Network Video Recorder
User Manual

N8NRE/N16NRE/N32NRE
N16NRD
N4NRN/N8NRN/N16NRN/N32NRN
N4NRL/N8NRL
N8NRP/N16NRP
N64NR/N128NR

Rev. 12/20/2023

Features and specifications are subject to change, please check www.specotech.com for firmware updates.

IMPORTANT

- Please read this user manual carefully to ensure proper and safe use of the equipment.
- We are not responsible for technical errors or typos in this manual. The contents of this manual are subject to change without notice.
- This device should only be operated only using the type of power source indicated on the rear panel. The voltage of the power supply must be verified before installing. It is recommended to disconnect from the power source if the device is not going to be used for a long period of time.
- Do not install this device near heat sources such as radiators, heating vents, stoves or other devices that produce heat.
- Do not install this device in a location at risk of water splash, drip, submersion, or high humidity. Clean only with a dry cloth.
- Never block any ventilation openings and always ensure proper ventilation around the machine.
- Always use the recorder menu option to power off the device.
- This recorder is for indoor use only. Do not expose the recorder to rain or a moist environment. If any solids or liquids get inside the recorder's chassis, please turn the device off immediately and get it checked by a qualified technician.
- Do not try to repair the device by yourself without technical aid or approval from Speco Technologies' Technical Support.

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1 Introduction

1.1 Welcome

Thank you for purchasing this Speco Blue NVR.

If technical assistance is needed, please contact Speco Technologies Technical Support.

Phone: 1-800-645-5516 option 3
Email: techsupport@specotech.com

1.2 Features

- **Basic Functions**
- Supports network device access including both Speco Technologies' and third-party IP cameras (IPC)
- This NVR supports the H.265 video coding stream and will also accept a mixed input of H.265 and H.264 IP cameras
- Supports standard ONVIF protocol
- Supports dual stream recording for each camera
- Supports the addition of IP cameras both automatically and manually
- Supports collective or individual configuration of the cameras' OSD, video parameters, mask, motion, etc.
- Supports multiple smart detection access and linkage for IPC's, such as scene change, video color cast detection, video blur detection, intrusion detection (region entrance/exiting detection), target counting, abandoned object detection, missing object detection, crowd density detection, face detection, license plate detection, smart tracking, fire detection, temperature detection, video metadata (BETA), etc.
- Supports a maximum of 8 user permission groups. This includes Administrator, Advanced and Common, which are the default permission groups of the system.
- Supports the creation of a maximum of 16 users. Also supports multiple web client logins by using one username at the same time and the ability to enable or disable user permissions
- Supports multiple web client logins at the same time
- **Live View**
- Supports 4K×2K/1920×1080/1280×1024 HDMI and 1920×1080/1280×1024 VGA high-definition synchronous display
- Supports multi-screen modes such as 1 / 4 / 6 / 8 / 16 / 32 (varies by model)
- Supports auto adjustment of the camera's image display proportion
- Supports enabling or disabling audio monitoring of a camera
- Supports manual snapshot of a camera live view
- Supports camera sequence adjustment
- Supports adding and saving display modes, and saved modes can be recalled directly
- Supports quick tool bar operation from the preview window
- Supports camera group view and scheme view in sequence, quick sequence view and dwell time setup
- Supports motion detection and video masking
- Supports multiple popular PTZ control protocols and setup of preset and cruise
- Supports direct mouse control of the IP dome including rotating, zoom, focusing, etc.
- Supports the zoom of a single camera image by sliding the scroll wheel of the mouse
- Supports the zoom of any area of a camera image up to a maximum of 16 times of the current size
- Supports image and lens adjustment (only available with some cameras)
- Supports quick camera addition in the camera window of the live view interface
- The live camera sequence of the web client will stay consistent with the NVR after adjusting the live camera sequence of the NVR, but the live camera sequence of the NVR will not be changed if the web client is changed
- **Disk Management**
- Each SATA interface (varies by unit) on the NVR supports HDDs with a max storage capacity of 16TB
- Supports disk group configuration and management and each camera can be added into different disk groups with different storage capacities
- Supports disk information and viewing of disk operating status
- **Record Configuration**
- Supports simultaneous main stream and sub stream recording, as well as collective or individual configuration of the recording stream
- Supports manual and auto recording modes
- Supports schedule recording, sensor alarm recording, motion detection recording, etc.
- Supports schedule recording and event recording setup with different recording streams
- Supports recording schedule setup and recycle recording

- Supports pre-recording and delay recording configuration of an event
- **Record Playback**
- Supports time scale operation in quick playback and the playback date and time can be set randomly by scrolling the mouse; the time interval of the time scale can be zoomed
- Supports record searching by time slice/time/event/tag
- Supports time view and camera view in searching by EZ mode
- Supports EZ search by month, by day, by hour and by minute and time slice to be displayed with camera thumbnail
- Supports a maximum of 4/8/16 cameras to be searched at a time (varies by unit channel size)
- Supports event search by manual/motion/sensor/intelligent events
- Supports bookmark search by the manual added bookmarks
- Supports instant playback of the selected camera in the live view interface
- Supports a maximum of 8 synchronous playback cameras
- Supports acceleration (to a maximum 32 times the normal speed), deceleration (to a minimum 1/32 times the normal speed) and 30s addition or reduction to current playing time
- **Record Export**
- Supports export of a recording through USB (U disk, mobile HDD)
- Supports export of a recording by time/event/image search
- Supports record cutting for exporting when playing back
- Supports a maximum of 10 export tasks in the background, as well as export status viewing
- **Alarm Management**
- Supports alarm schedule setup
- Supports enabling or disabling of the motion detection, external sensor alarm input, intelligent alarm and exception alarms including IP address conflict alarm, disk IO error alarm, disk full alarm, no disk alarm, illegal access alarm, network disconnection alarm, IPC offline alarm and so on, alarm trigger configuration supportable
- Supports IPC offline alarm trigger configuration of PTZ, snapshot, pop-up video, etc.
- Supports event notification modes of alarm-out, pop-up video, pop-up message box, buzzer, e-mail and so on
- Captured images can be attached to an e-mail when alarm is triggered
- Supports alarm status view of alarm-in, alarm-out, motion detection and exception alarm
- Supports triggering and clearing an alarm manually
- Supports auto-reboot of the system when an exception happens
- Supports face detection and face match alarm
- **Face Function**
- Supports adding 5,000 face pictures to the face database (up to 10,000 in select models)
- Supports image search by image, track playback and database management
- Supports face attendance and face check in
- Supports face information statistics
- Supports face match alarm
- **LPR Function**
- Support registration of up to 50,000 license plates
- Support license plate detection, matching and search
- Support vehicle information statistics
- Support license plate match alarm
- **Network Functions**
- Supports TCP/IP and PPPoE, DHCP, DNS, DDNS, UPnP, NTP, SMTP protocol and more
- Supports allow and block list function and the allow and block IP address/IP segment address can be set
- Supports multiple browsers including IE8/9/10/11, Firefox, Opera, Edge, Chrome (available only for the versions lower than 45) and Safari (on Macs)
- Supports remote configuration, import and export of the NVR parameters and other system maintenance operations including remote upgrading and system restart
- Supports remote camera configuration through the NVR including video parameters, image quality and so on
- Supports remote search, playback, and export through the NVR
- Supports triggering and clearing manual alarms remotely
- Motorized zoom cameras can be adjusted through the web client (Supports zoom in/out, but one key focus is not currently supported)
- Supports NVMS or other platform management software to access the NVR and manage it
- Supports NAT function and QR Code scanning by mobile phone and PAD
- Supports mobile surveillance by phones or PADs with iOS or Android OS

- Supports access of the NVR remotely through telnet, and the telnet function can be enabled or disabled
- If one camera recording is enabled or disabled manually through the web client, it will be simultaneously enabled or disabled on the NVR
- **Other Functions**
- The NVR can be controlled and operated by the buttons on the front panel (on applicable models), the remote control and the mouse
- Setup interfaces can be conveniently switched by clicking the main menus at the top
- Supports NVR information viewing including basic, camera status, alarm status, record status, network status, disk and export status
- Supports factory restore, import and export of the system configuration, log view and export and local upgrading by USB mobile device
- Supports auto recognition of the displayer's resolution
- You can click the right mouse button at any interface to go back to the upper interface
- You can click the mouse wheel at any interface to go to the live view interface
- The display language and video format of the NVR will not be changed and the system logs will be preserved if you reset the NVR to factory default
- Press and hold the right mouse button for 5 seconds in any interface to switch the output to VGA and the NVR will display the video at the lowest resolution which the NVR supports

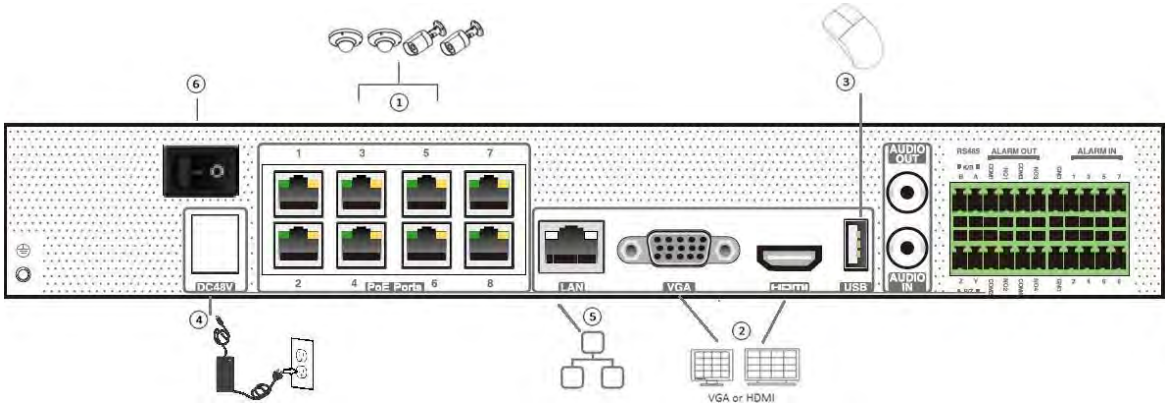
1.3 Front Panel Descriptions

The following descriptions are for reference only and may not apply to all models.

Name	Descriptions
REC	The light will be blue when recording
Net	The light will be blue when there is access to a network
Power	The light will be blue when there is power

1.4 Rear Panel Descriptions

To quickly get started, connect the items below to your recorder in the following order. Please refer to the following figure (**N8NRE** shown for reference).



1. Connect IP cameras to the PoE ports of the recorder.
2. Connect a monitor to the recorder via a VGA or HDMI cable (not included).
3. Connect the included optical mouse into any USB port of the recorder (front or rear).
4. Connect the power adapter to the recorder and plug the power cord into a 120VAC 50/60Hz outlet.
5. Connect recorder to network (optional but needed for remote access or for access to cameras not directly connected)
6. Turn on power switch and allow recorder to boot up.

1.5 Connections

- **Video Connections**

Video Output: Supports VGA/HDMI video output. You can connect to a monitor through these video output interfaces simultaneously or independently.

- **Audio Connections**

Audio Input: Connect to microphone, pickup, etc.
Audio Output: Connect to headphone, powered speaker (ex, ASPC20), amplifier, or other audio output devices.

2 Basic Operation Guide

2.1 Startup & Shutdown

Please make sure all connections are done properly before you power on the unit. Proper startup and shutdown are crucial to extending the life of your device.

2.1.1 Startup

① Connect the output display device to the VGA/HDMI interface of the NVR.
② Connect the mouse and power. When powered on, the device will boot and the power LED would turn blue.
③ EZ setup window will pop up (you should select the display language the first time you use the NVR). Refer to 3.1 EZ Setup for details.

2.1.2 Shutdown

You can power off the device by using remote control or mouse.

By remote control:

① Press Power button. This will take you to a shutdown window. The unit will power off after clicking “OK” button.
② Disconnect the power.

By mouse:

① Click Start➔Shutdown to open the Shutdown window. Select “Shutdown” in the window. The unit will power off after clicking “OK” button.
② Disconnect the power.

2.2 Remote Control

① Uses two AAA size batteries. (Not included)
② Open the battery cover of the remote control.
③ Place batteries. Please note the polarity (+ and -) and insert properly.
④ Replace the battery cover.

Key points to check in case the remote doesn’t work.
1. Check your batteries polarity.
2. Check the remaining charge in the batteries.
3. Check IR controller sensor for any masking.
If it still doesn’t work, please contact your distributor.
Note that the remote control is the same for all units of the same model. Be sure to point the IR sensor of the remote control directly towards the IR receiver of the NVR you wish control if you have multiple devices. It’s also recommended to place the recorders away from each other if possible.

There are two kinds of remote controllers. The interface is shown below.



Button	Function
REC	Record manually
Search	Enter search mode
MENU	Enter menu
Exit	Exit the current interface
ENTER	Confirm the choice or setup
Direction button	Move cursor in setup
ZOOM	Zoom in
PIP	Currently no function
	Control playback. Play (Pause)/Next Frame/Speed Up/Stop/Previous Frame/Speed Down
Multi	Choose multi screen display mode
Next	Switch the live image
SEQ	Go to sequence view mode
INFO	Get information about the device



Button	Function
Power Button	Turn device on and off
Record Button	Start recording
-/-- /0-9	Input number or choose camera
Fn1 Button	Currently no function
Multi Button	Choose multi screen display mode
Next Button	Switch the live image
SEQ	Go to sequence view mode
Audio	Enable audio output in live mode
Switch	Currently no function
Direction button	Move cursor in setup or pan/title PTZ
Enter Button	Confirm a choice or setup
Menu Button	Go to menu
Exit Button	Exit the current interface
Focus/IRIS/Zoom/PTZ	Control PTZ camera
Preset Button	Enter preset settings in PTZ mode
Cruise Button	Go to cruise settings in PTZ mode
Track Button	Currently no function
Wiper Button	Currently no function
Light Button	Currently no function
Clear Button	Currently no function
Fn2 Button	Currently no function
Info Button	Get information about the device
	To control playback. Play (Pause)/Stop/Previous Frame/Next Frame/Speed Down/Speed Up
Snap Button	Take snapshots manually
Search Button	Go to search mode
Cut Button	Currently no function
Backup Button	Go to backup mode
Zoom Button	Zoom in
PIP Button	Currently no function

2.3 Mouse Control

- **Mouse control in Live Display & Playback interface**

In the live display & playback interface, double click on any camera window to show the window in single screen mode; double click the window again to restore it to the previous size.

In the live display & playback interface, if the interfaces display in full screen, move the mouse to the top of the interface to have the tool bar appear. The tool bar will disappear automatically after you move the mouse away from it; move the mouse to the right side of the interface to pop up a panel and the panel will disappear automatically after you move the mouse away from it.

- **Mouse control in text-input**

Move the mouse to the text-input box and then click the box. The input keyboard will pop up automatically.

Note: Mouse is the default tool for all operations unless an exception is indicated.

2.4 Text-input Instruction





The interface has two types of input boxes. Refer to the above pictures. The left box is the number-only input box and the right box provides inputs of numbers, letters and punctuation characters. The introductions of keys on the input boxes are shown below.

Button	Meaning	Button	Meaning
	Backspace key	#?!	Switch keyboard to see more punctuation characters
DEL	Delete Key		Enter key
	Switch between upper and lower case		Space key
EN/CN	Switch language		

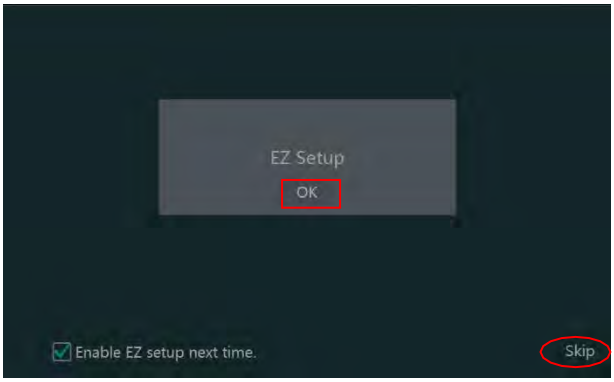
2.5 Common Button Operation

Button	Meaning
	Click to show the menu list.
	Click to change the sequence of the list.
	Click to change the camera display mode.
	Click to close the current interface.
Earliest	Click to go to the earliest date of camera recording.
Latest	Click to go to the latest date of camera recording.

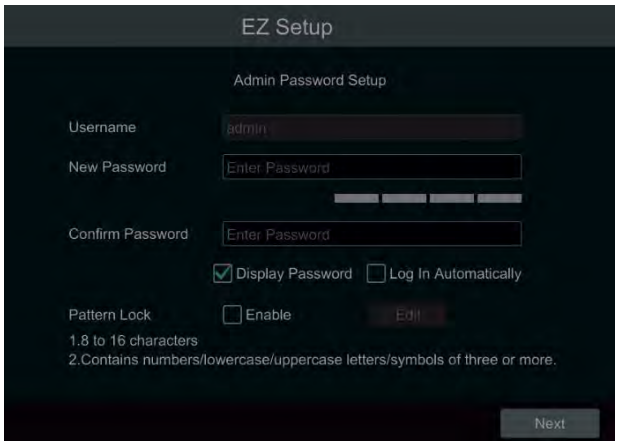
3 EZ Setup & Main Interface

3.1 EZ Setup

The disk icons will be shown on the top of the startup interface. You can view the number and status of each disk quickly and conveniently through these icons (: no disk; : unavailable disk; : RW available disk).
You can quickly configure the NVR by clicking "OK" to begin the EZ Setup process. You must configure the wizard if you start the NVR for the first time (or click "Skip" to cancel the EZ Setup until the next time you login).



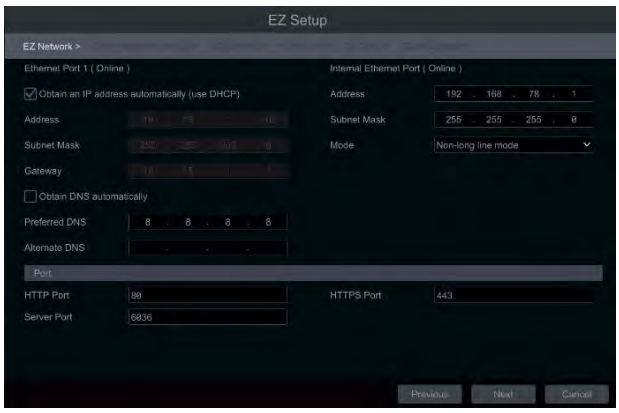
Click "OK" to start wizard. The setup steps are as follows:
① ***System Login***. Set your own password when you use the wizard for the first time (the default username of the system is ***admin***); select the login username and enter a password.
Note: The default password level is "Strong". We highly recommend you create one with 8~16 characters (including upper case letters, lower case letters, numbers and symbols) to increase the security of your product.



Click "Edit Security Question" to set questions and answers for admin password security. If you forget the password, please refer to Q4 in Appendix A FAQ for details.
Click "Next" to continue the wizard.

② ***Disk Settings.*** *You can view the disk number, disk capacity of the NVR and serial number, and R&W status of the disk. Click "Format" to format the disk. Click "Next" to continue. Then click "EZ Setup".*

③ ***Network Settings***. Select the network parameters as required. Check "Obtain an IP address automatically" and "Obtain DNS automatically" to set the IP address and DNS automatically (the DHCP function of the router in the same LAN should also be enabled), or manually enter them. Enter the HTTP port, RTSP port and Server port (please see 14.1.2 Port Configuration for details). Click "Next" to continue.

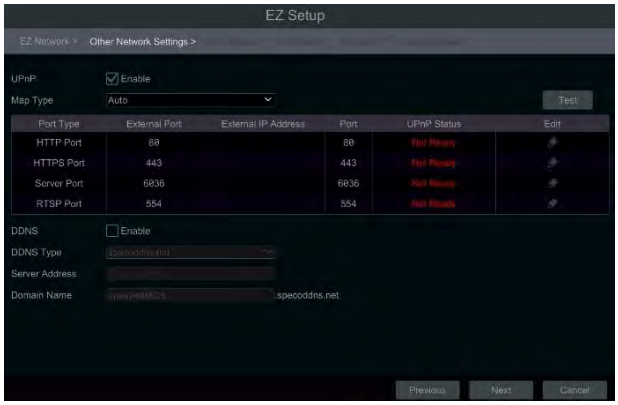


If you use the NVR with the PoE network ports, the online status of the internal Ethernet port will be shown on the interface.
If the NVR has two or more network ports, you can select the network parameters as required. Network Fault Tolerance and Multiple Address settings are available.

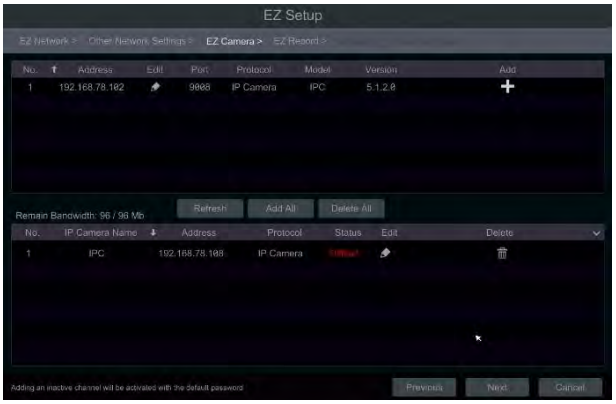
④ ***Other Network Settings.***

- UPnP settings: Check "Enable" in the interface and enter the external ports and then click "Test" to test the effectiveness of the input information. If the UPnP status states, "Invalid UPnP", the port number may be wrong. Click to modify the port until the UPnP status turns to "Valid UPnP". Refer to the picture below. If you know the external IP address of the NVR, enter the external IP address plus port in the address bar of your browser to access the NVR. (please see 14.1.6 UPnP Configuration for details).
- DDNS Settings: Check "Enable" and then select the DDNS type. Enter the server address, domain name, username and password according to the selected DDNS type. And then click "Register" or "Test" to test the effectiveness of the domain name. If it is effective, you can enter the domain name in the address bar of your browser to access the NVR. (please see 14.1.4 DDNS Configuration for details).

Note: Make sure the router supports UPnP and that UPnP is enabled in the router. Set the NVR's IP address, subnet mask and gateway and so on corresponding to the router.



⑤ ***Add Camera***. Add cameras via PoE first before adding any cameras from the LAN. Speco cameras added via the PoE ports will automatically be added to the corresponding channel. To add cameras from the LAN, make sure all cameras are set to DHCP. Click "Refresh" to refresh the list of online IP cameras which are on the same local network as the NVR and then click to add the searched camera. Click "Add All" to add all the cameras in the list. Click to delete the added camera. Click "Delete All" to delete all the added cameras.



Click  to edit the searched IP camera as shown below left. Enter the new IP address, subnet mask, gateway, username and the password of the camera. You can check “Sync to IPC” to modify the IP address of the IPC via different network segments for being in the same network segment as the NVR. Click “OK” to save your settings.





Click  to edit the added camera as shown above right. Enter the new camera name, IP address, port, username and the password of the camera. You can click “Test” to test the accuracy of the input information. Click “OK” to save your settings. You can change the IP camera name only when the added camera is online. Click “Next” to continue.

Tips：Please skip Step ⑥ and ⑦ if the NVR does not support RAID function.

⑥ ***Disk Mode.*** Click “Enable RAID” to enable the RAID function. Click “Next” to continue.

⑦ ***Create an array.*** Set the array name and select array type which including RAID0, RAID1, RAID5, RAID6 and RAID10. The global hot spares and array capacity can also be viewed here. See 7.4 Disk for details. Click “Next” to continue.

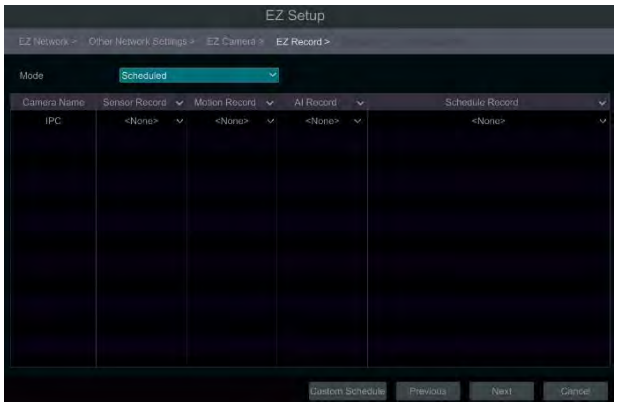
⑧ ***EZ Record Settings***. Two record modes are available: auto and scheduled.

Auto: Select one auto mode in the interface as shown below and then click “Next” to save your settings. Click “Advanced” to self-define record mode. See 7.1.1 Mode Configuration for details.



Scheduled: Set the “Sensor Record”, “Motion Record” and “Schedule Record” of each camera. Click “OK” to save. See 7.1.1 Mode Configuration for

details.

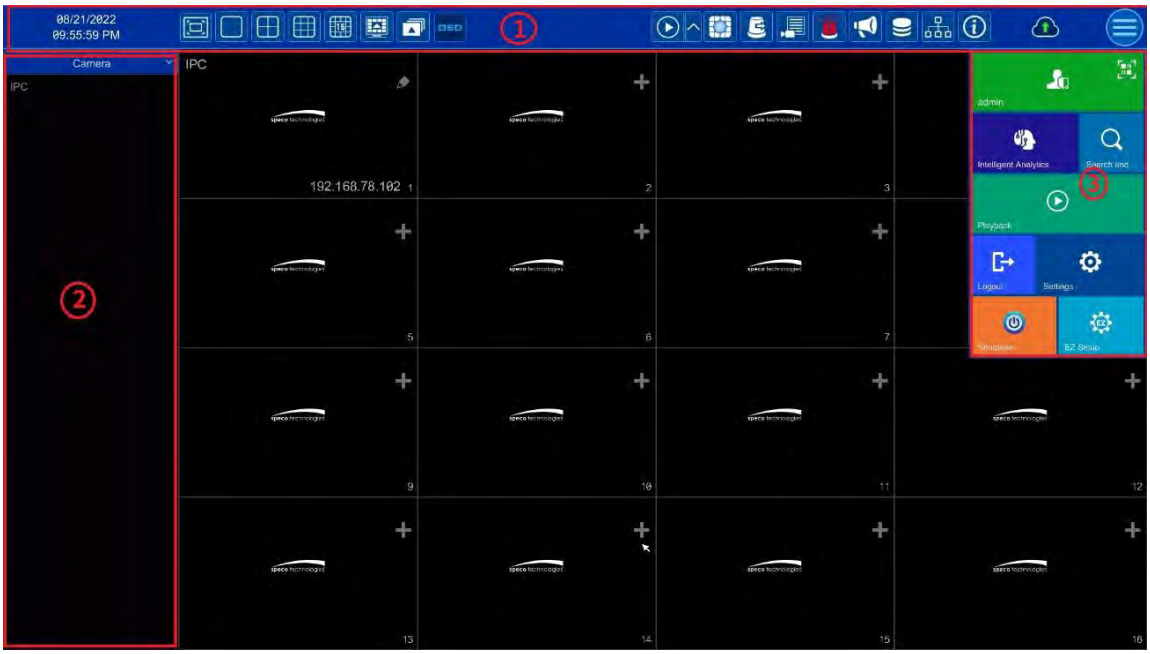


⑨ ***QR Code.*** Enable the NAT function in the interface or set it in the network configuration after exiting the wizard (please refer to 14.1.8 NAT Configuration for details). You can scan the QR Code through the Speco Blue App available for iOS and Android to view your cameras easily and securely. Please refer to 15.1 Mobile Client Surveillance for details. Click "OK" to save your settings.

⑩ Cloud Upgrade. Enable "Cloud Upgrade" and then click "OK" to save. If this function is enabled, you will get the latest version from the cloud server. Please refer to Cloud Upgrade section for details. Only user levels with "Network" access will be able to enable/disable cloud upgrades.

3.2 Main Interface

3.2.1 Main Interface Introduction



The buttons in area ① are described in the table below.

Button	Meaning
	Start button. Click to open area ③.
	Full screen button. Click to show full screen and hide area 2; click again to exit the full screen.
	Screen mode button.
	Dwell button (see 5.2.2 Quick Sequence View and 5.2.4 Scheme View In Sequence for details).
	Click to enable OSD; click again to disable OSD.

Button	Meaning
	Click to set the default playback time before starting instant playback (8.1 Instant Playback) or going to the playback interface for playback operations (8.2 Playback Interface Introduction); click to go to the playback interface. For instance, if you choose "5 minutes ago" as the default playback time, you can playback the recording from the past five minutes.
	Manual record button. Click to enable/disable record.
	Manual alarm button. Click to trigger or clear the alarm-out manually in the popup window.
	Record status button. Click to view the record status.
	Alarm status button. Click to view the alarm status.
	Voice broadcast button. Click to select the channel to broadcast.
	Disk status button. Click to view the disk status and RAID status.
	Network status button. Click to view the network status.
	Information button. Click to view system information.
	Click to enable the cloud upgrade feature.

Introduction of area ②:

Click "Camera" to view all the added cameras in the camera list. Select one camera window on the left side of the interface and then double click one camera in the list to preview the camera image in the selected window.

Click "Single Channel Sequences" to view all the added groups in the group list; click one group in the list to view all the added cameras in the group (refer to 4.2 Add/Edit Camera Group for detail configuration of the camera group). Select one camera window on the left side of the interface and then double click one group in the group list to preview the cameras' images one by one in the selected window.

Click "Customize Layout" to view all the display modes in the display mode list (refer to 5.2.1 Display Mode for detail configuration of the display mode). Double click one display mode in the list to switch to the display mode for previewing.

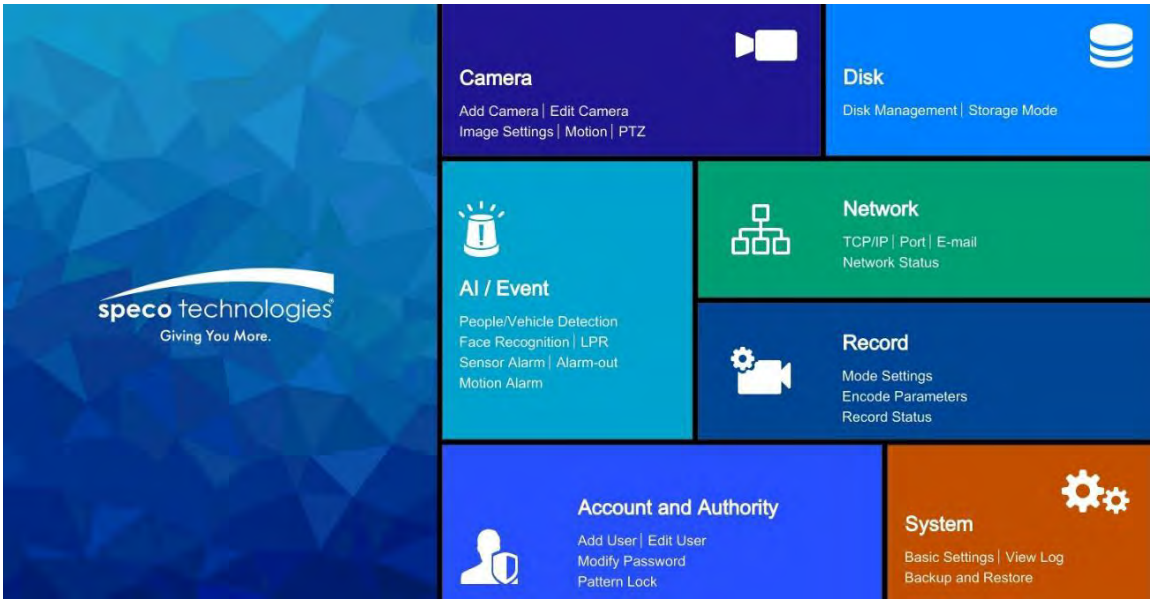
Click "Target Detection" to go to target detection interface. This tab will show the captured human, vehicles, license plates and face images. (This function is only available for some models using the appropriate cameras).

Introduction of area ③:

Icon / Button	Meaning
	It shows the current active user. Click the QR code icon to view the QR code and security code. Users can quickly add the NVR to the server list of the mobile APP by scanning this QR code.
	Click to go to the intelligent analytics interface.
	Click to go to record search and export interface, see 8.4 Record Search, Playback & Export for details.
	Click to go to playback interface (click on the tool bar at the top of the live view interface to set the default playback time), see 8.2 Playback Interface Introduction for details.
	Click to open the setup panel, see 3.2.2 Setup Panel for details.
	Click to log out the system.
	Click and then select "Logout", "Reboot" or "Shutdown" in the popup window.
	Click to go to the EZ setup menu.

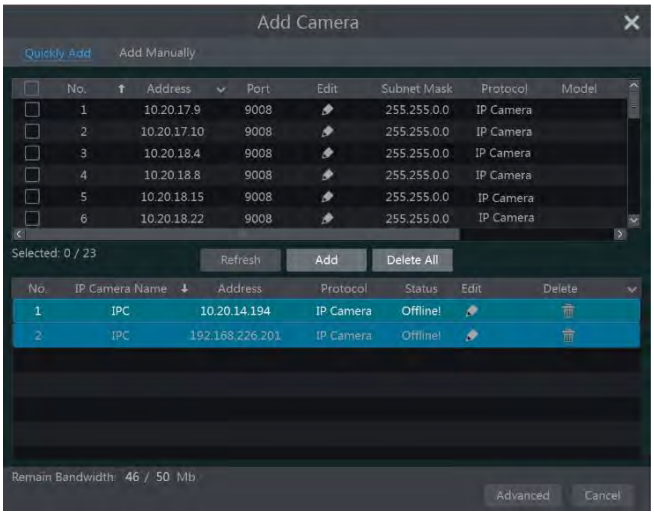
3.2.2 Setup Panel

Click Start➔Settings to open the setup panel as shown below.



The setup panel includes seven modules. Each module provides some function entries with links for convenient operation.
Take ***Camera*** module as an example. The ***Camera*** module provides convenient links such as "Add Camera", "Edit Camera", "Image Settings", "Motion", "Intelligence Analysis" and "PTZ". Click ***Camera*** to go to the camera management interface as shown below.

There are some function items on the left side of the camera management interface. Click each item to go to corresponding interface or window. For instance, click "Add Camera" to open the window below.



Click the main menus on the top of the camera management interface to go to corresponding interfaces. Refer to the picture below. For instance, you can go to the system setup interface by clicking "System" tag.



3.2.3 Main Functions

- **Camera**

This module covers the functions such as ***Camera Management*** (see Chapter 4 Camera Management for details), ***Image Settings*** (see 5.3 Image Configuration for details), ***Motion*** (see 11.2.1 Motion Configuration for details), and ***PTZ*** (see Chapter 6 PTZ for details) and so on.

- **Record**

This module covers functions such as ***Encode Parameters*** and ***Record Schedule***. Please see Chapter 7 Record & Disk Management for details.

- **AI/Event**

This module covers functions such as ***Sensor and Motion Alarm Handling*** and ***Alarm Out Settings***. Please see Chapter 9 AI Event Management and Chapter 11 General Event Management for details.

- **Disk**

This module covers functions such as ***Disk Management***, ***Storage Mode*** and ***Disk Information***. Please see Chapter 7 Record & Disk Management for details.

- **Network**

This module covers functions such as ***TCP/IP***, ***DDNS***, ***Port***, ***E-mail*** and ***Network Status***. Please see 14.1 Network Configuration for details.

- **Account and Authority**

This module covers functions such as ***Account Management*** (see 13.1 Account Management for details) and ***Permission Management*** (see 13.3 Permission Management for details).

- **System**

This module covers functions such as ***Basic Configuration*** (see 14.2 Basic Configuration for details), ***Device Information*** (see 14.8 View System Information for details), ***Log Information*** (see 14.7 View Log for details) and ***Configuration File Import & Export*** (see 14.5 Backup and Restore for details).

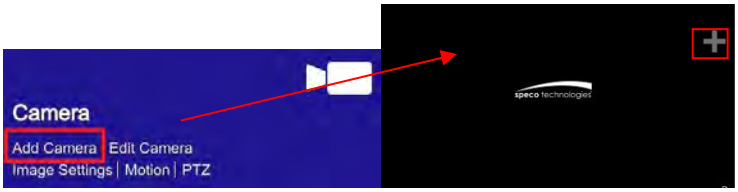
4 Camera Management

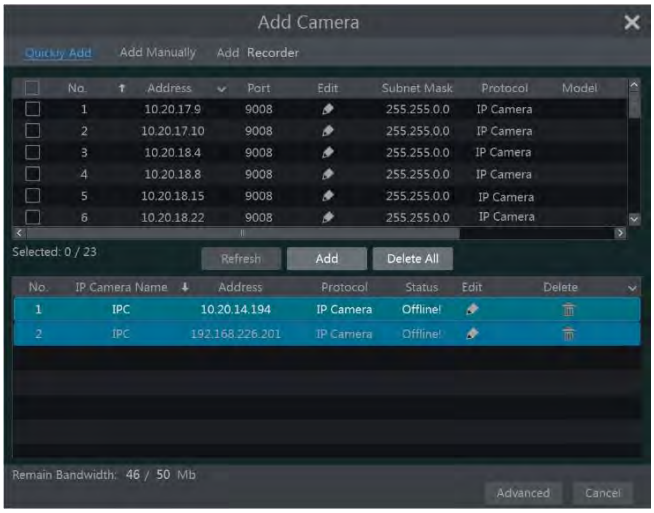
4.1 Add/Edit Camera

4.1.1 Add Camera

The network parameters of the NVR should be set before adding an IP camera (see 14.1.1 TCP/IP Configuration for details).

Refer to the pictures below. Click ***Add Camera*** in the setup panel or  in the top right corner of the preview window to open the "Add Camera" window below. You can quickly add from a list, or else add the IP camera manually.





➢ **Quickly Add**

Check the cameras and then click "Add" to add cameras. Click  to edit the camera's IP address, username, password and so on. Click "Default Password" to set the default username and password of each camera.



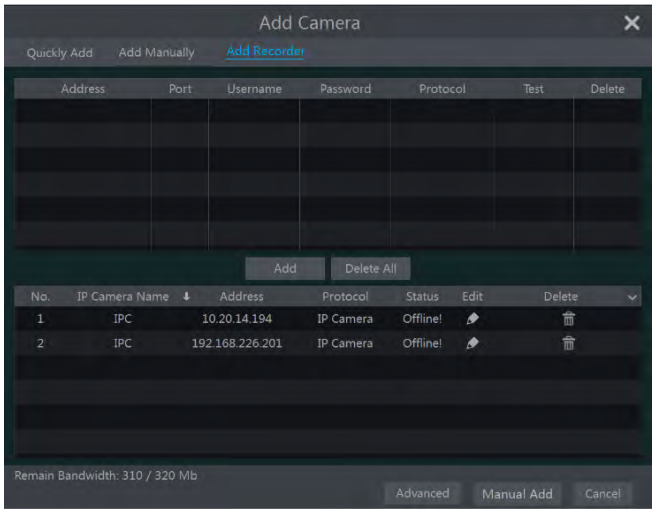
➢ **Add Manually**

Enter the IP address or domain name (click  in the IP address column to open the domain name input window, enter the domain name of the IPC in the window and then click "OK" button), port, username and password of the camera and then select the protocol. Click "Test" to test the accuracy of the input information and then click the "Add" button (you can input one camera's information as shown above such as IP address,

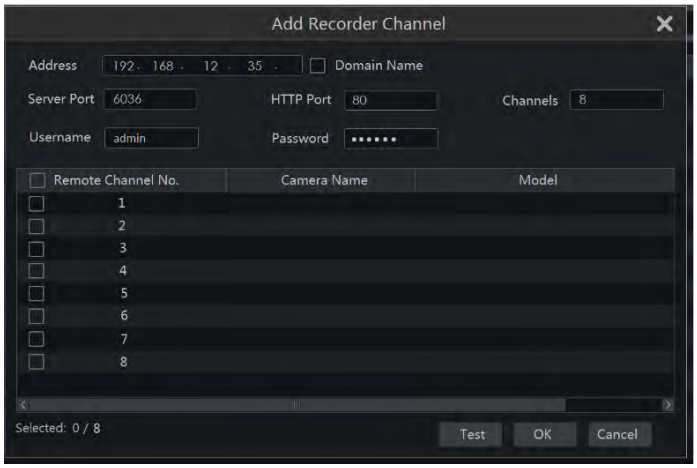
username and password before clicking “Add” button). Click to delete the camera. Click “Default Password” to set the default username and password of each camera.

Note: Some models may not support this function.
Click Start➔Settings➔System➔Basic➔General Settings to check “Enable Add IPC by Zero Operation”. If the NVR has unoccupied channels, it can add IPC without any operation by restarting.

➢ **Add Recorder**



- Quickly Add：Select the searched NVR/DVR and the click “Add” to add an NVR on the same local network.
- Manually Add：Click “Manual Add” and then enter the IP address or domain name, port, username and password of the NVR/DVR. Check the added remote channel number and click “Test” to test the accuracy of the input information. Then click the “OK” button to return to the previous interface.



Note: IPC from other NVR/DVR on the same local network can only be added if your NVR has open channels and the added IPCs support previewing and recording.

4.1.2 Edit Camera

Click “Edit Camera” in the setup panel to go to the interface as shown below. Click to view the live image of the camera in the popup window. Click to edit the camera (see ***Add camera*** in 3.1 EZ Setup for details). Click to delete the camera. Click in the “Operation” header line and then click “Modify IPC Password” to pop up a window (check the IPCs in the window, set the new password and then click “OK” button; only the online IPCs’ passwords can be modified, and a batch of IPCs’ passwords can be modified at the same time). Click to upgrade an online IPC (or click in the “Upgrade” header line and then click “IPC Batch Upgrade” to upgrade a batch of IPCs), select the device which stores the upgrade file in the “Device Name” item of the popup window and the upgrade file in the list (you should select the upgrade IPC model in the window if a batch of IPCs’ passwords need to be modified) and then click “Upgrade” button to start (the IPC will restart automatically after the upgrade is completed successfully).

IP PoE cameras directly connected to the PoE ports of the NVR will be displayed automatically in the camera list. Refer to the picture above. The PoE camera directly connected to the PoE port has a prefix shown before its camera name. The prefix consists of PoE plus PoE port number. A PoE camera directly connected to the PoE port cannot be deleted from the camera list manually.

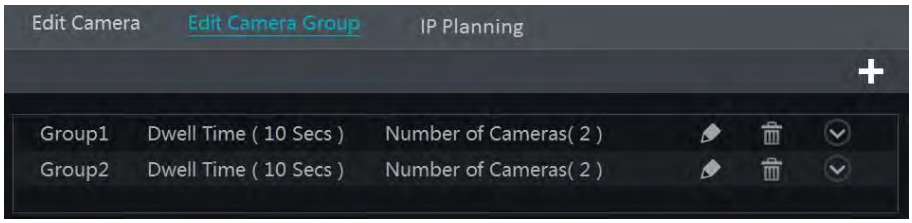
- An IP camera directly connected to the PoE port of the NVR through private protocol will be shown automatically in the camera list.
- One of two conditions must be met for an IP camera directly connected to the PoE port of the NVR through ONVIF protocol to be shown automatically in the camera list:
  - ✓ The IP camera directly connected to the PoE port is in the same network segment with the internal Ethernet port.
  - ✓ The DHCP (obtain an IP address automatically) of the IP camera directly connected to the PoE port is enabled.

If the IP camera directly connected to the PoE port cannot be displayed automatically in the camera list, please refer to Q6 in Appendix A FAQ for details.

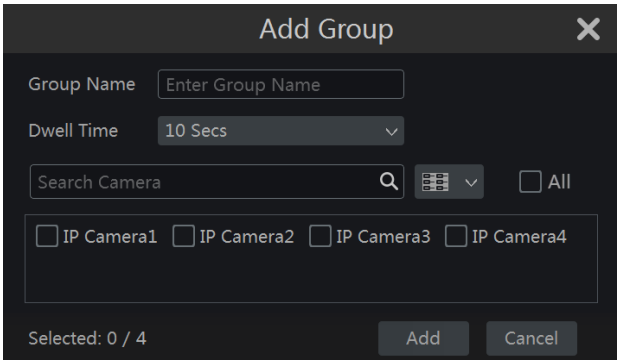
4.2 Add/Edit Camera Group

4.2.1 Add Camera Group

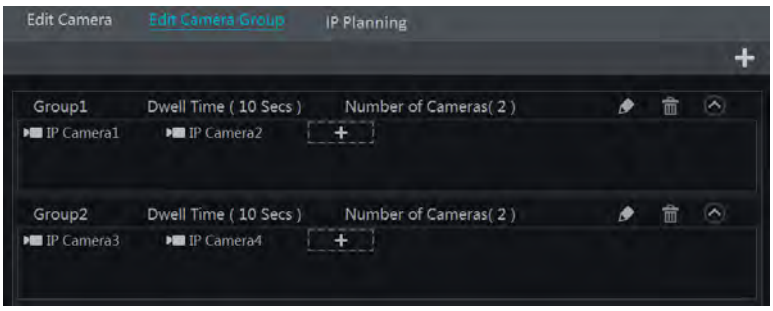
Click "Edit Camera Group" in the above interface to go to the interface as shown below.



Click  to open the window below. Set the group name and dwell time (the dwell time of the camera group sequence view) in the window. Check the cameras and then click "Add" to add group. Click  to view the cameras in the group after adding group.



4.2.2 Edit Camera Group

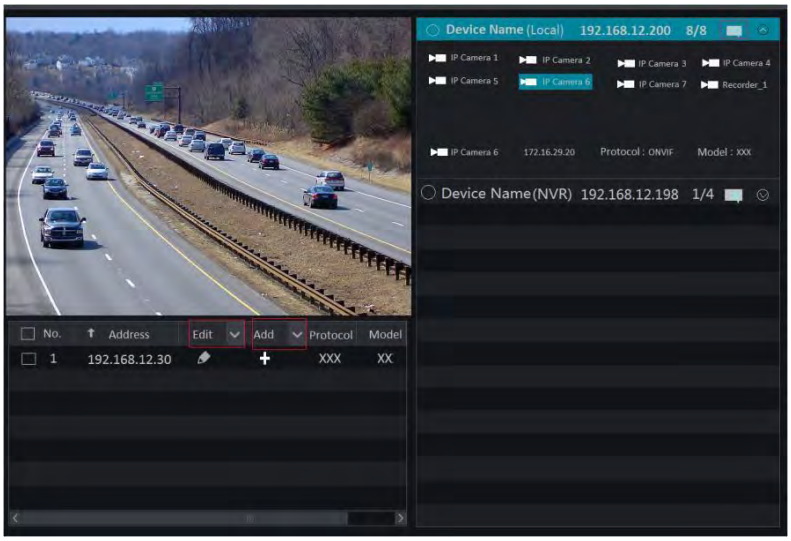


Click  to modify the group information such as group name and dwell time. Click  to delete the group.

4.2.3 IP Planning

Some models may not support this function.

Click “IP Planning” to go to the interface as shown below. This function supports searching other NVRs/DVRs that are in the same local network as the local NVR. The user may add camera channels of other NVRs/DVRs into the unoccupied channels of the local NVR.



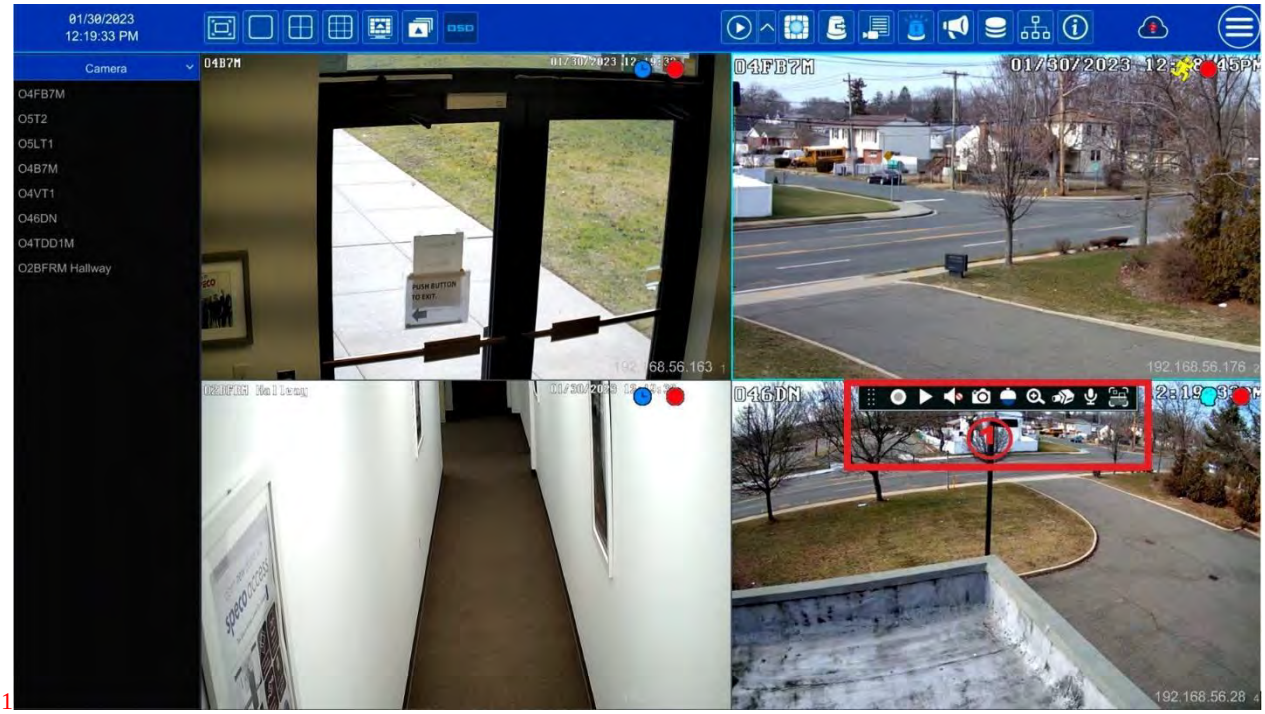
Click  to edit the IP address, username or password and other information of the NVRs.

Click  behind “Add” button to add the camera channels selected and the user may edit the IP address, username or password by clicking  behind the “Edit” button.

5 Live View Introduction

5.1 Live View Interface Introduction

You should add cameras when first logging into the system (see 4.1.1 Add Camera for details). Refer to the interface shown below and drag one camera in the preview window to another window to exchange windows.
The record symbols with different colors in the live view window refer to different record types: green stands for manual record, red stands for sensor-based record, yellow stands for motion based record, blue stands for scheduled record and cyan stands for intelligent record.



Click the preview window to show the tool bar as shown in area ①; right click the preview window to show the menu list. The tool bar and menu list are introduced in the table below.

Button	Menu List	Meaning
	--	Move tool. Click to move the tool bar anywhere.
	Manual Record On	Click to start recording.
	Instant Playback	Click to playback the recording; click "Instant Playback" to select or self-define the instant playback time. See 8.1 Instant Playback for details.
	Enable Audio	Click to enable audio. You can listen to the camera audio by enabling audio.
	Snap	Click to open the snapshot window. Click "Save" in the window to save the image. Click "Export" to export the image.
	PTZ Control	Click to go to PTZ control interface. See Chapter 6 PTZ for details.
	Zoom In	Click to go to single channel amplification interface.
	--	Click to go to image adjustment interface. Refer to 5.3.4 Image Adjustment for details.
	Start Talk	Click to start two-way talk. Only some cameras support.
	Target detection	Click to go to single channel target detection interface; the target includes faces, human bodies and vehicles.
--	**Camera Info**	Click to view the camera information.

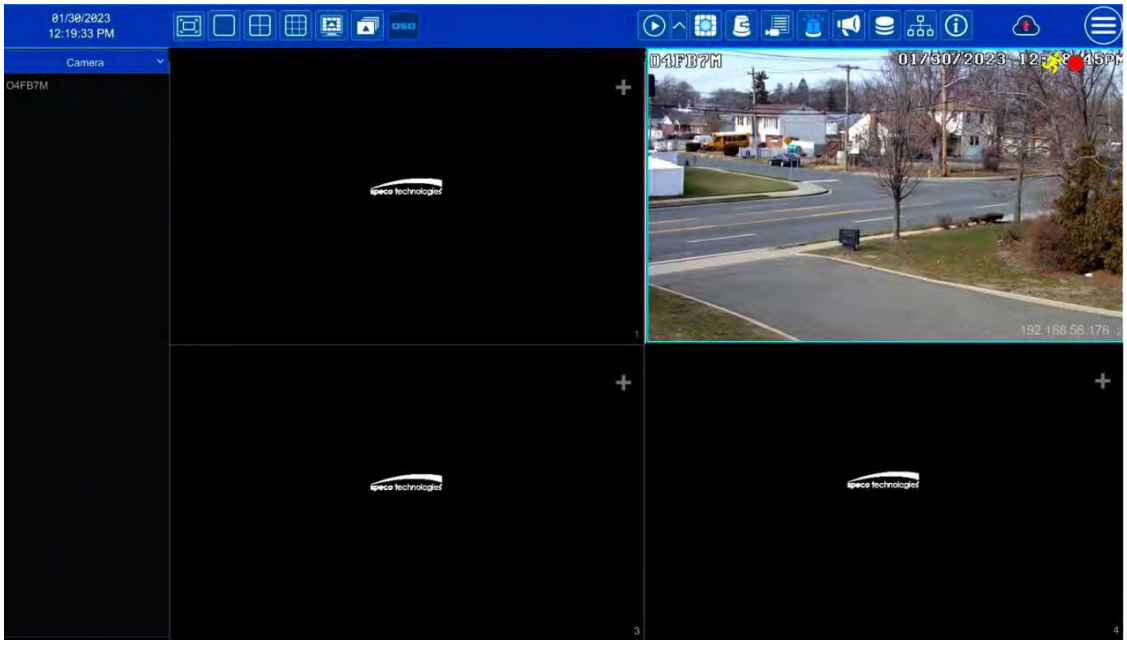
The single channel zoom amplification interface is shown below. Press and drag the blue box to select the area to zoom in on. Click / to zoom the image. Click the camera selection box to select other cameras for amplification. Click "Back" to return to the live view interface.



5.2 View Mode

5.2.1 Display Mode

Set different screen modes and camera display sequences as needed and then save the display modes classified by surveillance areas, priorities and so on. Refer to the picture below. Double click one display mode in the display mode list to view the live images in this mode.



➢ **Add Display Mode**

Method One:

① Click “Customize Display Modes” in the above interface
② Click to add a display mode name and then set the screen mode.
③ Add the cameras and adjust the cameras’ display sequence as required.
④ Click under the display mode list.

Method Two:

① Click Start➔Settings➔System➔Basic➔Output Settings to go to the interface and then set the screen mode.
② Double click the camera or camera group in the list to add them to the selected window.
③ Click to save the current display mode (refer to 5.2.4 Scheme View in Sequence for detail configurations). The display mode will be saved and displayed in the display mode list in the live preview interface.

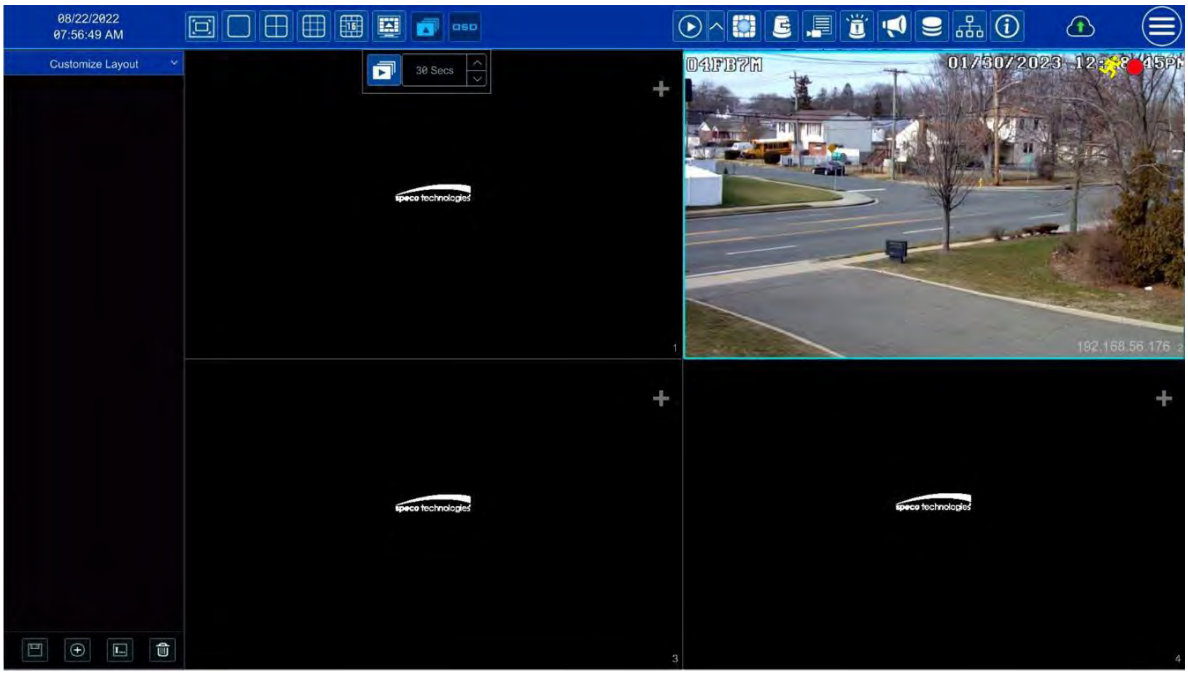
➢ **Edit Display Mode**

Click “Customize Display Modes” tab in the live preview interface and then select one display mode in the list. Click to edit the display mode

name; click  to delete the display mode.

5.2.2 Quick Sequence View

You can start quick sequence view if the scheme has not been created. If the scheme has been created, please refer to 5.2.4 Scheme View in Sequence for details.

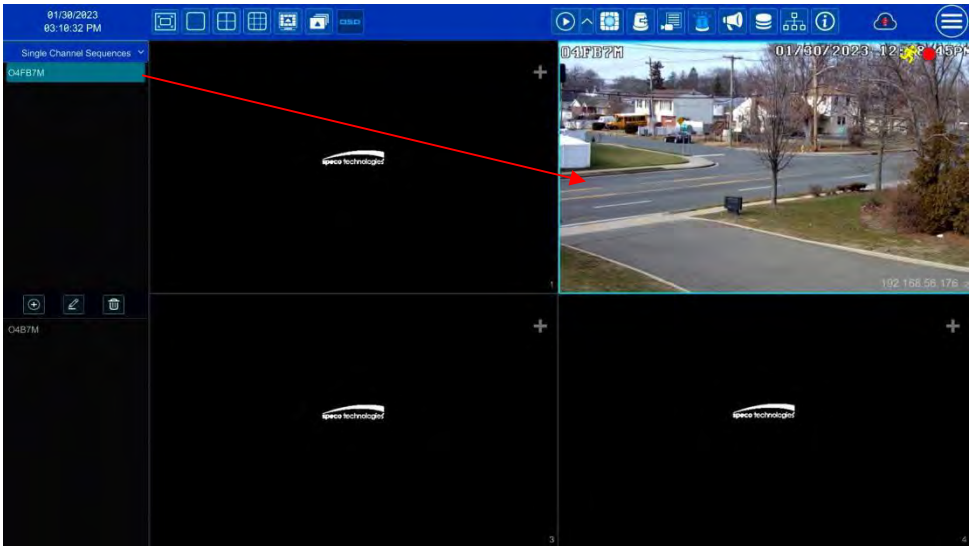


Go to the live view interface and then click  to open a small window. Set the dwell time in the window and then click  to view the live group by group according to the camera number of the current screen mode. Double click the sequence view interface to pause the view; double click again to restore the view. Click  to stop the view.

5.2.3 Camera Group View In Sequence

You can start camera group view in sequence if a camera group has been created (see 4.2.1 Add Camera Group for details).

① Go to the live view interface and then select a camera window.



② Double click one camera group on the right side of the interface. The cameras in the group will start camera group view one by one in the selected camera window.

You can also drag the group directly to any preview window. Right click on the group view window and then click “Close Dwell” button to stop the view.

You can also add camera group in the live view interface. Select “Single Channel Sequences” and then click to add camera group. Click to modify the group name and sequence interval. Click to delete the group.

5.2.4 Scheme View In Sequence

Click Start➔Settings➔System➔Basic➔Output Settings to go to the interface as shown below.
Area ① displays all the dwell schemes; area ② shows the detailed information of the scheme; area ③ displays all the cameras and groups; area ④ is the tool bar (: clear button; : favorite button, click to open a window, enter the display mode name in the window and then click “OK” to save the current display mode; other buttons are screen mode buttons).



➢ **Add Scheme**

Click in area ① to create a new scheme. Click on the top right corner of the scheme to delete it.

➢ **Configure Scheme**

a) Select a scheme in area ① and then click the screen mode button on the tool bar to set the screen mode of the scheme.
b) Select a camera window in area ② and then double click the camera or group in area ③. The camera or group will be added into the selected window. You cannot repeat a camera in the same scheme. You can click the right-click menu “Clear” in area ② to remove a single camera or click to remove all the cameras.
c) Click “Apply” to save your settings.

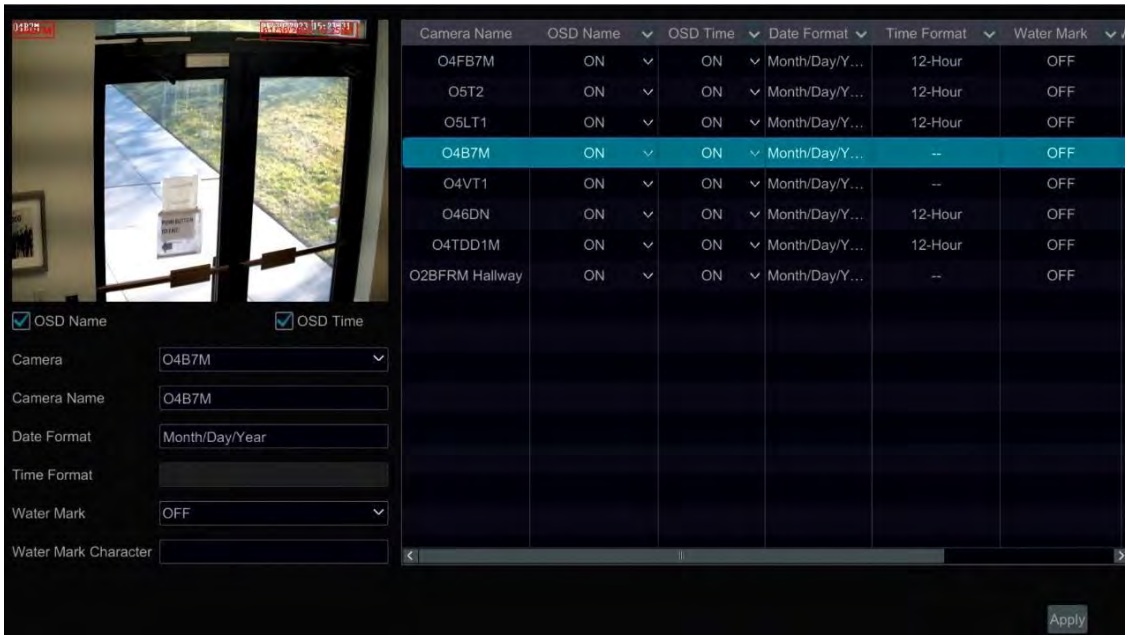
➢ **Start Sequence View**

Go to the live view interface and then click to open a window. Set the dwell time in the window and then click to start scheme view in sequence. Double click the sequence view interface to pause the view; double click again to restore the view. Click to stop the view.

5.3 Image Configuration

5.3.1 OSD Settings

Click Start➔Settings➔Camera➔Image➔OSD Settings to go to the interface as shown below. Select the camera, enter the camera name (or double click the camera name in the camera list to change the camera name), enable or disable the name and time OSDs (if enabled, drag the red name and time OSDs directly in the image view area to change the OSDs’ display position) and select the date and time formats. Click “Apply” to save your settings.



5.3.2 Image Settings

Click Start➔Settings➔Camera➔Image➔Image Settings to go to the interface below. Select the camera and then set the brightness, contrast, saturation and hue of the camera. Click “Advanced” button or in the camera list on the right side of the interface to open “Image Adjust” interface and then set the relevant items. Please refer to 5.3.4 Image Adjustment for detailed introductions of these items.
You can click “Default” to restore the image settings to the default factory settings.



5.3.3 Mask Settings

Some areas of the image can be masked for privacy. Up to four mask areas can be set for each camera. Click Start➔Settings➔Camera➔Image➔Mask Settings to go to the interface as shown below. Select the camera and enable the mask. Click “Draw” button and then drag the mouse on the image area to set the mask area; click “Delete” button to delete the mask areas; click “Apply” to save your settings.



5.3.4 Image Adjustment

Go to the live view interface and then click button on the tool bar under the camera window to go to the image adjustment interface.



➢ **Image Adjustment**

Select the camera and then click “Image Adjustment” to go to image adjustment tab. Refer to the picture above. Drag the slider to set the camera’s brightness, contrast, saturation and hue value. Check sharpness, wide dynamic and denoise and then drag the slider to set the value. Click “Default” button to set these parameters to default values.

The introductions of these parameters are as follows:

Parameter	Meaning
Brightness	The brightness level of the camera’s image.
Contrast	The color difference between the brightest and darkest parts.
Saturation	The degree of color purity. The image appears brighter the purer the color is.
Hue	Relates to the total color degree of the image.
Sharpen	Relates to the resolution level of the image plane and the sharpness level of the image edge.
Wide Dynamic	The wide dynamic range (WDR) function helps the camera provide clear images even under back light circumstances. When there are both very bright and very dark areas simultaneously in the field of view, WDR balances the brightness level of the whole image and provide clear images with details.
Denoise	Decrease the noise and make the image more thorough. Increasing the value will make the noise reduction effect better but it will reduce the image resolution.
White Balance	Automatically adjust the temperature color according to the environment.
BLC	HLC: lowers the brightness of the entire image by suppressing the brightness of the image’s bright area and reducing the size of the halo area. BLC: If enabled, the auto exposure will activate according to the scene so that the object of the image in the darkest area will be seen clearly.

Parameter	Meaning
Corridor Pattern	0°, 90°, 180° or 270° can be selected. (Only some cameras support this pattern)
Image Mirror	Turn the current video image horizontally.
Image Flip	Turn the current video image vertically.
High FPS Mode	High frame rate mode, if is it enabled, the frame rate of the camera's mainstream can be set to 1080P/720P @60fps/50fps. (Only some cameras support this mode)
Gain Mode	Choose "Auto" or "Manual". If "Auto" is selected, the gain value will be automatically adjusted according to the actual situation. If "Manual" is selected, the gain value should be set manually. The higher the value is, the brighter the image is.
Infrared Mode	Choose "Auto", "On" or "Off" as needed.
Shutter Mode	Choose "Auto" or "Manual". If manual is chosen, the digital shutter speed can be adjusted.
Day & Night Mode	Choose "Auto", "Day", "Night" or "Timing" as needed.
White Light Mode	"Auto", "Manual" or "Off" can be selected. (Only some cameras support this mode).

Note: The above-mentioned descriptions of the image parameters are for reference only. The cameras made by different manufacturers may have different parameter settings.

➢ **Lens Control**

Select the camera and then click "Lens Control" to go to lens control tab. Click − or + to adjust the zoom and focus parameters of the camera's lens. Click "Save" to save your settings.



The introductions of these parameters and buttons are as follows.

Button/Parameter	Meaning
− Zoom +	Click + / − to zoom in/out the image.
Focus Mode	If manual mode is selected, focus button & "One Key Focus" & "Day/night mode switch autofocus" will be available; if auto mode is selected, the time interval setup will be available.
− Focus +	Click + / − to increase/decrease the focal length.
One key Focus	Click it to focus instantly.
Day/night mode switch autofocus	If checked, the lens will focus automatically when the camera is switching day/night mode.
Time Interval	It is the time interval when camera lens is auto focusing. The interval can be set in the drop-down list.

Note: Function is only available for motorized zoom cameras.

5.3.5 Fisheye Settings

Some models may not support this function.

Click Start➔Settings➔Camera➔Image➔Fisheye Settings to go to the interface as shown below. Select the camera and the mode of fisheye and installation.

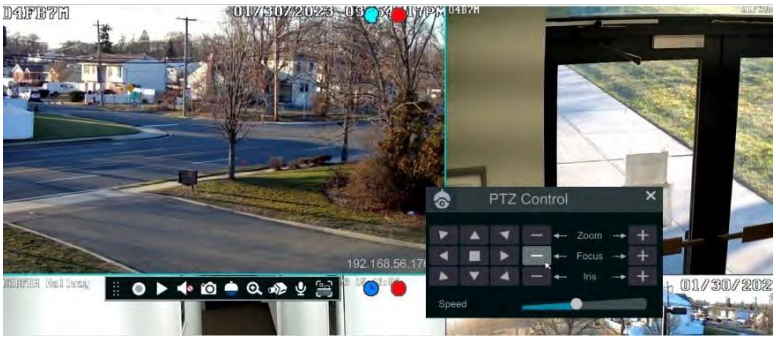


6 PTZ

6.1 PTZ Control Interface Introduction

You can control an IP dome or PTZ connected to the IP camera for PTZ control.

Click  on the tool bar at the bottom of the live preview window to go to the PTZ control interface as shown below.

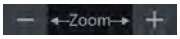


The direction, zoom, focus, iris and speed can be controlled in the small PTZ control window.

Right click the PTZ/speed dome camera window and select “PTZ Control” to go to the PTZ control panel as shown below.



Introductions of the buttons on the bottom right of the interface:

Button	Meaning
	Click / / / / / / / / to rotate the dome. Click to stop rotating the dome.
	Click / to zoom in / out the camera image.
	Click / to increase / decrease the focal length.
	Click / to increase / decrease the iris of the dome.
	Drag the slider to adjust the rotating speed of the dome.
	Click / to start / stop recording.
	Click / to hide / show the analog joystick.
	Click it to return to the live view interface.

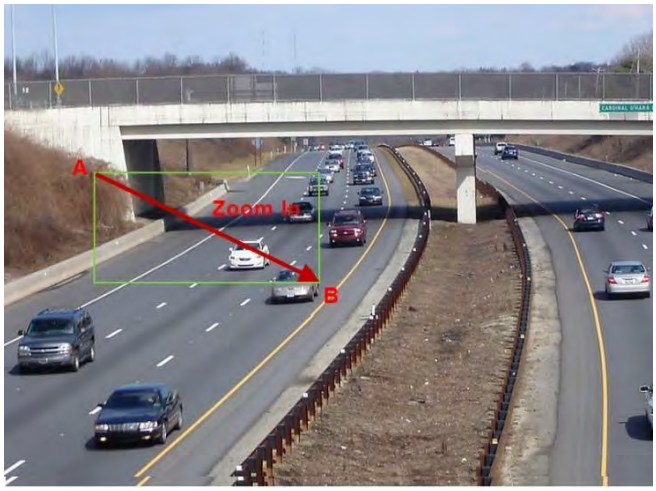
➢ **Analog Joystick Control**

The analog joystick on the left side of the interface provides quick PTZ control. The dome or PTZ will rotate when you drag the analog joystick. The farther you drag the analog joystick from the middle of the image, the faster the dome or PTZ rotates. The dome or PTZ will stop rotating when you

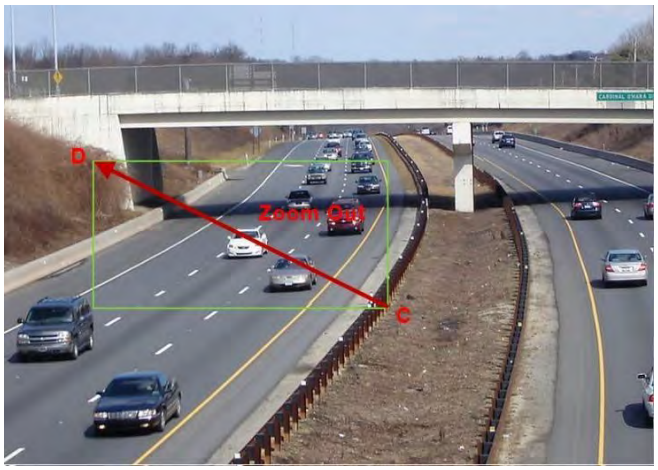
stop dragging the analog joystick.

- **3D Control**

Click the camera image on any area and the image will be centered on the clicked point.
Refer to the picture as shown below. Drag the mouse from A to B to get a green rectangle and the rectangle area will be zoomed in.



Refer to the picture as shown below. Drag the mouse from C to D to get a green rectangle and the rectangle area will be zoomed out.

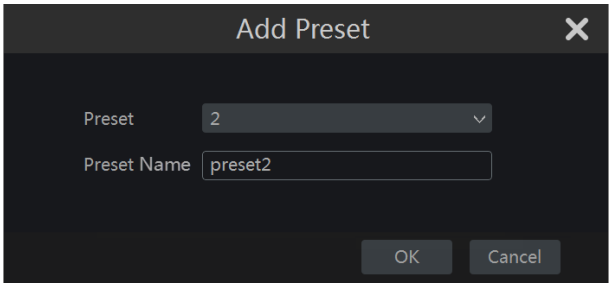


- **Advanced 3D Control**

Double click the left button of the mouse on any area of the camera image and then the image size will be doubled and centered on the clicked point.
Press and hold the left button of the mouse on any area of the camera image to zoom in on the image; press and hold the right button to zoom out of the image.
Move the cursor of the mouse to the camera image and then slide the scroll wheel of the mouse forward to zoom in on the image, slide the scroll wheel of the mouse backward to zoom out of the image.

- **Preset Settings**

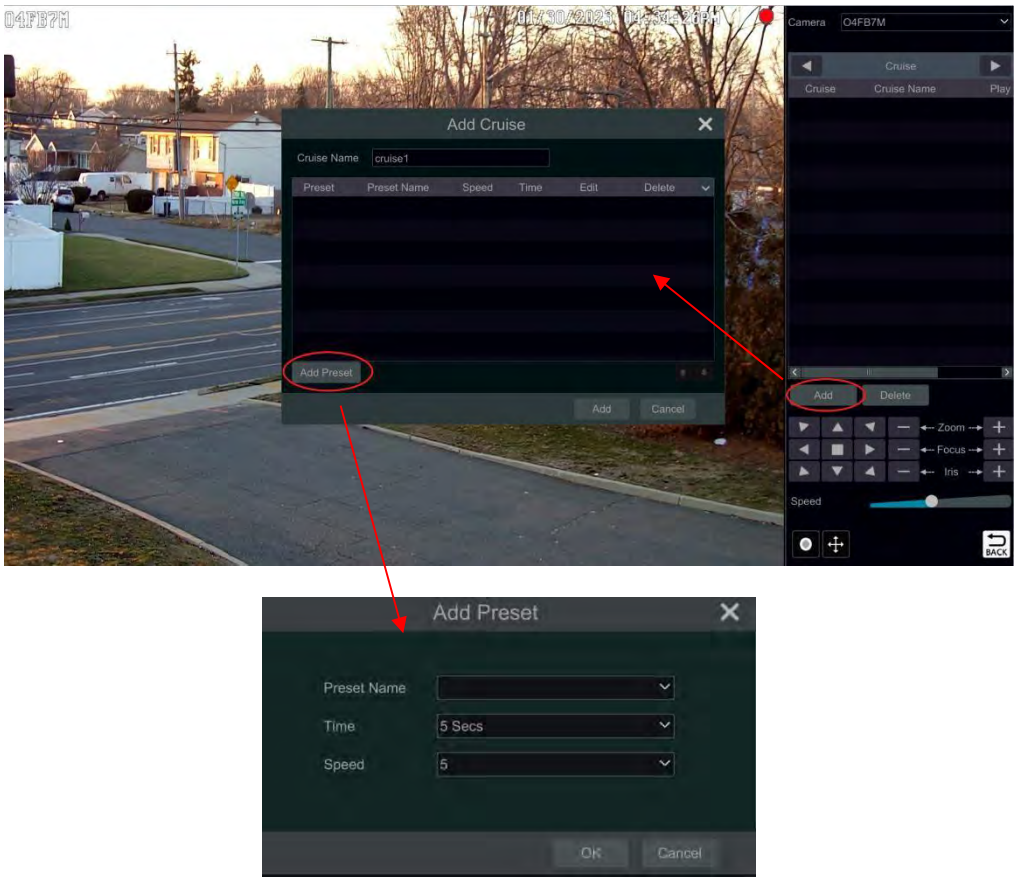
Click “Preset” to go to preset operation tab and then click the “Add” button to open the window below. Select the preset and then enter the preset name in the window; finally click the “OK” button to save your settings. You can add up to 255 presets for each dome.



Adjust the dome's direction and then click "Save Position" to save the current preset position (you can also click another preset in the preset list and then save the preset position after adjusting the dome's direction); click in the preset list to call the preset; click "Delete" button to delete the selected preset.
You can also go to preset settings interface for preset setup, see 6.2 Preset Setting for details.

➢ **Cruise Settings**

Click "Cruise" to go to cruise operation tab and then click "Add" button to open the window below. You can add up to 8 cruises for each dome.

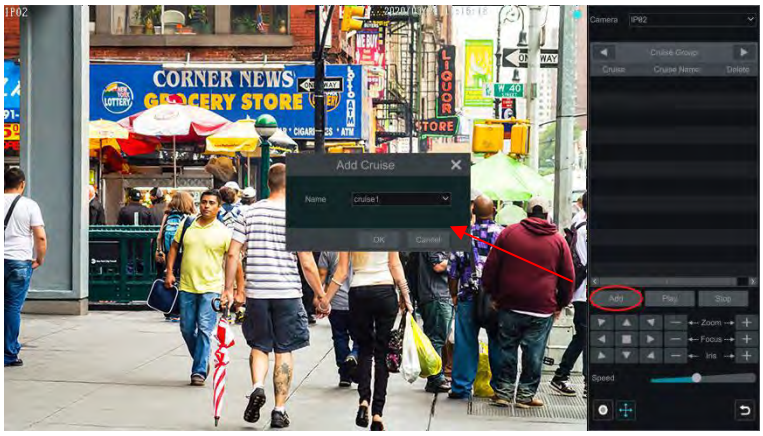


① Enter the cruise name in the "Add Cruise" window and then click "Add preset" to open the "Add Preset" window (Before adding preset to the cruise, please add preset of the dome first).
② In the "Add Preset" window, select the preset name, preset time and preset speed and then click "OK."
③ In the "Add Cruise" window, you can click to reselect the preset, then change the preset time and speed. Click to delete the preset. Click "Add" button to save the cruise.

Click to start the cruise and click to stop the cruise in the cruise list of the cruise operation tab; click the "Delete" button to delete the selected cruise.
You can also go to cruise settings interface for cruise setup, see 6.3 Cruise Settings for details.

➢ **Cruise Group Settings**

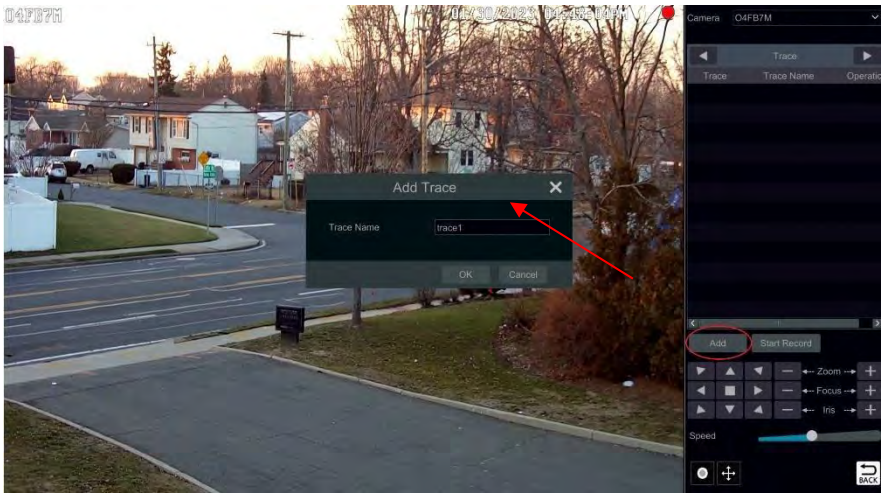
On the right panel, click to go to the cruise group settings tab. Click "Add" to add a cruise group as shown below.



In the “Add Cruise” window, select the cruise group name. After that, click “Play” to play the cruise groups in sequence.

➢ **Trace Settings**

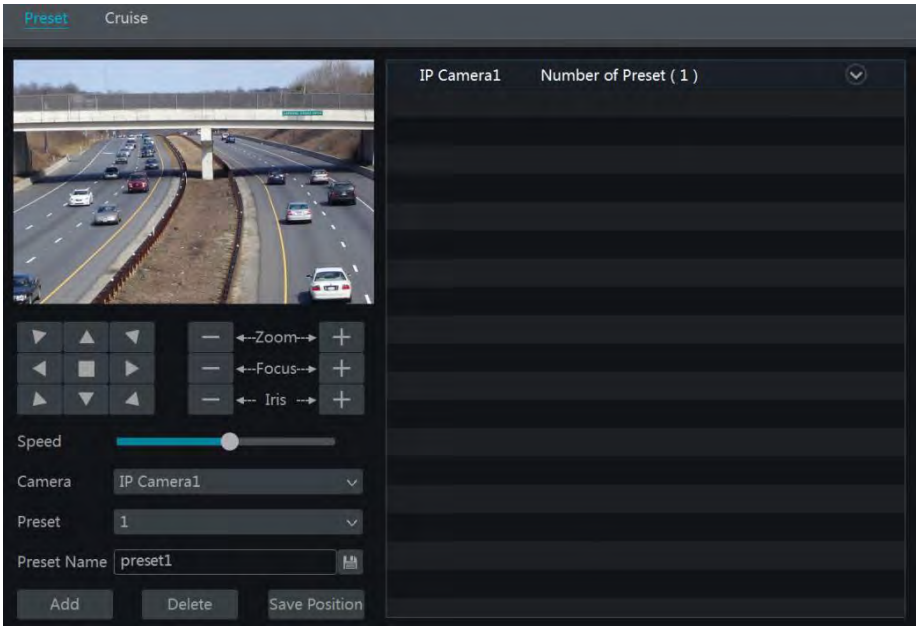
On the right panel, click  to go to the trace settings tab. Click “Add” to add the trace name. Then click “OK” to save this name. Please refer to the following picture:



After that, click “Start Record” to record the trace. Then click “Stop Record” to finish recording. Click  to play the recorded trace. Click  to delete the trace.

6.2 Preset Settings

Click Start➔Settings➔Camera➔PTZ➔Preset to go to the interface as shown below.



➢ **Add preset**

Select camera and then click “Add” button to add a preset; or click in the camera list on the right side of the interface to display the preset information of the dome and then click to add a preset. The operations of the “Add Preset” window are similar to that of the PTZ control interface; please see 6.1 PTZ Control Interface Introduction for details.

➢ **Edit preset**

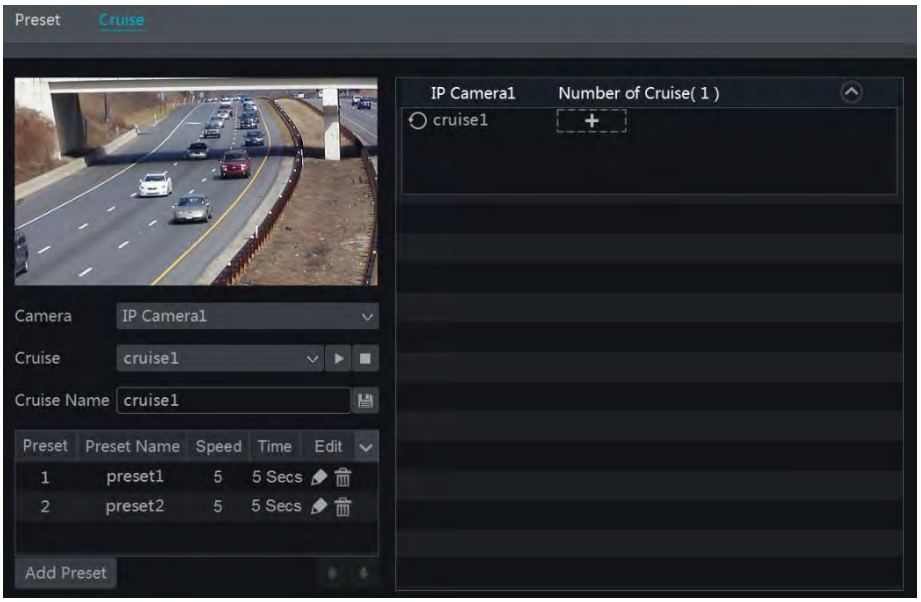
Select camera and preset. You can enter the new name of the preset and then click to save the new preset name. Adjust the rotating speed, position, zoom, focus and iris of the preset and then click “Save Position” to save the preset.

➢ **Delete Preset**

Select camera and preset and then click “Delete” to delete the preset.

6.3 Cruise Settings

Click Start➔Settings➔Camera➔PTZ➔Cruise to go to the interface as shown below.



➢ **Add Cruise**

Click in the camera list on the right side of the interface to display the cruise information of the dome and then click to add cruise. The operations of the “Add Cruise” window are similar to that of the PTZ control interface; please see 6.1 PTZ Control Interface Introduction for

details.

➢ **Edit Cruise**

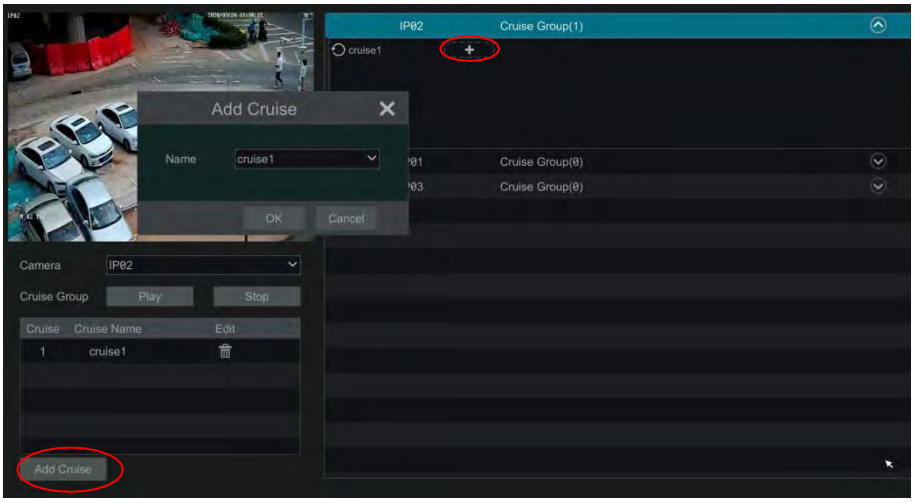
Select the camera and cruise in the “Cruise” interface. Enter the new cruise name and then click to save the cruise name. Click “Add Preset” to add a preset to the cruise. Click to edit the preset. Click to delete the preset from the cruise. Click one preset in the preset list and then click to move down the preset and click to move up the list. Click to start the cruise and click to stop it.

➢ **Delete Cruise**

Click on the camera list on the right side of the interface to display the cruise information of the dome and then click on the top right corner of the cruise to delete the cruise.

6.4 Cruise Group Settings

Click Start➔Settings➔Camera➔PTZ➔Cruise Group to go to the interface shown below.



➢ **Add Cruise Group**

Click “Add Cruise” to add the cruise, or click to extend the cruise list and then click to add the cruise. After that, click “Play” on the left panel as shown below to play the cruise lines in sequence.

➢ **Delete Cruise**

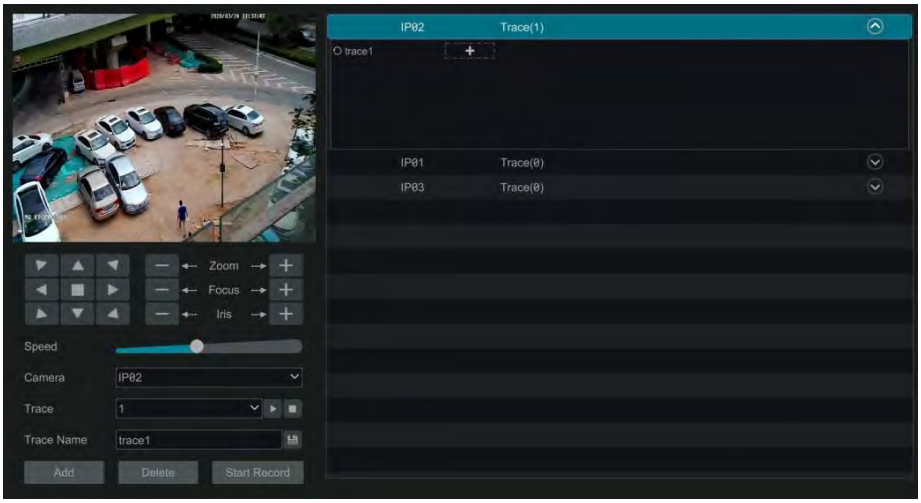
In the cruise list, click to delete the cruise.

6.5 Trace Settings

Click Start➔Settings➔Camera➔PTZ➔Trace to go to the interface as shown below.

➢ **Trace Record**

Select the PTZ camera and then click “Add” or extend the IPC information by clicking and then click to add a trace name. After that, click “Start Record” and move the speed dome to change its position and set its trace. Then click “Stop Record” to complete the trace record.



➢ **Play or Stop Trace**

Select the trace and click to play the trace; click to stop the trace.

➢ **Modify the Trace Name**

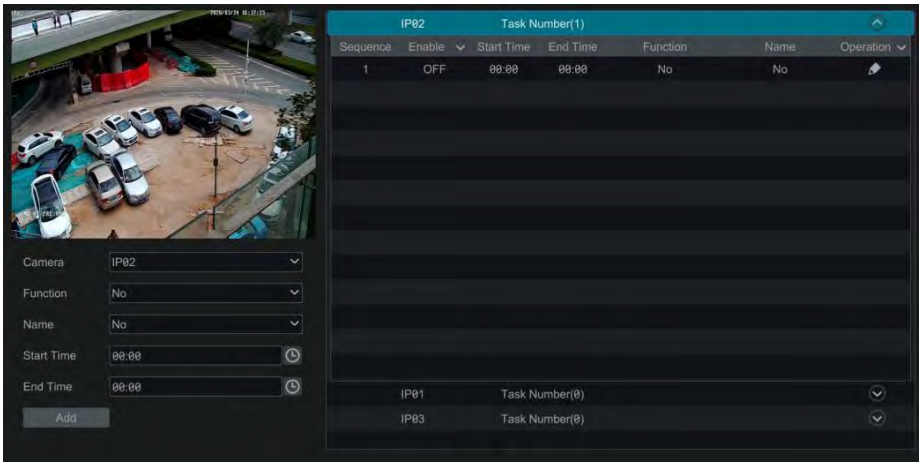
On the left panel, enter new trace name and click to modify and save the trace name.

➢ **Delete the Trace**

Click to delete the trace. Or put the cursor on the trace name (right panel) and then will appear on the right corner of the trace name; click it to delete this trace.

6.6 Task Settings

Click Start➔Settings➔Camera➔PTZ➔Task to go to the interface as shown below.



① Select a PTZ camera.
② Select function, such as preset, cruise, trace, random scanning, etc.
③ Select a name, such as preset name, cruise name, etc.
④ Select the start and end time.
⑤ Click “Add” to add the task.
⑥ Click to extend the tasks of the PTZ camera. Click beside “Enable” to enable the task. After the task is enabled, the PTZ camera will start the specific task at the specified time.

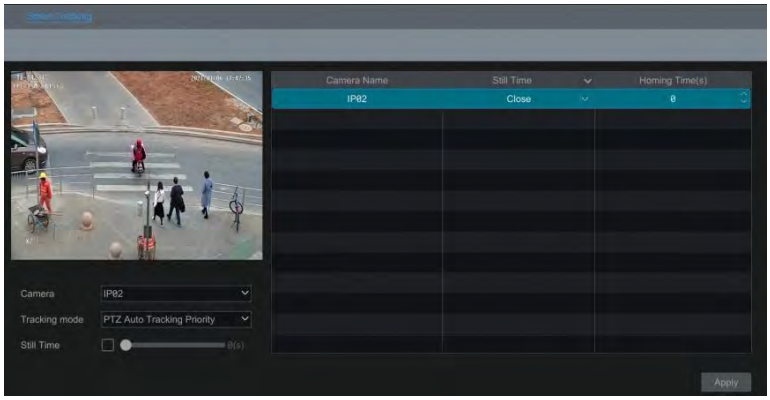
6.7 Smart Tracking

This function is only available with Speco Technologies’ AI PTZ cameras. Please add an AI PTZ camera to the NVR for this function to take effect.
Smart Tracking: When people or vehicles cross the alarm line or intrude the predefined area, the PTZ camera can automatically track them and the

target image will be automatically zoomed in and centered on the screen until the target disappears from the screen. After that, the PTZ camera will return to the tracking start position.

To set smart tracking:

1. Click Settings➔Camera➔Smart Tracking to go to the smart tracking interface.



2. Select the tracking mode and set the “still time” as desired.

Tracking Mode: Choose between PTZ Auto Tracking Priority or Manual PTZ Control Priority.

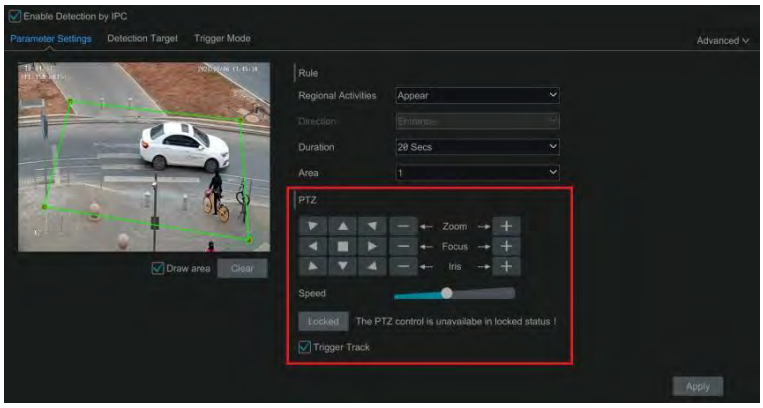
PTZ Tracking Priority: if this mode is selected, after enabling “Trigger track” in one of the following events you cannot control the PTZ by clicking the buttons on the PTZ control panel in the live view interface.

Manual PTZ Control Priority: if this mode is selected, after enabling “Trigger track” in one of the following events, you can control PTZ by clicking the buttons on the PTZ control panel in the live view interface during the process of smart tracking. After you stop controlling for 5 seconds, the PTZ camera will return to the pre-defined detection area and start tracking again when detecting a target.

Still time: If it is enabled and the time is set, if the target stops or hides behind an obstacle, or the target tracking is complete and there is no target appearing in the detection area during the set time, the PTZ camera will return to the tracking start position after the set time expires. During this time, if there are targets moving the PTZ will continue tracking. If it is not enabled, when the target stops or there is no target appearing in the detection area for 5 seconds, the PTZ camera will return to the start tracking position.

For example: At the stoplight, if a car is waiting for the red light for 30 seconds, and the “still time” is set as 20 seconds, the tracking will stop following; however, if the “still time” is set as 40 seconds, when the red light changes to green and the car starts to move, the PTZ will continue tracking this car.

3. Click Settings➔AI/Event➔AI Event. Select the AI PTZ camera and the event as needed (Line Crossing/Intrusion). For example: intrusion.



4. Enable the event, set the rule and then click “Locked”. This button will be changed to “Unlock”. Now the PTZ control panel in the above interface will be activated. Set the detection area by clicking the directional buttons in the above interface. After that, click “Unlock” to lock the detection area.

Note: The PTZ must be locked, or the smart tracking cannot take effect.

5. Click “Draw area” and then draw the intrusion region on the screen. After that, check “Trigger Track” and click “Apply” to save your settings.

6. Set the detection target.

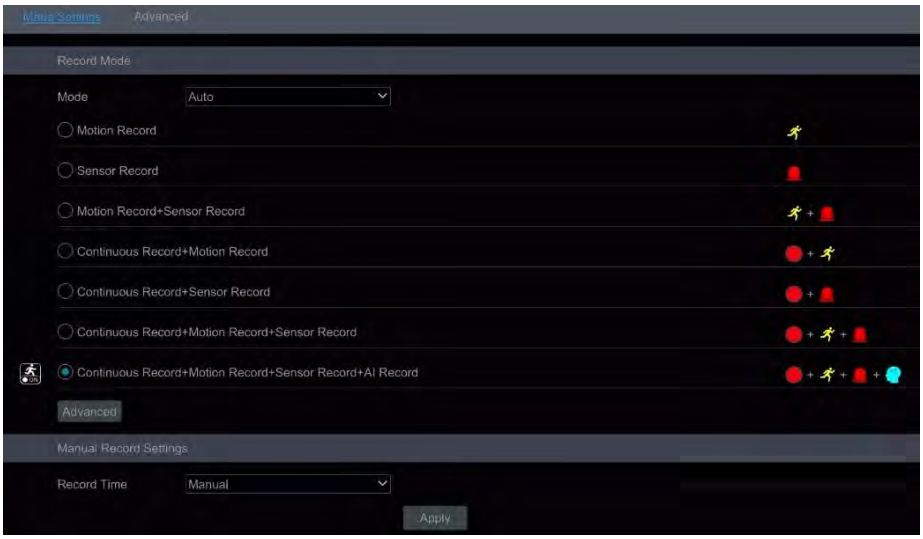
7. Click “Apply” to save settings.

7 Record & Disk Management

7.1 Record Configuration

7.1.1 Mode Configuration

Please format the HDDs before recording (refer to 7.4.1 Disk Management for details). Click Start➔Settings➔Record➔Mode Settings to go to the mode settings interface. You can set the record time under the "Manual Record Settings" and then click "Apply" to save your settings. There are two record modes: auto mode and scheduled mode.



➢ **Auto Mode**

Motion Record: Motion alarm record will be enabled when motion alarm is triggered.
Sensor Record: Sensor alarm record will be enabled when sensor alarm is triggered.
Motion Record+Sensor Record: Motion/sensor alarm record will be enabled when motion/sensor alarm is triggered.
Continuous Record+Motion Record: Normal record is enabled all the time; motion alarm record will be started when motion alarm is triggered.
Continuous Record+Sensor Record: Normal record is enabled all the time; sensor alarm record will be started when sensor alarm is triggered.
Continuous Record+Motion Record+Sensor Record: Normal record is enabled all the time; motion/sensor alarm record will be enabled when motion/sensor alarm is triggered.
Continuous Record+Motion Record+Sensor Record+ AI Record: Normal record is enabled all the time; motion/sensor/analytics alarm record will be enabled when motion/sensor/intelligence analytics alarm is triggered.
You can add more auto modes on intelligence record. Click "Advanced" button to open the window below. Check the modes in the window and then click "Add" button to show the modes in the record mode list (in the window, the checked modes can be shown in the record mode list while the unchecked modes cannot; you should check "***AI Record***").



Select one auto mode for the corresponding window to open. Set the encode, GOP, resolution, FPS, bitrate type, quality, max bitrate and audio of each camera and then click "OK" to save your settings. Please adjust the parameters according to the actual condition.



Video Encode: the available options will be H.265 and H.264 depending on what the camera supports.
Resolution: the higher the resolution is, the clearer the image is.
FPS: the higher the frame rate is, the more fluency the video has, with the tradeoff of using more storage.
Bitrate Type: CBR and VBR are optional. CBR means that no matter how much change is seen in the video scene, the compression bitrate will be kept constant. VBR means that the compression bitrate will be adjusted according to scene changes. For example, for scenes that do not have much movement, the bitrate will be kept at a lower value. This will help to optimize the network bandwidth.
Quality: When VBR is selected, you need to choose image quality. The higher the image quality you choose, the more bitrate will be required.
Max Bitrate: 32Kbps ~10240Kbps are optional.
GOP: Group of Pictures.

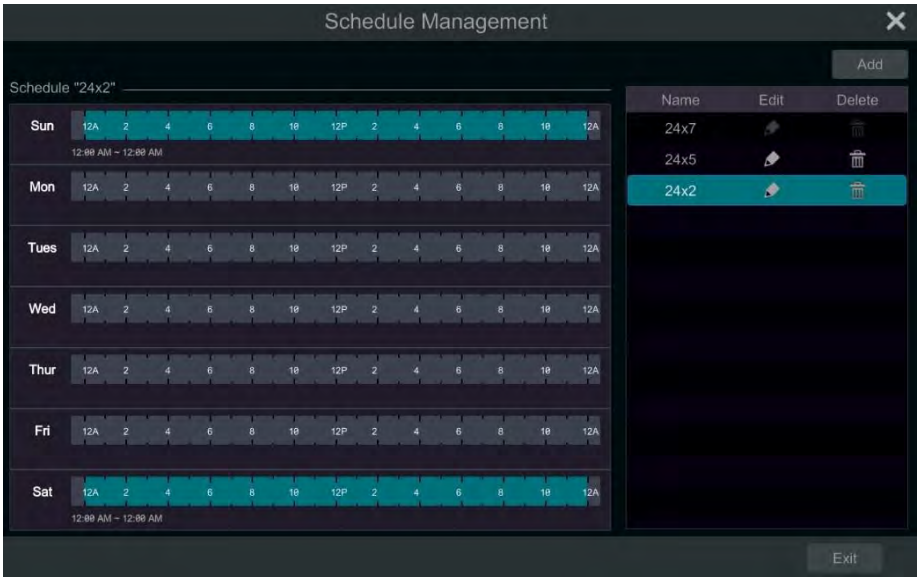
- **Scheduled Mode**

If scheduled mode is selected, you need to set the recording schedules for each camera. See *7.1.2 Schedule Settings* for details.

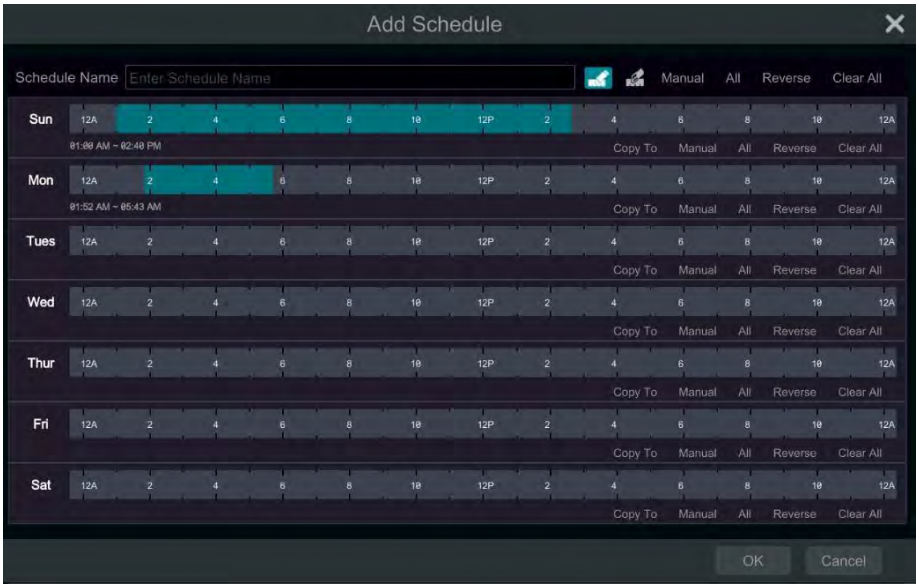
7.1.2 Schedule Settings

- **Add Schedule**

Click Start➔Settings➔Record➔Mode Setting to go to the mode setting interface. Then select “Scheduled” mode and click “Schedule Management” to set the schedule as shown below. “24 x 7”, “24 x 5” and “24 x 2” are the default schedules; you cannot edit or delete “24 x 7” while “24 x 5” and “24 x 2” can be edited and deleted. Click the schedule name to display the detailed schedule information on the left side of the interface. The seven rows stand for the seven days in a week and each row stands for 24 hours in a day. Blue stands for the selected time and gray stands for unselected time.



Click “Add” to add a new schedule. Refer to the picture below.



Set the schedule name and schedule time and then click “Add” to save the schedule. You can set day schedule or week schedule. : add button; : delete button.

- **Set Day Schedule**

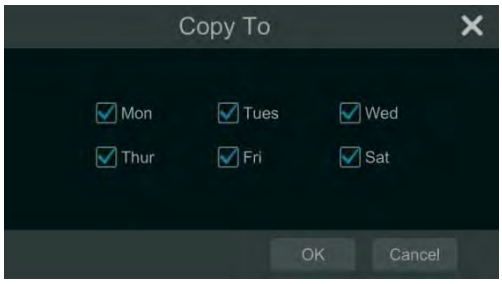
Click and then drag the cursor on the time scale to set record time; click and then drag the cursor on the time scale to delete the selected area.

You can manually set the recording start time and end time. Click or and then click “Manual” on each day to open the window below. Set the start and end time in the window and then click “OK” to save your settings.



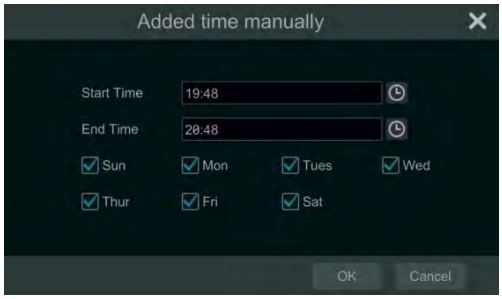
Click “All” to set all day recording; click “Reverse” to swap the selected and unselected time in a day; click “Clear All” to clear all the selected area in a day.

Click “Copy To” to copy the schedule of the day to other days. Refer to the picture below. Check the days in the window and then click “OK” to save your settings.



- **Set Week Schedule**

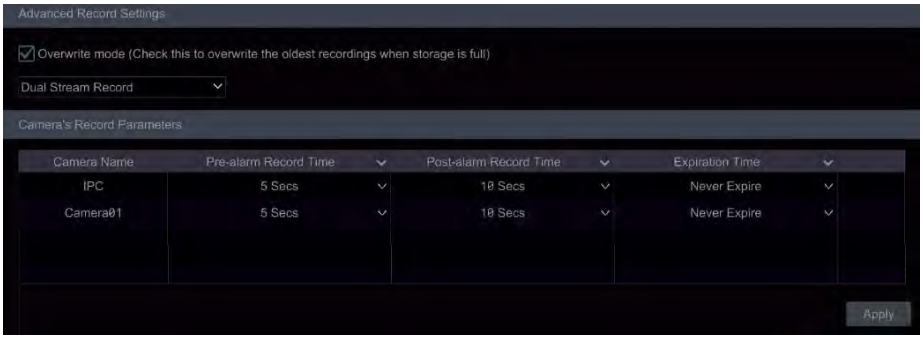
Click or and then click “Manual” beside to set the week schedule. Refer to the picture below. Set the start and end time, check the days in the window and then click “OK” to save your settings.



Click “All” to set all week recording; click “Reverse” to swap the selected and unselected time in a week; click “Clear All” to clear all the selected area in a week.

7.1.3 Advanced Configuration

Click Start➔Settings➔Record➔Advanced to go to the interface below. Enable or disable overwrite mode (overwrite mode: the earliest recording data will be replaced by the latest when the disks are full). Choose the record stream. Set the pre-alarm record time, post-alarm record time and expiration time of each camera and then click “Apply” to save your settings.



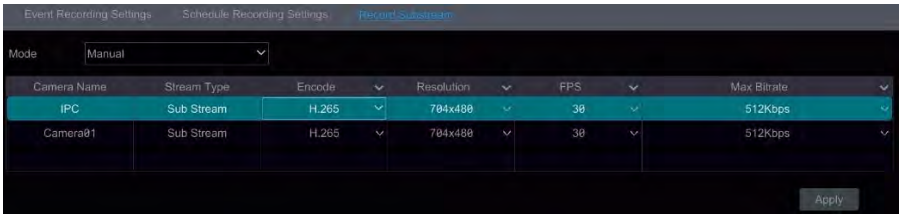
Pre-alarm Record Time: set the time to record before the actual recording begins.
Post-alarm Record Time: set the time to record after the actual recording is finished.
Expiration Time: set the expiration time for recorded video. If the set date is overdue, the recorded data will be deleted automatically.

7.2 Encode Parameters Settings

Click Start➔Settings➔Record➔Encode Parameters to go to the interface as shown below. Set the encode, resolution, FPS, GOP, bitrate type, quality, max bitrate and audio of main stream for each camera in “Event Recording Settings” and “Schedule Recording Settings” interfaces. Click “Apply” to save your settings. You can set the record stream of each camera one by one or batch set them for all cameras.



Click the “Record Substream” tab to set the record substream. Select “Auto” and the system will automatically set the record substream. Select “Manual” to set the encode, resolution, frame rate and max birate of the record substream manually.



7.3 Record Mode

7.3.1 Manual Recording

Method One: Click  on the tool bar at the top of the live view interface to enable recording of the camera.

Method Two: Go to the live view interface and then click the right-click menu "Manually Record On" in the camera window or click  on the tool bar under the camera window to start recording.

Note: Click Start➔Settings➔Record➔Mode Settings and then set the manual record time in the interface. Click "Apply" to save your settings.

7.3.2 Timing Recording

Timing Recording: the system will record automatically according to the schedule.
Set the timing record schedule of each camera. See *7.1.2 Schedule Settings* for details.

7.3.3 Motion Based Recording

Motion Based Recording: the system will start motion-based recording when the motion object appears in the setup schedule. The setup steps are as follows:

① Set the motion-based recording schedule of each camera. See *7.1.2 Schedule Settings* for details.
② Enable the motion and set the motion area of each camera. See *11.2 Motion Alarm* for details.
The camera will start motion-based recording once you finish the above steps.

7.3.4 Sensor Based Recording

① Set the sensor-based recording schedule of each camera. See *7.1.2 Schedule Settings* for details.
② Set the NO/NC type of the sensor, enable the sensor alarm and then check and configure the "Record". See *11.1 Sensor Alarm* for details.

7.3.5 AI Event Recording

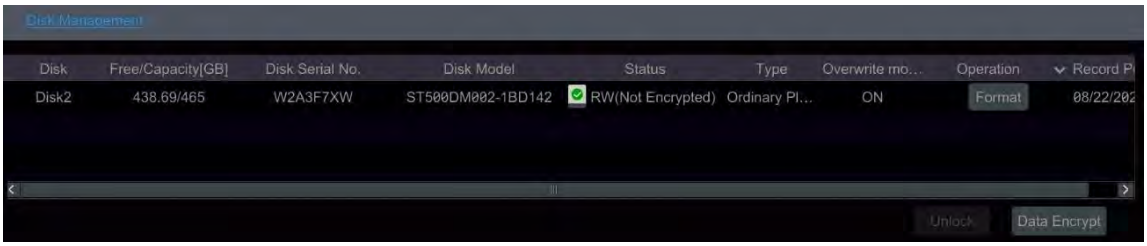
① Set the analytics recording schedule of each IP camera. See *7.1.2 Schedule Settings* for details.
② Enable the intelligent alarm detection (object detection, exception, tripwire or intrusion) and draw alert surface or warning area of each IP camera. See *9 AI Event Management* for details.
The camera will start analytic recording once you finish the above steps. This function is only available for some Speco Blue IPCs.

7.4 Disk

7.4.1 Disk Management

➢ Disk Management

Click Start➔Settings➔Disk➔Disk Management to go to the disk management interface. You can view the NVR's disk number and disk status and so on in the interface. Click "Format" button to format the HDD.



Data Encryption:
① Click "Data Encrypt".
② Enter the username and password used to log into the NVR. This username and password must have disk management permission.
③ Check the disk you want to encrypt and then enter the password.

After you encrypt the data of a disk, this disk cannot be read by other NVRs unless it is unlocked.

Data Decryption:
① Click "Change Encryption".
② Enter the username and password used to log in the NVR. This user must have disk management permission.
③ Check the disk you want to decrypt and then clear the password.

④ Click “Close Encryption”.

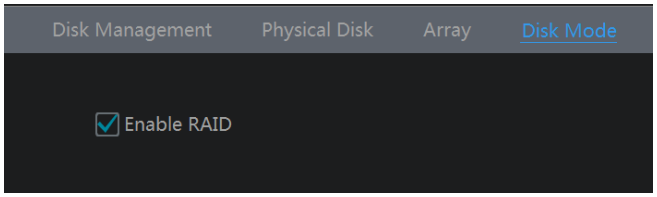
Unlock the disk: when one encrypted disk is transferred from another NVR to this NVR, it will be locked. You can select this locked disk and click “Unlock”. After you enter the password of its data encryption, its status will be “Read Only”. Now you can read the data of this disk but nothing can be written to it.

Some models may not support RAID function. RAID settings are as follows: Please skip the settings of physical disk, array and disk mode if the NVR doesn’t support this function. Check the spec sheet for your model to confirm if it supports RAID.

➢ RAID

① Enable RAID

(Go to Start➔Settings➔Disk➔Disk Mode)

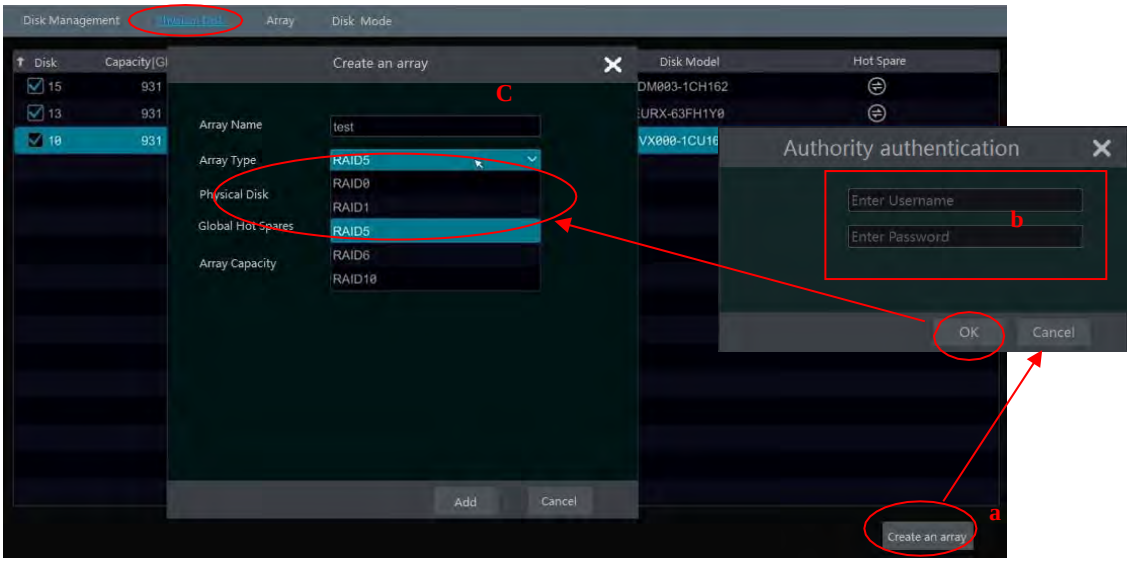


② Create an array. (Go to Start➔Settings➔Disk➔Physical Disk)

a. Click “Physical Disk” tab and then click “Create an array”.

b. Enter the username and password that has Disk Management authority. If you don’t have one, you can use the username and password for system login (the default username: admin; the default password:123456).

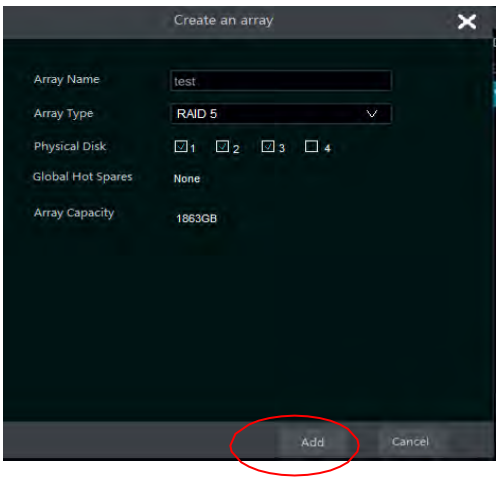
c. Enter array name and select array type (like RAID5).



d. Select physical disk.

If you have 16 disks, please select 15 disks. The remaining one should be set to a hot spare.

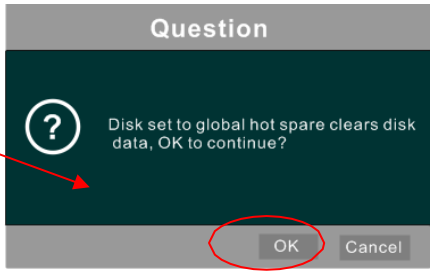
If higher data security is needed, you can decrease physical disks and increase hot spare disks. Please set them as needed.



e. Select a hot spare. In the physical disk interface, select the disk that is not in the array and click  as shown in the following pictures.

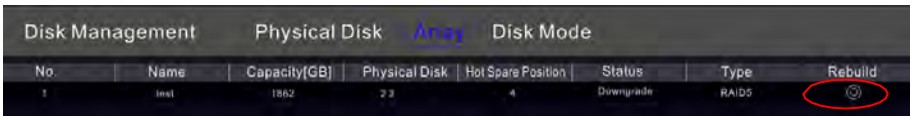




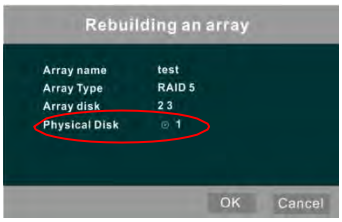


- RAID Rebuilding

If one of your disks is defective, the disk indicator on the front panel will turn red. A warning tip will pop up if the relevant HDD exception alarm is set. You need to rebuild your RAID configuration after you replace the broken disk with a new one.

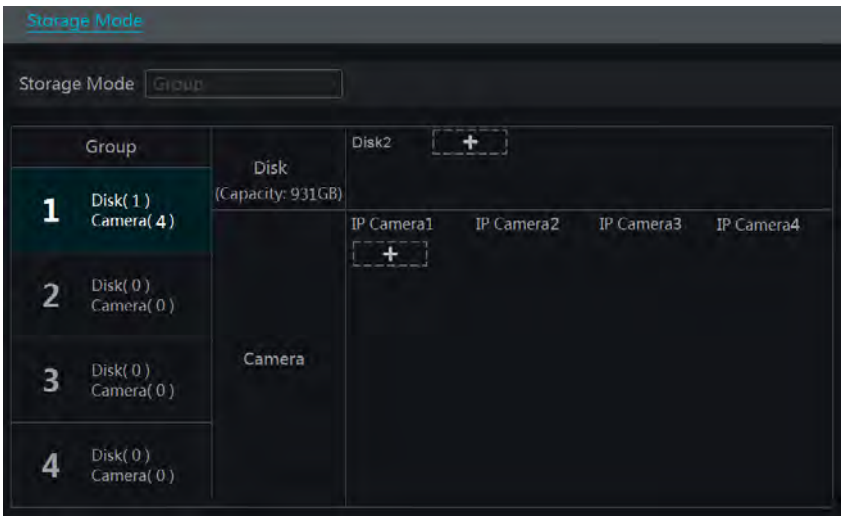


Click the above circled icon and then select the physical disk to rebuild.



7.4.2 Storage Mode Configuration

Click Start➔Settings➔Disk➔Storage Mode to go to the interface as shown below.



By using a disk group, you can correspond a camera to disk (the recording data of the camera in the group will be stored into the disks in the same group). An NVR with e-SATA interface supports e-SATA recording.

The added disks and cameras will be added into group one automatically. The disks and cameras in the groups can be deleted except group one (select a disk group and then click on the top right corner of the added disk or camera to delete it from the group). The deleted disks and cameras will be moved into group one automatically.

Each group can add disks and cameras from other groups. Each disk and camera can only be added into one group. Select a disk group and then click in the disk or camera row to open a window. Check the disks or cameras in the window and then click “Add”.

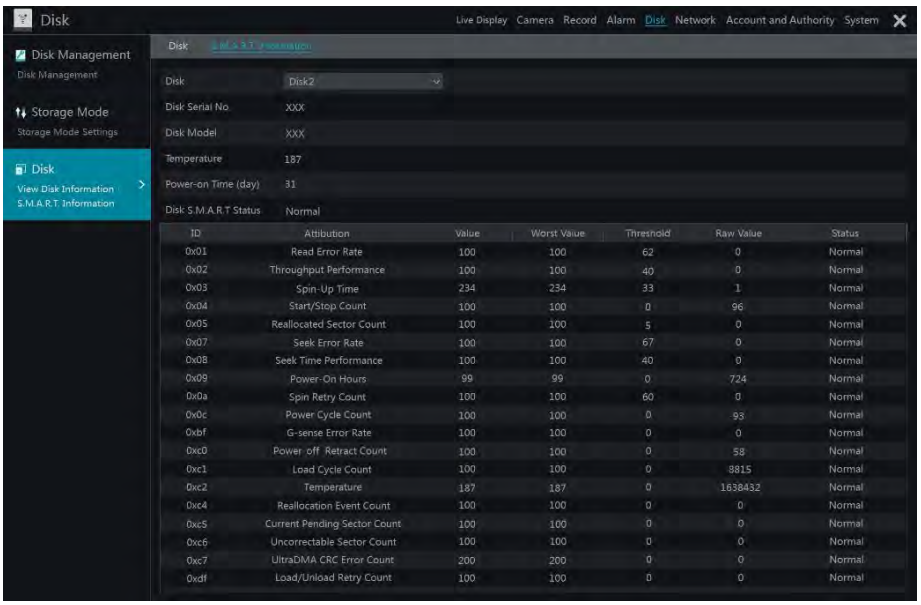
For models with 2 or 4 HDD slots, BK group can be added as shown below.



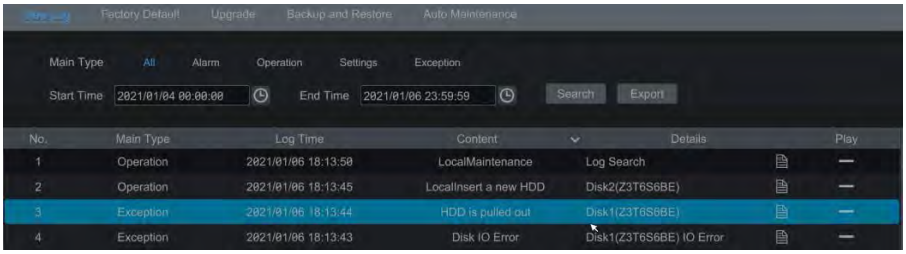
Click to add the backup HDD. After account verification, select an HDD and then this HDD will be removed from the normal group to the backup group. Simultaneously, it will be formatted. Please back up all data of this HDD in advance when you want to remove it to the backup group.
You can add cameras to this HDD. The added cameras can exist and be recorded both in one HDD of the normal group and the backup group.
Note: Each HDD only can exist in one group.

7.4.3 View Disk and S.M.A.R.T. Information

Click Start➔Settings➔Disk➔View Disk Information to view the HDD information; click “S.M.A.R.T. Information” to view the working status of the HDD (refer to the picture below); click “Health Status Check” to check the disks’ health status.



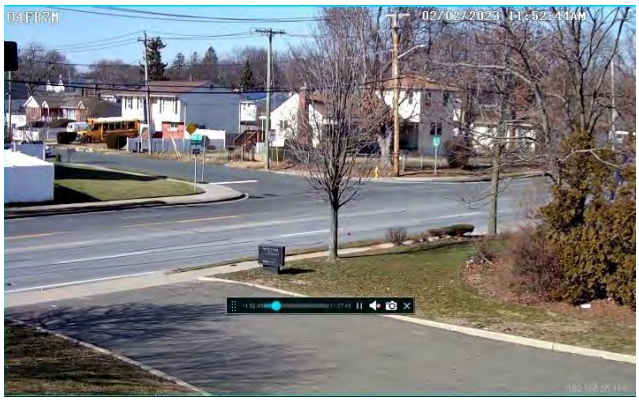
In addition, you can view the plug-in or pull-out details of the HDD from the logs to check whether someone has made changes to your HDD. Click Start➔Settings➔System➔View Log.



8 Playback & Backup

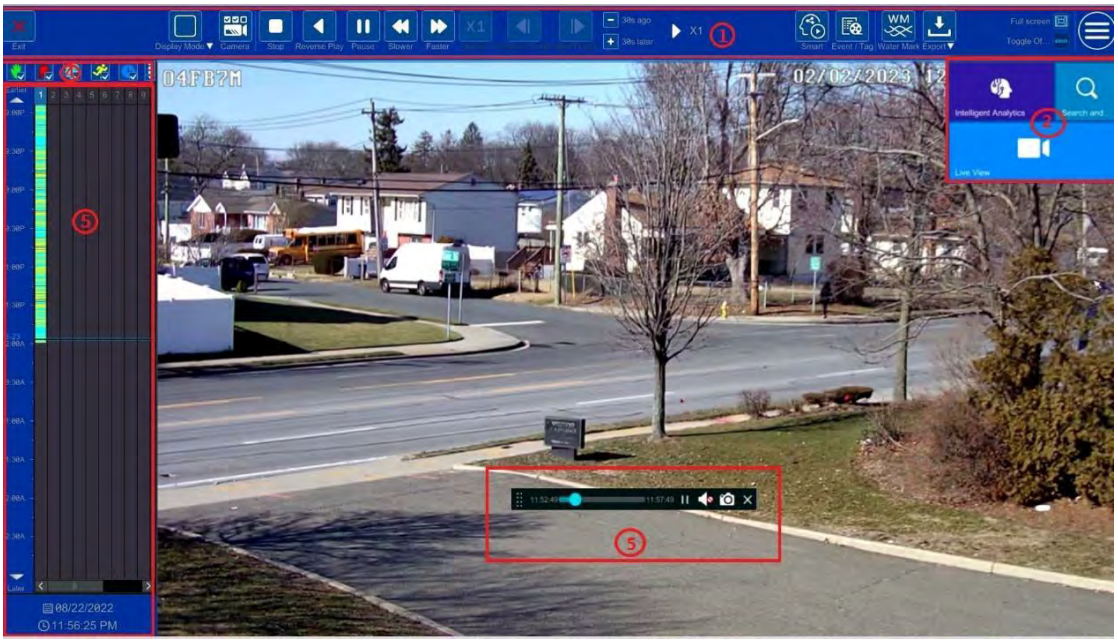
8.1 Instant Playback

Click on the tool bar at the bottom of the preview camera window to play back the recording (click on the tool bar at the top of the live view interface to set the default playback time). Refer to the picture below. Drag the playback progress bar to change the playback time. You can also click the right-click menu “Instant Playback” in the camera window and then set the instant playback time to play back the record.



8.2 Playback Interface Introduction

Click on the tool bar at the top of the live view interface or click Start➔Playback to go to the playback interface as shown below (click on the tool bar at the top of the live view interface to set the default playback time).



The panel on the left will show you the channel number and their recorded data coded by color. The bar that runs across them represents the playback time being viewed. You can move this bar around. To export, highlight a section of the desired recording, click export and follow the prompts. You can export single or multiple channels at the same time.

The added cameras will playback their recordings in the playback interface automatically. You can also add the playback camera manually. Click in the playback window to open the “Add Camera” window. Check the cameras in the window and then click “Add” to add playback camera. The system supports a maximum of 16 synchronous playback cameras.

The buttons on the tool bar (area ①) at the top of the playback interface are introduced in the table below.

Button	Meaning
	Start button. Click to open area ②.
	Full screen button. Click to show full screen; click again to exit the full screen.
	Screen mode button.
	OSD ON button. Click to enable OSD; click it again to disable OSD.
	Quick channel selection button
	Stop button.
	Rewind button. Click to play video backwards.
	Play button. Click to play video forwards.
	Pause button.
	Deceleration button. Click to decrease the playing speed.
	Acceleration button. Click to increase the playing speed.
	Previous frame button. It works only when the forward playing is paused in single screen mode.
	Next frame button. It works only when the forward playing is paused in single screen mode.
	Click to step backward 30s and click to step forward 30s.
	Click it to enter the smart playback interface
	Event list/tag button. Click to view the event recording of manual/schedule/sensor/ motion and the tag information.
	Watermark button. Click to enable a watermark; click again to disable watermark.
	Backup button. Drag the mouse on the time scale to select the time periods and cameras, and then click the button to back up the record. : Backup status button. Click to view the backup status.
	Back button. Click to return.

Introduction of area ②:

Button	Meaning
	Click to go to record search and export interface; see 8.4 Record Search, Playback & Backup for details.
	Click to go to the live view interface; see Chapter 5 Live View Introduction for details.
	Click to go to the intelligent analytics interface.

Click on the playback window to show the tool bar as shown in area ③; right click on the window to show the menu list. The tool bar and menu list are introduced in the table below.

Button	Menu List	Meaning
	--	Move tool. Click to move the tool bar anywhere.
	Enable Audio	Click to enable audio. You can listen to the camera audio by enabling audio.
	Snapshot	Click to take a snapshot.
	Zoom In	Click to go to the zoom in interface. The zoom in interface is similar to that of the camera window in the live view interface. Click to pause the record playing; click to play the record. When the record is paused in forward playing mode, you can click to view the previous frame and click to view the next frame.
	Add Tag	Click to add tag. You can play back the recording by searching the added tag. Click and then enter the tag name in the popup window. Click "Add" to add tag.

	Switch Camera	Click to switch the playback camera. Click and then check the camera in the popup window. Click "OK" to change the camera.
	Close Camera	Click to close the playback camera.

Introduction of area ④:

Click to set the date; click to set the time and then the playback camera will play the record from the time you set. You can check the record type as required for record playback; first you should click on the tool bar at the top of the interface to clear all the playback camera, then check the record type (: manual record; : sensor based record; : motion based record; : schedule record; : AI record; : POS record, if you want view the detailed smart playback icons, click to switch). Finally, click in the playback window to add camera for playback (the record time scale will show the record data of the checked record type only after the above operations).

Introduction of the record time scale (area ⑤):

Click to set the date; click to set the time and then the playback camera will play the record from the time you set.

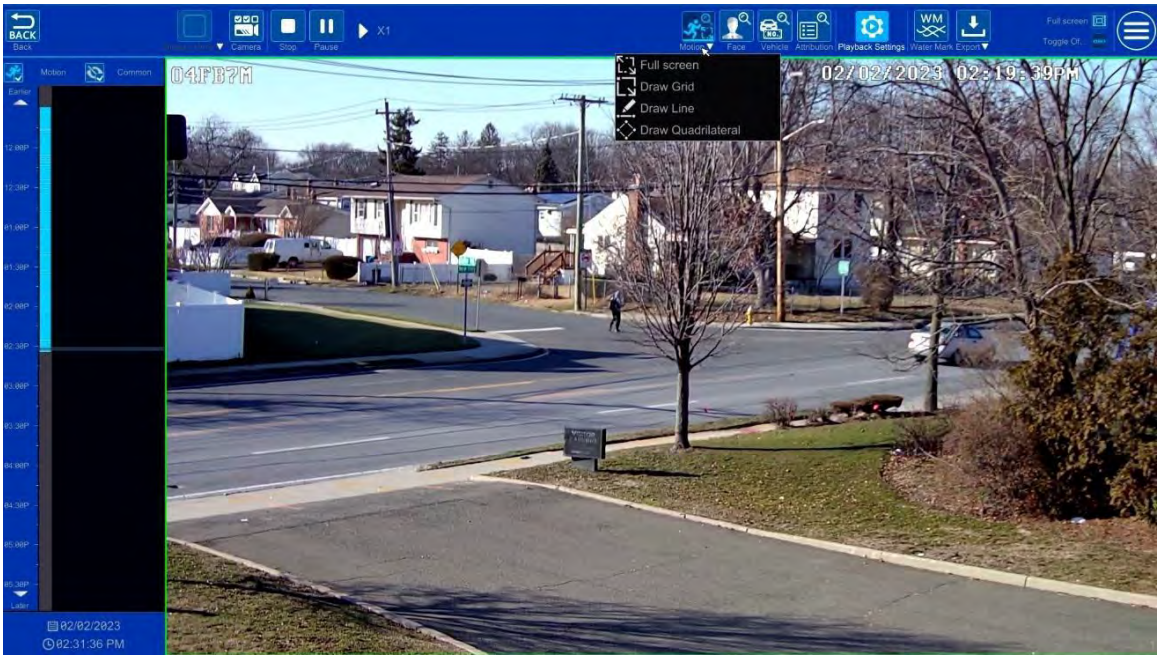
A tool bar will appear after moving the mouse to the record time scale. Click / to zoom the timeline; click to recover the timeline to 24 hours' ratio. Drag the timeline or slide the scroll wheel of the mouse on the time scale to show the hidden time on the top or bottom of the timeline. You can also click to show the hidden time on the top of the timeline or click to show the hidden time on the bottom of the timeline. Drag the slider at the bottom of the time scale to show the hidden playback cameras.

The record time scale shows different record types with different colors. The green block stands for manual record, red block stands for sensor based record, yellow block stands for motion based record, blue block stands for schedule record and cyan block stands for intelligent record. Click the record block to set the time and then the playback camera will play the record from the time you set.

Drag the color block on the time scale to select the backup area and then right click the area or click to open an export information window. Click button in the window to open the export window. Select the device, export path and format and then click "Export" button to start the backup.

8.3 Smart Playback

In the playback interface, click to go to the smart playback interface.



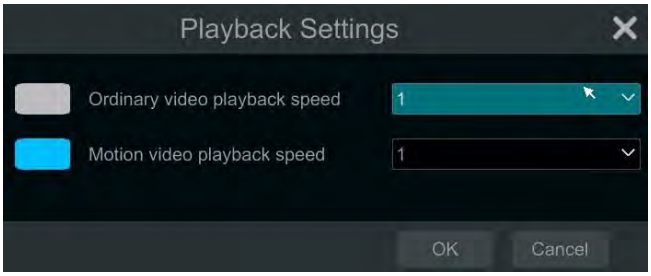
The descriptions of buttons in the smart playback interface

Button		Description
		Full screen motion button.
		Draw grid. You can search the record of motion detection in the pre-defined area.

Button	Description
	Draw line. You can search the record of crossing the line after drawing the line.
	Draw quadrilateral. You can search the record in this quadrilateral after drawing it.
Vehicle	Search by license plate number
Face	Search by face (only supported by N8NRE/N16NRE/N32NRE)
	Playback settings button
BACK Back	Return button. Click to return to the previous interface.

8.3.1 Smart Playback Settings

Click to set “Motion/Face/Vehicle video playback speed”, “Ordinary video playback speed”.
You can disable “Common” to view motion/face vehicle video playback in the right corner of the smart playback interface.



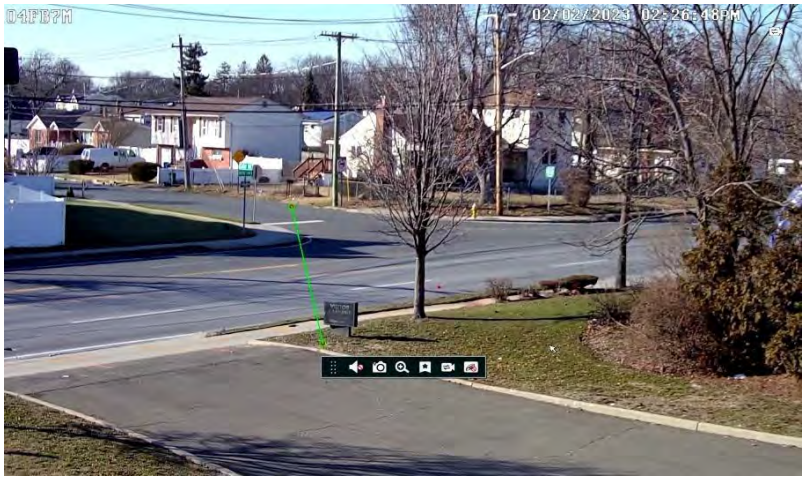
8.3.2 Smart Playback Based on Motion Detection

- **Smart Playback by Drawing Grid**

Click and draw a rectangle in the desired area. The system will then automatically search the record files of this area. The cyan blocks indicate that there are intelligent recording files. Move the cursor to such block and click to play the record.

- **Smart Playback by Drawing Line**

Click and draw a line in the desired area. The system will then automatically search for the record files where this line was crossed. The cyan blocks indicate that there are intelligent recording files. Move the cursor to such a block and click to play the recording.



- **Smart Playback by Drawing Quadrilateral**

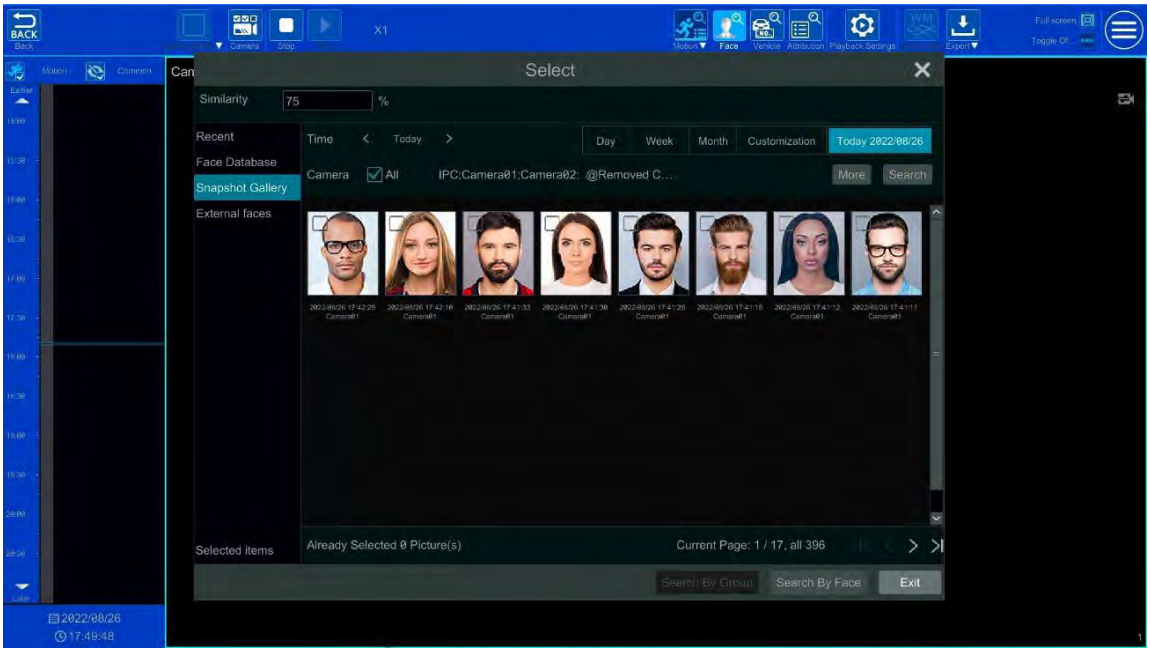
Click and draw a quadrangle in the desired area. The system will then automatically search the recording files of this area. The cyan blocks indicate that there are intelligent recording files. Move the cursor to such a block and click to play the recording.



8.3.3 Smart Playback by Face Search

Before starting this function, the face recognition function must be enabled. Please see Face Recognition section for details. If your device doesn't support such a function, please skip the following instructions.

① In the smart playback interface, click  to open the window below.



① Set similarity. The higher the sensitivity value is, the lower the searching accuracy is, and vice versa.

② Select targets. You can select targets from recent, face database, snapshot gallery or external faces.

③ Select search mode. There are two search modes: search by group and search by face.
Search by group: Choose "Face Database" and then click "More" to choose one or more groups.

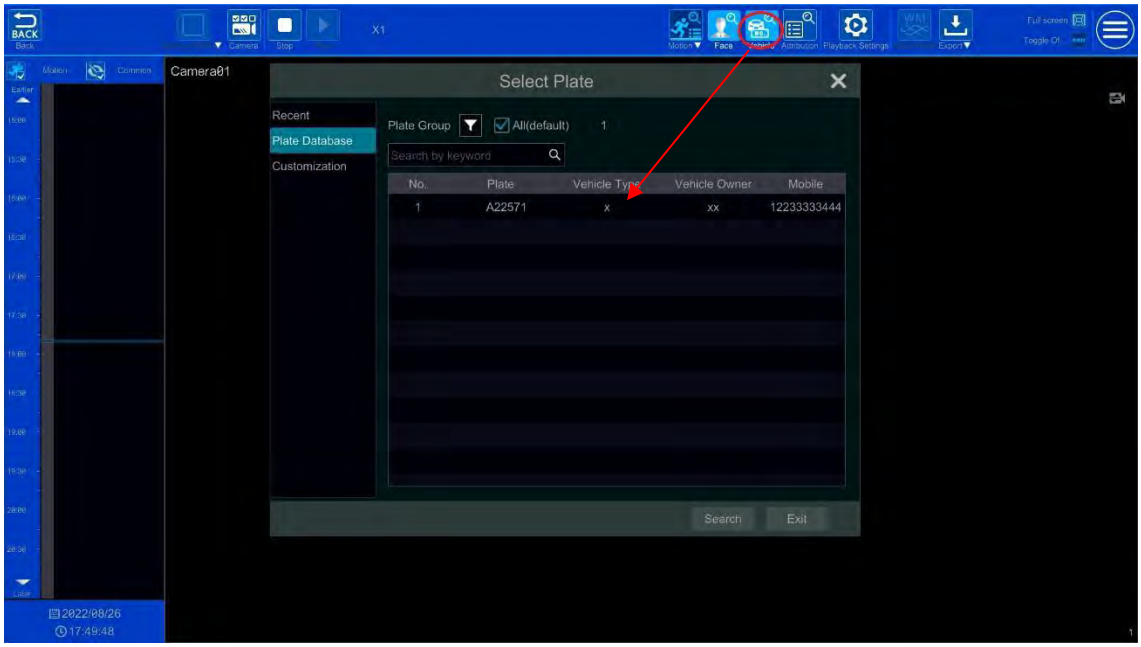
Move the cursor to the time block where the record exists and click to play those records.

You can only check "Face" to view the face records.

8.3.4 Smart Search by License Plate

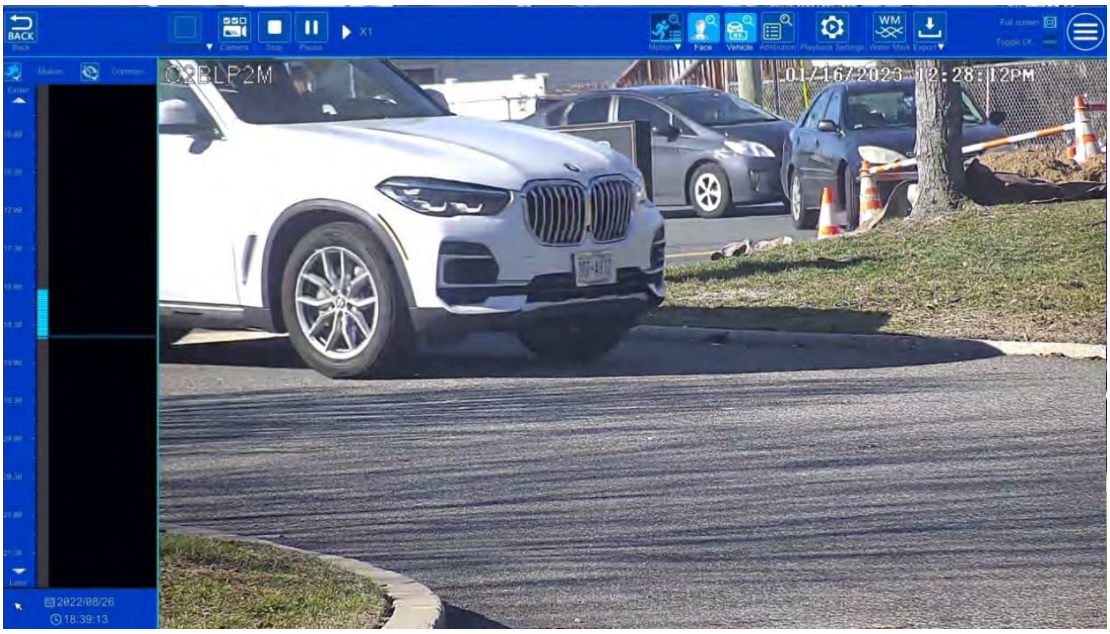
Before starting smart search by plates, please add ANPR cameras first and then enable the LPR function. Please refer to License Plate Recognition section for details.

Click  button to go to the following interface:



Select the plate from “Recent”, “Plate Database” or “Customization” and then click “Search” to search recorded files and play. Here is an example of plate search from “Plate Database”.

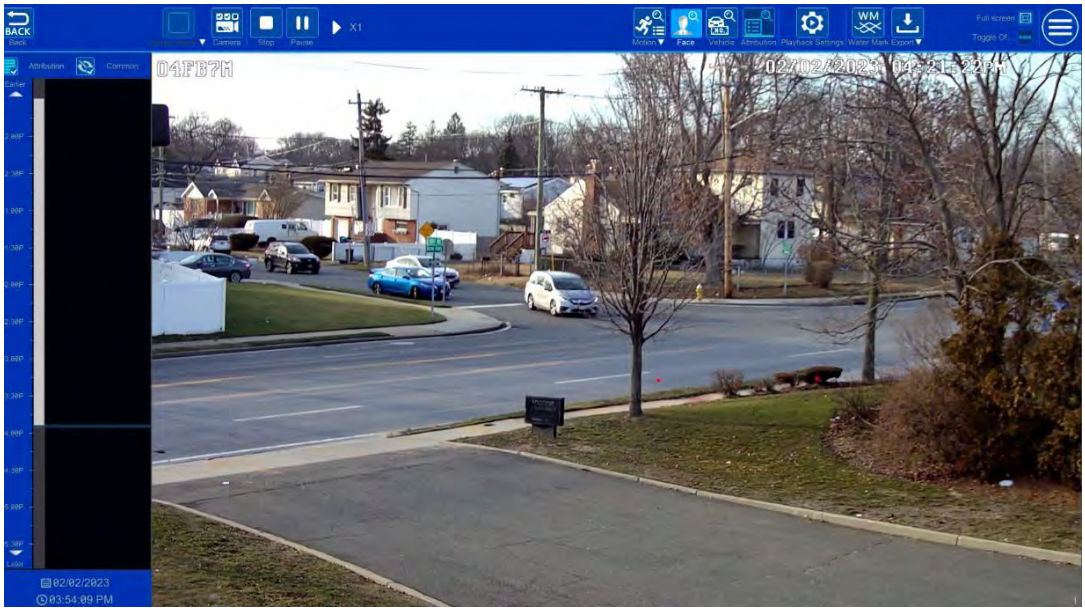
Click  to choose a group. Then plates will be listed in the table automatically. Click “Search” to play.



8.3.5 Smart Search by Object Attributes (BETA)

PLEASE NOTE THIS FUNCTIONALITY IS STILL IN BETA AND MAY HAVE SOME INACCURACIES.

Before searching for objects by attributes, you must enable the video metadata (BETA) function of the camera. ***Please note that this function will only work with specific cameras running the newest firmware. Check with Speco Technologies’ technical support for models and firmware.*** Click  to select the attributes. Select the attributes of human/motor vehicle/non-motor vehicle as needed to search the results.

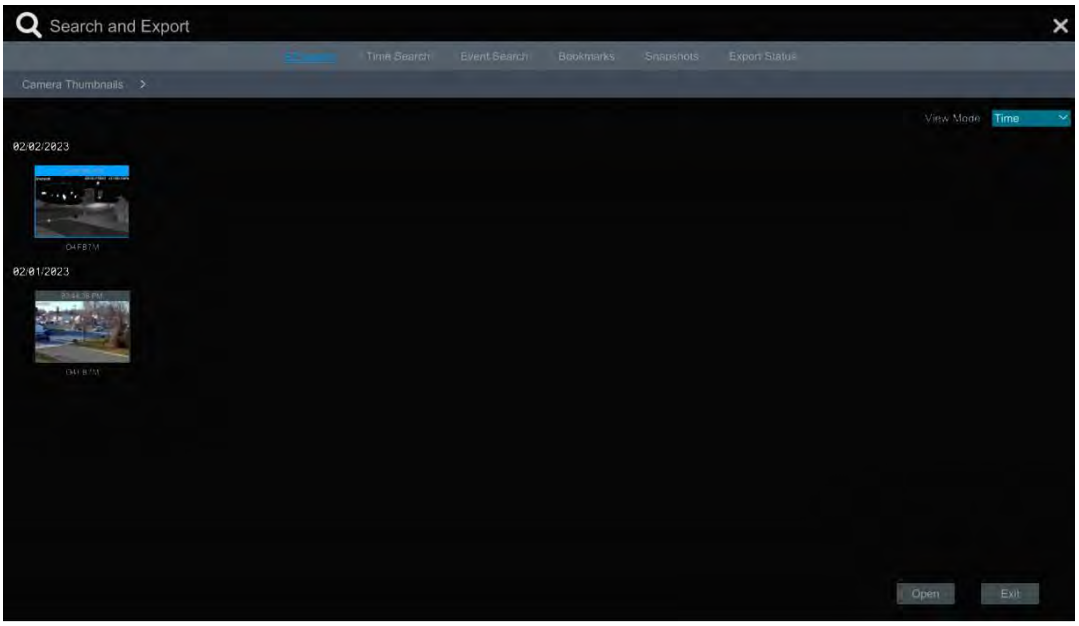


8.4 Record Search, Playback & Export

The record data and the captured pictures can be exported through the network or USB (U disk or USB mobile HDD). The file system of the export devices should be FAT32 format.

8.4.1 EZ Search

① Click Start➔Search and Export➔EZ Search to go to the “EZ Search” tab. There are two view modes: by time and by camera. In the time view mode, a maximum of 64 camera thumbnails can be showed. If the camera thumbnail number is more than 64, the cameras will be listed directly by their camera name, not the thumbnail. A maximum of 196 camera names can be listed. If the camera names exceed 196, the time view mode will be disabled and only the camera view mode will be available.



② Select one camera in the interface and then click “Open” button.

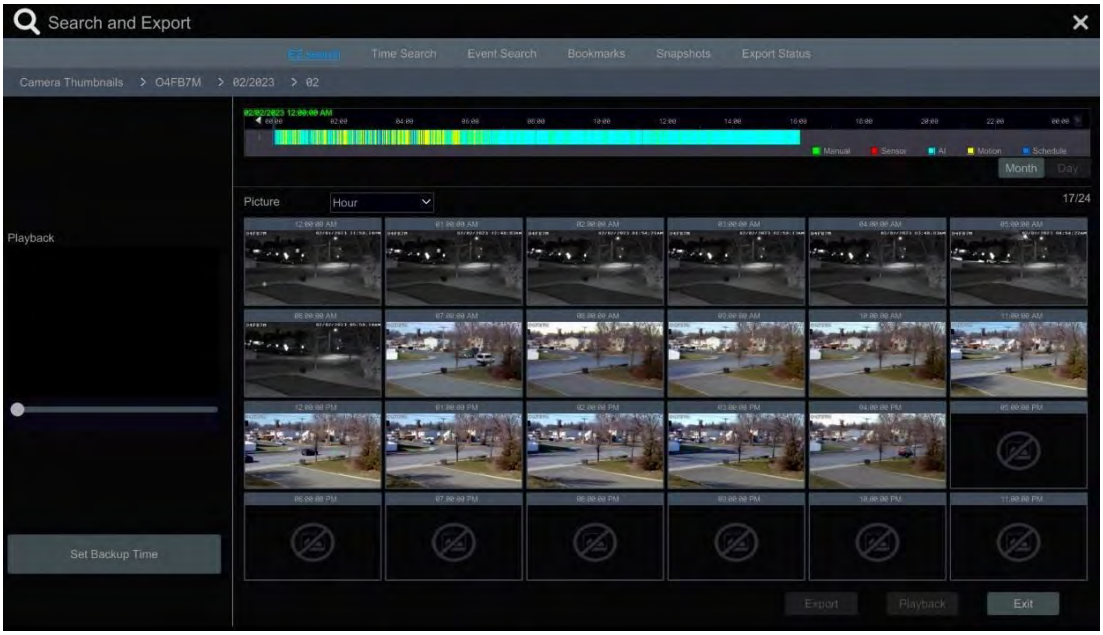
③ Click the image box to play the recording in the small playback box on the left side of the interface (the box which has image inside indicates that the recording data exists).

④ Refer to the picture below. Drag the color blocks on the time scale to select the recording data and then click the “Export” button to open the “Record Backup” window as shown below. Select the device name, backup format and path and then click “Export” button to start the backup.



Note: If you back up the record in private format, the system will back up a RPAS player to USB device automatically. The private format record can be played by RPAS player only.

⑤ Click "Playback" button to play the record in the playback interface (refer to 8.2 Playback Interface Introduction for details). Click "Exit" to exit the interface.



Time Slice Search:

Method One: Click "Year", "Month" or "Day" button under the record time scale to select the time slice mode. In "Day" mode, click / on the left/right side of the time scale to view the record of the last/next day; click "Minute" in the "Picture" option under the time scale to select "Minute" mode (in "Minute" mode, click the time scale to change the time of the 60 display windows) and click "Hour" to select "Hour" mode.

Method Two: Click beside "Camera Thumbnail" on the left top corner of the interface to select the time slice mode.

Method Three: Right-click the mouse on any area of the time-sliced interface to go back to the upper interface.

8.4.2 Time Search

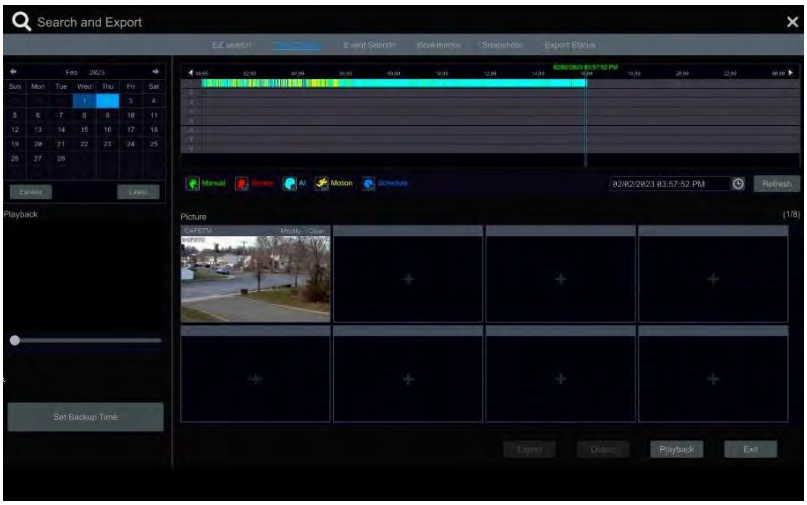
① Click Start➔ Search and Export➔Time Search to go to the "Time Search" tab as shown below.

② Click on the bottom of the interface to add playback camera. A maximum of 16 cameras can be added for playback. Click "Modify" on the top right corner of the camera window to change the camera and click "Clear" to remove the camera.

③ Click the camera window to play the recording in the small playback box on the left side of the interface. You can set the date on the top left of the interface, check the event type as required and click the time scale or click under the time scale to set the time. The camera window will play the record according to the time and event type you set.

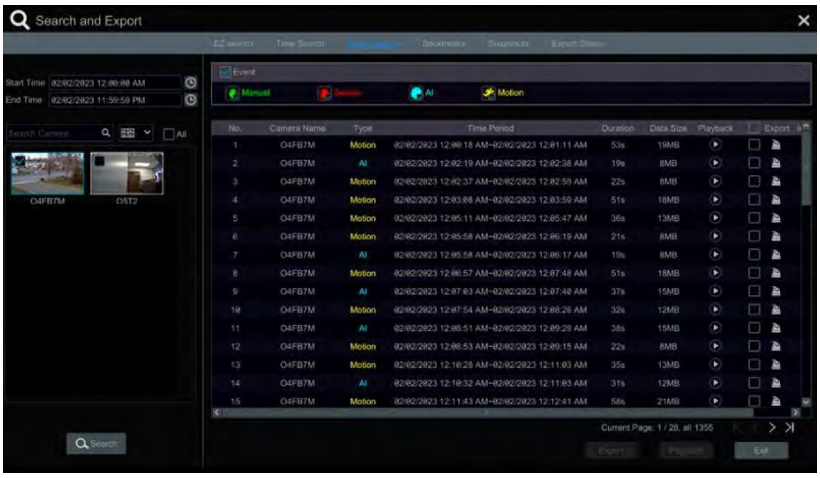
④ Drag the color blocks on the time scale to select the record data (or click "Set Backup Time" button on the bottom left corner of the interface to set the backup start time and end time) and then click "Export" button for record backup. Click "Playback" button to play the record in the playback

interface.



8.4.3 Event Search

① Click Start➔Search and Export➔Event Search to go to “Event Search” tab as shown below.



② Check the event type in the interface as required.

③ Click  to set the start time and end time on the top left of the interface.

④ Check specific cameras on the left side of the interface or check “All” to select all the cameras and then click  to search the record. The searched record will be displayed in the list.

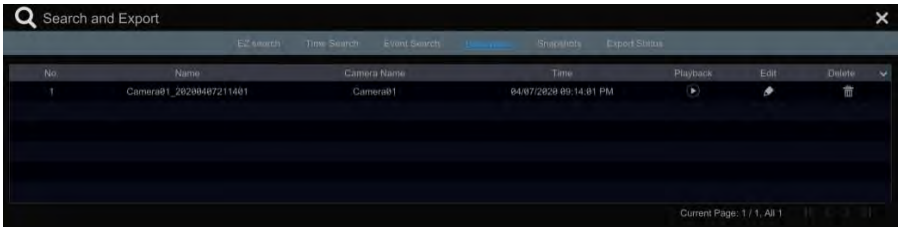
⑤ Click  in the list to play back the record in the popup window. Click  to back up one record data or check multiple record data in the list and then click “Backup” button for record batch backup.

⑥ Select one record data in the list and then click “Playback” button to play the record in the playback interface.

8.4.4 Bookmark Search

Only if you add tags can you play the recording by tag search. Click Start➔Playback to go to the playback interface and then click  on the bottom of the camera window to add bookmarks when you want to mark the playback time point of the selected camera.

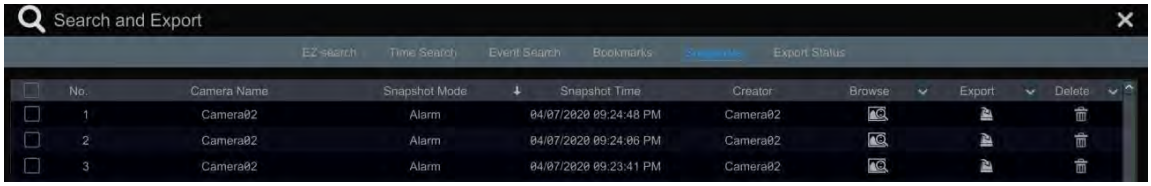
Click Start➔Search and Export➔Bookmarks to go to “Bookmarks” tab.



Click in the interface to play the record. Click to edit the tag name. Click to delete the tag.

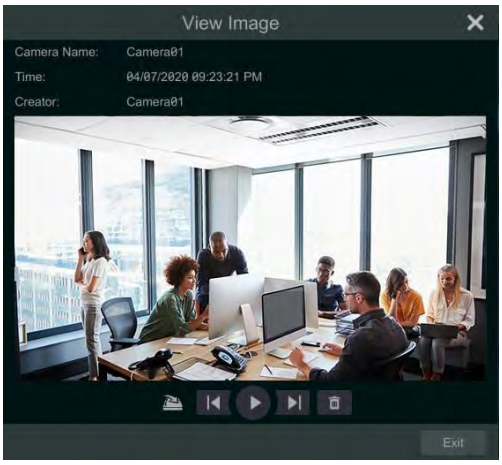
8.4.5 Snapshots

Click Start➔Search and Export➔Snapshots to go to “Snapshots” tab. The system will display all the captured images automatically in the list.



Click to delete the image. Click to open the “Export” window. Select the device name and save path in the window and then click “Save” button.

Click to open the “View Image” window. Click to export the image. Click to view the previous image; click to view the next image; click to delete the image; click to play all the images.



8.4.6 View Export Status

Click Start➔Search and Export➔Export Status or click on the tool bar at the bottom of the playback interface to view the export status.

9 AI Event Management

9.1 Face Recognition

Only some models support alarm trigger based on face comparison. If your device doesn't support face recognition function, please skip the face database and face recognition instructions.

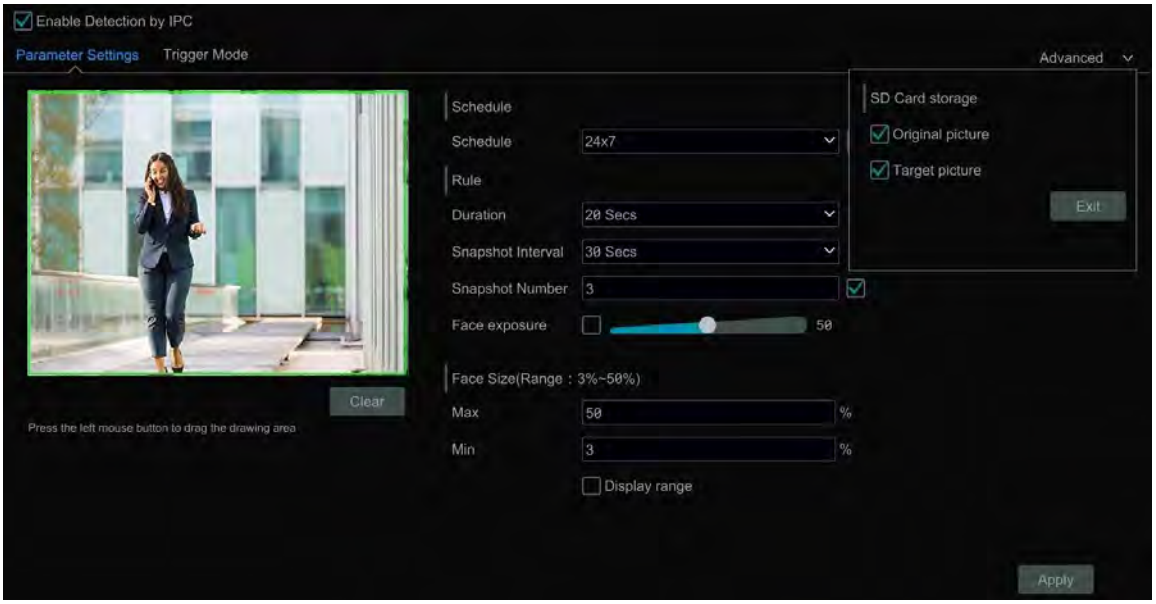
The following are instructions on how to set up the Face Recognition function for the first time:

Set face detection and alarm linkage ➔ Add face group ➔ Add faces to the face group ➔ Enable and set successful recognition (or stranger) ➔ Set successful recognition (or stranger) alarm linkage

9.1.1 Face Detection Settings

Face Detection: Alarms will be triggered if someone intrudes into the pre-defined alarm areas.

① Click Start➔Settings➔AI/Event➔AI Event➔Face Recognition➔ Detection to go to the following interface:



② Select the camera, check "Enable Detection by IPC" and set the duration.

Note: Some models may support face detection by NVR. For these models, the camera without AI function also can be added and used to detect faces through the NVR. However, if face detection by NVR is enabled for a camera (without AI), people/vehicle perimeter detection cannot be enabled simultaneously, and vice-versa.

③ Set the schedule. Click "Manage" to set the desired schedule. Please refer to 7.1.2 Schedule Settings for details.

④ Set the snapshot interval and snapshot number. The snapshot interval refers to the time interval that the camera captures the same face during its continuous tracking period. The snapshot number refers to the picture number of the same face captured during its continuous tracking period (For example: the snapshot interval is set to "30 seconds" and the snapshot number is set to "3"; then the camera will capture the same face once every 30 seconds and it will capture this face 3 times at most during its continuous tracking period).

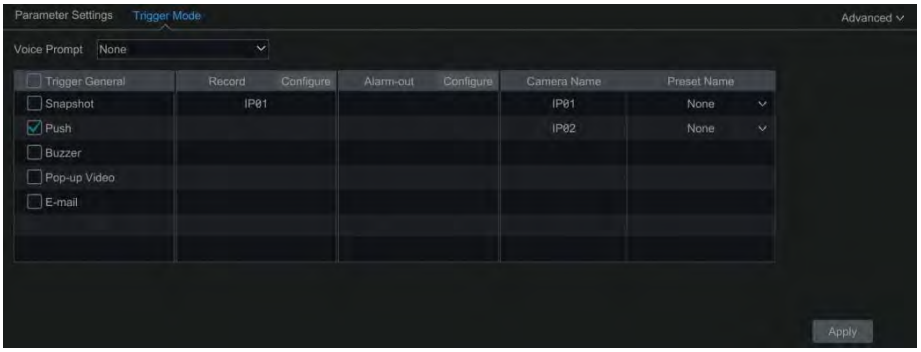
⑤ Enable face match exposure as need. When the brightness of the captured face is not enough, it can be enabled. (Only some IPCs support this function)

⑥ Set the alarm area. Drag the mouse to draw a detection area. Click "Clear" to delete the alarm area. Then set the detectable face size by defining the maximum value and the minimum value (The default size range of a single face image occupies from 3% to 50% of the entire image).

⑦ Enable "Original picture" or/and "Target picture" as needed. If enabled, the system will automatically save the corresponding images on the SD card.

⑧ Click "Apply" to save your settings.

⑨ Click "Trigger Mode" to go to face detection alarm linkage settings interface:



Face Detection Alarm Linkage Configuration:

① Trigger "Record", "Snapshot", "Push", "Alarm-out", "Preset", "Buzzer", "Pop-up Video" and "E-mail" as needed.

Record: Click the "Configure" button to open that window. Select a camera on the left side and then click >> to set the camera as the trigger camera. Select a trigger camera on the right side and then click << to cancel the trigger camera. Click "OK" to save your settings. The trigger cameras will record automatically when faces are detected.

Alarm-out*:* Click the "Configure" button to open that window. The "Trigger Alarm-out" window will then pop up automatically. Configure the trigger alarm-out in that window. The system will trigger the alarm-out automatically when faces are detected. You need to set the delay time and the schedule of the alarm outputs. See 11.6.1 Alarm-out for details.

Preset*:* Click and then select the preset for each camera. To add presets, please see 6.2 Preset Settings for details.

Snapshot: If it is enabled, the current camera will capture images automatically when faces are detected.

Push: If it is enabled, the system will send messages when faces are detected.

Buzzer*:* if it is enabled, the system will begin to buzz when faces are detected. To set the delay time of the buzzer, please see 11.6.4 Buzzer for details.

Pop-up Video*:* if it is enabled, the system will open the corresponding video automatically when faces are detected. To set the duration time of the video, please see 11.6.3 Display for details.

E-mail*:* if it is enabled, the system will send an e-mail when faces are detected. Before you enable the email, please configure the recipient's e-mail address (see 11.6.2 E-mail for details).

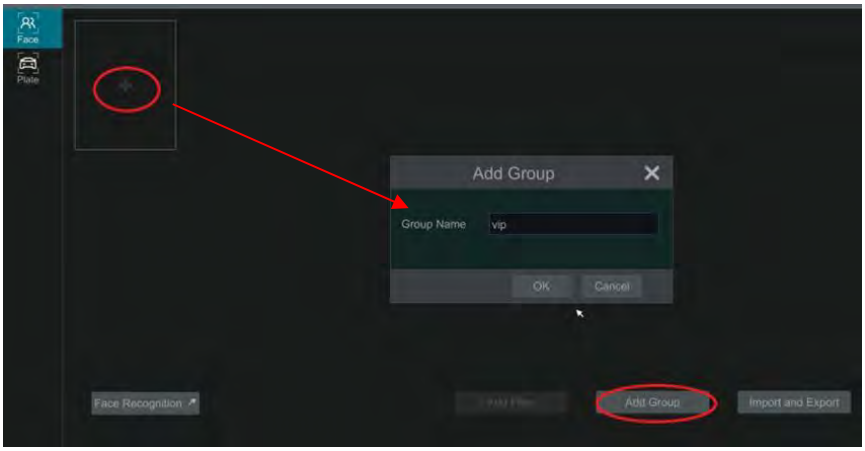
Enable "IPC_Digital Deterrent" or "IPC_Light" as needed (only specific IPCs support these two functions). To set the IPC voice and its times and volume, please refer to 11.6.6 Digital Deterrent for details. To set the light flashing time and frequency of the IPC, please refer to 11.6.7 Light for details.

⑩ Click "Apply" to save your settings.

9.1.2 Face Database Management

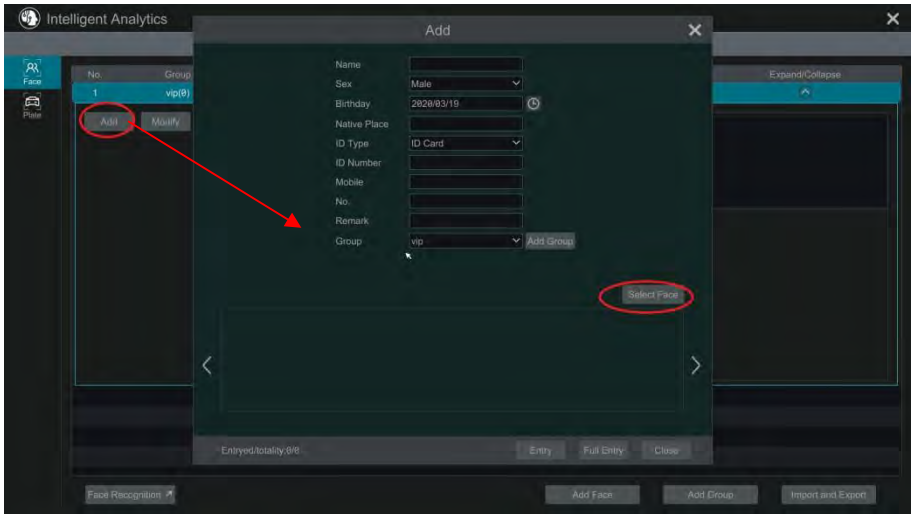
This function is only available for the N8NRE/N16NRE/N32NRE.

① Click Start➔Settings➔AI/Event➔AI Event➔Face Recognition➔Face Database to go to the following interface:



For the initial setup, click "+" or "Add Group" to add groups.

② To add targets for each group select a list and then click to expand the list as shown below.



② Click “Add” and then click “Select Face” to add face images. You can add faces from the snapshot gallery or add external faces.

Adding faces from snapshot gallery: Select search time or self define the search time and then click “Search” to search target faces. Next, select the desired faces and click “Select”.
Note: The picture marked with a green icon can be added to the face database. Those that can’t likely have resolution issues.



Add external faces
Save the face pictures on your USB storage device and then insert the USB storage device into the USB port of the NVR.
Go to the face database interface. Click to expand the group and then click “Add”. Select “External faces” to select face pictures. You can select one face to add or multiple faces to add.
To add multiple faces: a. put face pictures and the description file (.csv or .txt) to one specific folder (please edit the detailed descriptions of these pictures according to the personal information description); b. click “All” to select all face pictures; c. click “Full Entry”.
Note: the added image must be less than 70KB and the image format should be “.jpg” and “.jpeg”.

③ After that, add the corresponding information, like name, gender, birthday, ID number, phone number and so on.

Having saved the target image, click the image and then the detailed information will be listed on the right.



④ Import and Export Face database

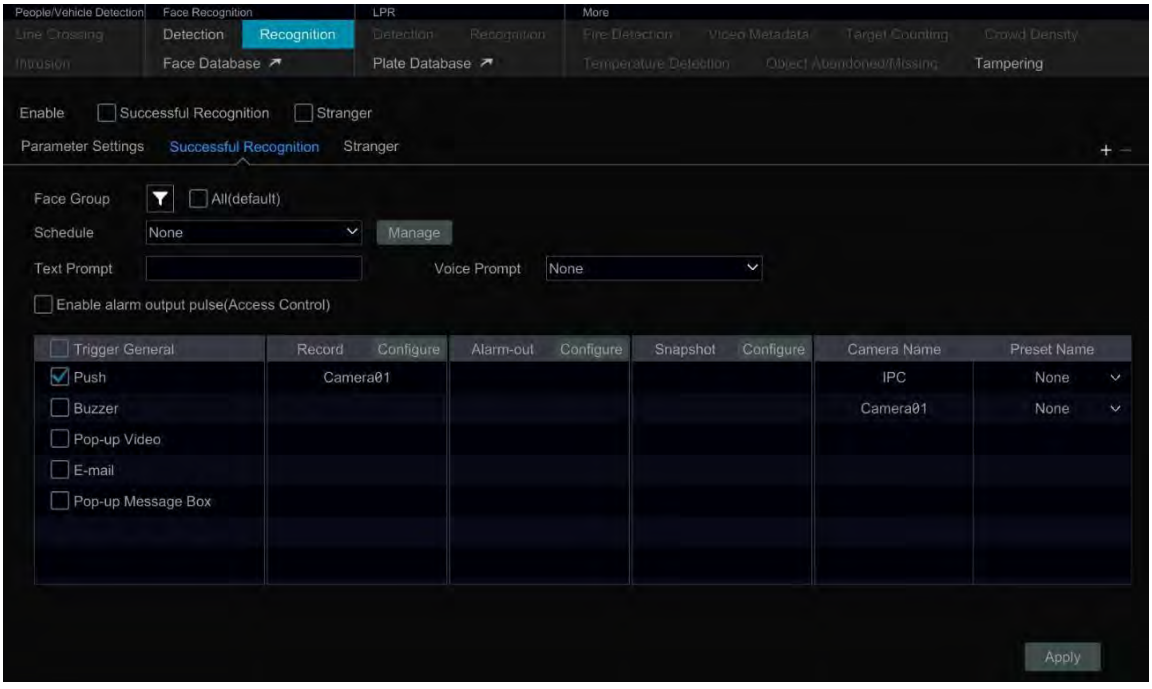
Insert your mobile storage device into the USB interface of the NVR and then click “Import and Export” to import or export the face database settings.

The exported face database file (cvs+jpg) can be directly imported to the face database to make it very convenient for you to transfer one NVRs face database file to other NVRs.

9.1.3 Face Recognition Settings

This function is only available for the N8NRE/N16NRE/N32NRE.

After the face database and face pictures are added, click “Face Recognition” to return to the face recognition setup interface. Click the “Recognition” tab to go to the following interface:



① Enable “Successful Recognition” or “Stranger”. Click “Parameter Settings” to set the similarity of the matching face group.

Disable live display: if checked, the live view interface (target detection tab) will not display captured faces in real time.

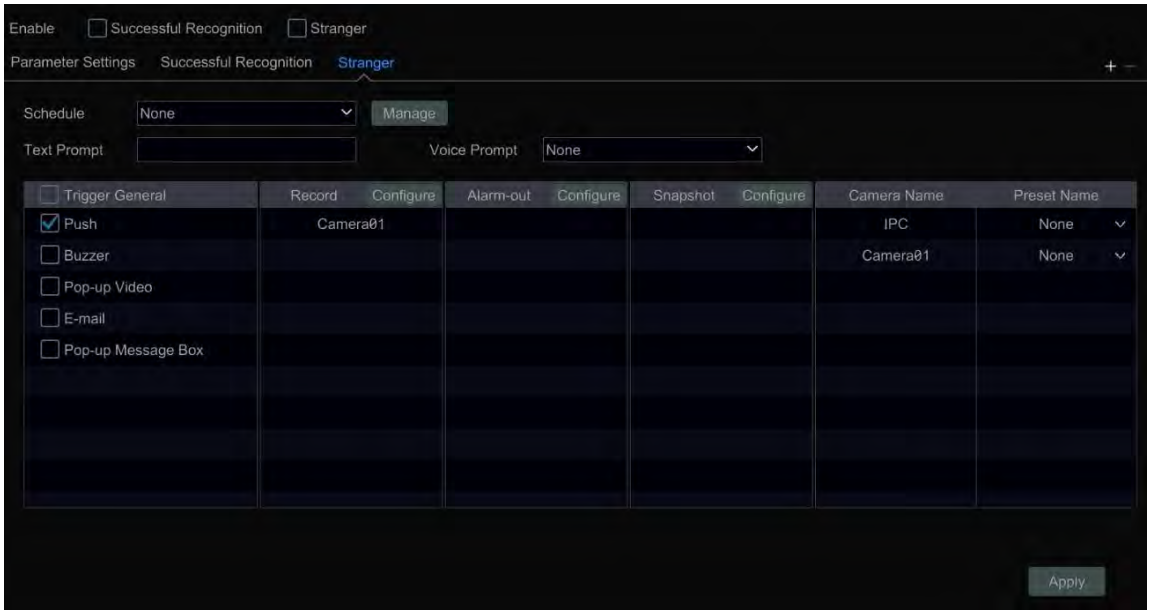
② Set the alarm linkage items for successful recognition.

- Select one or more face groups and then choose the schedule. Click “Manage” to set the schedule.
- Set the text prompt and voice prompt. When the captured face is matched successfully, the text will appear on the right of the live view

interface and broadcast the audio.

- Enable alarm output pulse (access control).
- Trigger record, snapshot, alarm-out, buzzer, push, pop-up video, E-mail and pop-up message box as needed. The alarm linkage settings are similar to the face detection alarm (see 9.1.1 Face Detection Settings for details).
- Click “Apply” to save your settings.

③ Set the stranger alarm linkage items. When the captured face picture doesn’t match the face pictures in the face database or their similarity is lower than the set value, the captured person will be regarded as a stranger.



- Configure the schedule
- Set the text prompt and voice prompt. The text will show on the captured picture and the voice will be broadcasted when detecting a stranger.
- Trigger record, snapshot, alarm-out, buzzer, push, pop-up video, E-mail and pop-up message box as needed. The alarm linkage settings are similar to the face detection alarm (See 9.1.1 Face Detection Settings for details).
- Click “Apply” to save your settings.

④ Click “+” to add more successful recognition tasks. Select the added task and then click “–” to delete it.

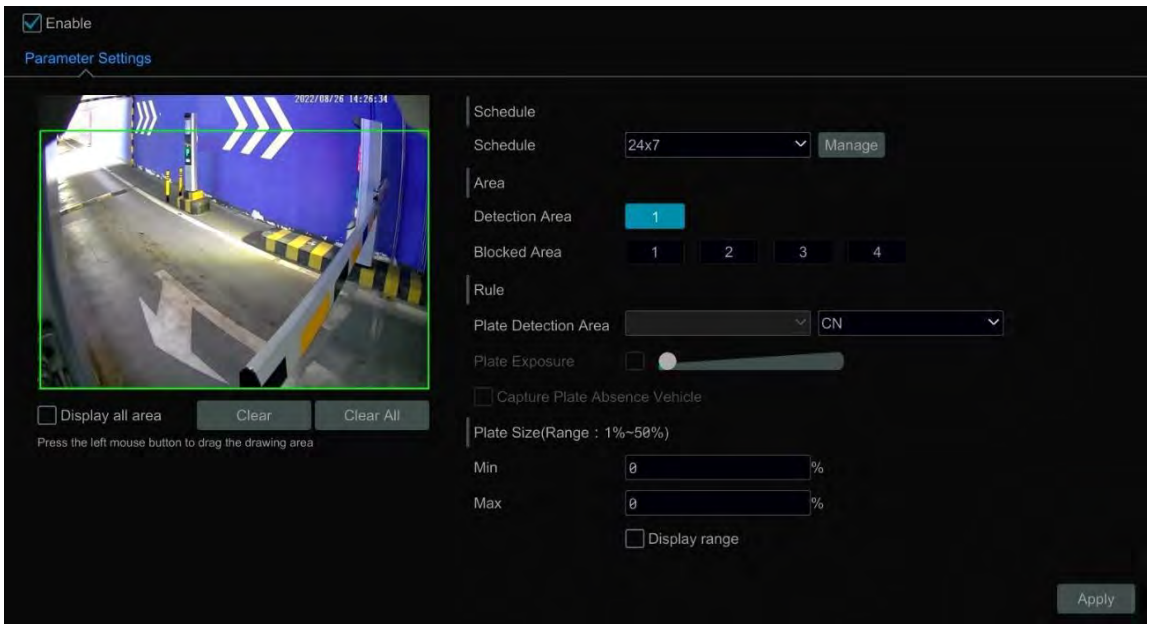
9.2 License Plate Recognition

Please add an LPR camera before using this function. If your camera doesn’t support this function, please skip the following instructions. When setting up an LPR for the first time, please use the following procedures:

Enable and set plate detection ➔ Add plate group ➔ Add plates to the plate group ➔ Enable license plate recognition ➔ Set successful recognition (or strange plate) alarm linkage

9.2.1 License Plate Detection Settings

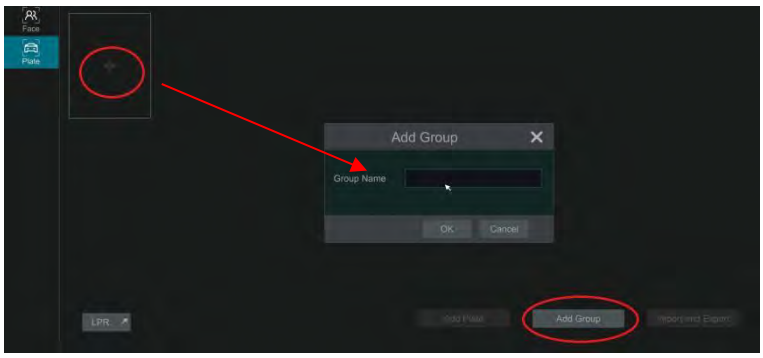
Click Start➔AI/Event➔AI Event➔LPR to go to the interface below. Select an ANPR camera and click the “Detection” tab shown below.



- Set the schedule.
- Set the area and plate exposure as needed.
  Set the alarm area. Drag the mouse to draw a detection area. Click “Clear” to delete the alarm area.
  Set the blocked area. Select the number and then draw a blocked area. Up to 4 areas can be set up. After you set the blocked area, this area will not be detected.
  Click “Display all area” to view all blocked and detection areas.
  Click “Clear All” to clear all blocked and detection areas.
- Check “Capture plate absence vehicle” as needed.
- Set the plate size by defining the maximum value and the minimum value (The default size range of a single plate occupies from 5% to 50% of the entire image).
- Display range: if enabled, the set maximum detection box and the minimum detection box can be displayed on the left window.
- Click “Advanced” to set the recognition mode as needed (only some LPR cameras support).

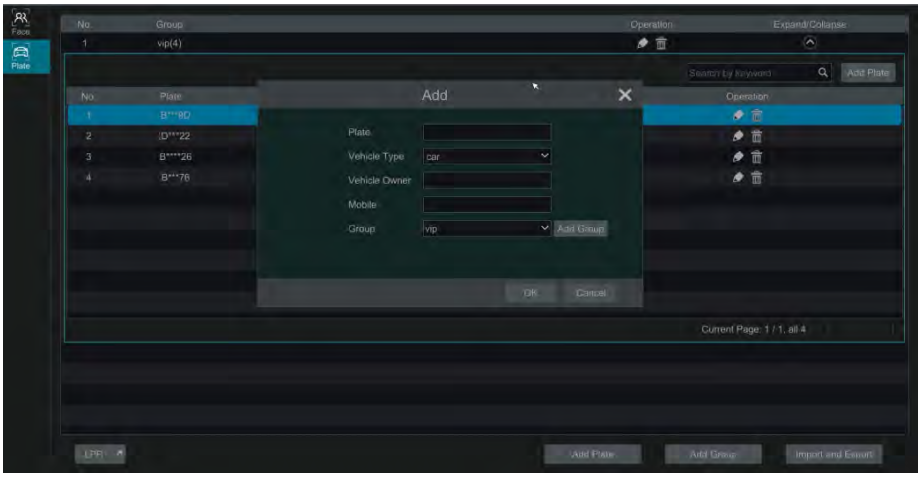
9.2.2 Plate Database Management

In the LPR interface, click the “Plate Database” tab to go to the plate database management interface shown below.
For the first time, you can click “+” or “Add Group” to add groups.



Add plates to each group:

① Click  to extend the group. Click “Add Plate” to open the following window:

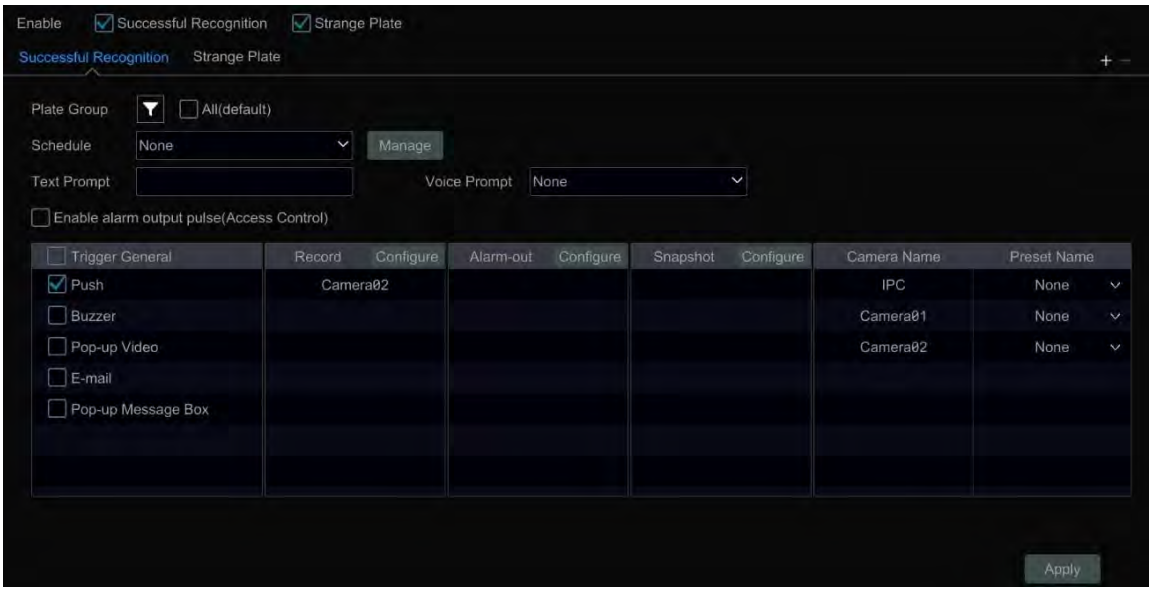


② Enter the plate, vehicle owner and mobile phone number.
③ Select the vehicle type and group.
④ Enable validity period to set the start and end time
⑤ Finally click “OK” to complete.

Select the added plate and then click  to modify its information; click  to delete this plate. The plates can be imported and exported in bulk by clicking “Import and Export”. You can click “Plate Information Description” to view the detailed information about how to import or export the plate list.

9.2.3 License Plate Recognition Settings

① In the LPR interface, click the “Recognition” tab. Then enable “Successful Recognition” or “Strange Plate”.



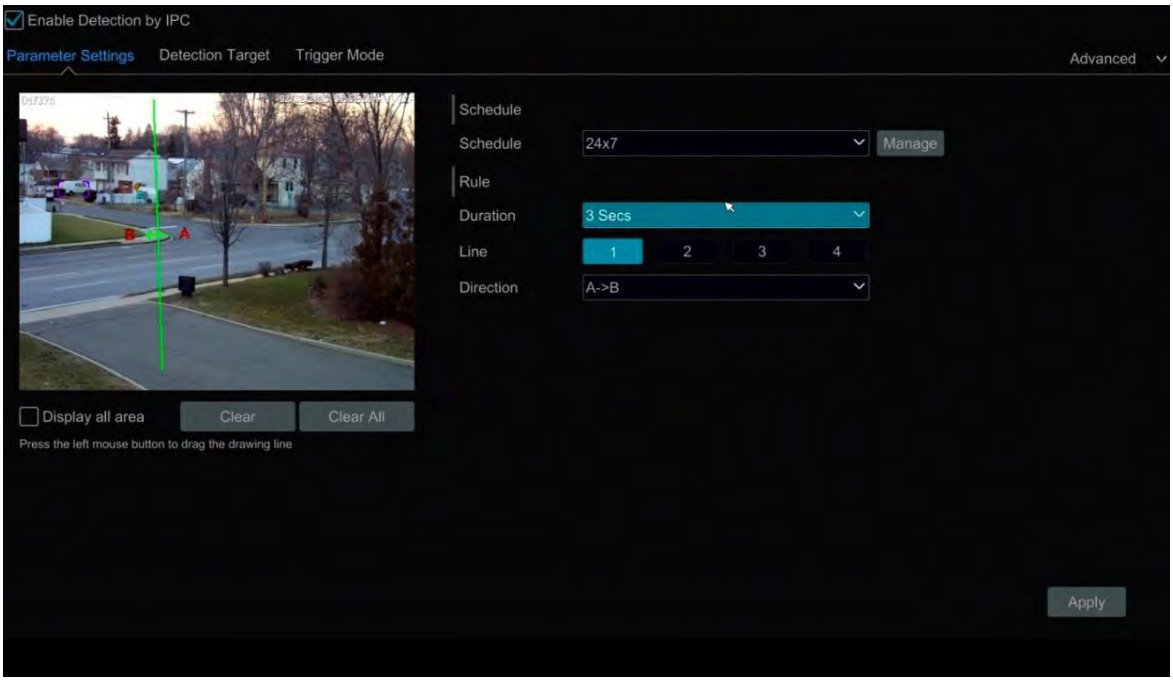
② Set the successful recognition alarm linkage.
- Select one or more plate groups and then choose the schedule. Click “Manage” to set the schedule.
- Set the text prompt. When the captured plate is matched successfully, the text will appear on the right of the live view interface.
- Enable alarm output pulse (access control).
- Trigger record, snapshot, alarm-out, buzzer, push, pop-up video, E-mail and pop-up message box as needed. The alarm linkage settings are similar to the face detection alarm (See 9.1.1 Face Detection Settings for details).

③ Set the strange plate alarm linkage. When the captured plate picture doesn’t match the plates in the plate database or their similarity is lower than the set value, the captured plate will be regarded as a strange plate.

9.3 Line Crossing Detection

Line Crossing Detection:
Alarms will be triggered if the people or vehicles cross the pre-defined alarm line.

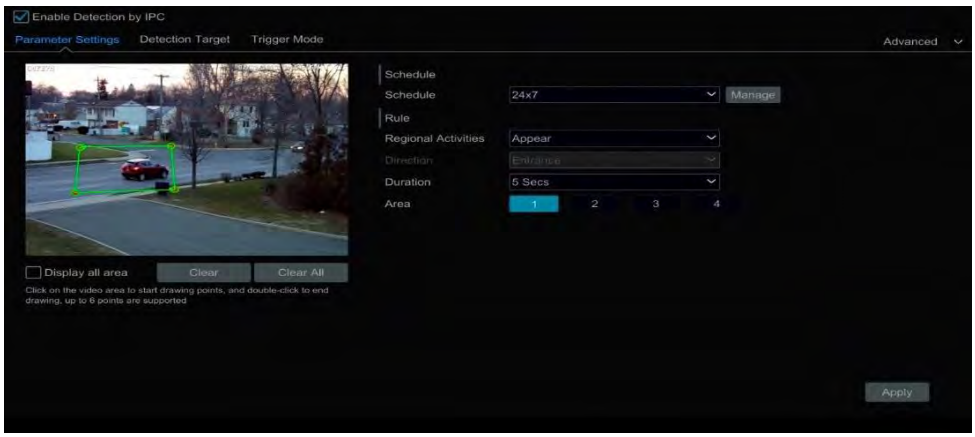
① Click Start➔Settings➔AI/Event➔AI Event ➔Line Crossing to go to the following interface:



② Select the camera, enable line crossing detection by IPC and set the duration.
③ Set the schedule.
④ Select the direction.
Direction: A<->B, A->B and A<-B optional. It is the crossing direction of the target that crosses over the alert line.
A<->B: the alarm triggers when the target crosses over the alert line from B to A or from A to B.
A->B: the alarm triggers when the target crosses over the alert line from A to B.
A<-B: the alarm triggers when the target crosses over the alert line from B to A.
⑤ Draw line. Refer to the interface shown above. Drag the mouse in the image to draw an alert line. Click the "Clear" to delete the alert line.
⑥ Click "Detection Target" to choose the detection target and the sensitivity. The detection target includes people, vehicle and non-vehicle. Only some IPCs can detect human or vehicle separately. If the camera doesn't support this function, please skip this step.
⑦ Click "Advanced" to choose "Original picture" or "Target picture" on the SD card of the camera. (If your camera doesn't support this function, please skip this step).
⑧ Click "Trigger Mode" to configure tripwire alarm linkage items.
● Enable or disable "Record", "Snapshot", "Push", "Alarm-out", "Preset", "Buzzer", "Pop-up Video" and "E-mail". The alarm linkage settings are the same as the face detection alarm (see 9.1.1 Face Detection for details).
● Enable "IPC_Digital Deterrent" or "IPC_Light" as needed (only some IPCs support these two functions). To set the IPC voice and its times and volume, please refer to 11.6.6 Digital Deterrent for details. To set the light flashing time and frequency of the IPC, please refer to 11.6.7 Light for details.
⑨ Click "Apply" to save your settings.

9.4 Intrusion Detection

Intrusion Detection Configuration:
Alarms will be triggered if the people or vehicles intrude into the pre-defined area.
① Click Start➔Settings➔AI/Event ➔AI Event➔Intrusion to go to the interface below.
② Select the camera, enable the intrusion detection by IPC and set the duration.
③ Set the schedule.
④ Select regional activities. "Appear" or "Cross" can be selected (if your camera doesn't support region entrance/exiting detection, "Cross" will not be enabled). If "Cross" is selected, you can choose the crossing direction.
⑤ Select the alarm area. Up to 4 alarm areas can be set up.
⑥ Draw the alarm area of the intrusion detection. Refer to the interface shown below. Click around the area where you want to set as the alarm area in the image (the alarm area should be a closed area).



⑦ Click “Detection Target” to choose the detection target and the sensitivity. The detection target includes people, vehicles and non-vehicles.

⑧ Click “Trigger Mode” to configure intrusion detection alarm linkage items.

● Enable or disable “Record”, “Snapshot”, “Push”, “Alarm-out”, “Preset”, “Buzzer”, “Pop-up Video” and “E-mail”. The alarm linkage settings are the same as the face detection alarm (see 9.1.1 Face Detection Settings for details).

● Enable “IPC_Audio” or “IPC_Light” as needed. (only some IPCs support these two functions). To set the IPC voice and its times and volume, please refer to 11.6.6 Digital Deterrent for details. To set the light flashing time and frequency of the IPC, please refer to 11.6.7 Light for details.

⑨ Click “Copy To” to copy all settings to other cameras.

⑩ Click “Apply” to save your settings.

9.5 Abandoned/Missing Object Detection

① Click Start➔Settings➔AI/Event➔AI Event➔Object Abandoned/Missing to go to the interface below.

② Set the schedule

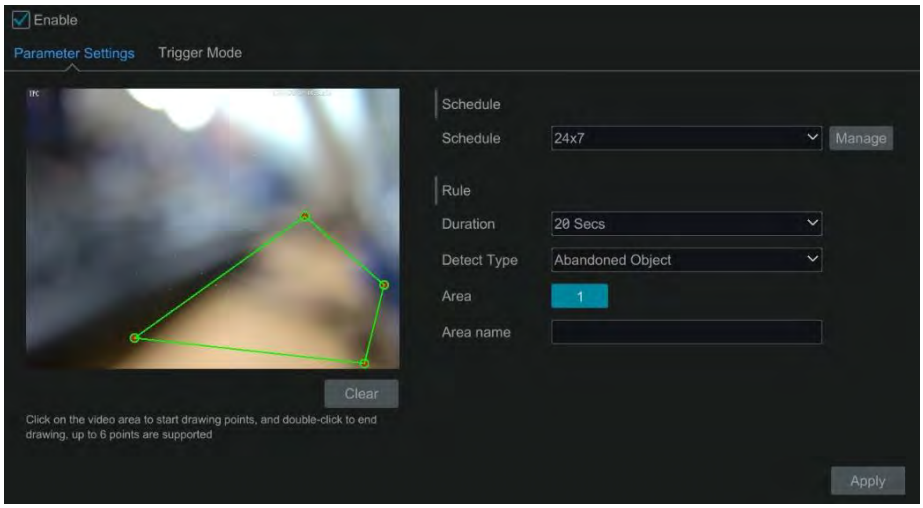
③ Select the camera, enable the object detection, and set the duration and detect type. There are two detection types: Abandoned object and missing object.

Abandoned object: Alarms will be triggered if there are articles left in the pre-defined detection area.

Missing object: Alarms will be triggered if there are articles missing in the detection area drew by the users.

④ Select the alarm area and area name. A maximum of 4 alarm areas can be set.

⑤ Draw the alarm area of the object detection. Refer to the interface shown below. Click around the area where you want to set as the alarm area in the image (the alarm area should be a closed area). Click the “Clear” button to delete the alarm area.



⑥ Click “Trigger Mode” to configure abandoned/missing object detection alarm linkage items. Enable or disable “Record”, “Snapshot”, “Push”, “Alarm-out”, “Preset”, “Buzzer”, “Pop-up Video” and “E-mail”. The alarm linkage settings are the same as the face detection alarm (see 9.1.1 Face Detection Settings for details).

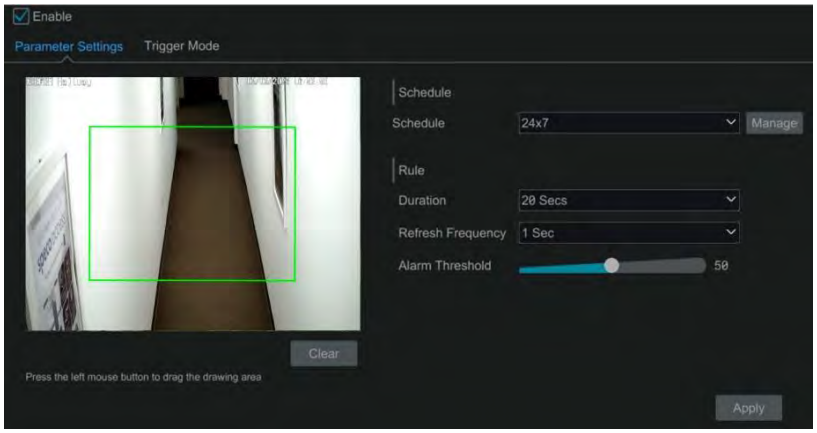
⑦ Click “Apply” to save your settings.

9.6 Crowd Density Detection

Only some IPCs may support this function.

Crowd Density Configuration:
Alarms will be triggered if the crowd density exceeds the set threshold value in the pre-defined area.

① Click Start➔Settings➔AI/Event➔AI Event➔Crowd Density to go to the interface below.



② Select the camera, enable crowd density detection and set the schedule, duration, refresh frequency and alarm threshold.
Refresh Frequency: Refers to the refresh time of the detection result report.
Alarm Threshold: Alarms will be triggered once the percentage of the crowd density in a specified area exceeds the pre-defined threshold value.
③ Select the alarm area. Draw the alarm area for the crowd density detection. Refer to the interface shown below. Check “Draw Area” and then drag the mouse to draw a rectangular area. Uncheck the “Draw Area” when you are finished. Click the “Clear” button to delete the alarm area.
④ Click Trigger Mode to configure crowd density detection alarm linkage items. Enable or disable “Record”, “Snapshot”, “Push”, “Alarm-out”, “Preset”, “Buzzer”, “Pop-up Video” and “E-mail”. The alarm linkage settings are the same as the face detection alarm (see 9.1.1 Face Detection Settings for details).
⑤ Click “Apply” to save your settings.

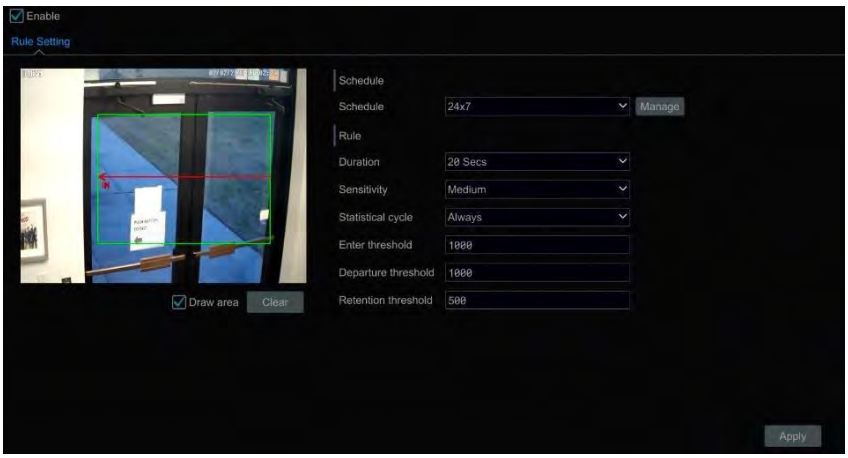
9.7 Target Counting

Only some IPCs support this function.

- **People counting in the pre-defined area**:

This function is used to detect, track and count the number of people entering or exiting a selected area on a video.
Note: Only specific IPCs support this function.

① Click Start➔Settings➔AI/Event➔AI Event➔Target Counting to go to the interface below.
② Select the camera, enable target counting detection and set the schedule, duration, sensitivity, statistic cycle, enter threshold, departure threshold and retention threshold.
Statistic cycle: Options of Always, daily, weekly and monthly.
Manual Reset: The current number of people counted will be cleared and the statistic cycle will restart when you click the “Manual Reset” button.
③ Set the alarm area and entrance direction. Click “Draw Area” and drag the mouse to draw a rectangular area. Drag the rectangle to change its position. Uncheck the “Draw Area” when you are finished drawing. Click “Clear” to clear the area. Click and drag the arrow or the other end of the arrow line to change the direction people enter.



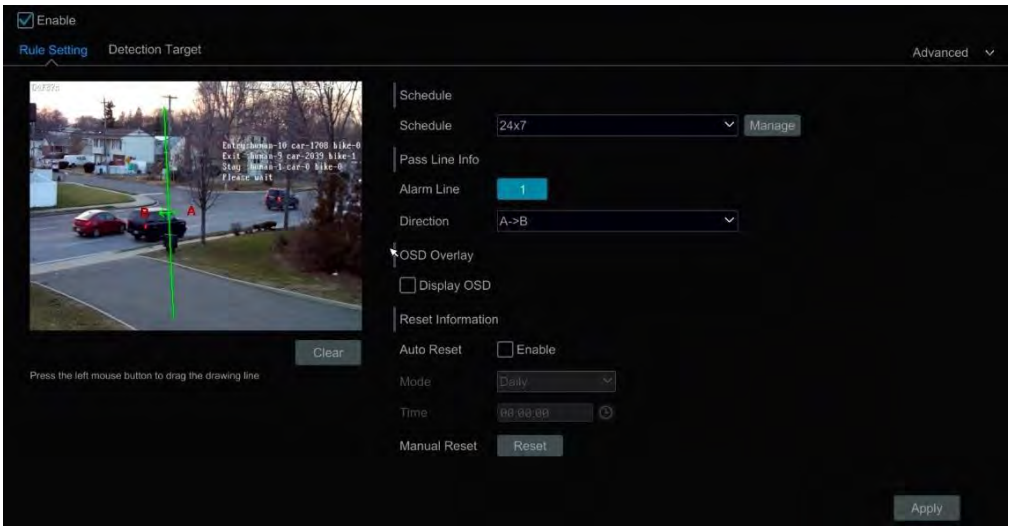
⑥ Click “Apply” to save your settings.

- **Human/Motor Vehicle/Non-Motor Vehicle Counting**

The information of human/motor vehicle/non-motor vehicle can be calculated and sent by day, by week and by month, so that you can receive and analyze these statistics on time.

Only some IPCs support this function. If your camera doesn’t support this function, please skip the following instructions.

① Click Start➔Settings➔AI/Event➔AI Event➔Target Counting to go to the following interface:



② Enable line crossing counting.

③ Set the schedule.

④ Drag the mouse on the small window to draw the line you want crossed. Click “Clear” to delete the alert line.

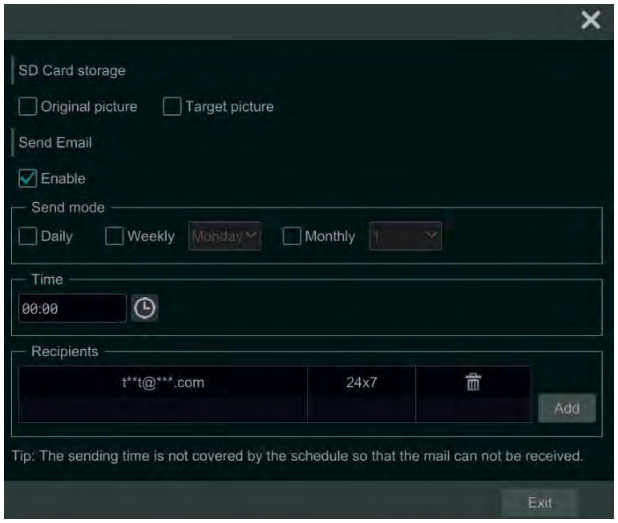
Direction: A->B and A<-B are optional. It is the direction of the target that crosses over the alert line.

⑤ Check “Statistical OSD” and the statistical information will be displayed on the live view interface.

⑥ Set the reset information. You can set reset information manually or enable “Auto Reset” as needed.

⑦ Click the “Detection Target” tab to set the detection target, including people, vehicles (Cars, trucks, etc.) and non-vehicles (bicycles, Motorcycles, etc.).

⑧ Click “Advanced” to open the window below. You can select “Original picture” or “Target picture”.



In the interface above, you can send e-mail to a specified person on a daily/weekly/monthly basis regarding the target counting. Click “Add” to add the recipient, and then enable “Send Email” and select “Send mode” and time.

⑨ Click “Apply” to save your settings.

9.8 Tampering Detection

Tampering Detection Configuration:

① Click Start➔Settings➔AI/Event➔AI Event➔Tampering to go to the following interface:



② Select the camera and detection duration and then enable the relevant detection as needed.

Scene Change: Alarms will be triggered if the scene of the monitor video has changed.

Video Blurred: Alarms will be triggered if the video becomes blurry.

Video Color Cast: Alarms will be triggered if the video becomes obscured.

③ Set the sensitivity of the exception detection.

④ Click “Trigger Mode” to configure exception alarm linkage items. Enable or disable “Record”, “Snapshot”, “Push”, “Alarm-out”, “Preset”, “Buzzer”, “Pop-up Video” and “E-mail”. The alarm linkage settings are the same as the face detection alarm (see 9.1.1 Face Detection Settings for details).

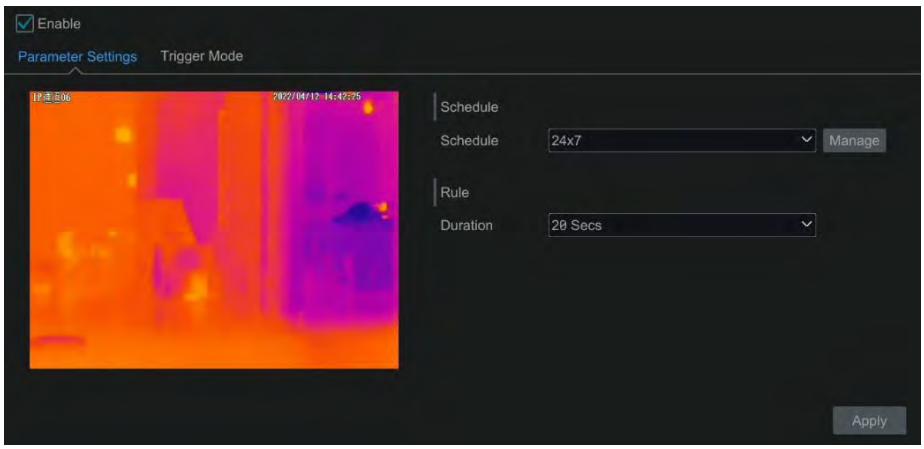
⑤ Click “Apply” to save your settings.

9.9 Fire Detection

Fire detection is only available if you are using the appropriate Speco Technologies’ Thermal Camera. Please note this is only intended as a supplement to official fire detection methods and should not be relied on as a primary alert source.

Fire Detection: Alarms will be triggered if the camera detects a fire source through the thermal imaging.

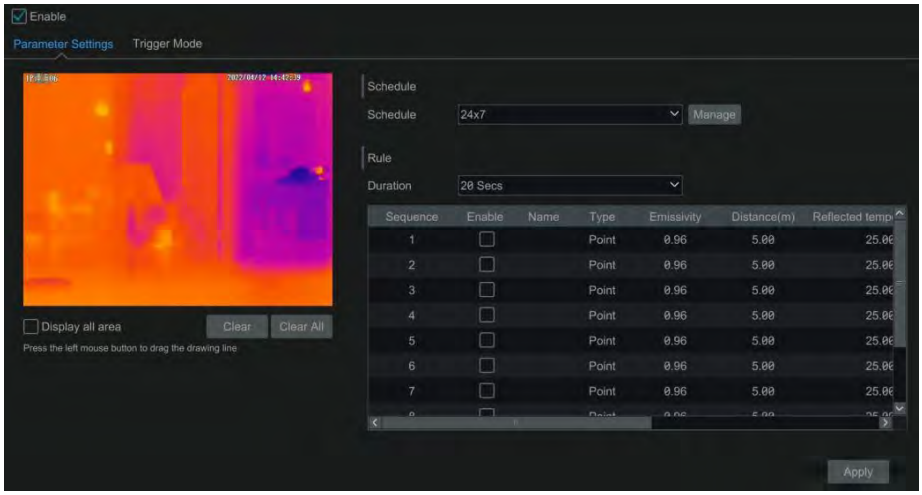
① Click Start➔Settings➔AI/Event➔AI Event➔Fire Detection to go to the following interface:



② Set the schedule and the alarm duration time.
③ Click “Trigger Mode” to configure exception alarm linkage items. Enable or disable “Record”, “Snapshot”, “Push”, “Alarm-out”, “Preset”, “Buzzer”, “Pop-up Video”, “Pop-up Message Box” and “E-mail”. The alarm linkage settings are the same as the face detection alarm (see 11.1 Sensor Alarm for details).
④ Click “Apply” to save your settings.

9.10 Temperature Detection

Temperature Detection is only available if you are using the appropriate Speco Technologies’ Thermal Camera.
Temperature Measurement: When a temperature of the pre-defined point/line/area exceeds the temperature threshold value, alarms will be triggered.
① Click Start➔Settings➔AI/Event➔AI Event➔Temperature Detection to go to the following interface:



② Set the schedule and the alarm duration time.
③ Set thermography rule. Select the rule type, including Point, Line and Area.
Emissivity: Set the emissivity of the target. The emissivity of each object is different.
Distance: The distance between the target and the camera.
Reflected temperature: If there is any object with high emissivity in the scene, set the reflective temperature to correct the ambient temperature. The reflective temperature should be set the same as the temperature of the high emissivity object.
Set the alarm rule, alarm temperature and alarm output. For example, select Alarm Rule as Above (Average Temperature), set the alarm temperature to 100°C and check alarm output. Alarms will then be triggered when the average temperature of the target is higher than 100°C.
④ Set the point, line or area on the small window.
Point setup: After the type is set to “Point”, click on the image to set the point. Up to 10 points can be set in the above interface.
Line setup: After the type is set to “Line”, drag the mouse on the image to draw a line. To ensure the accuracy of temperature measurement, it is recommended to set not more than two lines at the same time.
Area setup: Click around the area where you want to set as the alarm area on the image (the alarm area should be a closed area). To ensure the accuracy of temperature measurement, it is recommended to set not more than two areas at the same time.
⑤ Click “Trigger Mode” to configure exception alarm linkage items. Enable or disable “Record”, “Snapshot”, “Push”, “Alarm-out”, “Preset”, “Buzzer”,

"Pop-up Video", "Pop-up Message Box" and "E-mail". The alarm linkage settings are the same as the face detection alarm (see 11.1 Sensor Alarm for details).

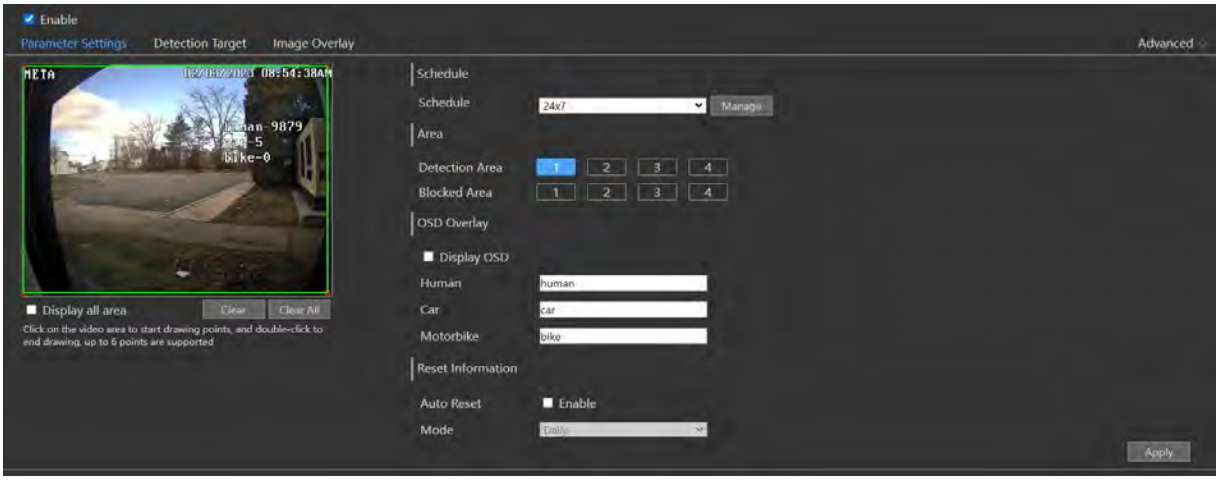
⑥ Click "Apply" to save your settings.

9.11 Video Metadata (BETA)

Please note that this feature is still in BETA and is not recommended for official implementation into your security environment.

Video Metadata (BETA): Humans, motor vehicles and non-motor vehicles in the video can be classified, counted and captured and the relevant features can be extracted and displayed on the live interface.

① Click Start➔Settings➔AI/Event➔AI Event➔Video Metadata (BETA) to go to the following interface:



② Enable Video Metadata (BETA) and then set the schedule.

③ Set the detection area and any blocked areas.

Detection Area: 4 detection areas can be set. Targets that enter the pre-defined detection area will be counted and captured.

Blocked Area: 4 blocked areas can be set. Targets that enter the pre-defined blocked area will not be counted or captured.

To set a detection area: Select the number and then set the detection area. Click around the area you want to set as the alarm area on the image (the alarm box should be a closed area).

To set blocked area: Select the number and then set the blocked area. The setup steps are the same as detection area settings.

Display OSD: If enabled, you can see the statistical information of humans, motor vehicles and non-motor vehicles on the screen. The statistical OSD information can be customized as needed.

④ Set the reset information. Auto reset or manual reset can be set as needed.

⑤ Advanced settings. Click "Advanced" to enter the advanced settings interface. Select the recognition mode as needed. Interval mode and instant mode can be selectable.

Interval mode: the system will push the captured picture to the live interface according to the set interval time.

Instant mode: the system will push the captured picture immediately once a target is detected.

⑥ Set the detection target and sensitivity.

⑦ Select the attribute information of the target. When the target is detected, the information you select will be displayed under the captured image.

⑧ Click "Apply" to save your settings.

10 Intelligent Analytics

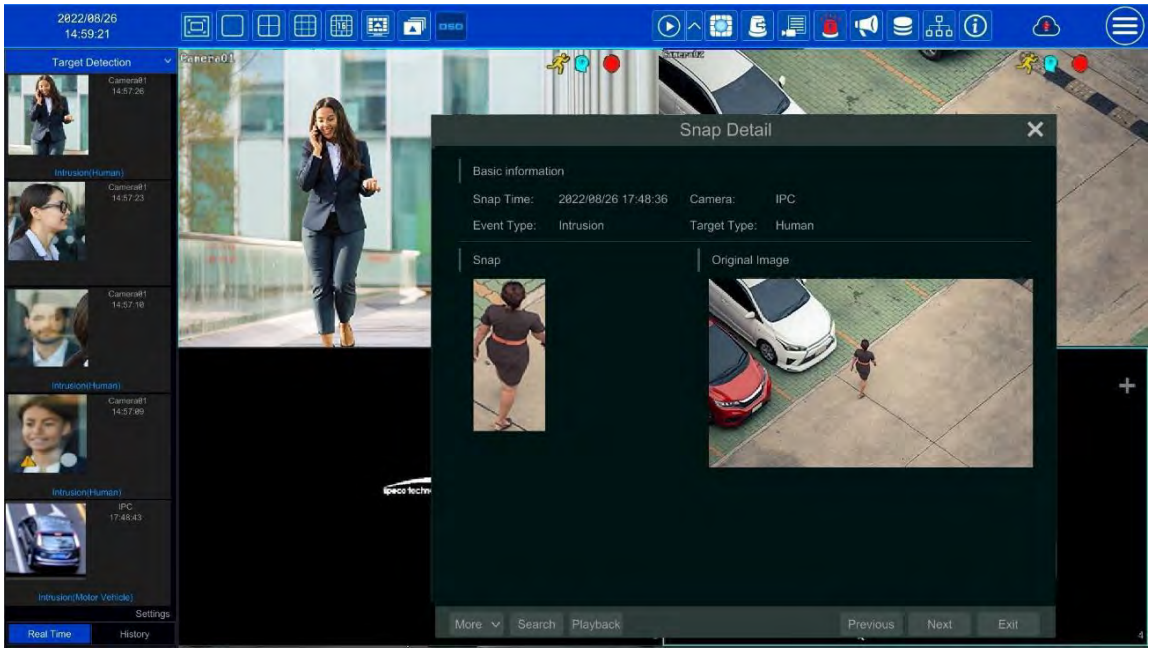
10.1 Target Detection View

10.1.1 Human Body/Vehicle Detection View

This feature only works with the appropriate Speco Blue cameras. The setup steps are as follow:

① Enable the line crossing/Intrusion/Target counting function of IPCs/NVR, draw the line or area and choose the detection target (see 9.3 Line crossing Detection and 9.4 Intrusion Detection for details).

② Go to live view interface and then click to go to the target detection interface of this channel. In this interface, you can switch the channel on the top right. You can also choose the target detection tab on the left panel of the live view interface to go to the target detection interface of multi-channel shown below. Note that only some models support multi-channel target detection function. Click the captured picture on the right of the live interface to see detailed snapshot information such as snapshot time, camera, event type and target type.



Click “More” to see a dropdown list. You can export the captured pictures by clicking “Export” or view the target ID by clicking “Information”. Click “Search” to go to smart human body/vehicle search interface. The system will automatically search captured people/vehicles. Click “Playback” to go to the playback interface.

10.1.2 Face Detection/Match View

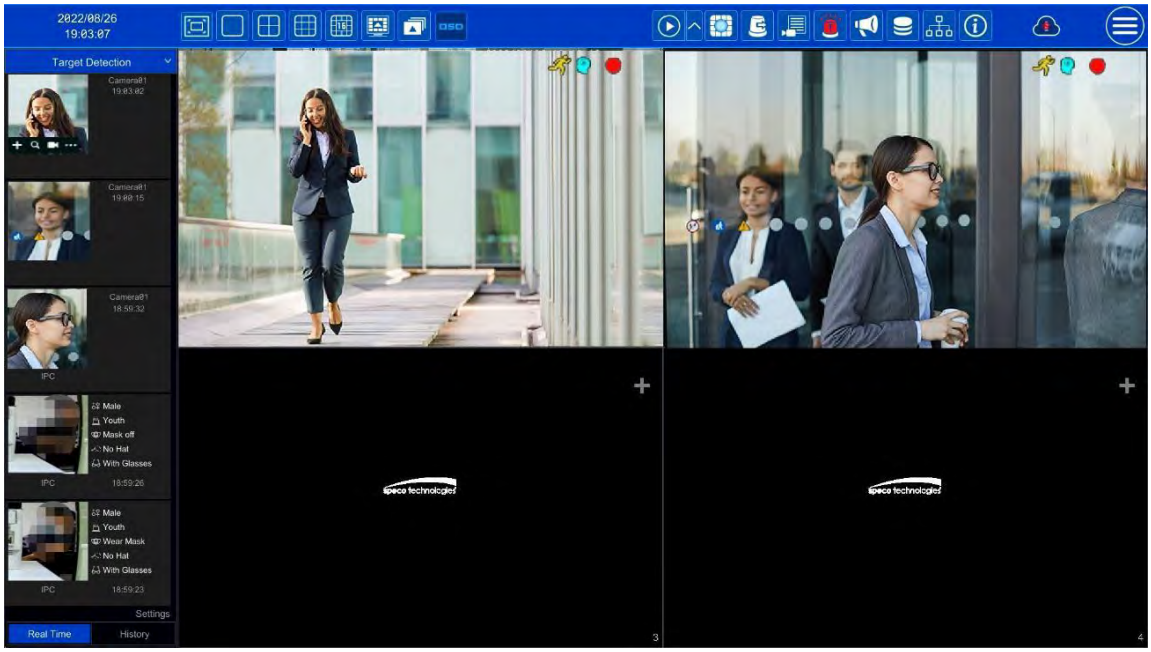
Only face recognition NVRs (8/16/32NRE) support the functions in this section. If your NVR doesn’t support these features, you can skip the following instructions.

The setup steps are as follow:

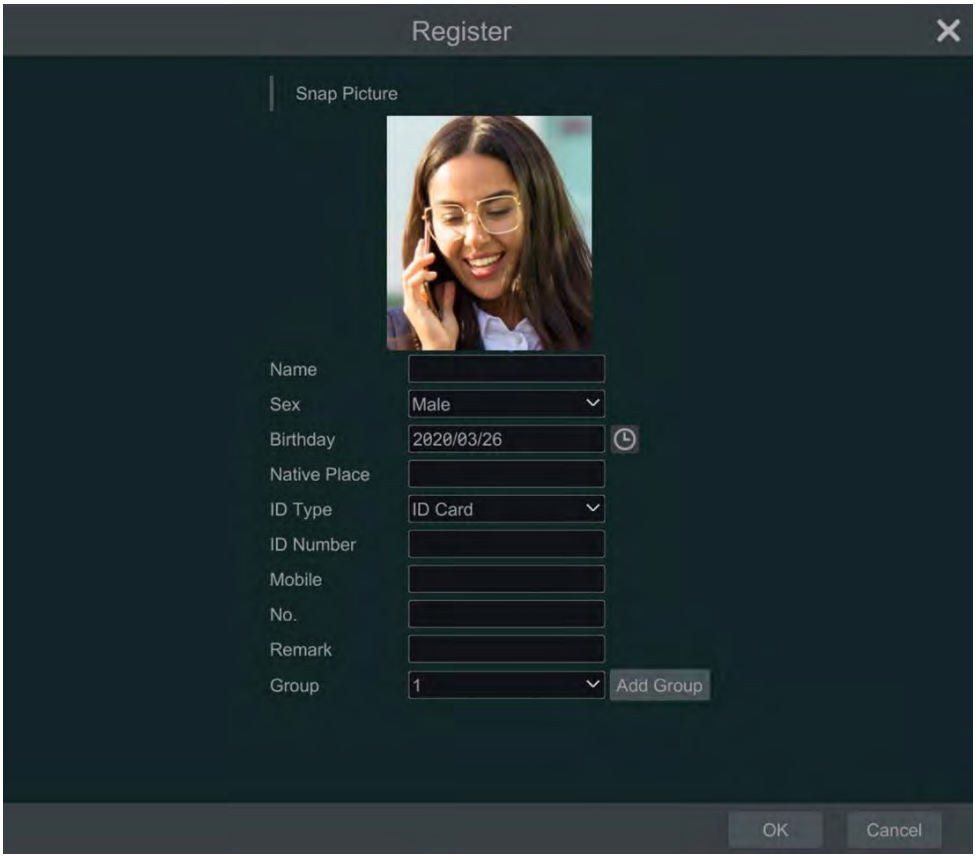
① Enable face detection function (see 9.1.1 Face Detection Settings for details).

② Enable face recognition function and set the alarm linkage items (see 9.1.3 Face Recognition Settings for details).

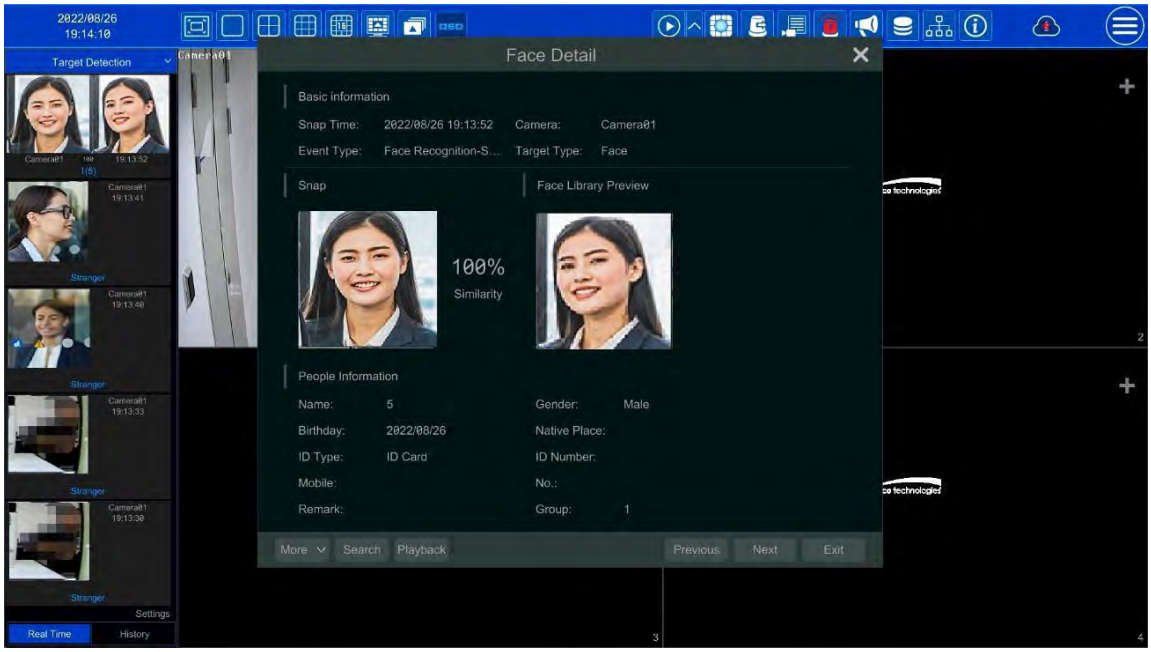
③ Go to live view interface and click on a face detection channel. This will open a toolbar under the channel. Next, click to go to the target detection interface of this channel. In this interface, you can switch the channel on the top right.



For unknown faces, you can select one and click ➕ under the captured face to register this face (see the picture below); click 🔍 to quickly go to the smart face search interface where you can search for matching facial information; click ▶ to quickly go to the smart face playback interface; click ••• to view snapshot details.

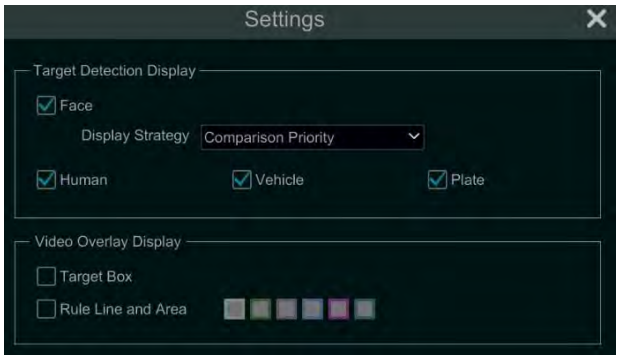


Before registering pictures of target faces, please create groups for them in advance (see 9.1.2 Face Database Management for details).
After the pictures are registered, your system will compare them automatically the next time the corresponding faces are captured. Refer to the following picture:



Double click a face picture to see details of the snapshot such as the snapshot picture, original image, snapshot time and camera. Click “more” and a dropdown list will display with more options. Click “Register” to register the current snapshot. Click “Search” to go to the face search interface. Click “Playback” to go to the playback interface. Click “Export” to export the details of this snapshot. Click “Information” to view face ID.

In the face match interface, click “Settings” to open the following window:



Target Detection Display: Face, human body, vehicle or plate can be enabled. If disabled, the captured target picture will not be displayed under the target detection tab in the live view interface.
Display Strategy: Two options: Comparison priority and only comparison
Video Overlay Display:
If “Target box” is clicked, you will see the target traced by a little red box.
If “Rule Line and Area” is checked, you will see the rule lines for line crossing detection and detection area of intrusion detection displayed on the screen. You can select the color of the rule line and area as needed.

When a captured face picture is successfully recognized, click the picture on the right to open a face detail window as shown above. In this window, you can see the captured face picture, the matched picture from the face library and the relevant information. You also can view the original image, search image by snapshot, play back by snapshot and export the face details by clicking “More” button.

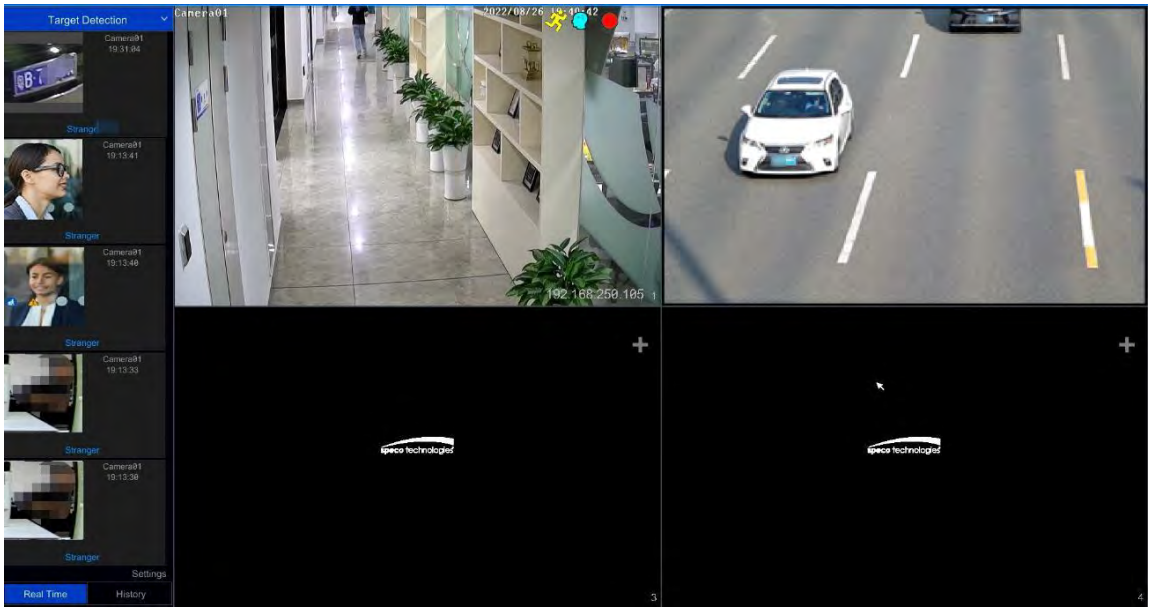
Additionally, you can view the history of captured face pictures and face match information in the face match interface by clicking the “History” tab. Besides registering face pictures in the live view interface, you can also add target face pictures to the face database interface.

Note: if you enter a remark when adding a face picture to the face database, that information (instead of the person’s name), will be shown under the picture after a successful recognition.

10.1.3 License Plate Detection/Recognition View

License plates can only be captured and matched if a compatible Speco Blue ANPR camera is added and enabled. The setup steps are as follows:

① Enable the Plate Detection function (See 9.2.1 License Plate Detection Settings for details).
Once enabled, you can see the captured plates displayed in the live view interface shown below:

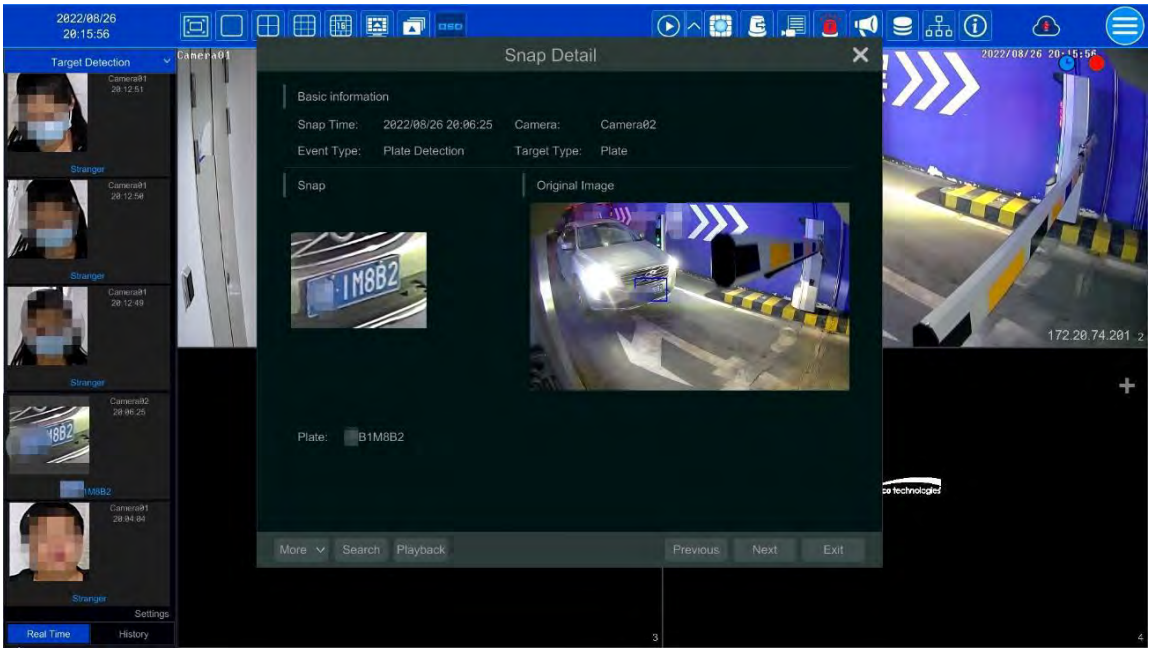


Put the cursor on the captured plate picture and then click + to register this plate as shown below:



Click ••• to view the captured detail information. Click to quickly enter the vehicle search interface. You can search the matched plate information in this interface. Click to go to the smart playback interface.

② Enable the License Plate Recognition function and set the alarm linkage items (see 9.2.3 License Plate Recognition Settings for details).
③ Go to the live view interface and click on the top right corner. Next, choose the Target Detection tab to go to the multi-channel target detection interface shown below. When a plate is captured, it will be displayed on the right panel. A strange plate will show “Strange plate” under the plate picture.



Click the captured plate picture to open a detailed information window. You can view the snapshot picture, original picture, snapshot time, camera, etc. Click “More” to view the ID information of the target and export the captured picture. Click “Search” to go to the vehicle search interface. Click “Playback” to go to the playback interface.

10.1.4 Object Attribute View (BETA)

① Enable the Video Metadata (BETA) function and then select the detection target and display attributes (see 9.11 Video Metadata (BETA) for details).
② Go to live view interface and click on an AI camera channel (where video metadata function is supported). This will bring a toolbar under the channel. Then click to go to the target detection interface of this channel. In this interface, you can switch the channel on the top right.
Click “Settings” at the bottom right to select the attribute information of people/motor vehicle/non-motor vehicle you want to view under the captured picture.
Click the captured picture to view its details. In the detail interface, you can view the captured picture, original picture, object attributes, etc.

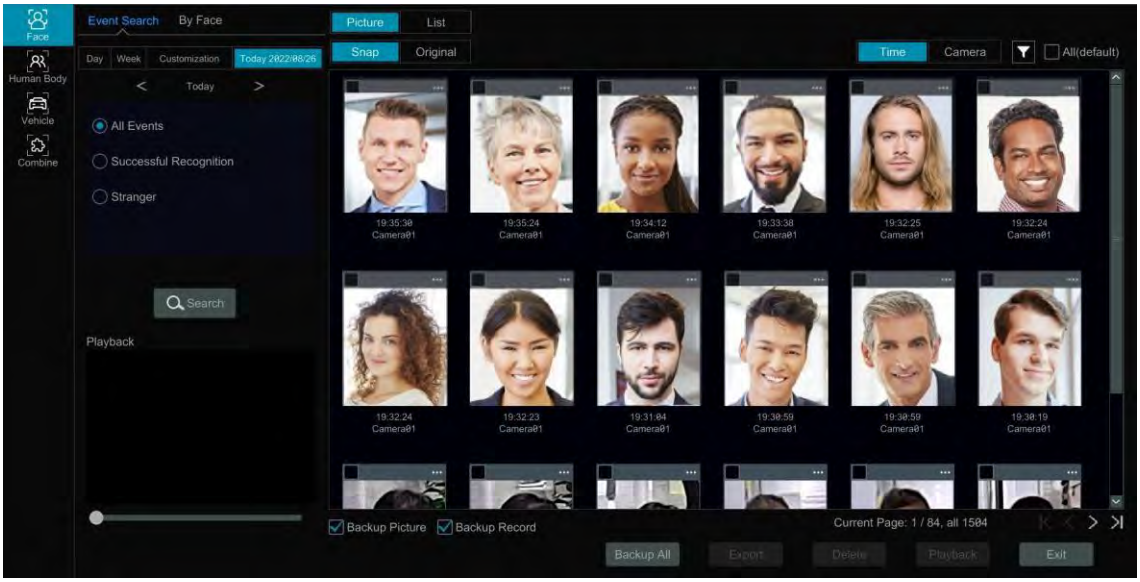
10.2 Smart Search

10.2.1 Face Search

Only some models support this function. You can skip the following instructions if your device doesn’t support Face Search.

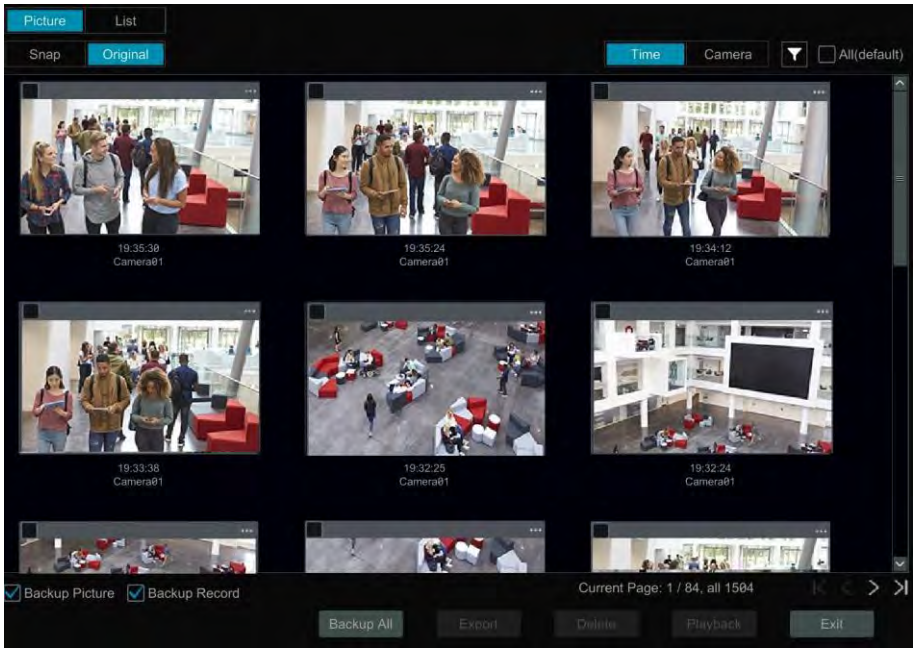
- **Face Search by Event**

① Click Start➔ Intelligent Analytics ➔ Search➔Face to go to the following interface:



② Click to choose a face detection camera.
③ Select all events, successful recognition, or stranger.
④ Click “Search” to search all face pictures. You can view face pictures by time or by camera.
⑤ Click the searched face picture to play in the small playback window; select a face picture and click “Backup” to export it.

Click “Original” to see the original image shown below.

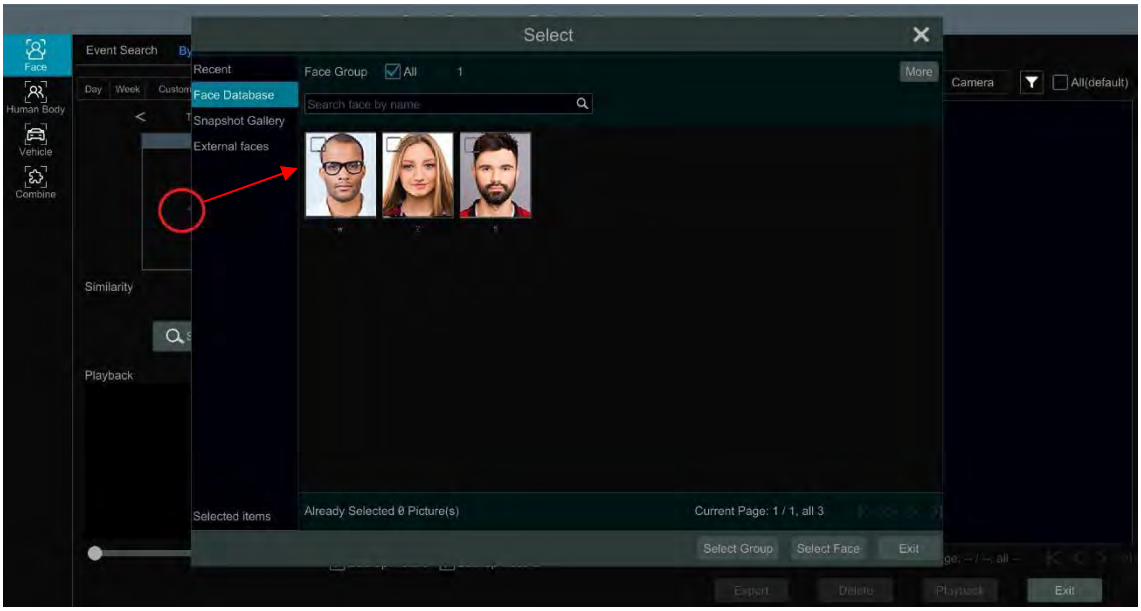


Click “List” to view the snapshot information list. Click to view the detail information; click to back up the image.

➢ **Face Search by Face**

In the face picture search interface, click “By Face” to go to the interface shown below.

① Click to add a target face which can be searched and added from recent, face database, snapshot gallery and external faces. A single face picture or multiple face pictures can be added and searched.



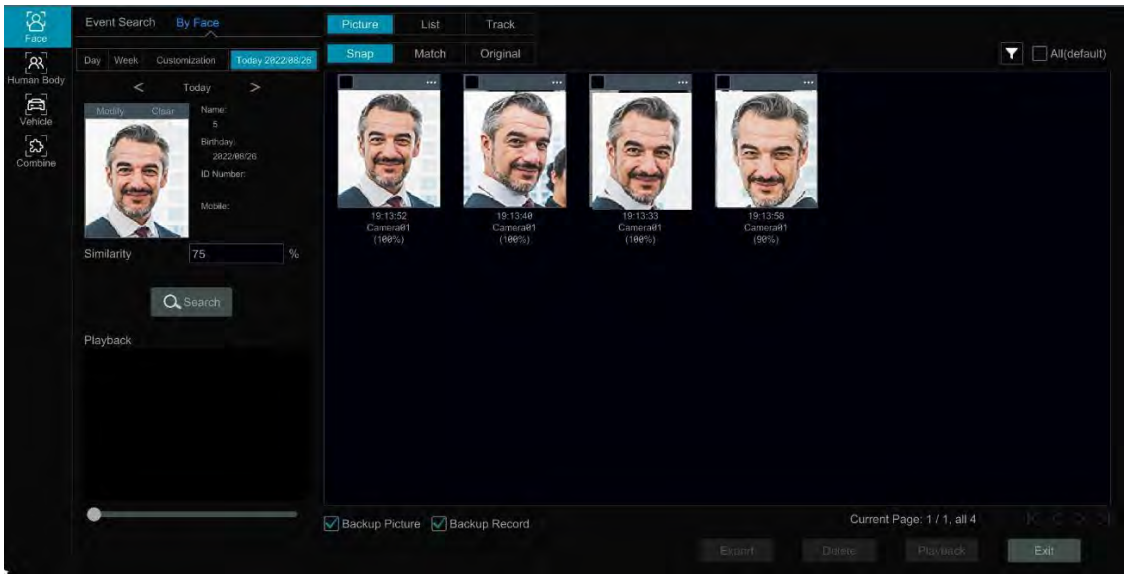
To add a single target face from recent faces:
a. Choose the face.
b. Click “Select Face”.

To add a single target face from the face database:
a. Click “More” to choose groups.
b. Select a target face and click “Select Face”.

To add a single target face from the snapshot gallery:
a. Select time and click “More” to choose cameras.
b. Click “Search”.
c. Check a face and click “Select Face”.

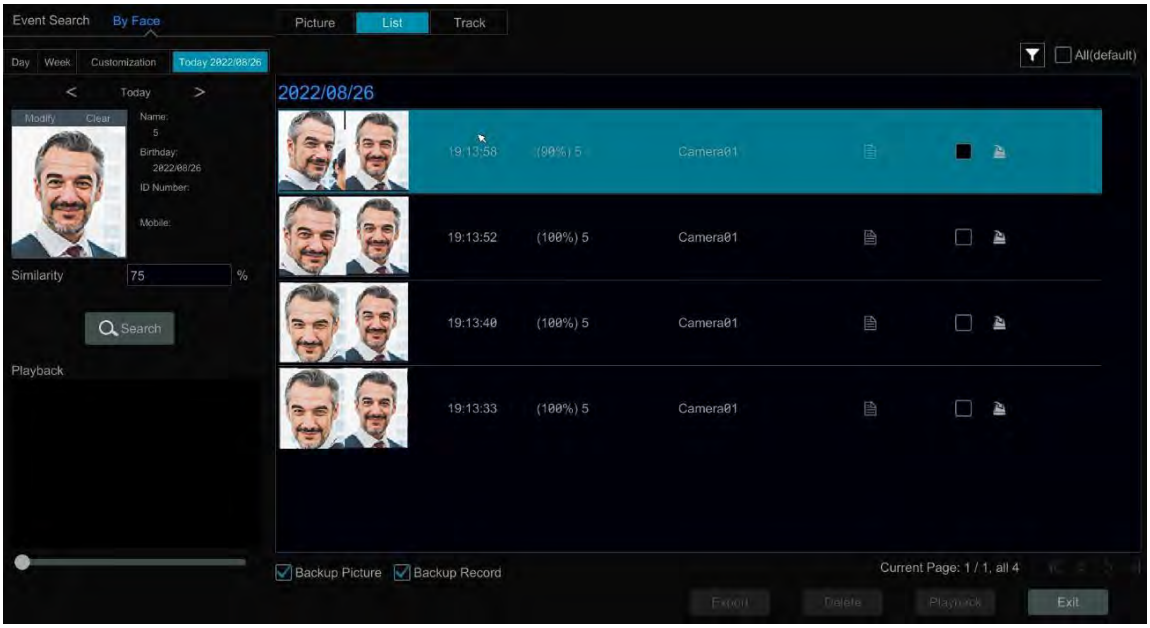
To add a single target face from external faces:
a. Save the target face to the mobile storage device and then insert this device into the USB interface of your NVR.
b. Select “External Face” to import the face via this interface.

② Set similarity and then click “Search”.
③ Click the searched image to play records in the small window.
④ Select the searched image and click “Backup Picture” or “Backup Record”. Then click “Backup” to build backups for pictures or records.



- **View Image by List**

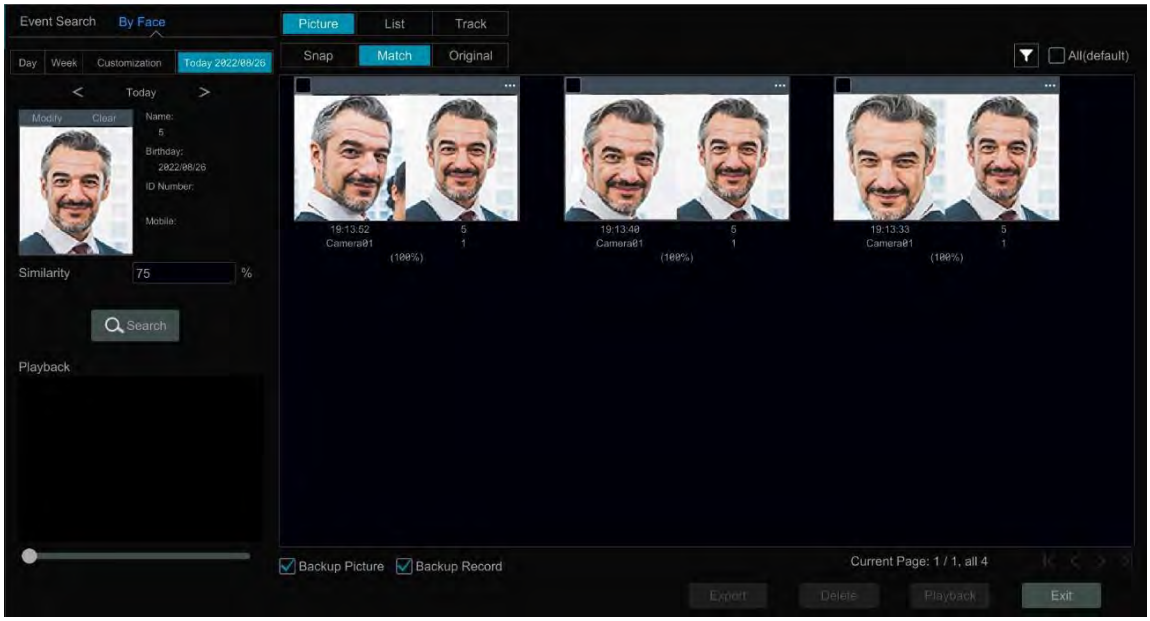
Click “List” tab to view images by time as shown below.



Click the searched image to play a clip. Click  to view the detailed information of the comparisons to the target face.

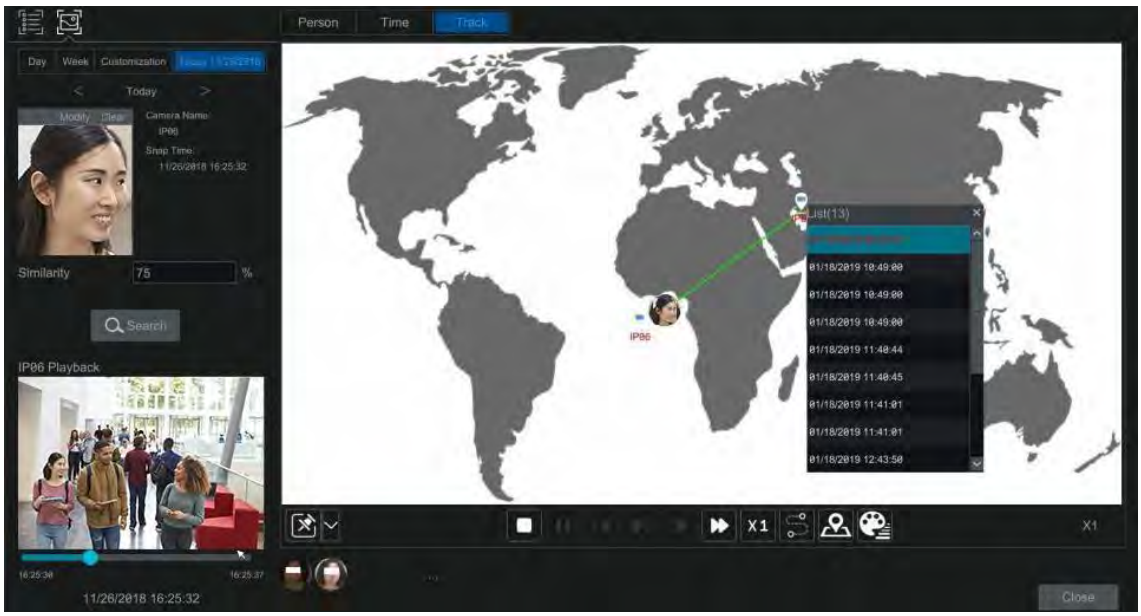
- **View Match Images**

Click the “Match” tab to view matching images as shown below.



10.2.2 Track Playback

Select “Track” to go to the following interface:



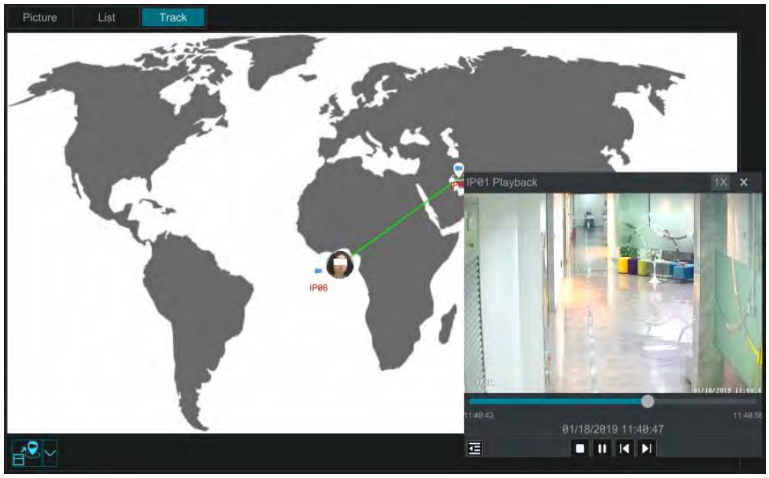
Note: Tracking will only work if two or more cameras have viewed and recorded the subject.

Descriptions of buttons on the tracking interface

Fixed Window		Frame	
Followed Window		Fast Forward（x2;x4）	
Exchange Window		Normal Speed	
Stop		Start/Stop Track	
Play		Edit Map	
Previous		Edit Color	
Next			

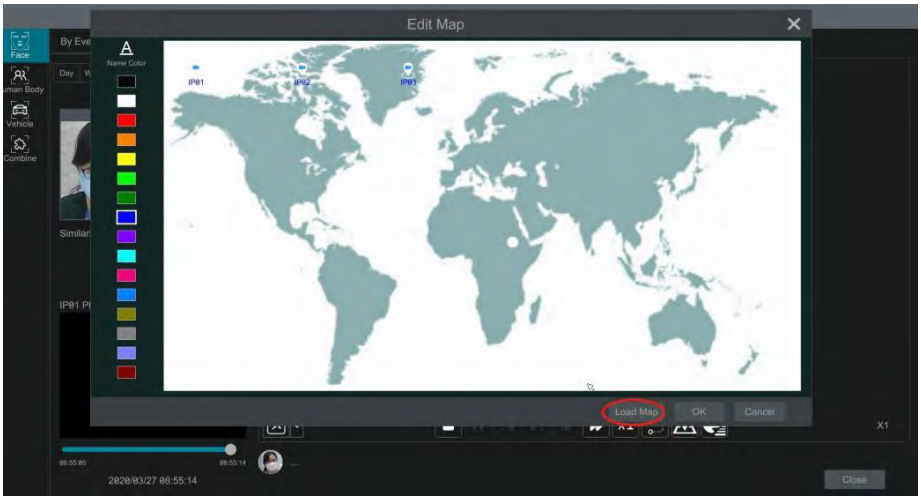
Click on a camera name for an event list appear to appear. Click one item to play that recording.

Click the button besides the fixed window icon to show “Followed Window” and “Exchange Window” icons. The small playback window will float on the map window by clicking “Followed Window” as shown below.



Click 1X to switch play speed. 1x and 2x can be switched. Click to view event list. Click one item to play this event.
Click “Exchange Window” to switch the position of the map window and the playback window.

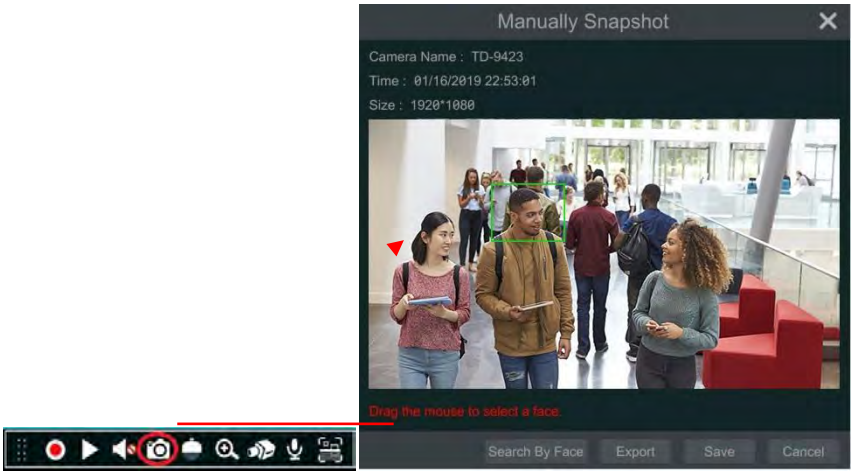
Click button to go to the following interface:



Click “Load Map” to add a map. Drag the camera names onto and around the map to change their locations. Choose a color from the left color list to set your favorite color for camera names.
Load Map: ① Save the map to a USB storage device and then insert the USB storage device into the NVR. ② Click “Load Map” button to upload the map.
Click button to modify the colors of camera names and track lines, and to set the line width.

10.2.3 Face Search by Snapshot

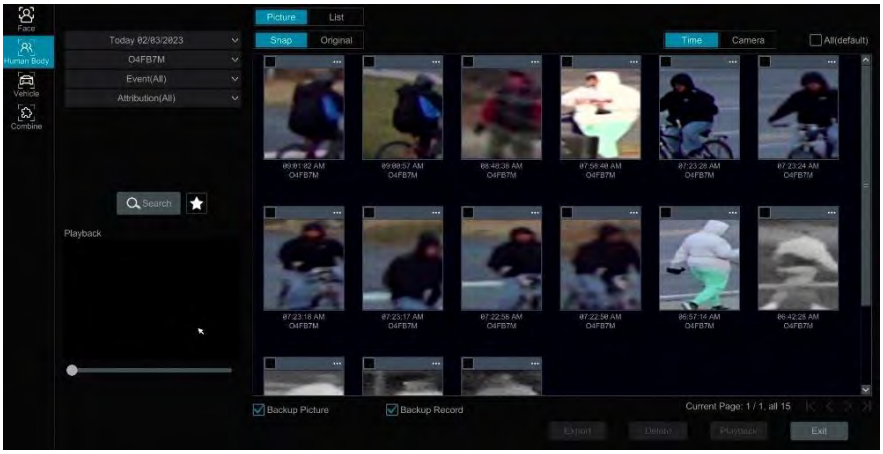
In the live or playback interface, click on a face detection camera and then select on the toolbar. This will bring up the following window:



Drag the mouse to select a face and then click “Search by Face” to go to the face search by face interface. You can see its snapshot pictures, match pictures, original pictures and so on by clicking the corresponding tab.

10.2.4 Human Body Search (BETA)

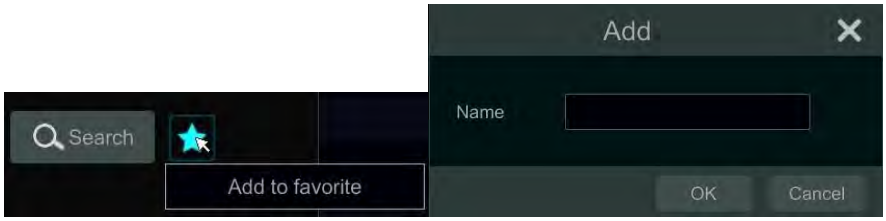
Click Start➔ Intelligent Analytics➔Smart Search➔Human Body to go to the human body search interface.
Select the search time, camera and event and then click “Search” to view search results.



You can also select the attributes of people to filter (like gender, age, mask-wearing status, glasses-wearing status, color of clothes, etc.). **Please note the metadata attribute feature is still in BETA and results may not be completely accurate.**

Click a searched picture to play the recording in the small window on the left. Select pictures and check “Backup Picture” and/or “Backup Record” and then click “Backup” to back up the pictures and /or records. Click “Original” to view the original captured pictures. Click “List” to view the file list of the captured pictures.

Click  and select “Add to favorite” to add a favorite group and save the current searched pictures to the favorite group. Then you can quickly view these figure pictures by clicking  and choosing the group name.



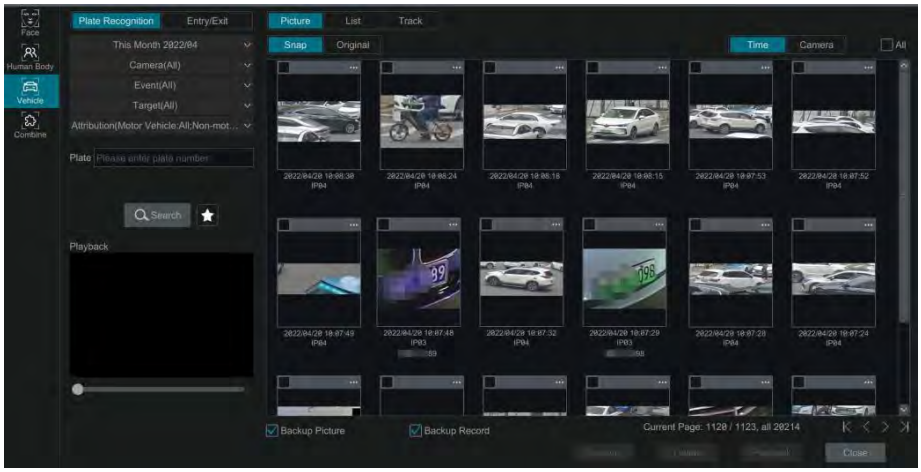
10.2.5 Vehicle Search

① Click Start➔ Intelligent Analytics➔Smart Search➔Vehicle to go to the vehicle search interface.

② Select the time, camera, event and vehicle type. Then click “Search” to search vehicles.

Event: Intrusion, Line Crossing, Target Counting, Plate Detection, Plate Match-Successful Recognition and Plate Match-Strange Plate can be selected.

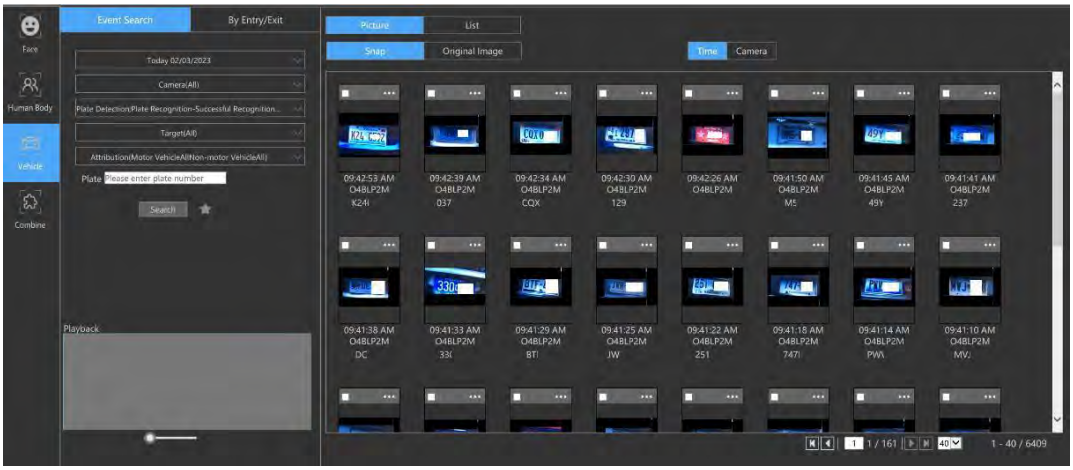
Attribution (BETA): Vehicle or non-vehicle attributes can be selected as needed. For example, you can search vehicles according to the color, brand or type. You can view face pictures by time or by camera. **Please note the metadata attribute feature is still in BETA and results may not be completely accurate.**



Click a searched vehicle picture to play the clip in the small window on the left. Select vehicle pictures and check “Backup Picture” and/or “Backup Record” and then click “Backup” to back up the pictures and /or records.

③ Click “Original” to see the original pictures; click “List” to view the snapshot information list. Click  to view the detailed information; click  to back up the image.

Select “Plate Detection” or “Plate Match” to view a plate image. You can also enter the plate number to search the plate pictures. Then you can view the track of this vehicle.



Click “Track” to view the track of the vehicle.

Note: Only one plate can be traced at a time and two or more Speco Blue ANPR cameras must have detected this vehicle to create a track to follow. The track setup steps are like the face track setup steps. Please refer to face track settings for details.

Click ★ to add a favorite group and save the current searched pictures to the favorite group. Then you can quickly view these vehicle pictures by clicking ★ and choosing the group name.

10.2.6 Combination Search

If you want to view the human body, vehicle or face pictures simultaneously, you can choose to do a combination search.

① Click “Combine”.

② Select the search time, camera, event and vehicle as needed.

Click a searched picture to play the clip in the small window. Select pictures and check “Backup Picture” and/or “Backup Record” and then click “Backup” to back up the pictures and /or records.

Click ★ to add a favorite group and save the current searched pictures to the favorite group. Then you can quickly view these pictures by clicking ★ and choosing the group name.

10.3 View Statistical Information

Click Start➔ Intelligent Analytics➔Statistics to go to the interface below. Through this interface, you can view the statistical information for people and vehicles, and you can customize the statistical information.

***The recorder can display a maximum count of 150,000 analytic data for all timeframe views.**



View People Information:

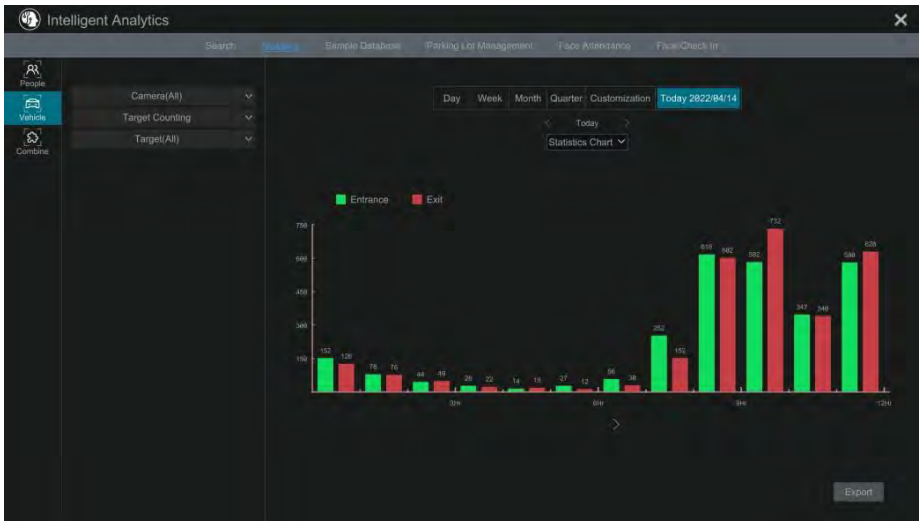
Note: The person information includes face information and figure information.

① Select the time.
② Select cameras.
③ Select events as needed, such as face detection, face match, intrusion and tripwire.

Note: Face match events (successful recognition & stranger) are available for some models. If Face Match-Successful Recognition event is selected, you can choose “Detail Chart” to view.

View Vehicle Information:

- Click “Vehicle”
- Select the time and cameras.
- Select events as needed.
- Select the vehicle attribution (BETA).



If “Remove duplicate license plate numbers” is checked, the duplicate statistics of the same license plate in the same day will not be displayed in the chart.

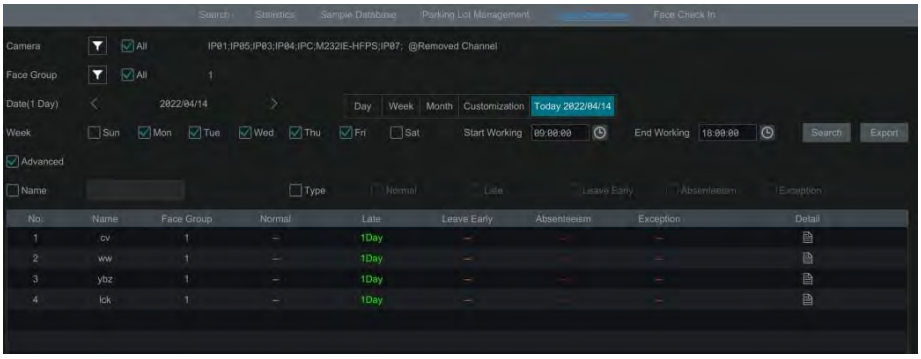
To customize statistical information:

Click “Combine” and then select events, people and vehicle as needed.

10.4 Face Attendance

This function is only available for some models. If your device doesn’t support face attendance, you can skip these instructions.

Click Start➔Intelligent Analytics➔Face Attendance to go to the following interface:

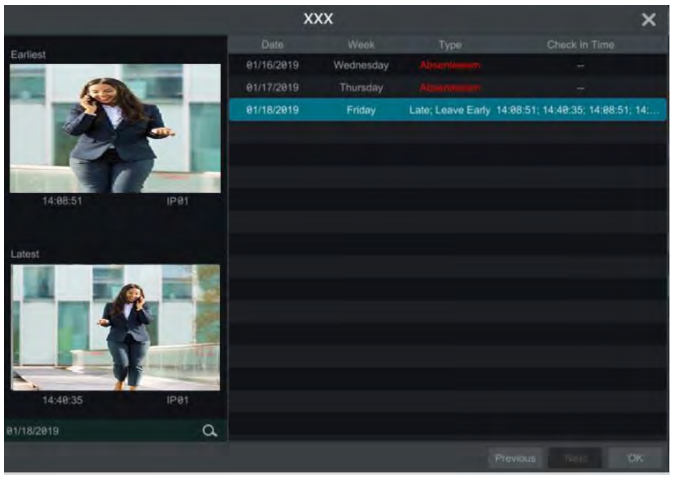


To search attendance information

① Click  behind camera and group to choose the desired cameras and groups.
② Set the attendance date. You can choose day, week, month and today or customize the time period.
③ Set the workday start time and the end time.
④ Click “Search” to view the attendance status.

If you need to know the attendance status of a specific person, you can click “Advanced” and then enter the name and choose the type.
Click “Export” to export the searched attendance information.

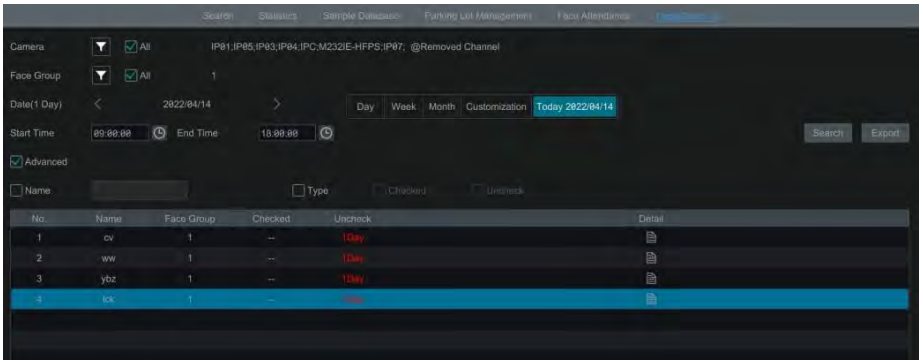
Click  to view the detailed attendance information. In this interface, click  to go to the face search interface.



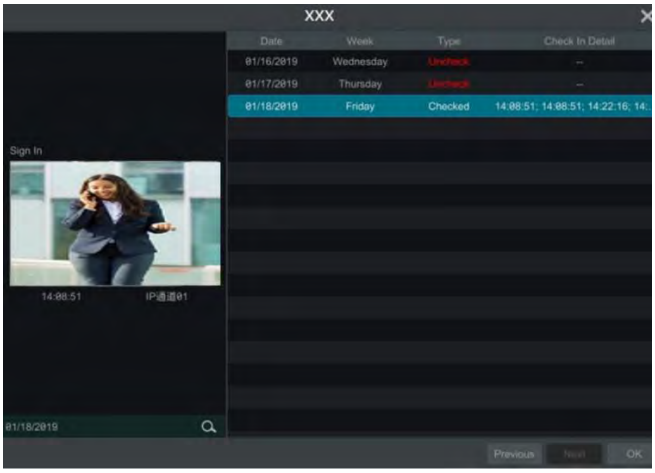
10.5 Face Check-In

Click Start➔Intelligent Analytics➔Face Attendance to go to the interface below.
The search steps of face check-in are as follows.

① Click  behind camera and group to choose the desired cameras and groups.
② Set the check-in date. You can choose day, week, month and today or customize the time period.
③ Set the face check-in start and end time.
④ Click “Search” to view the check-in status.



If you want to know the check-in status of a specific person, please click “Advanced” and then enter the name and choose the type to search.
Click  to view the detailed information. In this interface, the checked image can be viewed.
Click  to view the registered face picture of this person.

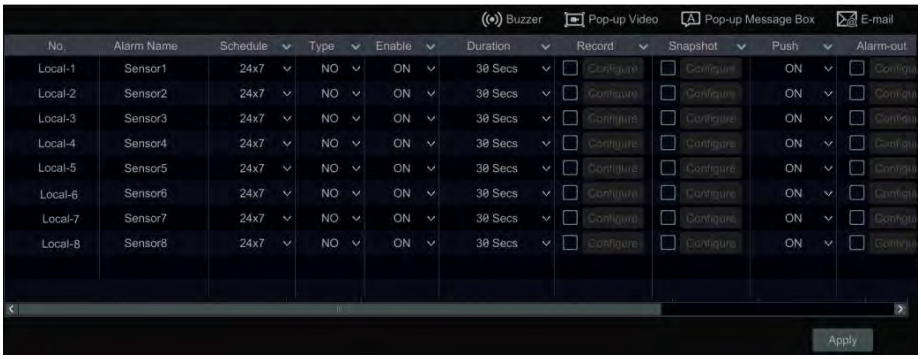

XXX
Date
Week
Type
Check In Detail
01/16/2019
Wednesday
Uncheck
--
01/17/2019
Thursday
Uncheck
--
01/18/2019
Friday
Checked
14:08:51; 14:08:51; 14:22:16; 14:
Sign In
14:08:51
IP通道01
01/18/2019
Previous
Next
OK

11 General Event Management

11.1 Sensor Alarm

To ensure complete setup of the Sensor Alarm function, you should enable the sensor alarm of each camera and then immediately set up the alarm handling for that camera.

① Click Start➔Settings➔Alarm➔Sensor to go to the following interface:



② Select the alarm type (NO or NC) according to sensor trigger type.

③ Enable the sensor alarm of each camera and select the schedule.

④ Check the “Duration”, “Record”, “Snapshot”, “Push”, “Alarm-out” and “Preset” and enable or disable the “Buzzer”, “Pop-up Video”, “Pop-up Message Box” and “E-mail” as required.

⑤ Click “Apply” to save your settings.

The configuration steps of the above-mentioned alarm linkages are as follows.

Duration: The interval time between adjacent motion detections. For instance, if the duration time is set to 10 seconds, once the system detects a motion, it will trigger the alarm alarm and will not detect any other motion (specific to that camera) for 10 seconds. If there is another motion detected during this period, it will be considered as continuous movement.

Record: If checked, the “Trigger Record” window will open automatically (you can also click the “Configure” button to open the window). Select a camera on the left side and then click >> to set the camera as the trigger camera. Select the trigger camera on the right side or click << to cancel the trigger camera. Click “OK” to save your settings. The trigger camera will record automatically when the sensor alarm is triggered.

Snapshot: If checked, the “Trigger Snapshot” window will open automatically. You can configure the trigger camera in this window. The trigger camera will capture images automatically when the sensor alarm is activated.

Push: If checked, choose ON or OFF. If ON, the system will send messages when the sensor alarm is triggered.

Alarm-out*:* If checked, the “Trigger Alarm-out” window will open automatically. The system will trigger the alarm-out automatically when the sensor alarm is tripped. You need to set the delay time and the schedule of the alarm outputs. See 11.6.1 Alarm-out for details.

Preset*:* If checked, the “Trigger Preset” window will open automatically. Here you can configure the trigger preset for each camera. To add presets, please see 6.2 Preset Setting for details.

Buzzer*:* If enabled, the recorder will emit an audible buzz when the sensor alarm is triggered. To set the delay time of the buzzer, please see 11.6.4 Buzzer for details.

Pop-up Video*:* After camera setup, the corresponding video will pop up automatically when the sensor alarm is triggered. To set the duration time of the video, please see 11.6.3 Display for details.

Pop-up Message Box: If enabled, the corresponding alarm message box will pop up automatically when the sensor alarm is triggered. To set the duration time of the message box, please see 11.6.3 Display for details.

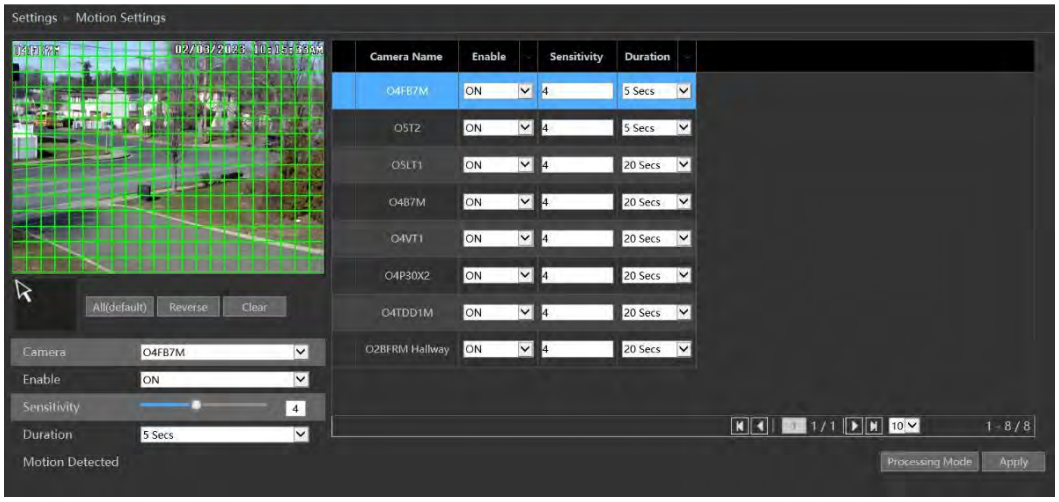
E-mail*:* if enabled, the system will send an e-mail when the sensor alarm is triggered. Before you enable email, please configure the recipient’s e-mail address first (see 14.1.5 E-mail Configuration for details).

11.2 Motion Alarm

Motion Alarm: when a motion object appears in the specified area, it will trigger the alarm. You should enable the motion of each camera first and then set the alarm handling of the camera to complete the whole configuration of the motion alarm.

11.2.1 Motion Configuration

① Click Start➔Settings➔Camera➔Motion Settings to go to the following interface:



② Select a camera, enable motion, and set the sensitivity and duration for that camera.

Sensitivity: The higher the value is, the more sensitive it will be to motion. You should adjust the value according to the practical conditions since the sensitivity is influenced by background color and time (day or night).

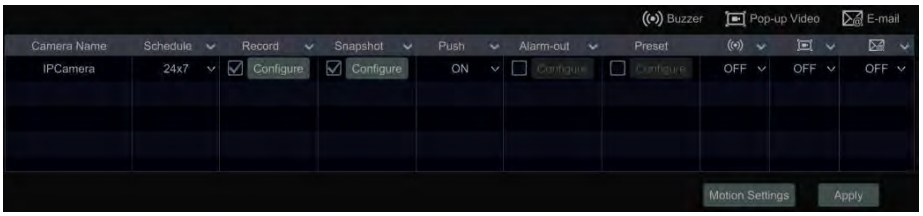
Duration: The interval time between adjacent motion detections. For instance, if the duration time is set to 10 seconds, once the system detects a motion, it will trigger the alarm and will not detect any other motion (specific to that camera) for 10 seconds. If there is another motion detected during this period, it will be considered as continuous movement.

③ Drag along the camera image to set the motion area. You can set more than one motion area. Click "All" to set the whole camera image as the motion area. Click "Reverse" to swap the motion area and the non-motion area. Click "Clear" to clear all the motion areas.

④ Click "Apply" to save your settings. Click "Processing Mode" to go to the alarm handling configuration interface of the motion alarm.

11.2.2 Motion Alarm Handling Configuration

① Click Start➔Settings➔Alarm➔Motion Alarm to go to the following interface:



② Enable or disable "Record", "Snapshot", "Push", "Alarm-out", "Preset", "Buzzer", "Pop-up Video" and "E-mail". The alarm handling setup for motion alarm is similar to that of the sensor alarm (see 11.1 Sensor Alarm for details).

③ Click "Apply" to save your settings. You can click "Motion Settings" to go to the motion configuration interface.

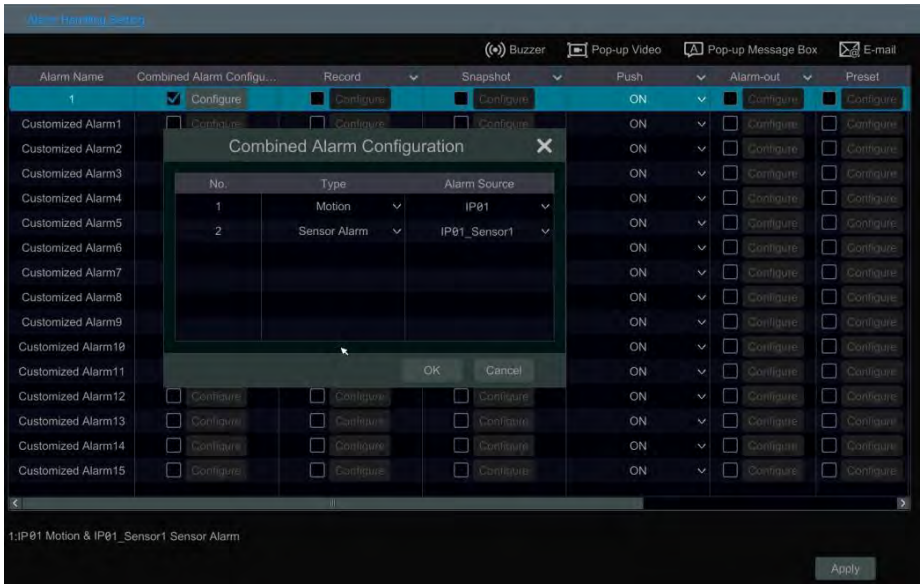
11.3 Combination Alarm

① Click Start➔Settings➔Alarm ➔Combination Alarm to go to the interface below.

② Customize combination alarm. Set alarm name and click "Configure" under the Combined Alarm Configuration menu. Then, select alarm type and alarm source. Finally, click "OK" to save your settings.

③ Enable or disable "Record", "Snapshot", "Push", "Alarm-out", "Preset", "Buzzer", "Pop-up Video" and "E-mail". The alarm handling setup of combination alarm is like that of the sensor alarm (see 11.1 Sensor Alarm for details).

④ Click "Apply" to save your settings.



11.4 IPC Offline Settings

① Click Start➔Settings➔AI/Event➔IPC Offline Settings to go to the interface as shown below.

② Enable or disable “Snapshot”, “Push”, “Alarm-out”, “Preset”, “Buzzer”, “Pop-up Video”, “Pop-up Message Box” and “E-mail”. The IPC Offline setup is similar to that of the sensor alarm (see 11.1 Sensor Alarm for details).

③ Click “Apply” to save your settings.



11.5 Exception Alarm Settings

① Click Start➔Settings➔AI/Event➔Exception Alarm to go to the interface as shown below.



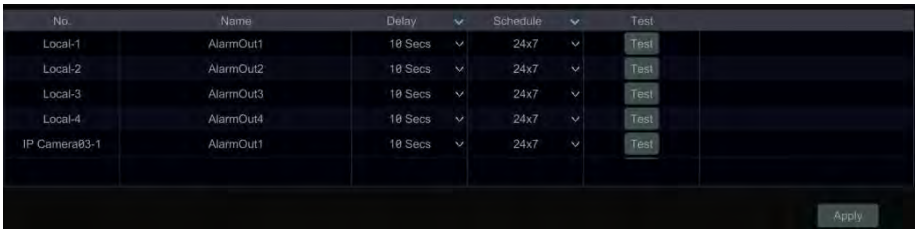
② Enable or disable “Push”, “Alarm-out”, “Buzzer”, “Pop-up Message Box” and “E-mail”. The exception handling setup is similar to that of the sensor alarm (see 11.1 Sensor Alarm for details).

③ Click “Apply” to save your settings.

11.6 Alarm Event Notification

11.6.1 Alarm-out

① Click Start➔Settings➔AI/Event➔Event Notification to go to the following interface:



② Set the delay time and the schedule of each alarm-out. You can click "Edit Schedules" to edit the schedules (see 7.1.2 Schedule Settings for details).

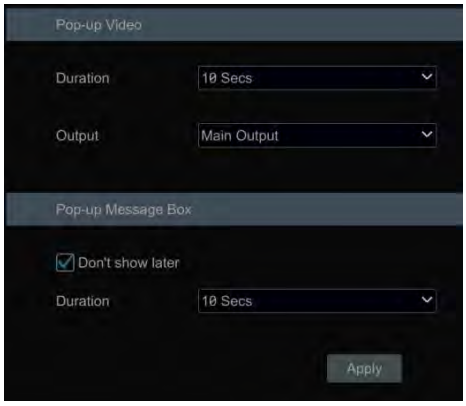
③ Click "Apply" to save your settings. You can click "Test" to test the alarm output.

11.6.2 E-mail

Click Start➔Settings➔AI/Event➔Event Notification➔E-mail to go to the e-mail configuration interface. Set the e-mail address of the recipients. See 14.1.5 E-mail Configuration for details.

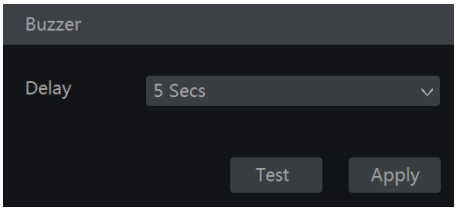
11.6.3 Display

Click Start➔Settings➔AI/Event➔Event Notification➔Display to go to the display configuration interface. Set the duration time of the pop-up video and the pop-up message box. If your device supports two outputs, please set the output of the pop-up video as needed. After that, click "Apply" to save your settings.



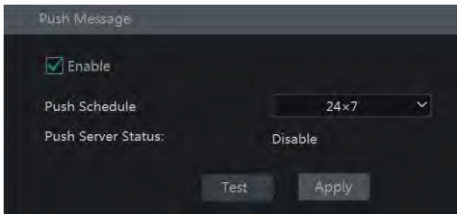
11.6.4 Buzzer

Click Start➔Settings➔AI/Event➔Event Notification➔Buzzer to go to the buzzer configuration interface. Set the delay time of the buzzer and then click "Apply" to save your settings. You can click "Test" to test the buzzer.



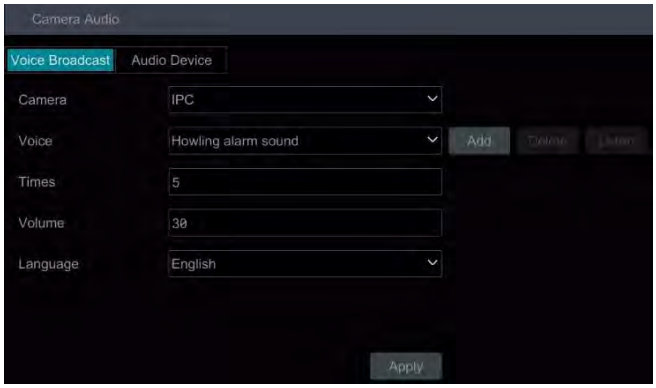
11.6.5 Push Message

Click Start➔Settings➔ AI/Event ➔Event Notification➔Push Message to go to the interface as shown below. Check "Enable" and then click "Apply" to save your settings. If the Push Server is online, it will push messages to the mobile clients.



11.6.6 Digital Deterrent

Click Start➔Settings➔ AI/Event ➔Event Notification➔Digital Deterrent to go to the interface as shown below.

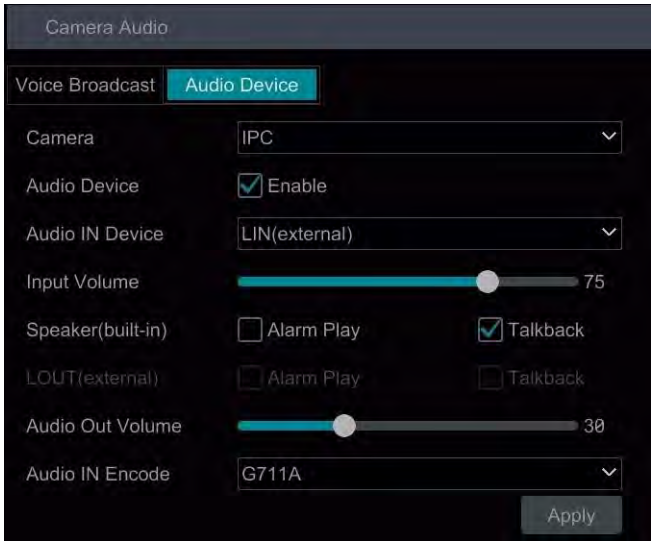


Camera audio settings:

You can set voice broadcast up for perimeter alert cameras. Select the camera, voice, broadcast times, volume, and language and then click “Apply” to save your settings. When an alarm is triggered, the camera will broadcast the voice you set.

Voice: click “Add” to add the alarm voice in WAV format. Click “Listen” to listen to the uploaded audio.

Click “Audio Device” to set the audio of the camera.



Select the camera and then click “Enable” next to audio device.

Audio IN Device: Please select according to the actual device configuration.

Input Volume: Set the audio input volume as needed.

Speaker (built-in): Please select its function as needed.

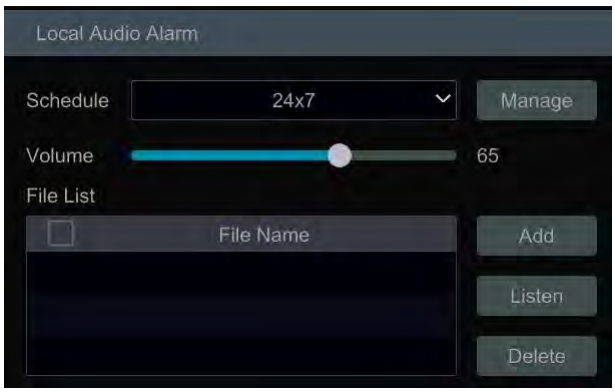
LOUT (Line Output): Select the function of the external audio device as needed.

Audio Out Volume: Set the audio output volume as needed.

Audio IN Encode: Select G711A or G711U

Local Audio Alarm

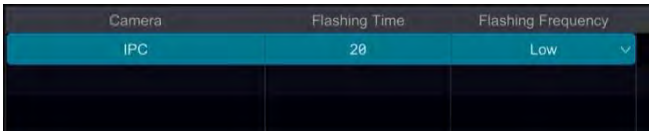
Set the audio alarm of the local NVR.



In this interface, you can set the schedule and volume of the local audio alarm. Click “Manage” to set the schedule. Click “Add” to upload the audio file. Choose the uploaded audio file and then click “Listen” to listen to it; click “Delete” to delete this file.

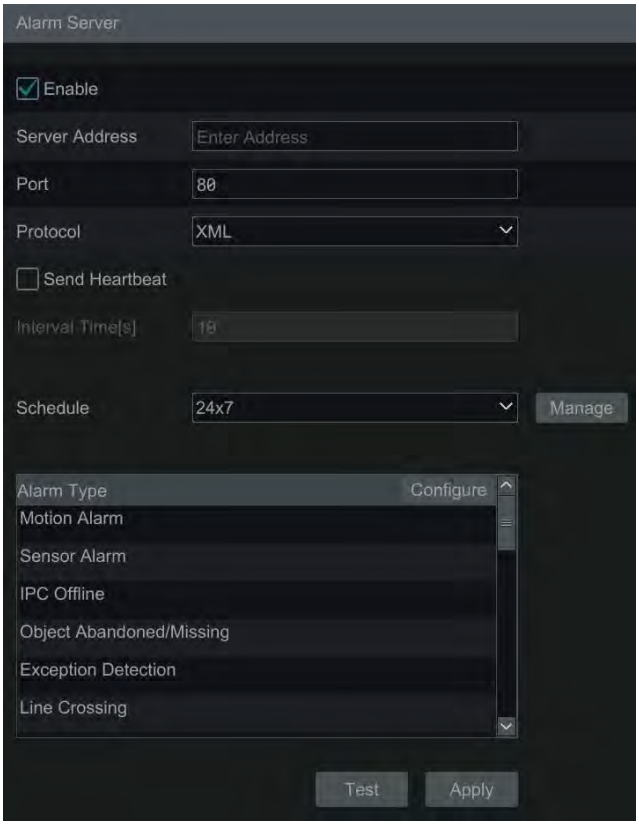
11.6.7 Light

Click Start➔Settings➔Alarm➔Event Notification➔Light to go to the interface as shown below. In this interface, you can set the light’s flashing time and frequency when an alarm is triggered.



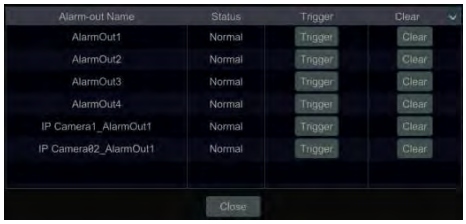
11.6.8 Alarm Server

Go to Alarm➔Alarm Server interface as shown below.
Enable the alarm server and enter the server address and port of the alarm server. Next, select the protocol. If “Send Heartbeat” is enabled, set the interval times. After that, test the effectiveness of the alarm server. After a successful test, please click “Apply”. When an alarm occurs, the device will transfer the alarm event to the alarm server. If an alarm server is not needed, there is no need to configure this section.



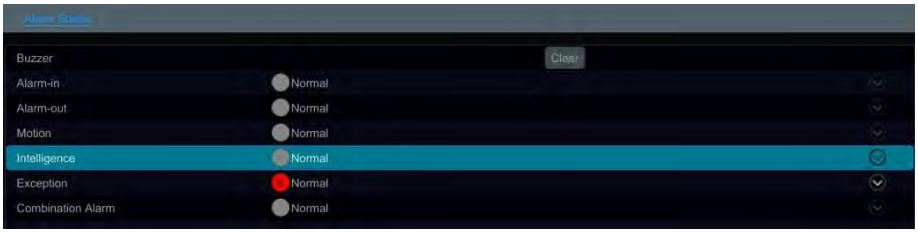
11.7 Manual Alarm

Click on the tool bar at the bottom of the live preview interface to open this window. Click “Trigger” to start alarm. Click “Clear” to stop alarm.

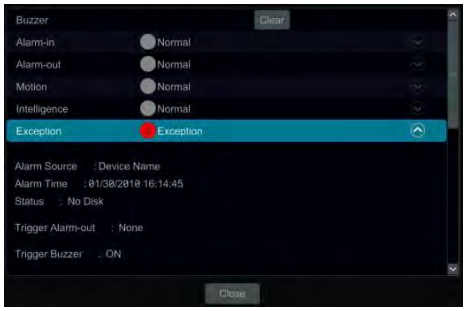


11.8 View Alarm Status

Click Start➔Settings➔Alarm➔Alarm Status or click on the tool bar at the bottom of the live preview interface to view the alarm status.



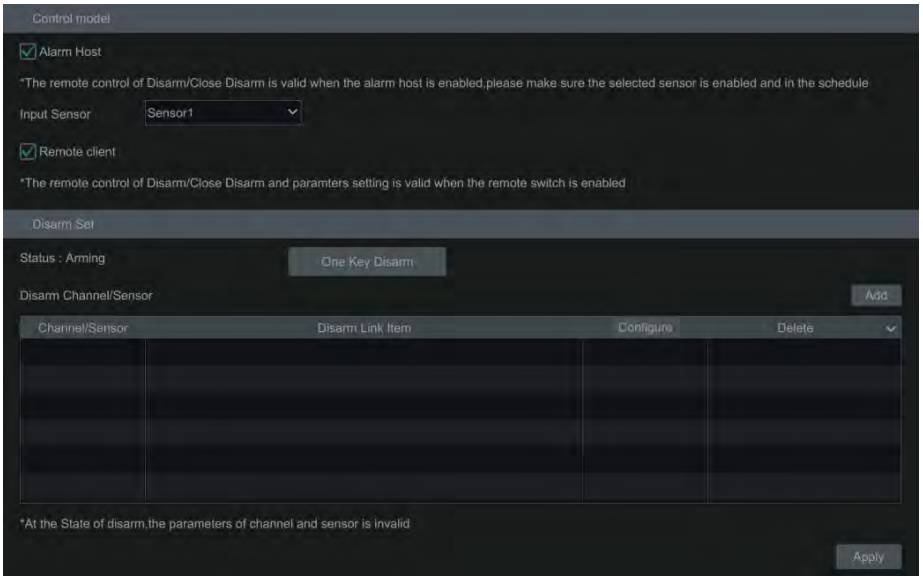
Click “Clear” to stop the buzzer when a buzzer alarm is triggered. Click to view the detailed information as shown below.



If the exception information is more than one page, you can enter the number in the box and then click to jump to the specified page. Click / to view the exception alarm information in the previous/next page.

11.9 System Disarming

You can quickly disarm the device through the alarm host or a remote client (such as the mobile app).



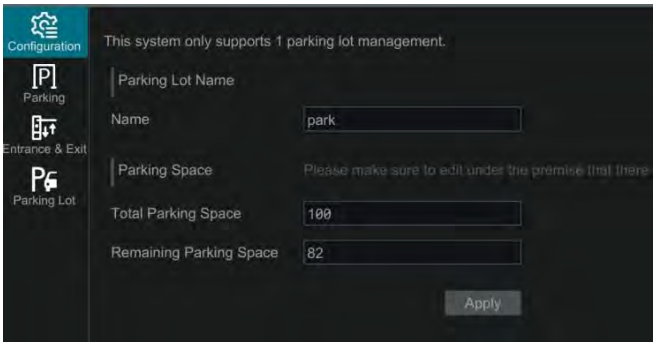
By default, all alarm linkages of all channels and sensor alarms will be disarmed after clicking “One Key Disarm”. You can also self-define the channels and sensors you want to disarm by clicking “Add”. Only the selected channels and sensors will be disarmed by clicking “One Key Disarm”.

12 Parking Lot Management

You can manage a parking lot through the NVR. This function will only work using compatible Speco Blue ANPR License Plate Cameras.

12.1 Parking Lot Settings

Click Start➔Intelligent Analytics➔Parking Lot Management to go to the parking lot setup interface.



12.1.1 Basic Settings

The recorder only supports the management of one parking lot. Please enter the parking lot name, total parking spaces and remaining parking spaces. To ensure the accuracy of the parking spaces, please enter the parking space information while there are no vehicles entering or exiting.

12.1.2 Parking Space Settings

Only the vehicles added into the plate database with the proper permission are allowed to pass through automatically. You can set the parking spaces according to the vehicle groups or directly use the total parking spaces. For the block list, you can set “No parking allowed”. After that, set the schedule and Email as needed.



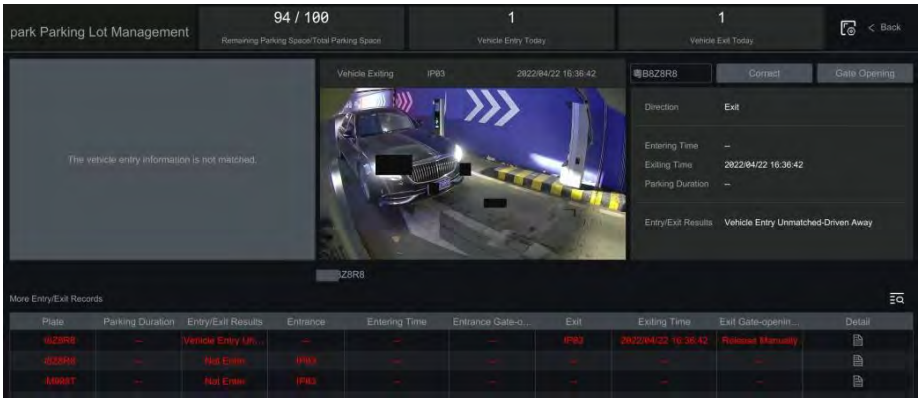
12.1.3 Entrance/Exit Management

Set the direction of vehicles (Enter/Exit) and bind LED screens as needed.



12.2 Parking Lot Management

After the above settings are completed, click “Parking Lot” on the left menu to go to the following interface:



In this interface, you can view the detailed information of the parking lot, including the total parking spaces, remaining parking spaces, number of vehicles entering today, number of vehicles exiting today and vehicle entry/exit records.

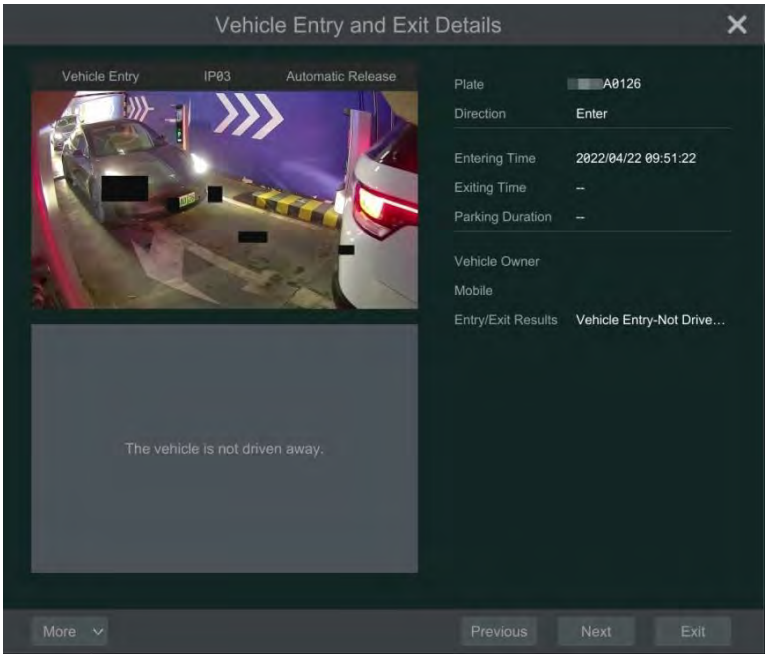
Only vehicles added into the plate database are allowed to pass automatically. If the vehicle is a stranger/unknown vehicle, it will not be allowed to enter unless it is manually approved. You can release it manually by clicking “Gate Opening”. While entering, if the plate number captured is not matched with the actual one, you can click “Correct” to correct it manually.

Click to view the detailed information of vehicle entry/exiting.

Click “More” to register the license plate or view the ID information.

Click to go to the parking lot setup interface.

Click to search the records of vehicles entering/exiting.

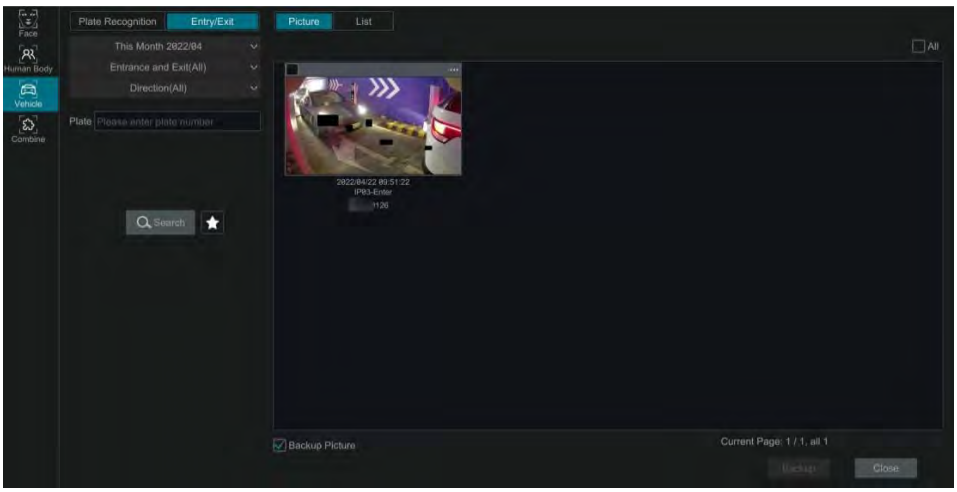


Click “Back” to return to the live view interface.

12.3 Search Vehicle Entry/Exiting Records

In the parking lot management interface, click to search the records of vehicles entering/exiting the park lot.

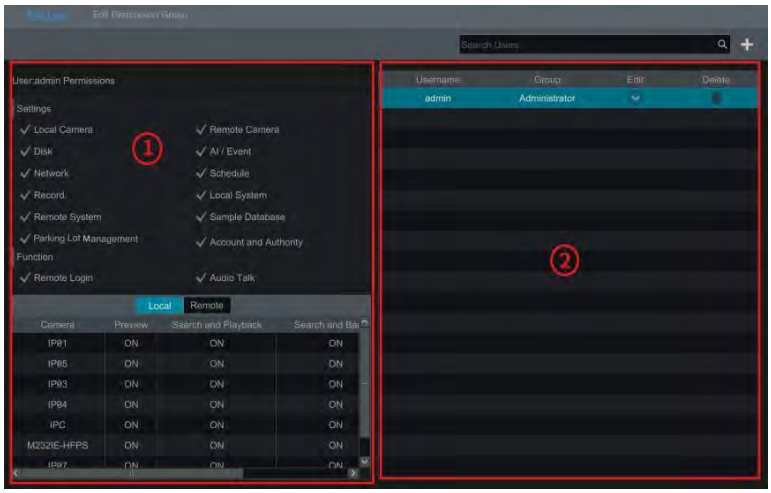
You can search these records by setting filtering conditions (including time/direction/license plate). Click in the right corner of the searched picture to view the details; click “Backup” to export the searched picture.


Face
Human Body
Vehicle
Combine
Plate Recognition
Entry/Exit
This Month 2022/04
Entrance and Exit(All)
Direction(All)
Plate
Please enter plate number
Search
Picture
List
All
2022/04/22 09:51:22
IP83-Enter
Backup Picture
Current Page: 1 / 1, all 1
Backup
Close

13 Account & Permission Management

13.1 Account Management

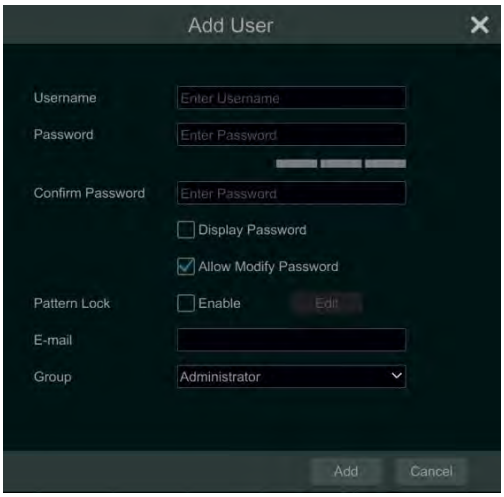
Click Start➔Settings➔Account and Authority➔Account➔Edit User to go to the interface shown below:



Area ① displays the user permissions. Area ② displays the user list. Click the user in the list to display its user permissions in area ①.
There are three default permission groups (“Administrator”, “Advanced” and “Common”) available when adding accounts. You can manually add new permission group (see 13.3.1 Add Permission Group for details).
Only ***admin*** and the users that have the “Account and Authority” permission can manage the system’s accounts. Group “Administrator” owns all the permissions displayed in area ① except “Account and Authority” and its permissions cannot be changed while the permissions of “Advanced” and “Common” can be changed. For security purposes, only the **admin** login can add new users.

13.1.1 Add User

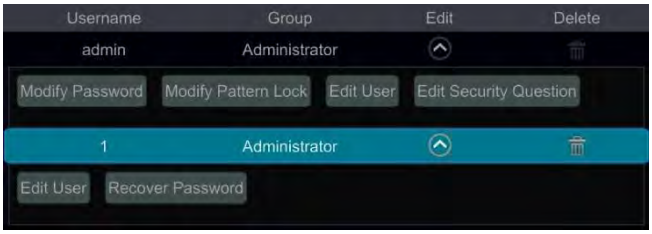
① Click Start➔Settings➔Account and Authority➔Account➔Add User or click + beside the search box to open a window as shown below.



② Set the username, password and group. User can also set a pattern lock here. The e-mail address is optional. Click “Add” to add the user.

13.1.2 Edit User

Click Start➔Settings➔Account and Authority➔Account➔Edit User and then click in the user list or double click the user to edit the user information. Click to delete the user (the ***admin*** user cannot be deleted).



➢ **Edit Security Question**

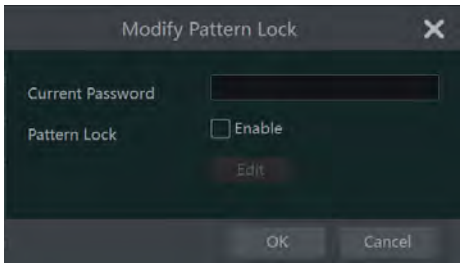
You can only set password security for ***admin***. Click "Edit Security Question" and then set questions and answers in the popup window. If you forget the password for ***admin***, please refer to Q4 in Appendix A FAQ for details. The passwords of other users can be recovered by ***admin*** or the users that have the "Account and Authority" permission.

➢ **Modify Password**

Only the ***admin*** password can be modified. Click "Modify Password" to open a window. Enter the current password and then set new password. Click "OK" to save your settings.

➢ **Modify Pattern Lock**

Some models may not support this function.
Click "Modify Pattern Lock" to open this window:



Enter current password and then check "Enable" to input pattern lock.

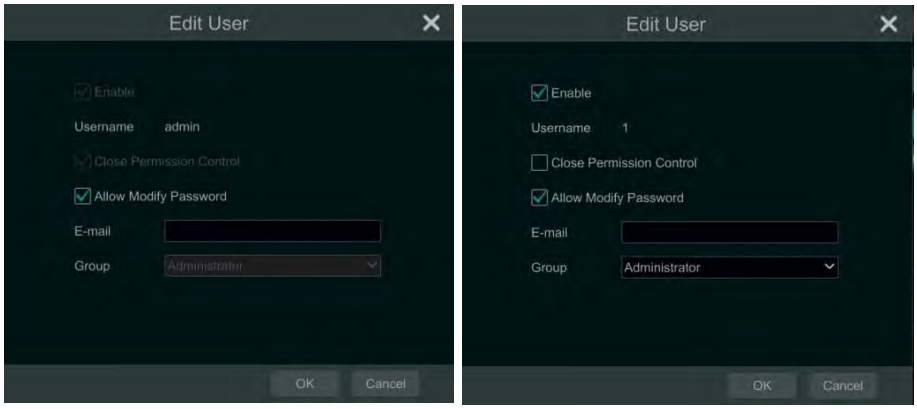


➢ **Recover Password**

Click "Recover Password" to reset the password to ***123456***.

➢ **Edit User**

Click "Edit User" to open the window as shown below. The ***admin*** level is enabled, and its permission control is closed and permission group cannot be changed by default. You can enable or disable other users (if disabled, the user will be invalid), open or close their permission control (if closed, the user will get all the permissions which ***admin*** has) and set their permission groups. Click "OK" to save your settings.



13.2 User Login & Logout

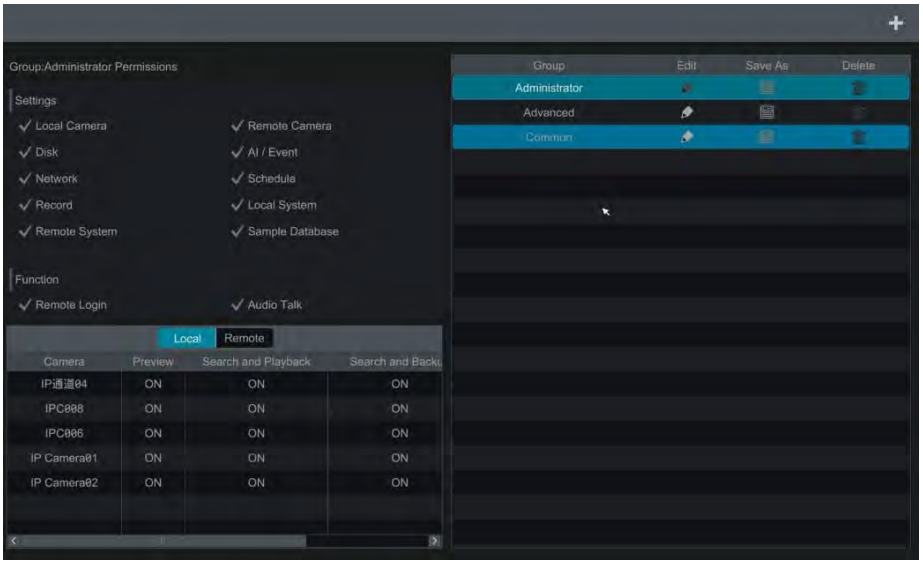
Login: Click Start➔Login or directly click the preview interface and then select username and enter the password in the popup window. Click "Login" button to log in the system.

Logout: Click Start➔Logout or click Start➔Shutdown to open the "Shutdown" window. Select "Logout" in the window and then click "OK" button to log out of the system.

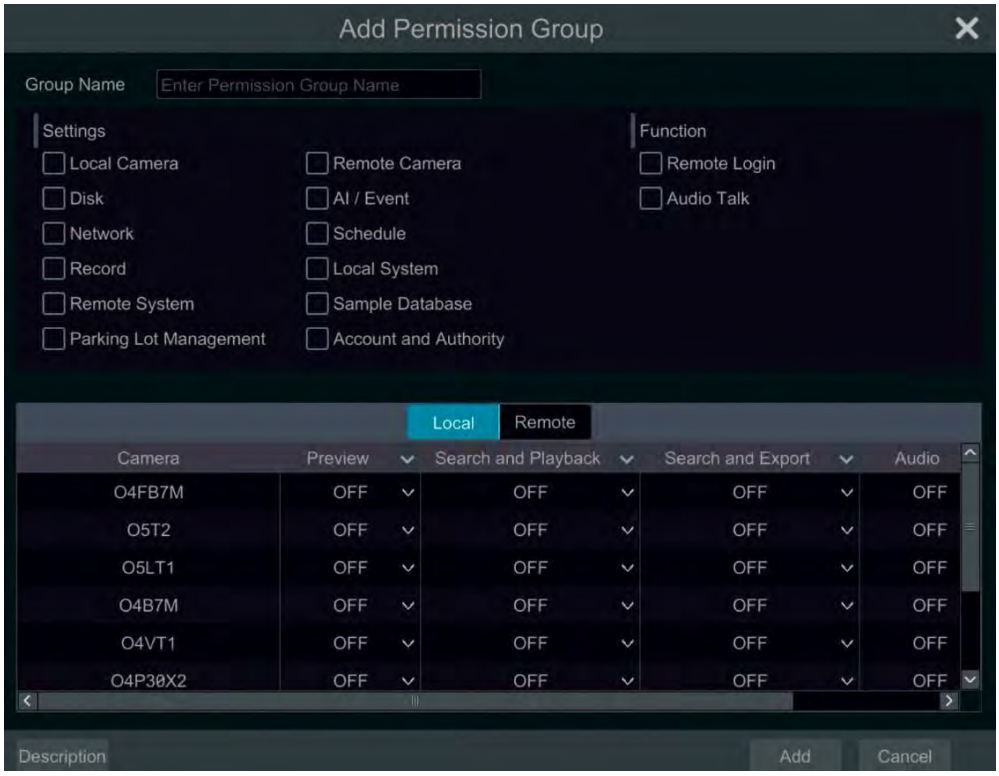
13.3 Permission Management

13.3.1 Add Permission Group

Click Start➔Settings➔Account and Authority➔Account➔Edit Permission Group to go to the interface shown below.



Click ➕ to add permission group. Set the group name, check the permissions as needed and then set the "Local" and "Remote" permissions. Click "Add" to save your settings.

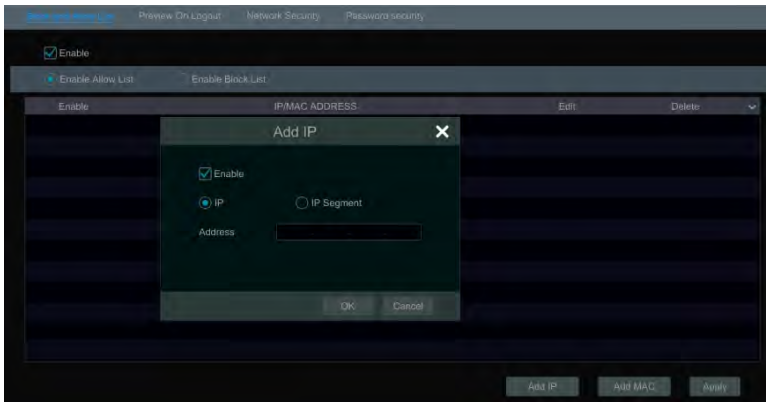


13.3.2 Edit Permission Group

Go to the "Edit Permission Group" interface and then click in the group list to edit the permission group (the operations of the "Edit Permission Group" are similar to that of the "Add Permission Group", please see 13.3.1 Add Permission Group for details). Click to save the group as a new group. Click to delete the permission group. The three default permission groups ("Administrator", "Advanced" and "Common") cannot be deleted.

13.4 Block and Allow List

① Click Start➔Settings➔Account and Authority➔Security to go to the following interface:



② Check "Enable" and then choose "Enable Allow List" or "Enable Block List" (a PC client with an IP address in the allow list can access the NVR remotely while a PC client in the block list cannot).

③ Add IP/IP segment/MAC. Click "Add IP" or "Add MAC" button and then check "Enable" in the popup window (it must be checked for the IP/IP segment/MAC you add be effective). Enter the IP/IP segment/MAC and then click "OK" button. In the above interface, click to edit IP/IP segment/MAC, click to delete it. Click "Apply" to save your settings.

13.5 Preview On Logout

Click Start➔Settings➔Account and Authority➔Security➔Preview On Logout to go to the interface below.

Set a camera and then enable or disable the preview permission on logout as required. If a camera's preview permission on logout is "ON", you can view the live image of the camera when you are logged out of the system. Otherwise, the live image of the camera cannot be seen when logged out.



13.6 Network Security

Click Start➔Settings➔Account and Authority➔Security➔Network Security to go to the interface below.



ARP (Address Resolution Protocol) Guard: This function can protect the LAN from ARP attacks and increase the network stability. If it is enabled, you can enable auto gateway MAC or manually set gateway MAC. Additionally, detection defense also can be enabled as needed.

13.7 Password Security

Click Start➔Settings➔Account and Authority➔Security➔Password Security to go to the following interface:



In this interface, you can set the security level and expiration time of the password. It's recommended to force a new password periodically to enhance system security.

13.8 View Online User

Click Start➔Settings➔Account and Authority➔User Status to view the online user information (you can view username, login type, IP address and login time for all active users online; click  to open a window showing the preview occupied channel number and playback occupied channel number).

14 Device Management

14.1 Network Configuration

14.1.1 TCP/IP Configuration

Click Start➔Settings➔Network➔TCP/IP to go to the interface below. Check “Obtain an IPv4 address automatically”, “Obtain an IPv6 address automatically” and “Obtain DNS automatically” to get the network addresses automatically, or manually enter the network addresses. You can modify the MTU value according to the network condition (MTU, Maximum Transmission Unit, can be modified according to network condition for higher network transmission efficiency). Click “Apply” to save your settings.



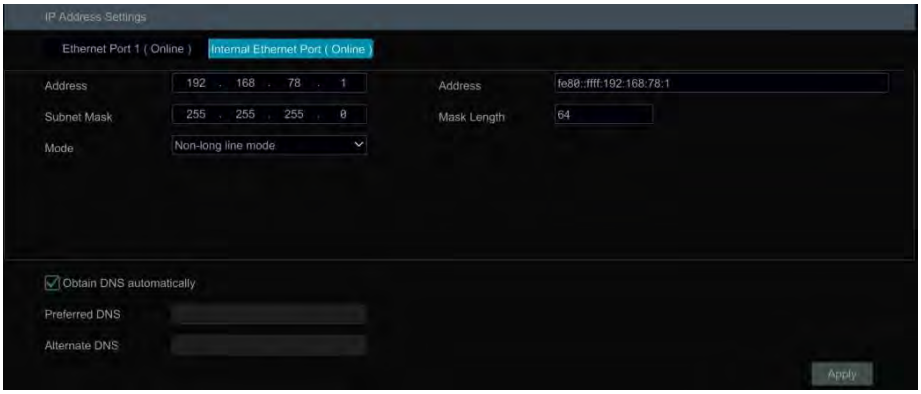
Note:

- **Internal Ethernet Port**

If you use an NVR with PoE network ports, click “Internal Ethernet Port” to go to the interface below.

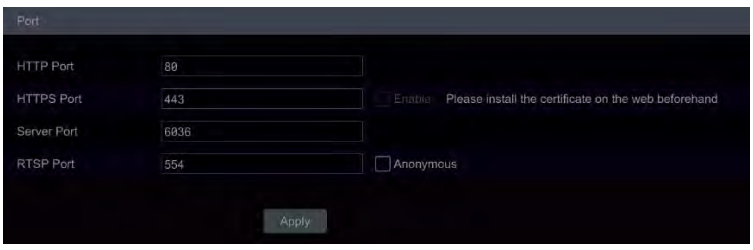
The internal Ethernet port is the port which connects all PoE ports with the NVR system. The PoE ports are available if the internal Ethernet port is online; if it is offline, all the PoE ports will be unavailable and it’s possible there’s an issue with the Ethernet port. The network address of the internal Ethernet port can be changed to be in the same network segment as IP cameras which are directly connected to the PoE ports of the NVR (Note that it is not recommended to change the network address of the internal Ethernet port).

Mode: Non-long line mode or long line mode can be selectable. The non-line mode is the default setting. If you want to run your PoE cameras longer than the standard 100M distance, you can choose long line mode. The tradeoff will be that your network speed on all PoE ports will drop to 10MBPs.



14.1.2 Port Configuration

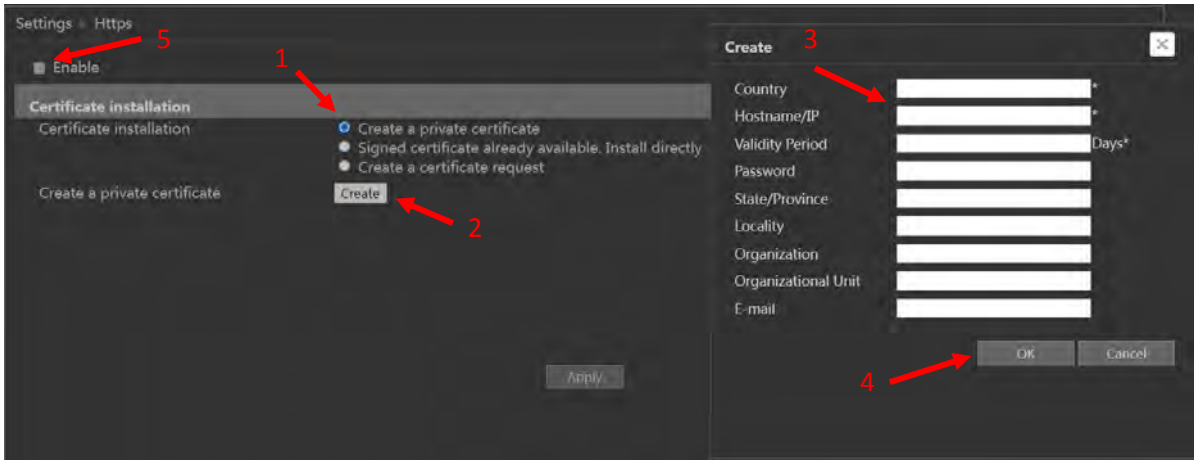
Click Start➔Settings➔Network➔Port to go to the interface shown below. Enter the HTTP port, HTTPS port, server port and RTSP port of the NVR, enable “Anonymous” as needed and then click “Apply” button to save your settings.



HTTP Port: the default HTTP port of the NVR is 80. For security, the port number can be changed another number such as 81. The port is mainly used for web client access. If you want to access the NVR through a web browser, you should enter the IP address plus HTTP port in the address bar of the web browser like http://192.168.11.61:81.
Note: The HTTP port and server port of the NVR should be mapped to the router before you access the NVR via WAN.

HTTPS Port: the default HTTPs port of the NVR is 443.
HTTPs provides authentication of the web site and protects user privacy. You can enter IP address plus HTTP port in the address bar of the web browser. Then enter username and password to log in. Click Settings➔Network➔HTTPS to go to the interface below. There are three ways to enable HTTPs service.

A. Create a private certificate.



① Select “Create a private certificate”.
② Click “Create”.
③ Fill out the corresponding information in the above creation box. Enter the country (two letter code), domain (NVR’s IP address/domain), validity date, password, province/state, region and so on.
④ Click “OK”.
⑤ Check “Enable” checkbox.
⑥ Click “Apply” to save your settings.

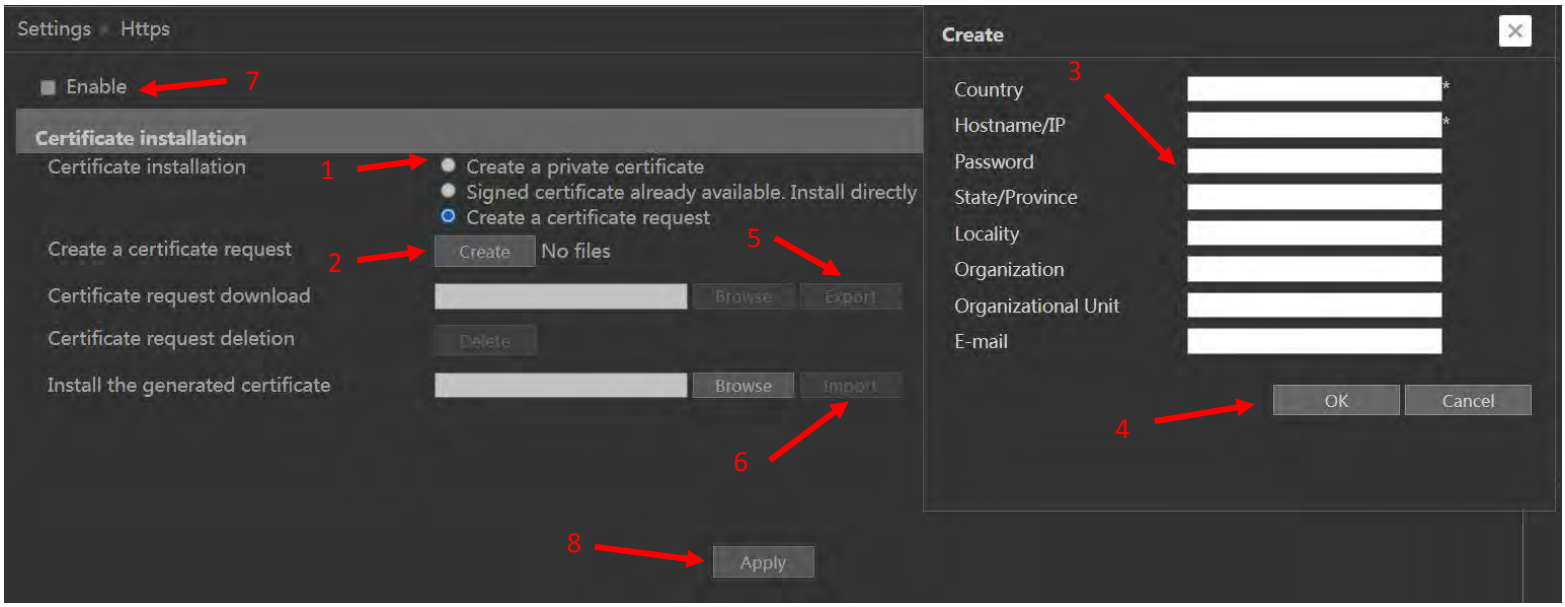
B. Install a signed certificate



① Check “Signed certificate already….”.
② Click “Browse” to select the certificate you want to import.
③ Click “Import”.
④ Check “Enable”.
⑤ Click “Apply” to save your settings.

Please note that the certificate uploaded here must be a certificate with private key.
To attach a private key to the certificate, please open the certificate and the private key files with an editor (such as Notepad++) and then copy the private key to the certificate.

C. Create a certificate request



① Check “Create a certificate request”.
② Click “Create”.
③ Fill out the corresponding information in the above creation box. Enter the country (two letter code), domain (NVR’s IP address/domain), validity date, password, province/state, region and so on.
④ Click “OK”. Then a certificate request file (CSR) will be created.
⑤ Click “Export” to export the certificate request file. Then send this file to the trusted third-party CA to apply a signed certificate.
⑥ Click “Browse” and select the signed certificate issued by the CA and then import this certificate.
⑦ Click “Enable”.
⑧ Click “Apply” to save your settings.

After that, the device can be accessed by entering https://{IP-address}: {https port} via the web browser (e.g. https://192.168.1.201:443).

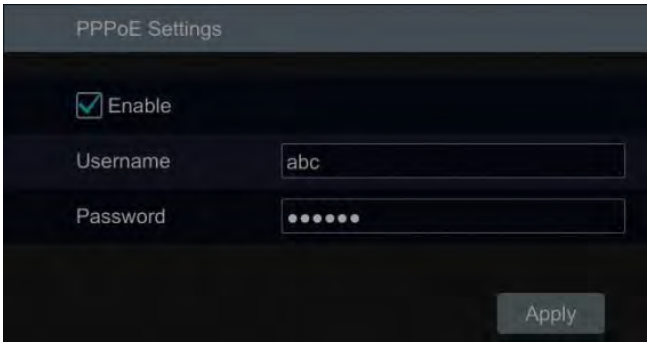
Server Port: the default server port of the NVR is 6036. The server port number can be changed as required. The port is mainly used in network video system management.
POS Port: the default POS port of the NVR is 9036.

API Server: You can log into a media player which supports the RTSP protocol. Moreover, a third-party can further develop performance through an API service.
Authentication: Basic authentication and digest authentication are optional.

RTSP Port: RTSP real-time stream protocol can be used to control the transfer of real-time data. Through a media player which supports the RTSP real-time stream protocol (Such as VLC player), you can view live images synchronously. The default RTSP port is 554 and it can be changed as needed. (The address format: rtsp://IP address:554/chID=1&streamType=main or rtsp://IP address:554/chID=1&streamType=sub; main indicators main stream; sub indicators sub stream; chID indicators channel ID).
Examples: Enable RTSP and “Anonymous”. Then open VLC player and enter the address (for example: rtsp://192.168.1.88:554/chID=1&streamType=main) in the network address bar of VLC player. You can then view the video of channel 1.

14.1.3 PPPoE Configuration

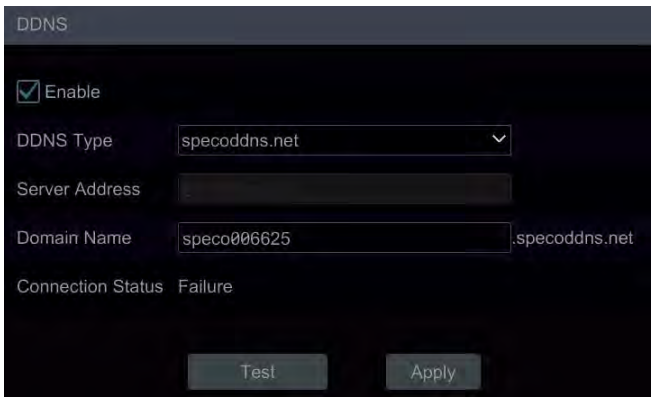
Click Start➔Settings➔Network➔PPPoE to go to the interface as shown below. Check “Enable” in “PPPoE Settings” and then enter the username and password obtained from the dealer. Click “Apply” to save your settings.



14.1.4 DDNS Configuration

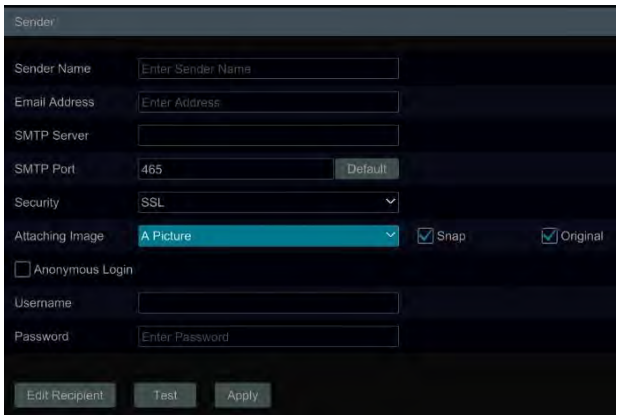
The DDNS is used to control the dynamic IP address through a domain name. Speco Technologies provides free DDNS service with US-based servers. You can access the NVR easily if the DDNS is enabled and configured. Click Start➔Settings➔Network➔DDNS to go to the interface shown below. The default DDNS type will be “specoddns.net”. A default domain name will be provided, and you can use this for your domain name or enter your own. If your

selected DDNS name is invalid or taken, please select another domain name. Click on test to confirm if the DDNS Domain is OK. If so, you may now go to [your domain name].specoddns.net with a browser and access your recorder remotely.

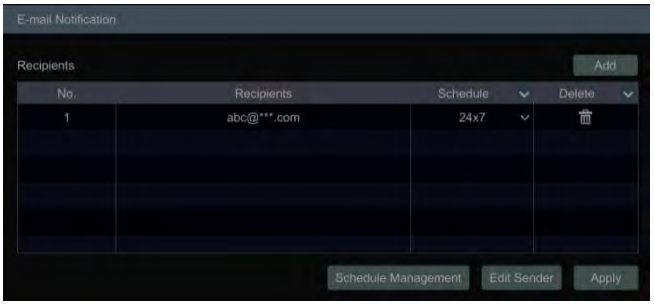


14.1.5 E-mail Configuration

Click Start➔Settings➔Network➔E-mail to go to the interface below. Enter the sender's name, e-mail address, SMTP server and SMTP port (you can click "Default" to reset the SMTP port to the default value) and then enable or disable the SSL and attaching image.
Attaching Image: Choose "NO", "A Picture" or "Multiple Pictures". If "A Picture" or "Multiple Pictures" is selected, snapshot image or original image can be selected to attach.
Select the username (the username list will be updated automatically according to the email address you input) and enter the password of the sender and then click "Apply" to save your settings (you don't have to enter the username and password if "Anonymous Login" is enabled). Click "Test" to open a window. Enter the e-mail address of the recipient in the window and then click "OK." The e-mail address of the sender will send an e-mail to the recipient. If the e-mail is sent successfully, it indicates that the e-mail address of the sender is configured correctly.



Click "Edit Recipient" to go to the following interface:



Click "Add" and then enter the recipient's e-mail address and select the schedule (if a schedule is selected, the system will send the alarm email and the recipient will receive it only in the selected schedule time) in the popup window. Click "Add" in the window to add the recipient. You can also change the recipient's receiving schedule by clicking in the "Schedule" column. Click to delete the recipient in the list. Click "Apply" to save your settings. Click "Edit Sender" to go to the e-mail configuration interface of the sender.

14.1.6 UPnP Configuration

By UPnP you can access the NVR through the web client which on the WAN via a router without port mapping.

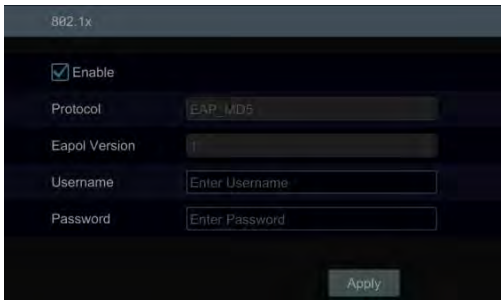
① Click Start➔Settings➔Network➔UPnP to go to the interface below.
② Make sure the router supports UPnP function and the UPnP is enabled in the router.
③ Set the NVR's IP address, subnet mask and gateway and so on corresponding to the router.
④ Check "Enable" in the interface as shown below and then click "Apply" button.

Click "Refresh" button to refresh the UPnP status. If the UPnP status is still "Invalid UPnP" after refreshing, the port number is wrong. Please change the mapping type to "Manual" and then click  to modify the port until the UPnP status turns to "Valid UPnP". Refer to the picture below. You can view the external IP address of the NVR. Enter the external IP address plus port in the address bar of your browser to access the NVR (example: http://183.17.254.19:81).



14.1.7 802.1X

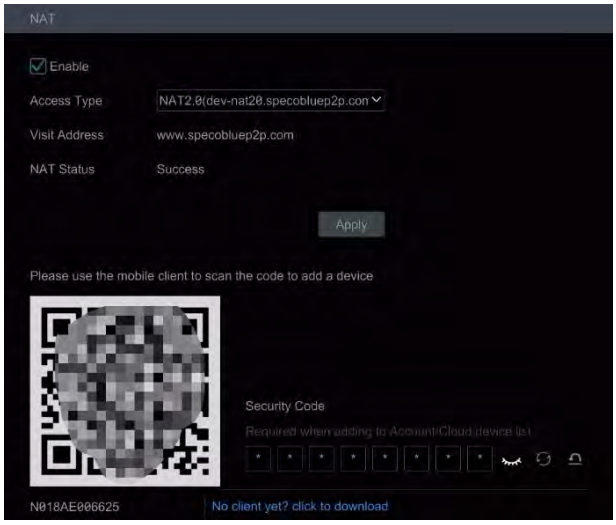
If 801.1X is enabled, NVR data can be protected. When the NVR is connected to the network protected by IEEE 802.1X, user authentication is needed.



To use this function, the NVR must be connected to a switch supporting the 802.1x protocol. The switch can be considered as an authentication system to identify the device in a local network. If the NVR connected to the network interface of the switch has passed the authentication of the switch, it can be accessed via the local network.
Protocol type and EAPOL version: Please use the default settings.
Username and password: The username and password must be the same as the username and password applied for and registered in the authentication server.

14.1.8 NAT Configuration

Click Start➔Settings➔Network➔NAT to go to the interface for NAT configuration and check "Enable". Click "Apply" to save your settings and make note of the QR code number under the QR code. Via a browser, go to connect.specotech.cloud, input the QR code number, your username and password to login. Note that you will need to install a plugin through the browser to get this feature to work.

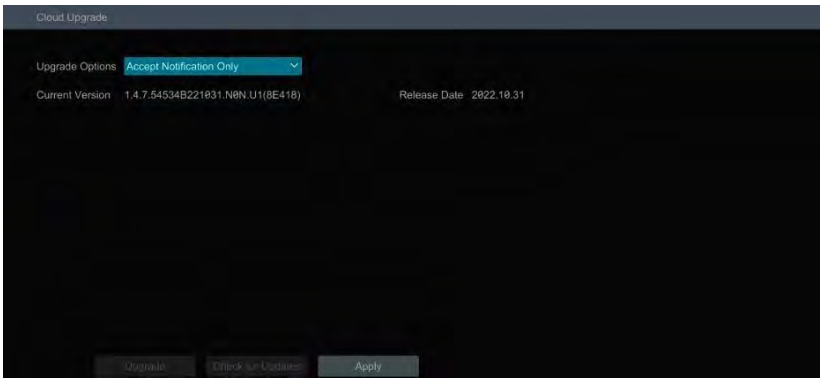


Check “Enable” and then select the NAT server address. Click “Apply” to save your settings.
You can scan the QR Code on the Speco Blue app installed on a mobile phone or tablet PC to quickly add the device to the server list of the mobile app.
Access Type: NAT or NAT2.0 can be selected.
Click “Advanced” to select the area as needed.
Note:
1. If you want to use the cloud upgrade, Speco Blue app, P2P web access or advanced browser features, you must enable NAT2.0.
2. After the NAT is enabled, use the Speco Blue app to scan the QR code. The device will be added to the server list of the Speco Blue app.
3. The device can be added to the account of the Speco Blue app only when NAT2.0 is enabled. After NAT2.0 is enabled, when you add the device to the account of the Speco Blue app, you must enter the security code of the device here.

After the device is bound to the account of the mobile app, the blue binding information will be shown under the QR code. Click this blue information to unbind it.

14.1.9 Cloud Upgrade

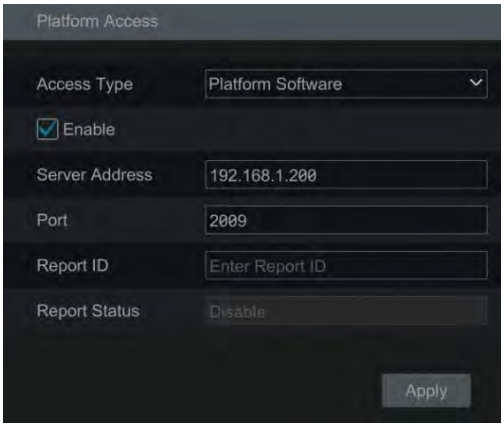
Note: Before you use cloud upgrade, please enable NAT2.0.
① Click Start➔Settings➔Network➔Cloud Upgrade as shown below.



② Select “Accept Notification Only” or click “Check for Updates” to check whether the current version is the latest. If your software version is not the latest, click “Upgrade” to download and upgrade from the cloud server.
③ Please don’t power off during the upgrade process.
④ Only users with Network user authority can activate and use this feature. If the dealer does not wish to provide this capability to their users, they can ensure that only the main Admin login has network authority.

14.1.10 Platform Access

Some models may not support this function.
This function is mainly used for connecting from the Speco Blue VMS. The setup steps are as follows: Click Start➔Settings➔Network➔Integration➔Platform Access to go to the interface.



Platform Access

① Set “Access Type” as “Platform Software” and select “Enable” as shown below.

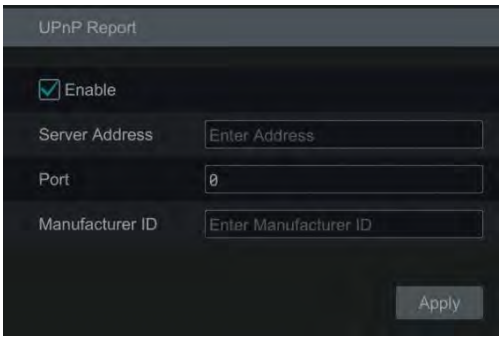
② Check the IP address and port of the transfer media server in the Speco Blue VMS. The default server port for auto report is 2009. If it is modified, please go to the transfer media interface to verify.

③ Enable the auto report in the Speco Blue VMS when adding a new device. Then self-define a device ID and complete the remaining information of the device in the Speco Blue VMS.

④ Enter the above-mentioned server address, port and report ID in the server interface. Then click “Apply” to save your settings. Now Speco Blue VMS will automatically connect this device.

14.1.11 UPnP Report Access

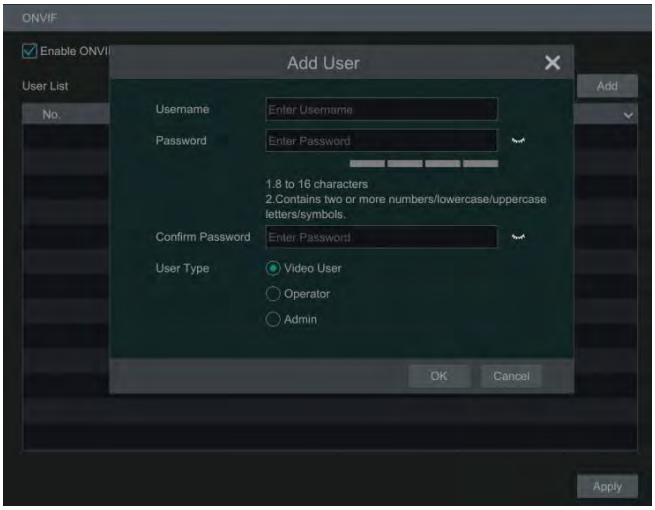
In this interface, you can also access a third-party platform by UPnP Report. Click Start➔Settings➔Network➔Integration➔UPnP Report. If this one is enabled, please enter the server address, port and manufacturer ID.



14.1.12 ONVIF

The device supports ONVIF (Profile G/T/S) and the model name can be searched on the ONVIF official website. After ONVIF is enabled, it can be searched and connected to a third-party platform via ONVIF protocol.

Click Start➔Settings➔Network➔Integration ➔ONVIF to enter the following interface:



Note: when adding the device to a third-party platform with ONVIF protocol, please check “Enable ONVIF” first and then enter the username and password created in the above interface.

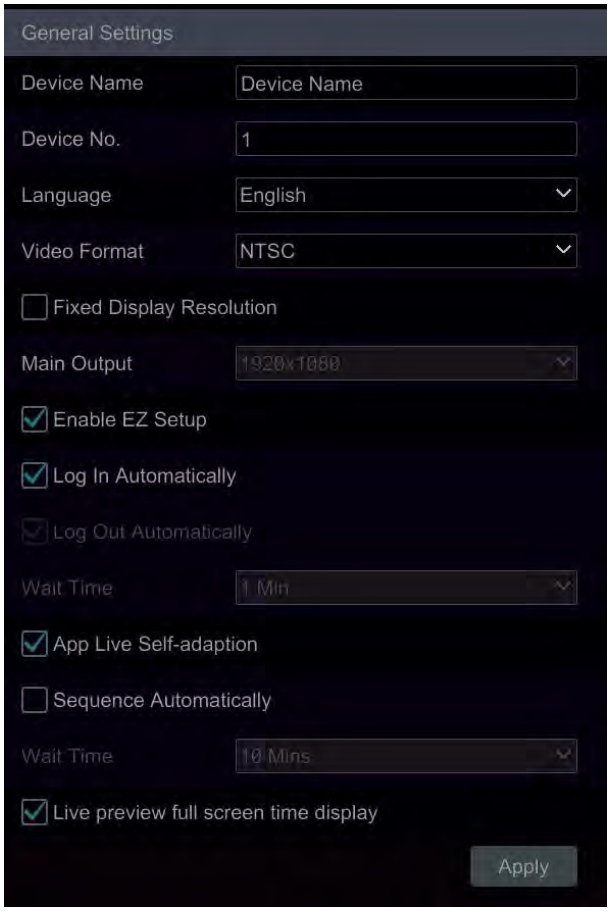
14.1.13 Network Status

Click Start➔Settings➔Network➔Network Status to view the network status to view network status conveniently.
Click Start➔Settings➔Network➔Network Status Detection. Enter the IP address and then click “Test” to check the network connection status (like network delay, packet loss).

14.2 Basic Configuration

14.2.1 General Configuration

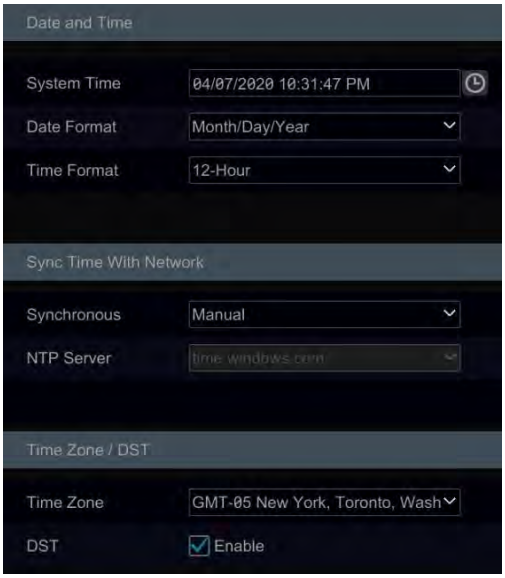
Click Start➔Settings➔System➔Basic➔General Settings to go to the interface below. Set the device name, device No., language, video format and main output. Enable or disable wizard, “Log In Automatically”, “Log Out Automatically” (if checked, you can set the wait time), “App Live Self-Adaption” and “Dwell Automatically” (if checked, you can set the wait time). Click “Apply” to save your settings.



Device Name: The name of the device. It may display on the client end or CMS to help users recognize the device remotely.
Video Format: Two modes: PAL and NTSC. Select the video format according to the camera.
Main Output: Enable "Fixed display resolution" and then select the main output as needed.
Note: You can set the resolutions of the main output and secondary output respectively if the NVR has dual outputs. Refer to the picture shown below.
Sequence Automatically: Select and set "wait time". The system will sequence automatically if it is not operated during the time you set.

14.2.2 Date and Time Configuration

Click Start➔Settings➔System➔Basic➔Date and Time to go to the interface shown below.
Set the system time, date format, time format and time zone of the NVR. The default time zone is GMT-05 New York, Toronto, Washington. If the selected time zone includes DST, the DST of the time zone will be checked by default. Click "Apply" to save your settings.
You can manually set the system time or synchronize system time with network through NTP.
Manual: select "Manual" in the "Synchronous" option and then click  after the "System Time" option to set the system time.
NTP: select "NTP" in the "Synchronous" option and then enter the NTP server.



14.2.3 Recorder OSD Settings

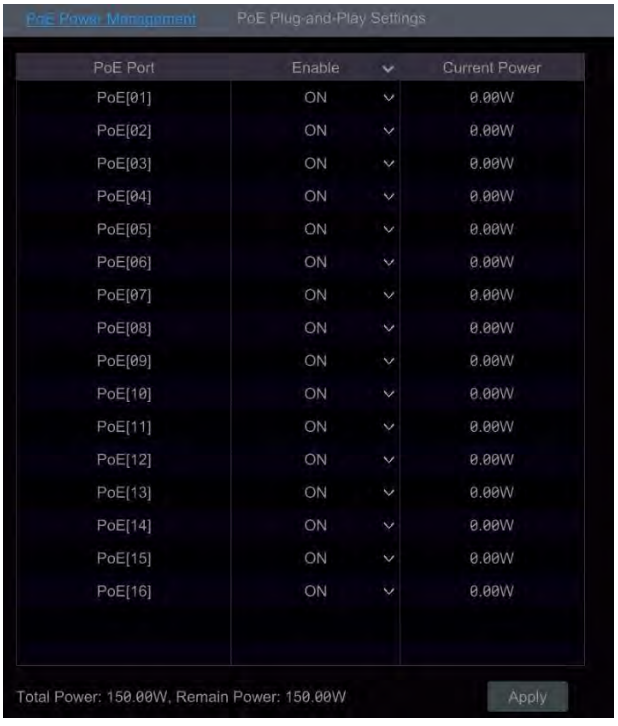
Click Start➔Settings➔System➔Basic➔Recorder OSD settings to go to the interface below. OSD name and icon can be enabled here.



14.2.4 PoE Settings

- PoE Management

Click Start➔Settings➔System➔Basic Settings➔PoE Power Management to go to the interface below. This function is only available for recorders with built-in PoE.



In this interface, you can view the the current power consumption of any attached POE cameras. The PoE power supply of the PoE camera/panel can be enabled or disabled by selecting “ON” or “OFF” as needed. This can also be done remotely through the Web browser.

- PoE Plug-and-Play Settings



The PnP function of each PoE port is enabled by default. You can directly connect a PoE IPC to the PoE port of the NVR with a network cable.

You can also connect a PoE IPC to the NVR via a PoE switch by the following steps:
1. Disable the PnP function of a PoE Port through the interface shown above.
2. Connect the PoE switch to a PoE port of the NVR with a network cable.
3. Connect the PoE IPCs to the PoE switch with network cables.
4. Go to Start➔Settings➔Network➔Internal Ethernet Port interface. Set the IP address segment and mode as needed.
5. Go to Start➔Settings➔Camera➔Edit Camera interface. Click “Add Camera” to add these PoE IPCs manually.
Note: If the above-mentioned PoE IPCs are added to the NVR successfully, the corresponding number of PoE ports will be occupied. For example, if the NVR has 16 PoE ports and one of them is used to connect a PoE switch with 8 connected PoE IPCs, then only 8 PoE ports of the NVR remain to directly connect PoE cameras. You cannot exceed the total channel count of a recorder.

14.3 Factory Default

Click Start➔Settings➔System➔Maintenance➔Factory Default and then click the “Reset to factory default” button in the interface to reset your unit to the factory default settings (check “Reset retain Network Configuration” to retain the network settings).

Note: Restoring the factory default settings will not change the time zone.

14.4 Device Software Upgrade

- **Upgrade**

You can click Start➔Settings➔System➔Information➔Basic to view MCU, kernel version, firmware version and so on.
Upgrade steps are as follows:
① Copy the upgrade software onto a USB storage device.
② Insert the USB storage device into a USB interface of your NVR.
③ Click Start➔Settings➔System➔Maintenance➔Upgrade to go to “Upgrade” interface. Select the USB device in “Device Name” option and go to the path where the upgrade software resides. Select the upgrade software and then click “Upgrade”. The system may automatically restart during upgrading. Please wait for the upgrade to finish and it’s critical to not power off the NVR during the upgrade process.

Note: The file system format of your USB mobile device used for upgrade, back up and restoration should be FAT32.

14.5 Backup and Restore

You can back up the configuration file of the NVR and export the file to other storage devices; in this way, you can implement the configuration to other NVRs of the same model and save setup time.
Insert the USB storage device into a USB interface on the NVR and then click Start➔Settings➔System➔Maintenance➔Backup and Restore to go to the interface.

- **Backup**

Select the USB device in “Device Name” option; go to the path where you want to store the configuration backup file and then click “Backup” button; finally, click “OK” in the popup window.

- **Recover**

Select the USB device in “Device Name” option; find the configuration backup file and then click “Recover” button; finally, click “OK” in the popup window.

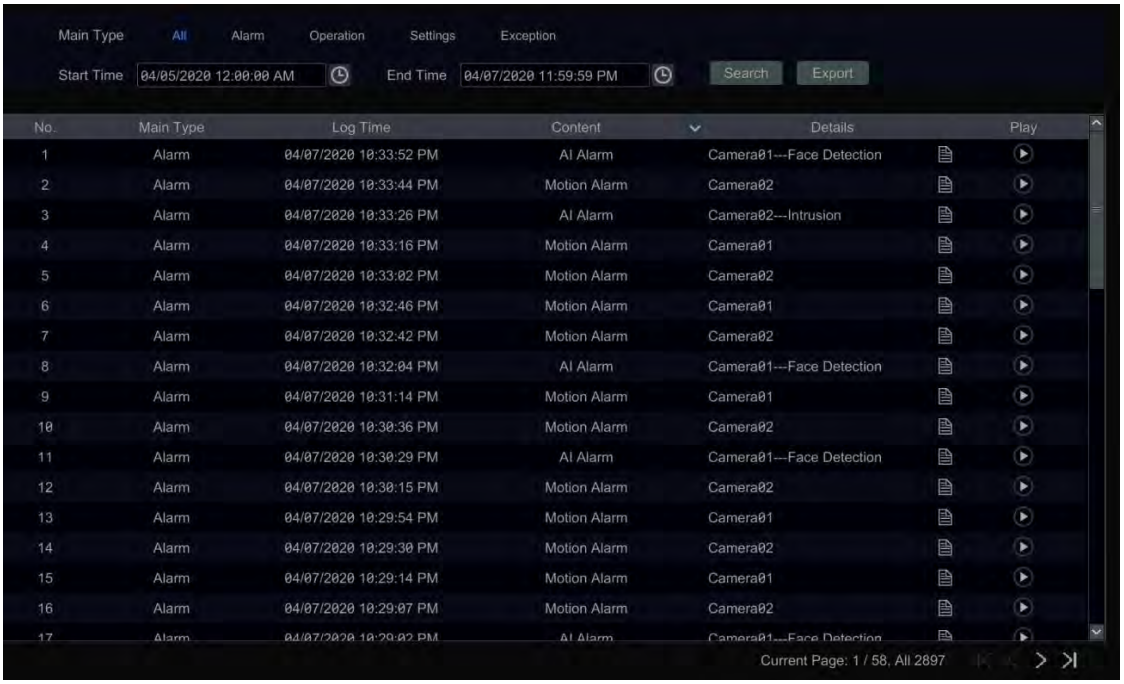
14.6 Restart Automatically

You can set an automatic restart time for your NVR to maximize performance. Click Start➔Settings➔System➔Maintenance➔Auto Maintenance to go to the interface as shown below. Enable auto maintenance, set the interval days and point of time and then click “Apply” to save your settings. The NVR will restart automatically at the appointed time every *interval* days.



14.7 View Log

Click Start➔Settings➔System➔Maintenance➔View Log to go to the log view interface. Select the log type, click  to set start time and end time and then click the “Search” button. The log file search results will be displayed in the list.



Choose the log file in the list and then click “Export” button to export the log file. Click  on the “Content” title bar to open a menu list. Using the check box, check contents on the menu list and then the log list will show only the checked log contents. Click  to play the video log.

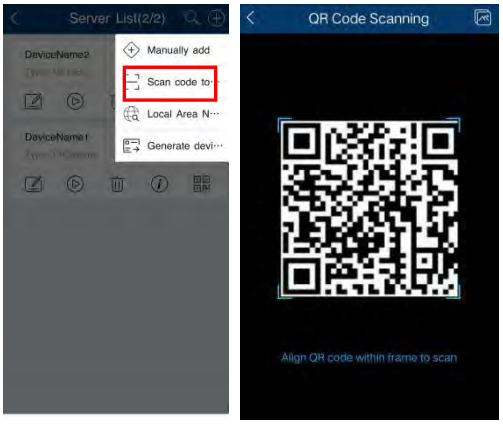
14.8 View System Information

Click Start➔Settings➔System➔Information and then click the corresponding menu to view the “Basic”, “Camera Status”, “Alarm Status”, “Record Status”, “Network Status” and “Disk” information of the system.

15 Remote Surveillance

15.1 Speco Blue app

① Enable NAT in the NVR. Refer to 14.1.8 NAT Configuration for details.
② Scan the QR Code through the Speco Blue App available for iOS and Android to easily and securely view your cameras.
③ Run the Speco Blue app, go to the "Add Device" interface and then click to scan the QR Code of the NVR (Go to Start➔Settings➔System➔Information➔Basic to view the QR Code of the NVR).
④ After scanning the QR Code successfully, enter the password to log into your mobile client.



15.2 Web LAN Access

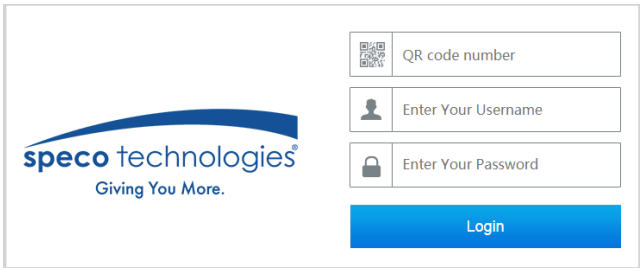
① Click Start➔Settings➔Network➔TCP/IP to go to the "TCP/IP" interface. Set the IP address, subnet mask, gateway, preferred DNS and alternate DNS of the NVR.
② Open the Web browser on your computer, enter the IP address of the NVR in the address bar and then press enter to go to the login interface shown below. You can change the display language on the top right corner of the login interface. Enter the username and password of the NVR in the interface and then click "Login" to go to the live view interface.



Notes: 1. Please make sure that the IP address of the NVR and the computer are both in the same local network segment. For example, if the IP address of the computer is 192.168.1.41, the IP address of the NVR should be set to 192.168.1.XXX.
2. If the HTTP port of your NVR is not 80 but another number, you need to input the IP address plus port number in the IE address bar when accessing the NVR over a network. For example, if the HTTP port is 81, you should enter http://192.168.1.42:81 in the address bar.

15.3 Web WAN Access

① Set the network of the NVR. Please refer to 14.1.1 TCP/IP Configuration for details.
② Click Start→Settings→Network→NAT to go to the interface for NAT configuration and check "Enable". Click "Apply" to save your settings and make note of the QR code number under the QR code. Via Internet Explorer, go to connect.specotech.cloud, input the QR code number, your username and password to login.



➢ **PPPoE Access**

① Click Start➔Settings➔Network➔PPPoE to go to the "PPPoE" interface. Check "Enable" in the "PPPoE settings" and then enter the username and password provided by your ISP. Click "Apply" to save your settings.
② Click Start➔Settings➔Network➔Network Status to view the IP address of the NVR.
③ Open the web browser on your computer, enter the IP address of the NVR like http://210.21.229.138 in the address bar and then press enter to go to the login interface. Enter the username and password of the NVR in the interface and then click "Login" to go to the live view interface.

➢ **Router Access**

① Click Start➔Settings➔Network➔TCP/IP to go to the "TCP/IP" interface. Set the IP address, subnet mask, gateway, preferred DNS and alternate DNS of the NVR.
② Set the HTTP port (it is suggested to modify the HTTP port because the default HTTP port 80 might be taken up) and enable UPnP function in both the NVR and the router. If the UPnP function is not available in the router, you need to forward the LAN IP address, HTTP port and server port of the NVR to the router. Port mapping settings may be different in different routers, so please refer to the user manual of the router for details.
③ Get the WAN IP address of the NVR from the router. Open the web browser on your computer, enter the WAN IP address plus HTTP port like http://116.30.18.215:100 in the address bar and then press enter to go to the login interface. Enter the username and password of the NVR in the interface and then click "Login" to go to the live view interface.

Note: If the WAN IP address is a dynamic IP address, it is necessary for you to use the domain name to access the NVR. Click Start➔Settings➔Network➔DDNS to set DDNS (see 12.1.4 DDNS Configuration for details). By using the DDNS function, you can use the domain name plus HTTP port like http://sunshine.dvrdydns.com:100 to access the NVR via the Internet.

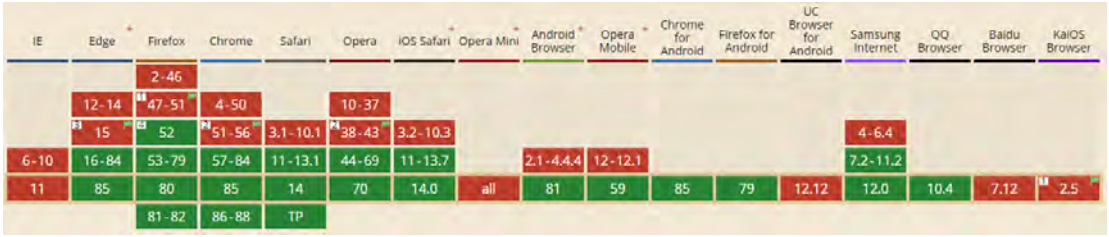
15.4 Web Remote Control

Your NVR supports Web client access with or without plug-in. The plug-in for HTLM5 browsers offers much improved features and performance. The supported browsers (green color) for remote access with a plug-in are as follows. The red color versions are not supported.

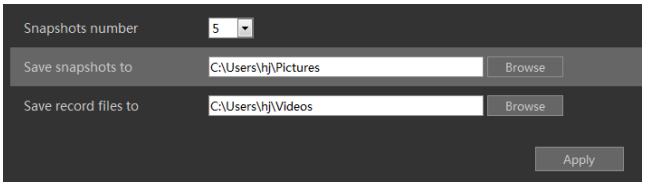
IE	Edge *	Firefox	Chrome	Safari	Opera	Safari on iOS *	Android Browser *	Opera Mobile *	Chrome for Android	Firefox for Android	Samsung Internet
		2-6									
6-9		7-10		3.1-4	10-11.5	3.2-4.1	2.1-4.3	12			
10	12-98	11-97	4-98	5-15.3	12.1-82	4.2-15.3	4.4-4.4.4	12.1			4-15.0
11	99	98	99	15.4	83	15.4	99	64	99	96	16.0
		99-100	100-102	TP							

When you access the NVR through the above web browser for the first time, the browsers need to download and install the relative components for normal preview and playback.
If your browser asks for permission on the configuration modifications after the plug-in runs, please allow it or the interface will not display normally; if the relevant ports of the plug-in (port 11563; port 12863; port 13863) are occupied, the system will tell you which program currently occupies the port. Please stop the occupying program.

The supported browsers (green color) for remote access without the plug-in are as follows. The red color versions are not supported.



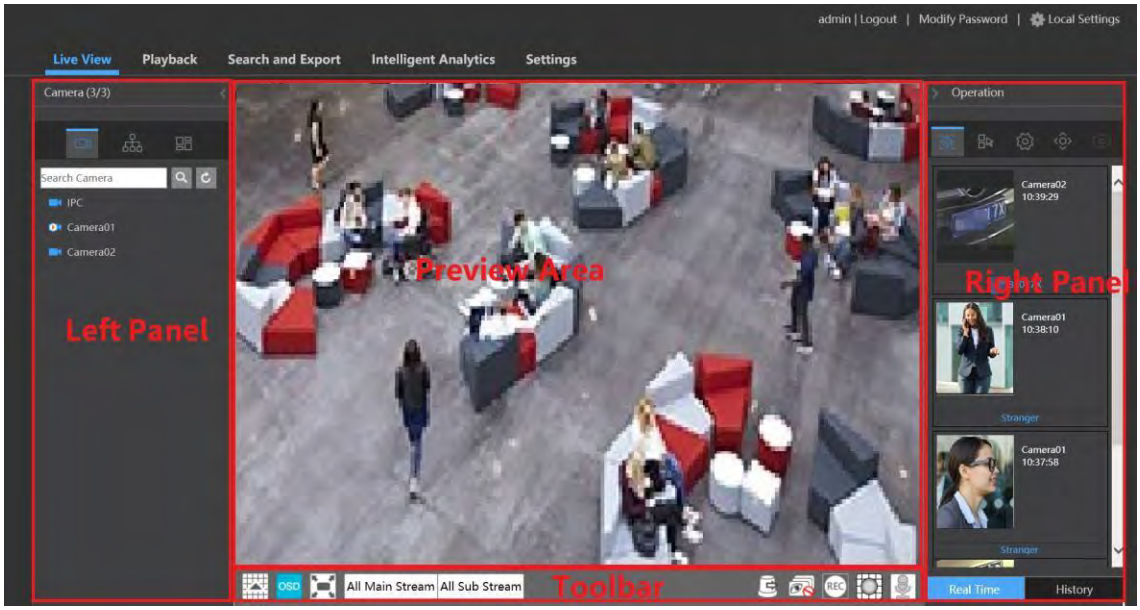
The buttons and icons on the top right corner of the remote interface are introduced as follows.
admin: the current login username.
Logout: click to log out and return to the login interface.
Modify Password: click to change the password of the currently active user. Enter the current password and then set a new password in the popup window. Click "OK" to save the new password.
Local Settings: click to change the local settings. Set the snapshot number and click "Browse" to set the snapshot path and record path as shown below. Click "Apply" to save your settings.



Below as an introduction is a web browser with the applicable plug-in installed.

15.4.1 Remote Preview

Click "Live View" in the remote interface to go to the live view interface. The live view interface consists of the four areas marked in the following picture:



➢ **Start Preview**

Select a window in the preview area and then click one online camera on the left panel to preview the camera in the window. You can click in the tool bar to preview all the cameras.

➢ **Left Panel Introduction**

Click on the left panel to hide the panel and click to show the panel. You can view all the added cameras and groups on the left panel.

- **View Camera**

Click to view the cameras. You can view the number of all the added cameras and the online cameras. For instance, the left number 3 in

Camera (3/3) on the left panel stands for the number of online cameras; the right number 3 stands for the number of all the added cameras. Enter the camera name in the search box and then click to search for the camera. Click to refresh the camera list.

- **View Group**

Click to view the groups. The top side of the left panel displays all the groups and the bottom displays all the cameras in the group.

- **View Scheme**

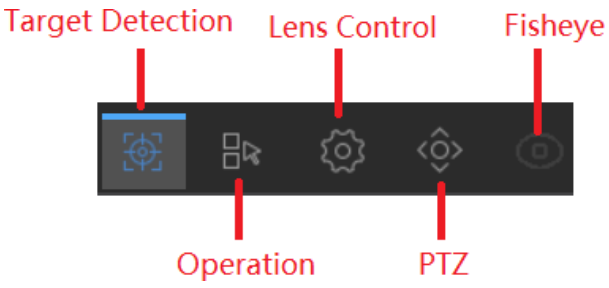
Click to view the scheme. All schemes can be shown in the left panel. Double click the scheme name to quickly invoke it.

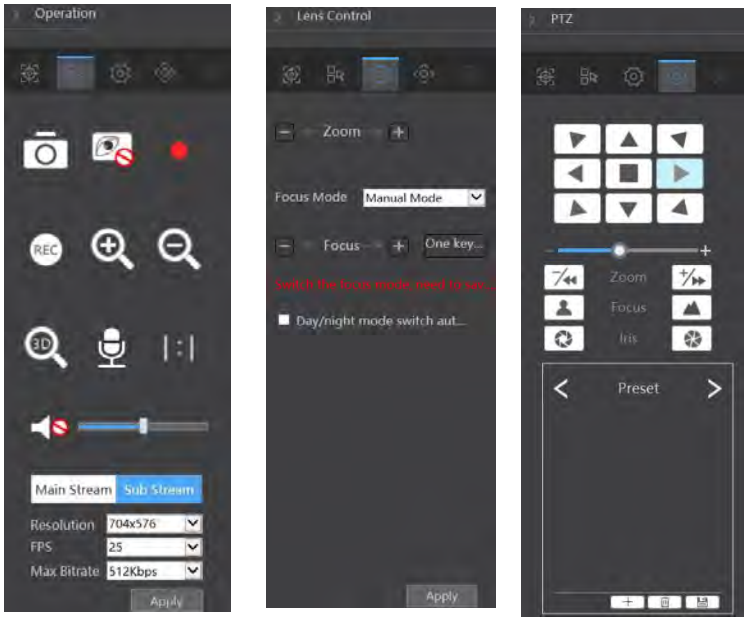
➢ **Tool Bar Introduction**

Button	Meaning
	Screen mode button.
OSD OFF	Click to disable OSD. Click OSD ON to enable OSD.
	Click to show full screen. Right click on the full screen to exit full screen.
All Main Stream All Sub Stream	Click "All Main Stream" or "All Sub Stream" to set the stream of all the cameras at once.
	Manual alarm button. Click to open a window and then trigger and clear the alarm-out in the window manually.
	Click to preview all cameras.
	Click to close all the preview cameras.
REC	Click to start recording all cameras to the local computer. Click REC again to stop recording.
	Click to start manual record of all cameras to the NVR. Click again to stop manual record for all cameras.
	Click to enable talk through the NVR.

➢ **Right Panel Introduction**

Click on the right panel to show the panel and click to hide the panel.





Click one camera window in the preview area and then click Main Stream to set the camera's live view stream and record stream to main stream in manual record mode; click Sub-stream to set the camera's live view stream and record stream to sub stream. In sub stream tab, set the resolution, FPS and bitrate and then click "Apply" to save your settings.

Operation panel introduction:

Button	Meaning
	Click to take snapshots.
	Click to start recording to computer; click it again to stop recording.
	Click to zoom in on the image of the camera and then drag the mouse on the camera image to view the hidden area.
	Click to zoom out of the image of the camera.
	The 3D zoom in function is designed for P.T.Z. Click the button and then drag the image to zoom in or zoom out the image; click the image on different areas to view the image of the dome omni-directionally.
	Click to start recording to the NVR
	Click to close the preview camera.
	Click to enable audio and then drag the slider bar to adjust the volume. You can listen to the camera audio by enabling audio.

PTZ panel introduction:

Button	Meaning
	Click / / / / / / / / to rotate the dome; click to stop rotating the dome.
	Drag the slider to adjust the rotating speed of dome.
Zoom	Click / to zoom in/out camera image.
Focus	Click / to increase/ decrease the focal length.
Iris	Click / to increase/decrease the iris of the dome.
Preset	Click to view the preset list and then click the button in the list to call the preset. Click to add a preset; click to save the preset settings; click to delete the selected preset
Cruise	Click to view the cruise list. Click to add a cruise; click to play the cruise; click to stop cruise.
Cruise Group	Click to view the cruise group list. Click to add a cruise group; click to play the cruise group; click to stop cruise group.

Button	Meaning
Trace	Click to view the trace list. Click + to add a trace; click ▶ to play the trace click ● to start record.

15.4.2 Remote Playback

Click "Playback" in the remote interface to go to the playback interface.

① Check the record event types and cameras on the left panel. Set the record date on the calendar beside the time scale.

② Click Search to search the record data and then click Play or directly click the time scale to play the record.

The operation of the playback time scale is like that of the time scale in the main program of the NVR. Please refer to 8.2 Playback Interface Introduction for details.

Introduction of playback control buttons:

Button	Meaning
■	Stop button.
◀	Rewind button. Click to play video backwards.
▶	Play button. Click to play video forwards.
❚❚	Pause button.
◀◀	Deceleration button. Click to decrease the playing speed.
▶▶	Acceleration button. Click to increase the playing speed.
◀❙	Previous frame button. It works only when forward playing is paused in single screen mode.
❙▶	Next frame button. It works only when forward playing is paused in single screen mode.
−30s+	Click − to step backward 30s and click + to step forward 30s.
✂	Backup start time button. Click the time scale and then click to set the backup start time.
✂	Backup end time button. Click the time scale and then click to set the backup end time.
⬇	Export button.
⬇	Backup tasks button. Click to view the backup status.
☰	Event list button. Click to view the event record of manual/schedule/sensor/motion.

15.4.3 Remote Export

Click "Export" in the remote interface to go to the export interface. You can export the record by event search or by time search.

➢ **Event Search**

Check the record type on the left side of the interface and then click to set the start time and end time; check the cameras and then click on the right side to search the record (the searched record data will be displayed in the list); check the record data in the list and then click "Export" button to export the record.

➢ **Time Search**

Click to set the start time and end time on the left side of the interface; check the cameras and then click on the right side to backup the record.

➢ **Snapshots**

The system will display all captured images automatically in the list. Click to delete an image. Click to open the "Export" window. Click to open the "View Image" window. Click to export the image.

➢ **View Export Status**

Click "Export Status" to view the export status. Click "Pause" to stop the export; click "Resume" to continue the export; click "Delete" to delete the task.

15.4.4 Intelligent Analysis

Click "Intelligent Analysis" in the remote interface to configure smart search, statistics, sample database, parking lot management, face attendance and face check in. All these settings are similar to that of the NVR. See the configurations of the NVR for details.

15.4.5 Remote Configuration

Click "Function Panel" in the remote interface and then configure the camera, record, alarm, disk, network, account and authority and system of the NVR remotely. All these settings are the same as the settings of the NVR. See the configurations of the NVR for details.

➢ **Jumping to IPC Web Client**

Except for IPCs that access with RTSP protocol, the IPC can directly jump from the NVR web client to the IPC web client by clicking in the above-mentioned interface.

1. Please log into the NVR Web Client (See 15.2 Web LAN Access or 15.3 Web WAN Access for details).
2. Click Function Panel➔Camera➔Edit Camera to go to the following interface:



No.	Camera Name	Address	Port	Status	Protocol	Model	Preview	Edit	Delete	Settings	Upgrac	Version
1	O4FB7M	192.168.56.176	554		Speco	O4B7M						5.1.1.0(29632)
2	[POE02]O5T2	192.168.78.102	554		Speco	O5T2						5.1.1.0(22278)
3	[POE03]O5LT1	192.168.78.103	554		Speco	O5LT1						5.1.1.0(26271)

3. Select the camera and click to log into the web client of the camera. From there, you can set the parameters of the camera as needed.

Appendix A FAQ

Q1. Why can't I find the HDD (Hard Disk Drive)?

a. Please check the power and SATA data cables of the HDD to make sure they are properly connected.

b. For some NVRs with the 1U or small 1U case, the power of the adapter may be not enough for operating your HDD. Please ensure you are using the power adaptor supplied along with your specific NVR.

c. Please make sure the HDDs are compatible with the NVR. See Appendix C Compatible Device List for details.

d. The HDD could have gone bad. Confirm with Speco Technologies technical support and follow the instructions to replace the HDD.

Q2. Why are there no images in some or all the camera windows?

a. Please make sure the resolutions of the cameras are supported by your NVR.

b. Please make sure the network cables of the IP cameras and NVR are both connected properly, and the network parameters are set correctly.

c. Please make sure the network and the switch are both up and running normally.

Q3. Do does my screen have no output after booting the NVR normally?

a. Please make sure the screen, HDMI or VGA cables are functioning and properly connected.

b. Please make sure the screen supports the resolution of 1280*1024, 1920*1080 or 3840*2160 (4K*2K). The NVR cannot self-adapt to a screen of which the resolution is lower than 1280*1024. In that event, the screen will remind you that the resolution is not supported by the NVR or just not display anything. Please change the screen to 1280*1024, 1920*1080 or 3840*2160 resolution before booting the NVR.

Q4. What do I do if I have forgotten my password?

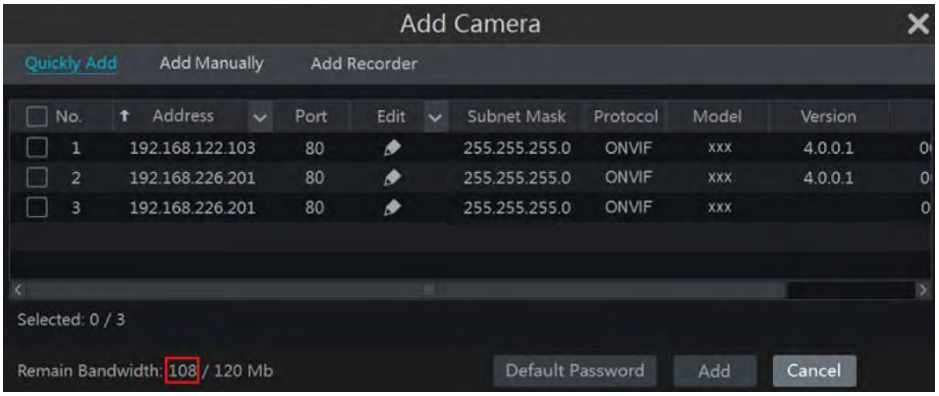
a. The ***admin*** password can be reset through the "Edit Security Question" function.

Click the "Edit Security Question" button in the login window and then enter the corresponding answer to the selected question in the popup window. If successful, the password for ***admin*** will be reset to ***123456***. If you forget the answers to these questions, there is no other way to restore the ***admin*** password, and you'll have to contact your dealer or Speco Technologies' technical support for assistance.

b. The passwords of other users can be reset by ***admin***, please refer to 13.1.2 Edit User for details.

Q5. Why will my NVR not accept the maximum number of IP cameras?

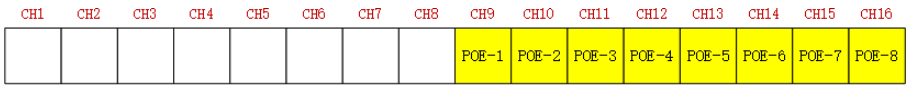
Take a 16 CH NVR as an example. Some 16 CH NVRs support a maximum of 120Mbps bandwidth input (please take the real device standard). Refer to the picture below. The remaining bandwidth should be larger than the bandwidth of the IP cameras you want to add, or you will fail to add an IP camera. You should lower the added cameras' bitrate to relieve the bandwidth. It is recommended to add cameras using "Quickly Add" for batch adding.



Q6. Why is an IP camera connected directly to the PoE port of my NVR not displayed automatically in the camera list?

a. Please check whether a PoE port is occupied by another IP camera that may have been added through the network (including a PoE switch).

- Take a 16 CH NVR with 8 PoE ports as an example. The resource distribution of the 16 CH IP cameras is shown in the picture below.



When you add IP cameras through the network, the IP cameras will occupy ports from CH1, CH2, CH3, CH4… in the sequence they are added; if you directly connect IP cameras to the PoE ports of the NVR, the IP cameras will occupy ports from CH9 to CH16 according to the number of the PoE port each IP camera is connecting to.

Let's say 12 IP cameras have been added to the NVR through the network and no IP cameras have been directly connected to a PoE port. The 12 IP

cameras occupy the 8 network resources from CH1 to CH8 and 4 PoE resources from CH9 to CH12 which otherwise would have been occupied by connecting the IP cameras directly. In this situation, if you directly connect one IP camera to PoE5, PoE6, PoE7 or PoE8, the IP camera will be displayed in the camera list automatically; if you connect it to PoE1, PoE2, PoE3 or PoE4, it won't be displayed in the camera list and will show a resource conflict; if you need to connect it to PoE1, PoE2, PoE3 or PoE4, you should first delete the IP camera which occupies the PoE port resource and then reconnect your camera to the PoE port.

- Take an 8 CH NVR with 8 PoE ports as another example. The resource distribution of the 8 CH IP cameras is shown in the picture below and the addition rules of the IP cameras are similar to the rules mentioned above. Please refer to above for details.

CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
POE-1	POE-2	POE-3	POE-4	POE-5	POE-6	POE-7	POE-8

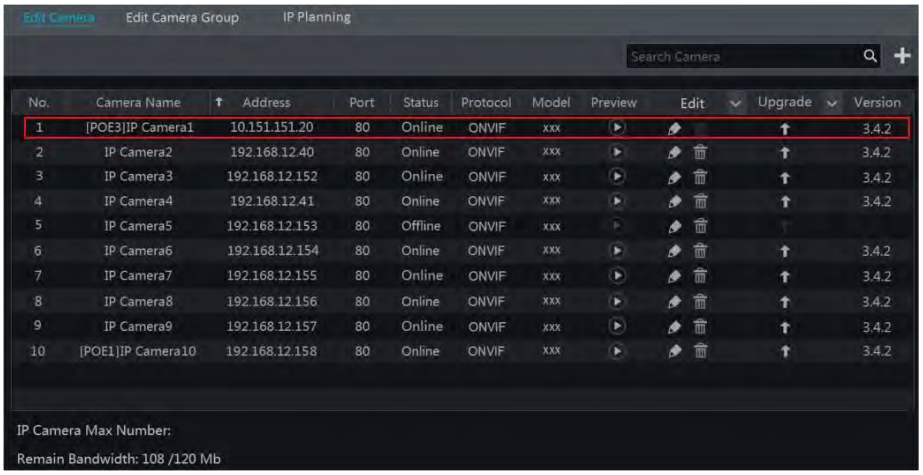
b. Please make sure that the internal Ethernet port and an IP camera which directly connects to a PoE port through the ONVIF protocol are in the same network segment, or you will fail to add the camera.
Log into the IP camera's Web client and then enable DHCP (to obtain an IP address automatically); or manually change the IP address of the IP camera to put it in the same network segment as the internal Ethernet port.

c. Check whether the number IP cameras exceeds the maximum allowed.
If the number of IP cameras exceeds the maximum allowed, the system will alert you that the IP camera count is exceeds the limit.

Q7. Why do I have no image output on an IP camera directly connected to the PoE port of my NVR using the ONVIF protocol, even though it's shown on the camera list?

Please make sure the username and password of the IP camera are correct. The IP camera's username and password can be modified through the two ways mentioned below.

① Click "Edit Camera" in the Camera module of the setup panel to go to the interface shown below. Click  to modify the username and password of the IP camera (enter the correct username and password of the IP camera in the popup window and then click "OK").



② Go to the live view interface and then click  in the preview window of the IP camera to edit the IP camera's username and password.

Q8. Why is my system not recording?

a. Make sure the HDD was formatted prior to use.

b. The recording schedule has not been set in manual record mode. Please refer to 7.1.2 Schedule Settings for details.

c. It's possible your HDD is full and the NVR is not able to record. Check HDD information from Disk Management and if required, please enable the recycle function (please see 7.1.3 Advanced Configuration for details).

d. There is no disk in the disk group, so please add at least one disk to the group. Refer to 7.4.2 Storage Mode Configuration for details.

e. The HDD could have gone bad. Confirm with Speco Technologies technical support and follow the instructions to replace the HDD.

Q9. Fail to access the NVR remotely through IE.

a. Note that Internet Explorer is no longer supported by Microsoft and it's recommended to use another browser such as Chrome, Edge, Firefox, etc.

b. Please make sure the IE version is IE8 or above.

c. Please check whether the PC has enabled the firewall or installed the antivirus software. Please try to access the NVR again after you disable the firewall and stop the antivirus software.

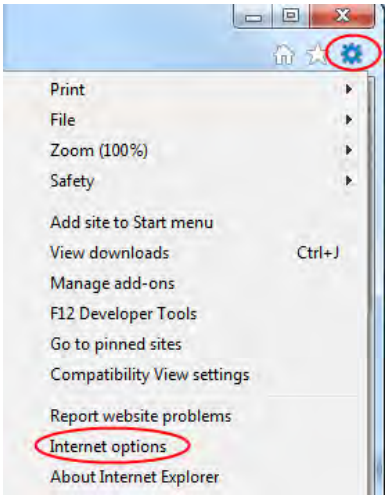
d. Allow & block list may have been set in Account and Authority settings. The PC of which the IP address is in the block list or out of the allow

list cannot access the NVR remotely.

Q10. ActiveX control cannot be downloaded. How can I do this?

a. IE browser may block the ActiveX control. Please do setup as per the steps mentioned below.

① Open IE browser. Click ➔Internet Options.



② Select Security➔Custom Level. Refer to Fig 10-1.

③ Enable all the sub options under "ActiveX controls and plug-ins". Refer to Fig 10-2.

④ Then click "OK" to finish setup.

b. Other plug-ins or anti-virus may block ActiveX. Please disable or do the required settings.

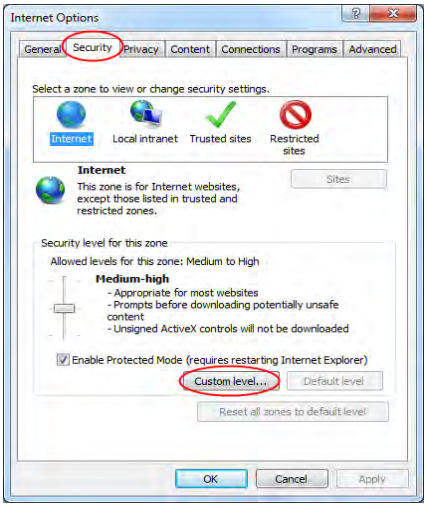


Fig 10-1

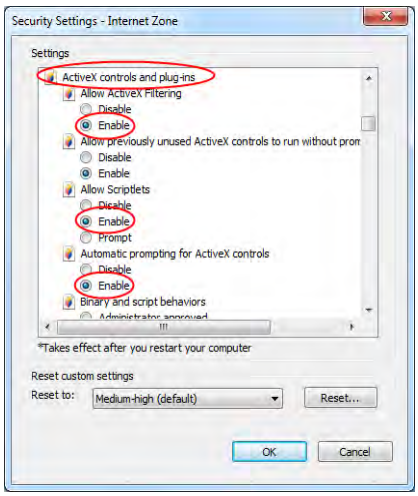


Fig 10-2

Q11. How do I play a backup file?

a. Recording backed up by NVR: insert the USB device with the recorded backup files unto the USB interface of a PC, and then open the USB device path. The recording can be backed up in either the private format or AVI format by the NVR.

- If you select the private format when backing up an NVR recording, an RPAS (Recording Player Application Software) compression package will be backed up to the USB device automatically along with the record data. Uncompress the "RPAS.zip" and then click "RPAS.exe" to set up RPAS. After the setup is completed, open RPAS player and then click "Open Folder" button in the middle of the interface to select the record data. Refer to Fig 11-1.

Select camera in the resource tree on the left side of the interface to play the camera recording. Click  on the tool bar under the camera image to enable audio. Refer to Fig 11-2.

Note: The recording will not have audio output if you disable the audio when recording by NVR. Please see 7.1.1 Mode Configuration and 7.2 Encode Parameters Setting for details.

- If you select the AVI format when backing up recording by NVR, the recording backup data can be played by a video player that supports this format.

b. Recording backed up through web. The recording can only be backed up via web using the AVI format. The recording can be backed up to a PC and played by a video player which supports this format.

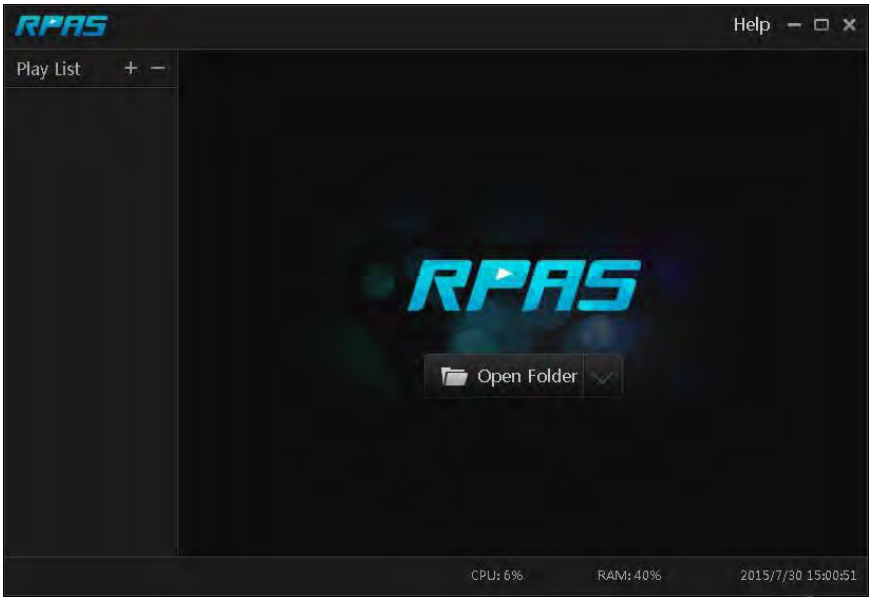


Fig 11-1

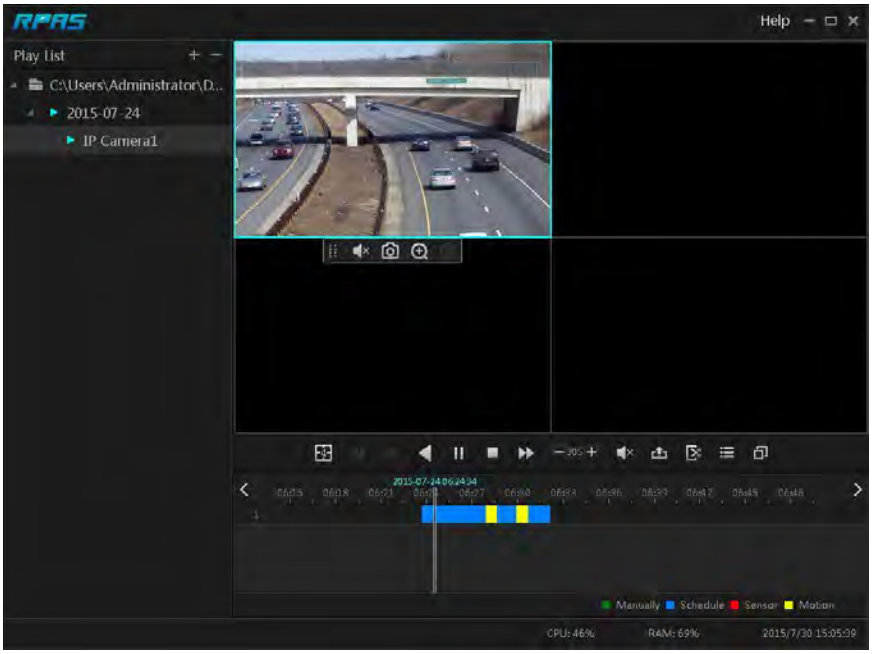


Fig 11-2

Appendix B Calculate Recording Capacity

The recording capacity is mainly up to the recording resolution, recording stream and bitrate. Different image quality parameters decide different disk capacity occupation under equal circumstances. The higher the recording resolution, recording stream and recording bitrate is, the more disk capacity is taken up under equal circumstances. The calculation format of the recording capacity is shown as below.

Recording Capacity (MB) = Bitrate (Kbps) ÷1024 ÷ 8 × 3600 × Recording hours per day × Record Storage Days × channel numbers

3600 means record for an hour(1TB=1024GB，1GB=1024MB，1MB=1024KB，1Byte=8bit).

Record Bitrate (Kbps)	Used Space (MB/H)	Used Space (MB/D)
10240	4500	108000
8192	3600	86400
6144	2700	64800
4096	1800	43200
3072	1350	32400
2048	900	21600
1024	450	10800
768	337.5	8100
512	225	5400
384	168.75	4050
256	112.5	2700

The table below shows the recording capacity requirements for record storage in 30 days.

Record Bitrate (Kbps)	Recording Capacity (TB)					
	1CH	4CH	8CH	16CH	32CH	64CH
10240	3.09	12.36	24.72	49.44	98.88	197.76
8192	2.48	9.89	19.78	39.56	79.11	158.21
6144	1.86	7.42	14.84	29.67	59.33	118.66
4096	1.24	4.95	9.89	19.78	39.56	79.11
3072	0.93	3.71	7.42	14.84	29.67	59.33
2048	0.62	2.48	4.95	9.89	19.78	39.56
1024	0.31	1.24	2.48	4.95	9.89	19.78
768	0.24	0.93	1.86	3.71	7.42	14.84
512	0.16	0.62	1.24	2.48	4.95	9.89
384	0.12	0.47	0.93	1.86	3.71	7.42
256	0.08	0.31	0.62	1.24	2.48	4.95

For instance, there is a 32CH NVR recording 24 hours per day and the recordings are stored for 30 days and the NVR adopts dual stream recording. If the main stream is 4096Kbps and the sub stream is 1024Kbps, then the total recording capacity is 49.45TB (39.56TB + 9.89TB).
Considering the format loss of the disk is about 10%, the required disk capacity will be 55TB (49.45TB ÷ (1-10%)).

Model: **N8NRE/N16NRE/N32NRE**
N16NRD
N4NRN/N8NRN/N16NRN/N32NRN
N4NRL/N8NRL
N8NRP/N16NRP
N64NR/N128NR

Federal Communications Commission (FCC) Statements

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Responsible Party:

Speco Technologies
200 New Highway
Amityville, NY 11701

Speco Technologies is constantly developing and improving products.
We reserve the right to modify product design and specifications without notice and without incurring any obligation.