click the Time Block Enable option box to make it selected. Enter the start and end time of the time period in the time period input box. Select a recording type from the [Recording Type] drop-down list. Different recording types can be specified for different time periods.

7. Copy the current template Parameter to the channel and date.

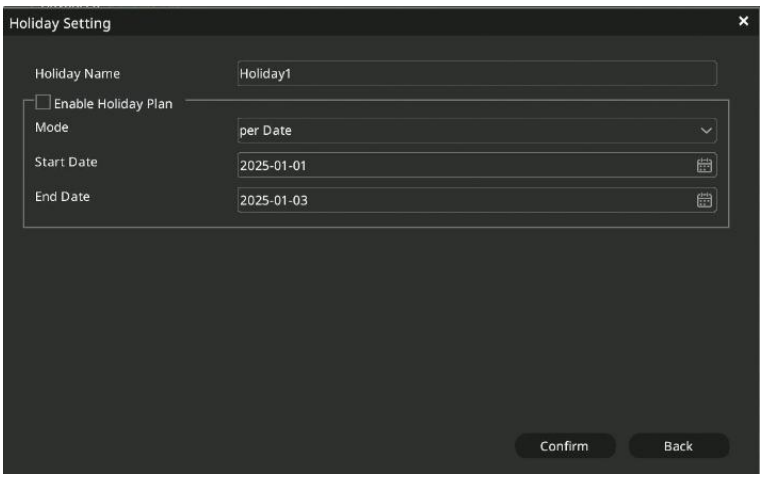
8. Click [Apply] to save the configuration.

4.12.1.3 Holiday planning

1. Enter [Main Menu-> Storage Settings-> Video Strategy] and select the Holiday Plan tab, as shown in the following figure.



2. Click to select a holiday in the list, and click [Edit] or double-click the left mouse button to enter the [Holiday Settings] interface.



3. Check [Enable Holiday Schedule] and select the holiday setting method [By Date], [By Month], or [By Week]. Enter the start date and end log for the holiday. Click [OK] to save the configuration.

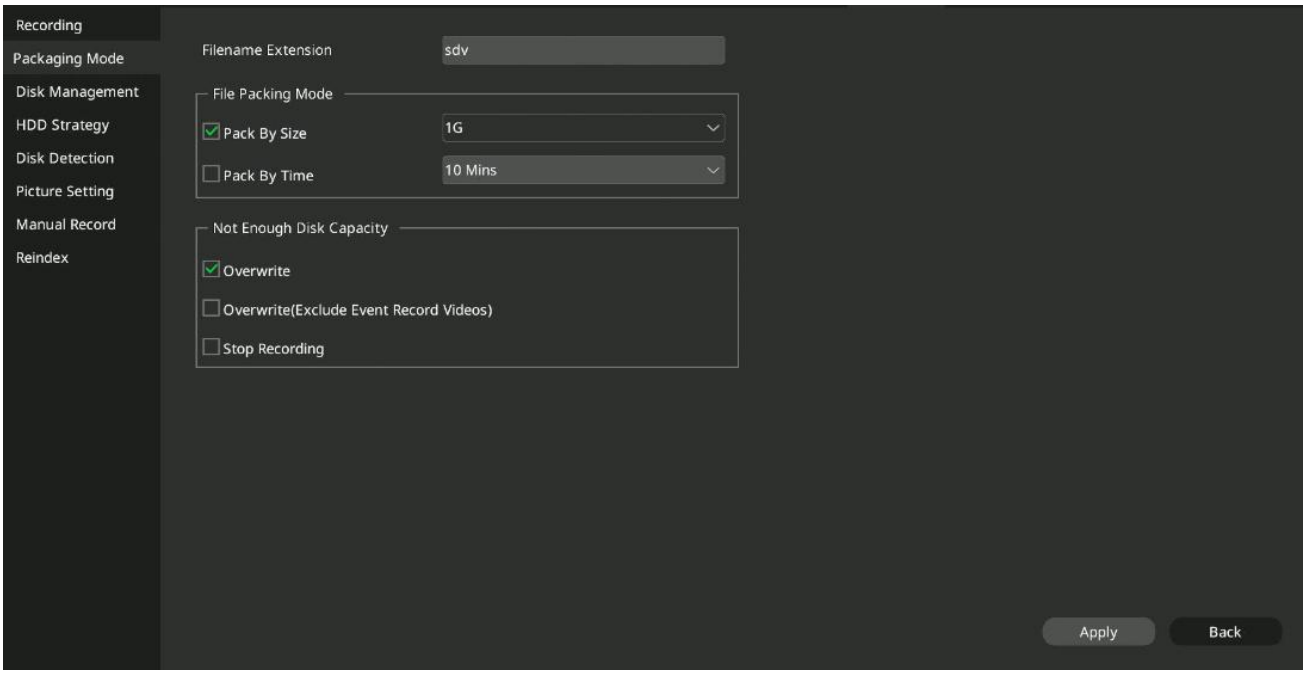
4. After enabling the holiday plan, you can select a holiday in [Date] of [Advanced Settings] and set the corresponding video template for the holiday. All enabled holiday schedules will be videotaped according to this template.

Explain：

- The current year's holiday video schedule can be configured.
- After the holiday schedule is enabled, the video recording schedule is preferentially executed during the holidays.
- Unless otherwise specified, all week-by-week configurations use Sunday as the first day of the week.

4.12.2 Packaging Strategy

1、Enter [Main Menu-> Storage Settings-> Packaging Policy], as shown in the following figure.



2、Select the handling mode of the system when the disk space is insufficient.

Stop recording: no more recording packing operation;

Circular deletion: delete the oldest video files to create space for new videos;

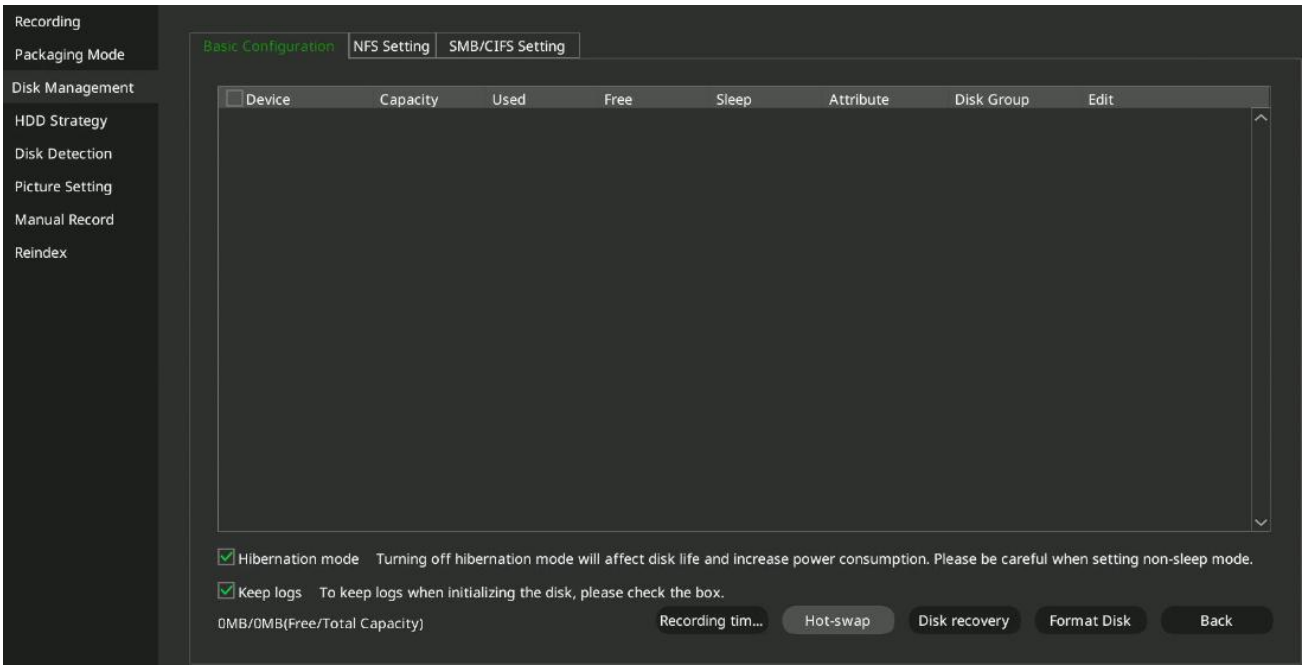
Cycle delete (except alarm file): delete the earliest video file (do not delete the alarm video) to create space for the latest video.

3、Click [Apply] to save the configuration.

4.12.3 Disk Management

4.12.3.1 Basic configuration

1. Enter [Main Menu-> System Settings-> Disk Management] and select the Basic Settings tab, as shown in the following figure.



2. When two or more disks are connected to the device and configured as the same disk group, "✎" will appear in the edit column in the list. Click "✎" to modify the disk usage, including read-write, backup, redundancy and read-only.

3. The total remaining capacity and total capacity of the current hard disk and virtual disk can be displayed in the interface.

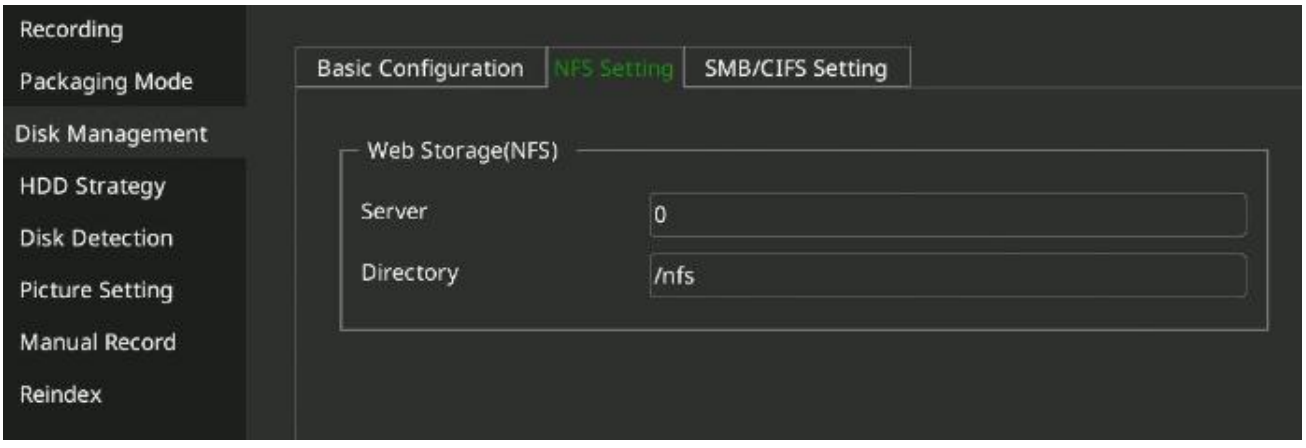
4. Hot plug. After selecting a disk in the disk list, click the [Hotplug] button, and the system will pop up the following prompt. Click the [OK] button to perform the hotplug operation on the disk.

5. Disk repair. Set whether to detect all disks and whether to repair damaged disks after the device is powered off and restarted. Click the [Disk Detection] button to pop up the disk detection window.

6. Initialization. Initialize the selected disk, and the U disk can select the initialization format.

4.12.3.2 NFS

1. Enter [Main Menu-> System Settings-> Disk Management] and select the NFS Settings tab, as shown in the following figure.

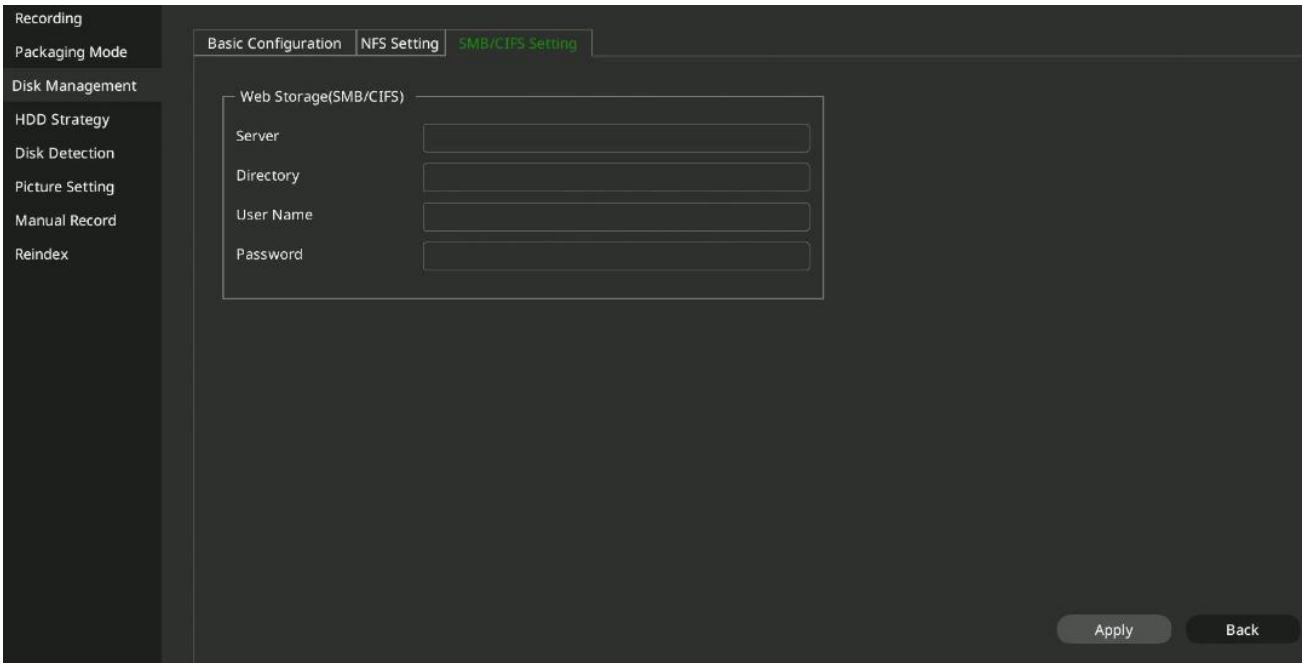


2. Set the IP address (domain name) and directory of the [NFS] service.

3. Click [Apply] to save the configuration.

4.12.3.3 SMB/CIFS

1. Enter [Main Menu-> System Settings-> Disk Management] and select the SMB/CIFS Settings tab, as shown in the following figure.

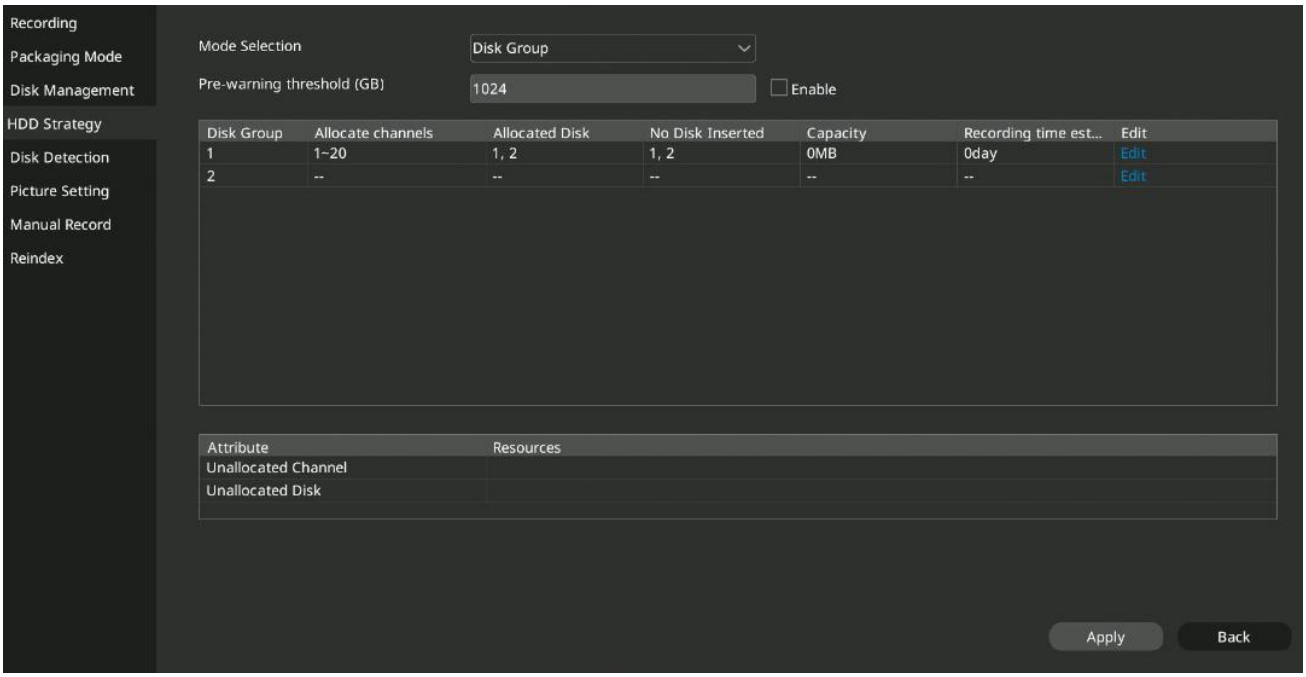


2. Set the IP address, directory, username, and password for the [SMB/CIFS] service.

3. Click [Apply] to save the configuration.

4.12.4 Disk Policy

1、 Enter [Main Menu-> Storage Settings-> Disk Set Quota], as shown in the following figure.



2. Set disk group or quota.

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.

Explain：

- Mode switching requires the device to be restarted.

3. Disk set setting.

(1) [Mode Select] Select [Disk Pack].

(2) Select the disk pack. There are eight disc packs from 1 to 8 in the drop-down box for selection.

(3) Select a disk for the disk group. Set which disks belong to the disk group. Check [Disk Select All] to select all available disks. A disk cannot belong to multiple disk groups at the same time.

(4) Select a channel for the disk stack. Selects which channels are recorded in the disc pack.

(5) Click the [Apply] 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.
- When eSATA is not a backup disk, it appears in the Disk All box.
- NVR defaults to a disk pack with a maximum of 40 channels, subject to the actual channels of the device.

4. Quota configuration

(1) [Mode Selection] Select [Quota].

(2) Select the channel to be set. Select the channel for which you want to set the quota from the [Channel] drop-down box.

(3) Set video quota. Set the maximum storage space occupied by the video file of the channel in GB, and 0 means unlimited size.

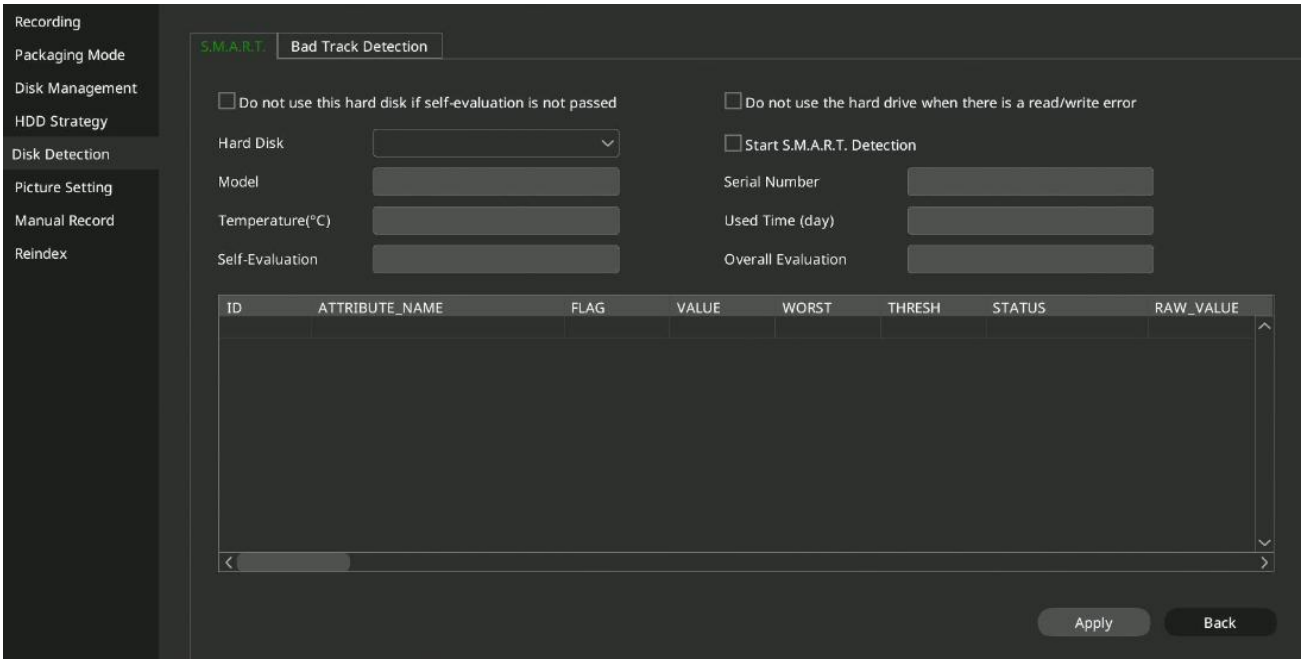
(4) Set the picture quota. Set the maximum storage space occupied by the image file of the channel in GB. 0 means unlimited size.

(5) Save the settings. Click the [Apply] button to save the settings.

4.12.5 Disk Detection

4.12.5.1 S.M.A.R.T.

1. Enter [Main Menu-> System Settings-> Disk Settings] and select the SMART tab, as shown in the following figure.



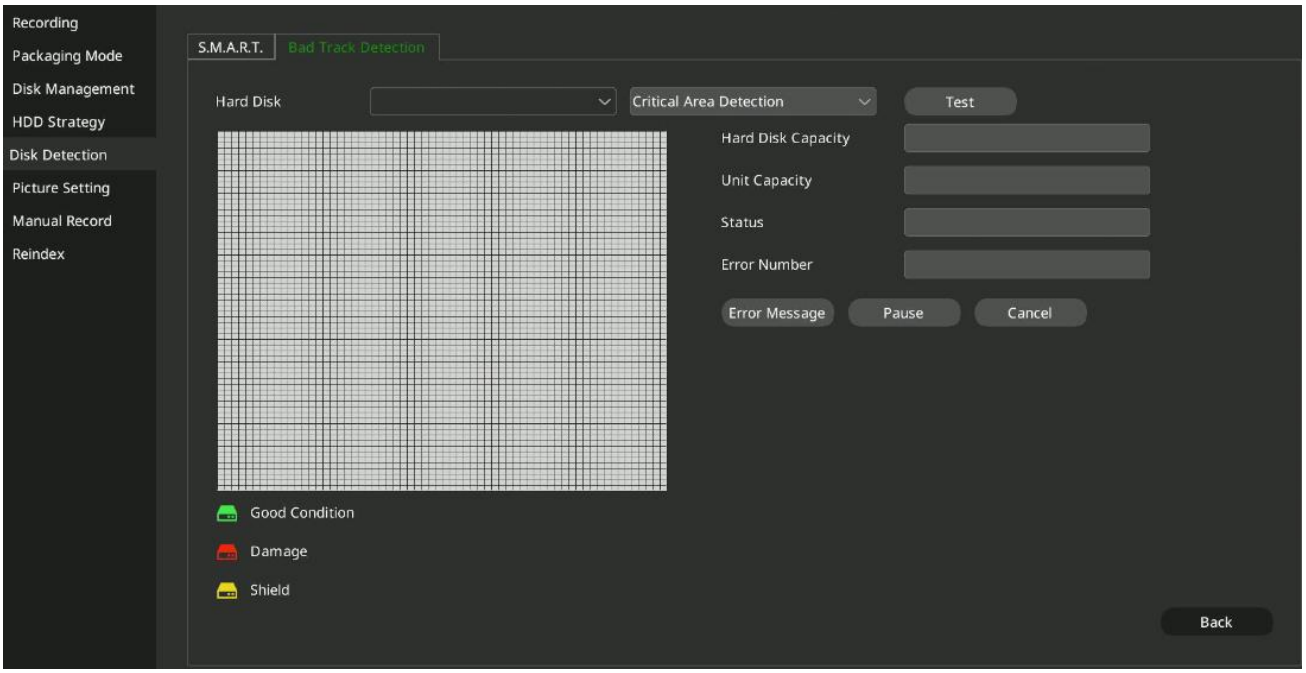
2. Select the disk to be detected, and check [Enable S. M. A. R. T detection] to enable the S. M. A. R. T detection Function of the disk. The S. M. A. R. T detection information is displayed in the corresponding interface.

3. When [Do not use the hard disk when the self-assessment of the hard disk fails] is checked, the hard disk will not be used if there is a problem in the self-assessment after the hard disk S. M. A. R. T is detected.

4.12.5.2 Bad track detection

1. Go to [Main Menu-> System Settings-> Disk Settings] and select the Bad Track Detection tab.

2. Select the hard disk and the detection mode, and click the detection button to enter the detection state, as shown in the following figure.



3. Click Pause to pause the bad track detection; click Resume to resume the bad track detection;

4. Click Cancel to cancel this bad track detection;

5. Click the error message to view the bad track of the hard disk.

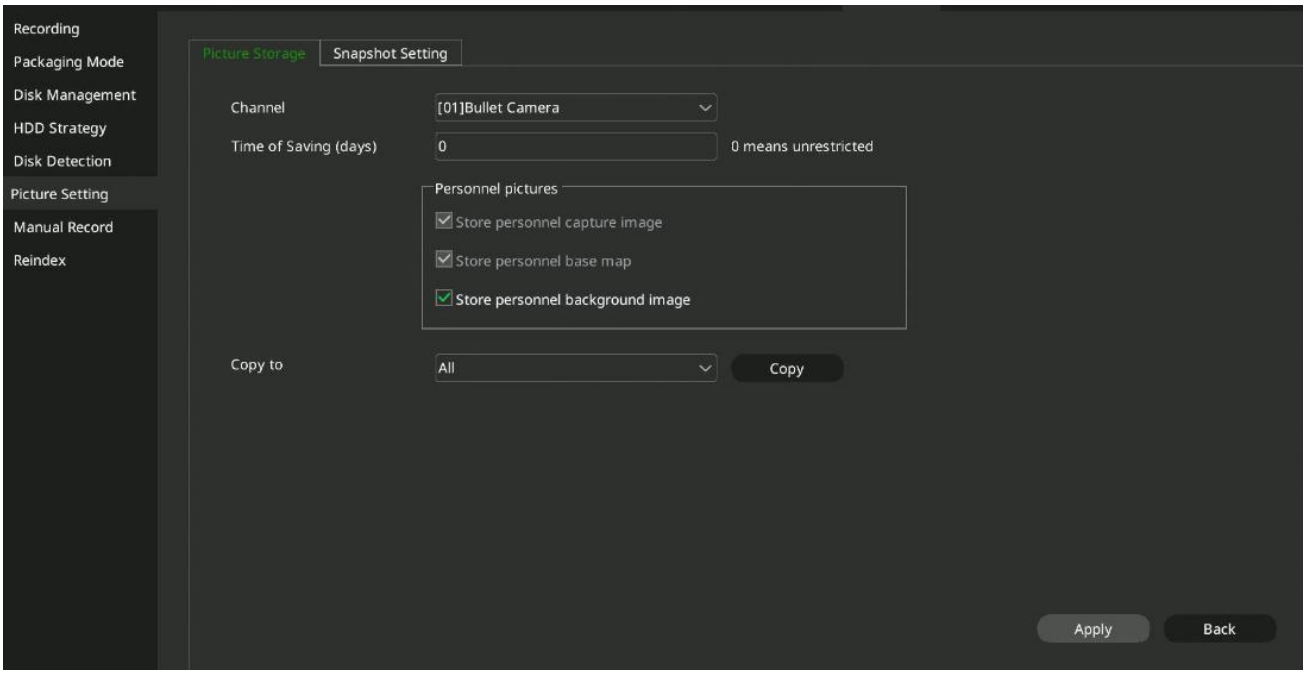
Explain：

- The error message 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.

4.12.6 Picture Settings

4.12.6.1 Picture Storage

1、Enter [Main Menu-> Storage Settings-> Snapshot Settings], and select the image storage tab, as shown in the following figure.



2、Select the channel to set the image storage format.

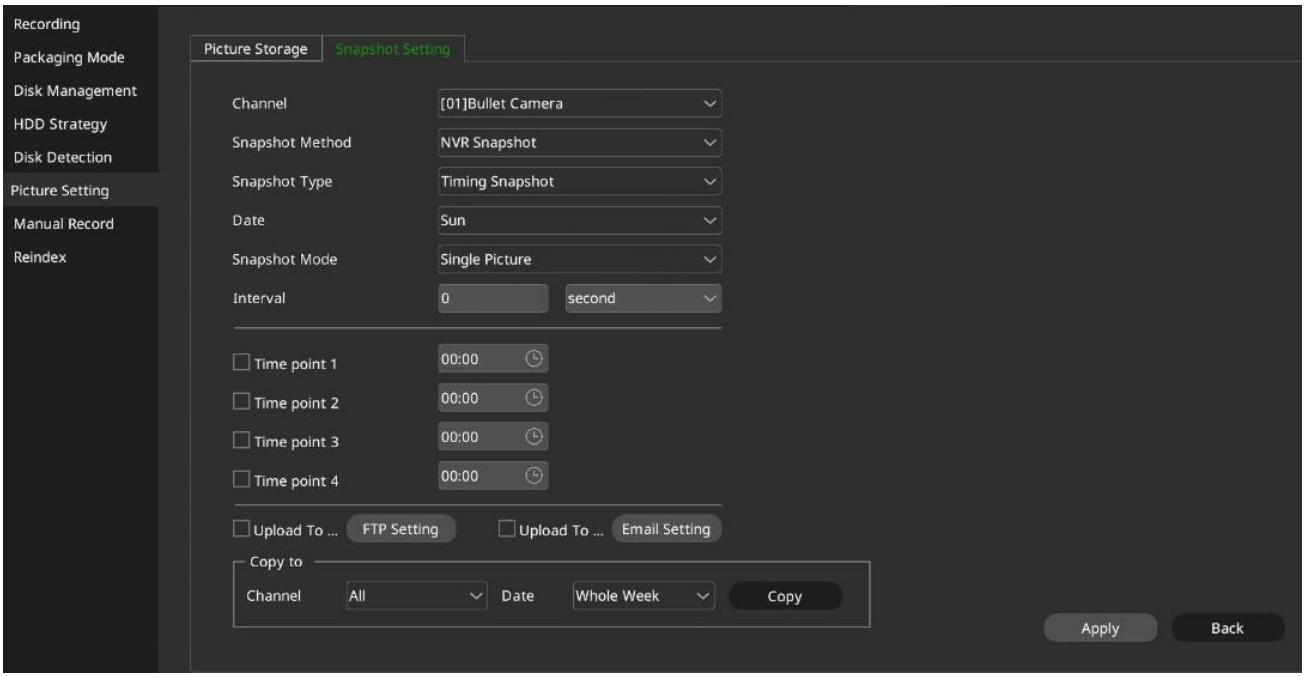
3、Set the retention time.

4、Select the face image storage format. It can also copy the picture storage configuration set by the current channel to the specified channel.

5、Click [Apply] to save the configuration.

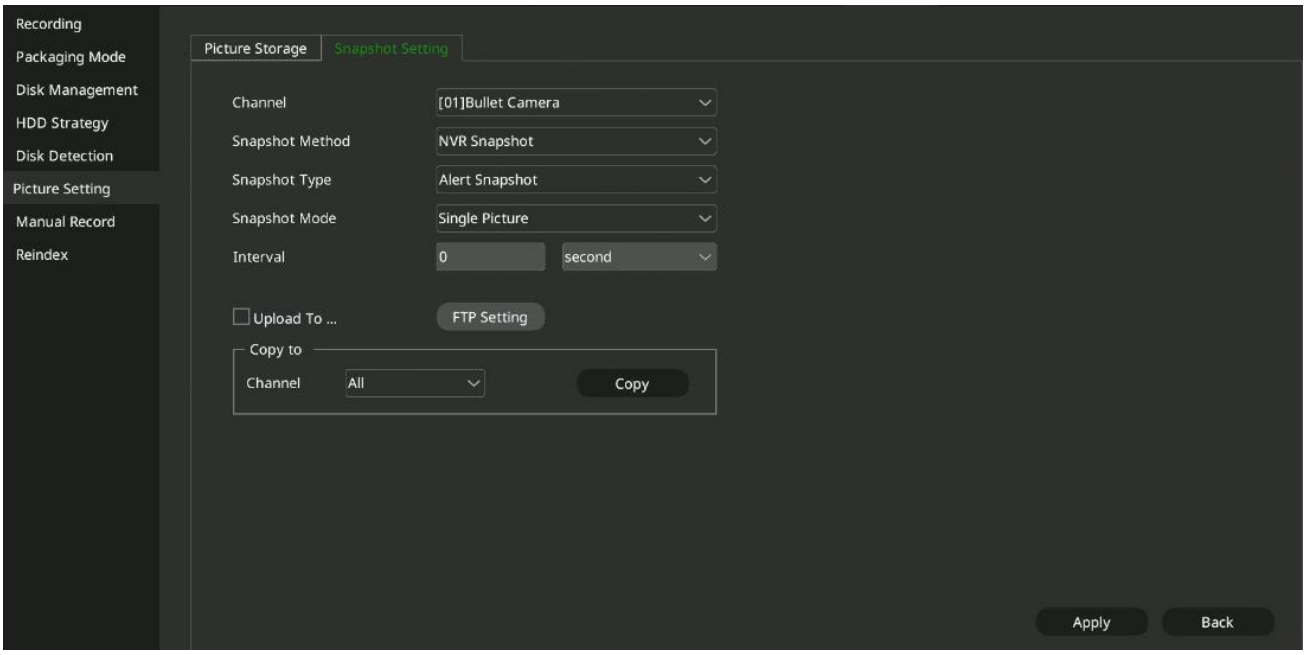
4.12.6.2 Snap Settings

1. Enter [Main Menu-> Storage Settings-> Picture Settings], and select the Snap Settings tab, as shown in the following figure.



(1) Select the target channel number for the capture setting operation.

(2) Set the capture type, which is divided into two types: regular capture and alarm capture. When the capture type is selected as alarm capture, the capture setting interface is shown in the following figure.



(3) Set the snapshot mode, which is divided into two modes: [single snapshot] and [multiple snapshots].

(4) Set the snapshot time interval in seconds.

(5) Choose whether to perform FTP upload operation on captured images. Click the 'FTP Settings' button to enter the FTP settings interface. For specific FTP settings, please refer to the corresponding chapter.

(6) Choose whether to perform SNMP upload operation on captured images. Click the 'Email Settings' button to enter the email settings interface. For specific settings, please refer to the corresponding chapter.

(7) You can copy the capture setting Parameter of the current channel to the specified channel.

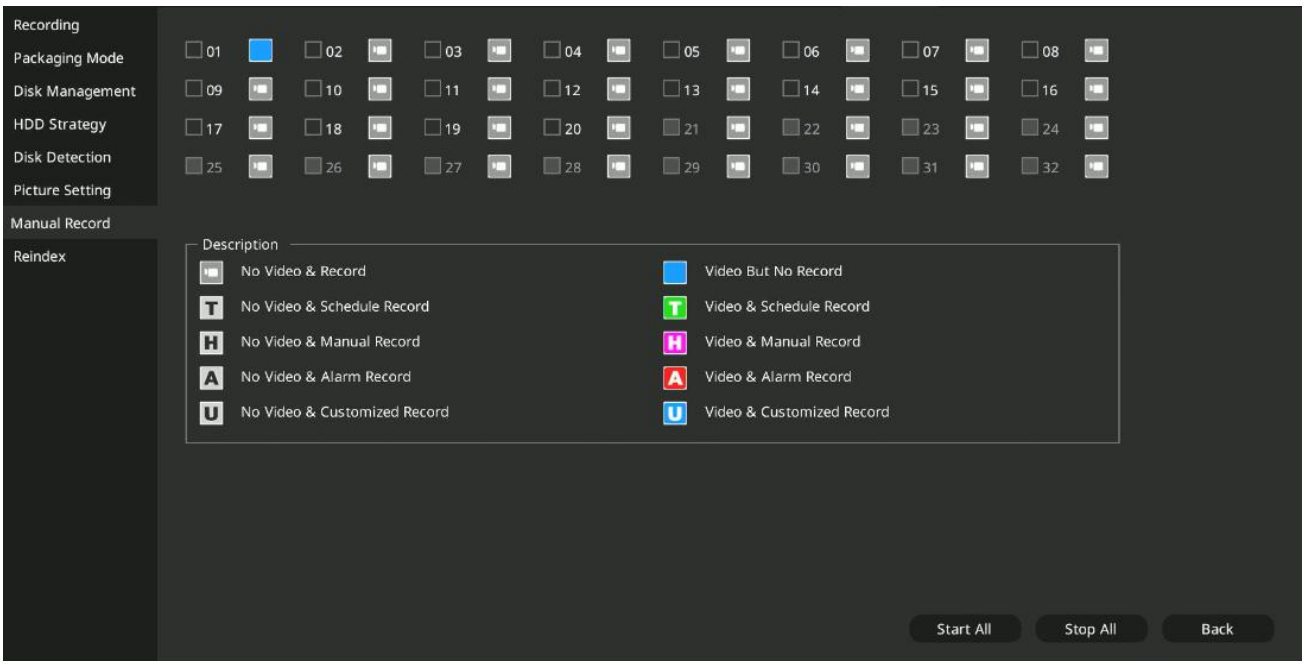
(8) Click on 'Apply' to save the configuration.

Explain：

- The system can capture up to 2000 pictures per channel within 24 hours, and the capture count returns to zero on the same day after the system is restarted.

4.12.7 Manual video recording

1. Enter [Main Menu-> Storage Settings-> Manual Video Recording], as shown in the following figure.



2. Select/reversely select a certain channel to start or stop the manual video recording of the channel.

3. Click [Record All] to start manual recording of all channels.

4. Click [Stop All] to stop the manual recording of all channels.

Icon status Explain is shown in the following table.

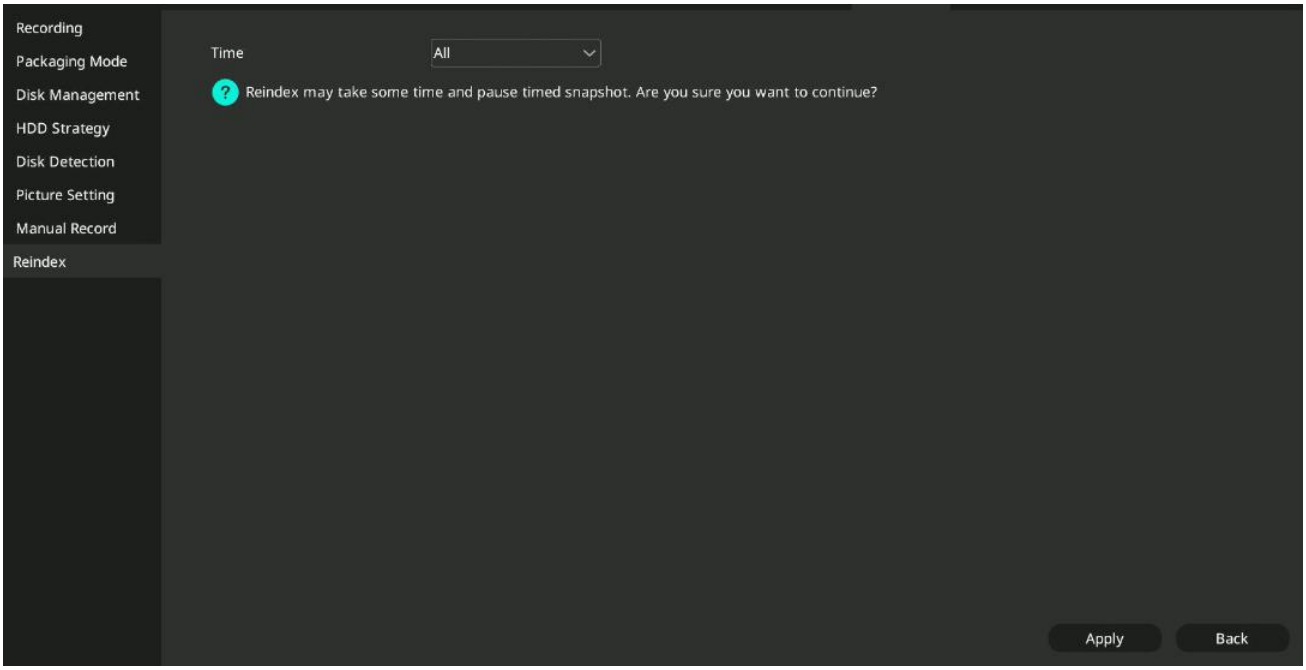
Icon	Explain
	No video, no recording
	Video available, not recorded
	No video, timer recording in progress
	No video, timer recording in progress
	No video, manual recording in progress
	Video available, manual recording in progress
	No video, alarm recording in progress
	There is a video and an alarm video is being recorded.
	No video, User-defined recording in progress.
	There is video, and user-defined recording is in progress.

Explain：

- For the video recording started manually, it can only be stopped manually, otherwise the video recording will continue. In the process of manual video recording, restart the device, and the manual video recording will stop automatically. If the recording template is enabled for some channels, after the manual recording is stopped, the channel continues to record according to the setting of the template.

4.12.8 Reindex

1. Enter [Main Menu-> Storage Settings-> Rebuild Index], as shown in the following figure.



2. You can select [All] or [User-defined] for the time. Select [User-defined] to select the start and end time of index rebuilding.

3. In the process of rebuilding the index, the user can exit the interface for other operations, but cannot play back the video.

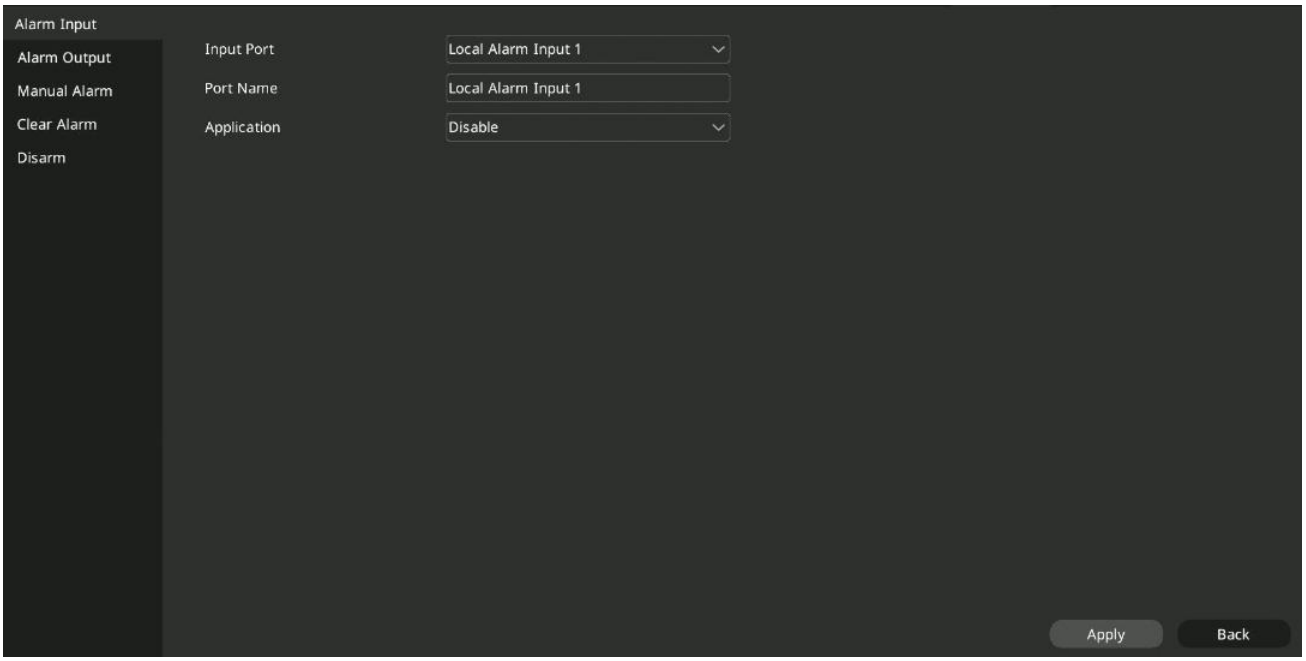
Explain：

- 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.

4.13 Alarm settings

4.13.1 Alarm Input

1. Enter [Main Menu-> Alarm Settings-> Alarm Input], as shown in the following figure.



2. Select the input port number to be set. This screen allows the setting of local and host alarm input port numbers.

3. Set the input port alias. You can set a custom name for the current input port.

4. Select the type of alarm.

Explain：

- Open circuit alarm: alarm when the local NVR alarm input port is open.
- Closed circuit alarm: alarm when the local NVR alarm input port is closed.

5. Set the alarm input defense time.

6. Enter [Linkage Local] to set alarm linkage.

(1) Alarm linkage voice prompt, linkage mail, linkage video, linkage output, linkage snapshot, linkage PTZ, linkage text plan, linkage single screen, etc. Can be set.

(2) After the setting is completed, the Parameter of other alarm input ports can be copied.

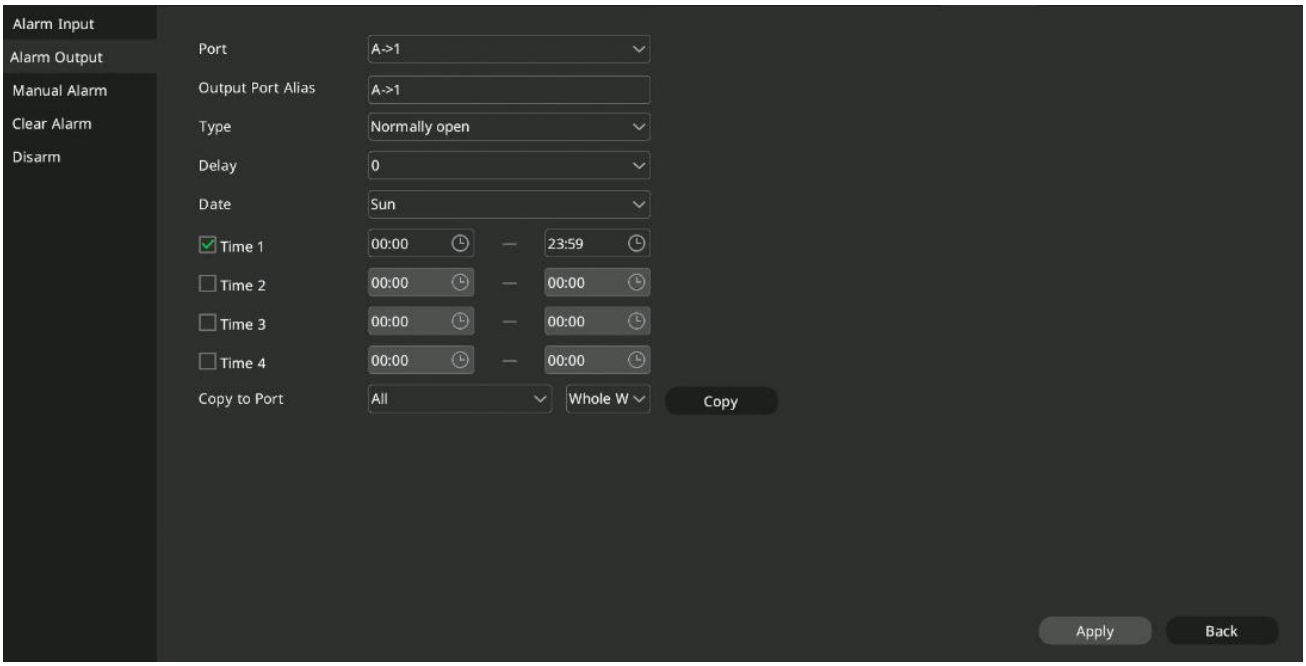
7. Click [Apply] to save the setting Parameter.

Explain：

- By setting the alarm input, when the local NVR has an alarm input alarm, it can prompt, record, etc.

4.13.2 Alarm output

1. Enter [Main Menu-> Alarm Settings-> Alarm Output], as shown in the following figure.



2. Select the output port number to be set. This interface can be used to set the local and host alarm outgoing port numbers.

3. Set the output port alias. You can set a custom name for the current output port.

4. Select the type of the alarm, which must be consistent with the requirements of the input signal of the external equipment at the alarm output port.

Explain：

- Open circuit alarm: normally, the alarm output port is closed. When an alarm occurs in the system and the action of the linkage output port is set, the alarm output port is opened.

- Closed circuit alarm: under normal conditions, the alarm output port is open. When an alarm occurs in the system and the action of the linkage output port is set, the alarm output port is closed.

5. Set the signal delay time. Set the signal delay of the alarm output port according to the actual needs.

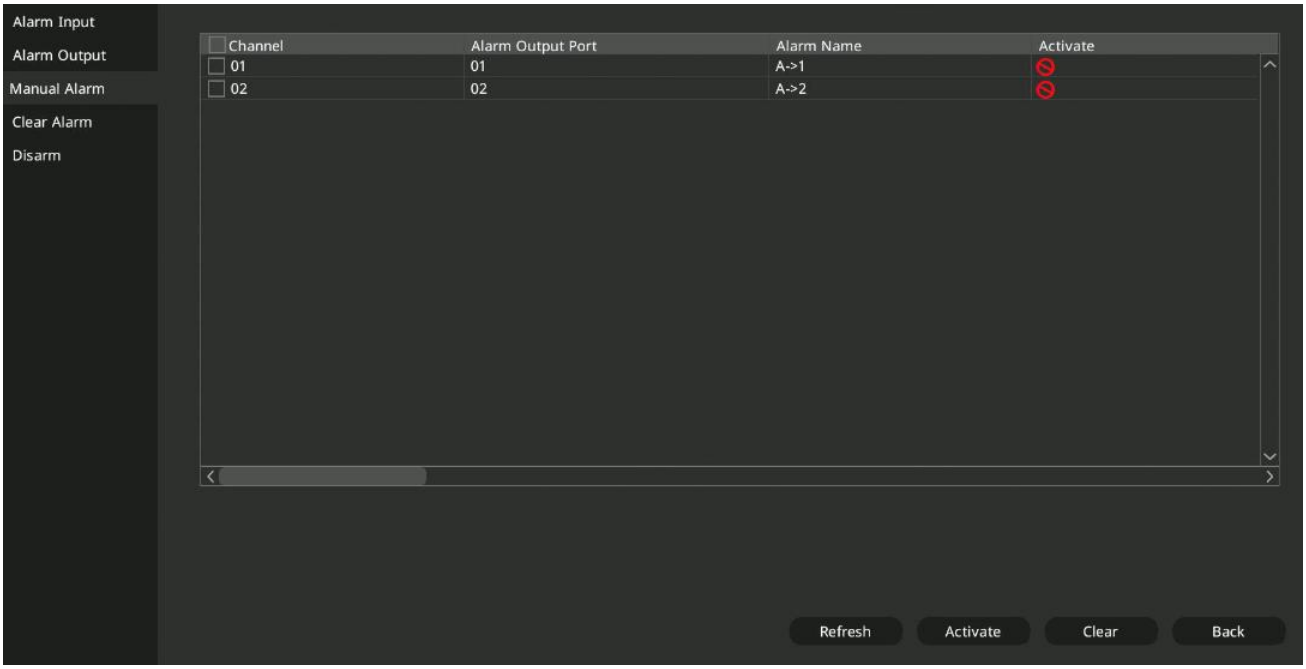
6. Set the alarm output defense time. The deployment date is used in conjunction with the time period.

7. Copy to port. After the setting is completed, the Parameter can be copied to other alarm output ports.

8. Click [Apply] to save the setting Parameter.

4.13.3 Manual Alarm

1. Enter [Main Menu-> Alarm Settings-> Manual Alarm], as shown in the following figure.



2. Select a certain alarm output port and click [Trigger] or [Clear] to trigger or clear it. The status bar of the alarm output port displays the current status of the port. Click [Refresh] to obtain the current attributes and status of the alarm output port.

4.13.4 Manual alarm elimination

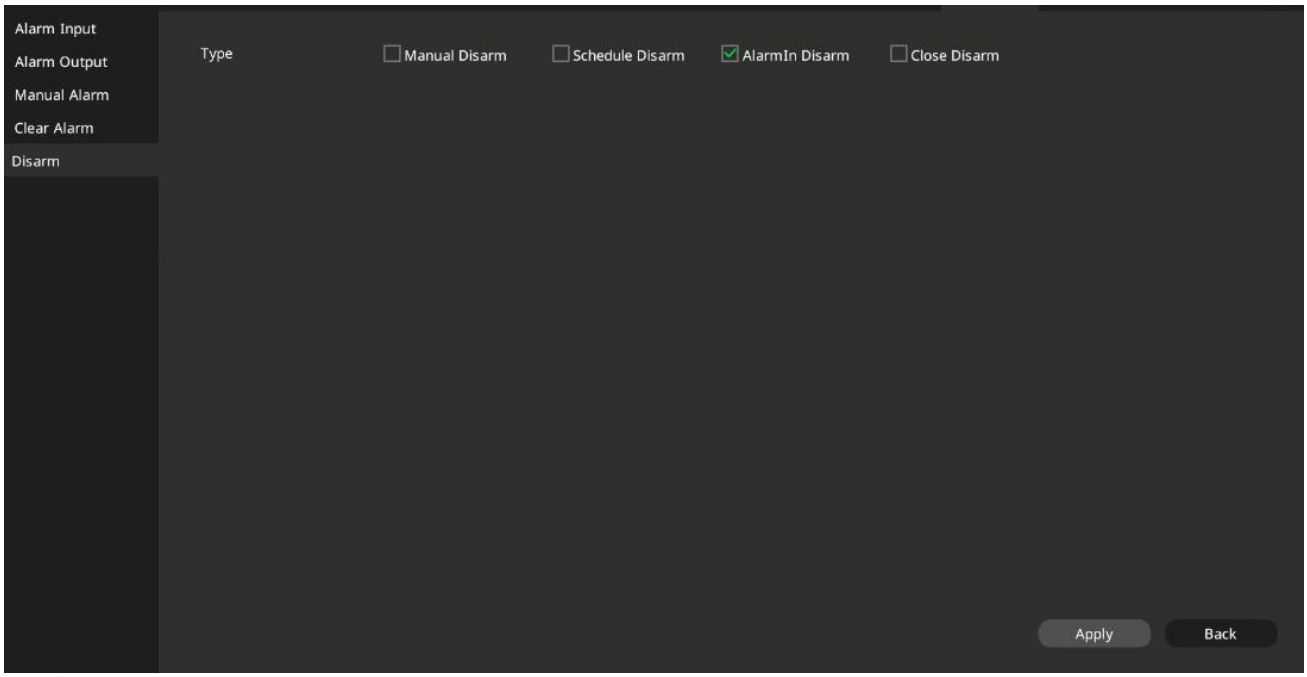
1. Enter [Main Menu-> Alarm Settings-> Manual Alarm Elimination], as shown in the following figure.



2. Select the alarm type to be eliminated in the manual alarm elimination interface. There are 6 options available: [All], [Port Alarm], [Motion Detection], [Video Loss], [Intelligent Analysis] and [Video Occlusion]. Click the corresponding button to eliminate the alarm of this type.

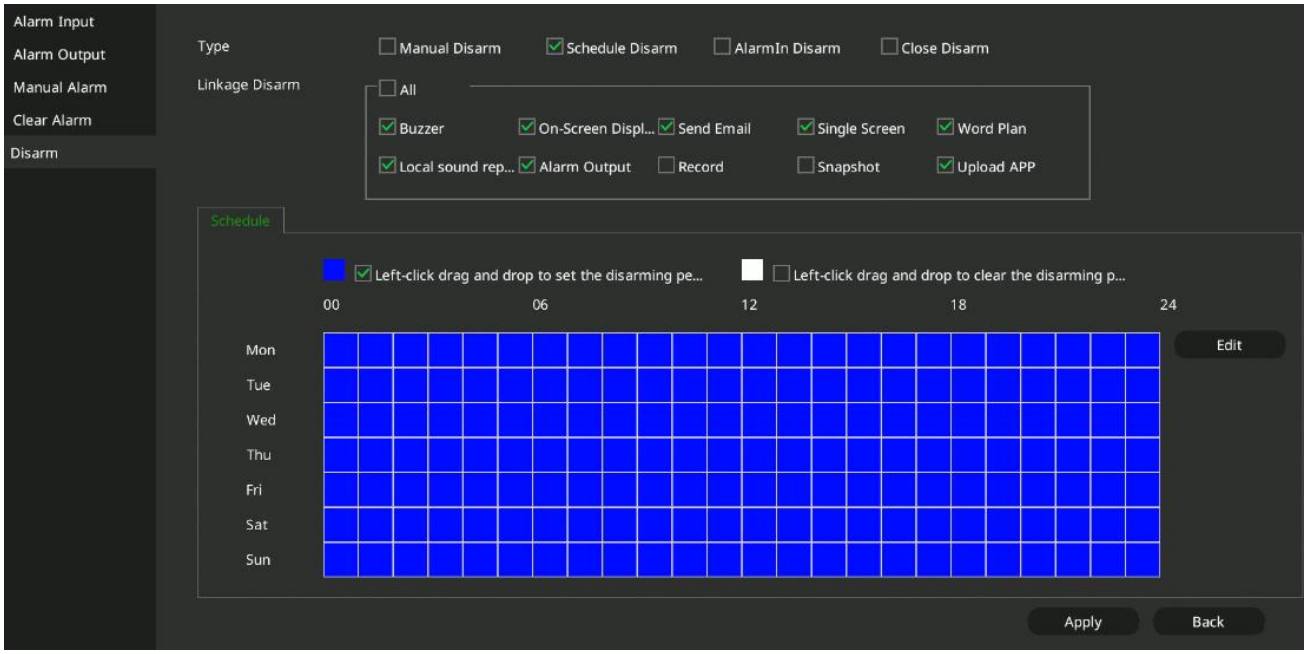
4.13.5 One key disarming

1、Enter [Main Menu-> Alarm Setting-> One-key Disarming], as shown in the figure below.



2、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].

3、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.



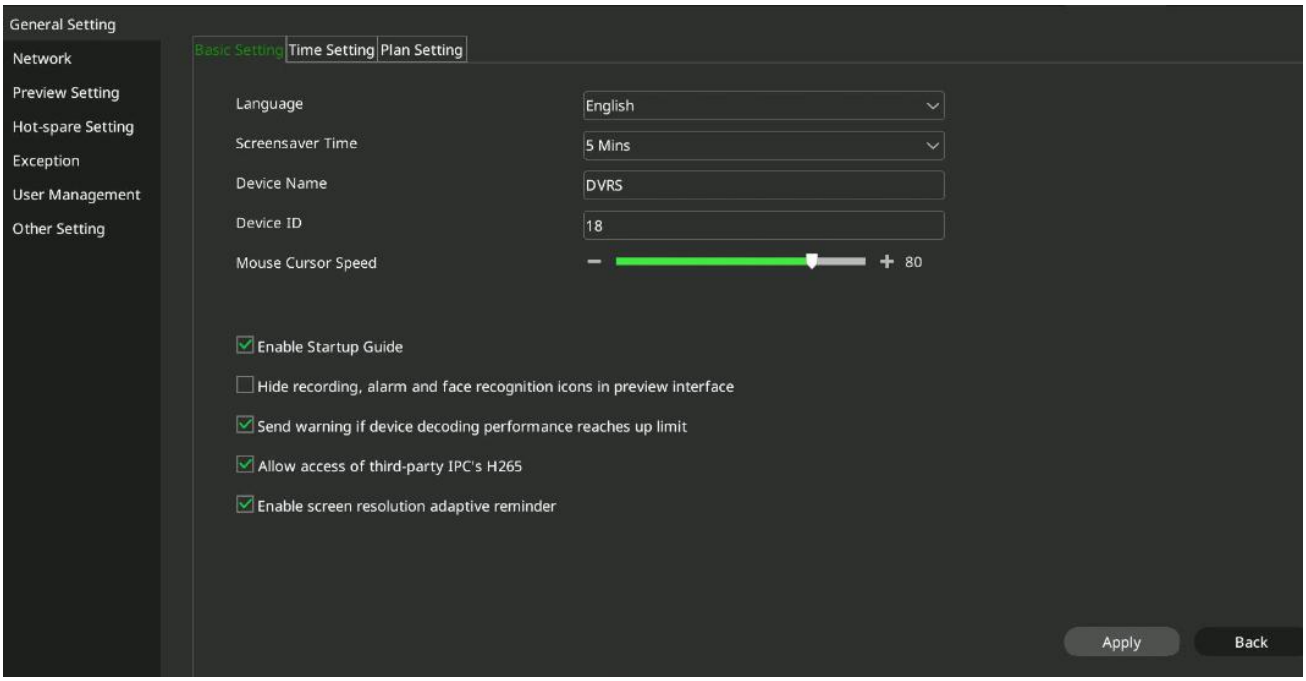
4.14 System Settings

The device attributes in the system are managed in a unified way.

4.14.1 General Settings

4.14.1.1 Basic Settings

1. Enter [Main Menu-> System Settings-> General Settings] and select the Basic Settings tab to set the local output display Parameter of the device, as shown in the following figure.



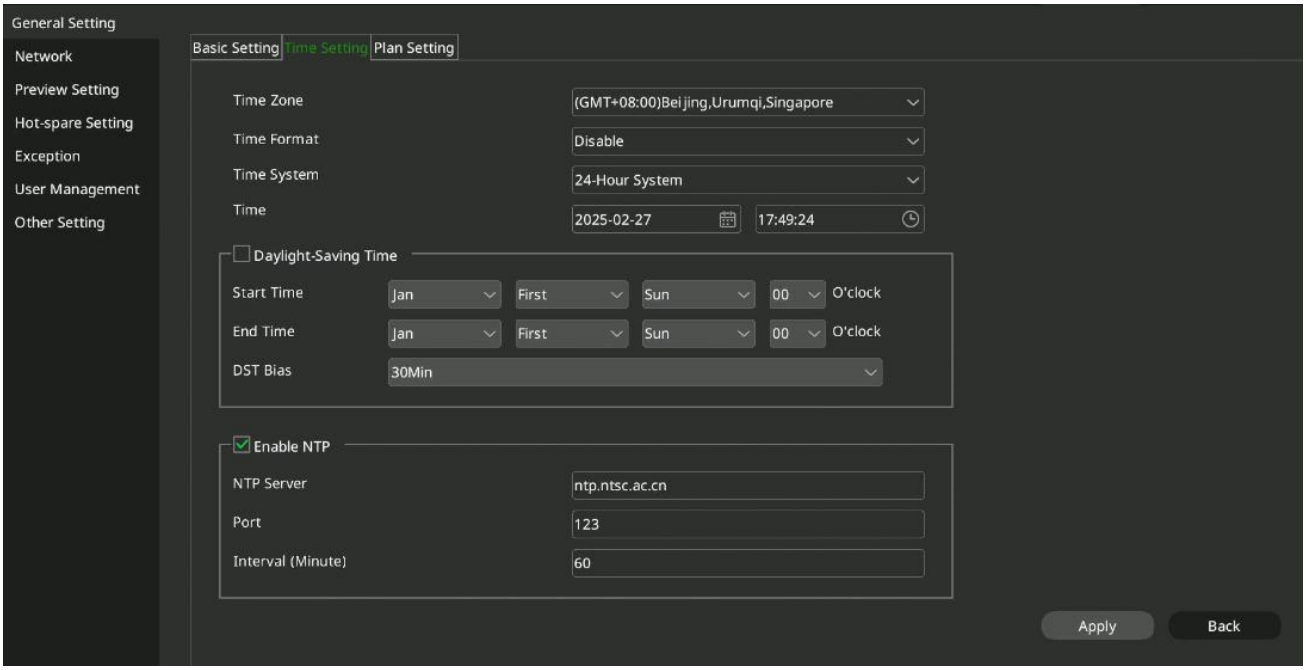
Explain：

- Language: Select the system language.
- Screen saver time: select the timeout time of the interface.
- Enable Boot Wizard: Select whether to enable the Boot Wizard setting.
- Buzzer sounds when pressing the key: select whether to turn on the buzzer.
- Screen resolution adaptive reminder: Select whether to enable the screen resolution adaptive reminder.
- Hide the video recording, alarm and face recognition icon in the preview interface: select whether to display the video recording, alarm, face recognition and other icons in the preview interface.
- Remind when the device decoding performance reaches the upper limit: select whether to pop up a prompt message when the device decoding performance reaches the upper limit.
- Mouse movement speed: select the mouse movement speed, support 0-100 adjustable.

- H265 access of third-party IPC: select whether to allow H265 access of third-party IPC.

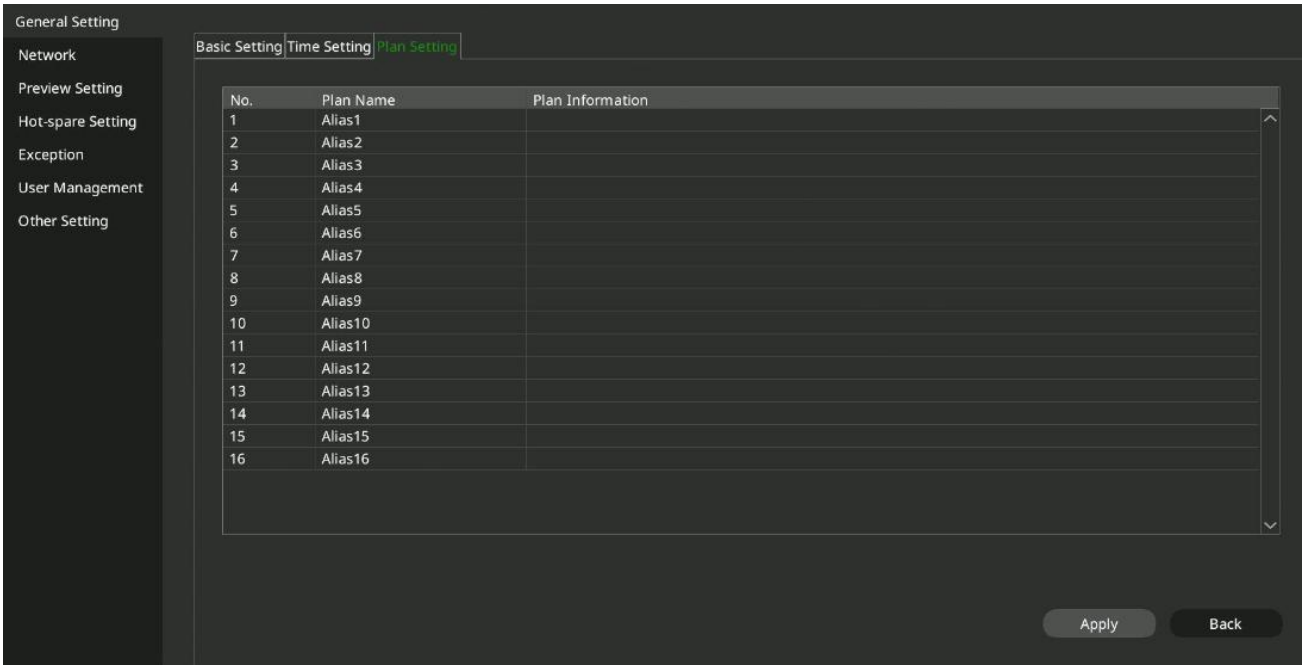
4.14.1.2 Time setting

1. Enter [Main Menu-> System Settings-> General Settings] and select the Time Setting tab to set the system time, time zone and NTP timing Parameter, as shown in the following figure.



4.14.1.3 Contingency Plan Settings

1、Enter [Main Menu-> System Settings-> General Settings] and select the Contingency Plan Settings tab, as shown in the following figure.



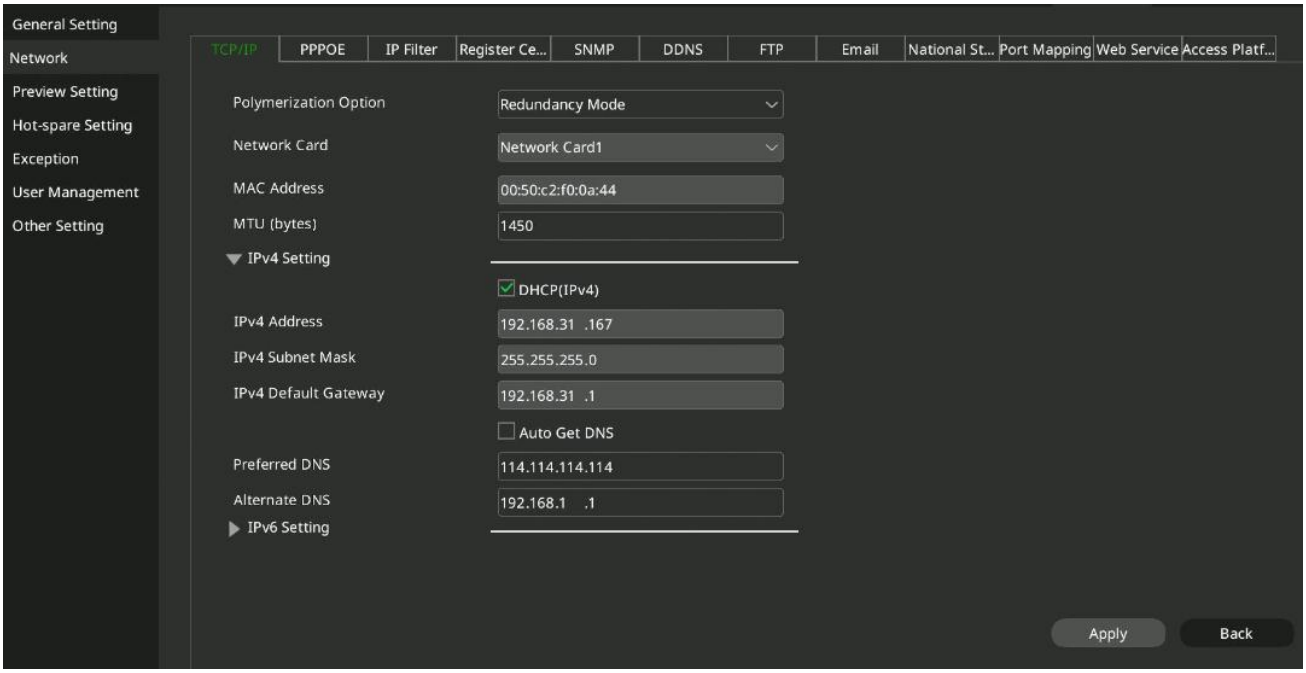
2、When a case occurs, it will be displayed in the preview interface according to the set linkage plan, and the on-duty personnel will deal with it according to the plan prompt, such as alarm, notification, help, etc.

3、Click the plan name or plan content to directly edit the plan name and plan content.

4.14.2 Network Settings

4.14.2.1 TCP/IP

1、Enter [Main Menu-> System Settings-> Network Settings], and select the TCP/IP label, as shown in the following figure.



2、In IPv4 settings, check [Obtain IPv4 address automatically], and the system will automatically obtain the IP address from the DHCP in the network. If not checked, you need to manually specify the IP address, subnet mask, gateway and other information of the device.

3、In the IPv6 setting, you can select the IPv6 mode as the route announcement/DHCP/manual mode. If you select the manual mode, you need to input the correct IPv6 address and IPv6 subnet prefix length (the value range is 3-127).

4、For aggregation options, there are two modes of multi-access and redundancy in the drop-down box:

- Network Multiple Access: In this mode, NIC 1 and NIC 2 operate independently.
- 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.

5. If the multiple access mode is enabled, the configuration method of network card 2 is the same as that of network card 1.

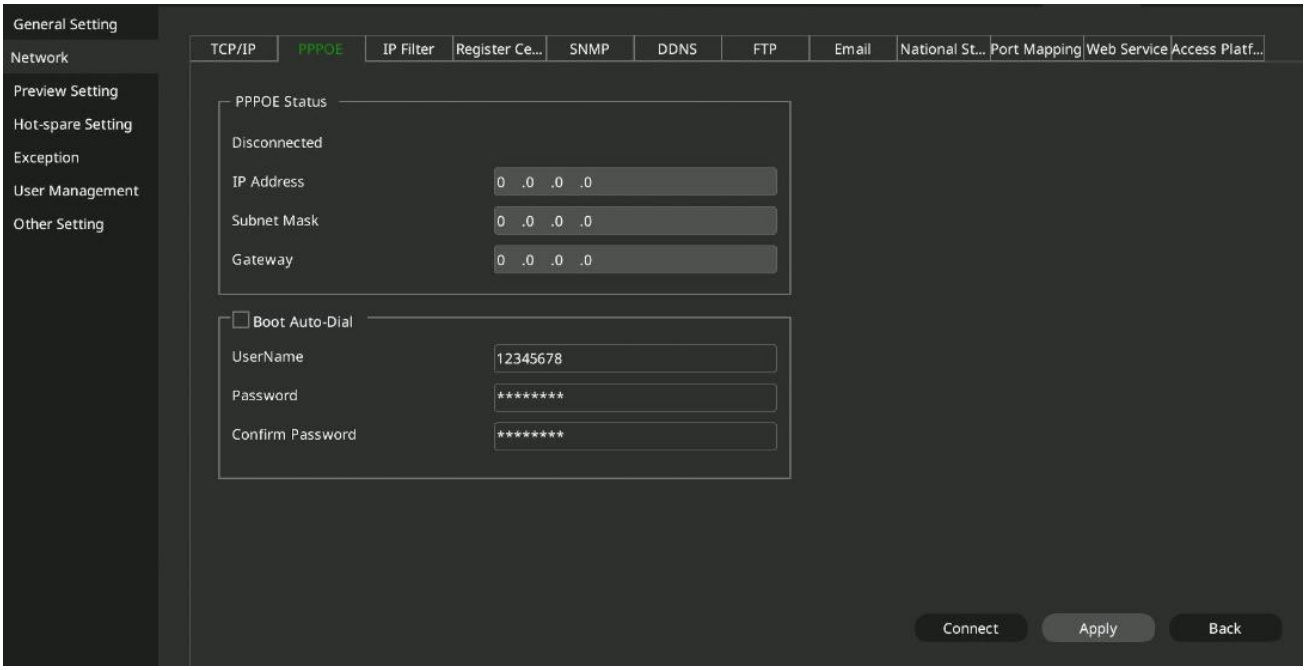
6. Click the [Apply] button to make the setting effective.

Explain：

- Only dual-NIC devices display this interface. Non-dual-NIC devices do not have aggregation options.
- Once the aggregation mode is set, the network Parameter of the second network card will be automatically filled in, and the user does not need to fill in.

4.14.2.2 PPPOE

1. Enter [Main Menu-> System Settings-> Network Settings] and select the PPPOE tab, as shown in the following figure.



2. Set whether to automatically dial when the machine is turned on.

3. Enter the account number and password for PPPOE dialing.

4. Click the [Connect] button to immediately start the PPPOE dialing operation.

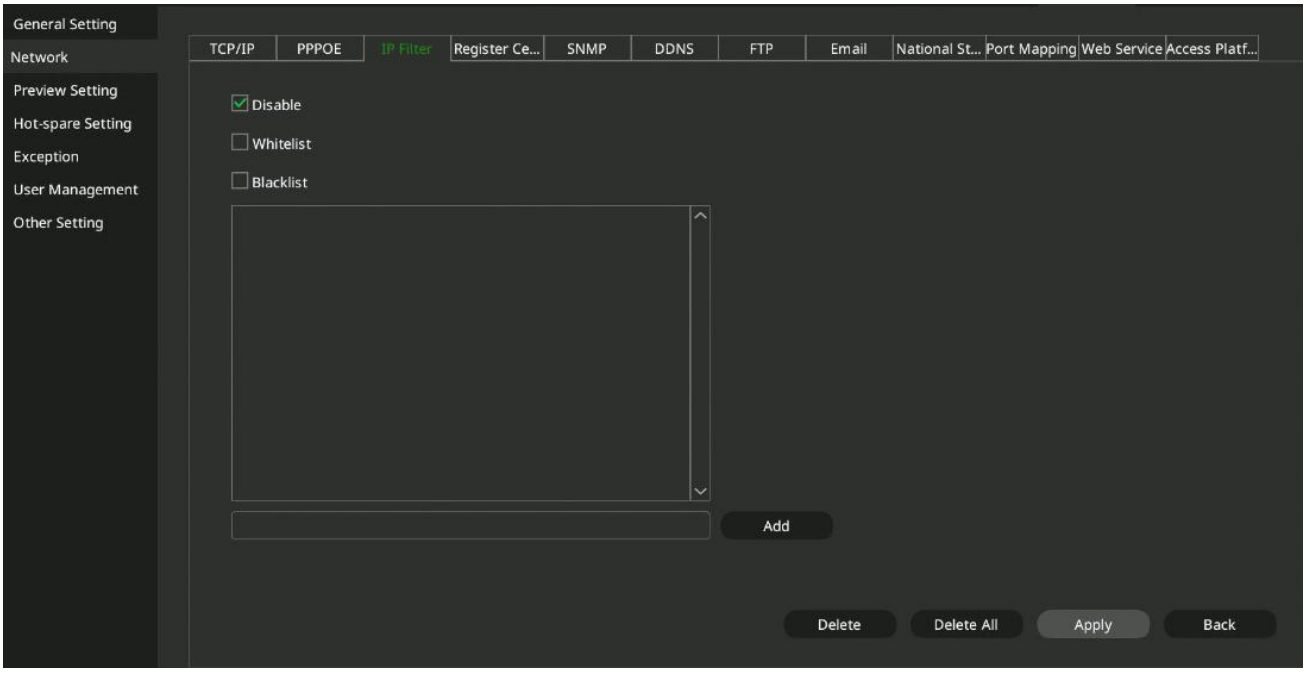
5. Click the [Apply] button to save the dialing setting information of PPPOE in the system. If [Automatic Dialing on Startup] is selected, the system will automatically dial after the next startup.

Explain：

- If normal dialing fails due to network interruption or cat replacement, please manually click the [Disconnect] button, and then try dialing again.

4.14.2.3 Black and white list

1. Enter [Main Menu-> System Settings-> Network Settings], and select the Black and White List tab, as shown in the following figure.



2. Select the use mode of IP permission. [Disable], [Whitelist], or [Blacklist].

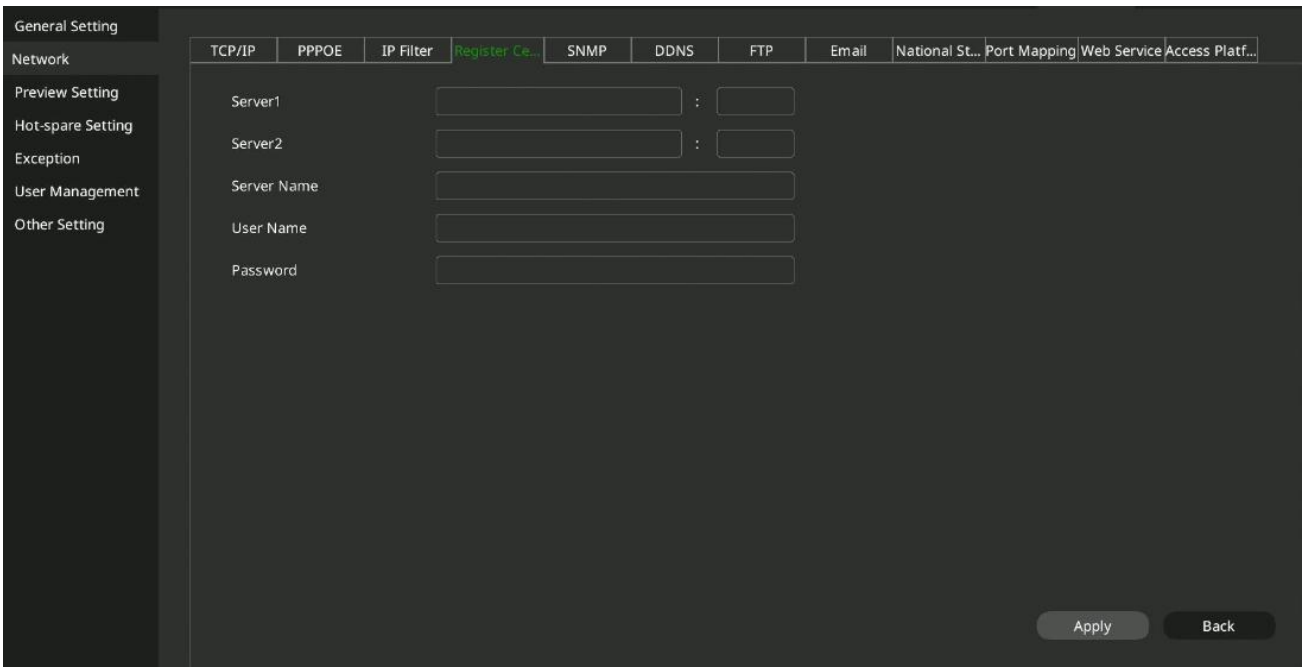
3. Enter the IP address to be disabled or allowed in the IP address input box.

4. Click the [Add] button to add the IP address to the list.

5. Click [Apply] to save the configuration.

4.14.2.4 Registration Center

1. Enter [Main Menu-> System Settings-> Network Settings] and select the Registration Center tab, as shown in the following figure.



2. Enter the IP addresses and port numbers of the primary and backup DNS servers. Default port is 6004.

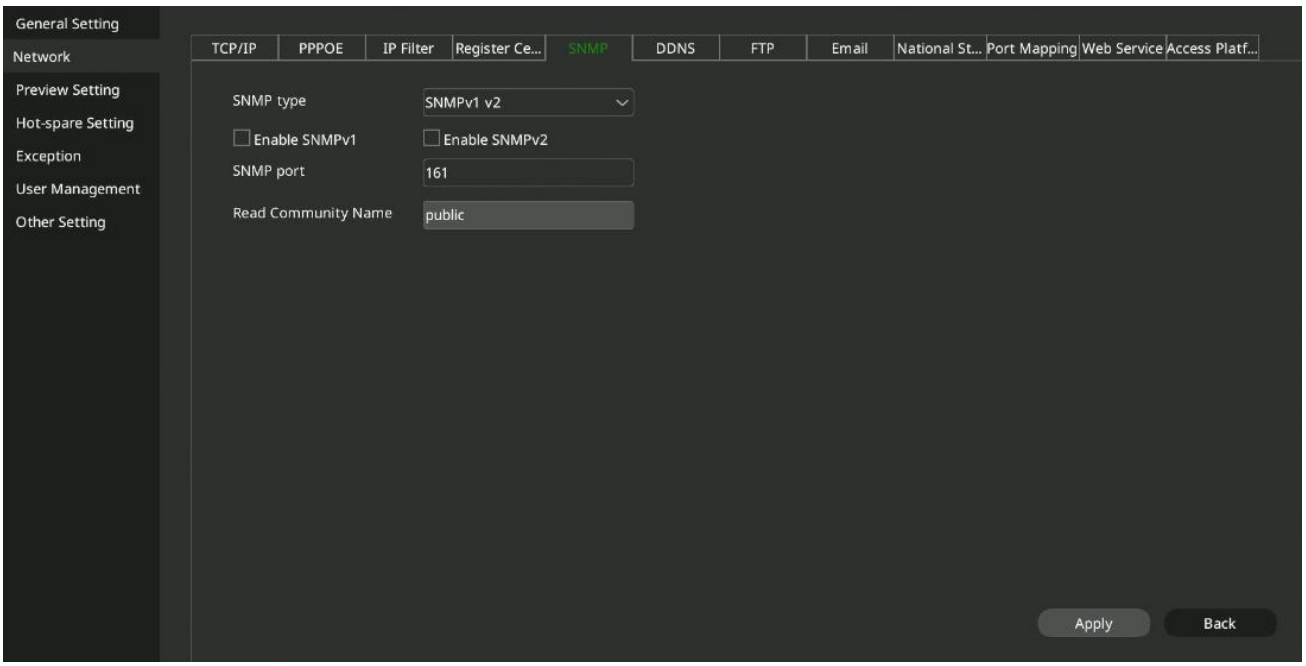
3. Enter the name used by the device to register with the domain name server.

4. Input the account and password used by the device to register with the domain name server.

5. Click the [Apply] button to save the currently set Parameter.

4.14.2.5 SNMP

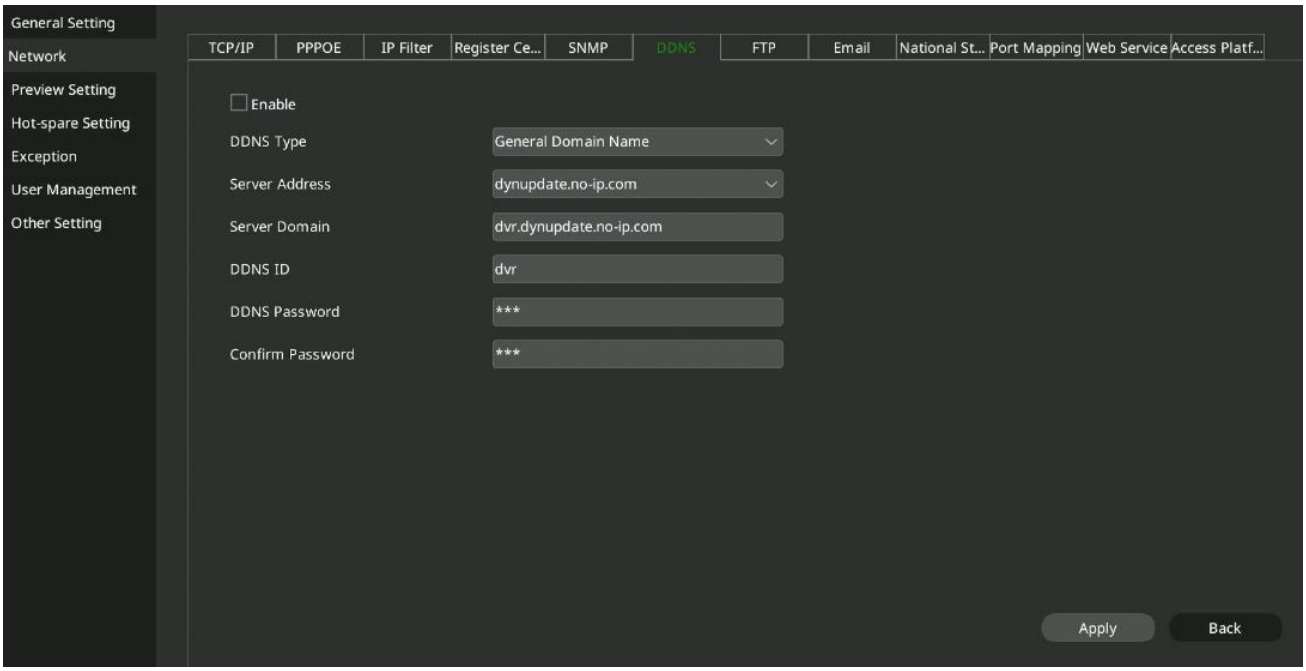
1、 Enter [Main Menu-> System Settings-> Network Settings] and select the SNMP tab, as shown in the following figure.



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

4.14.2.6 DDNS

1、 Enter [Main Menu-> System Settings-> Network Settings], and select the DDNS tab, as shown in the following figure.



2. Set whether to enable the DDNS service.

3. Enter the device domain name.

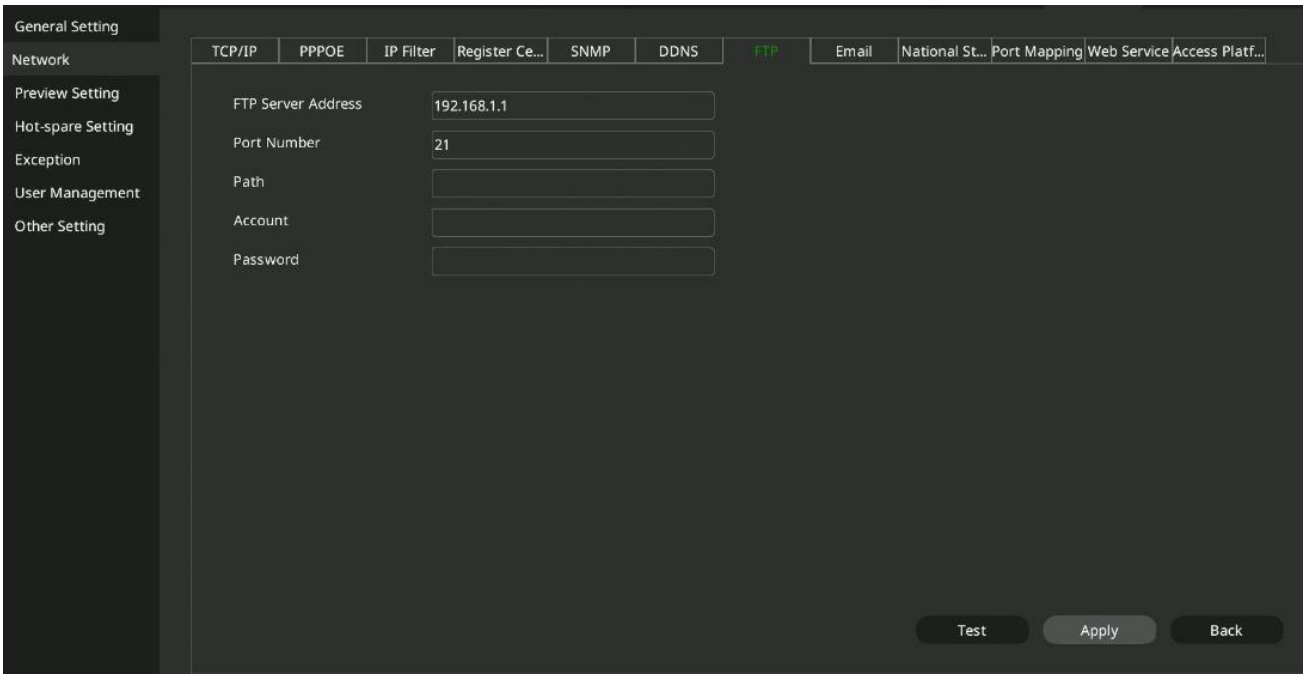
4. Enter the domain name or IP address of the DDNS server.

5. Enter the login account and password of the DDNS server.

6. Click the [Apply] button to save the configuration.

4.14.2.7 FTP

1. Enter [Main Menu-> System Settings-> Network Settings] and select the FTP tab, as shown in the following figure.

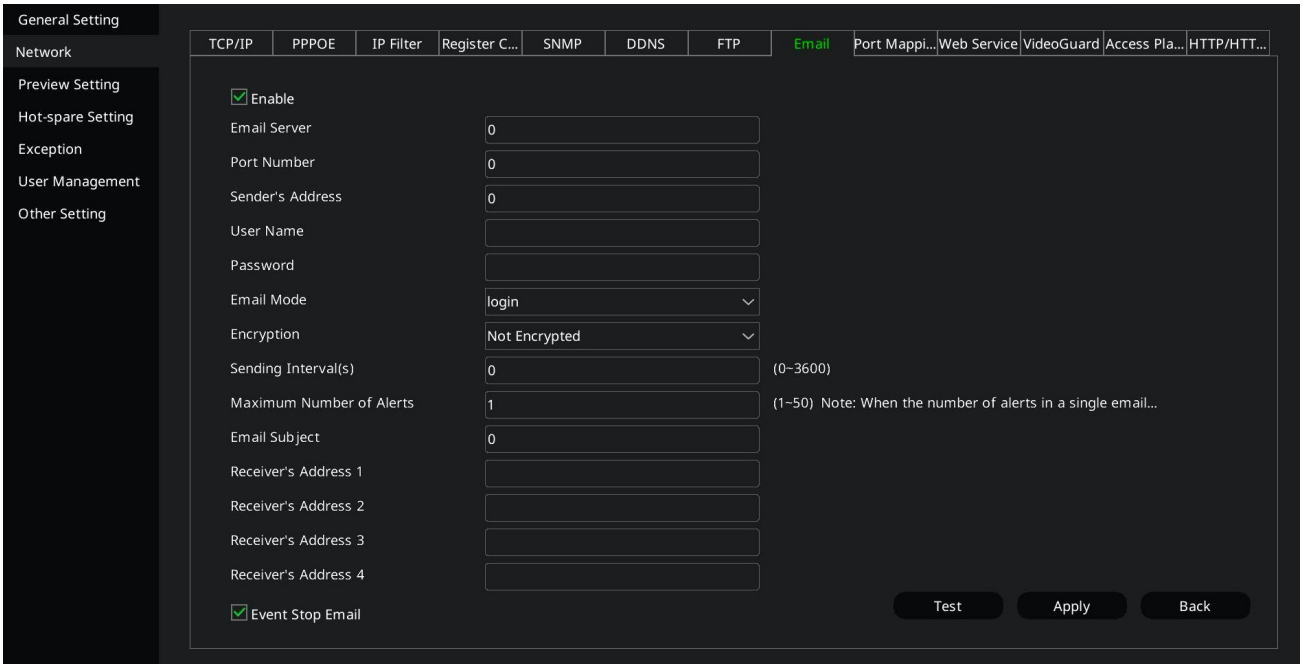


2. Enter the server address, port number, account and password of the FTP server.

3. Click the [Apply] button to save the configuration.

4.14.2.8 Email

1. Enter [Main Menu-> System Settings-> Network Settings] and select the Email tab, as shown in the following figure.

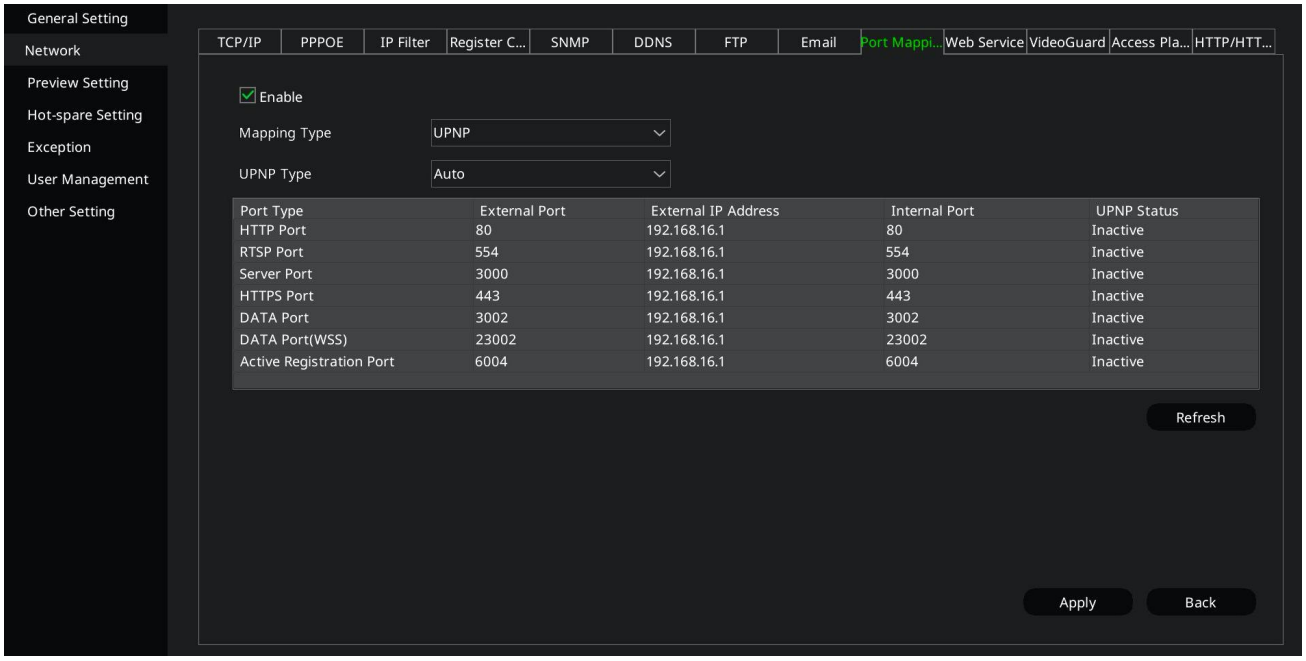


2. Enter the server address, port number, account, password, encryption mode, recipient address and subject of the Email server.

3. Click the [Apply] button to save the currently set Parameter.

4.14.2.9 Port Mapping

1. Enter [Main Menu-> System Settings-> Network Settings], and select the port mapping label, as shown in the following figure.



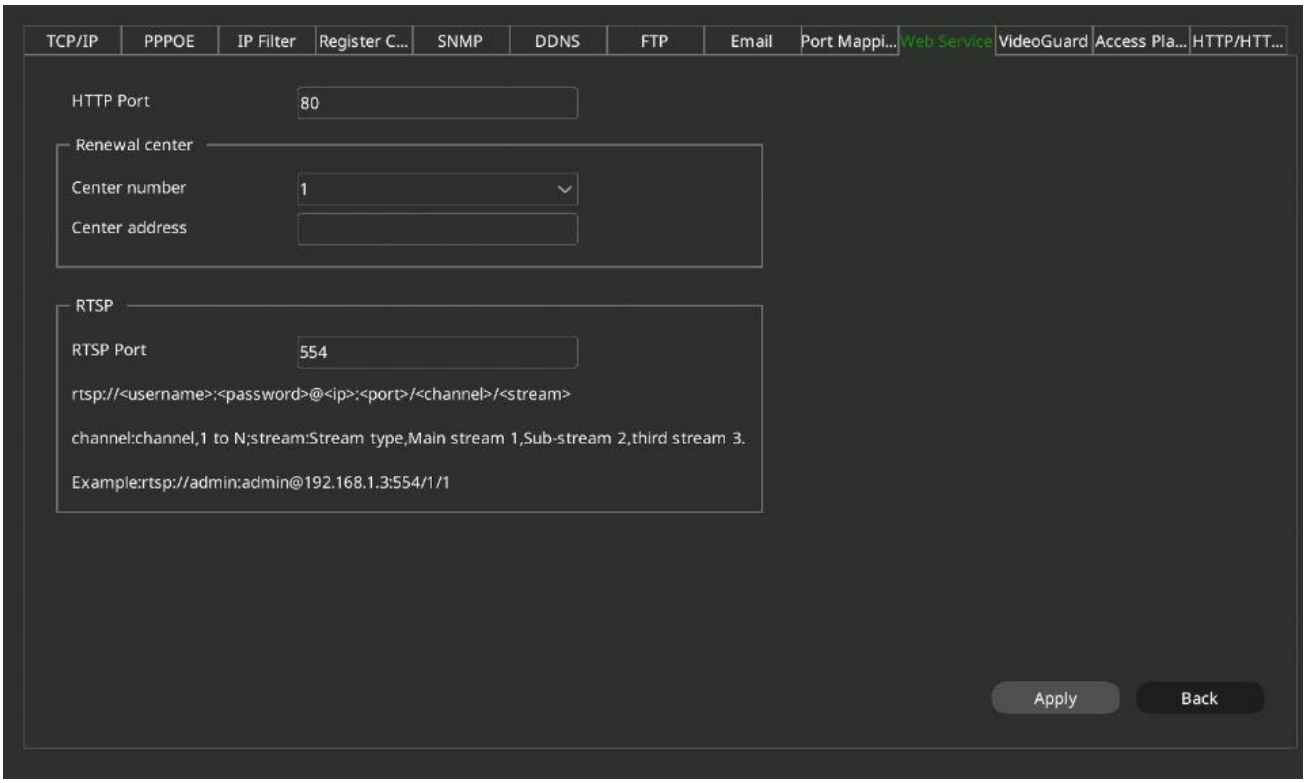
2. Check [Enable] and select the [Mapping Type] check box.

3. [Mapping Type] When Automatic is selected, the default external port is used for the corresponding service. When Manual is selected, the external port can be edited and the modified external port is used for the corresponding service. The external ports of HTTP ports and RTSP support 1-65535, and the external ports of service ports support 1-65534.

4. Click the [Apply] button to save the settings.

4.14.2.10 Web services

1. Enter [Main Menu-> System Settings-> Web Settings], and select the network service tag, as shown in the following figure.



(1) The RTSP and HTTP ports of the device can be modified in this interface.

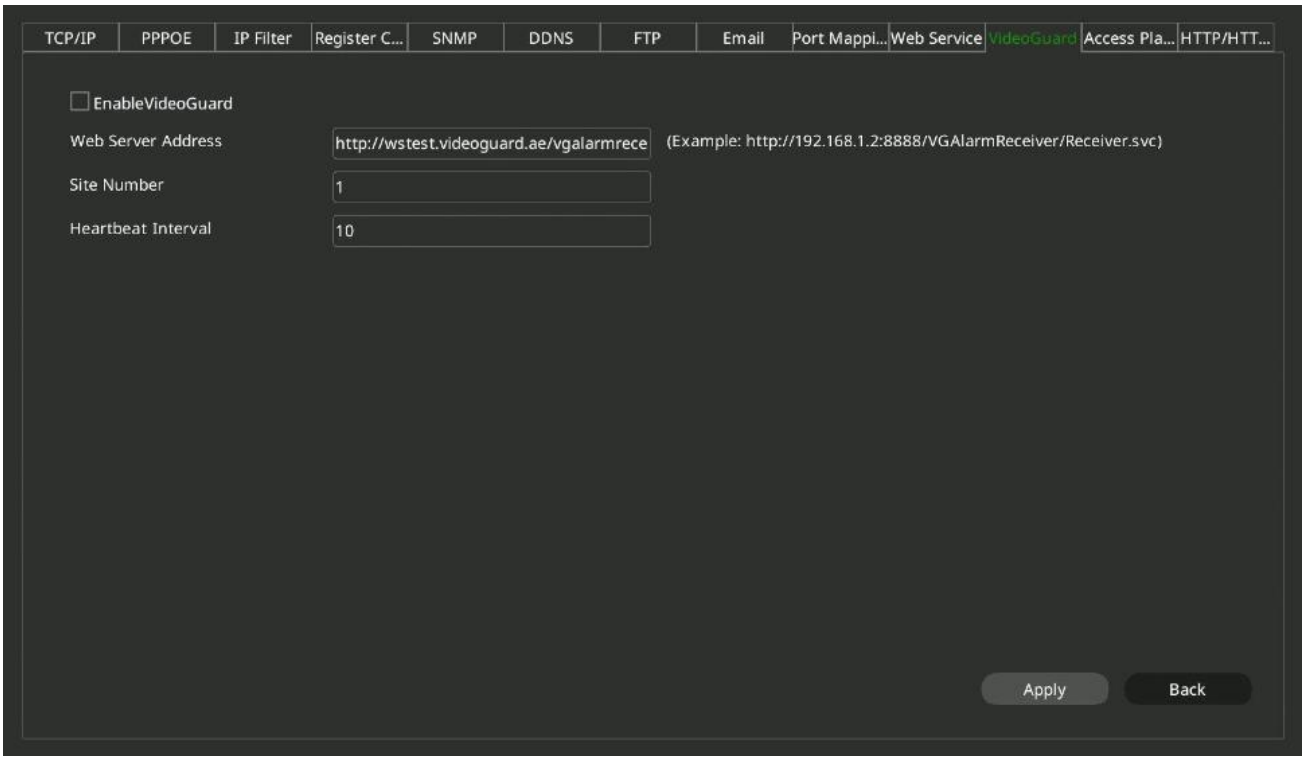
(2) Select the number of the resume center and fill in the address of the center to connect to the resume center for picture streaming.

Notice:

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

4.14.2.11 VideoGuard

1. Enter [Main Menu-> System Settings-> Network Settings] and select the Video Guard tab, as shown in the following figure.



2. After enabling the service, fill in the web server address, and set the site address and heartbeat interval.

Notice:

- The device needs to be connected to the Internet.

4.14.2.12 Platform access

1. Enter [Main Menu-> System Settings-> Network Settings], and select the platform access tab, as shown in the following figure.

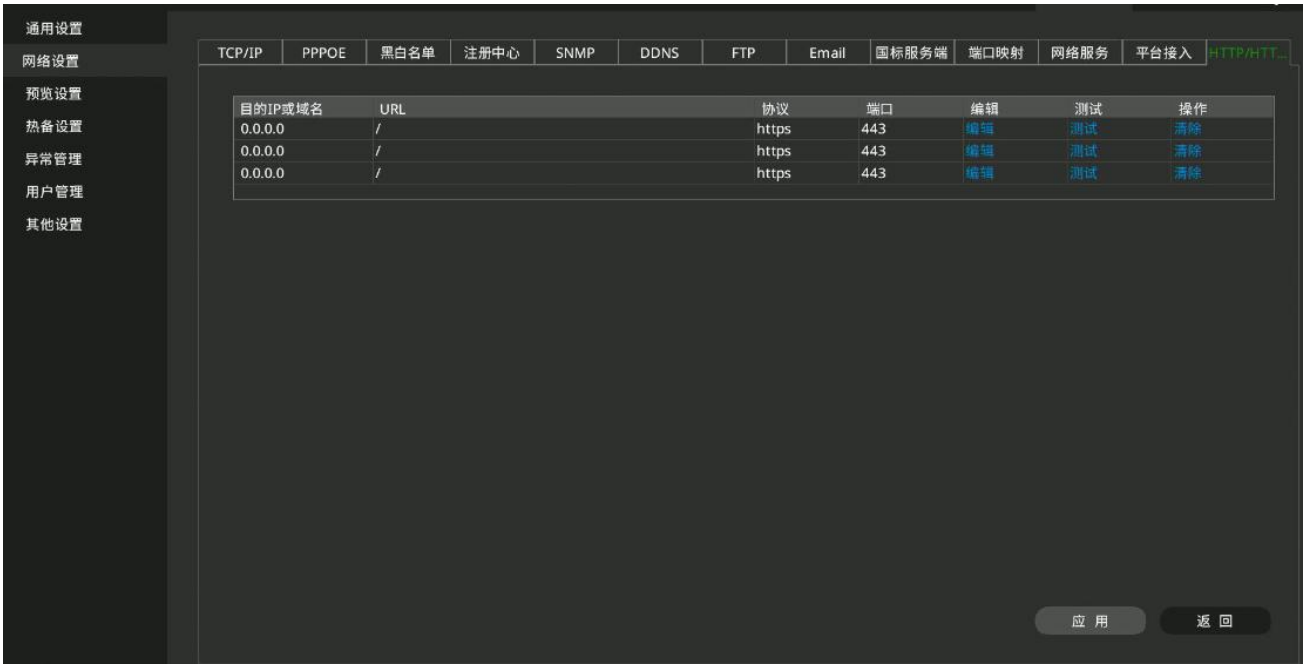


2. Support the enabling and disabling of ONVIF docking protocol, RTSP, P2P and GB28181. After setting, some devices will automatically restart and take effect.

Tiandy

4.14.2.13 HTTP/HTTPS Push Configuration

1. Enter [Main Menu-> System Settings-> Network Settings] and select the HTTP/HTTPS Push Configuration tab, as shown in the following figure.



Push the picture to the set website or platform.

Prerequisites

Get the HTTP/HTTPS server address first.

Destination IP or domain name

Indicates the HTTP server address or domain name.

URL and protocol

Represents the server path and protocol.

Editor

After clicking [Edit], you can modify the parameters.

Test

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

4.14.3 Preview Settings

See 4.5 Preview.

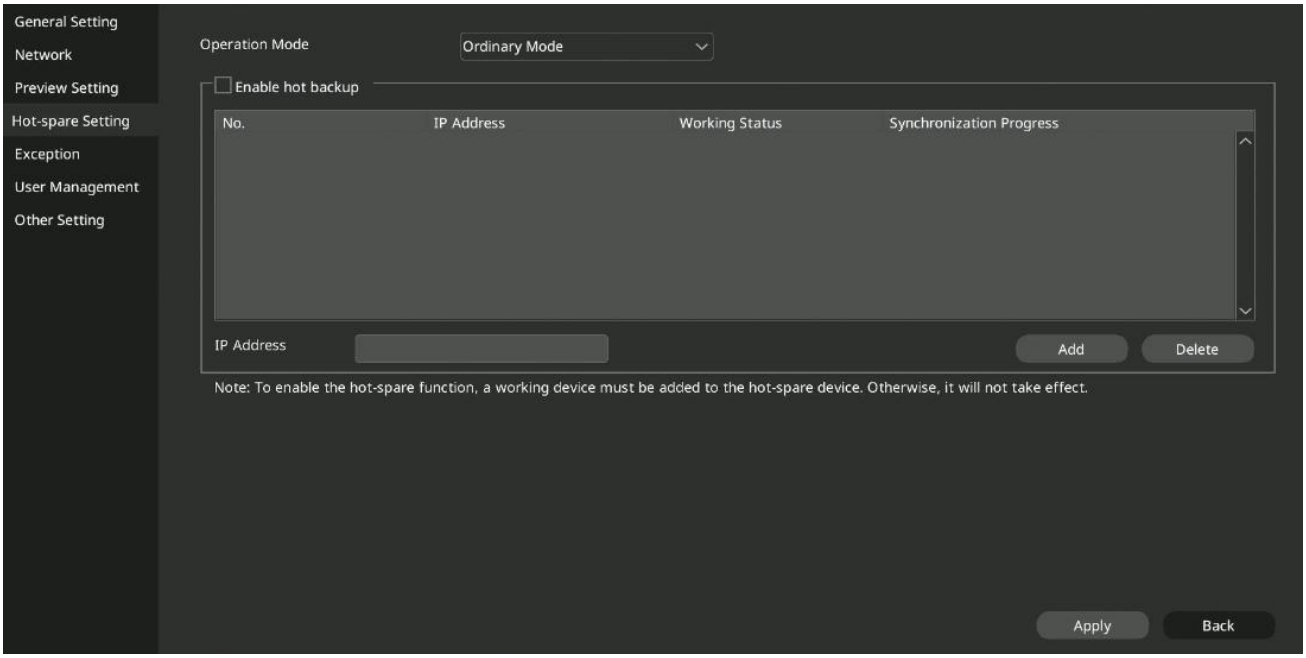
4.14.4 Hot standby setting

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.

4.14.4.1 Working machine settings

1. Enter [Main Menu-> System Settings-> Hot Standby Settings] and select the normal mode, as shown in the following figure.

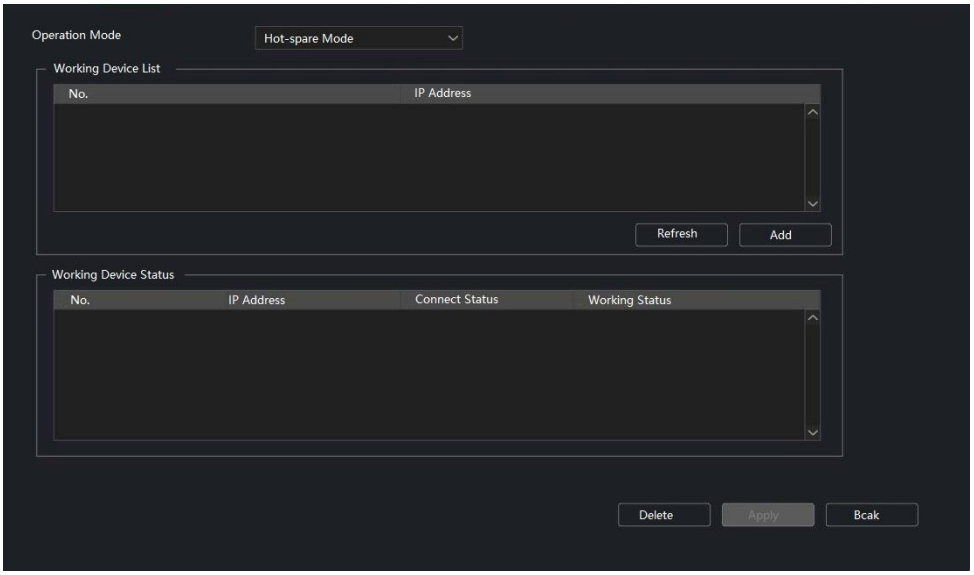


2. Select to enable the hot standby machine, set the IP address of the hot standby machine, and click Add; or select the IP to be deleted, and click Delete.

3. When the specified hot standby machine is set and connected to the local machine successfully, 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.

4.14.4.2 Setting of hot standby machine

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 machines 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.

8. Click [Apply] to save the configuration.

9. 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.

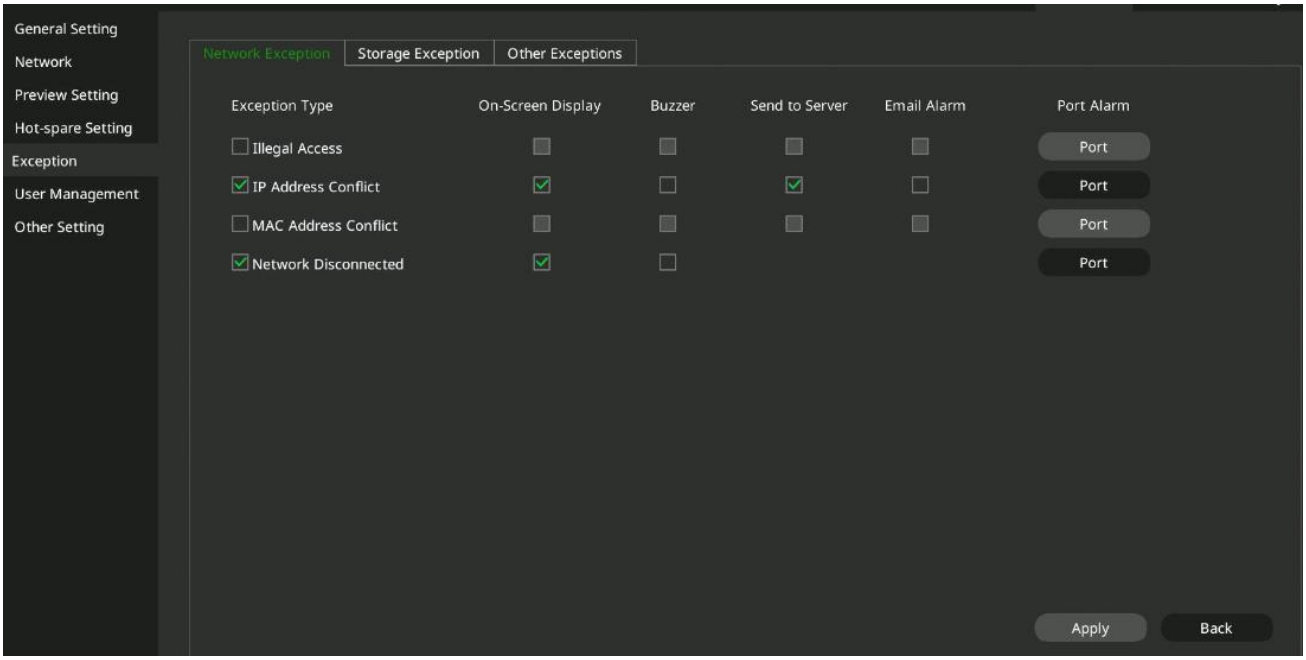
Explain：

- After the hot standby machine is changed to the working machine, it is necessary to manually restore the default Parameter.
- The system time of the working machine and the hot standby machine shall be consistent.

4.14.5 Exception Management

4.14.5.1 Network exception

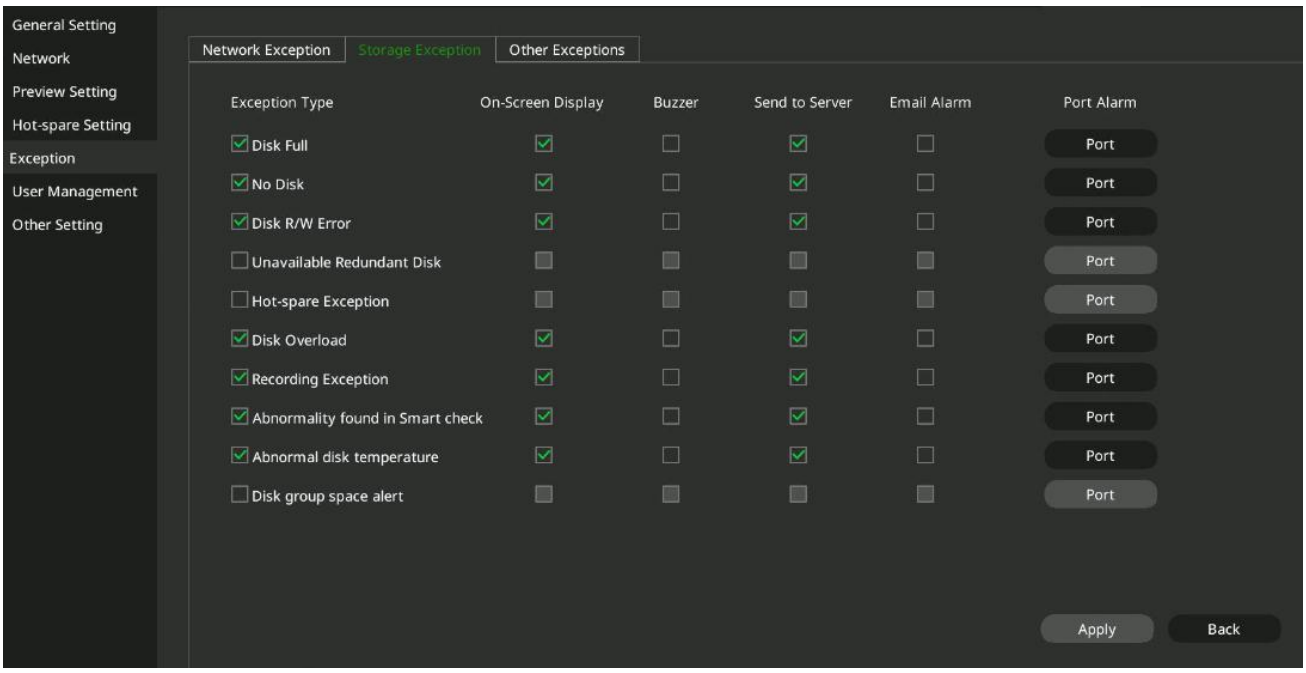
1. Enter [Main Menu- > System Settings- > Exception Management], and select the Network Exception tab, as shown in the following figure.



2. After checking the abnormal condition, you can check the corresponding linkage action of the system when the abnormal condition occurs, including screen display, sound prompt, upload center, etc.

4.14.5.2 Storage exception

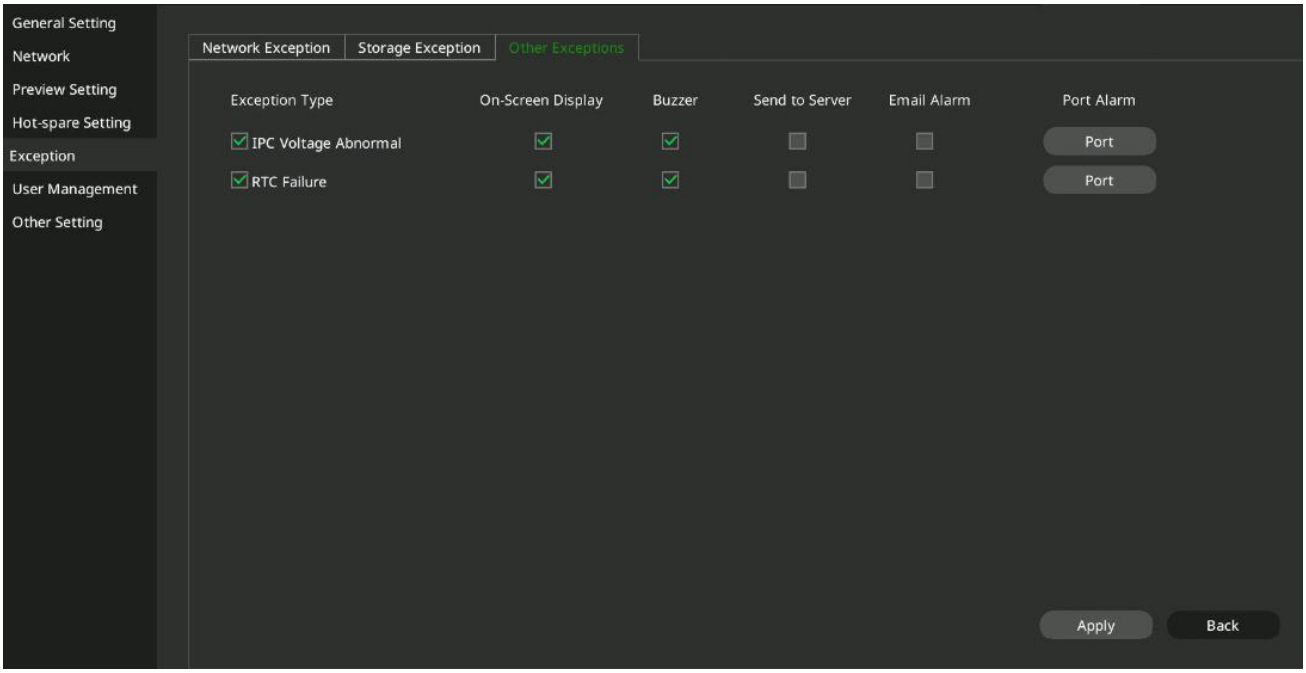
1. Enter [Main Menu- > System Settings- > Exception Management], and select the storage exception label, as shown in the following figure.



2. After checking the abnormal condition, you can check the corresponding linkage action of the system when the abnormal condition occurs, including screen display, sound prompt, upload center, etc.

4.14.5.3 Other anomalies

1. Enter [Main Menu-> System Settings-> Exception Management], and select other exception labels, as shown in the following figure.



2. After the abnormal condition is checked, the corresponding linkage action of the system can be checked when the abnormal condition occurs, including IPC voltage abnormality, RTC abnormality, etc.

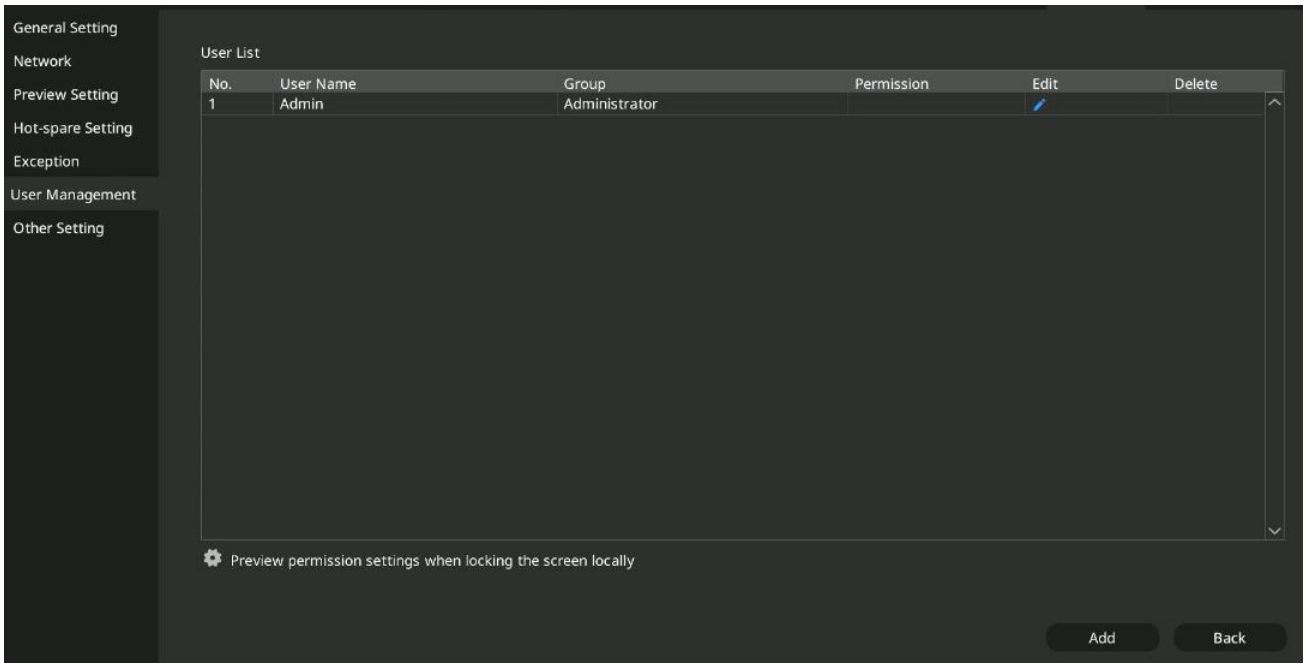
Explain：

- RTC exception means that the equipment recovers to the default time of January 1, 1970 due to power failure.

4.14.6 User management

4.14.6.1 Add User

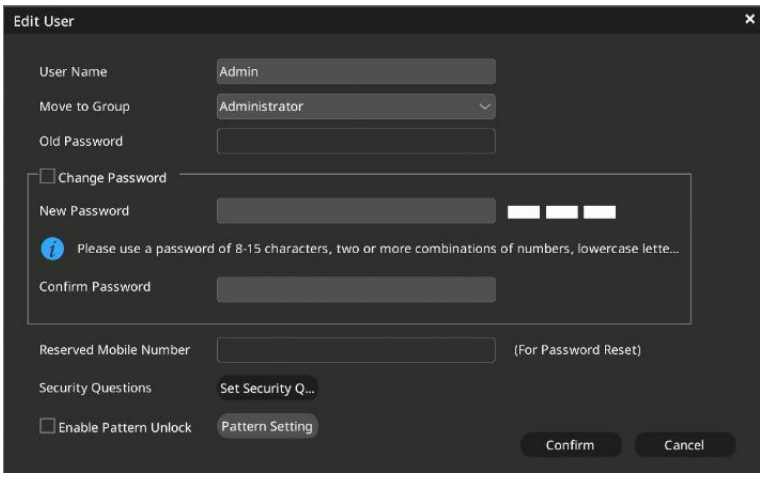
1. Enter [Main Menu-> System Settings-> User Management], as shown in the following figure.



Explain：

- Default user is added, which will be defaulted as default user after logout and login, and only the local preview permission of this user can be configured.

2. Click [Add User] to enter the [Add User] interface to set the user group, account, password, etc., as shown in the following figure.



Explain：

- After the user is added successfully, the added user information will be displayed in Basic Configuration-> User List.

- 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:

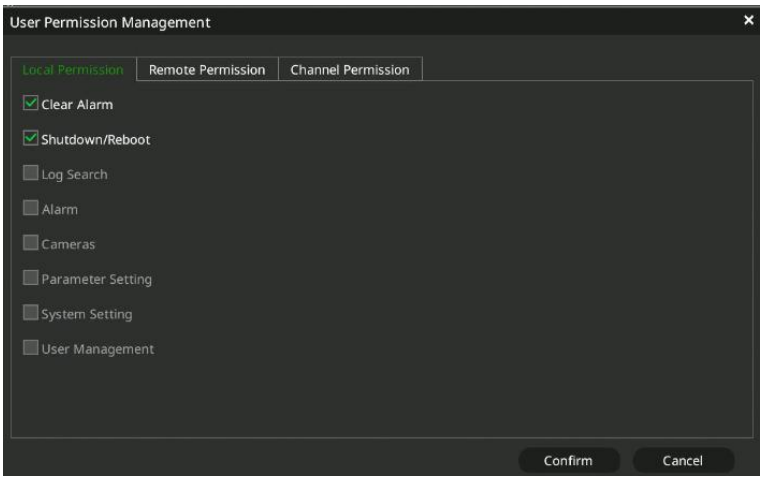
  Default user: browsing video

  Normal users: browsing videos

  Administrator: browse video + device control + Parameter setting + user management

4.14.6.2 User Permission Configuration

1. Click "" in the user list to open the user permission editing window, as shown in the following figure.



2. Permission Explain:

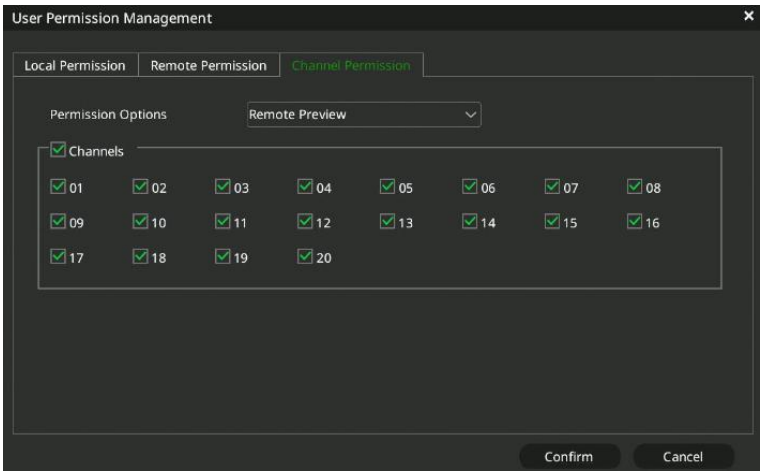
(1) Local authority: local operation authority, including manual alarm elimination, shutdown/restart, log search, alarm setting, channel management, Parameter setting, system setting and user management.

(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.

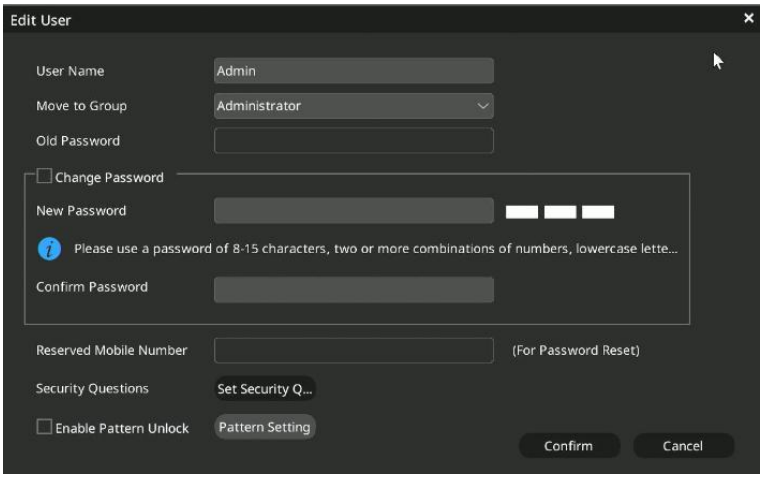
3. Channel authority Explain:

If the current user does not have the local preview permission of a certain channel, the channel will be unchecked (as shown in the fourth channel in the figure below). If the current user has the local preview permission of the channel, the channel will be checked.



4.14.6.3 Edit User

1. Click "✎" in the user list to pop up the edit user form, as shown in the following figure.

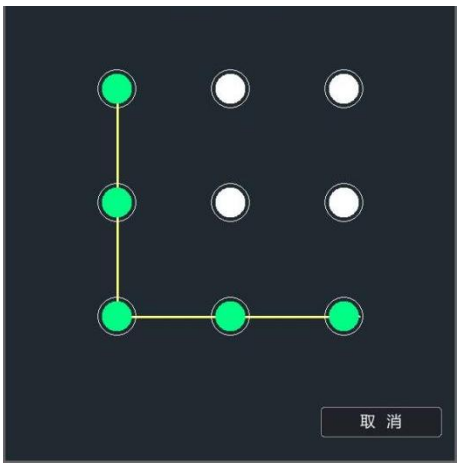


Explain：

- Only the admin user has the options of pattern unlocking and security setting; when editing the admin user and clicking [OK], you need to enter the original password first.

2. Pattern unlocking

（1）After checking Enable Pattern Unlock, a window will pop up. Only when the same pattern with more than 4 points is drawn twice according to the prompt, can unlocked pattern be set correctly, as shown in the following figure.



(2) Only admin users can use the pattern to unlock.

(3) The pattern unlocking is not enabled by default when the machine is started. After the setting is successful, click the pattern setting to modify the unlocking pattern.

3. Security problem

(1) Set security: After the admin user logs in, edit the user and click the [Set Security] button to enter the security setting interface.

The user can set 2 secret protection questions and select the custom question. The question needs to be filled in and cannot be empty.

（2）Verify the password protection: When the password protection is set, the admin user can click the [Forgot Password] button to change the password when logging in with the password.

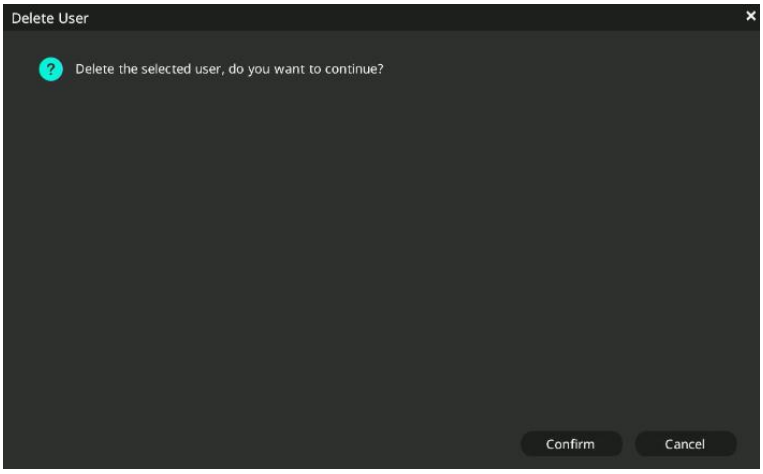
Click the [Forgot Password] button to enter the security verification interface.

4.14.6.4 Equipment Locking

After the password fails to unlock for 5 times, the device will enter the device locking interface, and the locking time is 5 minutes.

4.14.6.5 Delete User

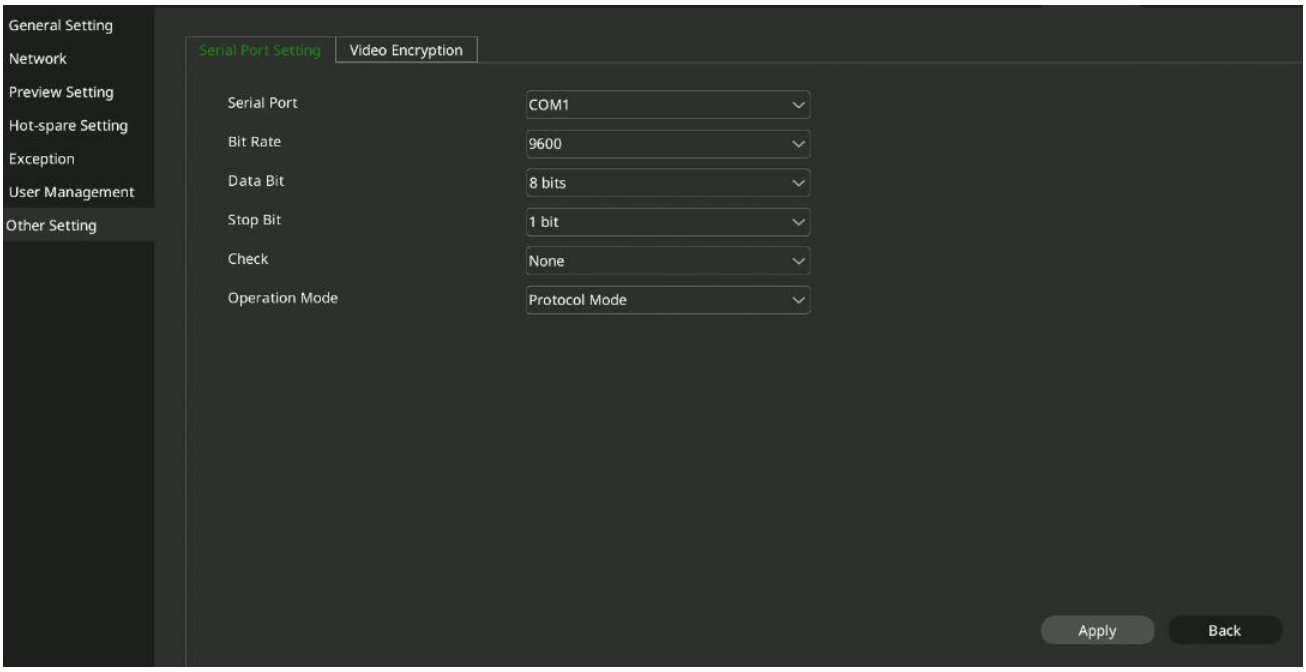
1. Select the user to be deleted, and click "" in the list to pop up the delete user form, as shown in the following figure.



4.14.7 Other settings

4.14.7.1 Serial port settings

1. Enter [Main Menu-> System Settings-> Other Settings], and select the Serial Port Settings tab, as shown in the following figure.

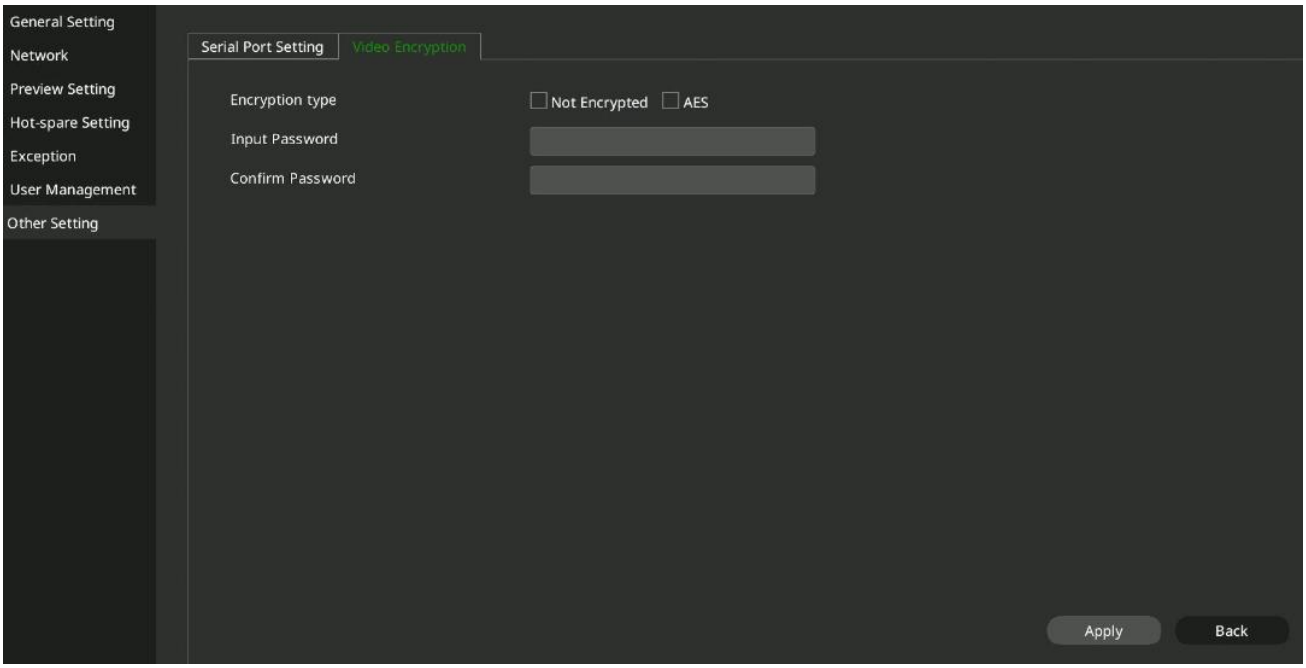


2. Select the corresponding serial port and modify it to the desired baud rate, data bit, stop bit, check and working mode.

3. Select [Apply] and save.

4.14.7.2 Video encryption

1. Enter [Main Menu-> System Settings-> Other Settings] and select the Video Encryption tab, as shown in the following figure.



2. [No encryption]: Do not enable encryption. [AES]: To enable AES algorithm encryption, you need to enter and confirm the password below.

Notice:

- After the video is encrypted, you also need to enter the password to view the playback. Please remember your encryption password to avoid being unable to view the video because of forgetting the password.

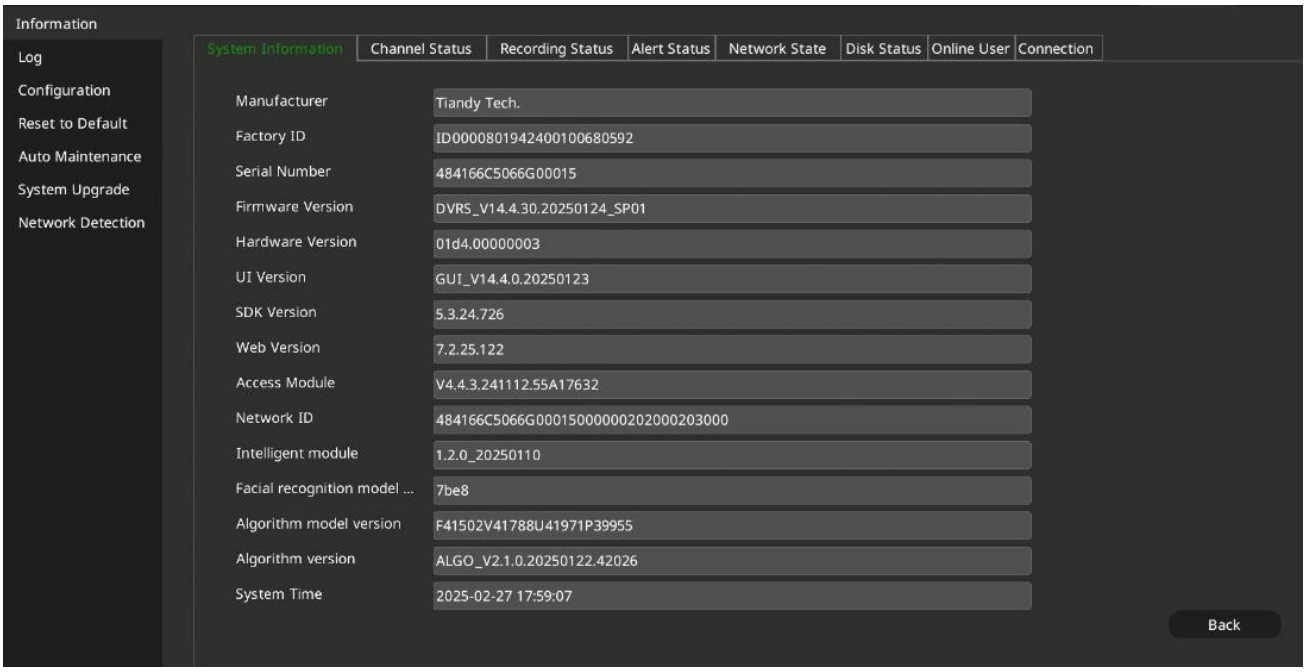
4.15 System maintenance

Check and maintain the system operation to ensure the normal and reliable operation of the system.

4.15.1 System information

4.15.1.1 System information

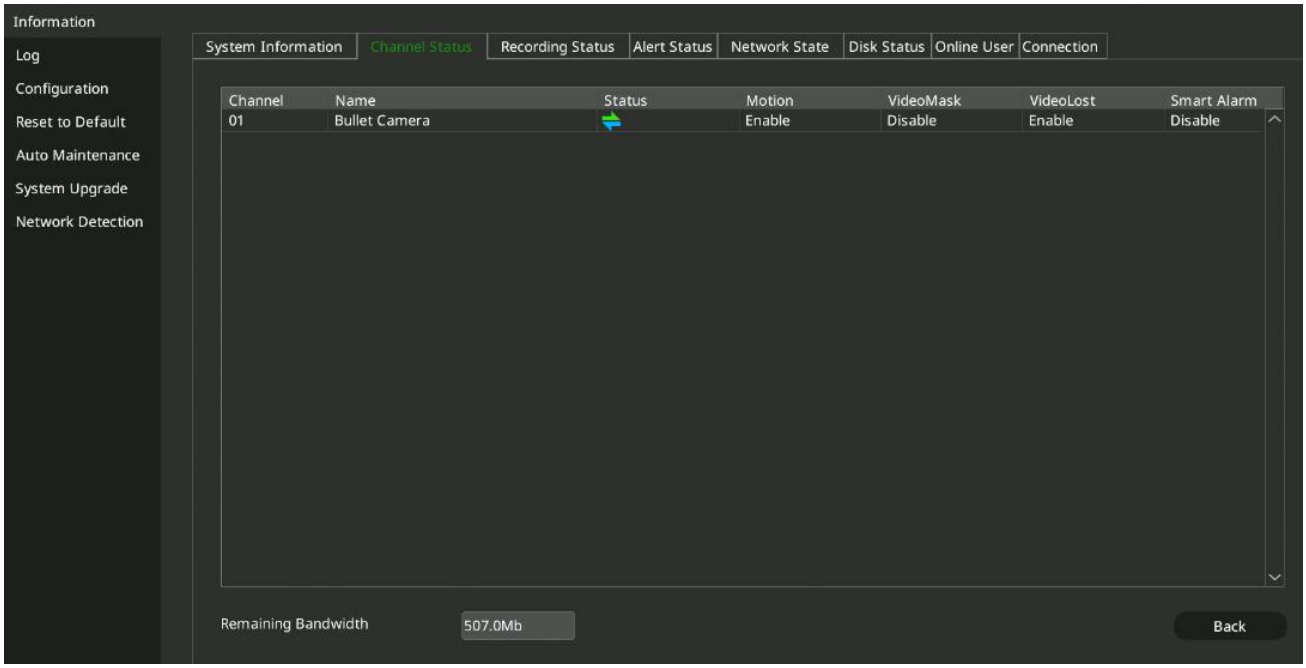
1. Enter [Main Menu-> System Maintenance-> System Information], and select the System Information tab, as shown in the following figure.



2. The manufacturer, serial number, kernel version, hardware version, SDK version, webpage version, UI version, system time and other information can be viewed through the system information.

4.15.1.2 Channel status

1. Enter [Main Menu- > System Maintenance- > System Information], and select the channel status label, as shown in the following figure.



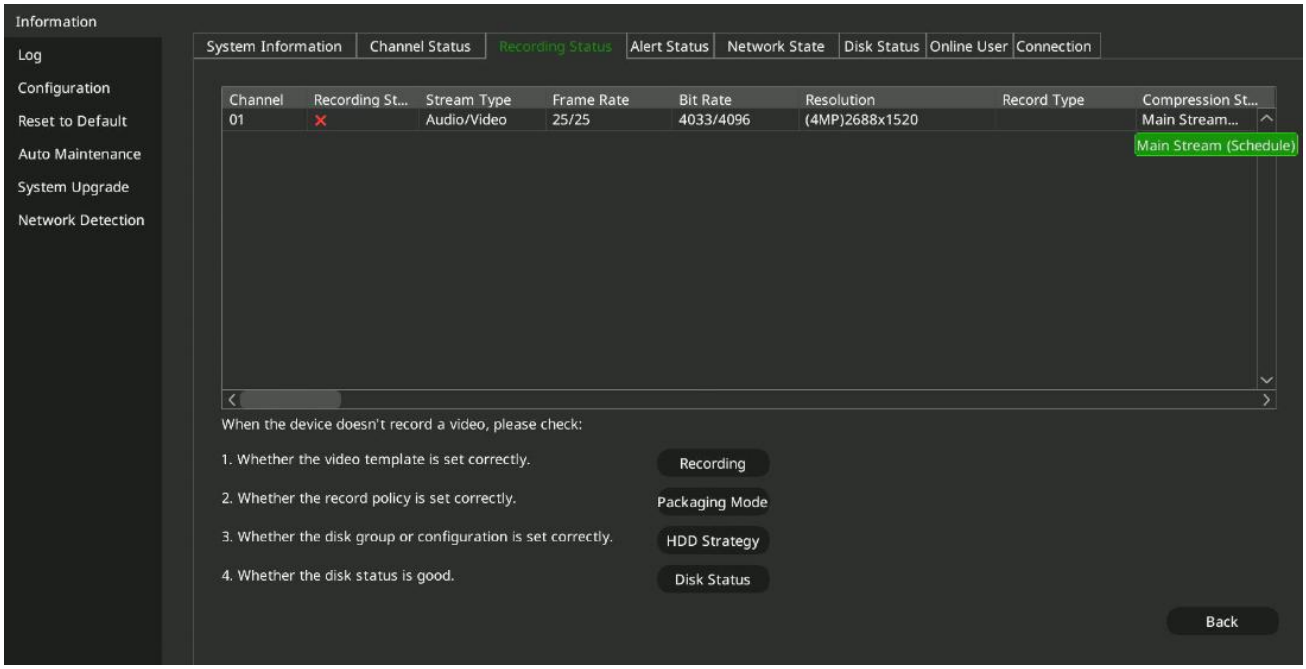
2. The channel number, channel name, connection status, motion detection status, video occlusion status, video loss status and other information can be viewed through the channel status.

Explain：

- Devices that do not support the video occlusion alarm function will not display the video occlusion column on the interface.

4.15.1.3 Video recording status

1. Enter [Main Menu- > System Maintenance- > System Information], and select the video status label, as shown in the following figure.

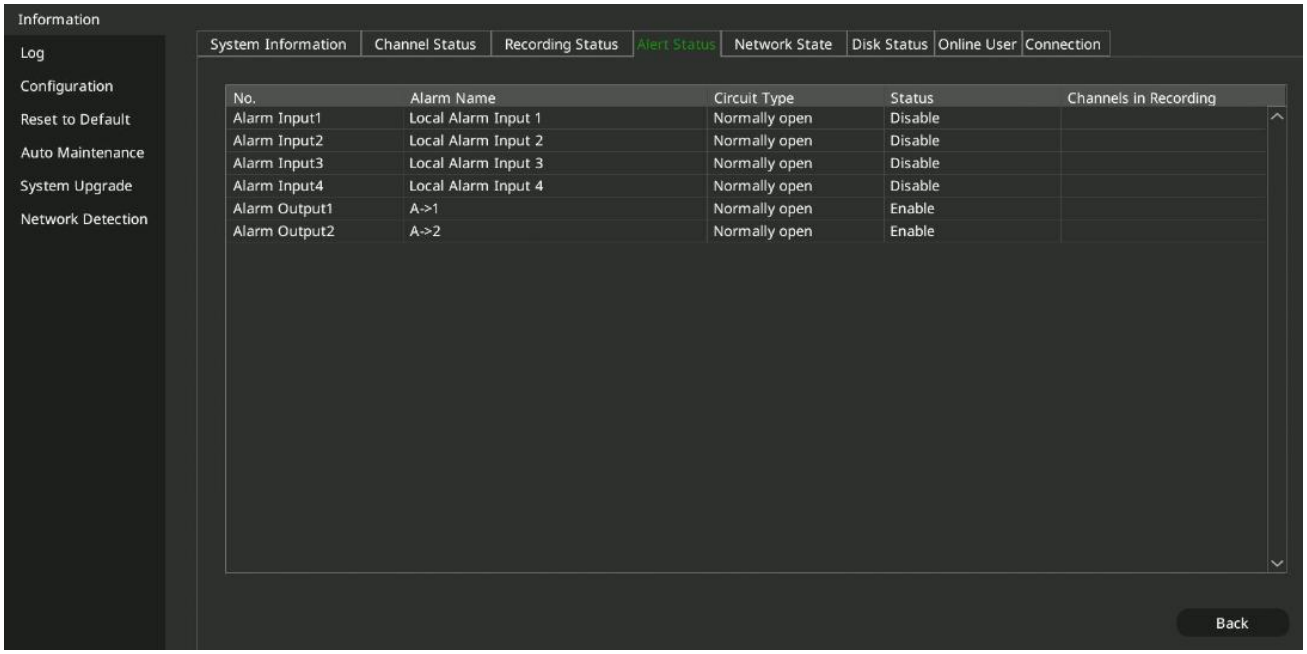


2. You can view the channel number, whether the video is being recorded, stream type, real-time frame rate/set frame rate, real-time code rate/set code rate, video resolution, video type, compression Parameter, redundancy and other information through the video recording status.

3. Click the video template, video policy, disk group setting and hard disk status to directly jump to the corresponding interface to view the device configuration status.

4.15.1.4 Translation failed

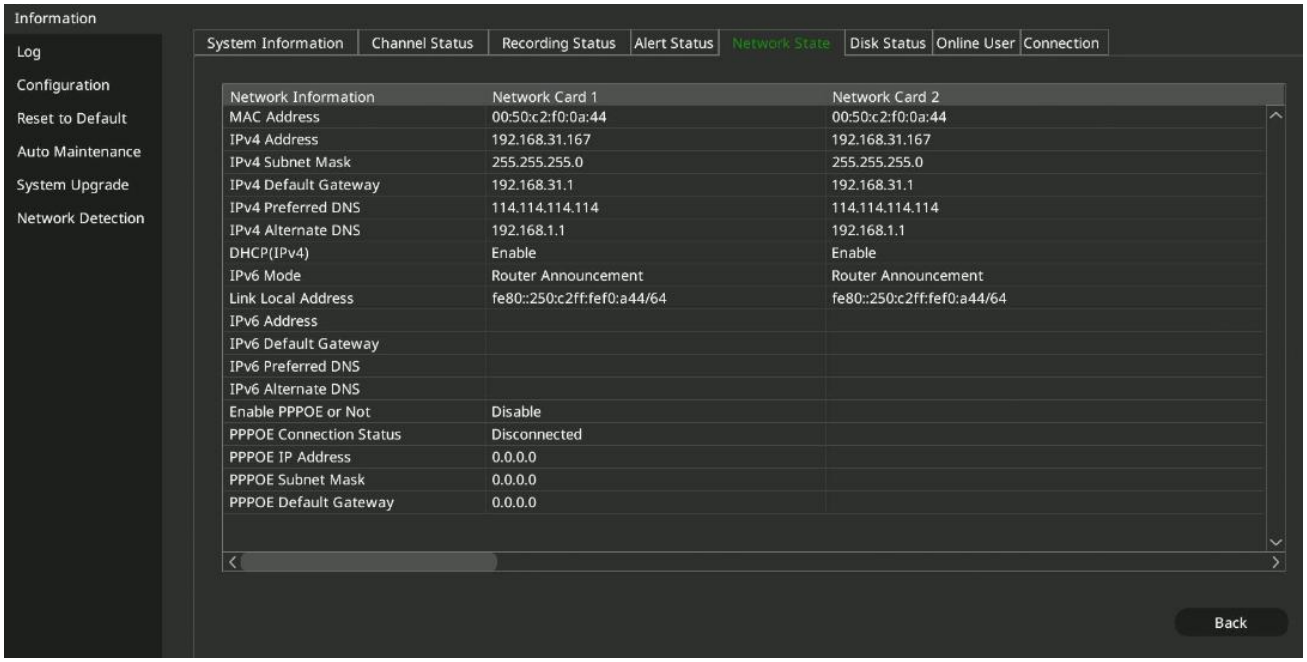
1. Enter [Main Menu- > System Maintenance- > System Information] and select the alarm status label, as shown in the following figure.



2. You can view the serial number, name, alarm type, whether it is open, trigger video channel and other information of the local alarm and alarm host through the alarm status.

4.15.1.5 Network Status

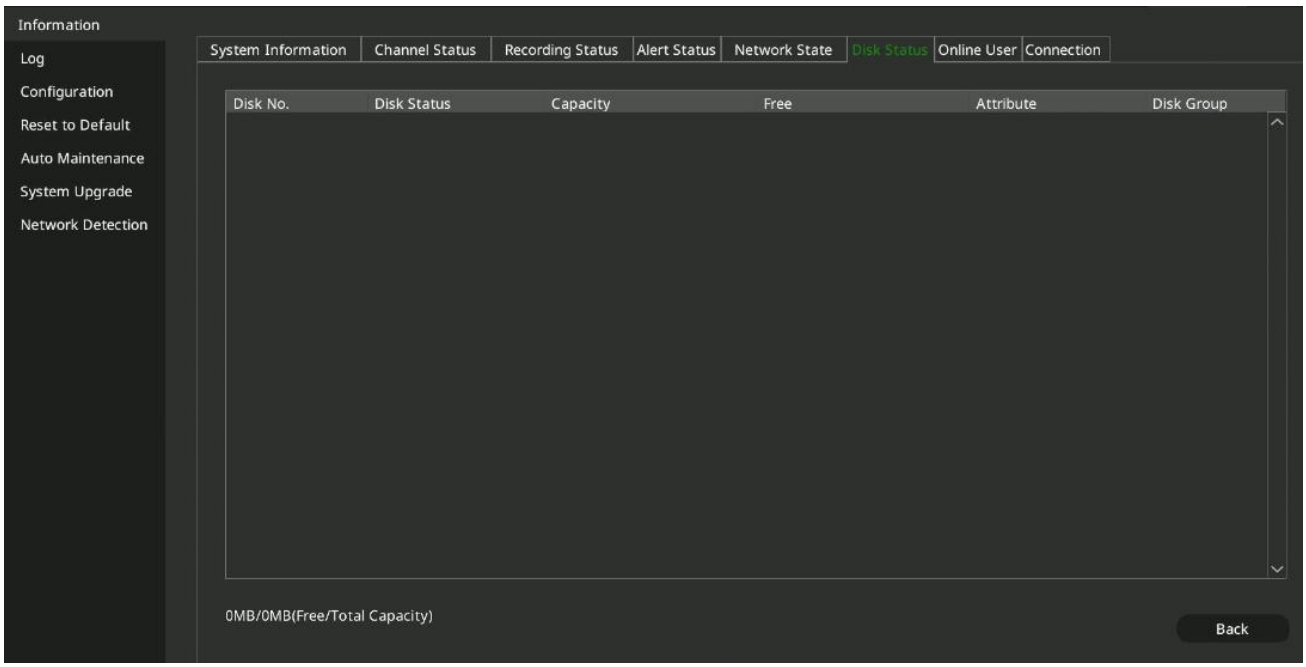
1. Enter [Main Menu- > System Maintenance- > System Information], and select the Network Status tab, as shown in the following figure.



2. The network information related to the network card can be viewed through the network status.

4.15.1.6 Hard disk status

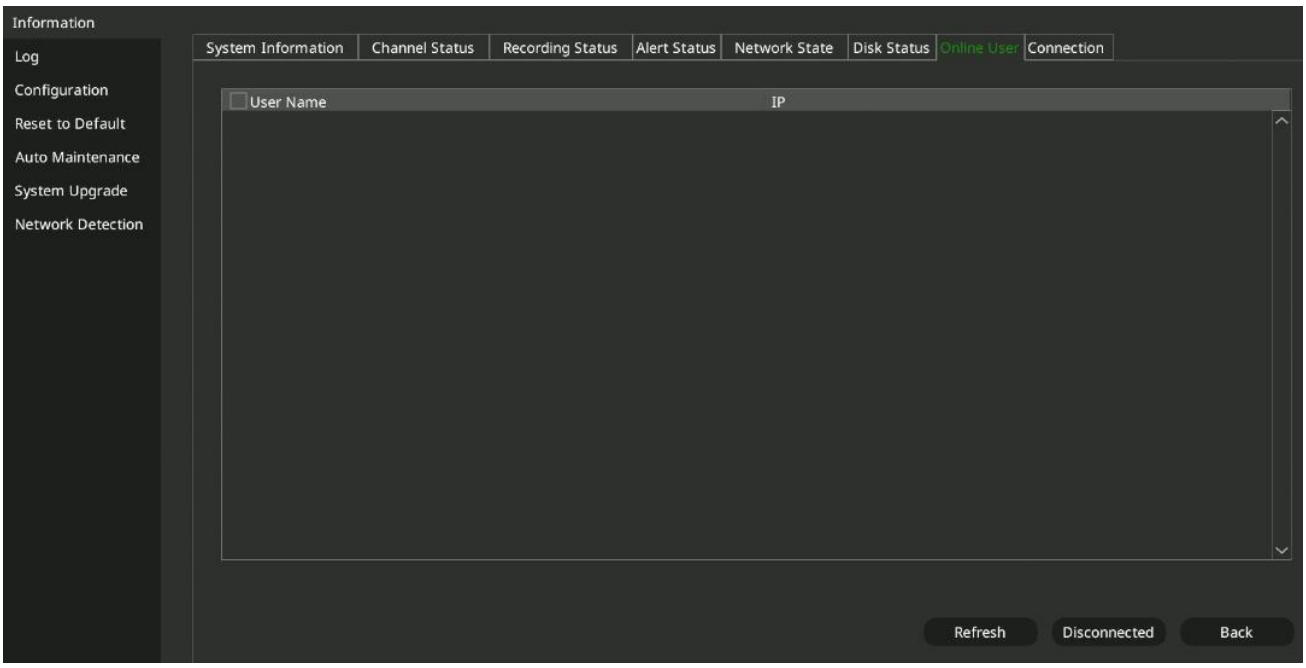
1. Enter [Main Menu-> System Maintenance-> System Information], and select the hard disk status label, as shown in the following figure.



2. The hard disk number, SMART detection status, size, idle, attribute, disk group, total remaining capacity and total capacity of all hard disks can be viewed through the hard disk status.

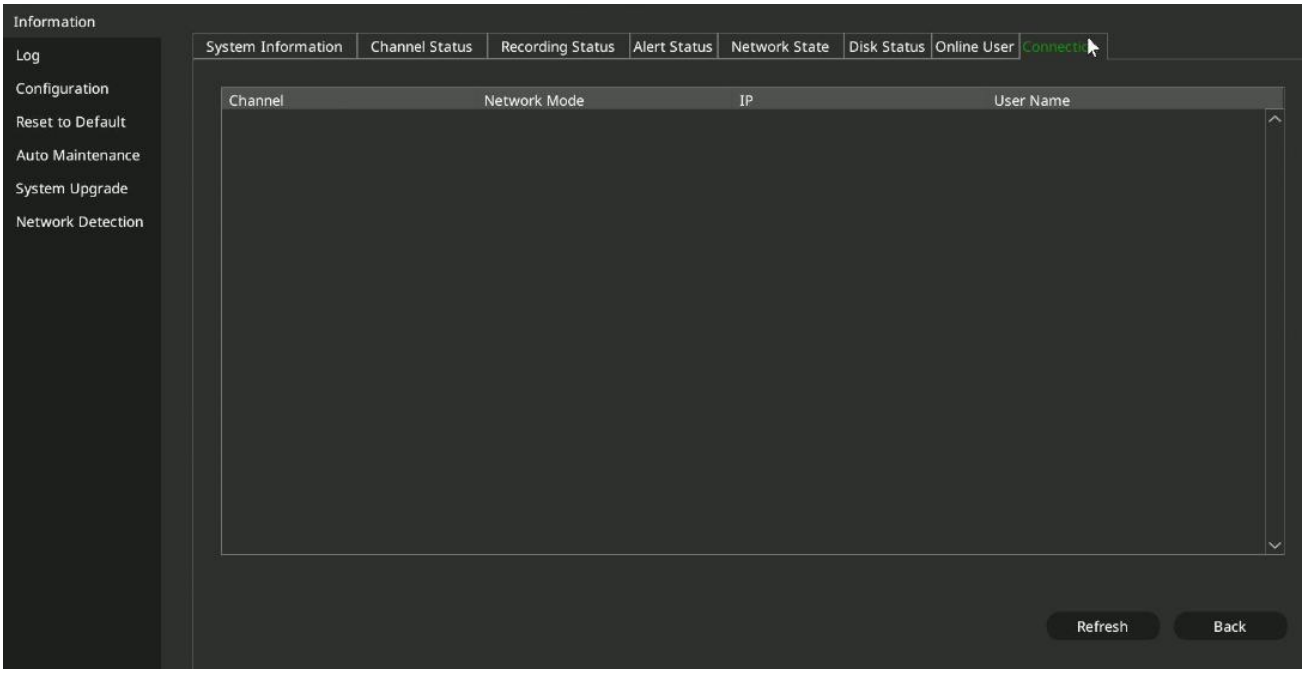
4.15.1.7 Online Users

1. Enter [Main Menu- > System Maintenance- > System Information] and select the Online User tab, as shown in the following figure.



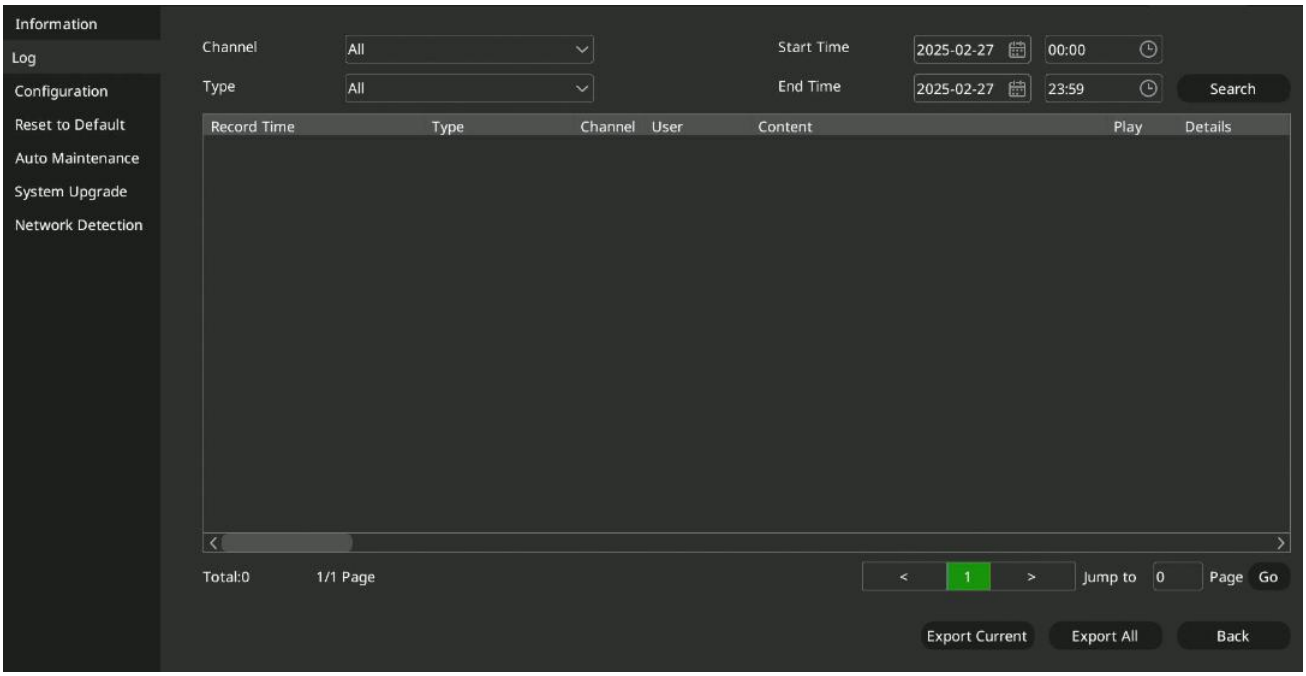
4.15.1.8 Connection information

1. Enter [Main Menu- > System Maintenance- > System Information], and select the Connection tab, as shown in the following figure.



4.15.2 Logs

1. Enter [Main Menu-> System Maintenance-> Log Management], as shown in the following figure.



2. After selecting query conditions such as channel, type, start and end time, click the [Query] button to query the log.

3. After querying the log, you can select the previous page and next page to view the log by pressing the button, or enter the page number and click the OK button to jump to the page. After selecting the log, click " " to view the log details. After selecting the alarm log, click " " to preview the recording of the alarm time period.

4. Log export operation

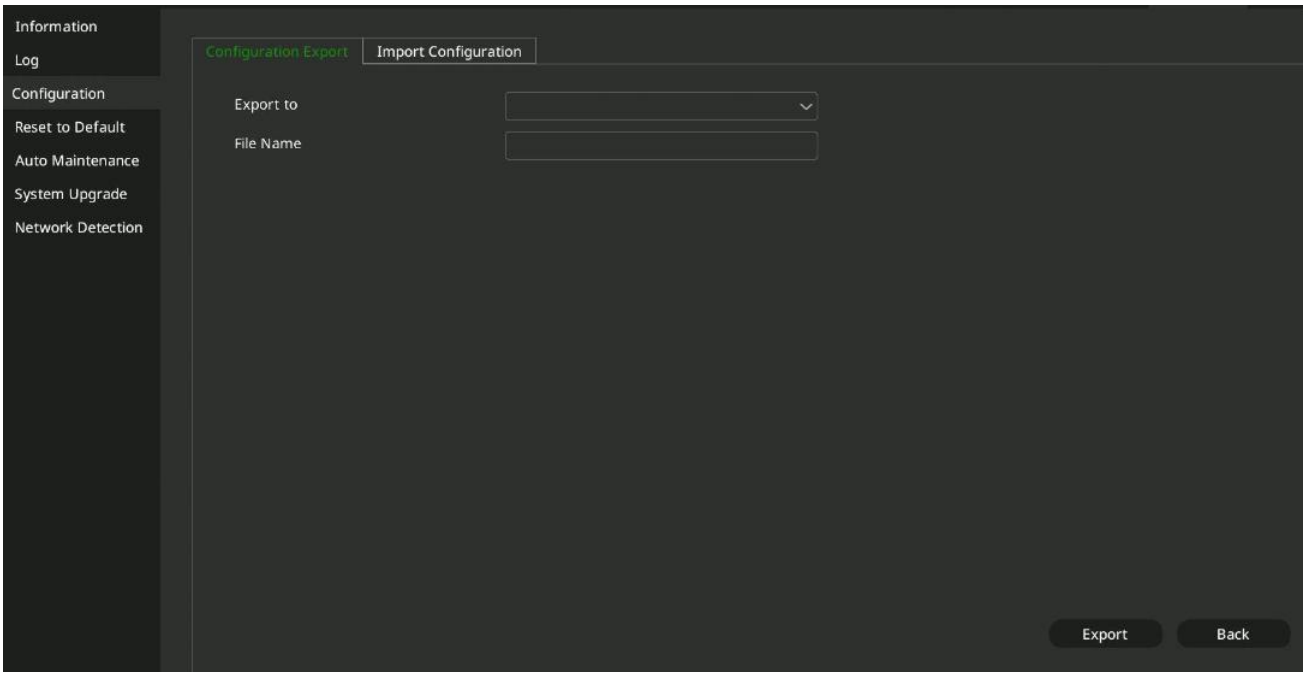
(1) Export the current page: After querying the log, click [Export the current page] to pop up the following window, select the path, and click [OK] to backup the log of the currently viewed page to the specified path.

(2) Export all pages: Click [Export all pages] to export all the queried logs. The backup path operation is the same as above.

4.15.3 Configuration Management

4.15.3.1 Configuration Export

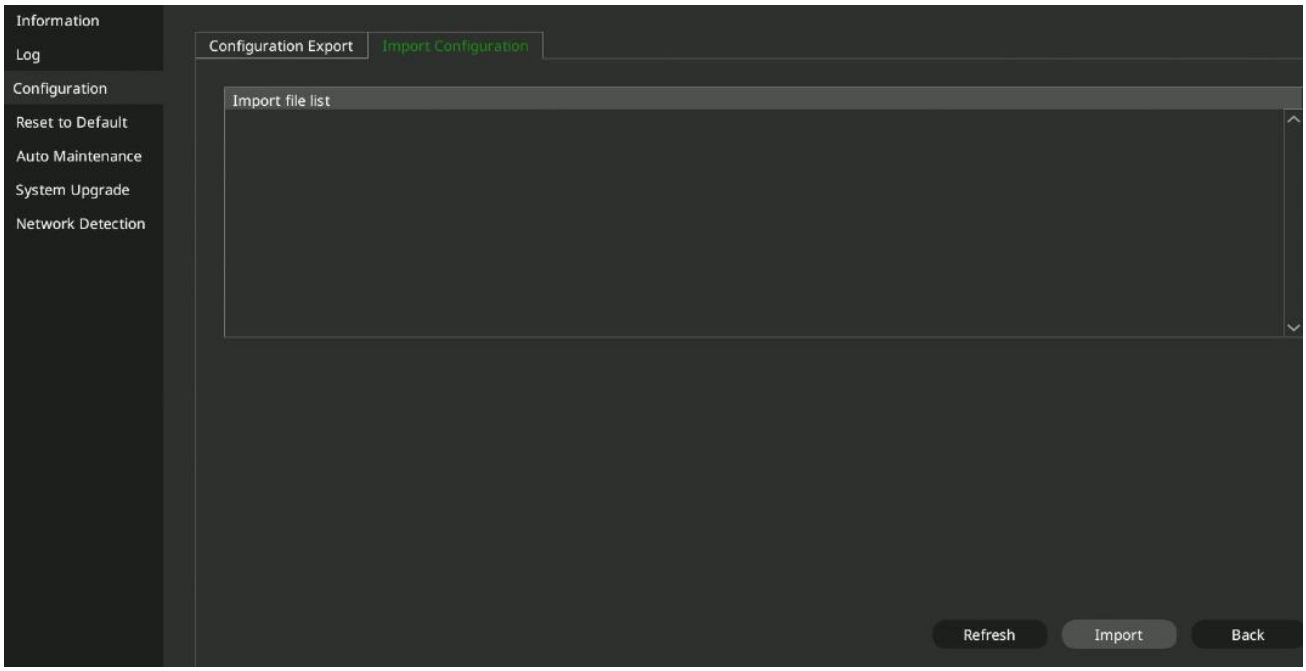
1. Enter [Main Menu-> System Maintenance-> Configuration Management] and select the Configuration Export tab, as shown in the following figure. [Export] the configuration file of the device, so that the configuration file can be backed up in time.



2. Select Configuration Export and add the export file name and path to export the device configuration.

4.15.3.2 Configuration Import

1. Enter [Main Menu-> System Maintenance-> Configuration Management] and select the Configuration Import tab, as shown in the following figure. If multiple devices have the same configuration, the [Import] operation saves device configuration time.

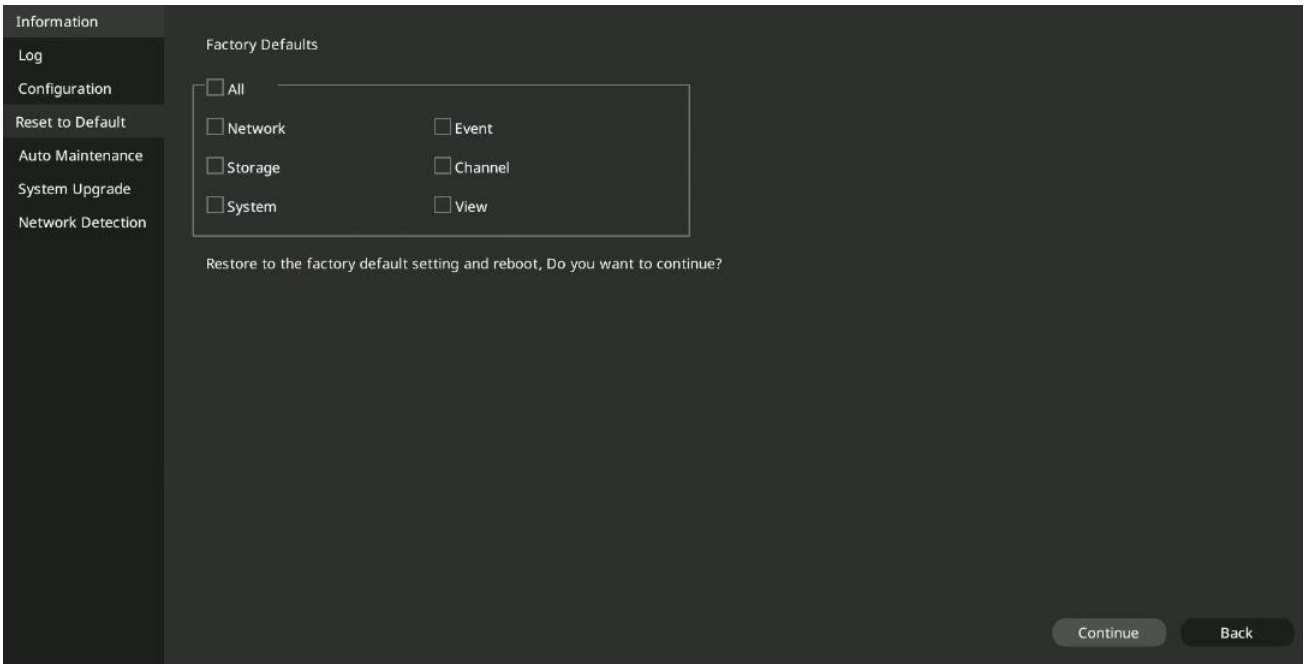


Explain：

- After the configuration is successfully imported, it will be automatically restarted.

4.15.4 Restore Default

1. Enter [Main Menu-> System Maintenance-> Restore Default], as shown in the following figure.



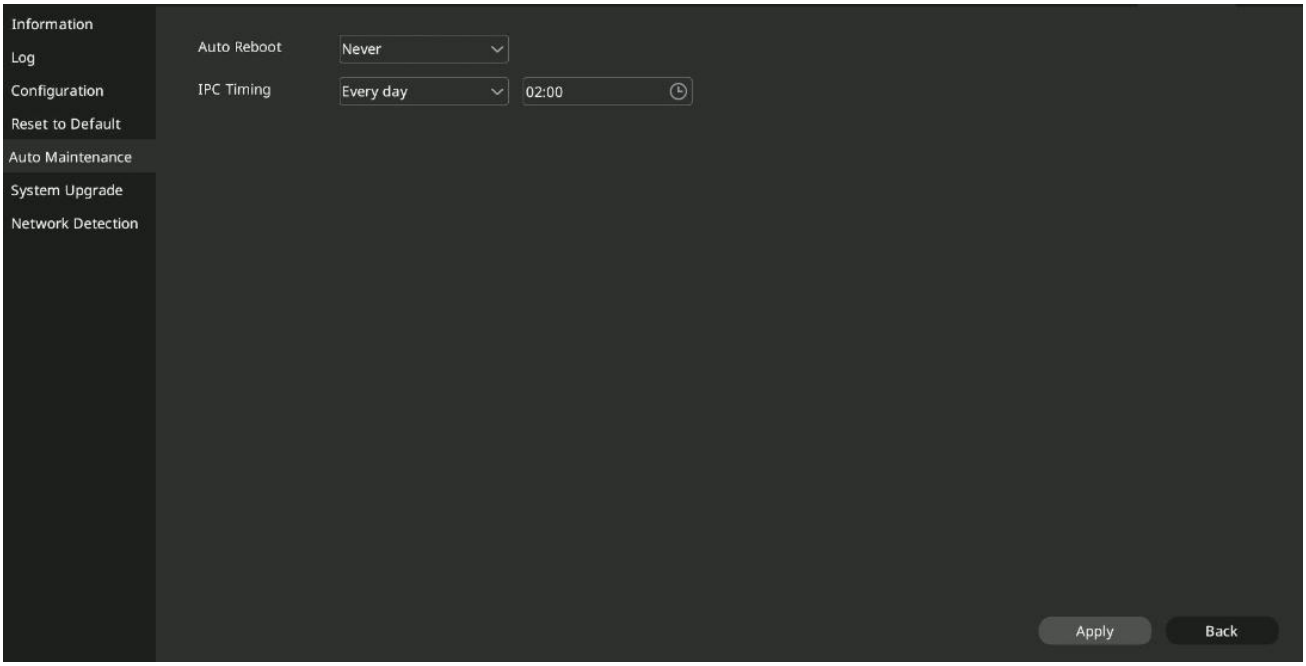
2. The user can select the module to restore the factory settings according to his own needs. Click the [Continue] button, and the selected module will be restored to the factory default configuration.

Explain：

- The device will automatically restart after the default is restored.

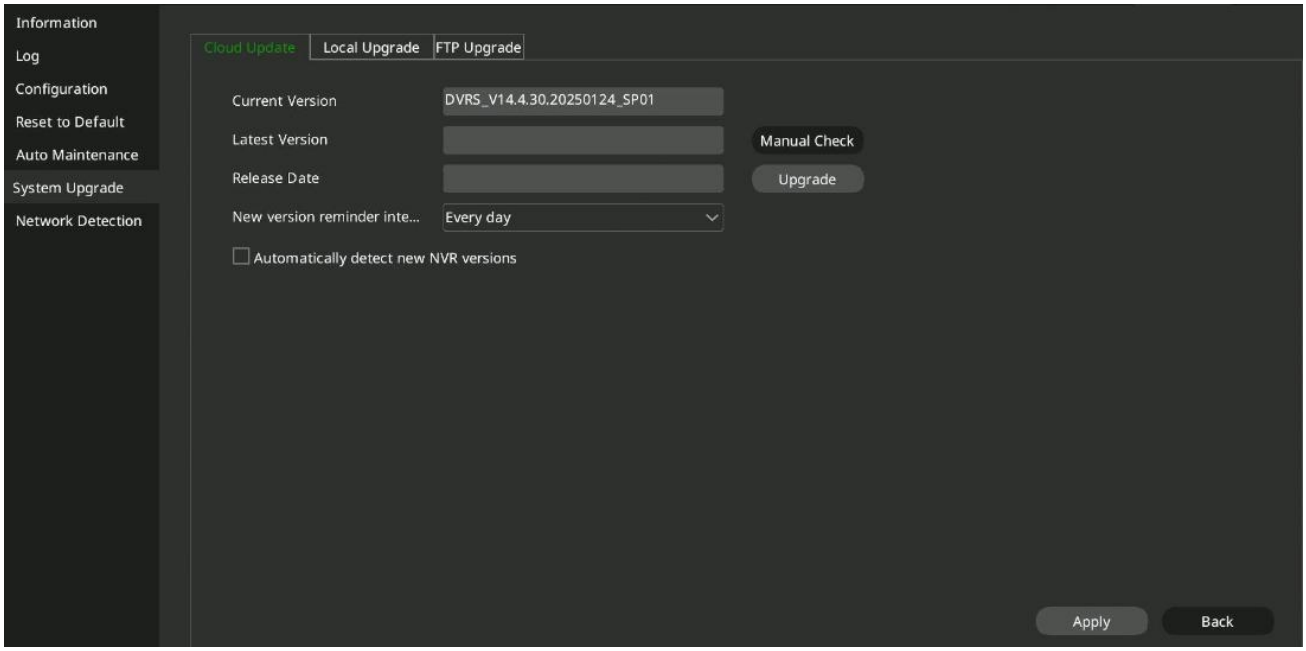
4.15.5 Automatic maintenance

1. Enter [Main Menu-> System Maintenance-> Automatic Maintenance], as shown in the following figure. The device name, serial number, and automatic restart time can be set. Some devices support IPC automatic timing.



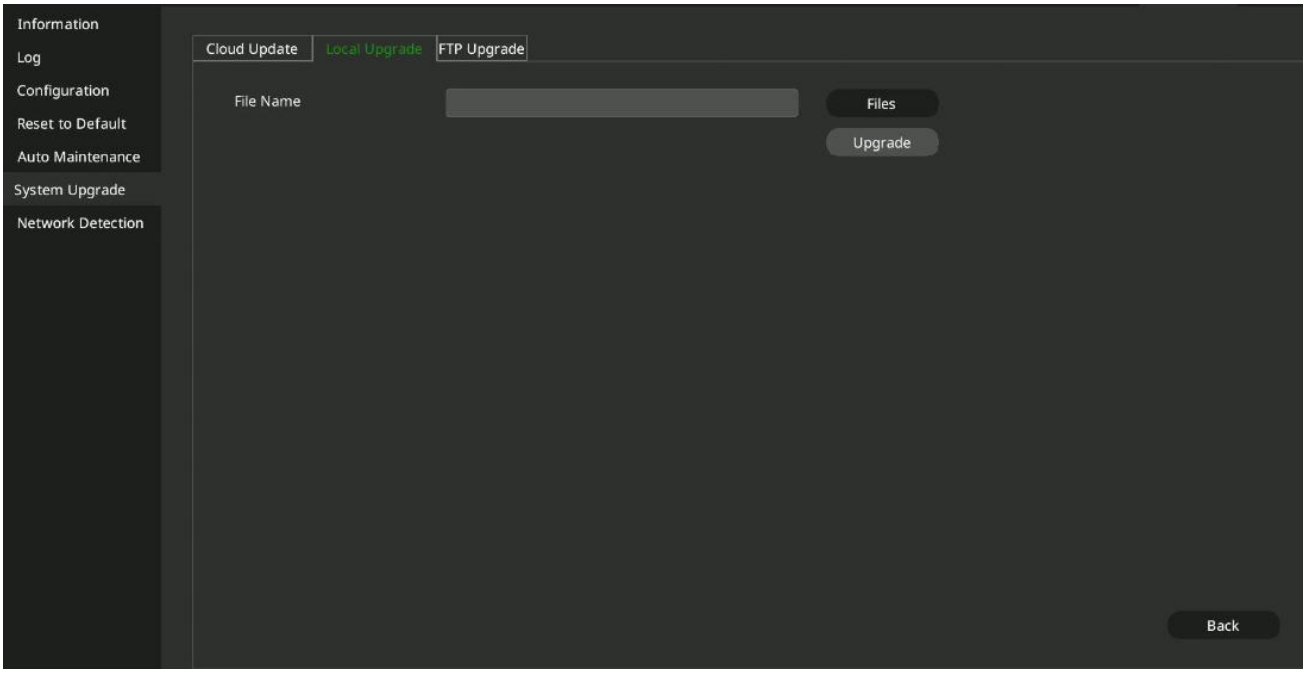
4.15.6 System upgrade

1. Enter [Main Menu-> System Maintenance-> System Upgrade] and select the Cloud Upgrade tab, as shown in the following figure.



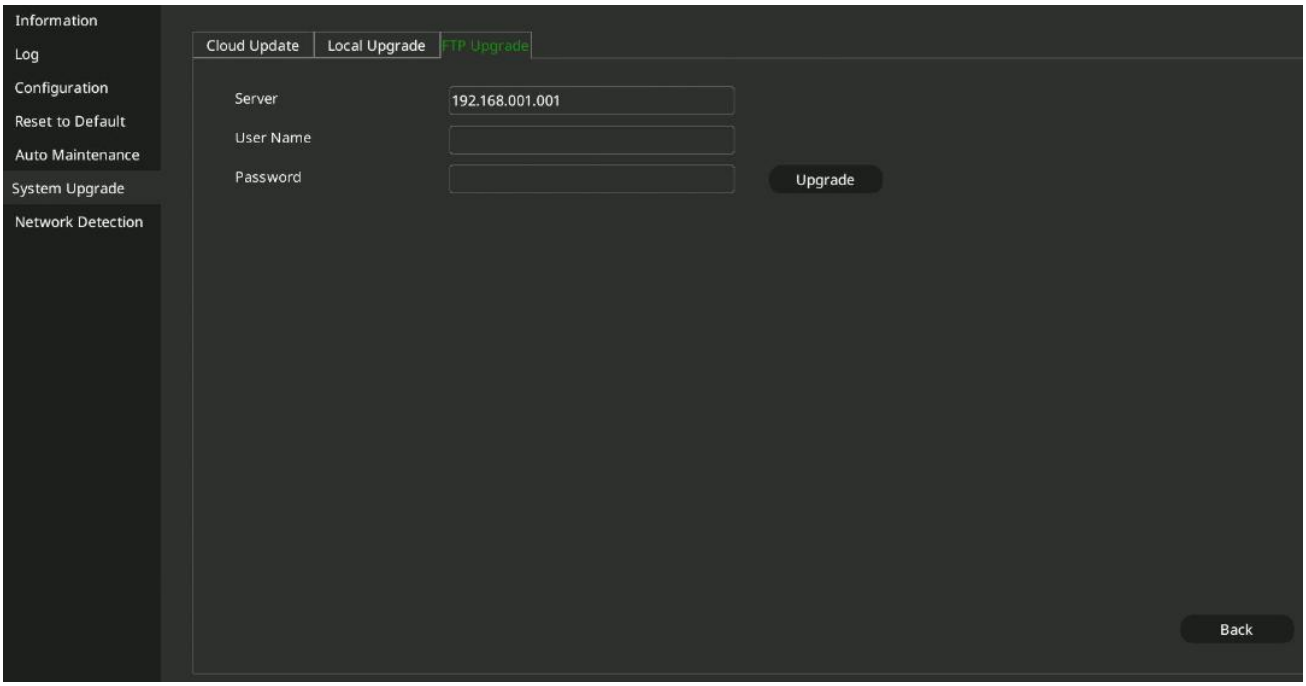
Click Manual Detection to detect whether the latest version can be upgraded, or check Automatically Detect NVR New Version, and set the new version reminder interval. If the new version can be upgraded, click Upgrade to upgrade to the new version.

2. Enter [Main Menu-> System Maintenance-> System Upgrade], and select the local file tab, as shown in the following figure.



3. Click [Browse File] to select the file to be upgraded, and then upgrade it.

4. Enter [Main Menu-> System Maintenance-> System Upgrade] and select the FTP Upgrade tab, as shown in the following figure.



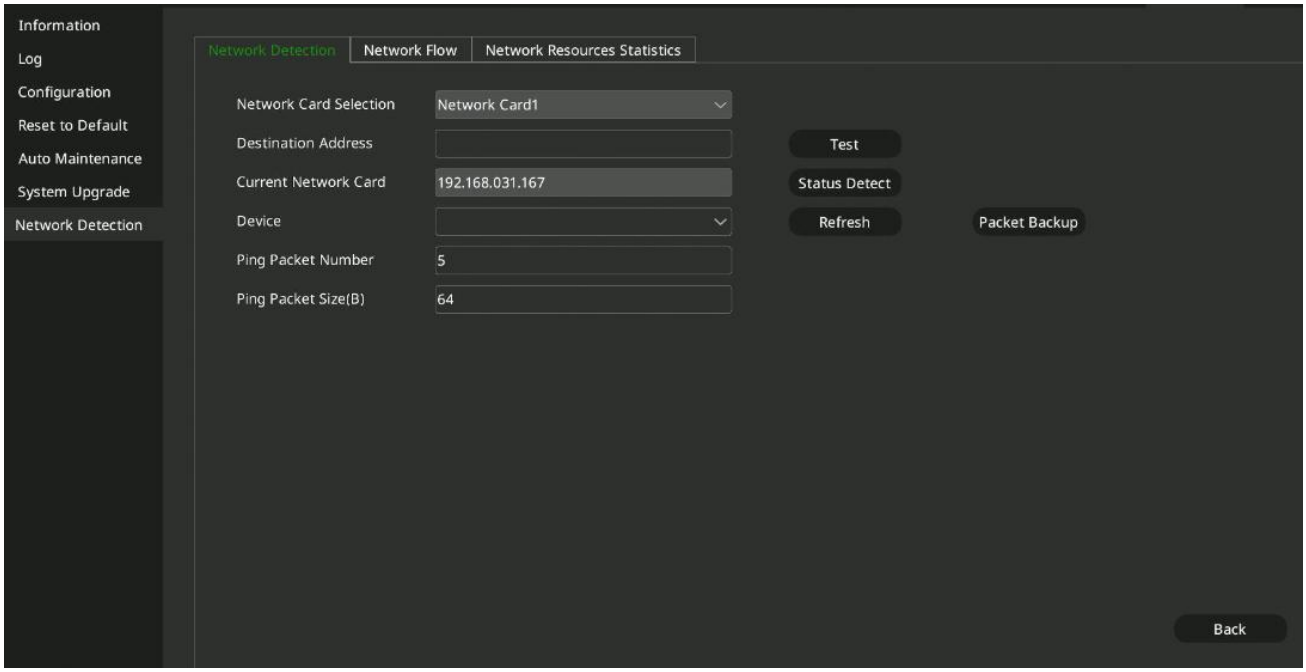
Explain：

- After the upgrade is successful, the device will automatically restart and run the new version of the program after restarting.
- If it is prompted that the upgrade fails or the equipment cannot operate normally after restarting, please contact the dealer in time for handling.

4.15.7 Network detection

4.15.7.1 Network detection

1. Enter the [Main Menu-> System Maintenance-> Network Detection] interface, and select the network detection tab, as shown in the following figure.



2. In the network test column, enter the destination address to test whether the address can be pinged.

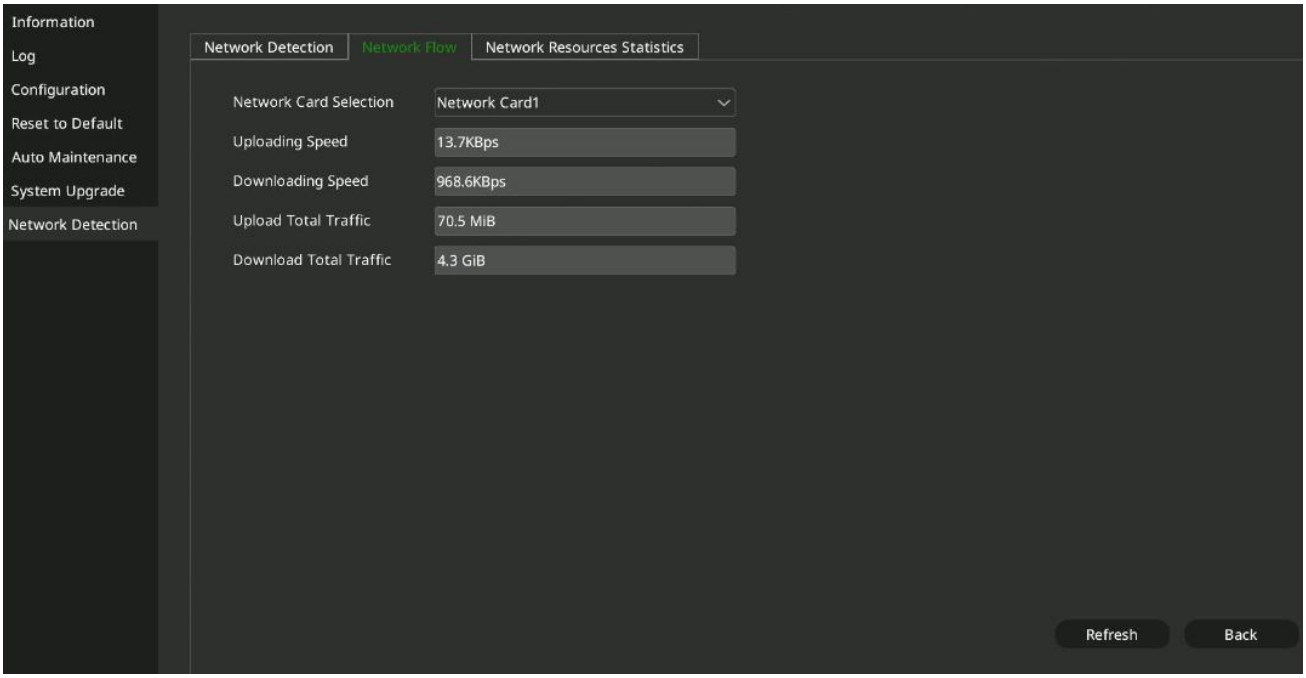
3. Click the [Capture Backup] button to capture the current network card and save it to the specified storage medium.

4. Click the [Status Detection] button to detect whether the gateway and DNS of the current network card are reachable.

5. You can set the number and size of PING packets.

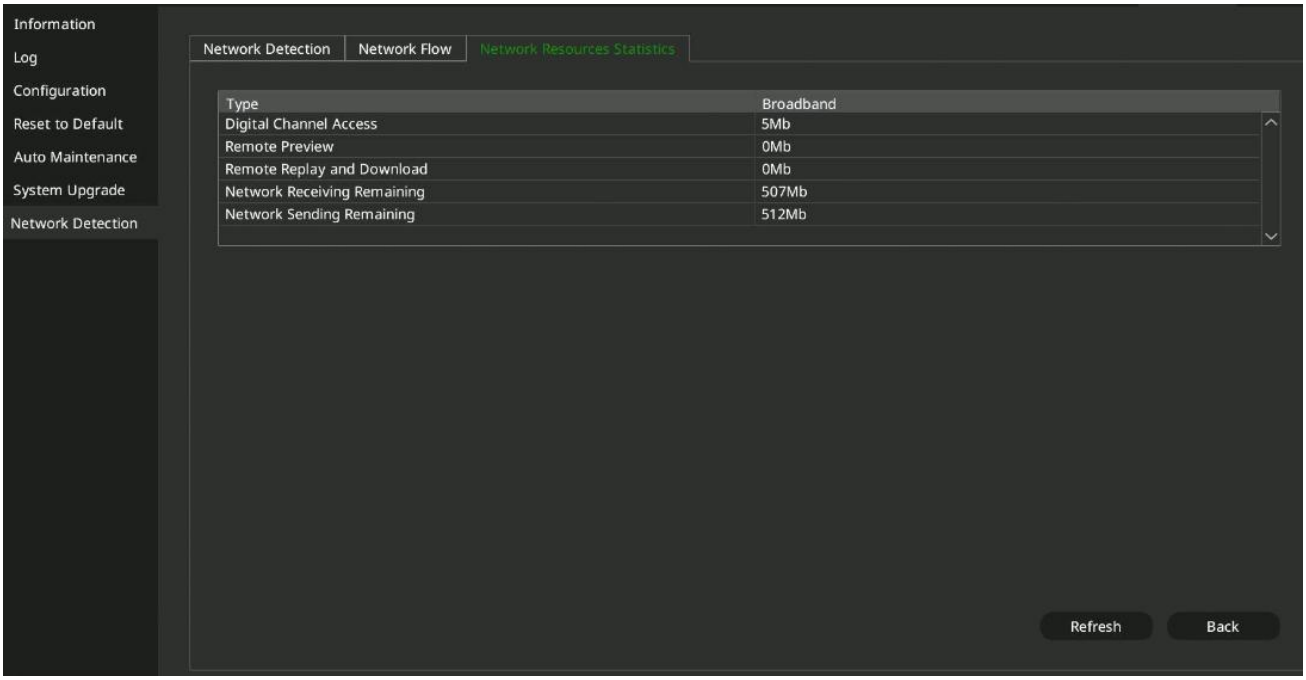
4.15.7.2 Network traffic

1、Enter [Main Menu-> System Maintenance-> Network Detection], select the network traffic label, and click [Refresh] to view the real-time network data, as shown in the following figure.



4.15.7.3 Network resource statistics

1、Enter [Main Menu-> System Maintenance-> Network Detection], select the Network Resource Statistics tab to view the usage of network resources, as shown in the following figure.



5 WEB Visiting

The device is embedded with Web service. When the device is connected to network, the user can realize remote WEB visiting by inputting the IP address of the present device in the browser address bar. Refer to "IE Part of User Manual of NVR Series Network Video Recorder" for details.

Explain：

- WEB service supports IE browser visiting.

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Appendix 1 Reference for HDD Capacity Calculation

(You can easily use our "Storage Capcity Tool" in Search config software to calculate the HDD volume needed).

Calculate the total capacity required a hard disk video recorder according to the video recording requirements (video type, video storage time).

Calculation method:

1. According to Equation (1), calculate the storage capacity q_i required by a single channel per hour, in MByte.

$$q_i = d_i \div 8 \times 3600 \div 1024 \quad (1)$$

Wherein: d_i - bit rate, in Kbit/s

2. After determining the recording time requirement, calculate the storage capacity m_i required by a single channel according to Equation (2), in MByte.

$$m_i = q_i \times h_i \times D_i \quad (2)$$

Wherein: h_i - recording time per day (hours)

D_i - the number of days the video needs to be stored

3. According to Equation (3), calculate the total capacity q_T (total) required for timer recording of all channels of a hard disk video recorder.

$$q_T = \sum_{i=1}^{c} m_i \quad (3)$$

Wherein: c - the total number of channels for a DVR.

4. According to Equation (4), calculate the total capacity q_T (total) required alarm recording (including motion detection) for all channels of a hard disk video recorder.

$$q_T = \sum_{i=1}^{c} m_i \times a\% \quad (4)$$

Wherein: a% - alarm incidence.

Appendix 2 Troubleshooting of Common Faults

The fault phenomenon	Possible reasons for
After the 220V power supply is connected and the power switch is turned on, the "PWR" indicator on the panel (for 2U chassis, it is "Ready") is not on, and the fan is not running.	1) The power cable is damaged 2) The power switch is faulty
After the 220V power supply is connected and the power switch is turned on, the "PWR" indicator on the panel (for 2U chassis, it is "Ready") is on in green, but the fan is not running.	1) The panel power cable is damaged 2) The fan is damaged
After the hard disk video recorder is turned on, the monitor connected to VOUT has no signal.	1) The video cable connected to the monitor is broken 2) The interface board of the DVR is broken 3) The mother board of the DVR is broken
The hard drive cannot be found on startup.	1) The hard disk cable is broken 2) The hard disk power cable is not plugged in 3) The hard disk is damaged

Recording is impossible	1) HDD is not mounted to the SATA port 2) HDD not formatted 3) The video template is not enabled or the time period is not set correctly 4) The purpose of SATA is not set to recording
Video and audio network transmission fail in the client.	1) One or more of the items such as IP address, port number, user name, and password of the DVR entered in the "Local Config" on the client interface are incorrect 2) The network cable is faulty 3) The network interface of the mother board is broken

Appendix 3 Maintenance Instructions

1. Dust on the circuit board, if dampened, will cause short circuit, which will affect the normal operation of the device and even damage the device. To ensure the long-term and stable operation of the device, please regularly remove dust inside the cabinet.

2. Please ensure that the device is well grounded to avoid interference with video and audio signals and damage of device by static electricity or surge voltage.

3. Do not plug and unplug audio and video signal cables, RS-485, alarm interfaces under live conditions, which may easily damage the port.

4. Do not directly cut off the mains power to shut the device down, but to use the OFF button on the front panel (press and hold for more than 3 seconds) or on the video interface to allow the system to shut down automatically and then cut off the mains power to avoid damage to the hard disk.

5. Please keep the device away from heat sources and places.

6. Please maintain good ventilation around the device case for heat dissipation.

7. Please check and maintain the system regularly.