

ENFORCER®

4K Network Video Recorder

Installation Manual



DRN-116-4TB shown



Model	Channels	Included HDD*	Internal storage capacity
DRN-104-2TB	4 channels	2TB SATA	1 SATA, up to 10TB
DRN-108-2TB	8 channels	2TB SATA	1 SATA, up to 10TB
DRN-116-4TB	16 channels	4TB SATA	2 SATA, up to 10TB each

*Other HDD sizes available by special order, including 1/2/4/6/8/10 TB

The ENFORCER Network Video Recorder offers 4K and H.265 High Efficiency Video Coding, reducing bandwidth and storage requirements without giving up video quality. These NVRs are perfect for a wide range of applications due to their cost-effectiveness and simple-to-install design.

- Compatible with 8MP (4K) IP Camera
- QR code and Wizard assistance for easier first-time setup
- Plug-and-Play
- Built-in PoE Ports (IEEE 802.3af/at)
- VGA and HDMI® output up to 4K resolution
- ONVIF® Profile S conformant
- Live view recording and playback up to 4K@30FPS
- P2P for simple remote connection using PC or mobile device
- Supports up to 9 AI functions, up to 12 when used with EV-N2806-2W4WQ

DRN-116-4TB Additional Features:

- Supports up to two (2) HDDs
- Live view recording and playback up to 4K@45FPS
- 8 Sensor inputs, 1 alarm relay output

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SECO-LARM®

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Specifications

Model	DRN-104-2TB	DRN-108-2TB	DRN-116-4TB
Video			
Resolution	8MP (4K), 5MP, 2MP (1080p), 1.3MP (960p), 1.0MP (720p)		
Incoming bandwidth	50Mbps	76Mbps	112Mbps
Outgoing bandwidth	48Mbps	32Mbps	96Mbps
HDMI® output	1024x768, 1280x720, 1280x1024, 1440x900, 1920x1080, 2560x1440, 3840x2160 (4K)		
VGA output	1024x768, 1280x720, 1280x1024, 1440x900, 1920x1080		
Frame rate	4K: Up to 30FPS 4MP: Up to 60FPS 2MP: Up to 120FPS	4K: Up to 45FPS 4MP: Up to 90FPS 2MP: Up to 180FPS	
Compression	H.265+/H.265/H.264+/H.264		
AI	Support		
Playback function	Fast forward / backward (2x,4x, 8x, 16x)		
	Slow forward (1/2x, 1/4x, 1/8x, 1/16x)		
User Interface			
Local	UI5.0		
Web	IE10/11, Safari V12.1 above, Firefox V.52 above, Chrome V.57 above, Edge V.79 above		
Auxiliary Interface			
HDMI® output	1 Output		
VGA output	1 Output		
POE input	4x RJ45	8x RJ45	16x RJ45
USB	USB2.0 x 1 front & 1 rear		
Alarm I/O	None		8 In / 1 Out
Included HDD	2TB SATA		4TB SATA
Internal storage capacity	1 SATA HDD, up to 10TB		2 SATA HDD, up to 10TB
General			
Power supply	48VDC@1.2A	48VDC@1.5A	48VDC@3.75A
Power consumption	5W	6W	8W
Operating humidity	Less than 90%RH		
Operating temperature	32°~104°F (0°~40°C)		
Dimensions	11 ¹³ / ₁₆ "x8 ¹⁵ / ₁₆ "x2 ¹ / ₁₆ " (300x227x53 mm)		14 ⁷ / ₈ "x13 ³ / ₈ "x2" (378x340x50 mm)

Warnings



Please read the following safety instruction carefully to avoid personal injuries and prevent the equipment and other connection devices from being damaged.



- The device should be used in compliance with local laws, electrical safety regulations, and fire prevention regulations.
- Use the provided power supply only. Never operate the equipment using another power supply.
- Insert the plug firmly into the power socket. Do not connect several devices to a single power adapter.
- Power the device off before connecting and disconnecting accessories and peripherals.
- The NVR should not be placed in a dusty location.
- The NVR should be placed in a closed area with good ventilation and away from sunshine, rain, and water. If the device should be exposed to water, unplug the power cable immediately.
- The NVR includes an HDD which produces a large amount of heat during operation. Do not block the cooling vents (on the top, bottom, and both sides) during operation.
- Never place the NVR in an unstable location. The NVR may fall causing serious personal injury or death.
- Keep the surface of the NVR clean and dry. Use only a soft cloth to clean the outer case of NVR. Do not use liquid aerosol cleaners.
- If smoke, odor, or noise should come from the NVR, turn off the power immediately, unplug the power cable, and contact your local dealer.
- This product contains a coin/button cell battery. If the battery is swallowed, it can cause severe internal burns in under 2 hours possibly leading to death.
- If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
- Keep new and used batteries away from children at all times.
- Do not dispose of the battery in a fire or hot oven, or mechanically crush or cut the battery. Doing so may cause an explosion.
- Do not leave the battery in an extremely high temperature environment. Doing so may result in an explosion or the leakage of flammable liquid or gas.
- Do not subject the battery to extremely low air pressure. Doing so may result in an explosion or the leakage of flammable liquid or gas.

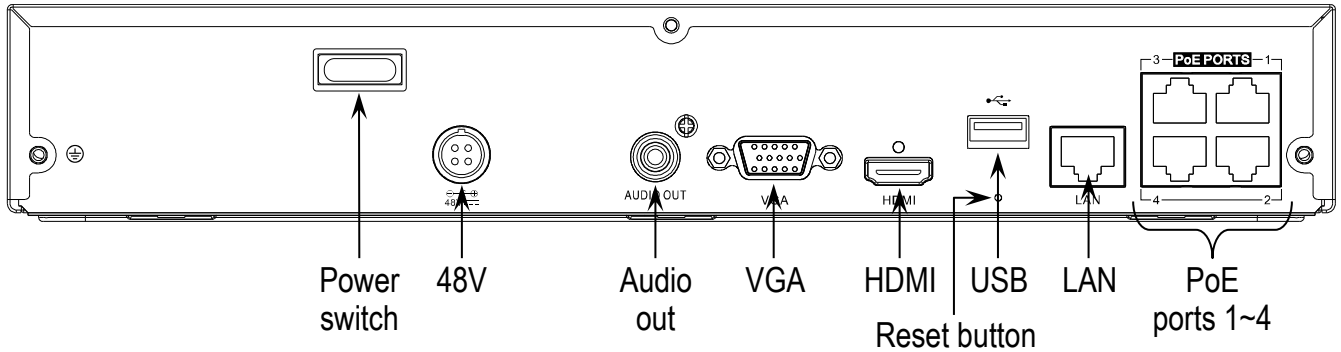
Parts List

- | | | | |
|-----------------|----------------------|-----------|-------------------------|
| 1x NVR | 1x 3' HDMI® Cable | 1x Mouse | 4x Screws for 2.5" HDD* |
| 1x Power supply | 1x 3' Internet cable | 1x Manual | |

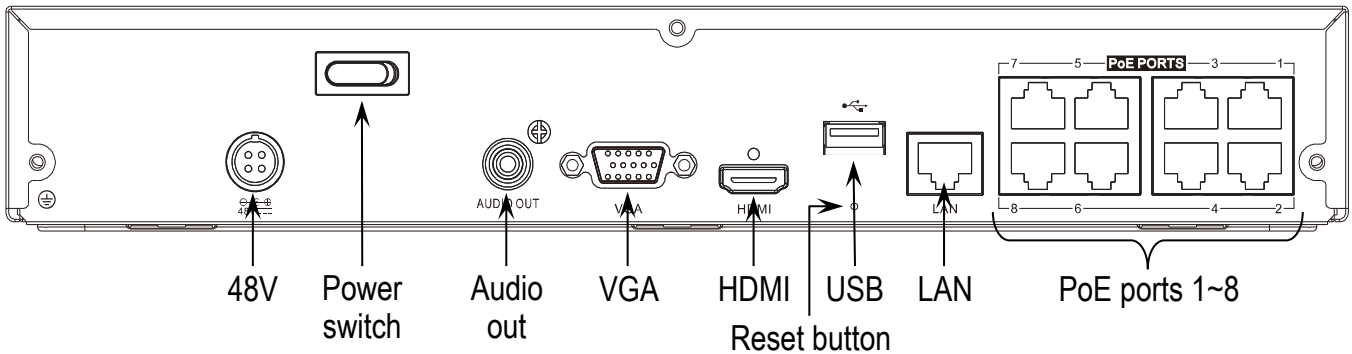
*DRN-116-4TB includes 8x mounting screws for 2.5" HDD and 4x mounting screws for 4.5" HDD.

Overview

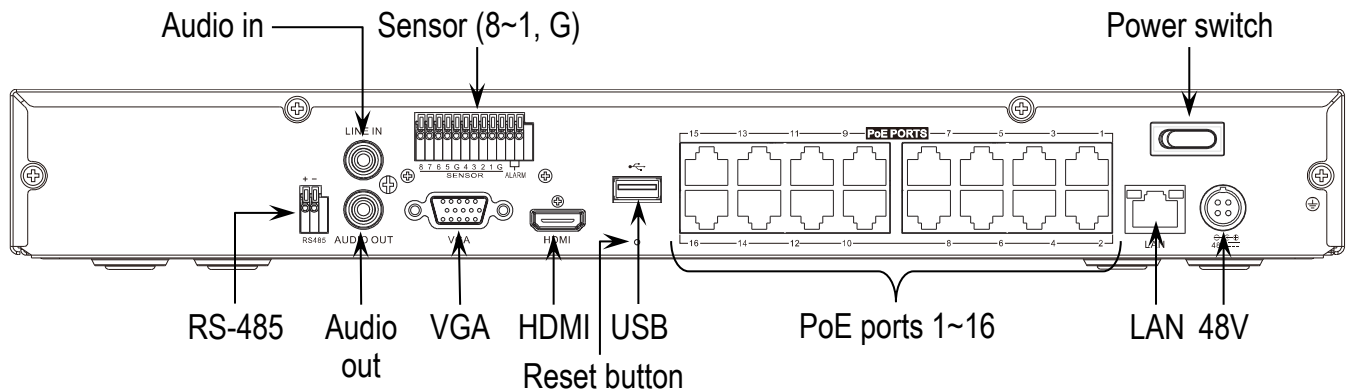
DRN-104-2TB



DRN-108-2TB



DRN-116-4TB



REAR PANEL FEATURE DESCRIPTIONS

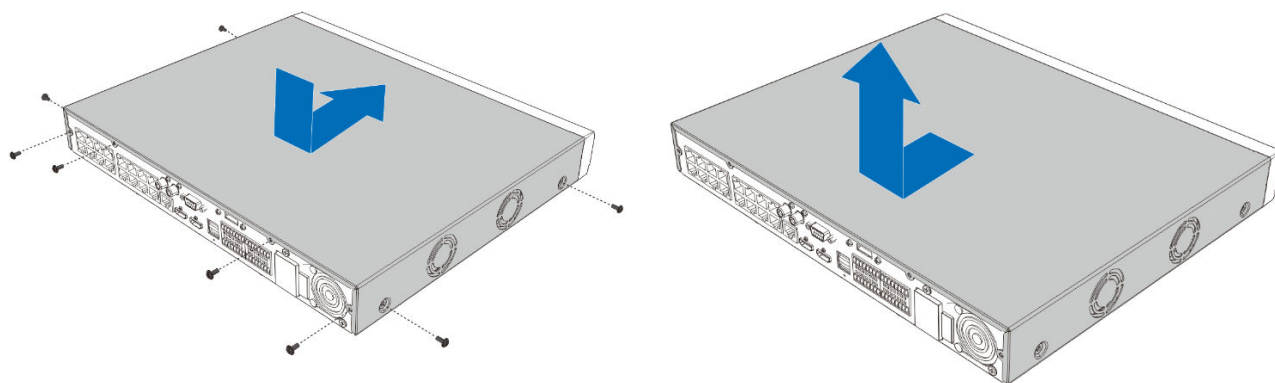
- **48V** – Connect the included power supply.
- **LAN** – Connect to the internet router.
- **PoE Ports** – Connect to the PoE IP Cameras.
- **USB** – Connect the included mouse.
- **HDMI®** – Connect to a monitor via an HDMI® connection.
- **VGA** – Connect to a monitor via a VGA connection.
- **Alarm** – Connect to an external alarm output device such as a strobe or siren.
- **Sensor (8~1, G)** – Connect to external alarm sensors.
- **Audio Out** – Connect to speakers.
- **Audio In** – Connect to a microphone.
- **RS-485** – Connect to an RS-485 device.

Installation and Connection

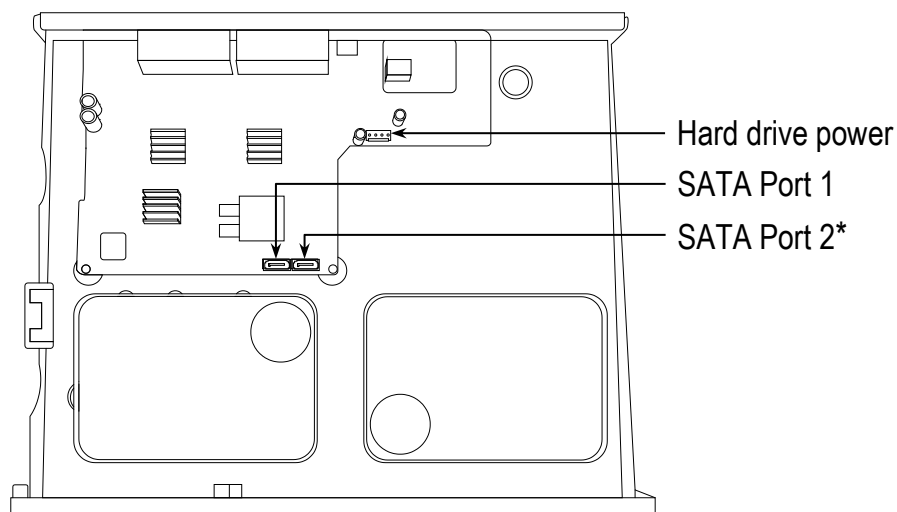
HARD DRIVE INSTALLATION

1. Power the NVR off, remove the screws on both sides and the rear panel and open the upper cover (DRN-116-4TB shown in the following instructions but other models are similar).

CAUTION: DO NOT remove the cover or attempt to replace a hard drive while the device is powered on.



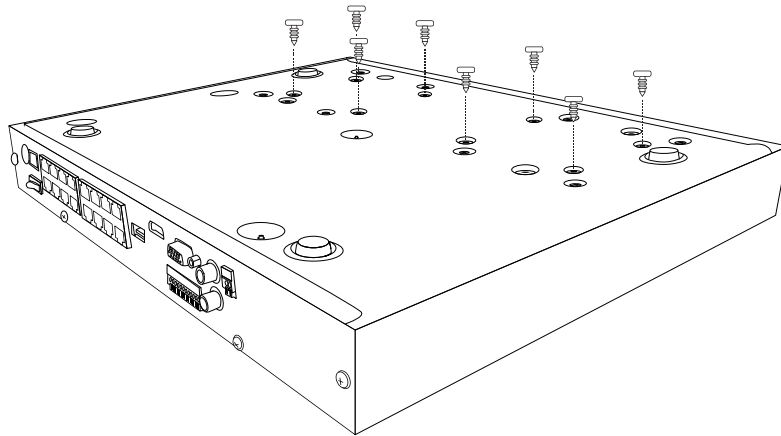
2. Connect the data and power cables to the hard drive(s) and position as shown (DRN-116-4TB shown here. DRN-104-2TB and DRN-108-2TB are similar but only have space and a port for a single hard drive).



*DRN-116-4TB only

Hard Drive Installation (Continued)

- Carefully turn the NVR over and secure the hard drive(s) with screws (4 screws for each hard drive).

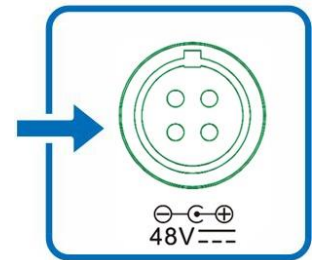


- Turn the NVR upright and carefully reattach the cover, replacing the screws on the sides and back.

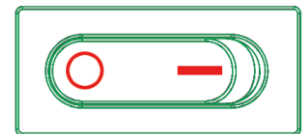
POWER SUPPLY

- Connect the included power adapter to the 48V port on the back of the NVR and plug it into a standard wall outlet.

CAUTION: Use only the provided power adapter. Use of any other power adapter may damage the device and void the warranty.



- Turn the NVR on with the power switch located on the back panel.



USING THE MOUSE

A. Left Button

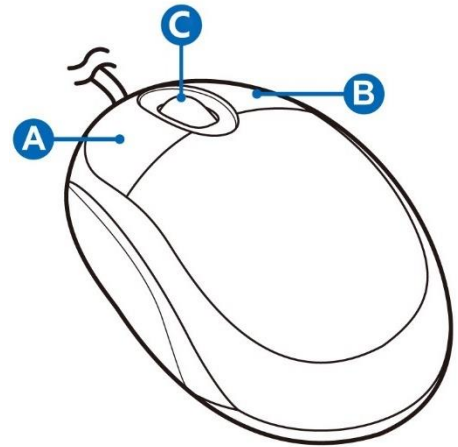
- Click to select menu options.
- During *Live View* in split-screen view, double-click on a channel to view it in full-screen. Double-click the channel again to return to split-screen view.
- Click on a channel on a *Live View* screen to open the *Camera Quick Toolbar*.
- Click and hold to drag sliders and scales in menu mode.

B. Right Button

- Click once to open the *Taskbar* on the *Live View* screen. See the *Taskbar* on pg. 39.
- In menus, click to go back or close a menu.

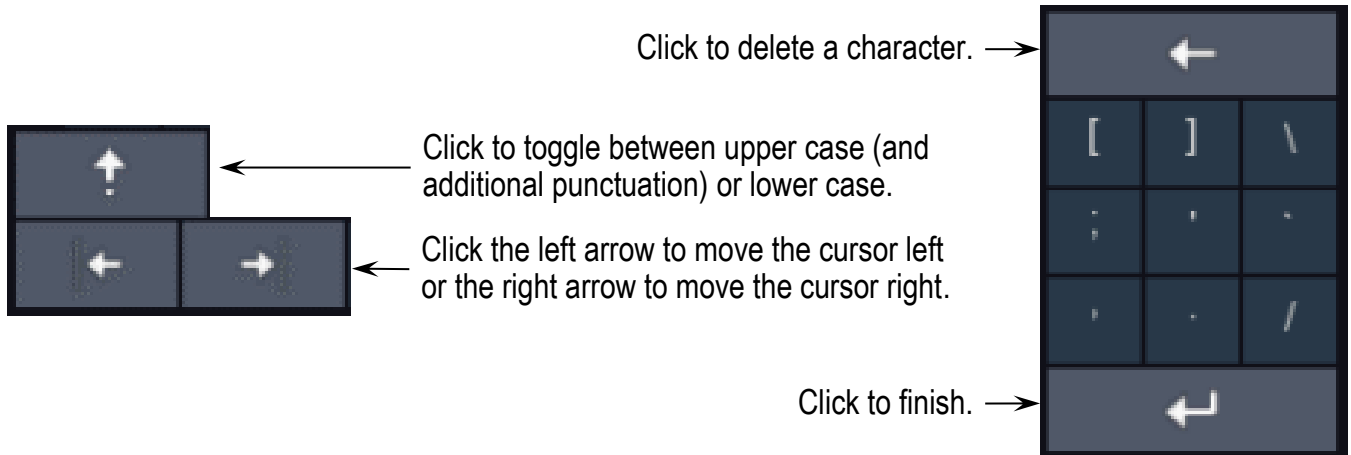
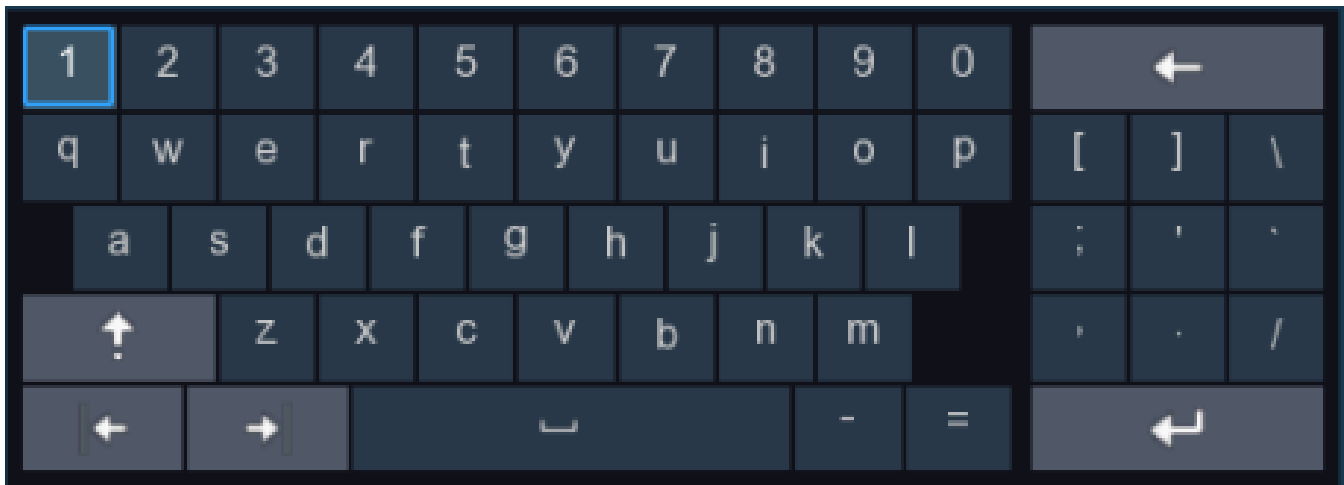
C. Scroll Wheel

- In menus, scroll to move up or down through the menu content.
- While hovering over the volume control wheel, scroll to turn system volume up or down.



USING THE VIRTUAL KEYBOARD

A virtual keyboard will appear onscreen at any point where data should be entered such as a password, camera name, etc.

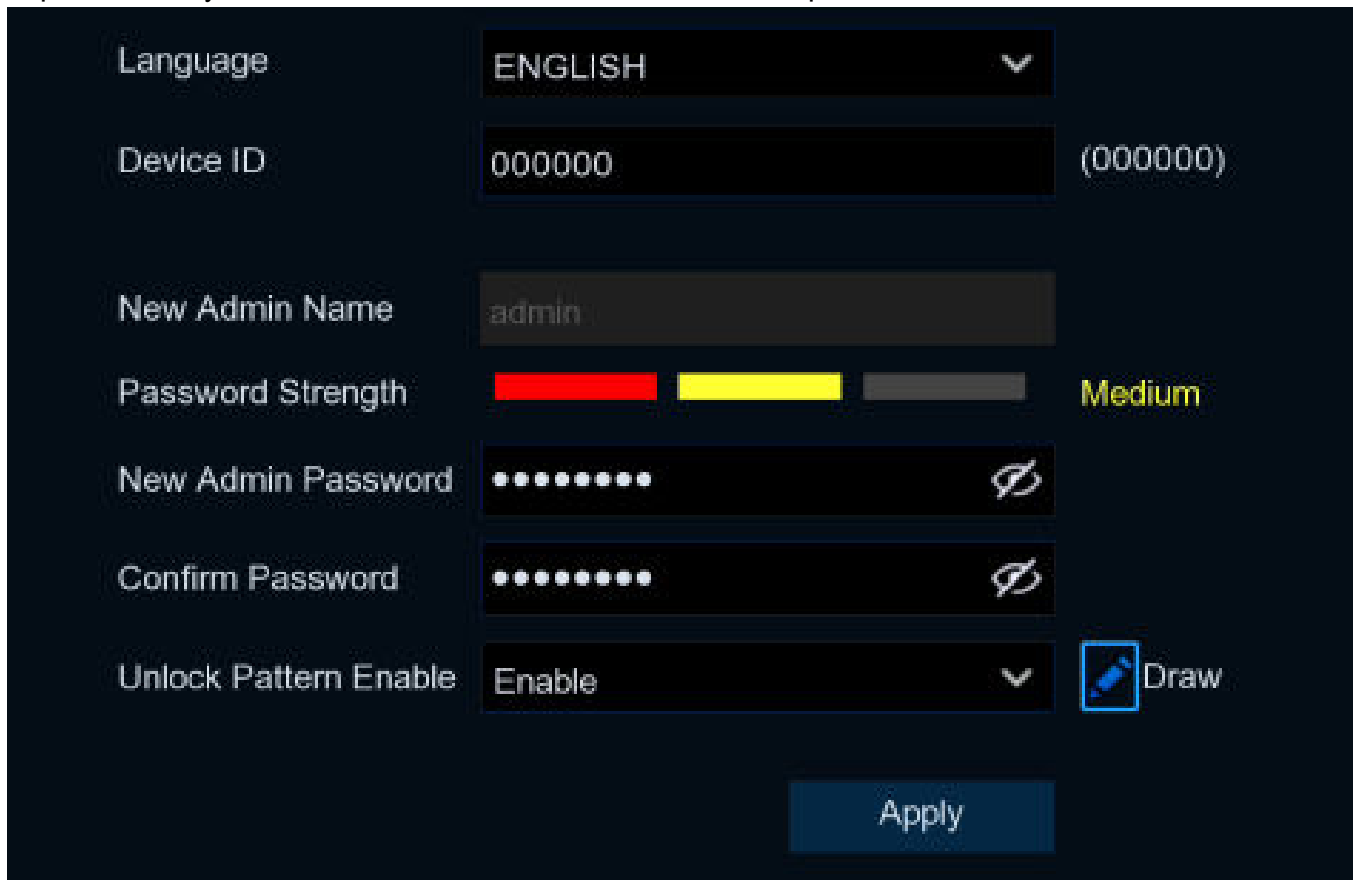


PASSWORD

Strong and unique passwords are crucial to network security. Proper configuration of passwords and other security settings is the responsibility of the installer and/or end-user.

SETTING A NEW PASSWORD

When you first set up the NVR, you will need to set your own username and password. It is important that you record these and save them in a secure place for future reference.



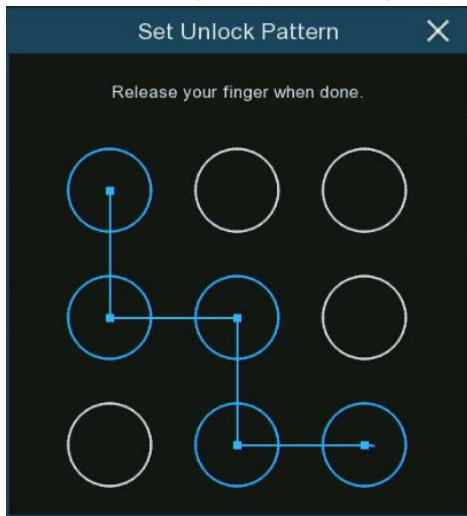
The screenshot shows a configuration menu with the following fields and options:

- Language:** A dropdown menu set to "ENGLISH".
- Device ID:** A text field containing "000000" with "(000000)" to its right.
- New Admin Name:** A text field containing "admin".
- Password Strength:** A progress bar with three segments (red, yellow, grey) and the label "Medium".
- New Admin Password:** A masked password field with 8 dots and a toggle icon.
- Confirm Password:** A masked password field with 8 dots and a toggle icon.
- Unlock Pattern Enable:** A dropdown menu set to "Enable" with a "Draw" icon to its right.
- Apply:** A button at the bottom right.

- **Language:** Choose from one of the languages as the OSD language (default, English).
- **Device ID:** Enter a Device ID (default, 000000). See *System Configuration, General Settings* on pg. 221 for more information on the Device ID.
- **New Admin Password:** Enter your new password. The password must be 8~16 characters, combining at least 2 different types from among the following: uppercase letters, lowercase letters, digits, and special symbols. You can view your *Password Strength* below to help you in choosing a stronger password.
- **Confirm Password:** Enter the password again.

PASSWORD – SETTING A NEW PASSWORD (CONTINUED)

- **Unlock Pattern:** Select *Enable* to allow unlocking with a pattern unlock. A separate screen will open to allow you to "draw" your chosen pattern (see *Set Unlock Pattern* screen).



- **Apply:** Click *Apply* to confirm your settings. A *Recover Password* screen will open allowing you to set password recovery questions should you forget your password.

PASSWORD – SETTING A NEW PASSWORD (CONTINUED)

- **Security Question Configuration:** Check this box and choose three security questions using the dropdown boxes beside each one and type in your answer exactly as you would always answer it.
- **Certificate Of Authorization:** If you check this box, you will need to insert a USB drive and click the *Export* button to save a secret key to the USB drive that will allow you to reset the password in the future.
- **Super Code:** This option would allow the device to be unlocked by a temporary, time-bound super code generated by an authorized dealer at your request if, at some future time, you were to forget the password.

NOTE: Since the *Super Code* option is obviously much less secure, SECO-LARM **does not** support this and would not be able to provide a super code.

PASSWORD (CONTINUED)

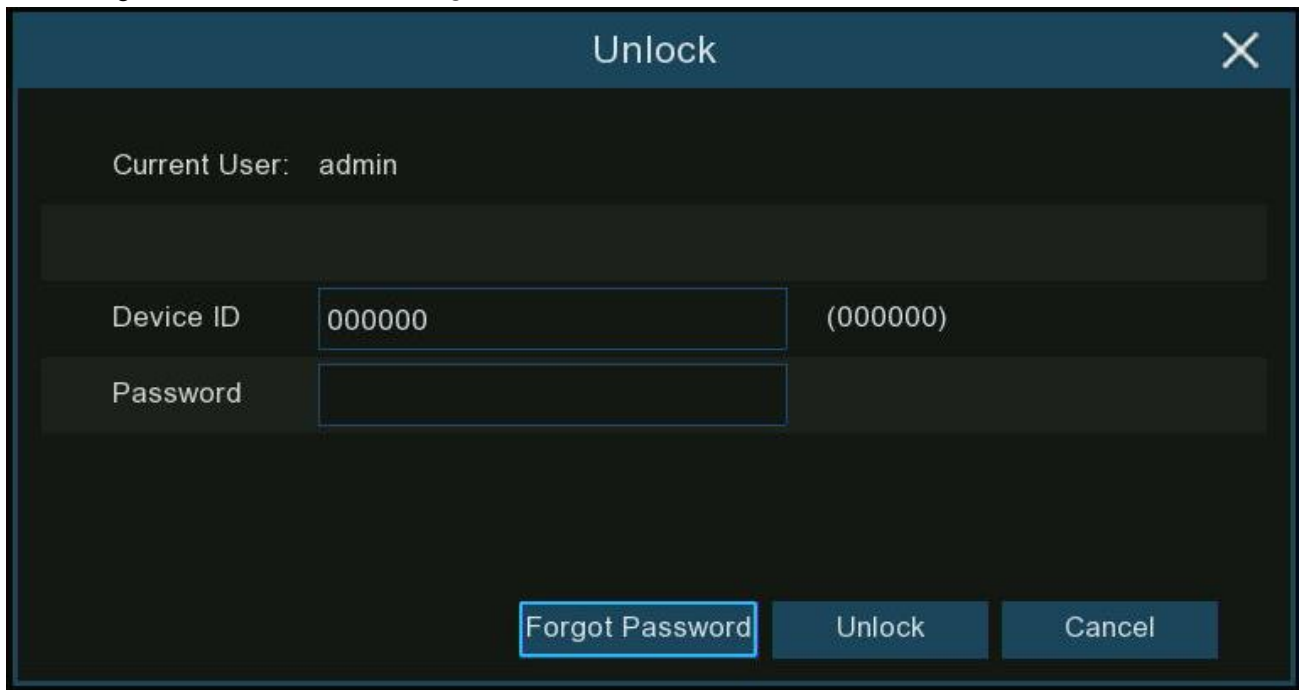
RESETTING A PASSWORD

You cannot log in to the system without the correct password. Should you forget the password, you can reset it using one of the methods described below.

USING SECURITY QUESTIONS

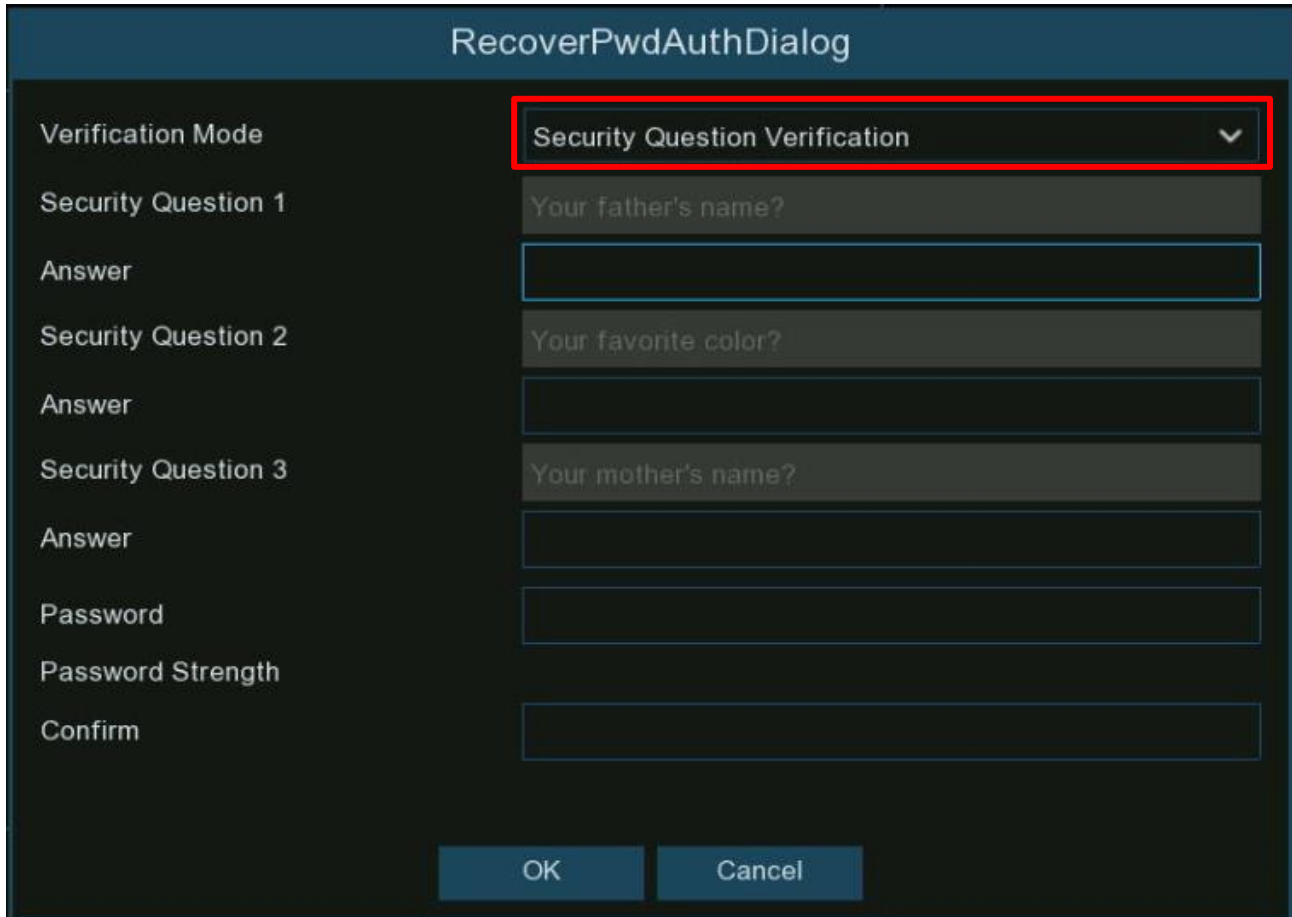
If you enabled the *Security Question Configuration* option as described in *Setting a New Password* beginning on pg. 13, you can reset it by answering these questions correctly.

1. In the login window, click the *Forgot Password* button.



PASSWORD – RESETTING A PASSWORD, USING SECURITY QUESTIONS (CONTINUED)

2. Select Security Question Verification.



The screenshot shows a dialog box titled "RecoverPwdAuthDialog" with a dark background. It contains several input fields and a dropdown menu. The "Verification Mode" dropdown is highlighted with a red border and shows "Security Question Verification" selected. Below it are three security questions: "Your father's name?", "Your favorite color?", and "Your mother's name?". Each question has an "Answer" field. At the bottom, there are "Password", "Password Strength", and "Confirm" fields, followed by "OK" and "Cancel" buttons.

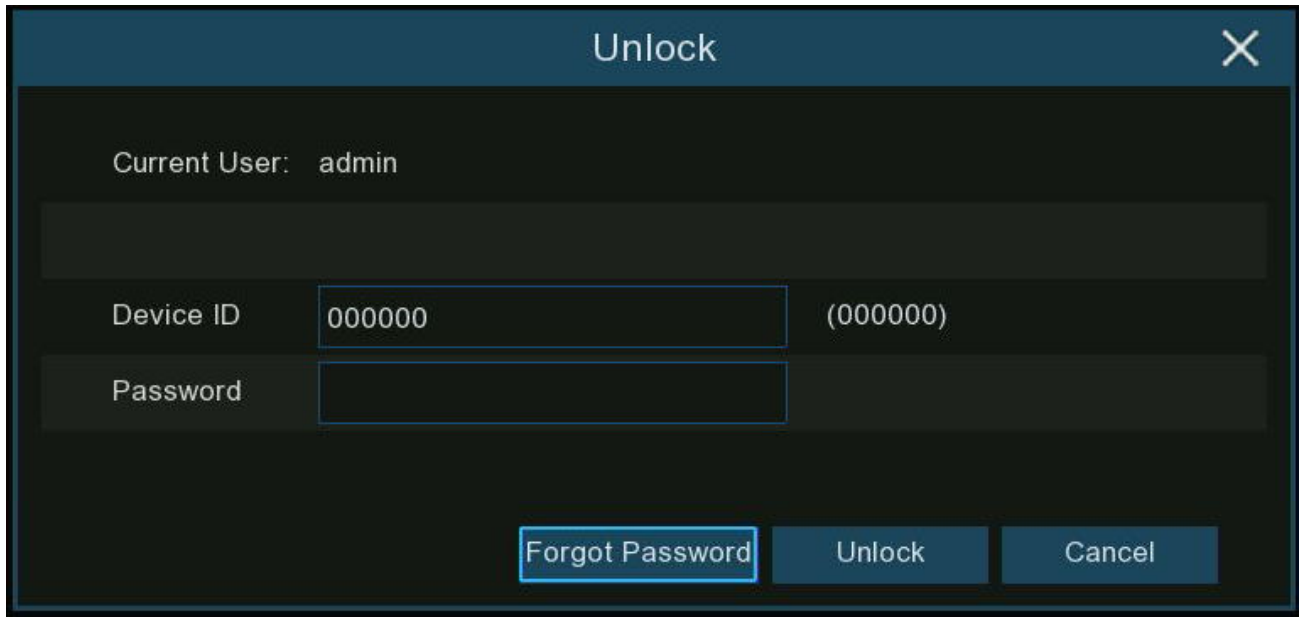
3. Enter the answer to each question.
4. Enter the new password twice and click *OK* to activate the new password.

PASSWORD – RESETTING A PASSWORD (CONTINUED)

USING THE SECRET KEY

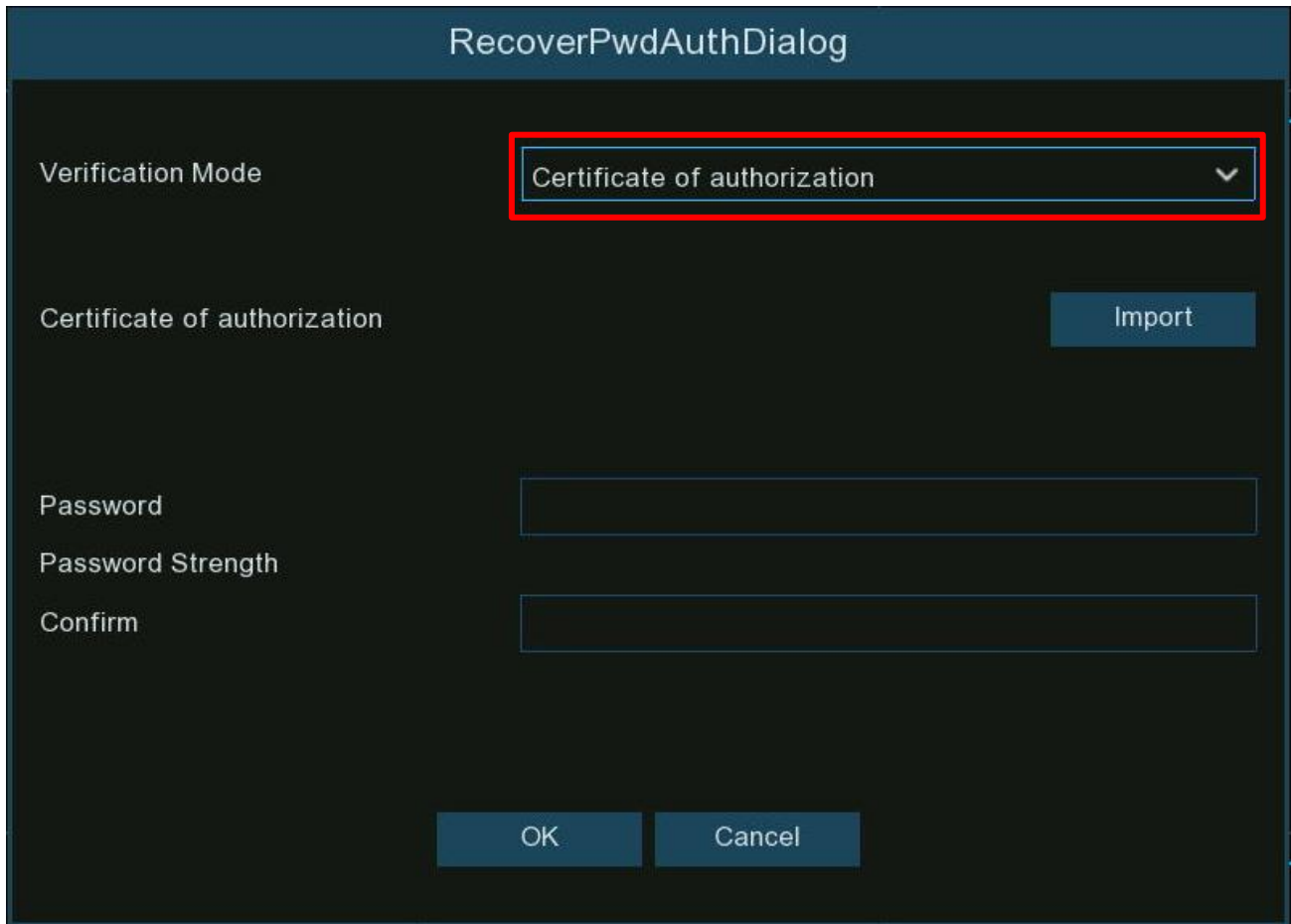
If you enabled the *Certificate of Authorization* option as described in *Setting a New Password* beginning on pg. 13, you can reset it with the secret key you exported to the USB drive at that time.

1. In the login window, click the *Forgot Password* button.



PASSWORD – RESETTING A PASSWORD, USING THE SECRET KEY (CONTINUED)

2. Select *Certificate of Authorization*.



The screenshot shows a dialog box titled "RecoverPwAuthDialog" with a dark background. It contains several fields and buttons:

- Verification Mode:** A dropdown menu with "Certificate of authorization" selected. This dropdown is highlighted with a red rectangular border.
- Certificate of authorization:** A text input field with an "Import" button to its right.
- Password:** A text input field.
- Password Strength:** A text input field.
- Confirm:** A text input field.
- Buttons:** "OK" and "Cancel" buttons at the bottom.

3. Insert the USB drive that includes the secret key and click the *Import* button to load the key.
4. Enter the new password twice and click *OK* to activate the new password.

USING A SUPER CODE

As noted in *Setting a New Password* beginning on pg. 13, SECO-LARM ***does not*** currently support this option.

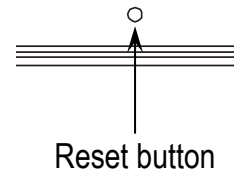
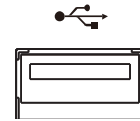
PASSWORD – RESETTING A PASSWORD (CONTINUED)

HARD RESET

If you are unable to reset the password using any of the methods described above, you can reset your NVR to factory default.

NOTE: Resetting your NVR *will restore all settings to their factory defaults* resulting in the loss of all stored customizations, data, and other settings and should be considered only as a last resort.

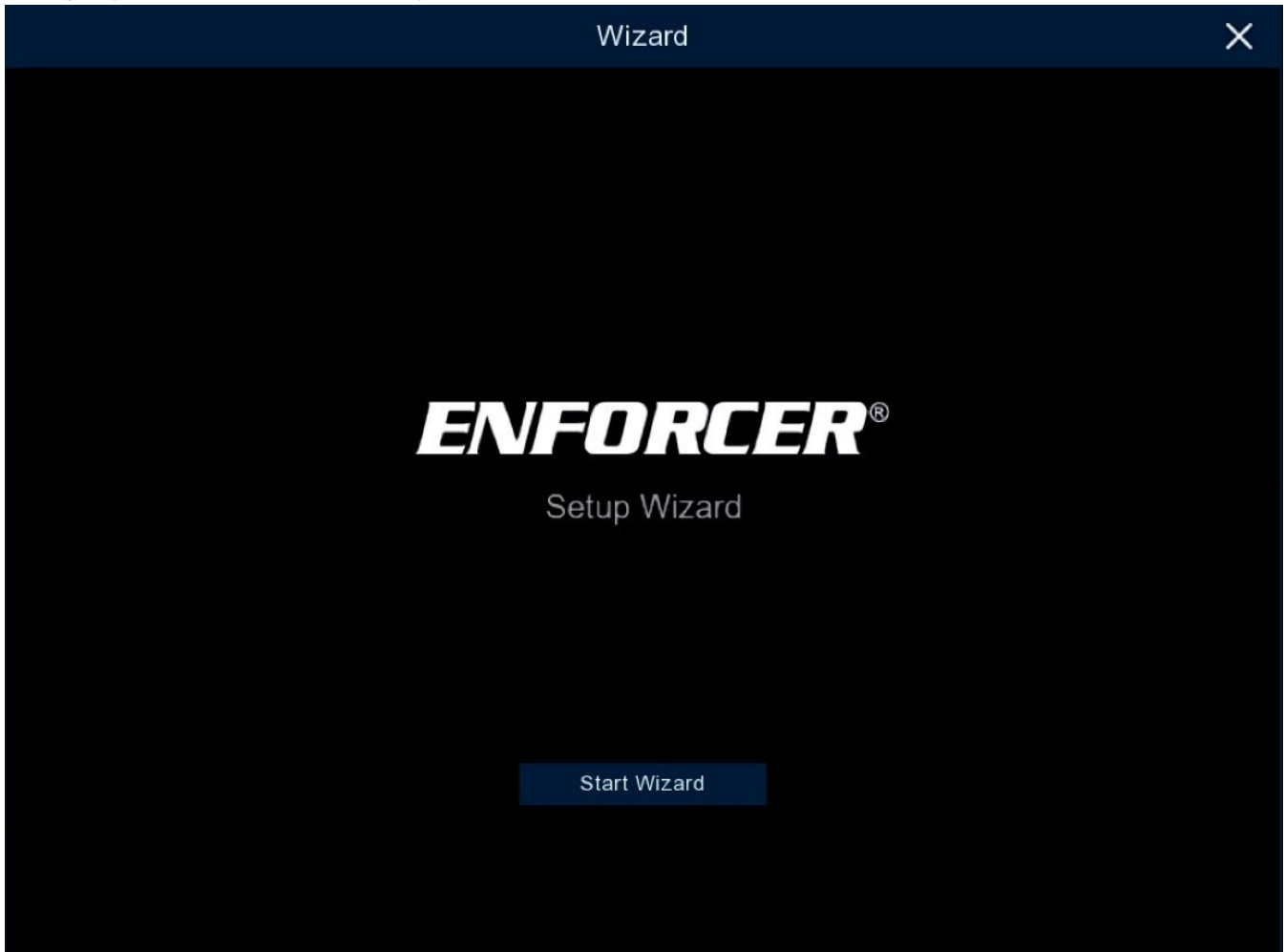
1. To initiate a hard reset, find the reset button on the back just under the USB port (see diagram, right).
2. Use a small pin or paper clip to press and hold the reset button for 10 seconds until you hear a beep.



Startup

START WIZARD

When you first start the NVR, you must configure the Start Wizard to help you configure the system and get your NVR setup properly.



Log in to the system and click on *Start Wizard* to proceed to the next step.

START WIZARD (CONTINUED)

NETWORK CONFIGURATION

You will then see the following screen.

Network			
Local Connection			
DHCP	<input checked="" type="checkbox"/>		
IP Address	192.168.001.100		
Subnet Mask	255.255.255.000		
Gateway	192.168.001.001		
IPv6 Address	2000:0:0:0:0:0:0:1	/	064
IPv6 Gateway	2000:0:0:0:0:0:0:1		
DNS			
DNS1	192.168.001.001		
DNS2	008.008.008.008		
Port			

- **DHCP:** Check this box if you connect to a router that allows you to use *DHCP*. The router will assign automatically all the network parameters for your NVR. Otherwise, you will need to fill in the following boxes manually.
- **IP Address:** The *IP address* identifies the NVR in the network. It consists of four groups of numbers between 0 to 255, separated by periods (for example, 192.168.001.100).
- **Subnet Mask:** The *subnet mask* is a network parameter which defines a range of IP addresses that can be used in a network. If an *IP address* is like a street address, then the *subnet mask* is like the neighborhood where that street address may be found. The subnet mask address also consists of four groups of numbers separated by periods (for example, 255.255.000.000).
- **Gateway:** This address allows the NVR to access the Internet. The format of the *gateway address* is the same as the *IP address* (for example, 192.168.001.001).
- **IPv6 Address / IPv6 Gateway:** Enter the IPv6 address and gateway that you received from your ISP.
- **DNS1/DNS2:** DNS1 is the primary DNS server and DNS2 is a backup DNS server. Usually, it should be enough just to enter the DNS1 server address.

START WIZARD – NETWORK CONFIGURATION (CONTINUED)

Port							
	Service	Protocol	Internal Port	External Port	UPNP Status	Mapi	
1	Http/Https/RTSP	TCP	00080	00080	Inactive	Auto	
2	Client	TCP	09000	09000	Inactive	Auto	


- **Http/Https/RTSP:** This port is used to log in remotely to the NVR (e.g., using the Web Client), or to allow the NVR to stream in real time to another device (e.g., a streaming Media player.). The ONVIF also uses this same port. If the default port (80) is already being used by another application, change it here.
- **Client:** This port is used by the NVR to send information. If the default port (9000) is already being used by another application, change it here.
- **Internal Port:** This port is usually used for a LAN connection.
- **External Port:** This port is usually used for a WAN connection.
- **UPNP:** This setting is related to whether you want to log in remotely to the NVR using the *Web Client* via different router/LAN. If you do and if your router supports UPnP, check here to enable this option and you will not need to manually configure port forwarding on your router. Otherwise, if your router does not support UPnP, leave this unchecked and make sure to manually configure port forwarding on your router.
- **Mapping Strategy:** If you want the router UPnP server to randomly distribute the ports, choose *Auto*. If you want to select a particular port, choose *Manual*.
- **Enable PPPoE:** PPPoE is a protocol that allows the NVR to connect to the network directly via a DSL modem. Check this box to enable this and enter the *User* and *Password* provided by your ISP.

PPPoE	
Enable PPPOE	<input type="checkbox"/>
User	<input type="text"/>
Password	<input type="text"/>

START WIZARD (CONTINUED)

DATE/TIME

Next, configure the date, time, date format, time format, time zone, NTP, and DST for your area.

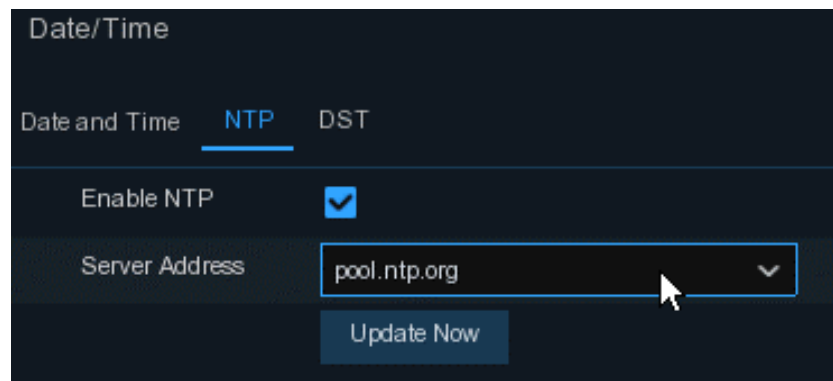
- **Date:** Click on the calendar icon  to set the system date.
- **Time:** Enter the current time in the correct format (24-hour or 12-hour, depending on the *Time Format* selected below).
- **Date Format:** Choose your preferred date format from the dropdown.
- **Time Format:** Choose your preferred time format, either 24-hour (Military) or 12-hour format.
- **Time Zone:** Choose your current time zone from the dropdown.




Date/Time		
Date and Time	NTP	DST
Date		04/15/2021 
Time		11:28:21
Date Format		MM/DD/YYYY 
Time Format		24Hour 
Time Zone		GMT+08:00 

NTP (NETWORK TIME PROTOCOL)

Network Time Protocol (NTP) allows a device connected to the Internet to automatically synchronize the date and time by connecting to Time Server to update the time on a regular basis (daily, in this case). Enable it on the *NTP tab* of the *Date/Time* window.



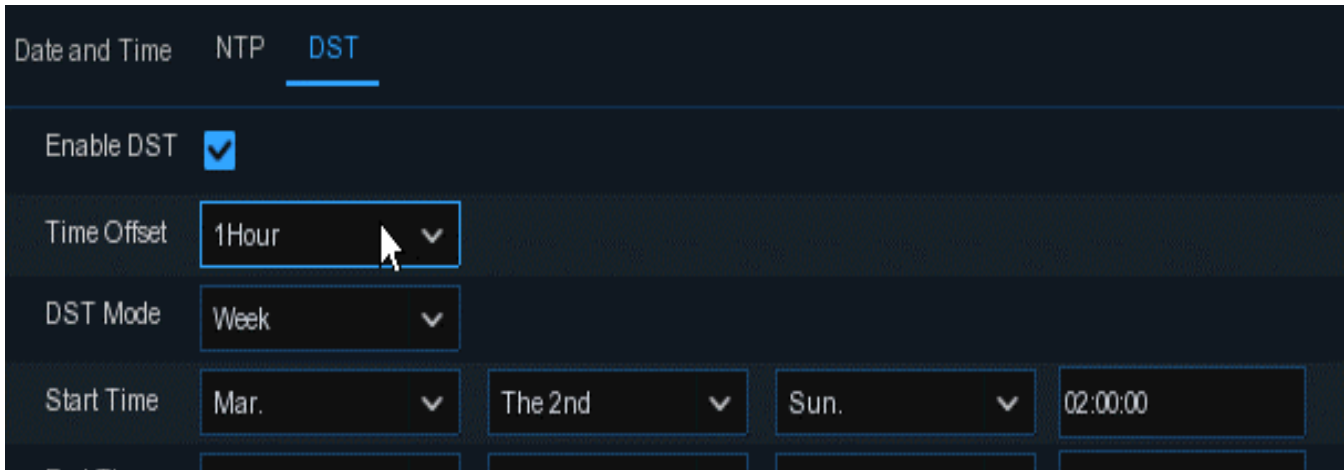
Date/Time		
Date and Time	NTP	DST
Enable NTP	<input checked="" type="checkbox"/>	
Server Address	pool.ntp.org 	
<input type="button" value="Update Now"/>		

NOTE: The NVR polls the time server once each 24 hours. If the NVR loses the correct time for some reason, it may take up to 24 hours to update, depending on the exact time of the change and the NTP update.

- **Enable NTP:** If your NVR is connected to the Internet, click the NTP tab and check *Enable NTP* to enable Network Time Protocol (NTP).
- **Server Address:** Click to choose a particular time server from the *Server Address* dropdown if desired. (The default server, pool.ntp.org, is recommended.)

START WIZARD (CONTINUED)**DST (DAYLIGHT SAVING TIME)**

If your area observes Daylight Saving Time, you should enable that setting from the *DST* tab.



The screenshot shows the 'DST' configuration page. At the top, there are three tabs: 'Date and Time', 'NTP', and 'DST'. The 'DST' tab is active. Below the tabs, there are several settings:

- Enable DST:** A checkbox that is checked.
- Time Offset:** A dropdown menu set to '1Hour'.
- DST Mode:** A dropdown menu set to 'Week'.
- Start Time:** A series of dropdown menus and text boxes. The first dropdown is set to 'Mar.', the second to 'The 2nd', the third to 'Sun.', and the text box contains '02:00:00'.

- **Enable DST:** Click to enable Daylight Saving Time (DST).
- **Time Offset:** Set the amount of time offset for your area (usually 1 hour).
- **DST Mode:** Set the DST Mode, either Week or Day. In *Week* mode, you set DST based on what week it starts (default, recommended) which usually remains the same year to year. In *Day* mode, you must set the actual beginning and ending dates each year.
- **Start Time:** Set the starting date and specific beginning time.
- **End Time:** Set the ending date and specific ending time.

NOTE: Even if you have enabled *NTP*, you should still enable *DST* (see the previous section, *NTP (Network Time Protocol)*) since this instructs the NVR whether you wish to follow the DST standard.

START WIZARD (CONTINUED)

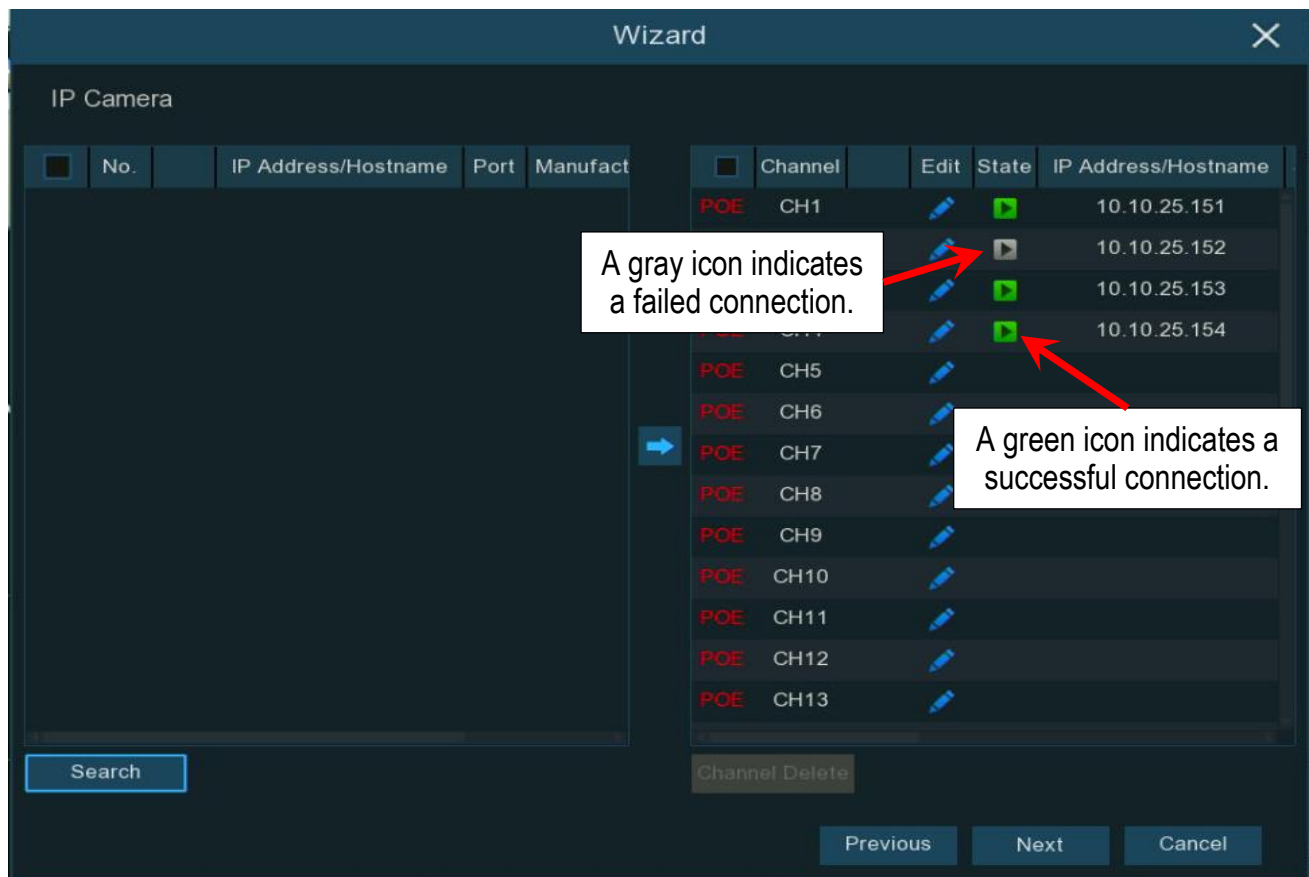
IP CAMERA CONNECTION

Now it is time to add your IP cameras. There are several ways to get connected.


CONNECTING DIRECTLY TO NVR PoE PORTS

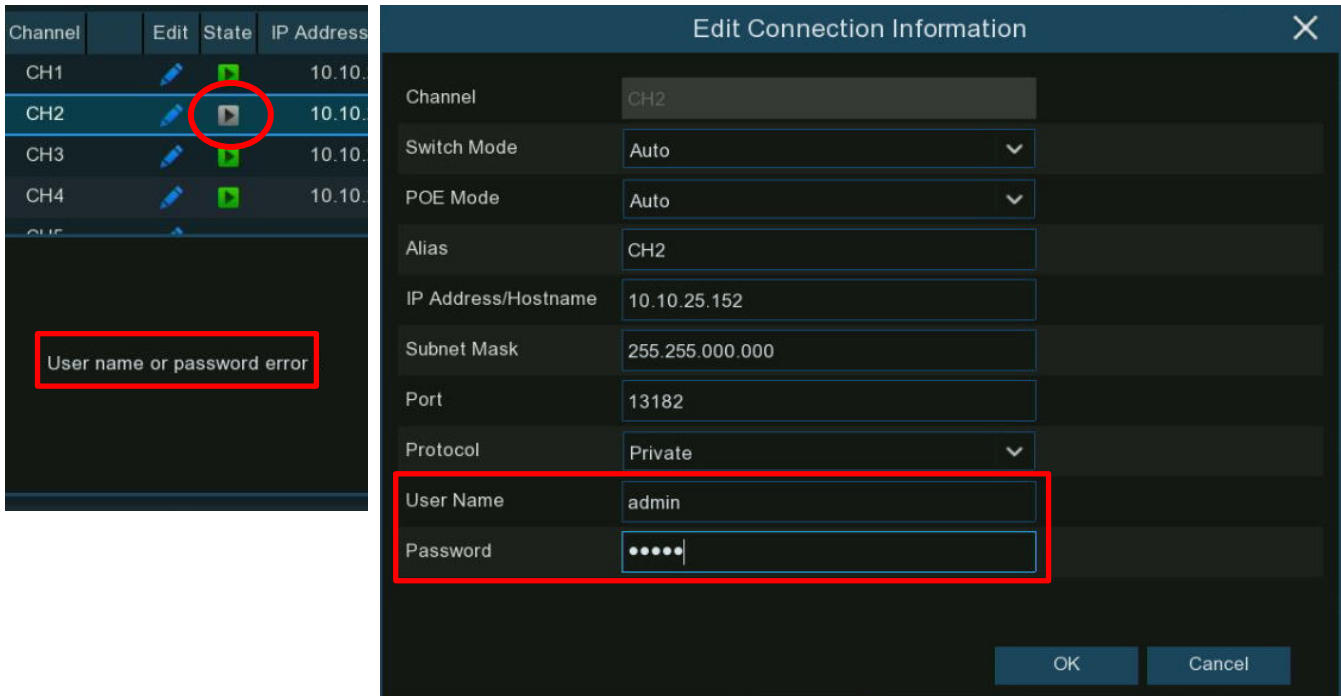
When connected to the NVR's PoE ports, your IP cameras will automatically connect to the NVR and will appear on the right of the window provided the connected IP camera meets the following requirements.

- The IP camera must communicate with the NVR via our private protocol. To ensure compatibility, we recommend the use of ENFORCER brand IP cameras only.
- The IP camera must be set to DHCP mode.













START WIZARD – IP CAMERA CONNECTION, *CONNECTING DIRECTLY TO NVR PoE PORTS (CONTINUED)*

A gray icon in the *State* column indicates a connection failure. Click on the icon for a pop-up message indicating the reason for the failure. In case of a *User name or password error!*, click the edit icon  and enter the correct username and password for the camera.



The screenshot shows a table of camera channels and a dialog box for editing connection information.

Channel	Edit	State	IP Address
CH1			10.10.25.152
CH2			10.10.25.152
CH3			10.10.25.152
CH4			10.10.25.152
CH5			10.10.25.152


The 'Edit Connection Information' dialog box contains the following fields:

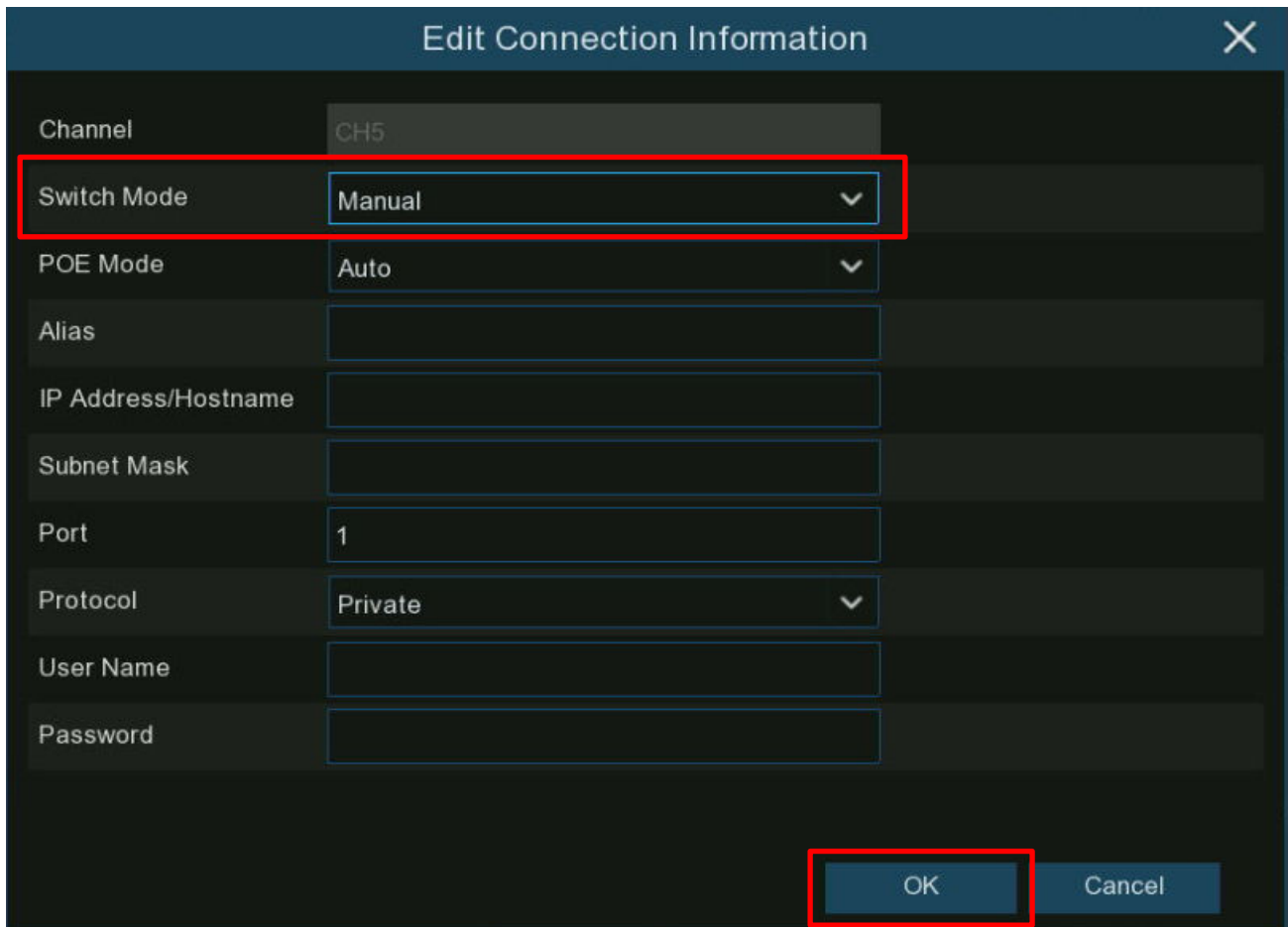
- Channel: CH2
- Switch Mode: Auto
- POE Mode: Auto
- Alias: CH2
- IP Address/Hostname: 10.10.25.152
- Subnet Mask: 255.255.000.000
- Port: 13182
- Protocol: Private
- User Name: admin
- Password: [masked]

A red box highlights the 'User Name' and 'Password' fields. A red box in the main interface highlights the error message: "User name or password error".

START WIZARD – IP CAMERA CONNECTION (CONTINUED)*CONNECTING AN IP CAMERA VIA LAN*

To add an IP camera from a LAN, first ensure that your NVR is properly connected to the LAN and that the IP camera you want to add is in the same network segment as your NVR.

1. From the IP Camera screen in the Wizard, click the edit icon  in the channel with the LAN connection that includes the camera that you want to add.
2. In the window that opens, click the drop-down arrow next to *Switch Mode*, select *Manual* and click *OK* to save.



The screenshot shows a dialog box titled "Edit Connection Information" with a close button (X) in the top right corner. The dialog contains several fields for configuring an IP camera connection:

Channel	CH5
Switch Mode	Manual
POE Mode	Auto
Alias	
IP Address/Hostname	
Subnet Mask	
Port	1
Protocol	Private
User Name	
Password	

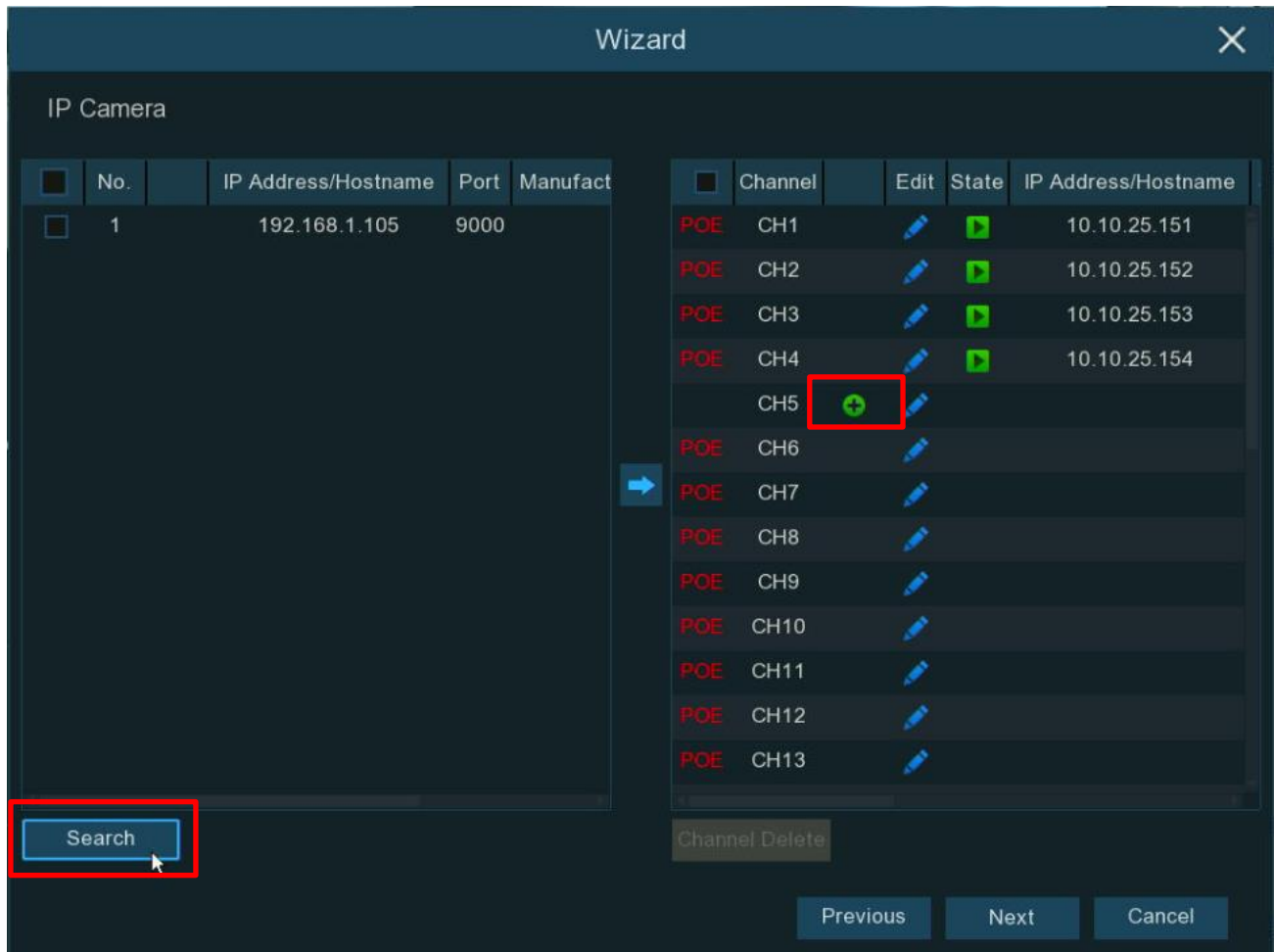
At the bottom right of the dialog, there are two buttons: "OK" and "Cancel". The "OK" button is highlighted with a red box.

START WIZARD – IP CAMERA CONNECTION, CONNECTING AN IP CAMERA VIA LAN
(CONTINUED)

- Click the *Search* button on the left bottom corner of the window, all available cameras in the LAN will be displayed. Select the camera you want to add and click the add icon ➔.

OR

- Or click the Add icon ⊕ in the channel list and click *Search* button, all available cameras in the LAN will be displayed. Click on the camera you want to add.



START WIZARD – IP CAMERA CONNECTION, CONNECTING AN IP CAMERA VIA LAN
(CONTINUED)

- 5. Enter the camera's username and password and click *Add* button to complete.

The screenshot shows a window titled "Add IP Camera" with a close button (X) in the top right corner. At the top, there is a table with the following columns: No., IP Address/Hostname, Port, Manufacturer, Active state, Device Type, and MAC Address. The table contains one row with the following values: 1, 192.168.5.111, 9000, (blank), None, IP CAMERA, and (blank). Below the table is a form with the following fields: IP Address/Hostname (192.168.5.111), Alias (CH5), Port (9000), Protocol (Private), User Name (admin), and Password (masked with dots). At the bottom of the form, there are four buttons: Search, Default Password, Add, and Cancel. The Add button is highlighted with a red box.


No.	IP Address/Hostname	Port	Manufacturer	Active state	Device Type	MAC Address
1	192.168.5.111	9000		None	IP CAMERA	

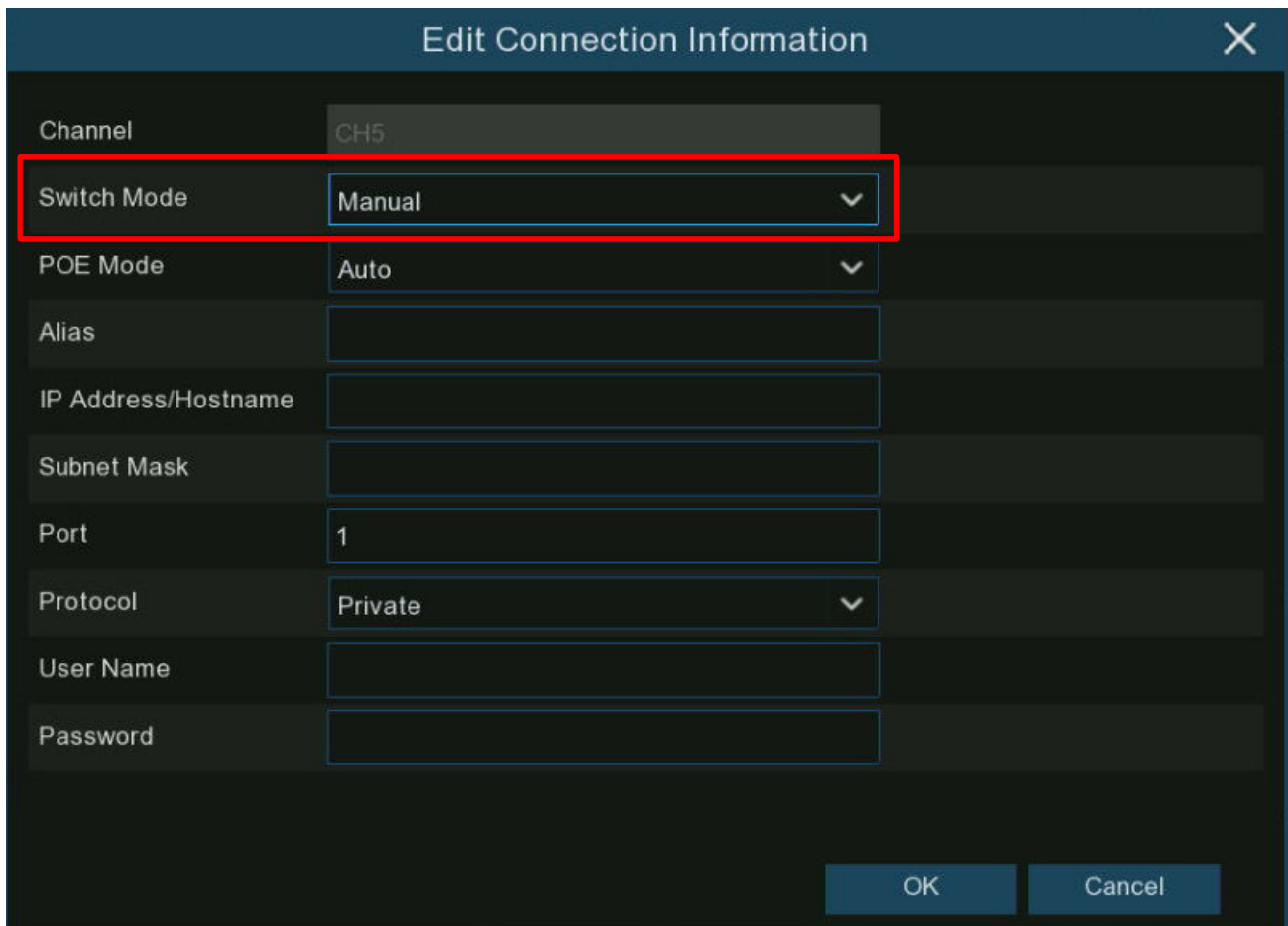
IP Address/Hostname: 192.168.5.111
Alias: CH5
Port: 9000
Protocol: Private
User Name: admin
Password: •••••

Buttons: Search, Default Password, Add, Cancel

START WIZARD – IP CAMERA CONNECTION (CONTINUED)*CONNECTING AN IP CAMERA FROM THE INTERNET*

To add an IP camera from the Internet, first ensure that your NVR is properly connected to the Internet and that the IP camera you want to add is in the same network segment as your NVR.

1. From the *IP Camera* screen in the *Wizard*, click the edit icon  in the channel with the LAN connection that includes the camera that you want to add.
2. In the window that opens, click the drop-down arrow next to *Switch Mode*, select *Manual* and click *OK* to save.



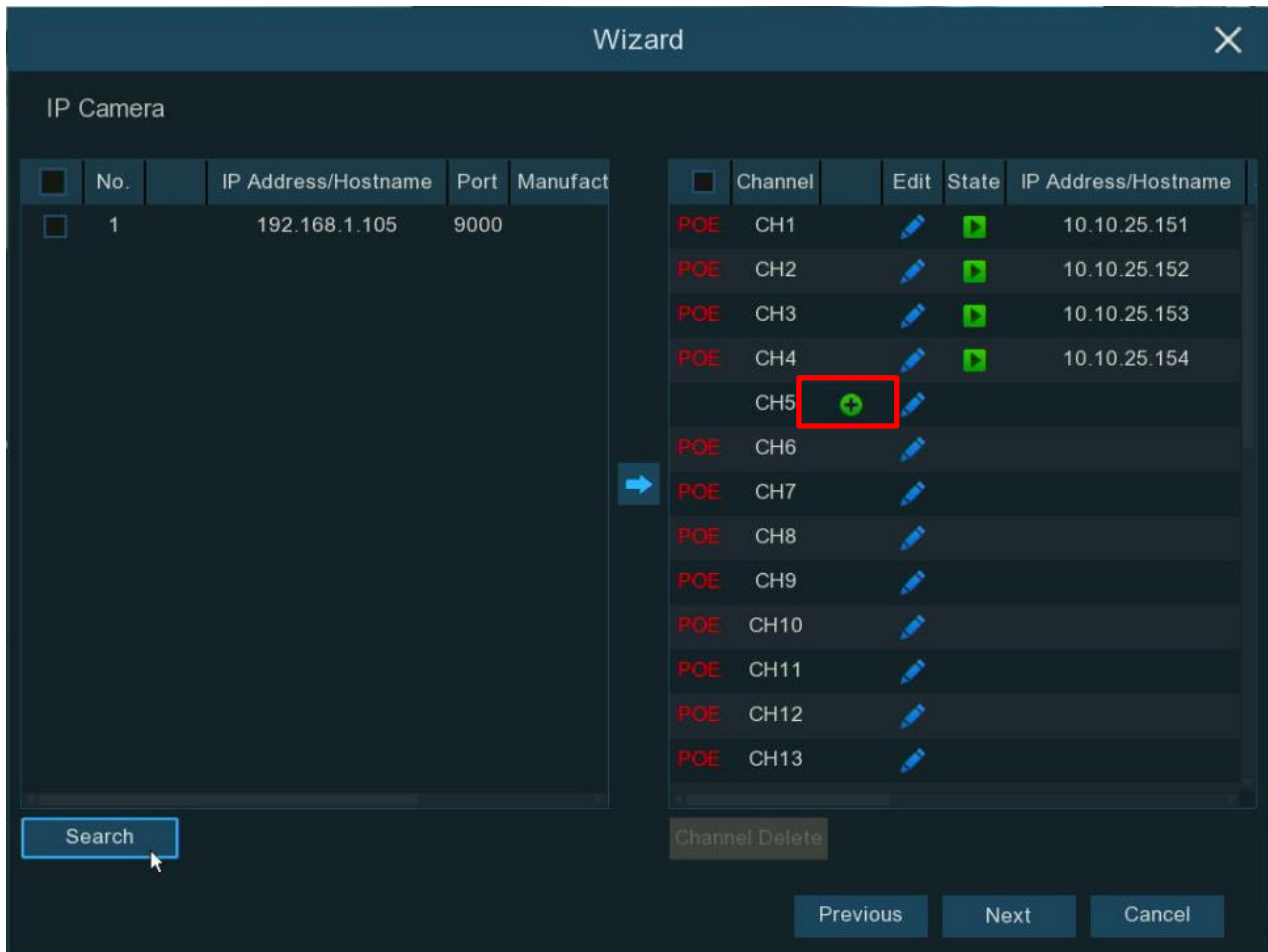
The screenshot shows a dialog box titled "Edit Connection Information" with a close button (X) in the top right corner. The dialog contains several fields for configuring an IP camera connection:

Channel	CH5
Switch Mode	Manual
POE Mode	Auto
Alias	
IP Address/Hostname	
Subnet Mask	
Port	1
Protocol	Private
User Name	
Password	

At the bottom right of the dialog are two buttons: "OK" and "Cancel". The "Switch Mode" dropdown menu is highlighted with a red rectangular box.

START WIZARD – IP CAMERA CONNECTION, CONNECTING AN IP CAMERA FROM THE INTERNET (CONTINUED)

- 3. Click the Add icon  in the channel list.



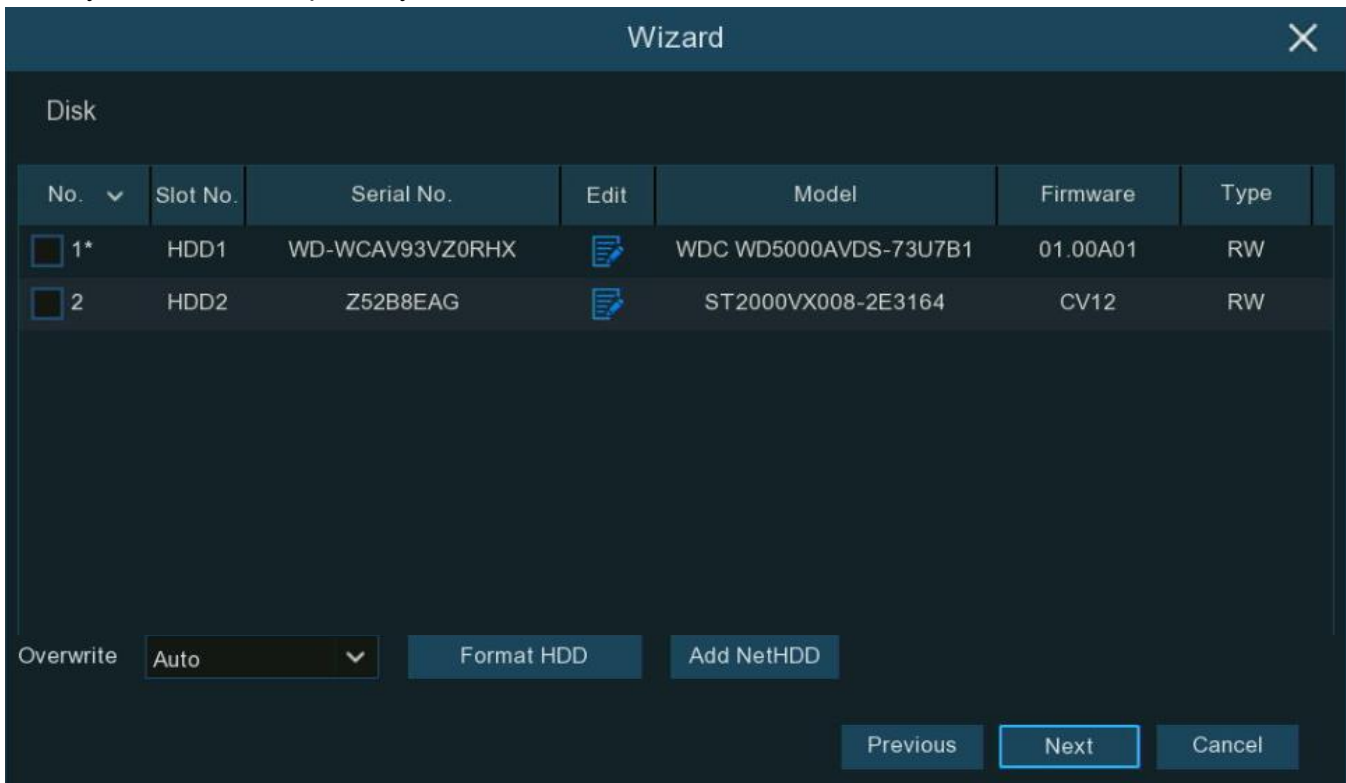
- 4. Enter the IP camera's internet IP address, port, protocol, username, and password and click the Add button to complete.

IP Address/Hostname	<input type="text" value="222.87.42.87"/>
Alias	<input type="text" value="CH5"/>
Port	<input type="text" value="9000"/>
Protocol	<input type="text" value="Private"/>
User Name	<input type="text" value="admin"/>
Password	<input type="password" value="•••••"/>

START WIZARD (CONTINUED)

HARD DRIVE

Next, you should set up how your hard drive will be used.



- **Format HDD:** When installing a new hard drive for the first time, the drive must be formatted. Select the new hard drive and click the Format HDD button to format it.
- **Overwrite:** Click the dropdown to set what should happen when the hard drive becomes full.
 - **Auto:** The default is *Auto* which instructs your NVR to overwrite the oldest video files as the hard drive becomes full.
 - **Number of Days:** Choose to set a specific number of days for recordings to be kept before they are overwritten. For example, if you choose *7 days*, then only the last 7 days' recordings are retained.
 - **Off:** To prevent overwriting any old recordings, select *OFF*. When this is selected, all recording will stop when the disk is full.

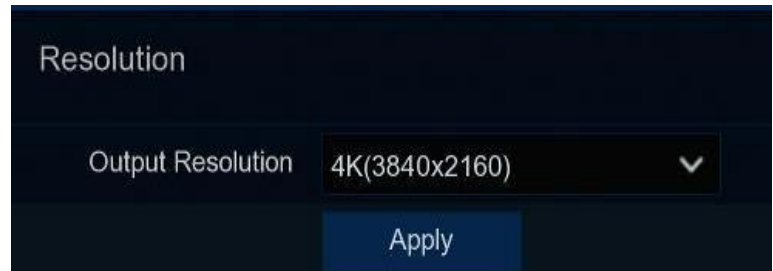
NOTE: If *Off* is selected, you must regularly check the drive status to make sure the drive is not full. Therefore, we recommended the *Auto* selection as this prevents your NVR from running out of storage space.

- **Add NetHDD:** Click this button and follow the instructions to add a network hard drive.

START WIZARD (CONTINUED)

RESOLUTION

Choose an output resolution that matches your monitor. The NVR adjusts the output resolution automatically to match the best resolution of your monitor when the system is starting up.



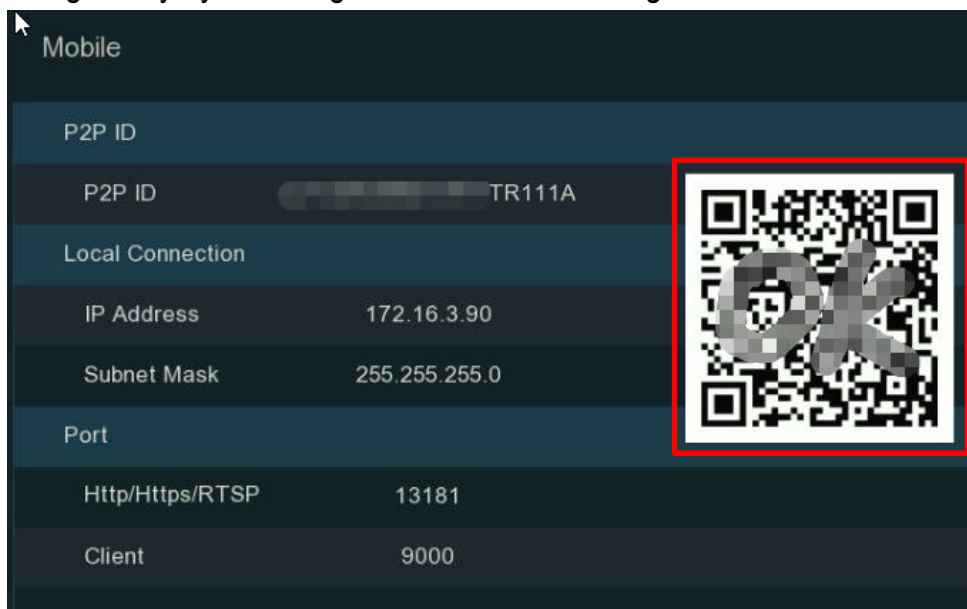
If you are connecting to a 4K HDMI monitor, you can choose a maximum of 4K (3840x2160) resolution. If connecting to a VGA monitor, you cannot choose a resolution greater than 1080P(1920x1080).

MOBILE

Scan the QR code on this screen (see example below) from within the *SL Vision* app to view live feeds from your cameras, access recorded footage, and save video clips or snapshots of what you have seen on your smartphone or tablet from a remote location and receive real-time alerts. Note that the screenshot shown below is for reference only. Each NVR QR code is unique, and you must use the QR code shown on your NVR app screen.



Download the *SL Vision* app from either the App Store or Google Play by scanning the QR code on the right.



START WIZARD (CONTINUED)

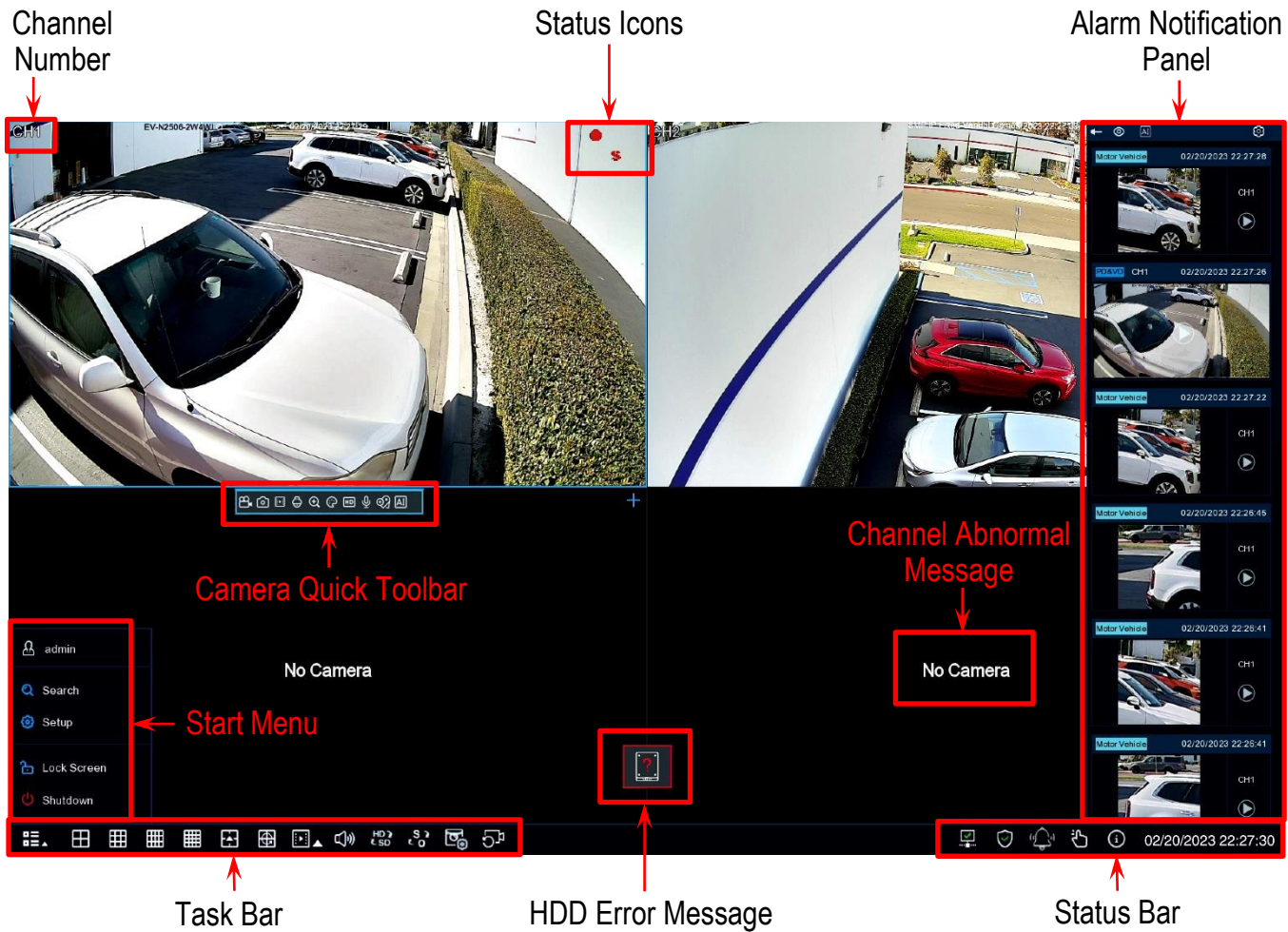
SUMMARY

From the *Summary* screen you can see the system information you have set in the *Start Wizard*.

Summary	
System	
Resolution	1080P(1920x1080)
Date/Time	05/12/2022 09:00:04, GMT+08:00
NTP	OFF
Network	
DHCP	OFF
IP Address	172.16.3.90
Subnet Mask	255.255.255.0
Gateway	172.16.3.1
DNS1	192.168.5.1
DNS2	8.8.8.8
PPPoE	OFF
<input type="checkbox"/> Don't show the Wizard after start.	
Previous	Finish

If you do not want the *Start Wizard* to automatically appear the next time you turn on the NVR, check the *Don't show the Wizard after start* at the bottom of this screen. Click the *Finish* button to save and exit the Wizard.

LIVE VIEW SCREEN OVERVIEW



DEFINITIONS




Status Icons

Icon	Definition
	Camera is currently recording
	Motion alarm triggered
	Intelligent or AI alarm triggered
	External I/O alarm triggered
	PIR alarm triggered

HDD Error Icons

Icon	Definition
	HDD not installed or other error
	HDD unformatted
	HDD is full
	HDD is read-only

LIVE VIEW SCREEN OVERVIEW – DEFINITIONS (CONTINUED)**Channel Abnormal Messages**

Message	Meaning
No Camera	No camera has been added to this channel. Click the add icon  to add a new camera.
Failed to connect to camera, please check the network connection	The added camera is offline or has lost connection. Check network connection or click the edit icon  to check the camera status.
User name or password error!	The camera's username or password is incorrect. Click the edit icon  to correct.
Resource Not Enough	There are not enough system resources to decode the camera images. Try changing the cameras to sub-stream mode. If 2 or more cameras are using MJPEG decoding, only 1 camera can be encoded at the same time.
Band Width Limited!	The camera cannot get online because the total bit rate of all connected cameras exceeds the NVR's bandwidth limitation.

LIVE VIEW SCREEN OVERVIEW (CONTINUED)

CAMERA QUICK TOOLBAR

In *Live View*, click on a connected camera to display the *Camera Quick Toolbar*.




Icon	Definition
	Click to manually record the channel immediately. When manual recording is in process, the icon will turn red. Click again to stop manual recording.
	Click to save a snapshot of the current camera image. <i>Manual Capture</i> must be enabled to use this feature. For instructions for enabling <i>Manual Capture</i> , see <i>Capture Images</i> on pg. 80.
	Click to play the last 5 minutes recording of this channel.
	Click to enter the PTZ control panel. Click to control the zoom and focus of motorized varifocal lens
	Click to zoom-in on the channel. Use the scroll wheel of your mouse to zoom in and zoom out of the image.
	Click to adjust the image color of the channel.
	Click to switch the live view video stream between HD & SD. HD refers to <i>Mainstream</i> images, SD refers to <i>Substream</i> images.
	Click to start two-way voice communication.
	If your camera has white LEDs, click this to turn the LEDs on or off.
	If your camera has a built-in speaker, click this icon to turn the alarm sound on or off.
	Click to add a tag. The tag allows for faster searches. For more information on tags, see <i>Tag Search and Playback</i> on pg. 284.
	Hover the mouse over the icon to view AI statistics when the AI function is activated in your NVR.

LIVE VIEW SCREEN OVERVIEW (CONTINUED)

TASKBAR

From the *Taskbar*, you can enter the system menu, start playback, change the *Live View* display, and more.



Icon	Definition
	Click to open the <i>Start Menu</i> .
	Click to choose the number of channels to display (4, 9, 12, or 16) in the <i>Live View</i> screen.
	Click to display 20, 25, or 36 channels in the <i>Live View</i> screen.
	Click to choose from more display layouts in the <i>Live View</i> screen.
	Click to start viewing channels in a sequence. To set the sequence display mode, see <i>Output Configuration</i> on pg. 225.
	The <i>Quick Playback</i> icon allows you to playback the recordings for all channels from the beginning of the day or the latest 5 seconds, 10 seconds, 30 seconds, 1 minute, or 5 minutes by clicking the triangular icon  at its lower right.
	Click to adjust audio output volume.
	Click to switch the live view image resolution for all channels between <i>Mainstream</i> and <i>Substream</i> .
	Click to switch the image scale for all channels between original and stretch.
	Click to switch between real-time, balanced, or smooth view. This affects the <i>Live View</i> video quality by changing the bitrate and frame rate.
	Click to reset to the default layout.

LIVE VIEW SCREEN OVERVIEW (CONTINUED)

STATUS BAR

From the *Status Bar*, you can check the network status, turn all white light LEDs and alarm sounds on/off, start/stop manual recording, check system information, and disable/enable the mouse.
















Icon	Definition
	Network disconnected Network connected but offline Network connected and working properly
	The NVR is armed. The NVR is disarmed.
	Click to turn all the white light LEDs and alarm sound on or off for available cameras.
	Click to start manual record and manual relay alarm output.
	Click to view system information, channel information, recording information, and network state.

LIVE VIEW SCREEN OVERVIEW (CONTINUED)

START MENU

From the Start menu, you can switch users, search & playback, enter the *System Setup Menu*, lock & unlock the screen, and shut down, reboot, and log out of the system.

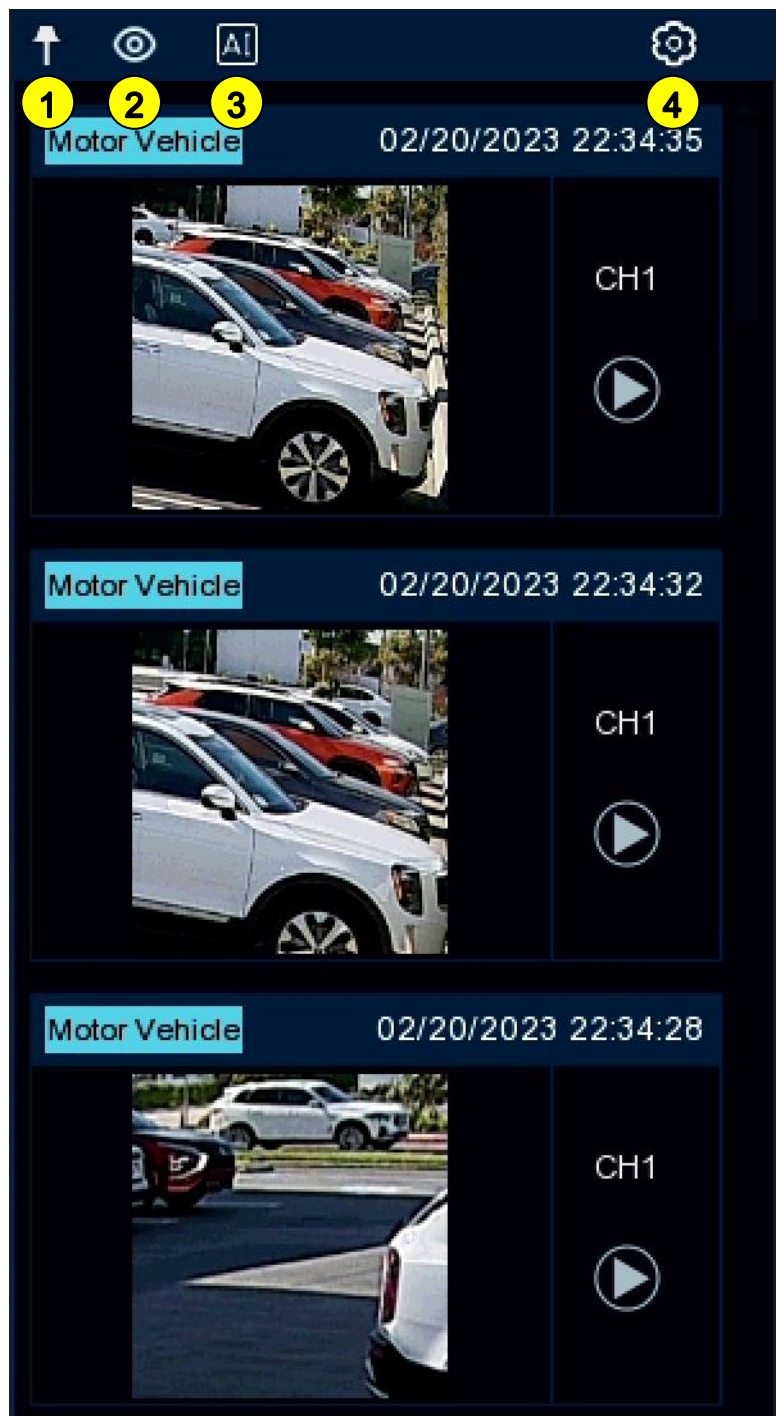
	Icon	Definition
 admin	 admin	Click to switch users. To enable multiple users, see on pg. 225.
 Search	 Search	Click for search and playback. For more information, see <i>Search, Playback, and Backup</i> beginning on pg. 267.
 Setup	 Setup	Click to enter NVR system setup. For more information, see <i>System Setup</i> beginning on pg. 44.
 Lock Screen	 Lock Screen  Unlock	If you have set the menu timeout (see <i>General Settings</i> on pg. 221), when the NVR menu has not been in use for a set time, the screen locks automatically to protect unauthorized OSD operation. However, you can click the <i>Lock Screen</i> icon  to lock the screen immediately. If the system is locked, you can click the <i>Unlock</i> icon  to unlock it.
 Shutdown	 Shutdown	Click the <i>Shutdown</i> button to shut down, reboot, or logout from the NVR. When you click <i>OK</i> , the system will require you to enter your password to authenticate.

LIVE VIEW SCREEN OVERVIEW (CONTINUED)

ALARM NOTIFICATION PANEL

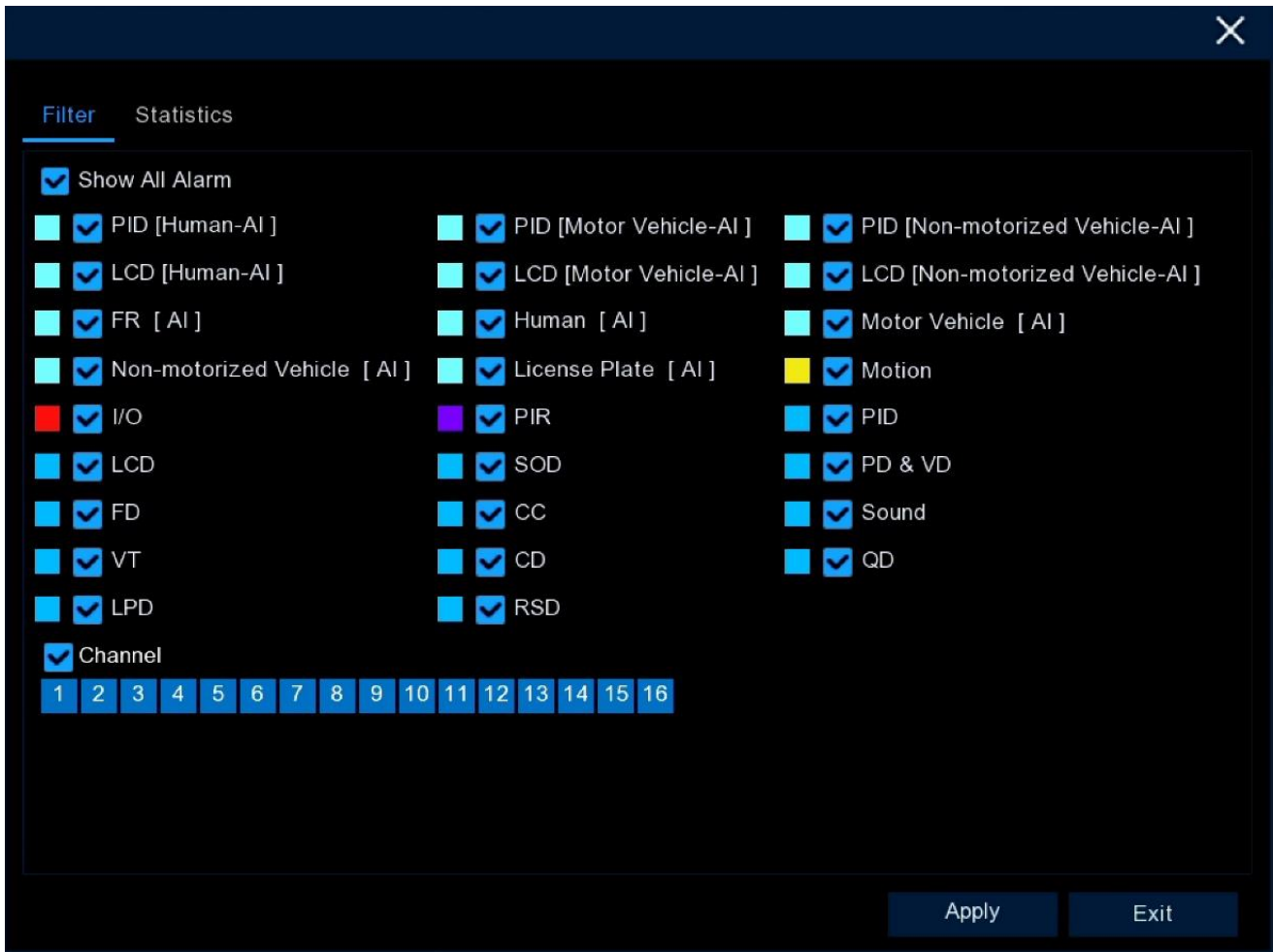
The *Alarm Notification Panel* displays thumbnails of past alarm events, color-coded according to event type. Place the cursor over the notification panel and use the mouse scroll wheel to scroll up/down. Click the *Play* icon next to or over the thumbnail to play the event.

- 1 Click to always display the notification panel.
- 2 Click to pin/unpin the notification panel.
- 3 Click to reveal AI statistical information.
- 4 Click to reveal the *Filter* and *Statistics* functions (shown next page).

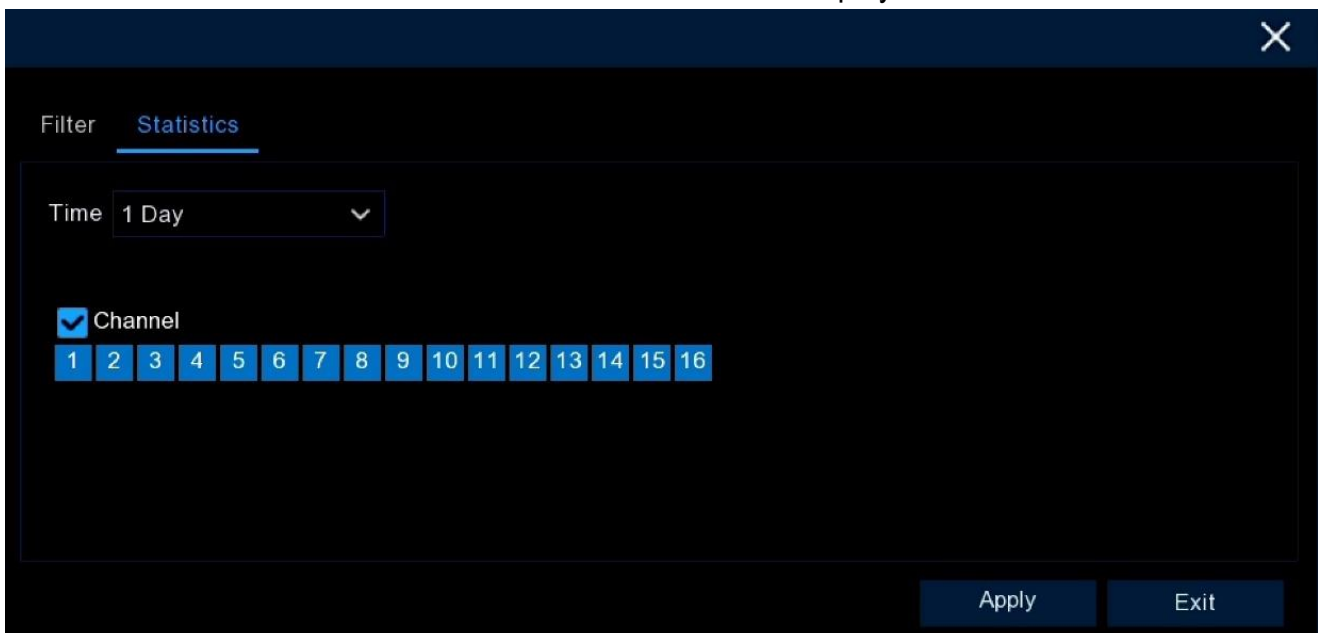


LIVE VIEW SCREEN OVERVIEW – ALARM NOTIFICATION PANEL (CONTINUED)

Use the *Filter* to customize which alerts and which camera will appear in the notification panel.



You can also customize the time duration and channels to display in the AI *Statistics*.



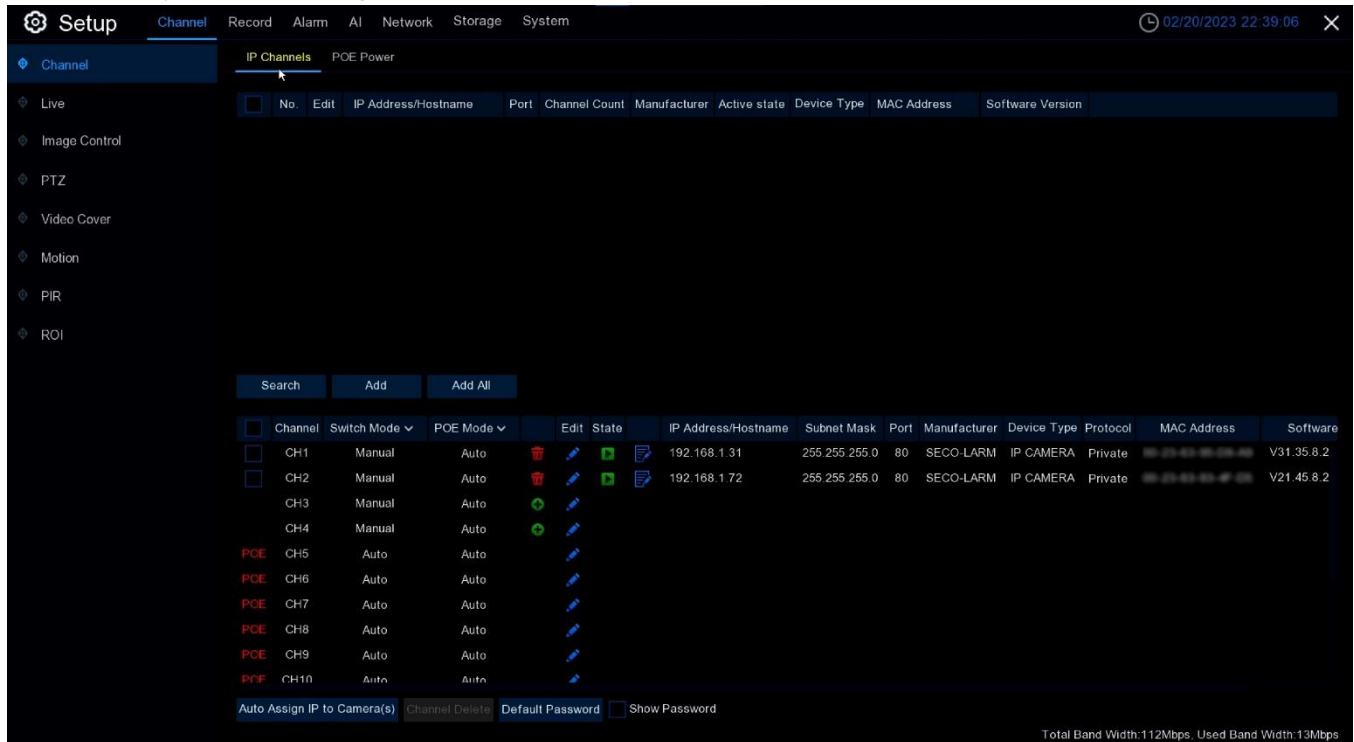
System Setup

In *System Setup* you can configure *Channels*, *Recording*, *Alarms*, *Network*, *Device*, *System*, *AI*, and *AI Scenario*.



CHANNEL

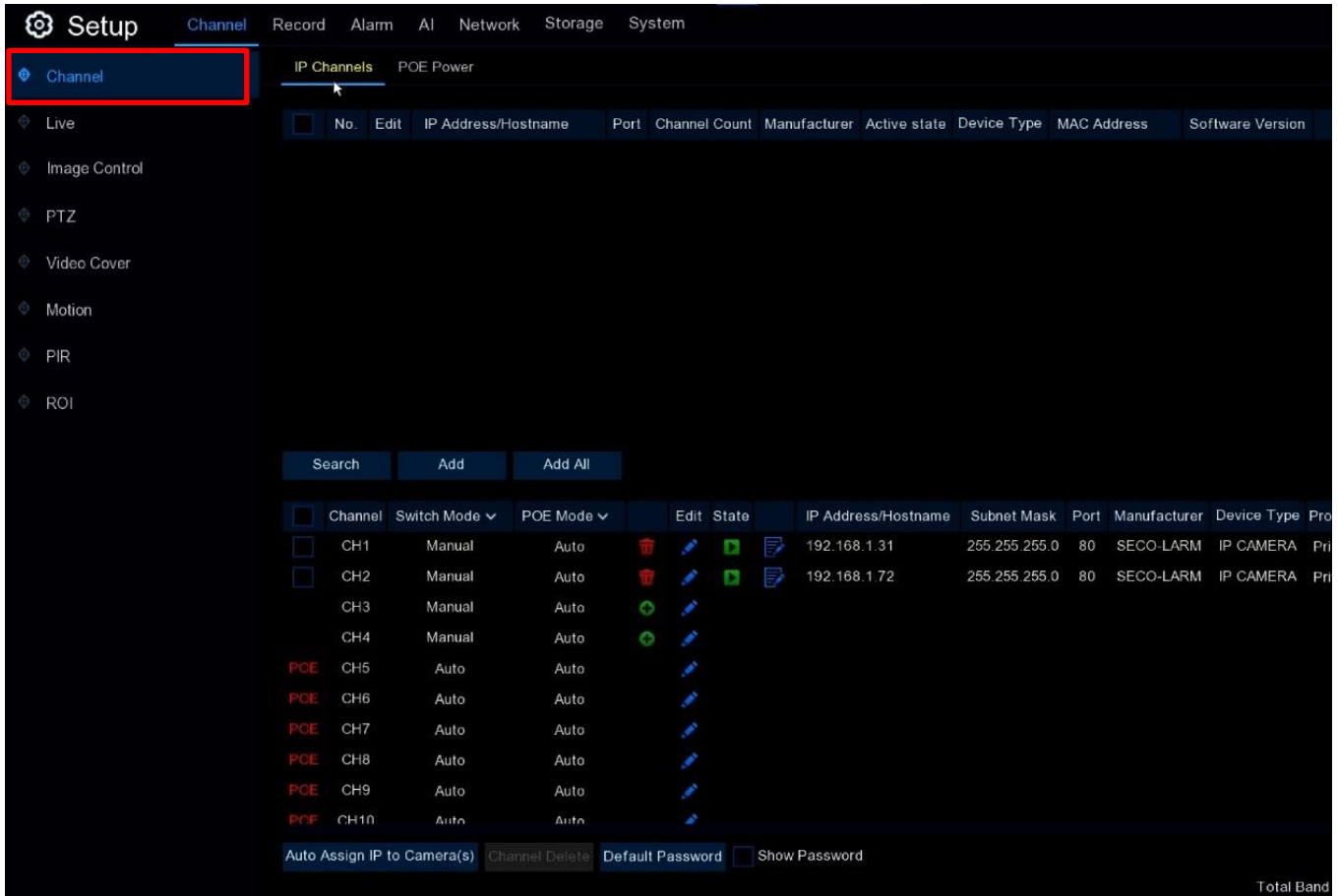
Click on the *Channel* button in *System Setup* (see above) to manage the camera connection, *Live View* display, camera images, PTZ setup, video cover, motion setup, and more.



CHANNEL (CONTINUED)

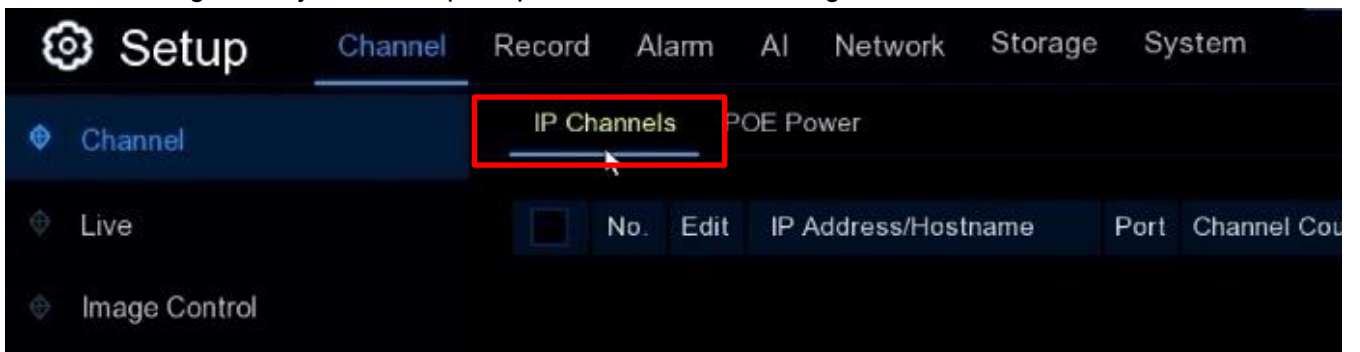
CHANNEL

Click the *Channel* tab on the *Setup* screen sidebar to add and delete IP cameras. You can also check PoE power consumption by clicking *PoE Power*.



IP CHANNELS

Add or delete IP cameras here. If you are connecting the cameras via a LAN or Internet connection, see *Connecting External Cameras via LAN/Internet* on pg. 51 for further details. If you are connecting directly to a PoE port, please continue reading below.



CHANNEL – CHANNEL, IP CHANNELS (CONTINUED)

PoE NVR CONNECTION

For a PoE NVR connection, you may connect IP cameras via the internal PoE ports and/or external LAN(WAN) port. PoE not only provides power over ethernet but supports plug & play connection for IP cameras.

NOTE: Connecting more than one camera to a single PoE port by any method is *not* recommended. You must connect only one IP camera to any single PoE port.

Channel	Switch Mode	PoE Mode	Edit	State	IP Address/Hostname	Subnet Mask	Port	Manufacturer	Device Type	Protocol	MAC Address	Software
CH1	Manual	Auto			192.168.1.31	255.255.255.0	80	SECO-LARM	IP CAMERA	Private	...	V31.35.8.2
CH2	Manual	Auto			192.168.1.72	255.255.255.0	80	SECO-LARM	IP CAMERA	Private	...	V21.45.8.2
CH3	Manual	Auto										
CH4	Manual	Auto										
POE CH5	Auto	Auto										
POE CH6	Auto	Auto										
POE CH7	Auto	Auto										
POE CH8	Auto	Auto										
POE CH9	Auto	Auto										
POE CH10	Auto	Auto										

Auto Assign IP to Camera(s) Channel Delete Default Password Show Password

Total Band Width:112Mbps. Used Band Width:13Mbps



- **Switch Mode:** *Auto* mode supports Plug & Play connection via the PoE port. If you want to add cameras manually, click the edit icon and change the mode to *Manual*. Alternatively, click the dropdown arrow at the top of the column to change all channels to *Auto* or *Manual* mode.
- **PoE Mode:** With *Auto* mode, the maximum bandwidth is limited to 100Mbps. With *ePoE* mode, the maximum bandwidth is limited to 10Mbps and PoE transmission distance will be extended up to 200 meters with Cat5e RJ45 cable or above. If you have a connection problem with *Auto* mode when the IP camera is powered by PoE via an RJ45 cable longer than 100 meters, then change to *ePoE* mode for a more stable connection. If the video sticks in *ePoE* mode, try reducing the encoding bit rate.

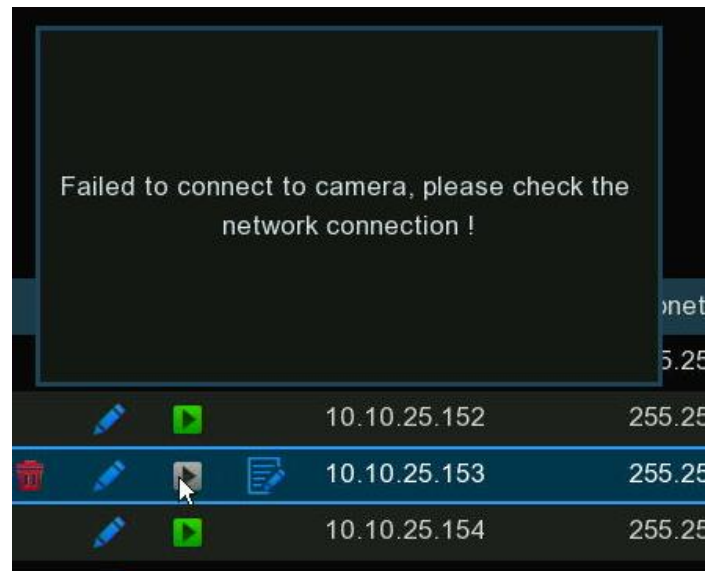
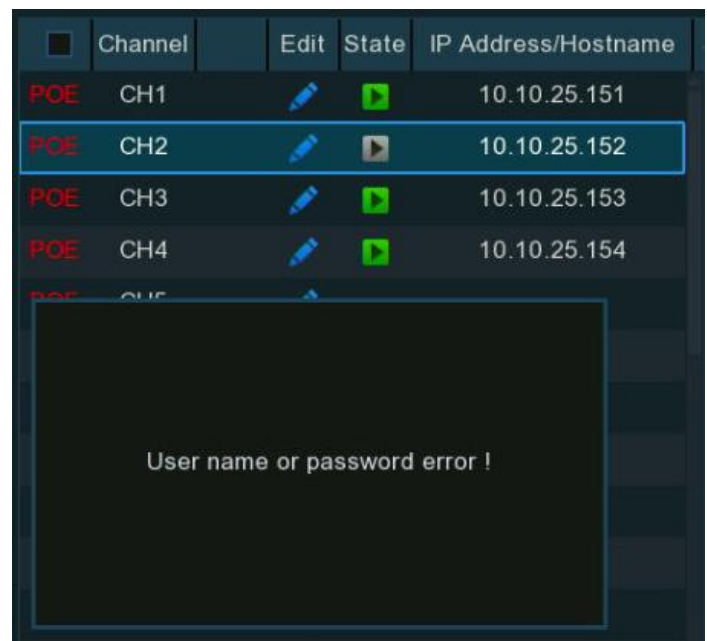
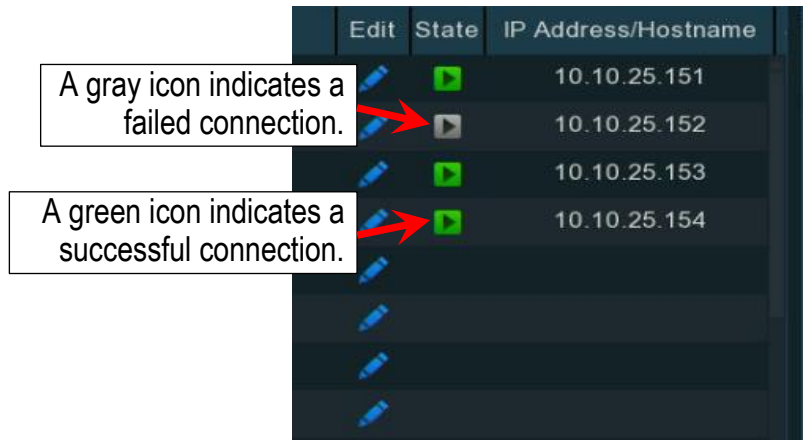
CHANNEL – CHANNEL, IP CHANNELS, PoE NVR CONNECTION (CONTINUED)

- **Edit:** To edit the Switch mode, PoE mode, network parameters, username, and password for an individual camera, click the edit icon and enter the data in the popup shown below.

Edit Connection Information	
Channel	CH1
Switch Mode	Auto
POE Mode	Auto
Alias	CH1
IP Address/Hostname	10.10.25.151
Subnet Mask	255.255.000.000
Port	80
Protocol	Private
User Name	admin
Password
OK Cancel	

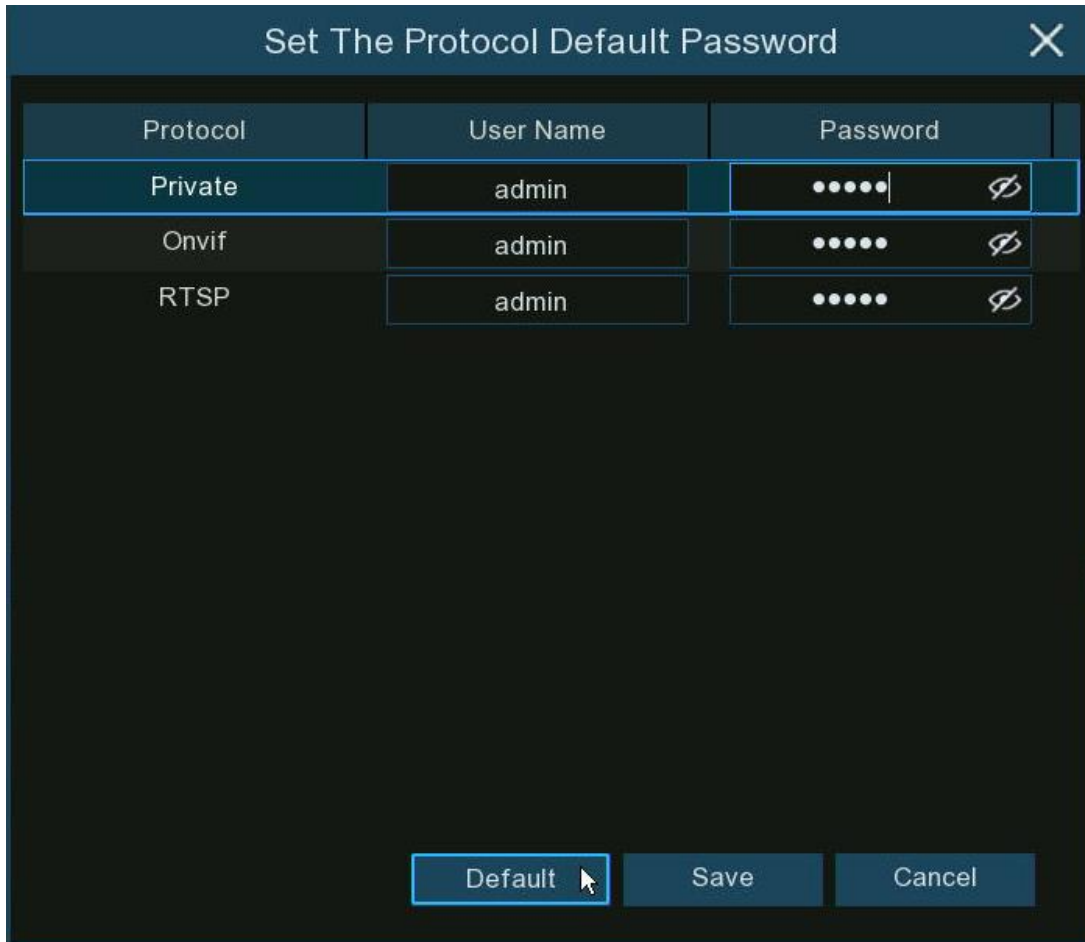
CHANNEL – CHANNEL, IP CHANNELS, POE NVR CONNECTION (CONTINUED)

- **State:** This column shows the connection status of each camera. A gray icon in the *State* column indicates a connection failure.
 - Click on a gray icon to show the reason for the failure.
 - If the problem is a "User name or password error!," the camera username and password differs from the default username and password. Click the edit icon  and enter the correct username and password.
 - If the error message reads "Failed to connect to camera, please check the network connection," the network parameters might be incorrect or incompatible with ONVIF protocols. Click the edit icon  and change to the correct network parameters.
- **Auto Assign IP to Camera(s):** If you try to manually add a camera that is not in the same network segment, you might receive a "failed to connect" error. In that case, you can select this to change the camera's IP address.

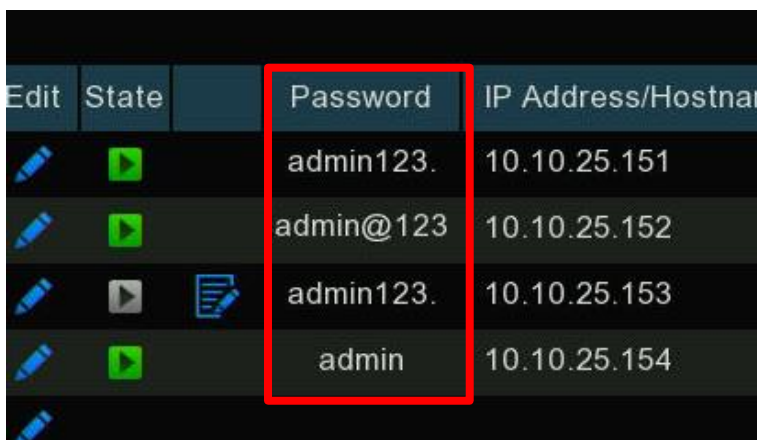


CHANNEL – CHANNEL, IP CHANNELS, PoE NVR CONNECTION (CONTINUED)

- Default Password:** Select this to configure the default username and password of private, ONVIF, and RTSP protocol connections. The default password is *admin*. Please note, if the username and password of the camera you add differs from the default values, you may need to enter the username and password each time you restart the NVR.



- Show Password:** Click to show the passwords of connected IP cameras on the channel list as seen here.

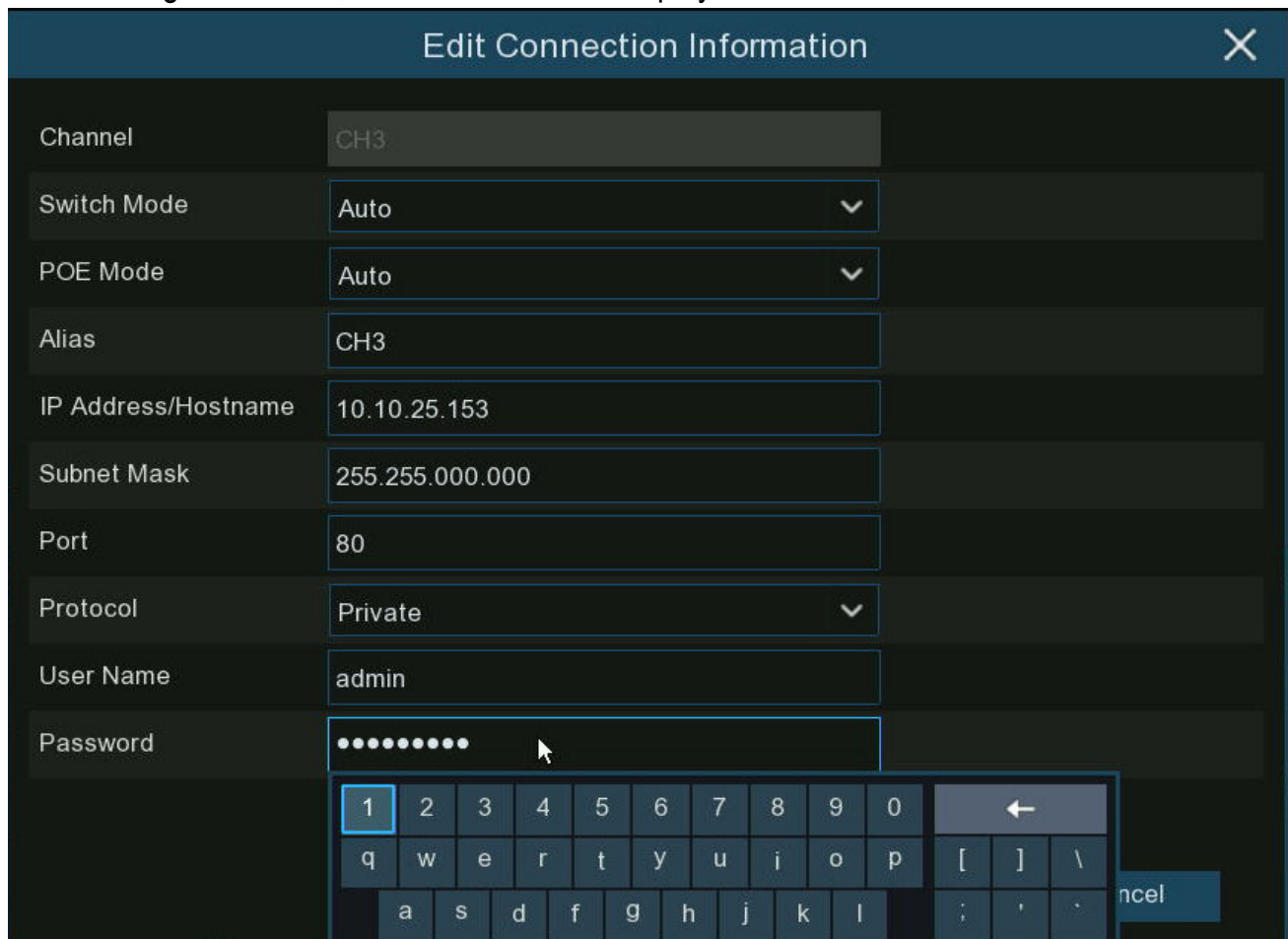


CHANNEL – CHANNEL, IP CHANNELS, PoE NVR CONNECTION (CONTINUED)

CONNECTING PLUG & PLAY PoE CAMERAS

To connect a Plug & Play PoE Camera, proceed as follows.

1. Keep the default settings.
2. Change the default username and password to be same as those of the camera.
3. Make sure your IP camera is already set to DHCP IP address. If your camera is set to a static IP address which is different from the IP address segment in the PoE router, your IP camera will be unable to get online (See *General Settings* beginning on pg. 197).
4. Connect the IP camera to a PoE port on the NVR's rear panel.
5. After starting the camera, it will be online and displayed in the camera list.




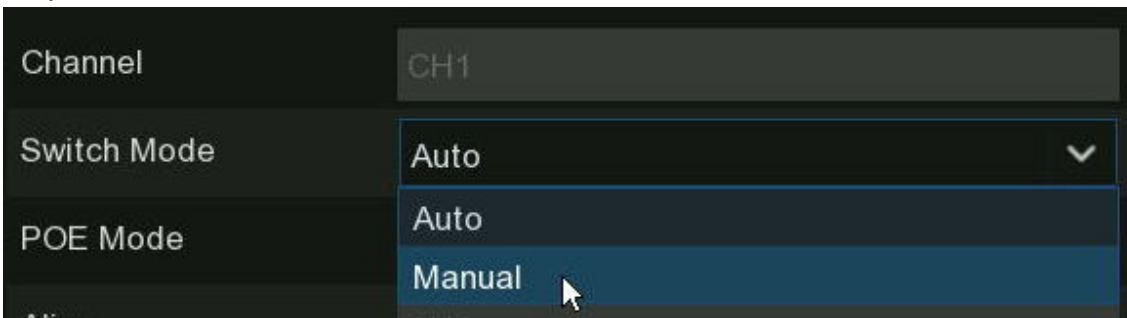
CHANNEL – CHANNEL, IP CHANNELS, PoE NVR CONNECTION (CONTINUED)*CONNECTING EXTERNAL CAMERAS VIA LAN/INTERNET*

To connect an IP camera via a LAN or Internet, proceed as follows.

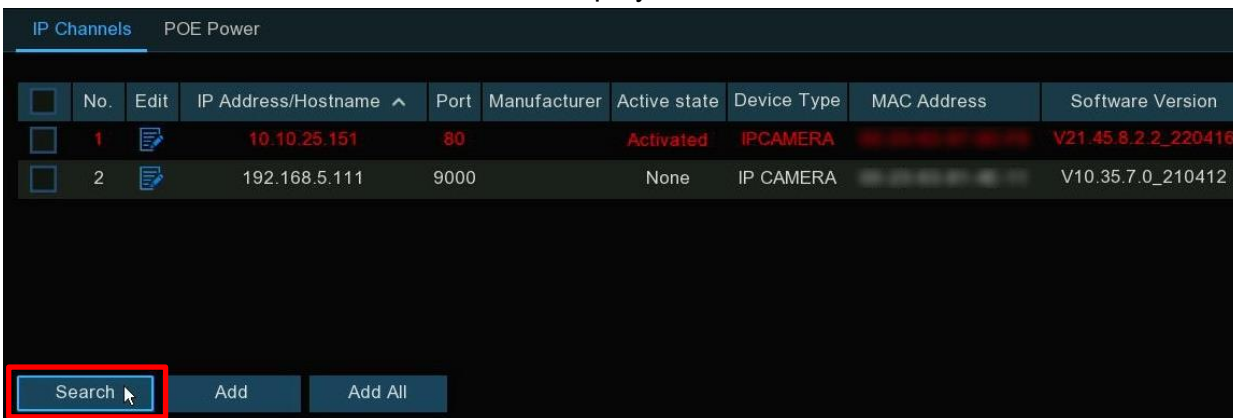
1. Ensure your NVR is properly connected to the LAN and or Internet.
2. Change the PoE Switch Mode to manual.
 - a. To change all channels to Manual, click the *Switch Mode* dropdown and select *Manual*.




- b. To add an individual channel manually, click the edit icon  in the channel list, click the drop-down arrow next to *Switch Mode* to select *Manual*, and click *OK* to save.



3. To add an individual camera on a LAN
 - a. Change the PoE mode to *Manual* as described above.
 - b. **Either** click the *Search* button which will display all available cameras in the LAN.



CHANNEL – CHANNEL, IP CHANNELS, PoE NVR CONNECTION, CONNECTING EXTERNAL CAMERAS VIA LAN/INTERNET (CONTINUED)

c. Or click the Add icon  in the channel list and click the Search button which will display all available cameras in the LAN.

Channel	Switch Mode ▾	PoE Mode ▾		Edit	State
CH1	Manual	Auto			
CH2	Manual	Auto			

d. Click on the camera you want to add, complete the parameters below, and enter the camera's username and password.

Add IP Camera ✕

No.	IP Address/Hostname	Port	Manufacturer	Active state	Device Type	MAC Address
1	10.10.25.151	80		Activated	IPCAMERA
2	192.168.5.111	9000		None	IP CAMERA

IP Address/Hostname:

Alias:

Port:

Protocol: ▾

User Name:

Password:

Bind channel: ▾

- **Alias:** Enter the camera ID that you want displayed in the *Live View* screen.
- **Port:** Select the camera's communication port.
- **Protocol:** Select the connection protocol from the dropdown.
- **Bind channel:** Select the channel for the camera.

CHANNEL – CHANNEL, IP CHANNELS, PoE NVR CONNECTION, CONNECTING EXTERNAL CAMERAS VIA LAN/INTERNET (CONTINUED)

e. Click the *Add* button and the camera will be displayed in the channel list.

Channel	Switch Mode	PoE Mode	Edit	State	Password	IP Address/Hostname	Subnet Mask	Port	Manufac
CH1	Manual	Auto			admin	192.168.5.111	255.255.255.0	9000	
CH2	Manual	Auto							

4. To add multiple cameras on a LAN

a. Click the *Search* button to display all available cameras on the LAN **or** click the *Add All* button to search and add all available cameras on the LAN.

The screenshot shows the 'IP Channels' section of the interface. A table lists three cameras with columns for No., Edit, IP Address/Hostname, Port, Manufacturer, Active state, Device Type, MAC Address, and Software Version. Below the table, three buttons are visible: 'Search', 'Add', and 'Add All'. A red 'OR' with arrows points to the 'Search' and 'Add All' buttons, which are also highlighted with red boxes.

b. Select the cameras from the search results and click *Add*. Enter the usernames and passwords for the cameras. All cameras must use the same username and password, otherwise those with different usernames or passwords will not be connected.

The screenshot shows the 'Add IP Camera' configuration form. It includes fields for Port (80), Protocol (Private), User Name (Default), and Password (Default). The 'Auto' checkboxes for both Port and Protocol are checked. The 'User Name' and 'Password' fields are highlighted with a red box.

c. The added cameras will be displayed in the channel list.

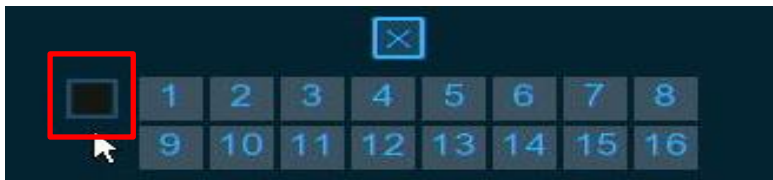
Channel	Switch Mode	PoE Mode	Edit	State	Password	IP Address/Hostname	Subnet Mask	Port	Manufac
CH1	Manual	Auto			admin	192.168.5.111	255.255.255.0	9000	
CH2	Manual	Auto							

CHANNEL – CHANNEL, IP CHANNELS, PoE NVR CONNECTION, CONNECTING EXTERNAL CAMERAS VIA LAN/INTERNET (CONTINUED)

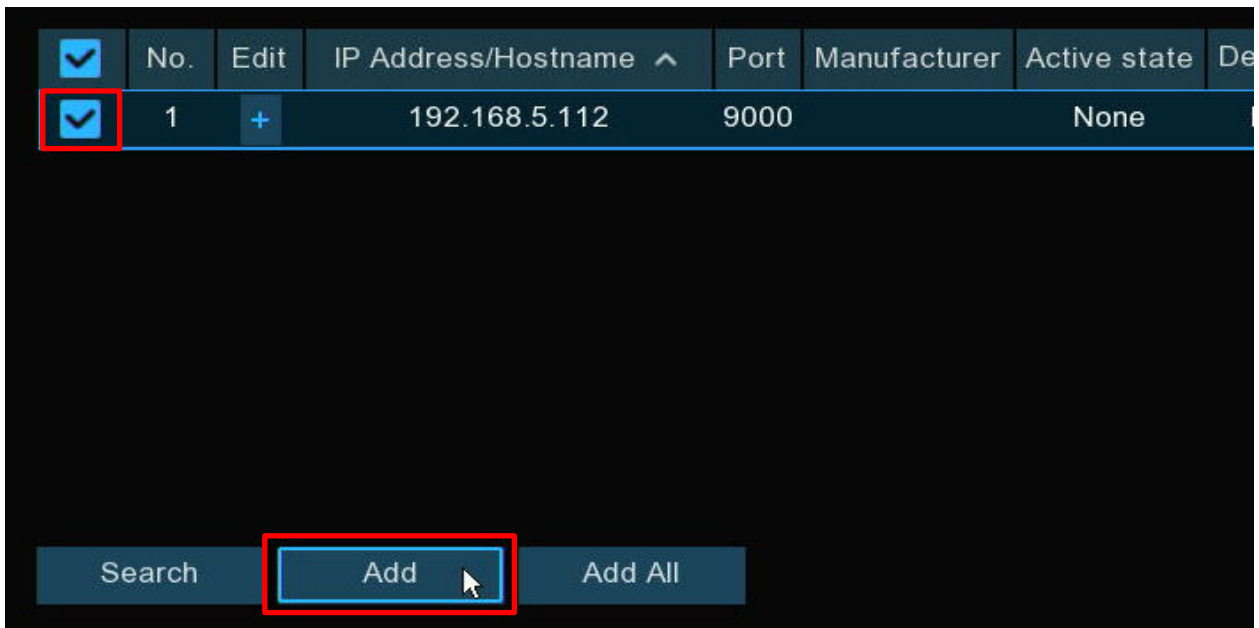
- 5. To add cameras from another NVR on the LAN
 - a. Click the *Search* button to display all available devices on the LAN. There will be an edit icon **+** displayed if the device is an NVR.



- b. Click the edit icon **+** and select the camera channels one by one or click the checkbox to select all cameras. Click the icon to go back to the search list.



- c. Select the NVR from the search list and click *Add* button.



CHANNEL – CHANNEL, IP CHANNELS, PoE NVR CONNECTION, CONNECTING EXTERNAL CAMERAS VIA LAN/INTERNET (CONTINUED)

d. Enter the username and password of the NVR and click *Add* button.

The screenshot shows a configuration form with the following fields:

- Port: 9000
- Protocol: Private
- User Name: admin
- Password: [masked]

The 'Add' button is highlighted with a red box.

e. The added cameras will be displayed in the channel list.

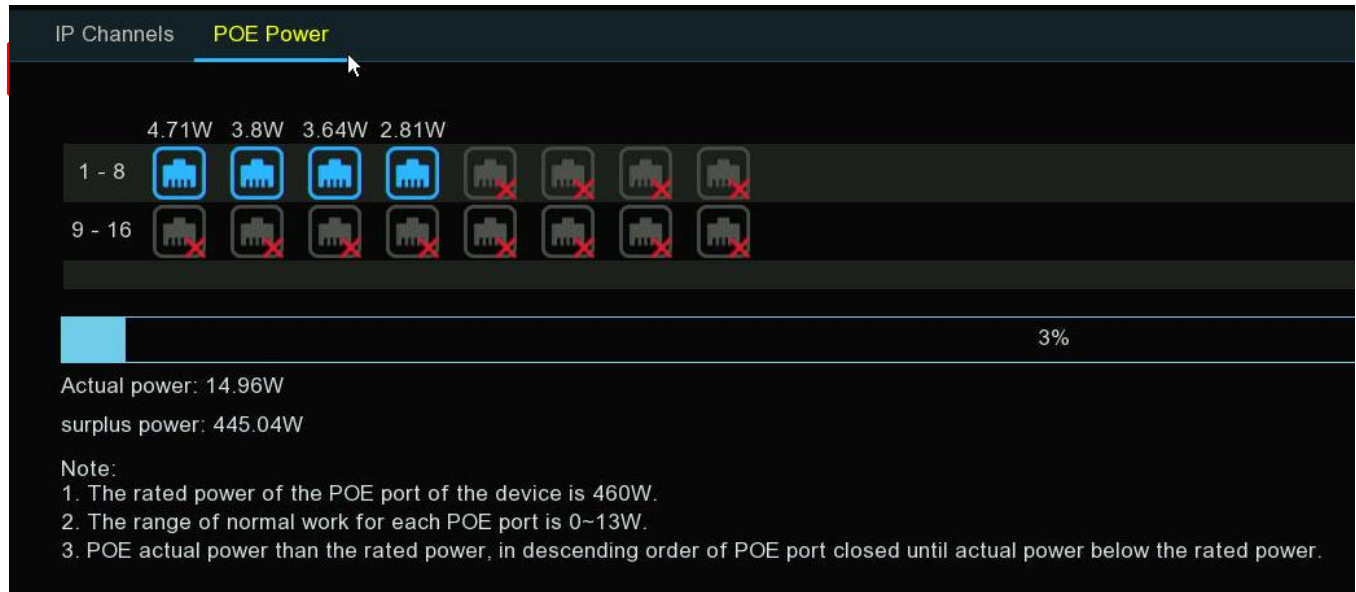
Channel	Switch Mode	POE Mode		Edit	State		IP Address/Hostname
CH3	Manual	Auto					192.168.5.112-1
CH4	Manual	Auto					192.168.5.112-2
CH5	Manual	Auto					192.168.5.112-3
CH6	Manual	Auto					192.168.5.112-4

6. For Non-PoE NVR connections, refer to *Connecting External Cameras via LAN/Internet* on pg. 51.

CHANNEL – CHANNEL (CONTINUED)

PoE POWER

Click the PoE tab at the top of the page to show the real-time power consumption of each PoE port, total actual power, and rated power.



CHANNEL (CONTINUED)

LIVE

Click the *Live* tab on the *Setup* screen sidebar to configure camera parameters, including channel name, color, date & time format, refresh rate, and more.

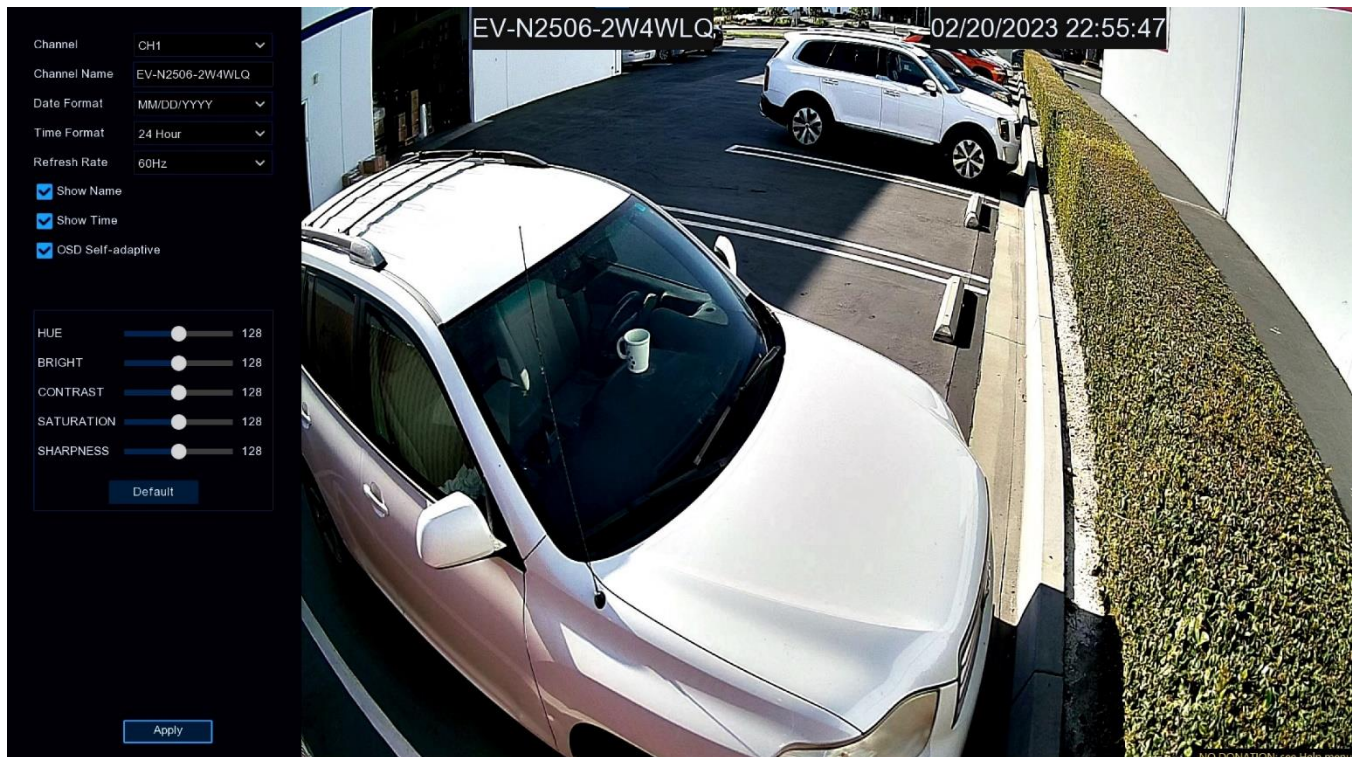
Channel	Setup	Covert	Channel Name	Show Name	Date Format	Time Format	Show Time	Refresh Rate	OSD Self-
CH1		<input type="checkbox"/>	EV-N2506-2W4WLQ	<input checked="" type="checkbox"/>	MM/DD/YYYY	24 Hour	<input checked="" type="checkbox"/>	60Hz	
CH2		<input type="checkbox"/>	Camera	<input checked="" type="checkbox"/>	MM/DD/YYYY	24 Hour	<input checked="" type="checkbox"/>	60Hz	

Apply

- **Convert:** Check this box to hide the camera images in *Live View*. If checked, the images will only be hidden in the *Live View*. Recordings will not be affected. Enable this if your NVR and display is in a public area (shop, warehouse, etc.) where you don't want others to see the images from the selected camera.
- **Channel Name:** Click to name the camera.
- **Show Name:** Leave this checked (default) to display the camera name in *Live View* mode. Uncheck it to hide the camera name. This setting affects both *Live View* and recordings.
- **Date Format:** Click to choose a date format from the dropdown.
- **Time Format:** Click to choose a time format from the dropdown.
- **Show Time:** Leave this checked (default) to embed a timestamp on all video recordings. Uncheck to disable this feature. This setting affects both *Live View* and recordings.
- **Refresh Rate:** Choose the value from the dropdown that matches the frequency of alternating current in your region (default, US standard 60Hz).
- **OSD Self-Adaptive:** Check this box to let the OSD text color adapt to the background.

CHANNEL – LIVE (CONTINUED)

- **Setup:** Click the  icon for a camera to show more settings (see below).



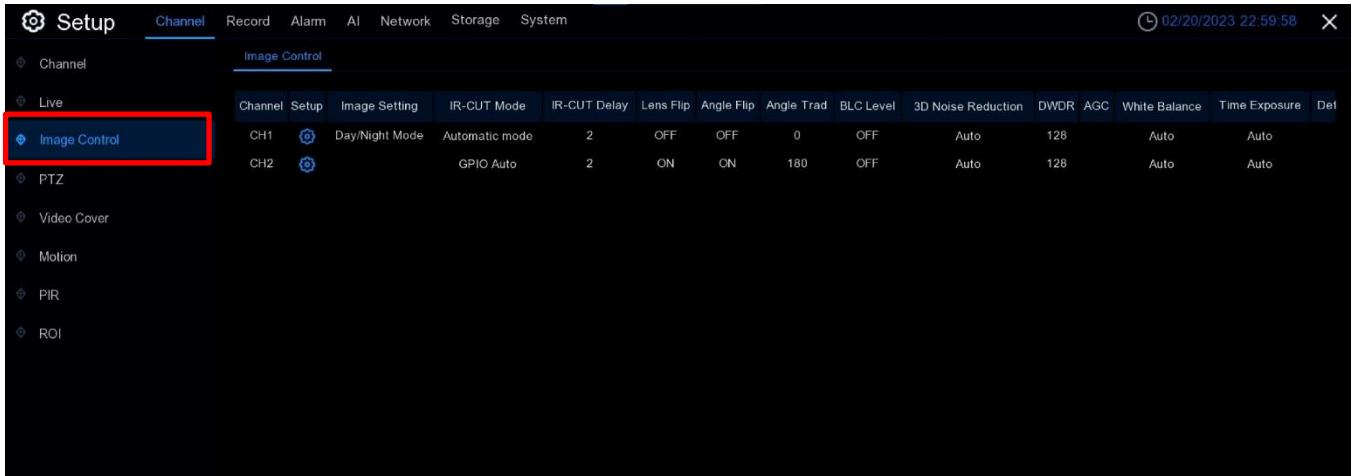
- **Channel:** Select a channel to edit from the dropdown.
- **Channel Name:** Click to name the camera.
- **Date Format:** Click to choose a date format from the dropdown.
- **Time Format:** Click to choose a time format from the dropdown.
- **Refresh Rate:** Choose the correct refresh rate from the dropdown.
- **Show Name:** Check or uncheck this box to show or hide camera name.
- **Show Time:** Check or uncheck this box to show or hide the date and time.
- **OSD Self-Adaptive:** Check to let the OSD text color adapt to the background.
- **HUE:** Adjust the hue value to change the color mix of the image.
- **BRIGHT:** Adjust the brightness of the image.
- **CONTRAST:** Adjust the difference in luminance that makes an object distinguishable.
- **SATURATION:** Adjust the value related to how much color is displayed in the image.
- **SHARPNESS:** Adjust the image sharpness.

Click *Apply* to save your settings. Click *Default* to load the default settings. Right click to exit.

CHANNEL (CONTINUED)

IMAGE CONTROL

Click the *Image Control* tab on the *Setup* screen sidebar to configure image settings for supported IP cameras. If the camera is connected to an NVR with ONVIF protocol, it might support configuring.



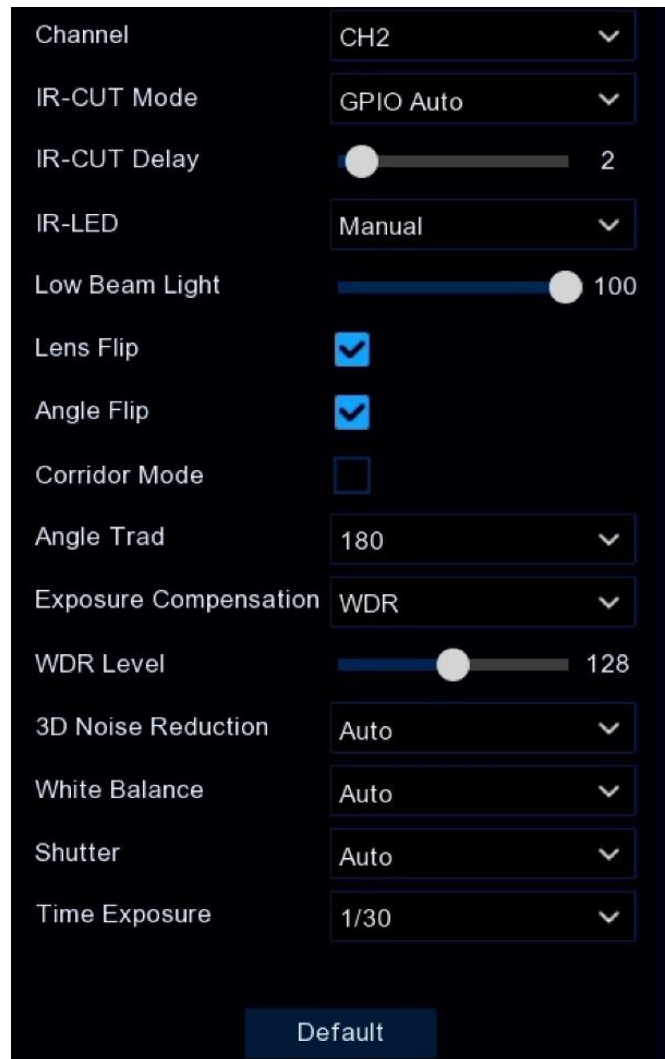
- **Setup:** Click the icon for a camera to show more settings (see following).



- **Channel:** Choose a channel to configure.

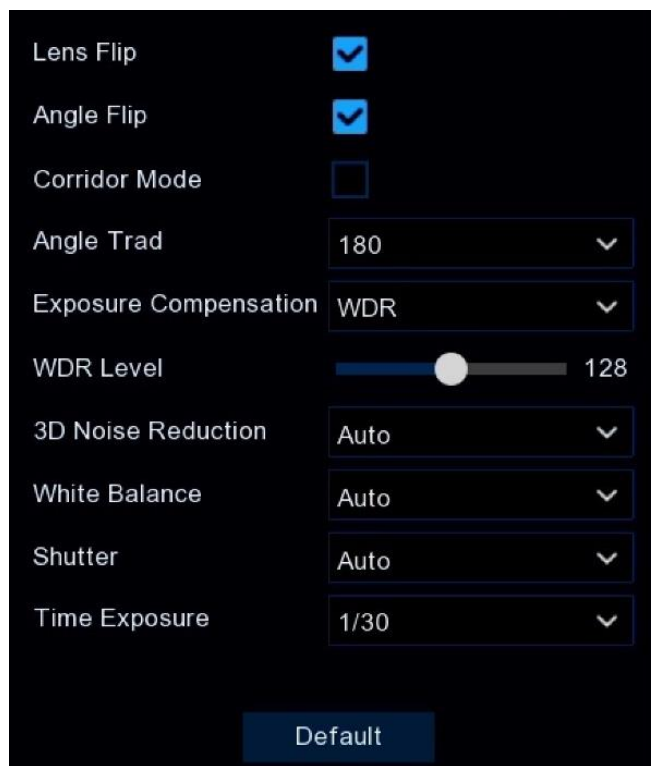
CHANNEL – IMAGE CONTROL (CONTINUED)

- **IR-CUT Mode:** Choose how the camera handles color and manages the transition from daytime to nighttime and vice versa.
 - **GPIO AUTO:** Choose to allow the camera to use input from the light sensor to switch automatically from *Color Mode* to *Black White Mode* and vice versa according to the camera's pre-defined light algorithms.
 - **Color Mode:** Choose to force the camera to operate in *Color Mode* only. Note that in low light conditions, the color will be faint and image clarity will be reduced.
 - **Black White Mode:** Choose to force the camera to operate in *Black and White Mode* only.
 - **Image Mode:** Choose to allow the camera software to switch automatically from *Color Mode* to *Black and White Mode* and vice versa based on a user-prescribed sensitivity level.
 - **Sensitivity:** Set the sensitivity value between 0 and 3, the higher the value, the sooner the camera will switch to night mode as the scene darkens. At 0, the camera will not change to night mode unless the light level is almost completely dark.
 - **Schedule:** Choose to set the images as black & white or color according to a schedule.
- **IR-CUT Delay:** Use the slider to adjust the delay of the IR cut filter when transitioning from daytime to nighttime. The default setting will be suitable for most camera locations but can be adjusted if needed. The higher the number, the greater the delay.
- **IR-LED:** In this dropdown, you can configure the IR LED lighting method.
 - **Smart IR:** Choose to allow the LED lighting to be managed by the system.
 - **Manual:** Choose to manually configure the brightness of the LED lights including individual control of low-beam and high-beam lights.
- **Lens Flip & Angle Flip:** Choose to reverse the image orientation vertically and/or horizontally.
- **Corridor Mode:** Choose to make better use of the camera's vertical angle for an optimized view of long, narrow scenes such as a narrow corridor.



CHANNEL – IMAGE CONTROL (CONTINUED)

- **Angle Trad:** Choose to rotate the image.
- **Exposure Compensation:** When the surrounding illumination and the subject vary greatly in brightness, you can enable exposure compensation for a better image.
 - **WDR:** Images produced by wide dynamic range (WDR) sensors can have proper exposure on both the darker and lighter parts of the image, giving more detail across a wider dynamic range between the shadows and highlights by brightening dark areas and darkening bright areas. If enabled, click and hold the slider left or right to change the WDR Level.
 - **HLC:** High Light Compensation (HLC) allows your camera to compensate for brighter parts of your image, maintaining detail in brighter parts of the image that would otherwise be blown out. When you enable HLC, the camera will take very bright areas into consideration and adjust the exposure accordingly. With HLC, your camera will try to properly expose your entire scene while reducing the brightness of the highlights. If enabled, click and hold the slider left or right to change the HLC Level.
 - **BLC:** Back Light Compensation (BLC) allows you to choose which areas of your scene should be properly exposed instead of letting the camera choose for you. By enabling BLC, the camera over-exposes the brighter parts of your image in order to properly expose the darker parts. If enabled, click and hold the slider left or right to change the BLC Level.
 - **Disable:** Disable exposure compensation.
- **XXX Level:** Move the slider to adjust the *Exposure Compensation* level for the type selected above if any.
- **3D Noise Reduction:** Click this dropdown to configure 3DNR to reduce image noise (grainy, fuzzy appearance) if desired. *Auto* is highly recommended.
- **White Balance:** Click this dropdown to adjust color compensation by establishing a basis for what is true white if desired. *Auto* is highly recommended.
- **Shutter:** Click this dropdown to adjust the shutter setting. *Auto* is highly recommended.
- **Time Exposure:** Click this dropdown to adjust the exposure speed if you have set the shutter to manual. *Auto* is highly recommended.



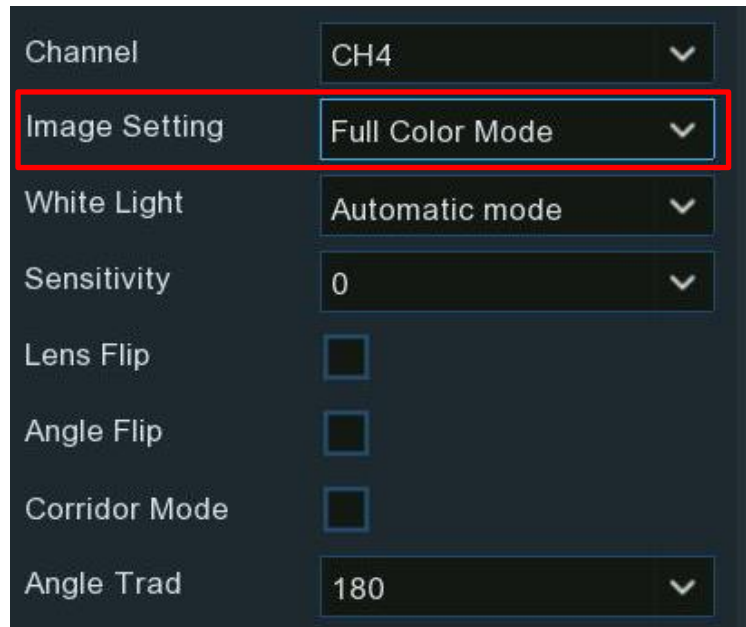
CHANNEL – IMAGE CONTROL (CONTINUED)

FULL COLOR CAMERA SETTINGS

(IP Cameras with White LEDs only)

If a full color camera is connected to the NVR, an *Image Setting* option and *White Light* option will be displayed on the *Image Control* setting page. Some other options may vary depending on the connected camera.

Full color cameras include not only IR LEDs, but also white light LEDs and allow you to determine the operating mode of these LEDs.



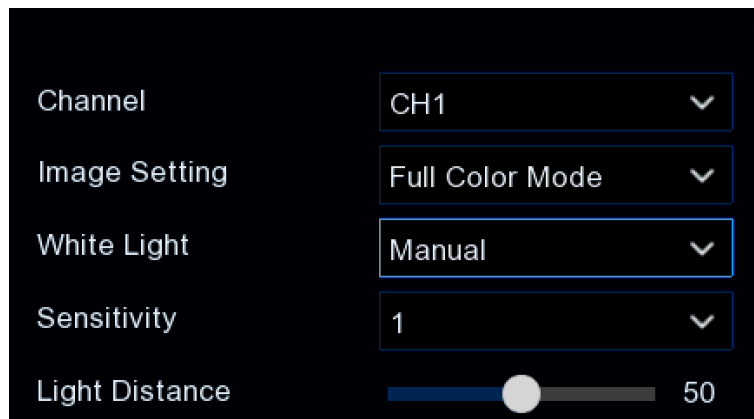
• Image Setting

- **Day/Night Mode:** Choose to force the camera to work as a normal IR LED camera.
- **Full Color Mode:** Choose to allow camera to work as a full color camera enabling you to configure the brightness of the white LEDs.

NOTE: When using Full Color Mode, the white LEDs cannot be used as deterrence lights (see *When Using IP Cameras with Deterrence* beginning on pg. 103 for more information on deterrence).

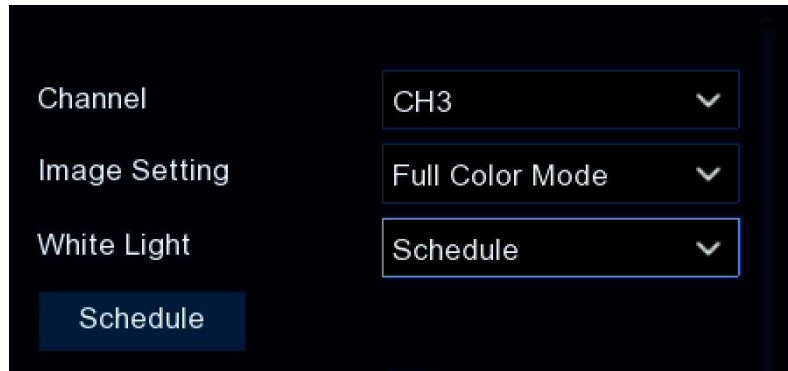
• White Light:

- **Automatic mode:** Choose to allow the system to automatically control the brightness of the white LEDs based on the brightness of the images. The *Sensitivity* dropdown gives you some control of this as will be described later.
- **Manual mode:** Choose this option to manually control the LED brightness. Set a fixed brightness value in the *Light Distance* Slider. The higher the number, the brighter the LEDs and vice versa. The LEDs will be permanently turned off if the value is set to 0.



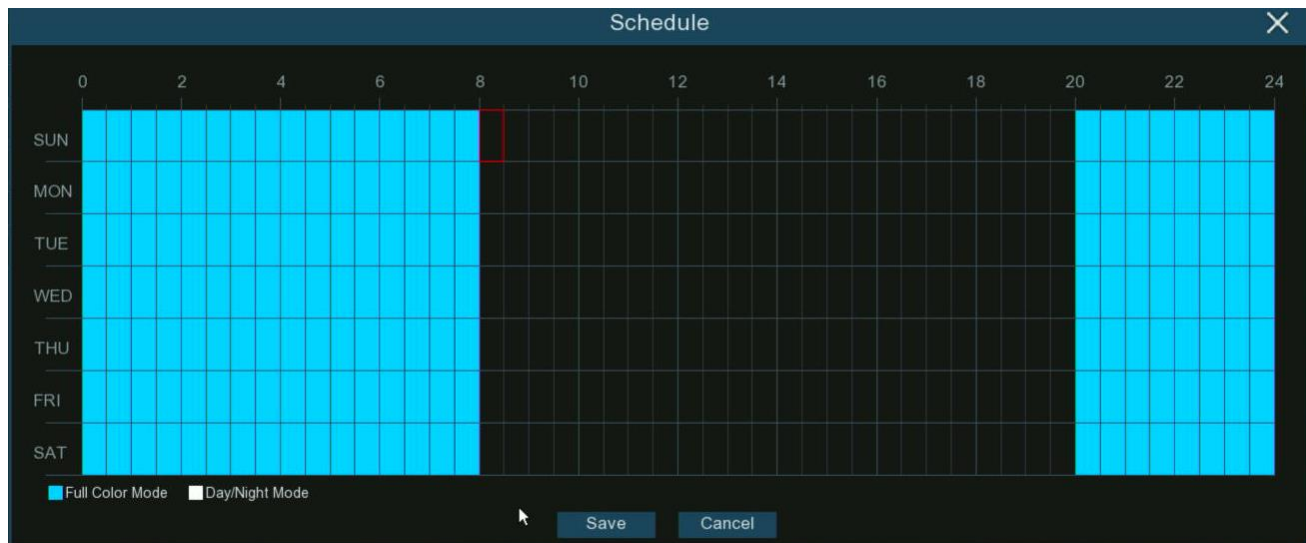
CHANNEL – IMAGE CONTROL, FULL COLOR CAMERA SETTINGS (CONTINUED)

- **Schedule:** Choose this option to set the white LEDs to be turned on or off according to a schedule. If you choose this option, you will see a *Schedule* button appear below, replacing the *Sensitivity* dropdown. You will need to set the schedule with this button as described below.



- **OFF:** Turn the white LEDs off.

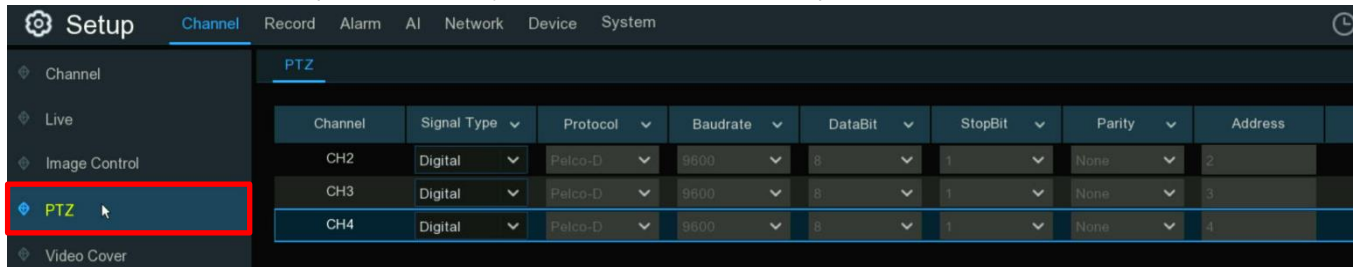
- **Sensitivity:** Move the slider to adjust. The higher the number, the more sensitive the system will be in determining when to turn on the white LEDs and vice versa when the *White Light* is set to *Automatic mode*.
- **Schedule:** Press the *Schedule* button to open a popup to set the daily schedule if you have chosen the *Schedule* option under *White Lights*. In the popup, each square represents 30 minutes, and a blue square represents when the white LEDs should be turned on in full color mode, while a black square represents when they should be off. Click on a square to change its color or click and drag the mouse over a range to change a period of time.



CHANNEL (CONTINUED)

PAN/TILT/ZOOM (PTZ)

Click the *PTZ* tab on the *Setup* screen sidebar to configure the PTZ (Pan/Tilt/Zoom) settings for speed dome cameras (available only on select NVR models).




- **Channel:** Shows the channel name
- **Signal Type:** If your PTZ camera is connected to the *RS-485* port, choose *Analog*, otherwise choose *Digital*.

The following items refer to Analog PTZ only.


- **Protocol:** Choose the communication protocol between the PTZ camera and the NVR.
- **Baudrate:** Set the communication speed to be used for the connection between the NVR and the PTZ camera. Ensure that it matches the compatibility of your PTZ camera.
- **DataBit / StopBit:** The information between the NVR and PTZ-capable camera is sent in individual packets. The *DataBit* indicates the number of bits sent, while the *StopBit* indicates the end of the packet and the beginning of the next (information) packet. The available parameters for *DataBit* are: 8, 7, 6, 5. the available parameters for the *StopBit* are 1 or 2.
- **Parity:** *Parity* is for error checking. Consult your PTZ camera documentation to configure this setting.
- **Address:** Set the command address for the PTZ system. Note that each PTZ camera needs a unique address to function properly.

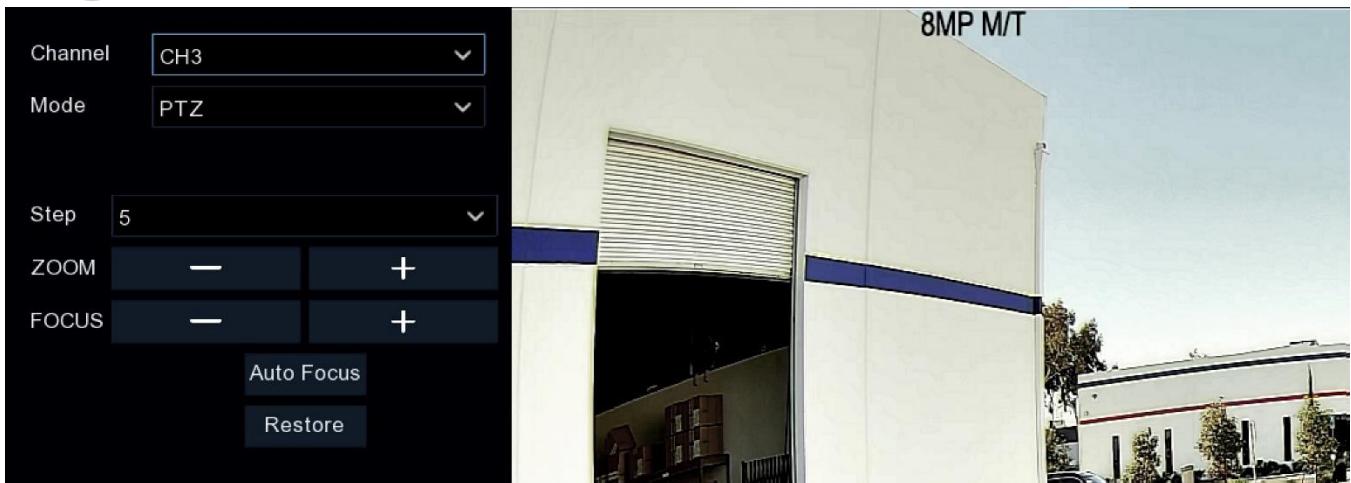
CHANNEL – PAN/TILT/ZOOM (PTZ) (CONTINUED)**MFZ AND PTZ CONTROL**

In *Live View*, click on a connected camera to pop up the *Camera Quick Toolbar*. Click the PTZ icon  to enter *PTZ Control Panel*.

**CONTROLLING YOUR MFZ CAMERA**

(IP cameras with motorized focus and zoom only)


If an MFZ (Motorized Focus & Zoom) camera is connected you can zoom in or zoom out. In *Live View*, click on the desired MFZ camera to pop up the *Camera Quick Toolbar*. Click the PTZ icon  to enter *MFZ Control Panel*.












- **Step:** Click this dropdown to set the number of steps of each movement of the MFZ lens.
- **Zoom:** Click the **—** or **+** to zoom in and zoom out.
 - **—** : Single click to zoom out by the number of steps set above and auto focus. Click and hold to continuously zoom out until you release the mouse button.
 - **+** : Single click to zoom in by the number of steps set above and auto focus. Click and hold to continuously zoom in until you release the mouse button.
- **Focus:** Click the **—** or **+** to fine tune the focus manually.
 - **—** : Single click to focus out by the number of steps set above. Click and hold to continuously focus out until you release the mouse button.
 - **+** : Single click to focus in by the number of steps set above. Click and hold to continuously focus in until you release the mouse button.
- **Auto Focus:** Click to instruct the camera to auto focus on the object.
- **Restore:** Click to restore the camera to default status.

CHANNEL – PAN/TILT/ZOOM (PTZ), MFZ AND PTZ CONTROL (CONTINUED)

CONTROLLING YOUR PTZ CAMERA

In *Live View*, click on the desired PTZ camera to pop up the *Camera Quick Toolbar*. Click the PTZ icon  to enter *PTZ Control Panel*, shown below.



- **Mode:** Click to set the control mode – *PTZ* or *Preset*.
- **Directional Buttons:** Click and hold a directional button to move the camera in the direction selected. Click the middle button  to continually rotate the camera towards the left (click the any other directional button to stop). To change the rotational speed, stop the rotation and restart after changing the speed setting (below).
- **Speed:** Move the slider to adjust the speed at which the camera will pan or tilt.
- **Zoom:** Click the  or  to zoom in and zoom out.
 -  : Single click to zoom out by the number of steps set above and auto focus. Click and hold to continuously zoom out until you release the mouse button.
 -  : Single click to zoom in by the number of steps set above and auto focus. Click and hold to continuously zoom in until you release the mouse button.
- **Focus:** Click the  or  to fine tune the focus manually.
 -  : Single click to focus out by the number of steps set above. Click and hold to continuously focus out until you release the mouse button.
 -  : Single click to focus in by the number of steps set above. Click and hold to continuously focus in until you release the mouse button.

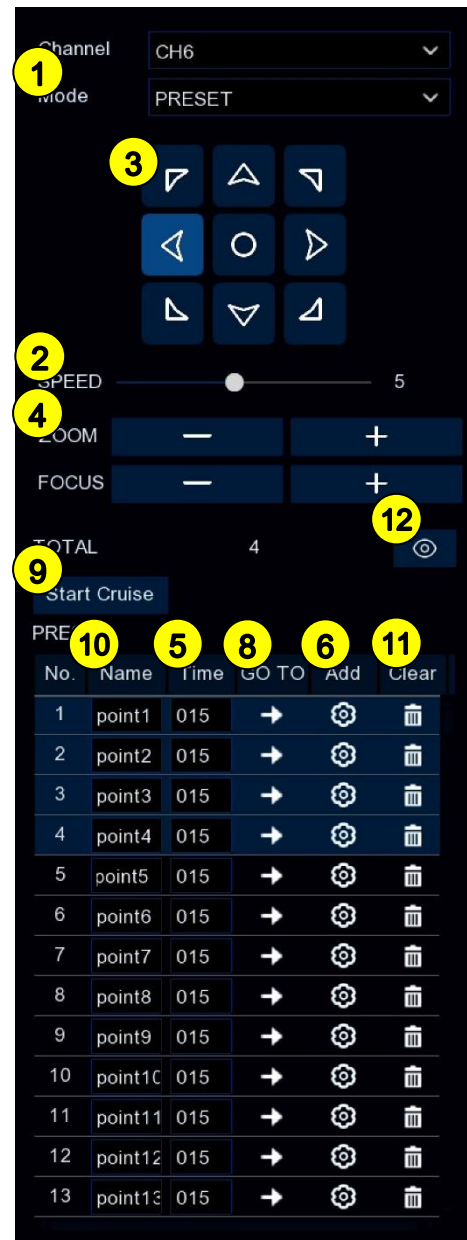


CHANNEL – PAN/TILT/ZOOM (PTZ), MFZ AND PTZ CONTROL, CONTROLLING YOUR PTZ CAMERA (CONTINUED)


PRESET POSITION

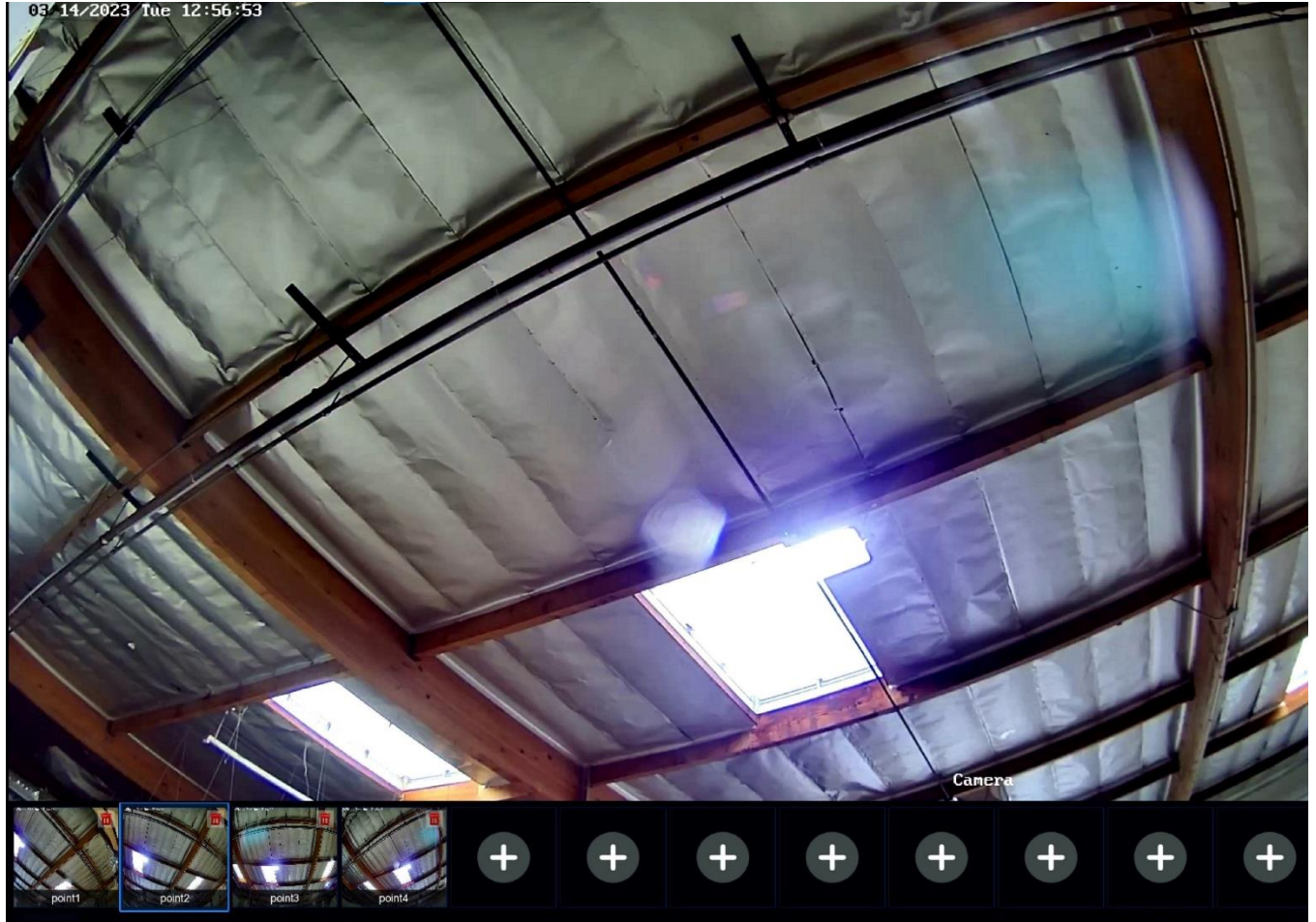
The NVR allows you to configure up to 255 preset positions for the camera to focus on.

- 1 In the *PTZ Control Panel*, select the *Preset* mode.
- 2 Move the speed control slider to adjust the speed at which the camera will pan or tilt.
- 3 Click and hold the directional buttons to move the camera in the direction selected.
- 4 Change the optical zoom and focus of the lens if needed.
- 5 When the position is fixed, in the time column beside the corresponding point enter the length of time (in seconds) that the camera should stay at this position before moving to the next position.
- 6 Click the icon in the *Add* column to create the preset point.
7. Repeat steps 1 to 6 to add more preset positions. The saved preset positions will be displayed with blue background.
- 8 To confirm a preset, click the arrow → in the *GO TO* column to move the camera to the selected position.
- 9 To view the preset sequence you have created, click *Start Cruise*. The camera will move to each preset position in sequence. Click *Stop Cruise* to stop.
- 10 Give a name to each preset position if desired.
- 11 Delete a particular preset position by clicking trash can icon 🗑️ in the *Clear* column.



CHANNEL – PAN/TILT/ZOOM (PTZ), MFZ AND PTZ CONTROL, CONTROLLING YOUR PTZ CAMERA (CONTINUED)

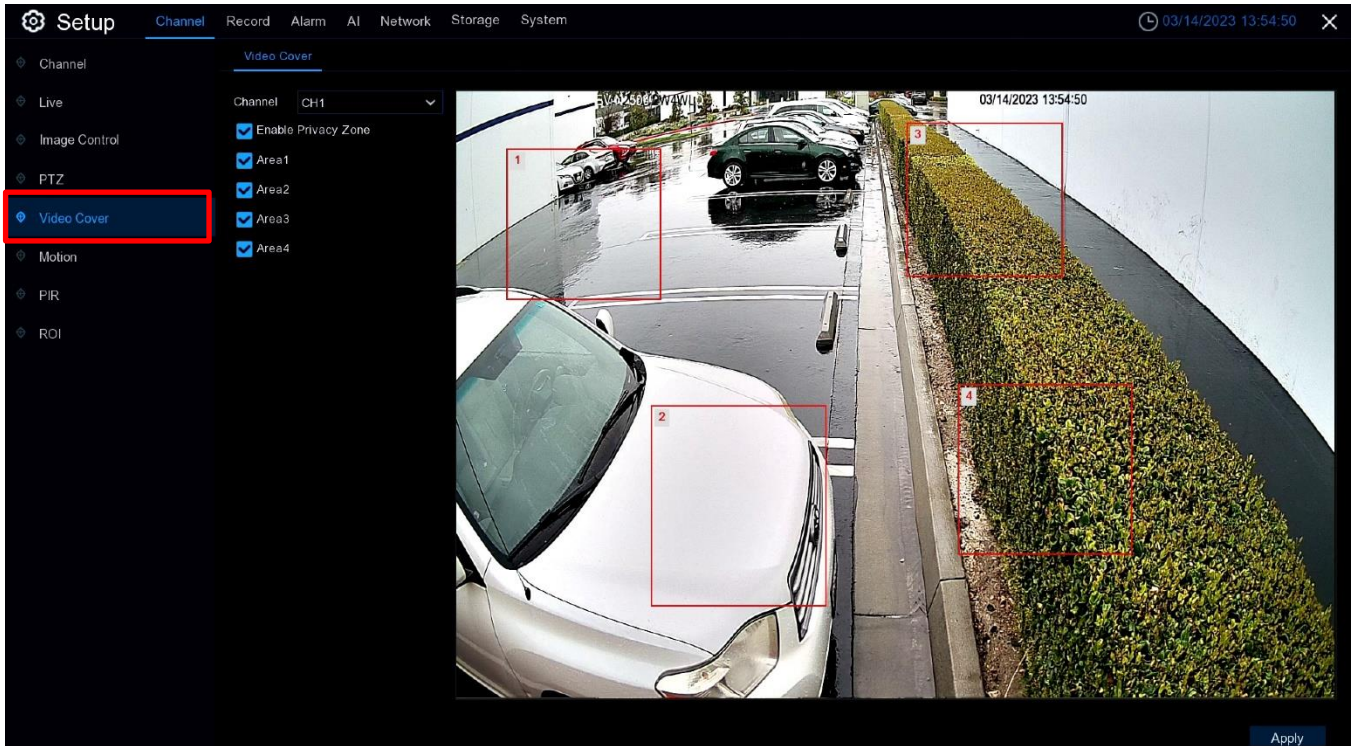
- 12. Click the visual icon  to see the thumbnail of each preset position at the bottom of the *Live View* screen. You can go to, delete, or add a preset position in the visual interface as well.



CHANNEL (CONTINUED)

VIDEO COVER

Click the *Video Cover* tab on the *Setup* screen sidebar to configure the function allowing you to obscure all or part of your image for privacy (up to 4 privacy masks per camera). Areas obscured by a mask won't be shown live or recorded.



- **Channel:** Select a camera to edit.
- **Enable Privacy Zone:** Check this box to enable this function.
- **Area 1 to 4:** Click the checkbox next to each mask, up to the number of privacy masks that you want to enable. Up to 4 can be enabled per camera. Depending on the number of privacy masks enabled, one or more masks will appear in the *Live View* window. Each mask will be numbered up to the number of masks that you have enabled.

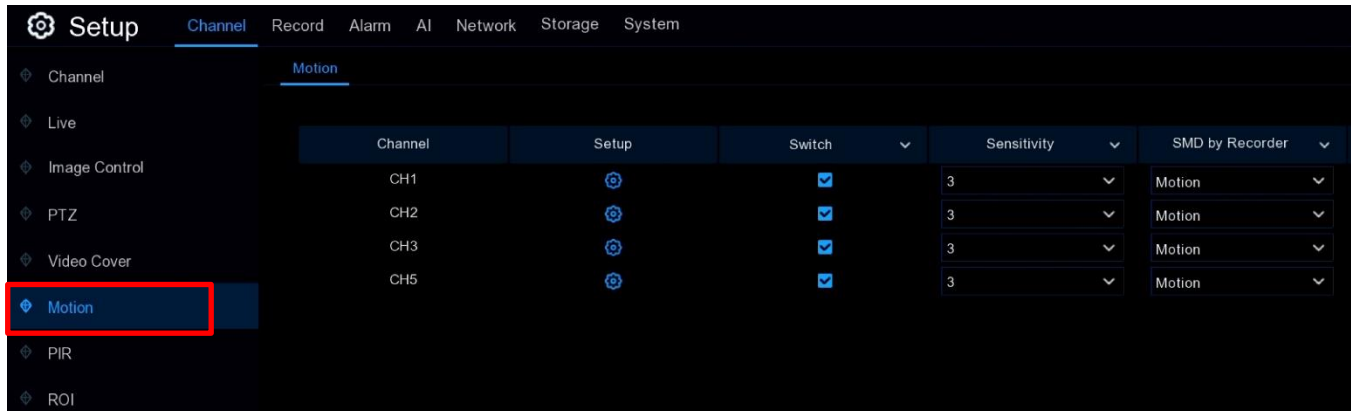


1. To reposition a mask, click and hold inside the mask and drag to the desired location.
2. To resize a mask, click and hold the bottom right corner of the mask and drag the corner to the desired size. You can reposition and resize each mask to overlap each other.
3. When finished, click *Apply* to save. Areas obscured by a mask won't be shown live or recorded.
4. To remove a mask, uncheck the checkbox next to its number and click *Apply* to save.

CHANNEL (CONTINUED)

MOTION DETECTION

Click the *Motion* tab on the *Setup* screen sidebar to configure motion parameters. When motion has been detected by one or more cameras, your NVR can alert you to a potential threat at your camera location. It does so by sending an email alert with an attached image from the camera as a reference (if this option is enabled) and/or by sending a push notification via the mobile app.



- **Switch:** Check to enable or uncheck to disable motion detection.
- **Sensitivity:** Choose the sensitivity level from this dropdown. The higher the number, the greater the sensitivity to detecting motion.
- **Deterrence:** Choose to use the white LED as a deterrent when the camera detects motion (for cameras that support this feature).


NOTES

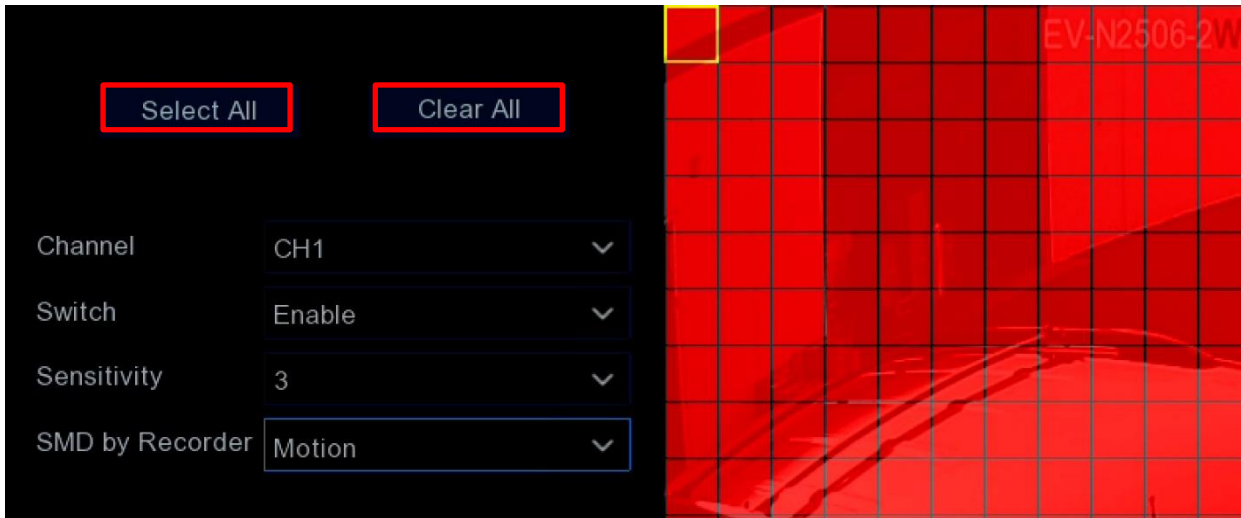
- Deterrence is not recommended with *Motion Detection*.
- When using *Full Color Mode*, the white LEDs cannot be used as deterrent lights (see *Full Color Camera Settings* on pg. 62 and *When Using IP Cameras with Deterrence* beginning on pg. 103 for more information).
- **SMD by Recorder:** Click this dropdown to choose the type of detection target (not supported by some NVRs).
 - **Motion:** Detects all motion events, including people, vehicles, animals, trees, etc.

If your camera or NVR supports *Smart Motion Detection (SMD)*, you can choose from the advanced motion detection targets below.

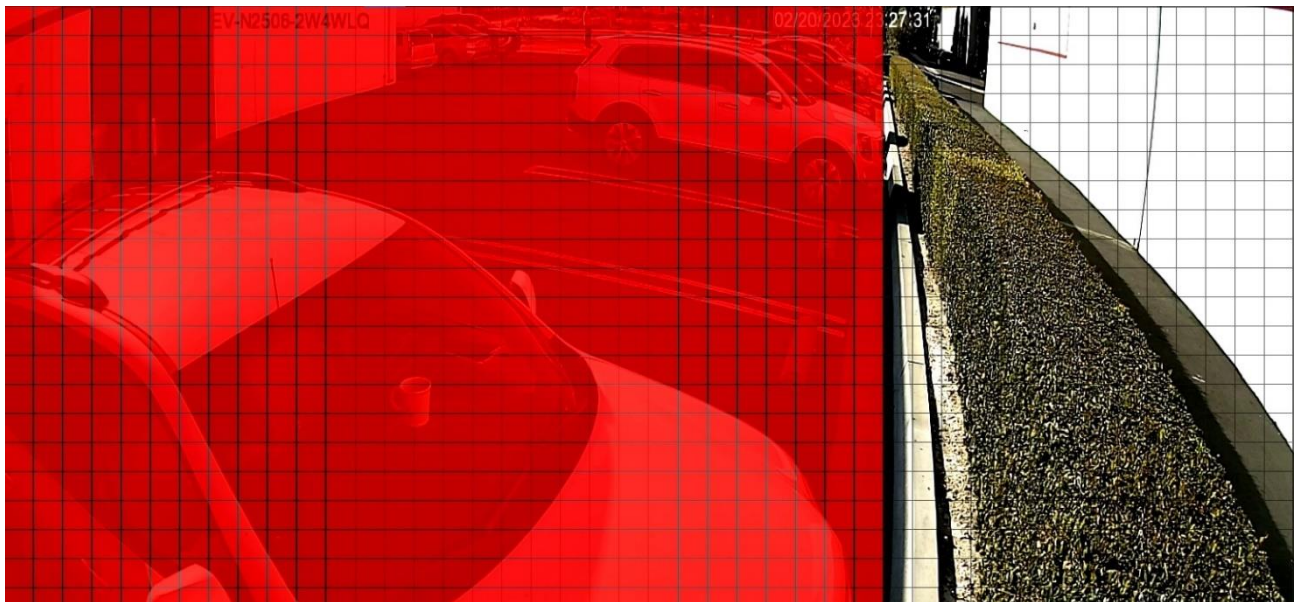
- **Pedestrian:** Only alerts when pedestrian movement is detected.
- **Vehicle:** Only alerts when vehicle movement is detected.
- **Vehicle & Pedestrian:** Only alerts when pedestrian and/or vehicle movement is detected.

CHANNEL – MOTION DETECTION (CONTINUED)

To setup the motion detection area for a camera, click its  icon to open the *Setup* page. The whole screen is marked for motion detection (red blocks) by default.



1. Click *Clear All* to delete the entire default detection area.
2. Click *Select All* to select the entire detection area.
3. To create a new detection area, click on the cell or square where you want to start and drag across to select the desired area.

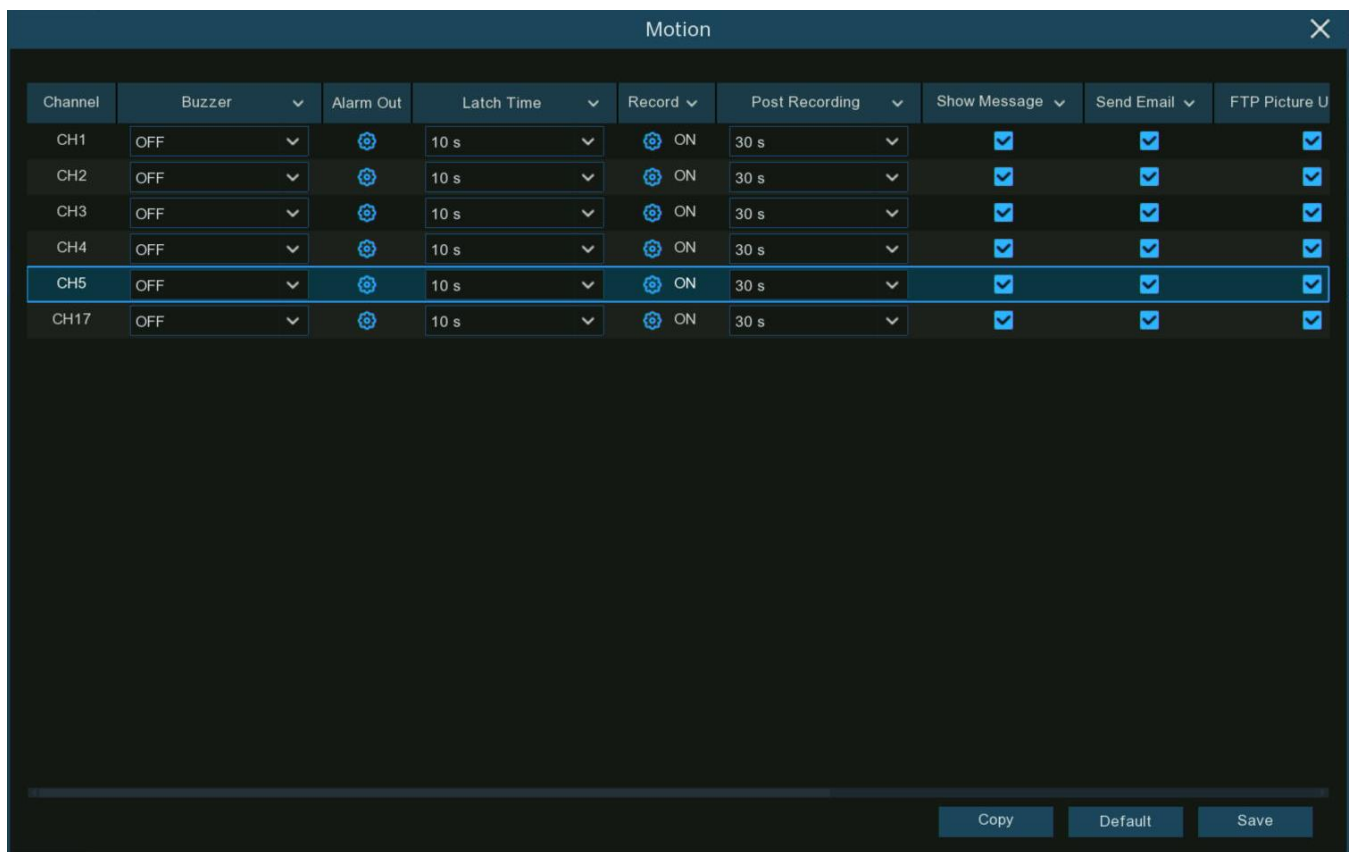
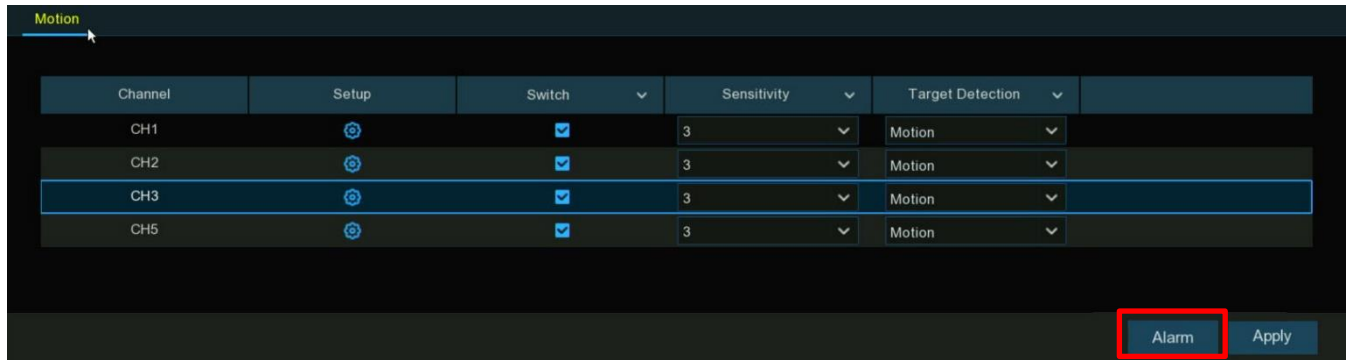


4. Repeat to choose multiple areas.
5. Use the same process to deselect a previously selected area.
6. Movement outside of the motion detection areas will be ignored and will not trigger recordings or event notifications.
7. Adjust the sensitivity if required, then right-click to exit.
8. Click *Apply* to save changes.

CHANNEL – MOTION DETECTION (CONTINUED)


MOTION ALARM SETTINGS

Click the *Alarm* button to configure the options for alarm notifications and more.





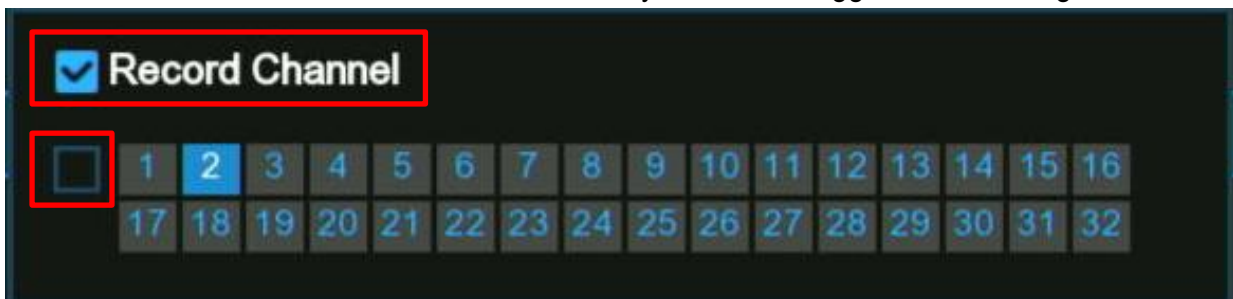
- **Buzzer:** Click to enable the NVR's buzzer and select a duration to alert you when motion is detected.


CHANNEL – MOTION DETECTION, *MOTION ALARM SETTINGS (CONTINUED)*

- **Alarm Out:** If your NVR or IP camera supports connections to external relay devices, the system can send an alert message to an external alarm. Click the  icon in this column, to choose the external alarm devices from the screen shown below.



- **Local->x:** For external alarm devices connected to the NVR
- **CHx->1:** For external alarm devices connected to IP cameras
- **Latch Time:** Click to configure the external alarm duration when triggered.
- **Record:** Click to instruct your NVR to trigger additional cameras to start recording when motion is detected. Click the dropdown arrow  to select or deselect all channels.
 - Click the  icon to open the popup shown below and click the *Record Channel* checkbox in the upper left corner to enable recording.
 - Click the checkbox beside the rows of channel numbers to select all channels.
 - **OR** click on the individual camera number that you want to trigger for recording.



- **Post Recording:** Click to change the duration for your NVR to continue recording after an event has occurred.
- **Show Message:** Click to enable/disable the onscreen alarm icon  when motion detection is triggered.
- **Send Email:** Click to enable/disable sending an email alert when an alarm event is detected.

CHANNEL – MOTION DETECTION, *MOTION ALARM SETTINGS (CONTINUED)*

Show Message ▾	Send Email ▾	FTP Picture Upload ▾	FTP Video Upload ▾	Picture to Cloud ▾	Video to Cloud	Full Screen ▾	Voice Prompts
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

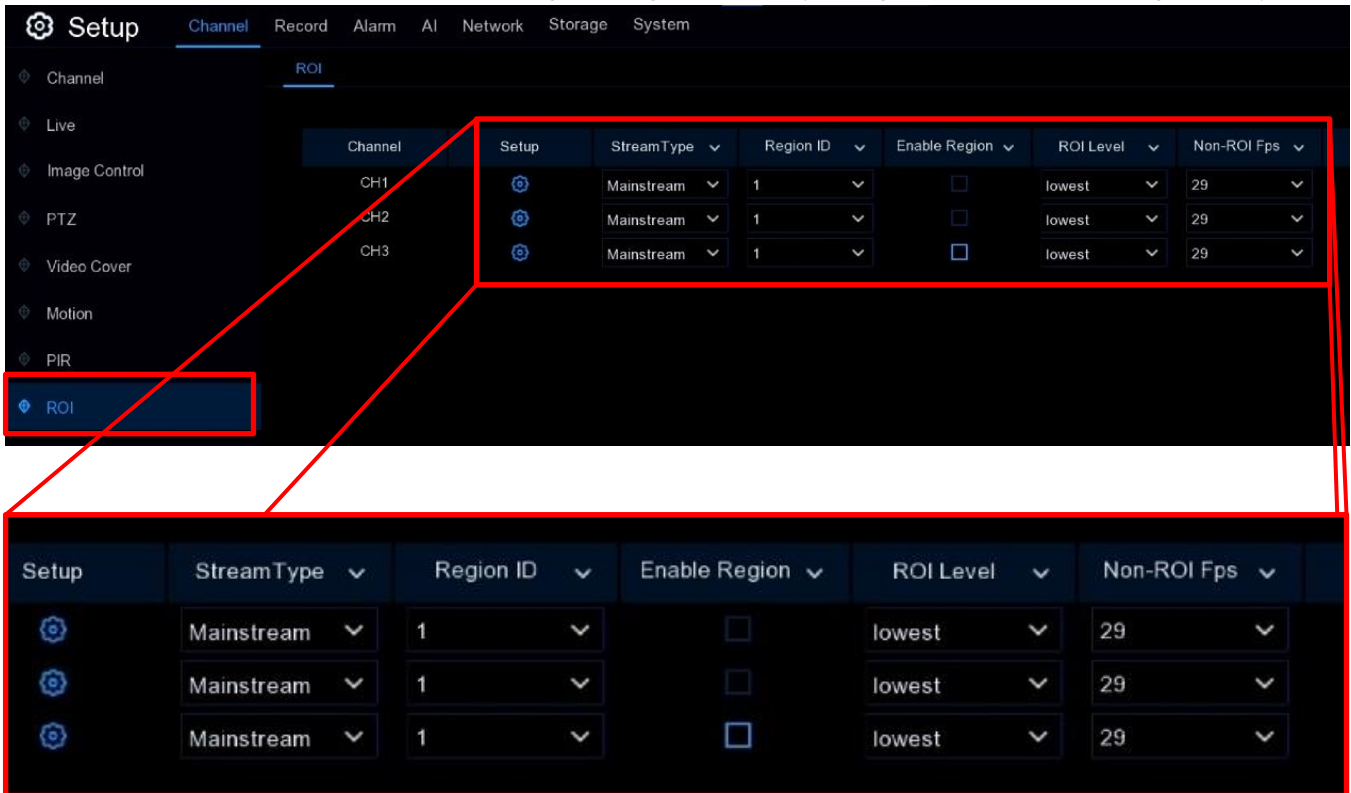
Scroll left for more columns

- **FTP Picture Upload:** Click to enable/disable the copying of snapshots to your FTP server when motion detection is triggered.
- **FTP Video Upload:** Click to enable/disable the copying of videoclips to your FTP server when motion detection is triggered.
- **Picture to Cloud:** Click to enable/disable the copying of snapshots to Dropbox or Google Drive when the detection is triggered.
- **Video to Cloud:** Click to enable/disable the copying of videoclips to Dropbox or Google Drive when motion detection is triggered.
- **Full Screen:** Click to enable/disable full-screen view in *Live View* mode when motion detection is triggered.
- **Voice Prompts:** Click to select a customized voice alert when motion detection is triggered if your NVR is connected to a speaker. For details on adding a customized voice alert, see *Voice Prompts* on pg. 98.
- **Default:** Click *Default* to revert to default settings.
- **Copy:** Click the *Copy* button at the bottom of the screen to apply all settings to other connected cameras.
- **Save:** Click *Save* to save settings.

CHANNEL (CONTINUED)


ROI (REGION OF INTEREST)

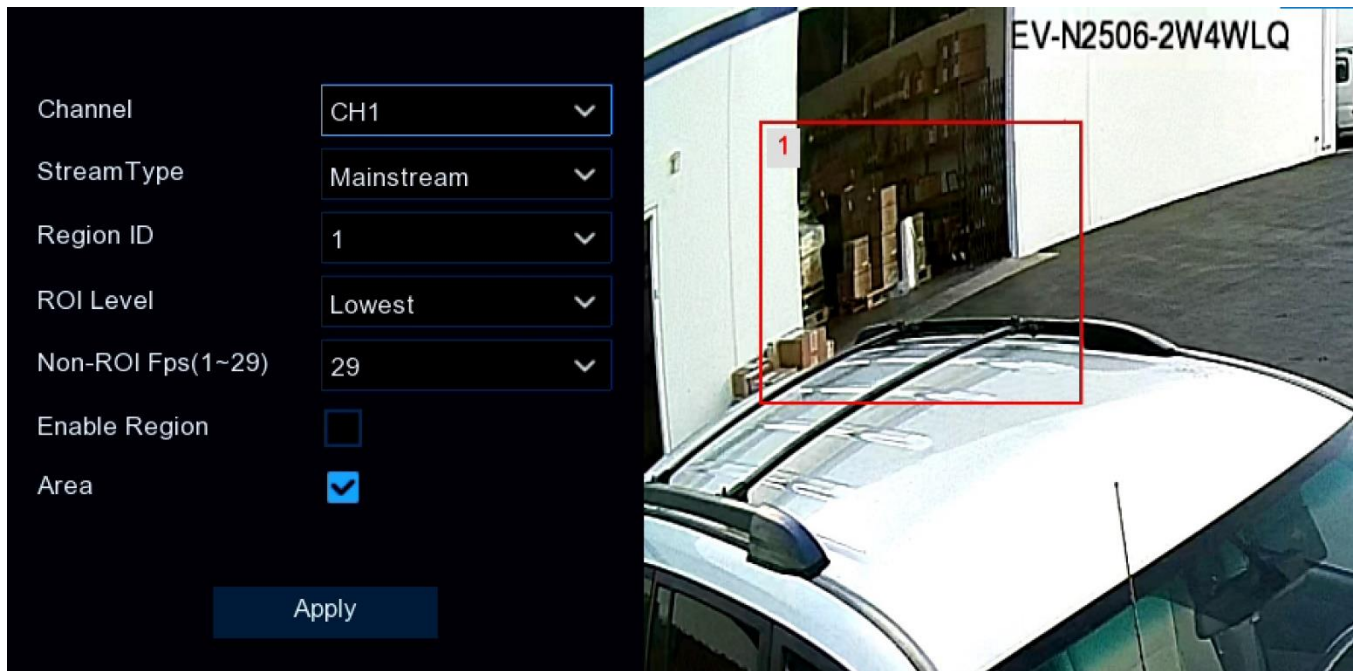
Click the *ROI* tab on the *Setup* screen sidebar to configure the ROI (Region of Interest) parameters to allow the camera to focus on providing the highest quality images on a selected region only.



- **Stream Type:** Click to choose the *Stream Type* where you want to apply the ROI.
- **Region ID:** Click to choose the *Region ID* you want to use. For each *Region ID*, you can set up different sizes and locations for the ROI.
- **Enable Region:** Enable or disable the ROI function for this camera.
- **ROI Level:** Set the desired image quality for the ROI from low to high.
- **Non-ROI Fps:** Set the FPS (Frames per Second) for non-ROI regions.

CHANNEL – ROI (REGION OF INTEREST) (CONTINUED)

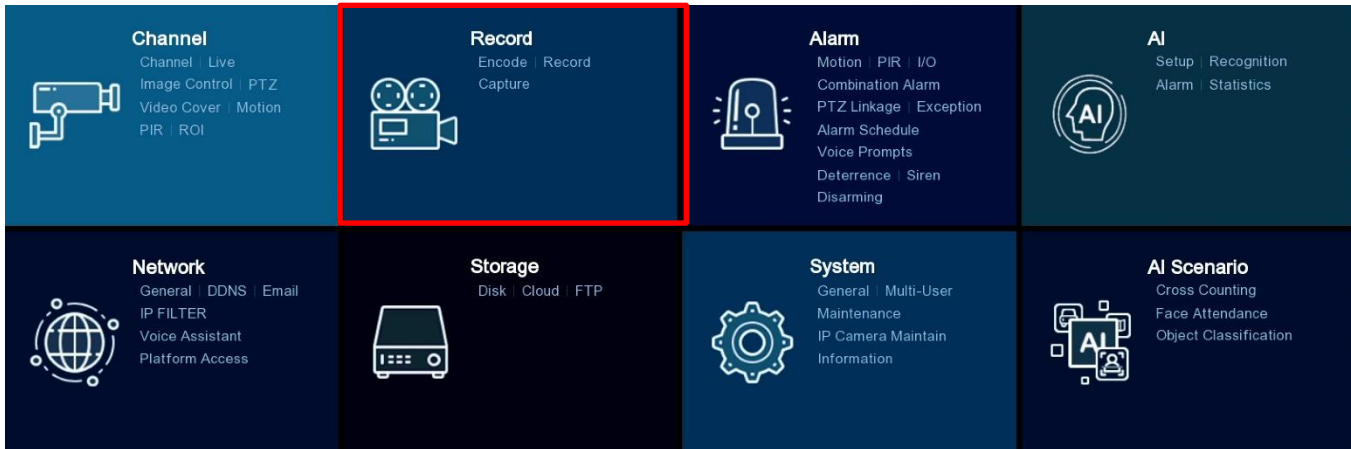
To set the *ROI Region*, click the  icon for the camera you wish to set up, opening the screen shown below.



- **Channel:** Click to select the *Channel* you would like to edit.
- **Stream Type:** Click to select the *Stream Type* that you would like to apply to the ROI.
- **Region ID:** Click to select a *Region ID*.
- **ROI Level:** Set the desired image quality for the *ROI* from low to high.
- **Non-ROI Fps:** Set the *FPS* (Frames per Second) for non-ROI regions.
- **Enable Region:** Enable or disable the selected ROI Region for this channel.
- **Area:** Check to configure the *Region Area*. The preview section on the right will display a red square with the corresponding *Region ID* designating the *Region Area*. To reposition the area, click and hold within the square to move it to the desired location. To resize the area, click the bottom right corner and drag to the desired size.
- **Apply:** When finished, click the *Apply* button to save changes and close the window.

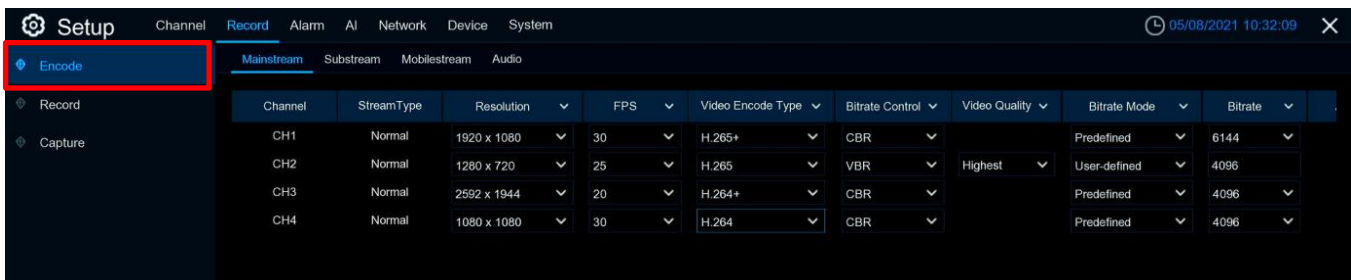
RECORD

Recording configuration options are available in the *Record* and *Capture* tabs accessible from the *Setup* main screen. From here, you can access and change the recording frame rate and resolution as well as the recording schedule for each connected camera. You can also enable and set a schedule for your NVR to take a snapshot each time when an event occurs.



ENCODING SETTINGS

From the *Record* screen, click the on the *Encode* tab in the sidebar to configure the video recording and network transmission picture quality. Generally, *Mainstream* defines the video quality that is saved to the drive while *Substream* defines the video quality that is to be viewed via remote access, for example, web clients and CMS/VMS and *Mobile Stream* defines the video quality that is to be viewed via remote access on mobile devices.



RECORD – ENCODING SETTINGS (CONTINUED)

VIDEO ENCODING

The first three tabs allow you to configure the encoding parameters of the *Mainstream*, *Substream* and *Mobile Stream* accordingly.

Mainstream Substream Mobilestream Audio							
Channel	StreamType	Resolution	FPS	Video Encode Type	Bitrate Control	Video Quality	
CH1	Normal	1920 x 1080	30	H.265+	CBR		
CH2	Normal	1280 x 720	25	H.265	VBR	Highest	
CH3	Normal	2592 x 1944	20	H.264+	CBR		
CH4	Normal	1080 x 1080	30	H.264	CBR		

Scroll right for more columns

- **FPS:** This parameter defines the number of frames per second the NVR will record at. By default, the recording frame rate is automatically selected by the NVR based on the camera's specifications.
- **Video Encode Type:** Choose from the codecs listed (will vary depending on what is supported by the connected camera). Among these, the H.265 codec compresses information more efficiently and provides the best video quality for a given bandwidth and H.265+ has a higher compression rate than H.265. The H.264 codec will impact the reliability of the connection between the camera and NVR due to its higher bandwidth requirements while H.264+ has a higher compression rate than H.264.
- **Bitrate Control:** Click to select the bit rate. For a simple scene, such as a gray wall, a constant bitrate (CBR) is suitable. For a more complex scene, such as a busy street, a variable bitrate (VBR) is more suitable.
- **Video Quality:** Available for VBR only, click to select the desired quality of recording that will be used to determine the variable bit rate.

RECORD – ENCODING SETTINGS, VIDEO ENCODING (CONTINUED)

Video Quality ▾	Bitrate Mode ▾	Bitrate ▾	Audio ▾	I Frame Interval ▾	ETR ▾
Highest ▾	Predefined ▾	4096 ▾	<input checked="" type="checkbox"/>	60	
Highest ▾	Predefined ▾	4096 ▾	<input type="checkbox"/>	60	<input type="checkbox"/>
Highest ▾	Predefined ▾	4096 ▾		30	
Highest ▾	User-defined ▾	4096	<input type="checkbox"/>	30	
Lowest ▾	User-defined ▾	4096	<input type="checkbox"/>		
Highest ▾	Predefined ▾	4096 ▾	<input checked="" type="checkbox"/>	60	
Highest ▾	Predefined ▾	6144 ▾	<input checked="" type="checkbox"/>	60	<input type="checkbox"/>
Highest ▾	Predefined ▾	4096 ▾	<input checked="" type="checkbox"/>	60	<input type="checkbox"/>
	Predefined ▾				
Highest ▾	Predefined ▾	8192 ▾	<input checked="" type="checkbox"/>	60	

Scroll left for more columns

- **Bitrate Mode:** Click to choose between the *User-defined* mode to set the bit rate yourself or the *Predefined* mode to limit the NVR certain preset bit rates.
- **Bitrate:** Click to the select speed of data transfer (bit rate) that the NVR will use to record video. Recordings encoded at higher bit rates will be of better quality. For cameras monitoring medium to high traffic areas, increase the bit rate to add more detail to the camera's image. At the same time, note that this will increase the bandwidth required. It is recommended that you increase the bit rate in small doses until you are satisfied with the image quality.
- **Audio:** If your camera has a built-in microphone or external audio input device, you're able to record the audio streaming together with the video streaming. Click the checkbox to disable or enable. Make sure you have already enabled *Audio Streaming* to use this feature (see *Audio Encoding* on pg. 80).
- **I Frame Interval:** Click to configure the number of partial frames that occur between full frames (*I-Frames*) in the video stream. For example, in a scene where a door opens and a person walks through, only the movements of the door and the person are stored. The stationary background that occurs in the previous partial frames are not recorded. If you increase the *I-Frame Interval* value, the number of partial frames also increases. Higher values are only recommended on networks with high reliability, otherwise keep the default selection.

RECORD – ENCODING SETTINGS, VIDEO ENCODING (CONTINUED)

- **ETR:** If your camera supports *Event Trigger Resolution (ETR)*, click this check box to enable the function to allow video streaming rates to be set independently for normal recording and alarm triggered recording.

CH7	Normal	3840 x 2160	15	H.265	CBR	Predefined	2048	<input checked="" type="checkbox"/>
	Alarm	3840 x 2160	30	H.265	CBR	Predefined	8192	<input checked="" type="checkbox"/>

For example, you can decrease the frame rate and bit rate to reduce the recording file size during normal recording and increase the frame rate and bit rate for clearer images when an alarm event occurs.

NOTE: ETR is available for *Mainstream* only.

AUDIO ENCODING

The last tab is the *Audio* tab. If your camera has a built-in microphone or an external audio input device, click to open this tab to activate the audio stream, define the input/output volume, and select the audio encoding type.

Mainstream Substream Mobilestream Audio					
Channel	Enable	Output Volume	Input Volume	Type	
CH1	<input checked="" type="checkbox"/>	5	5	G711A	
CH2	<input checked="" type="checkbox"/>	5	5	G711U	
CH4	<input checked="" type="checkbox"/>	5	5	G711U	
CH6	<input checked="" type="checkbox"/>	5	5	G711A	
CH7	<input checked="" type="checkbox"/>	5	5	G711A	
CH8	<input checked="" type="checkbox"/>	5	5	G711A	
CH11	<input checked="" type="checkbox"/>	5	5	G711A	

- **Enable:** Click to turn *Audio Streaming* on or off.
- **Output Volume:** Click to set the audio output volume.
- **Input Volume:** Click to set the audio input volume.
- **Type:** Click to choose the desired audio encoding codec from the dropdown.

RECORD (CONTINUED)

RECORD

Below the *Encode* tab in the sidebar is the *Record* tab where you can configure the recording parameters for each channel.

The screenshot shows the 'Setup' interface with the 'Record' tab selected. The left sidebar has 'Record' highlighted with a red box. The main area displays a table for configuring recording parameters for 21 channels (CH1 to CH21). The table columns are Channel, Record Switch, Stream Mode, PreRecord, and ANR. Each channel has a 'Record Switch' checkbox (all checked), a 'Stream Mode' dropdown (all set to 'DualStream'), and a 'PreRecord' checkbox (all checked). Channels CH7 and CH8 also have an 'ANR' checkbox checked. At the bottom right, there are 'Copy', 'Default', and 'Apply' buttons.

Channel	Record Switch	Stream Mode	PreRecord	ANR
CH1	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH2	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH3	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH4	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH5	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH6	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH7	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CH8	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CH9	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH10	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH11	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH12	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH13	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH14	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH15	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH16	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH17	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH18	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH19	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH20	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	
CH21	<input checked="" type="checkbox"/>	DualStream	<input checked="" type="checkbox"/>	

RECORD – RECORD (CONTINUED)

RECORDING CONFIGURATION

Record Record Schedule				
Channel	Record Switch <input type="checkbox"/>	Stream Mode <input type="checkbox"/>	PreRecord <input type="checkbox"/>	ANR <input type="checkbox"/>
CH1	<input checked="" type="checkbox"/>	DualStream <input type="checkbox"/>	<input checked="" type="checkbox"/>	
CH2	<input checked="" type="checkbox"/>	DualStream <input type="checkbox"/>	<input checked="" type="checkbox"/>	
CH3	<input checked="" type="checkbox"/>	DualStream <input type="checkbox"/>	<input checked="" type="checkbox"/>	
CH4	<input checked="" type="checkbox"/>	DualStream <input type="checkbox"/>	<input checked="" type="checkbox"/>	
CH5	<input checked="" type="checkbox"/>	DualStream <input type="checkbox"/>	<input checked="" type="checkbox"/>	
CH6	<input checked="" type="checkbox"/>	DualStream <input type="checkbox"/>	<input checked="" type="checkbox"/>	
CH7	<input checked="" type="checkbox"/>	DualStream <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CH8	<input checked="" type="checkbox"/>	DualStream <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CH9	<input checked="" type="checkbox"/>	DualStream <input type="checkbox"/>	<input checked="" type="checkbox"/>	

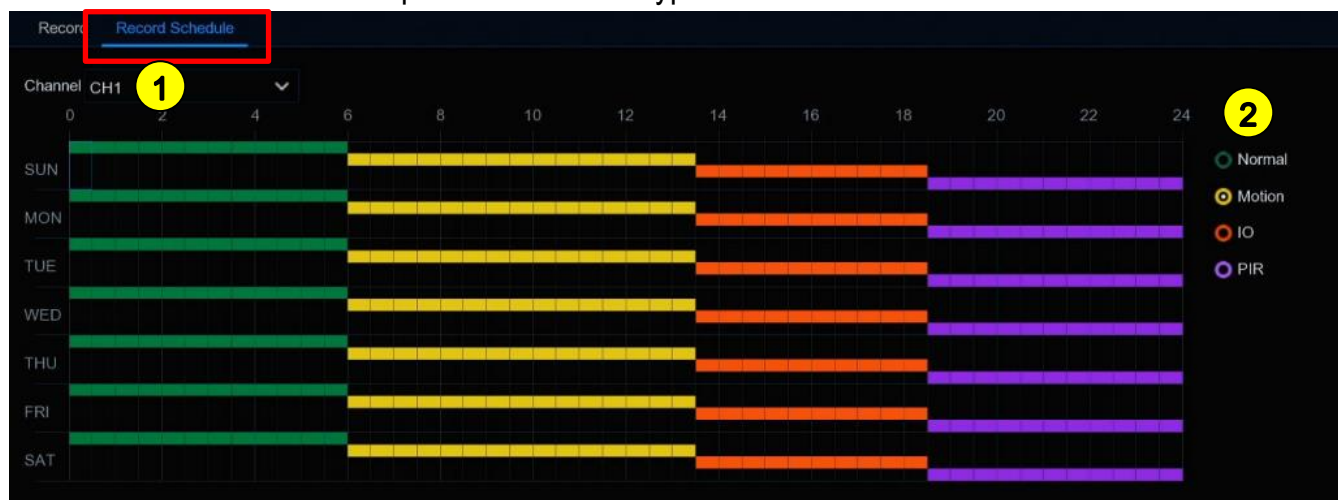
- **Record Switch:** Click to enable recording in this channel.
- **Stream Mode:** By default, the NVR records both *Mainstream* and *Substream* video (known as *DualStream*). *Mainstream* (high quality) video is used for playback when using your NVR directly and *Substream* (reduced quality) is used for remote playback on a mobile device. If you don't need remote playback, you can select *Mainstream* recording only to save storage space.
- **Prerecord:** Check to enable the NVR to record several seconds before an event occurs. It is recommended to leave this enabled.
- **ANR:** Check to enable ANR (Automatic Network Replenishment) so that, if there is a difficulty with the network connection between the NVR and camera, the camera would start continuous recording and store the video on the camera's SD card. Once the network is restored, the video recordings will be sent to NVR's storage. Enabling ANR is recommended if your camera supports this function.

RECORD – RECORD (CONTINUED)

RECORDING SCHEDULE

Click the *Recording Schedule* tab to define and schedule the video-recording mode for each channel. You can set up a daily and hourly schedule for normal (continuous) recording, motion recording, I/O alarm recording, & PIR recording (depending on what your camera supports).

By default, the NVR is set to constantly record 24-hours a day, 7 days a week but you can adjust the schedule to fit your needs and set a different schedule for each camera as desired. The schedule is color-coded to represent the event type.



- 1 Choose a *Channel* to configure.
- 2 Click your choice of one of the *Recording Mode* radio buttons.
 - Normal:** The NVR will record constantly for the set period highlighted in green.
 - Motion:** The NVR will only record if motion is detected during the time highlighted in yellow.
 - IO:** The NVR (supporting models only) will only record if an external sensor is triggered during the time highlighted in red.
 - PIR:** The NVR will only record if PIR detection occurs during the time highlighted in purple.
3. Click the color corresponding to the selected *Recording Mode* and drag the cursor to mark the desired time slots for this mode.
4. Repeat steps 2 and 3 to set a schedule for other *Recording Modes* if desired.
5. The set recording schedule is valid only for the selected channel. If you want to use the same recording schedule for other channels, use the *Copy* function.
6. If a time slot is not colored (i.e., is black) there will be no recording during that time period.
7. Click *Apply* to save your settings.

RECORD (CONTINUED)

CAPTURE IMAGES

You can enable your NVR to take a snapshot each time an event occurs and set a schedule for this function. This can be very helpful in finding alarm events quickly and can also be used for timelapse photography.

CAPTURE CONFIGURATION

Click the *Capture* tab to configure.

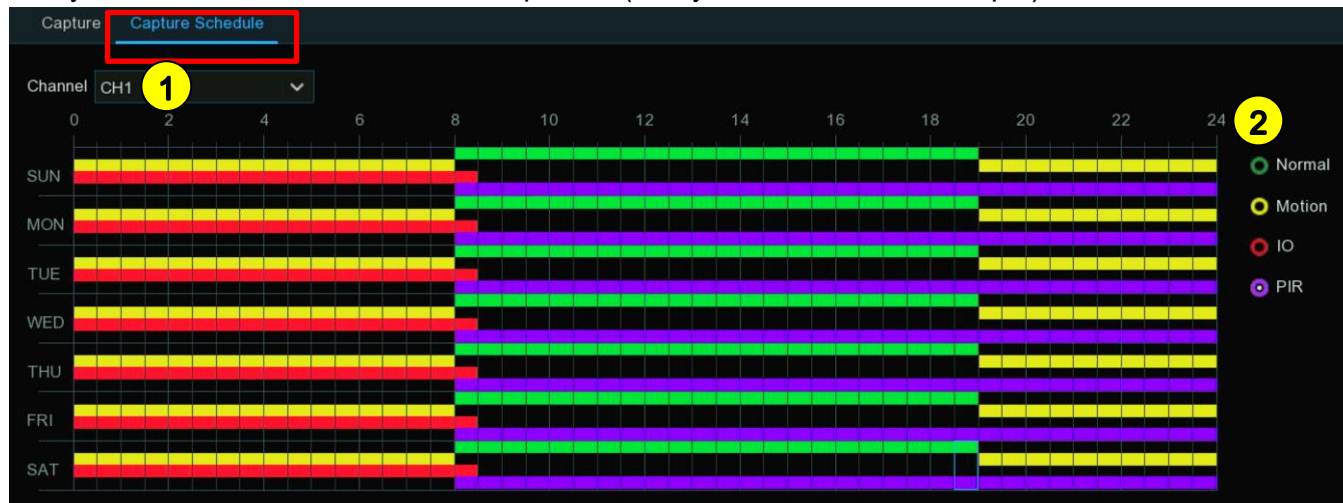
Channel	Auto Capture	Normal Interval	Alarm Interval
CH1	<input type="checkbox"/>	5 s	5 s
CH2	<input type="checkbox"/>	5 s	5 s
CH3	<input type="checkbox"/>	5 s	5 s
CH4	<input type="checkbox"/>	5 s	5 s
CH5	<input type="checkbox"/>	5 s	5 s
CH6	<input type="checkbox"/>	5 s	5 s

- **Auto Capture:** Check to enable the NVR to take a snapshot each time an event occurs.
- **Normal Interval:** Click to set the length of time between each snapshot during a *Normal* capture mode (set the schedule on the next tab, see *Capture Schedule*, below). For example, during a *Normal* capture schedule, a snapshot would be taken every 5 seconds using the default selection as shown above. Adjust this time setting according to your needs.
- **Alarm Interval:** If you have set one of the alarm-triggered capture modes (Motion, IO, or PIR, set the schedule on the next tab, see *Capture Schedule*, below), a snapshot is taken each time an alarm is detected, according to the interval displayed here. Adjust this time setting according to your needs.

RECORD – CAPTURE IMAGES (CONTINUED)

CAPTURE SCHEDULE

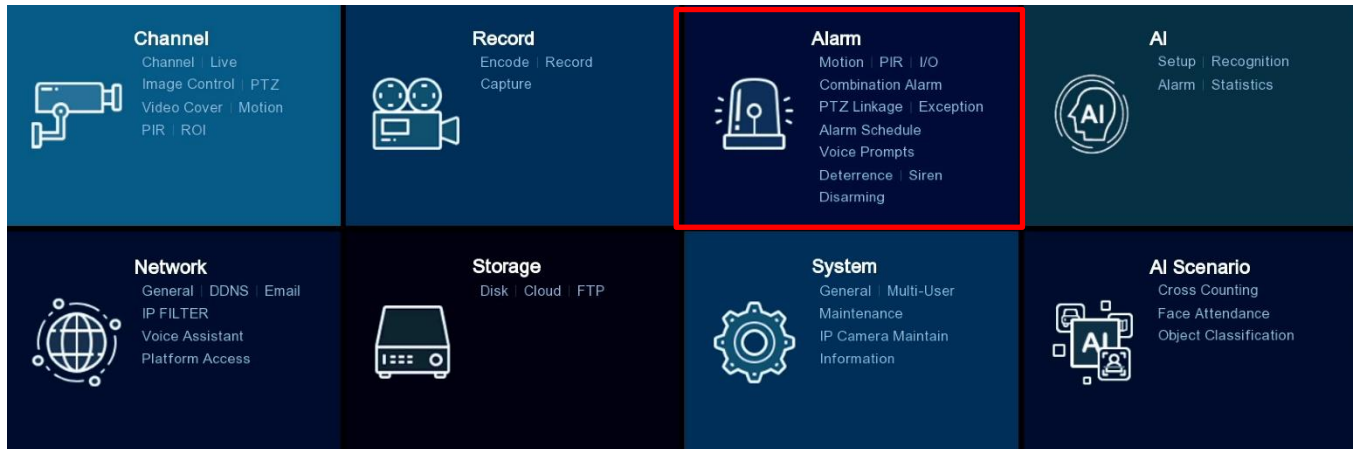
You must create a capture schedule so your NVR can take snapshots when an event has occurred or if you want to take time interval snapshots (every 5 seconds, for example).



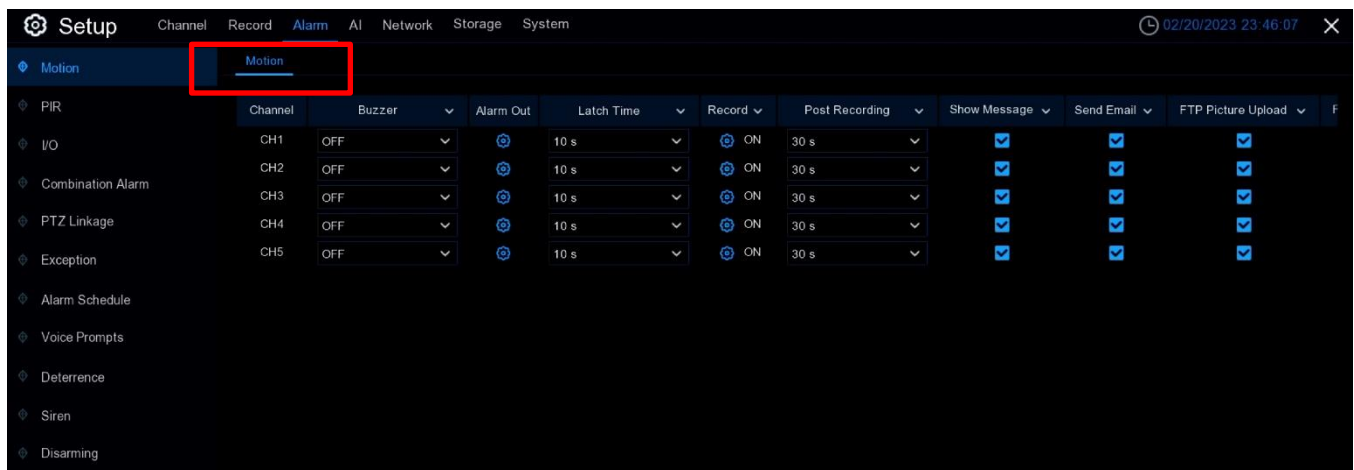
- 1 Choose a *Channel* to configure.
- 2 Click your choice of one of the *Capture Mode* radio buttons.
 - **Normal:** The NVR will take snapshots according to the *Normal Interval* setting chosen in the previous step (see *Capture Configuration*, above) for the set period highlighted in green.
 - **Motion:** The NVR will only take snapshots when motion is detected during the time highlighted in yellow.
 - **IO:** The NVR (supporting models only) will only take snapshots when an external sensor is triggered during the time highlighted in red.
 - **PIR:** The NVR will only take snapshots when PIR detection occurs during the time highlighted in purple.
3. Click the color corresponding to the selected *Capture Mode* and drag the cursor to mark the desired time slots for this mode.
4. The set capture schedule is valid only for the selected channel. If you want to use the same capture schedule for other channels, use the *Copy* function.
5. If a time slot is not colored (i.e., is black) there will be no capture during that time period.
6. Click *Apply* to save your settings.

ALARM SETTINGS

In this section, you can configure all the actions around an alarm when an event occurs.



MOTION ALARM



- **Buzzer:** Click to enable the NVR's buzzer and select a duration to alert you when motion is detected.
- **Alarm Out:** If your NVR or IP camera supports connections to external relay devices, the system can send an alert message to an external alarm. Click the icon in this column, to choose the external alarm devices from the screen shown below.



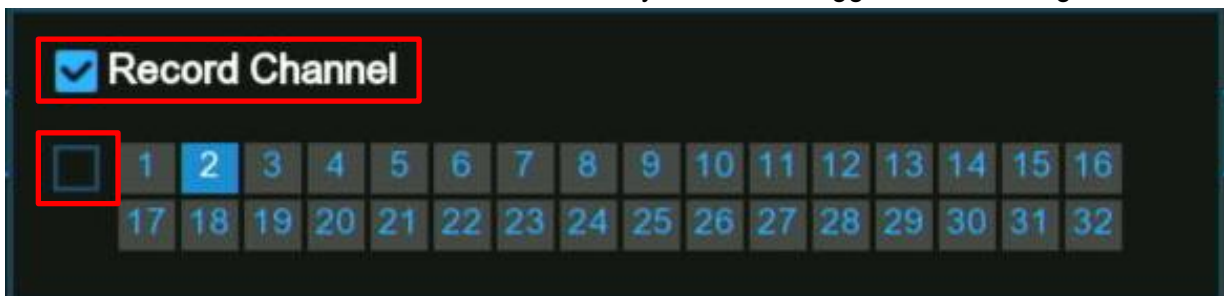
- **Local->x:** For external alarm devices connected to the NVR.
- **CHx->1:** For external alarm devices connected to IP cameras.

ALARM SETTINGS – MOTION ALARM (CONTINUED)

Latch Time	Record	Post Recording	Show Message	Send Email
10 s	ON	30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 s	ON	30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 s	ON	30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Scroll right for more columns

- **Latch Time:** Click to configure the external alarm duration when triggered.
- **Record:** Click to instruct your NVR to trigger additional cameras to start recording when motion is detected. Click the dropdown arrow to select or deselect all channels.
 - Click the icon to open the popup shown below and click the *Record Channel* checkbox in the upper left corner to enable recording.
 - Click the checkbox beside the rows of channel numbers to select all channels.
 - **OR** click on the individual camera number that you want to trigger for recording.



- **Post Recording:** Click to change the duration for your NVR to continue recording after an event has occurred.
- **Show Message:** Click to enable/disable the onscreen alarm icon when motion detection is triggered.
- **Send Email:** Click enable/disable sending an email alert when an alarm event is detected.

ALARM SETTINGS – MOTION ALARM (CONTINUED)

Send Email ▾	FTP Picture Upload ▾	FTP Video Upload ▾	Picture to Cloud ▾	Video to Cloud	Full Screen ▾	Voice Prompts
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Scroll left for more columns

- **FTP Picture Upload:** Click to enable/disable the copying of snapshots to your FTP server when motion detection is triggered.
- **FTP Video Upload:** Click to enable/disable the copying of videoclips to your FTP server when motion detection is triggered.
- **Picture to Cloud:** Click to enable/disable the copying of snapshots to Dropbox or Google Drive when the detection is triggered.
- **Video to Cloud:** Click to enable/disable the copying of videoclips to Dropbox or Google Drive when motion detection is triggered.
- **Full Screen:** Click to enable/disable full-screen view in *Live View* mode when motion detection is triggered.
- **Voice Prompts:** Click to select a customized voice alert when motion detection is triggered if your NVR is connected to a speaker. For details on adding a customized voice alert, see *Voice Prompts* on pg. 98.



- **Motion:** Click to configure the Motion Detection (see *Motion Detection* on pg. 70)
- **Default:** Click *Default* to revert to default settings.
- **Copy:** Click the *Copy* button at the bottom of the screen to apply all settings to other connected cameras.
- **Apply:** Click *Apply* to save settings.

PIR ALARM (FUTURE)

This feature is not currently available but is planned for the future.

ALARM SETTINGS (CONTINUED)

I/O ALARM

(Supported NVR models only)

For models that support an alarm input, click the I/O tab in the sidebar to configure.

Alarm In	Alarm Type	Buzzer	Alarm Out	Latch Time	Channel	Post Recording	Show Message	Send Email	FTP Picture Upload
Local<-1	Normally-Open	Disable		10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local<-2	Normally-Open	Disable		10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local<-3	Normally-Open	Disable		10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local<-4	Normally-Open	Disable		10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local<-5	Normally-Open	Disable		10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local<-6	Normally-Open	Disable		10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local<-7	Normally-Open	Disable		10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local<-8	Normally-Open	Disable		10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CH2<-1	OFF	Disable		10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CH3<-1	OFF	Disable		10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

- **Alarm In:** Click to choose the alarm input channel.
 - **Local->x:** For external alarm input devices connected to the NVR.
 - **CHx->1:** For external alarm input devices connected to IP cameras.
- **Alarm Type:** Click to choose the alarm input type, Normally Open (N.O.) or Normally Closed (N.C.) or choose OFF to disable this sensor trigger function.
- **Buzzer:** Click to enable the NVR's buzzer and select a duration to alert you when motion is detected.

ALARM SETTINGS – I/O ALARM (CONTINUED)

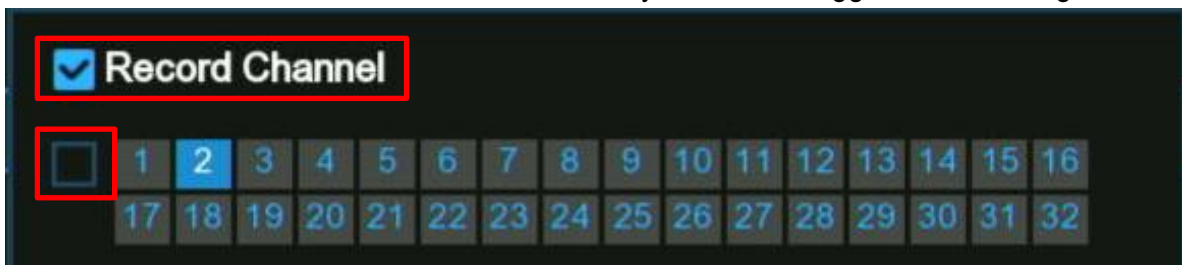
Alarm Out	Latch Time	Channel	Post Recording	Show Message	Send Email	FTP Picture Upload
	10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	10 s		30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Scroll right for more columns

- **Alarm Out:** If your NVR or IP camera supports connections to external relay devices, the system can send an alert message to an external alarm. Click the icon in this column, to choose the external alarm devices from the screen shown below.



- **Local->x:** For external alarm devices connected to the NVR.
- **CHx->1:** For external alarm devices connected to IP cameras.
- **Latch Time:** Click to configure the external alarm duration when triggered.
- **Record:** Click to instruct your NVR to trigger additional cameras to start recording when motion is detected. Click the dropdown arrow to select or deselect all channels.
 - Click the icon to open the popup shown below and click the *Record Channel* checkbox in the upper left corner to enable recording.
 - Click the checkbox beside the rows of channel numbers to select all channels.
 - **OR** click on the individual camera number that you want to trigger for recording.



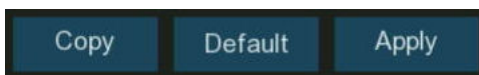
- **Post Recording:** Click to change the duration for your NVR to continue recording after an event has occurred.
- **Show Message:** Click to enable/disable the onscreen alarm icon when motion detection is triggered.

ALARM SETTINGS – I/O ALARM (CONTINUED)

Show Message ▾	Send Email ▾	FTP Picture Upload ▾	FTP Video Upload ▾	Picture to Cloud ▾	Video to Cloud	Full Screen ▾	Voice Prompts
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Scroll right for more columns

- **Send Email:** Click enable/disable sending an email alert when an alarm event is detected.
- **FTP Picture Upload:** Click to enable/disable the copying of snapshots to your FTP server when motion detection is triggered.
- **FTP Video Upload:** Click to enable/disable the copying of videoclips to your FTP server when motion detection is triggered.
- **Picture to Cloud:** Click to enable/disable the copying of snapshots to Dropbox or Google Drive when the detection is triggered.
- **Video to Cloud:** Click to enable/disable the copying of videoclips to Dropbox or Google Drive when motion detection is triggered.
- **Full Screen:** Click to enable/disable full-screen view in *Live View* mode when motion detection is triggered.
- **Voice Prompts:** Click to select a customized voice alert when motion detection is triggered if your NVR is connected to a speaker. For details on adding a customized voice alert, see *Voice Prompts* on pg. 98.

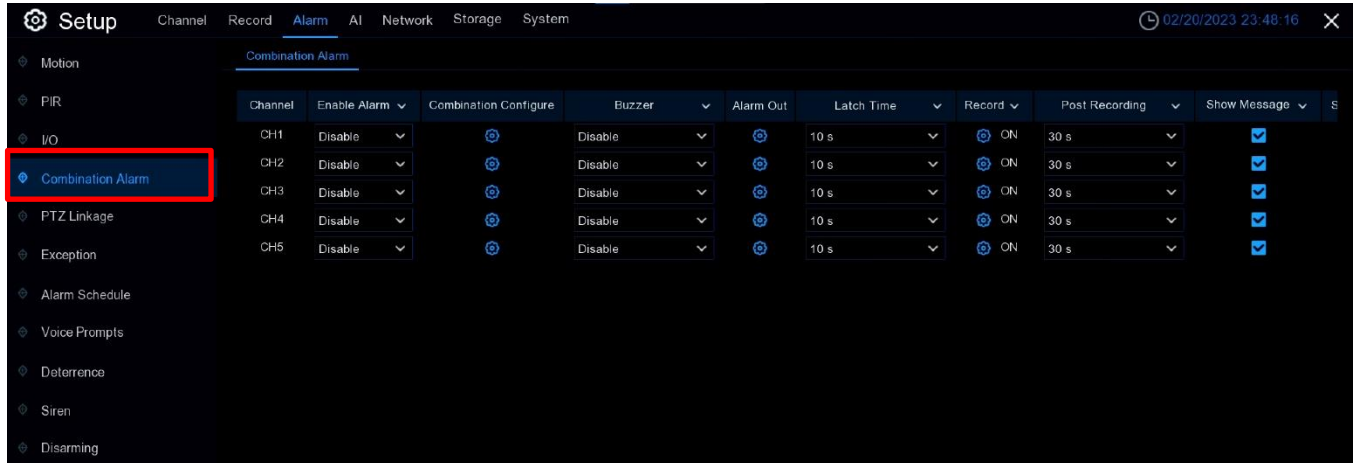



- **Default:** Click *Default* to revert to default settings.
- **Copy:** Click the *Copy* button at the bottom of the screen to apply all settings to other connected cameras.
- **Apply:** Click *Apply* to save settings.

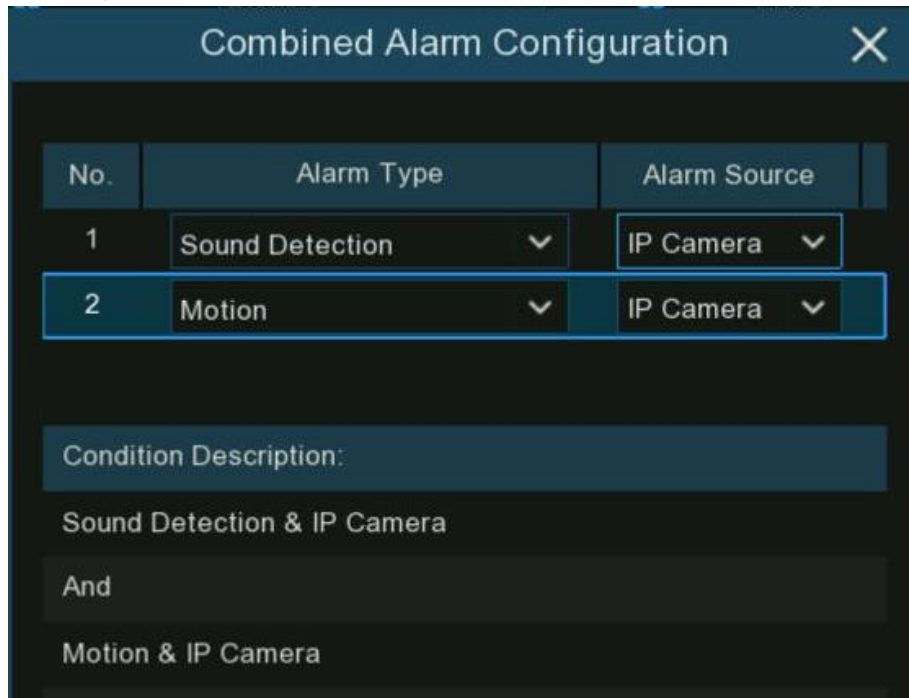
ALARM SETTINGS (CONTINUED)

COMBINATION ALARM

A *Combination Alarm* instructs the NVR to trigger an alert only when two alarms are triggered at the same time which can be helpful in minimizing false alarms.



- **Enable Alarm:** Click to enable or disable the *Combination Alarm*.
- Click the configuration  icon beside a channel to choose the alarm combination of 2 kinds of alarm types from the NVR and/or IP camera.



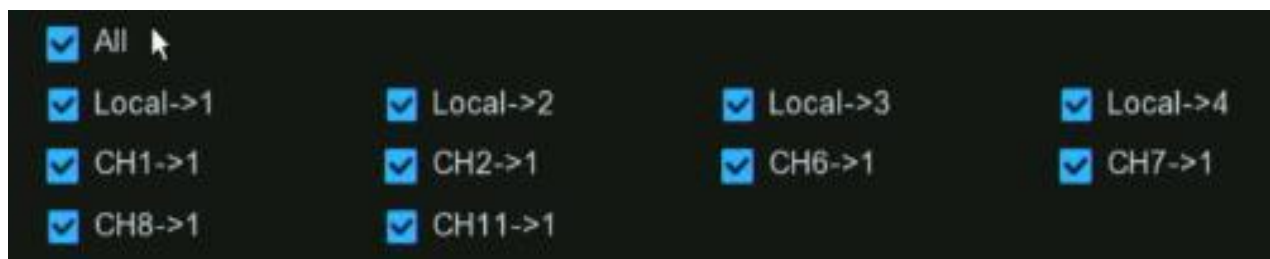
NOTE: If the combined alarm is enabled in a channel, all of the individual alarm functions you had set in that channel will be disabled. The individual alarm functions will be restored if the combined alarm function is disabled.

ALARM SETTINGS – COMBINATION ALARM (CONTINUED)

Buzzer	Alarm Out	Latch Time	Record	Post Recording	Show Message
Disable		10 s	ON	30 s	<input checked="" type="checkbox"/>
Disable		10 s	ON	30 s	<input checked="" type="checkbox"/>
Disable		10 s	ON	30 s	<input checked="" type="checkbox"/>
Disable		10 s	ON	30 s	<input checked="" type="checkbox"/>
Disable		10 s	ON	30 s	<input checked="" type="checkbox"/>

Scroll right for more columns

- **Buzzer:** Click to enable the NVR's buzzer and select a duration to alert you when motion is detected.
- **Alarm Out:** If your NVR or IP camera supports connections to external relay devices, the system can send an alert message to an external alarm. Click the icon in this column, to choose the external alarm devices from the screen shown below.



- **Local->x:** For external alarm devices connected to the NVR.
- **CHx->1:** For external alarm devices connected to IP cameras.
- **Latch Time:** Click to configure the external alarm duration when triggered.
- **Record:** Click to instruct your NVR to trigger additional cameras to start recording when triggered. Click the dropdown arrow to select or deselect all channels.
 - Click the icon to open the popup shown below and click the *Record Channel* checkbox in the upper left corner to enable recording.
 - Click the checkbox beside the rows of channel numbers to select all channels.
 - **OR** click on the individual camera number that you want to trigger for recording.



- **Post Recording:** Click to change the duration for your NVR to continue recording after an event has occurred.

ALARM SETTINGS – COMBINATION ALARM (CONTINUED)

Show Message ▾	Send Email ▾	FTP Picture Upload ▾	FTP Video Upload ▾	Picture to Cloud ▾	Video to Cloud	Full Screen ▾	Voice Prompts
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Scroll right for more columns

- **Show Message:** Click to enable/disable the onscreen alarm icons when triggered.
- **Send Email:** Click enable/disable sending an email alert when an alarm event is detected.
- **FTP Picture Upload:** Click to enable/disable the copying of snapshots to your FTP server when triggered.
- **FTP Video Upload:** Click to enable/disable the copying of videoclips to your FTP server when triggered.
- **Picture to Cloud:** Click to enable/disable the copying of snapshots to Dropbox or Google Drive when triggered.
- **Video to Cloud:** Click to enable/disable the copying of videoclips to Dropbox or Google Drive when triggered.
- **Full Screen:** Click to enable/disable full-screen view in *Live View* mode when triggered.
- **Voice Prompts:** Click to select a customized voice alert when triggered if your NVR is connected to a speaker. For details on adding a customized voice alert, see *Voice Prompts* on pg. 98.
- **Default:** Click *Default* to revert to default settings.
- **Copy:** Click the *Copy* button at the bottom of the screen to apply all settings to other connected cameras.
- **Apply:** Click *Apply* to save settings.

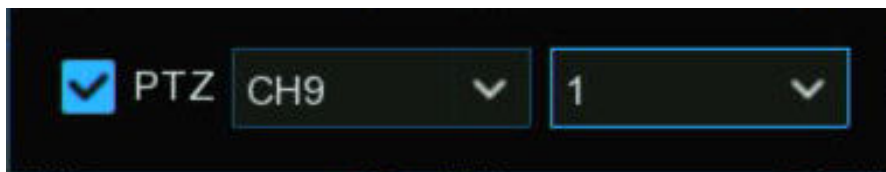
ALARM SETTINGS (CONTINUED)

PTZ LINKAGE

If there are any PTZ cameras connected to your NVR, click the *PTZ Linkage* tab in the sidebar to configure the cameras' shift to focusing on a selected preset position when a motion event, I/O sensor alarm, and/or PIR alarm occurs.



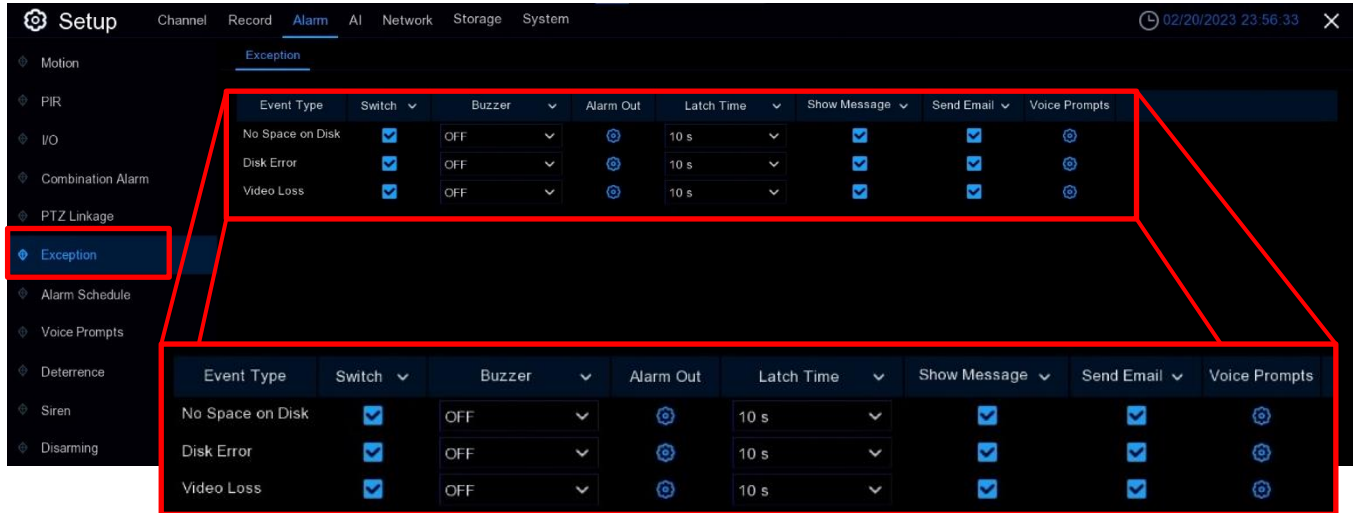
- **Switch:** Click to enable PTZ linkage for the channel.
- **Alarm:** Click the icon to choose the alarm sources between one or many options.
 - **I/O:** Among the alarm source options, if I/O is chosen, click the icon next to that choice to configure the PTZ linkage function for the channel when an I/O alarm occurs.
- **PTZx:** Set up to 4 positions for the PTZ linkage for each channel. Click the icon under PTZ1~PTZ4, select the channel of the connected PTZ camera, and choose a preset point.



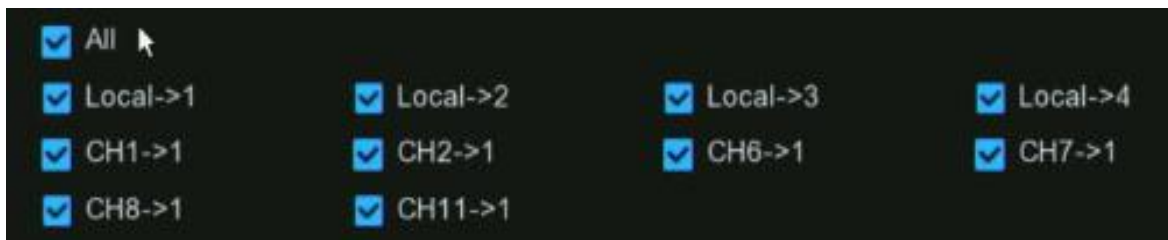
ALARM SETTINGS (CONTINUED)

EXCEPTION ALARM

Click the *Exception Alarm* tab in the sidebar to configure the abnormal events that the NVR should alert you of.



- **Event Type:** There are three event types that your NVR will detect as an exception.
 - **No Space on Disk:** When the hard drive has no space left.
 - **Disk Error:** When there is a hard drive error.
 - **Video Loss:** When one or more channels has lost connection.
- **Buzzer:** Click to enable the NVR buzzer and set an alert duration when an exception is detected.
- **Alarm Out:** If your NVR or IP camera supports connections to external relay devices, the system can send an alert message to an external alarm. Click the icon in this column, to choose the external alarm devices from the screen shown below.



- **Local->x:** For external alarm devices connected to the NVR.
- **CHx->1:** For external alarm devices connected to IP cameras.
- **Latch Time:** Click to configure the external alarm duration when an exception is detected.
- **Show Message:** Click to enable/disable an onscreen when an exception is detected.
- **Send Email:** Click enable/disable sending an email alert when an exception is detected.
- **Voice Prompts:** Click to select a custom voice alert when an exception is detected if the NVR is connected to a speaker. For more on custom voice alerts, see *Voice Prompts* on pg. 98.

ALARM SETTINGS (CONTINUED)

ALARM SCHEDULE

Alarms can be individually scheduled for *Alarm Out*, *Push Notification*, *FTP Upload*, *Cloud Upload*, *Buzzer*, and *Voice Prompts* 24 hours a day, 7 days a week. Click the *Alarm Schedule* tab in the sidebar to configure.

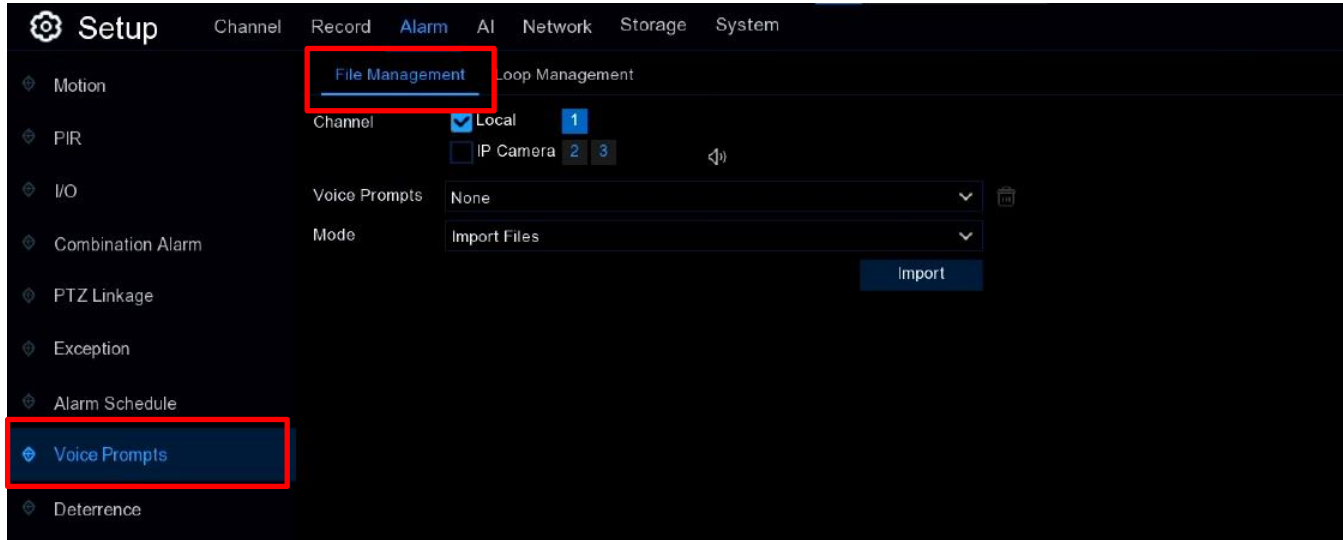


1. Select the *Channel* to configure.
2. Click on the *Notification* radio button you want to schedule.
3. Click a time slot and drag the cursor to mark a time period. The green blocks show that the selected notification alarm is active for this period.
4. The schedule is valid only for the selected channel. If you want to use the same schedule for other channels, use the *Copy* button.
5. Click *Save* to save your settings.

ALARM SETTINGS (CONTINUED)

VOICE PROMPTS

If your NVR or IP camera supports the voice prompts and has a built-in or external speaker, you can set a customized voice alert when an alarm event occurs.



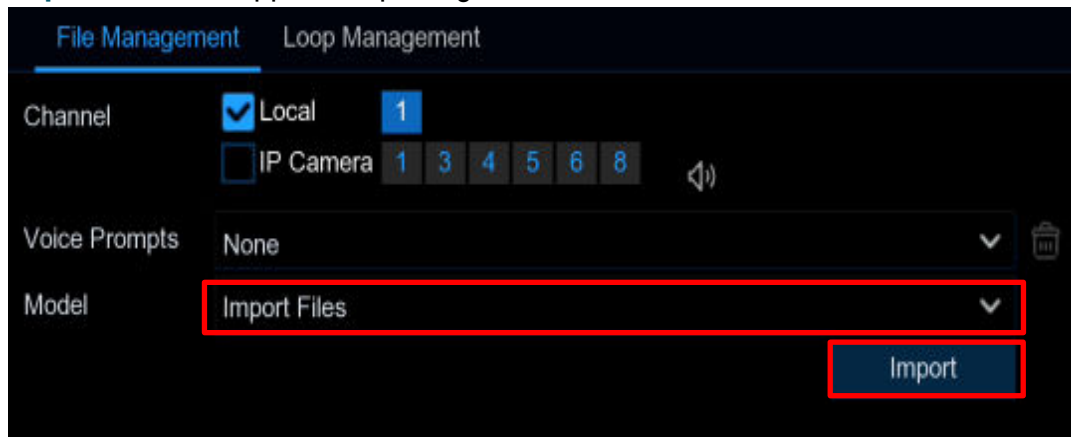
FILE MANAGEMENT

From the *Voice Prompt* tab in the sidebar, click on the *File Management* tab near the top of the window to create and delete voice files.

CREATING VOICE FILES

The NVR provides three different ways for creating and deleting voice files.

- **Import Files** – Supports importing MP3, WMA, and WAV files from a USB drive and/or website



- Click the dropdown next to *Model* and choose *Import Files*.
- Click the *Import* button and choose the audio file. You can only import one file at a time from a USB drive but can import multiple files at one time from a website.

ALARM SETTINGS – VOICE PROMPTS, FILE MANAGEMENT, CREATING VOICE FILES
(CONTINUED)

- **Local Conversion** – supports converting plain text to an audio file using a local text-to-speech algorithm (English only)

The screenshot shows the 'File Management' tab selected. The 'Channel' section has 'Local' and 'IP Camera' checked. The 'Voice Prompts' dropdown is set to 'None'. The 'Model' dropdown is set to 'Local Conversion'. The 'Language' dropdown is set to 'ENGLISH'. The 'Name' field contains 'private zone'. The 'Plain Text' field contains 'Warning; this is a private zone, do not enter'. An 'Import' button is located at the bottom right.

- Click the dropdown next to *Model* and choose *Local Conversion*.
- Enter the name of the file in the *Name* box.
- Enter the text that you wish to convert to speech in the *Plain Text* box.
- Click the *Import* button. The text will be converted and saved to the NVR file storage.

ALARM SETTINGS – VOICE PROMPTS, FILE MANAGEMENT, CREATING VOICE FILES
(CONTINUED)

- **Internet Server Conversion** – supports converting plain text to an audio file using an internet service that supports English, Spanish, and French.

The screenshot shows the 'File Management' tab in the ENFORCER 4K Network Video Recorder interface. The 'Channel' section has 'Local' selected with '1' and 'IP Camera' with '6', '7', and '8'. The 'Voice Prompts' dropdown is set to 'None'. The 'Model' dropdown is set to 'Internet Server Conversion'. The 'Language' dropdown is set to 'ENGLISH'. The 'Name' field contains 'private zone'. The 'Plain Text' field contains 'Private zone, do not enter'. The 'Import' button is highlighted.

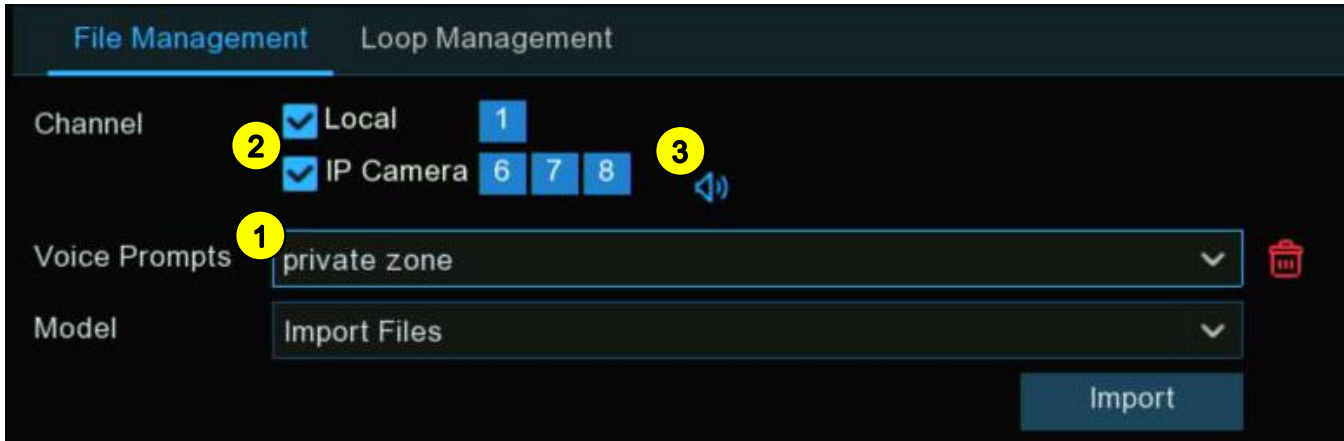
- Click the dropdown next to *Model* and choose *Internet Server Conversion*.
- Choose a different language if desired (default, English).
- Enter the name of the file in the *Name* box.
- Enter the text that you wish to convert to speech in the *Plain Text* box.
- Click the *Import* button. The text will be converted and saved to the NVR file storage.


NOTE: To work with languages other than English, we recommend that you log in via a web browser.

ALARM SETTINGS – VOICE PROMPTS, FILE MANAGEMENT (CONTINUED)

REVIEWING VOICE FILES

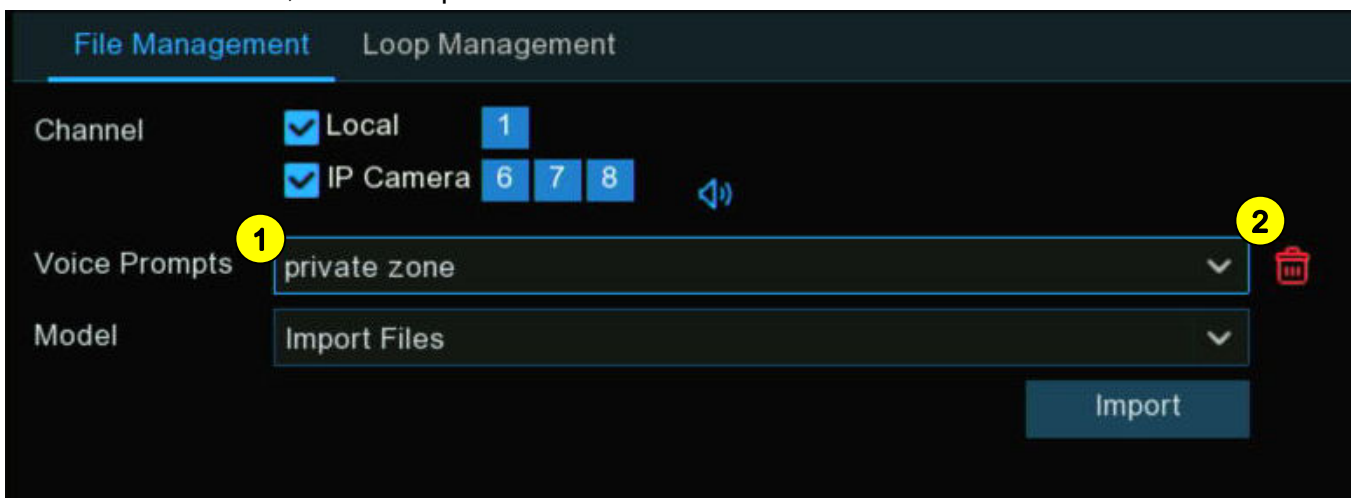
After creating your voice files, you can listen to them through your NVR and/or IP camera's speaker to ensure that they are correct and of good quality.




- 1 Select a voice file to review from the *Voice Prompts* dropdown.
- 2 Choose the audio playback device. *Local* indicates the NVR audio output device. *IP Camera* indicates the speaker or audio output device in the IP camera.
- 3 Click the *Play*  icon.

DELETING VOICE FILES

To delete a voice file, follow the procedure below.



- 1 Select a voice file to delete from the *Voice Prompts* dropdown.
- 2 Click the delete icon  to delete the file.

ALARM SETTINGS – VOICE PROMPTS (CONTINUED)*LOOP MANAGEMENT*

The NVR can be set to play a continuous loop of voice files at specified periods of time. To configure, click on the *Loop Management* tab.

Channel	Local	IP Camera
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Voice Prompts	Start Time	End Time	Play Icon
private zone	12:00:00	12:59:59	▶
Alarm-Siren	14:00:00	14:59:59	▶
private zone	17:00:00	17:59:59	▶

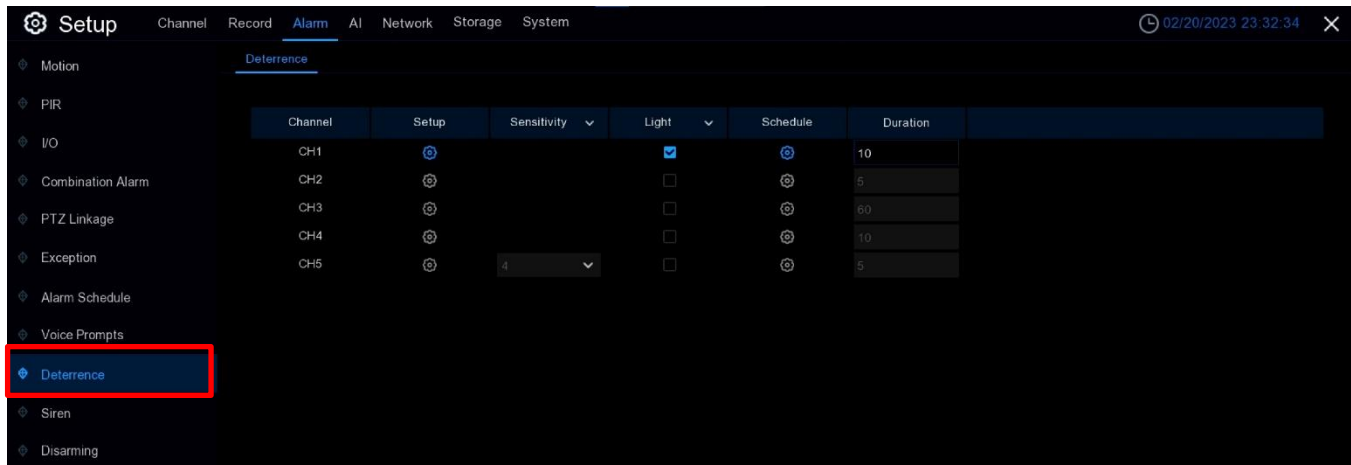
- 1 Select the device you wish to play the voice file on.
 - 2 Choose a voice file.
 - 3 Set the time period.
 - 4 Click play icon ▶ to listen to the file.
 - 5 Click add icon + to add another sound file to the loop playlist, up to a maximum of 12 sound files.
 - 6 To delete a sound file, click the delete icon -.
7. Click *Apply* to save your settings.

NOTE: The time period of one sound file cannot overlap with that of any other sound file.

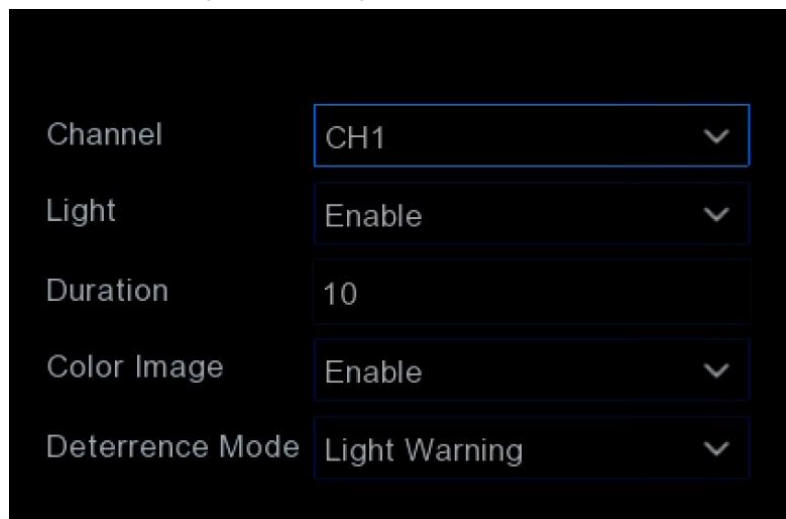
ALARM SETTINGS (CONTINUED)

WHEN USING IP CAMERAS WITH DETERRENCE

Click on the *Deterrence* left tab on the *Setup* screen to configure the action of the white LEDs and speaker of deterrence cameras when an alarm event is detected.



- **Setup:** Click the camera's ⚙️ icon to enter the configuration page.
- **Light:** Click the drop-down menu to enable the camera's white LEDs (if available).
- **Duration:** Click to adjust the length of time the white light will remain lit when an alarm is detected.
- **Color Image:** Click to enable color for nighttime images. Otherwise, nighttime images will remain black & white.
- **Deterrence Mode:** Click the drop-down menu to select either *Light Warning* (a continuous light) or *Strobe Light*. When *Strobe Light* is chosen, you can select a *Strobe Frequency* between *Low*, *Medium*, or *High*.

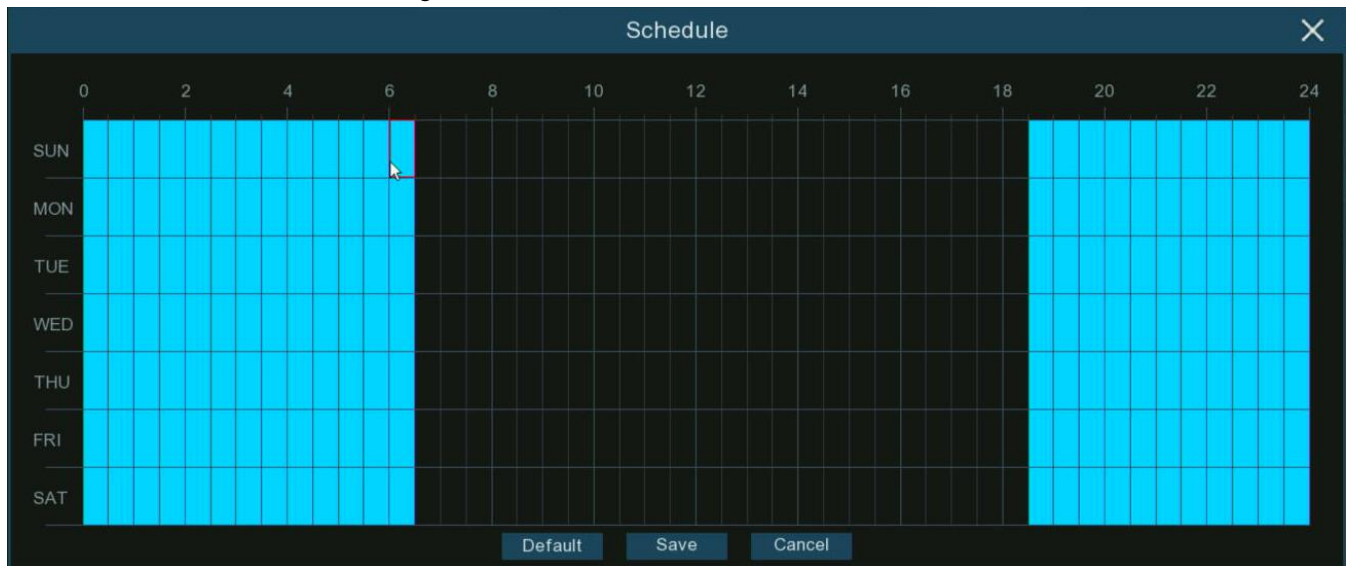


NOTE: When using *Full Color Mode*, the white LEDs cannot be used as deterrence lights (see *Full Color Camera Settings* on pg. 62).

- **Schedule:** Click the ⚙️ icon to configure the deterrence schedule:

ALARM SETTINGS – WHEN USING IP CAMERAS WITH DETERRENCE (CONTINUED)

When the camera is connected to the NVR through the client port, you should see a schedule interface similar to the following.



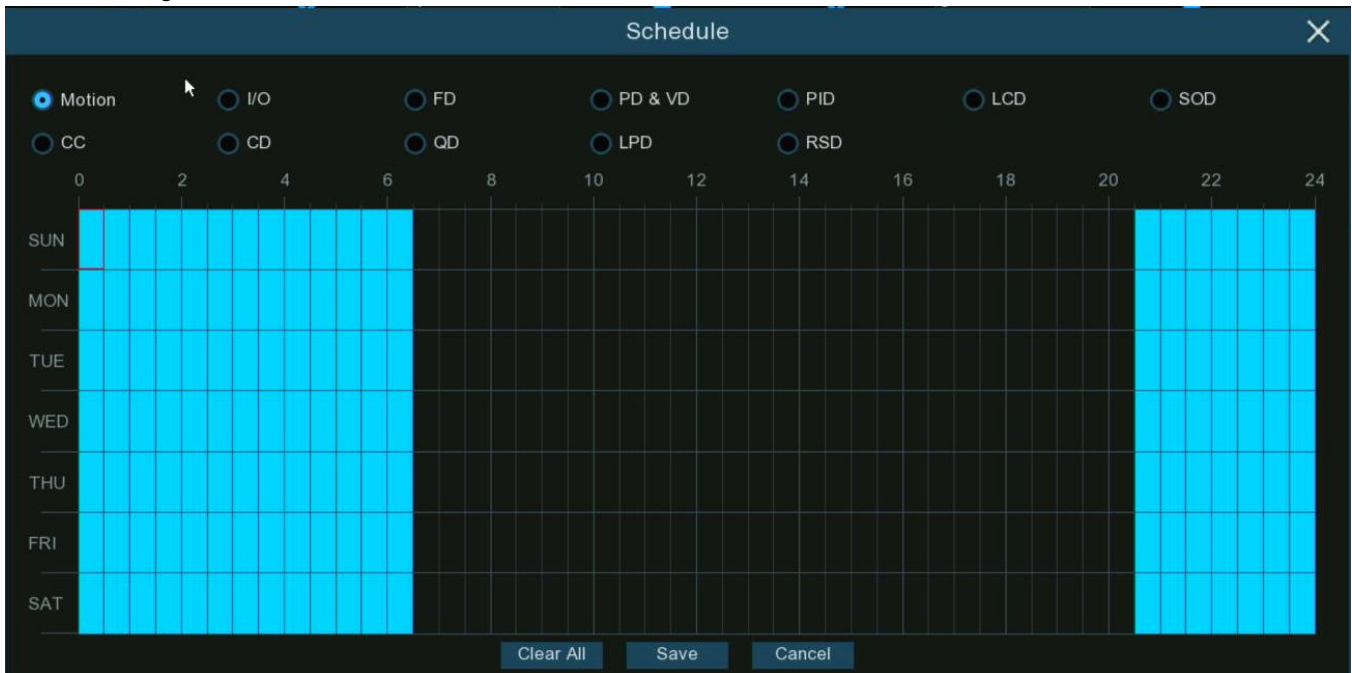
In the default setting, the LEDs will not trigger between 4:30 p.m. and 6:30 a.m. Adjust as desired.

Each square represents 30 minutes, and a blue square represents when the white LEDs should be active for deterrence while a black square represents when deterrence should be inactive. Click on a particular square to change its color or click and drag the mouse over a range to change a period of time.

Click **Save** to save any changes. Right-click to exit.

ALARM SETTINGS – WHEN USING IP CAMERAS WITH DETERRENCE (CONTINUED)

When the camera is connected to the NVR web port, you should see a schedule interface similar to the following.



All supported alarm types are listed above and a schedule for each can be configured individually.

Click the checkbox of the alarm type you want to configure and set the schedule in the same way as described on the previous page.

Click Save to save any changes. Right-click to exit.

ALARM SETTINGS (CONTINUED)

SIREN

To configure the action of deterrence cameras' built-in speaker when an alarm event is detected, click on the *Siren* tab of the sidebar.

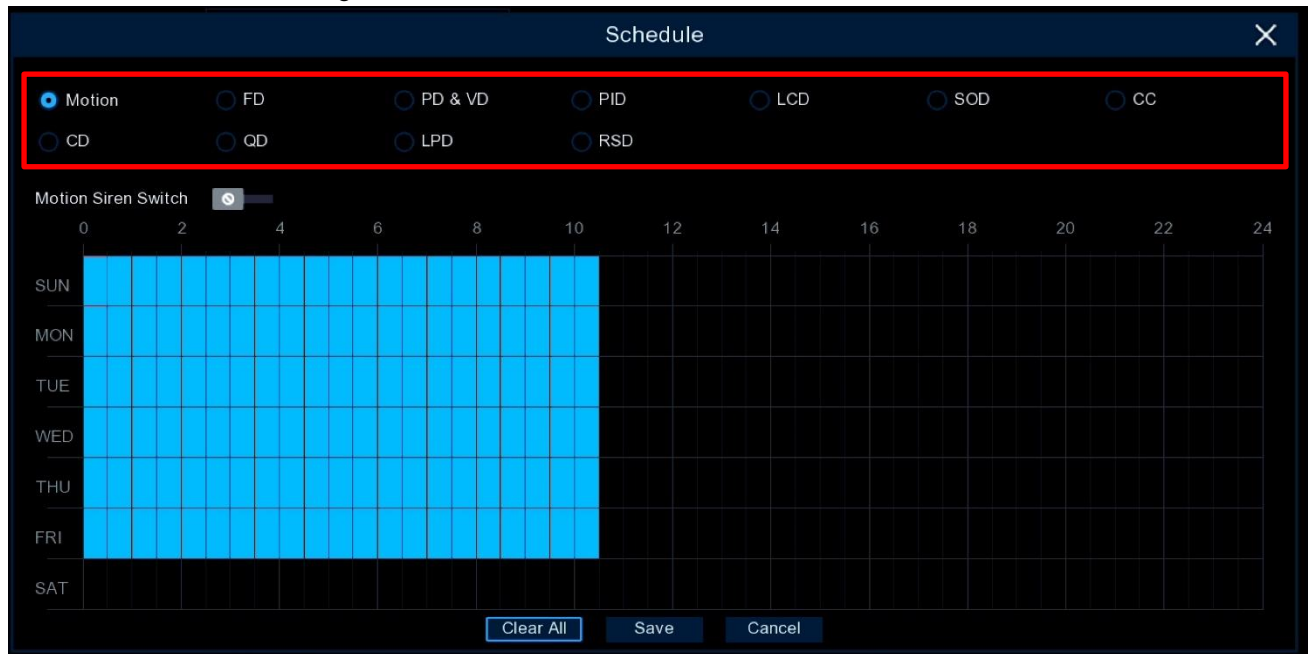
The screenshot shows the 'Setup' interface with the 'Alarm' tab selected. The 'Siren' sub-tab is active. The settings are as follows:

Setting	Value
Channel	CH6
Enable	<input checked="" type="checkbox"/>
Siren Type	Alarm1
Siren Level	9
Siren Duration(s)	10
Schedule	Schedule

- **Channel:** Click to select the channel you want to configure.
- **Enable:** Click to enable the siren function.
- **Siren Type:** Click to select the type of siren.
- **Siren Level:** Adjust the volume using the slider.
- **Siren Duration:** Select the duration in seconds that you want the siren to be activated.

ALARM SETTINGS – SIREN (CONTINUED)

- **Schedule:** Click to configure the siren schedule.

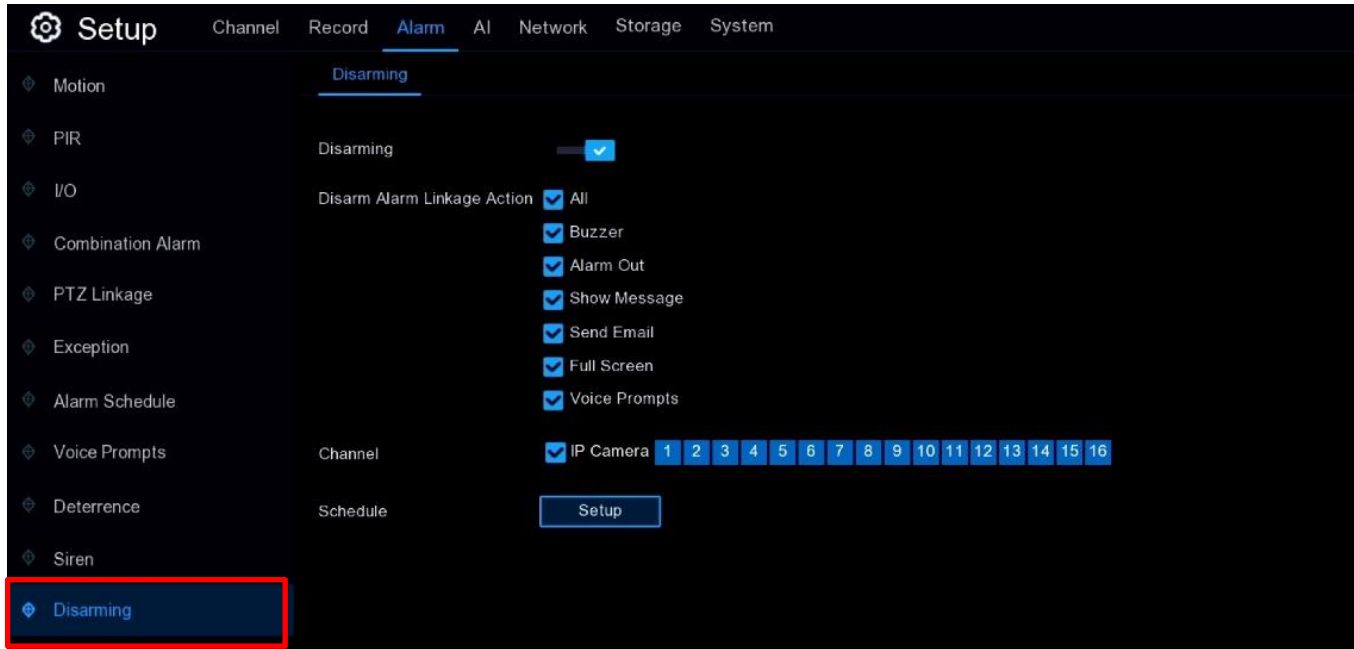


- Select one of the radio buttons for the Alarm Function (see AI beginning on pg. 109 for information about each choice).
- Click on a time block and drag to select a time period. The blue colored blocks represent time periods with the siren should be active.
- **XXX Siren Switch:** Click to enable the selected *Alarm Function Switch* according to the schedule selected or disable the scheduling to allow it to be active at all times.
- **Save:** Click *Save* to save your settings.

ALARM SETTINGS (CONTINUED)

DISARMING

From the *Disarm* tab on the sidebar, you can configure parameters for disarming alarms. This will override all other schedules and provides a quick way of blocking out certain *alarm-free* times for entire channels.



- **Disarming:** Click to enable or disable.
- **Disarm Alarm Linkage Actions:** Check any alarm functions you wish to disarm.
- **Channel:** Select the Channel(s) you wish to disarm.
- **Schedule:** Click *Setup* to configure your disarm schedule.

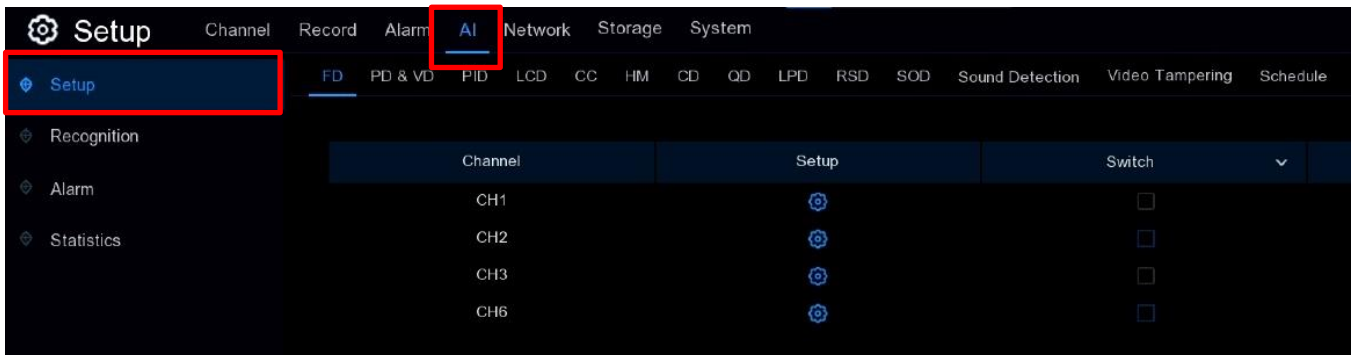
AI

Artificial Intelligence (AI) is an advanced function that enables the system to take specific customized actions from specialized alarm events that are based on face detection, pedestrian detection, and vehicle detection technology in correspondence with AI powered IP cameras. If your NVR supports AI functions, you will see the AI menu on the Setup screen.



AI SETUP

Click the AI menu and then the Setup tab in the sidebar to activate the AI functions and configure them according to your requirements. Choose the desired function from its respective tab below the menu bar.



NOTE: Some AI detection functions, including *Face Detection*, *Pedestrian and Vehicle Detection*, *Perimeter Intrusion Detection*, *Line Crossing Detection*, *Cross Counting*, *Crowd Density Detection*, *Queue Length Detection*, and *License Plate Detection*, may be mutually exclusive due to certain performance limitations. If the *Switch* checkbox is grayed out and unable to be checked, this denotes that another conflicting AI function has already been enabled for this camera.

AI – AI SETUP (CONTINUED)

FD (FACE DETECTION)

Face Detection is a great way to improve how you monitor various areas. When human faces are detected, the NVR will activate recording and send an alert. This makes it ideal for restricted places where people shouldn't be at certain times.

Channel	Setup	Switch
CH1		<input type="checkbox"/>
CH2		<input type="checkbox"/>
CH3		<input type="checkbox"/>
CH6		<input type="checkbox"/>

- **Switch:** Click to enable or disable *Face Detection* for this channel.
- **Setup:** Click the icon to configure *Face Detection* for this channel.

Channel: CH2

Snap Mode: Realtime Mode

Apply Mode: Customize

Roll Range: 30 (0-180)

Pitch Range: 30 (0-180)

Yaw Range: 45 (0-180)

Picture Quality: 100 (0-100)

Frontal View Default | Multi Angle Default

Min Pixel: 64 (32-1080)

Max Pixel: 640 (320-1080)

Face Enhance: Enable

Face Attribute: Enable

Detection Mode: Static Mode

Rule Kind: Rect

Detection Range: Full Screen

Dynamic Marking: Enable

Save

Office

640 x 640

64 x 64

AI – AI SETUP, FD (FACE DETECTION) (CONTINUED)

- **Channel:** Click to select the channel that you want to configure.
- **Snap Mode:** Click to select how snapshots containing a recognized face to capture. This can affect the number of facial recognition notifications you will receive.
 - **Realtime Mode:** Select to instruct the camera to track and capture the face of anyone entering and leaving the detection area (setup instructions below). You'll get two notifications in the *Alarm Notification Panel* –when the face is first detected and again as the face leaves the detection area. This is useful if you want to continuously monitor a person's presence in an area and get alerts in real time (recommended).
 - **Optimal Mode:** Select to instruct the camera to capture a single, best snapshot of the face.
 - **Interval Mode:** Select to specify the number of snapshots to take and the time interval between snapshots.
 - **Snap Num:** Enter the number of snapshots to take.
 - **Snap Frequency:** Enter the time interval between snapshots.
- **Apply Mode:** Click to choose the optimization mode for the camera's facial recognition.
 - **Frontal View:** Choose to optimize the facial recognition engine to scan for faces approaching the camera straight-on (recommended).
 - **Multi Angle:** Choose to optimize the facial recognition engine to scan for faces approaching the camera from various angles.
 - **Customize:** Choose to optimize the facial recognition engine to scan for faces approaching the camera from customized angles.
 - **Roll Range:** Enter the range of face rotation.
 - **Pitch Range:** Enter the range of face pitch (vertical adjustment).
 - **Yaw Range:** Enter the range of face yaw (horizontal adjustment).
 - **Picture Quality:** Enter a number for the relative picture quality (100 = best quality).
 - **Frontal View Default:** Click to load default values for the *Frontal View* (Roll Range: 30, Pitch Range: 30, Yaw Range: 45, Picture Quality: 100).
 - **Multi Angle Default:** Click to load default values for the *Multi Angle View* (Roll Range: 180, Pitch Range: 180, Yaw Range: 180, Picture Quality: 100).

Channel	CH2	(0-180)
Snap Mode	Realtime Mode	(0-180)
Apply Mode	Customize	(0-180)
Roll Range	30	(0-180)
Pitch Range	30	(0-180)
Yaw Range	45	(0-180)
Picture Quality	100	(0-100)

Frontal View Default Multi Angle Default

AI – AI SETUP, FD (FACE DETECTION) (CONTINUED)

- **Min Pixel:** Set the minimum face size (in pixels) that the camera will attempt to recognize. The smaller the number of pixels, the more faces the camera will try to recognize and at a farther distance. If you find that the camera is recognizing too many unwanted distant faces, try increasing the minimum pixel value to train the camera to look for larger faces that are typically at a closer distance.
- **Max Pixel:** The maximum face size (in pixels) that the camera will attempt to recognize. If you want the camera to detect faces in closer proximity, try increasing the maximum pixel value, otherwise leave the value at the default.
- **Face Enhance:** Enable to make it easier to recognize moving faces. However, note that this may lower overall picture quality.
- **Face Attribute:** Enable to detect gender, age, masks, glasses, and facial expressions.
- **Detection Mode:** Click the dropdown to choose between *Static Mode*, to analyze all faces in the camera's field of view or *Motion Mode*, to analyze only moving faces.

	Frontal View Default	Multi Angle Default
Min Pixel	64	(32-1080)
Max Pixel	640	(320-1080)
Face Enhance	Enable	▼
Face Attribute	Enable	▼
Detection Mode	Static Mode	▼
Rule Kind	Rect	▼
Detection Range	Full Screen	▼
Dynamic Marking	Enable	▼

Save

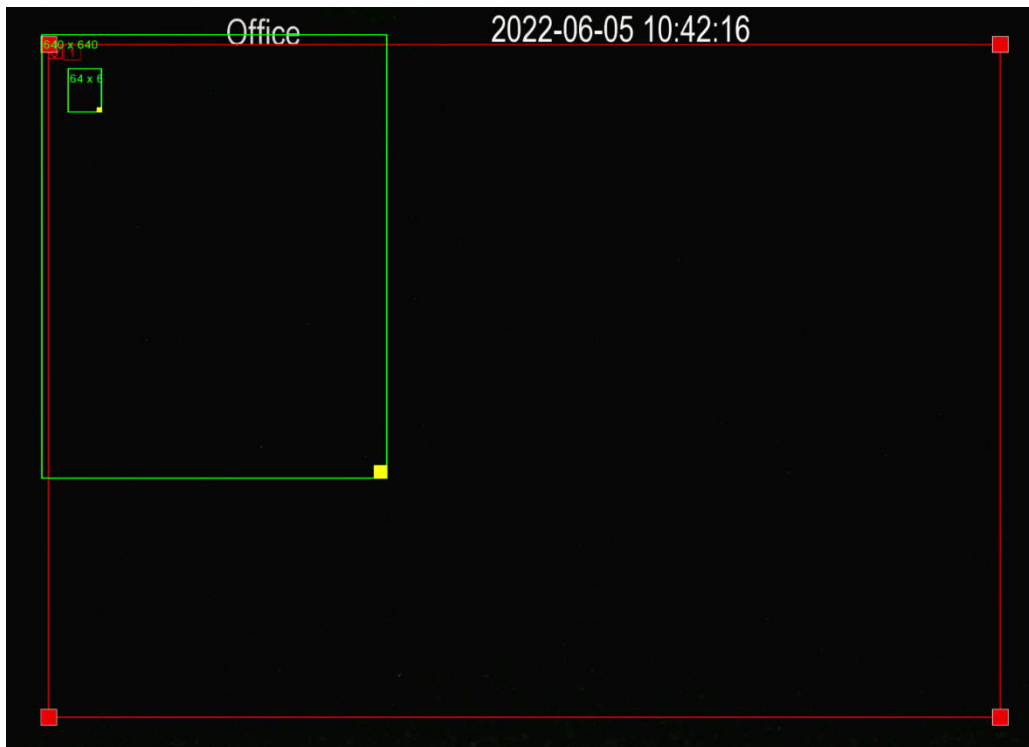
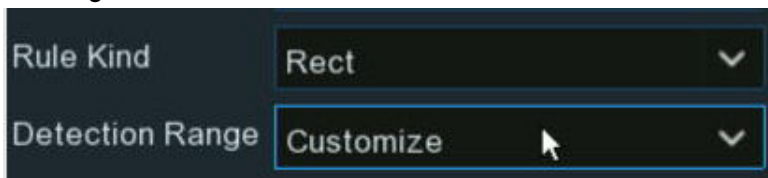
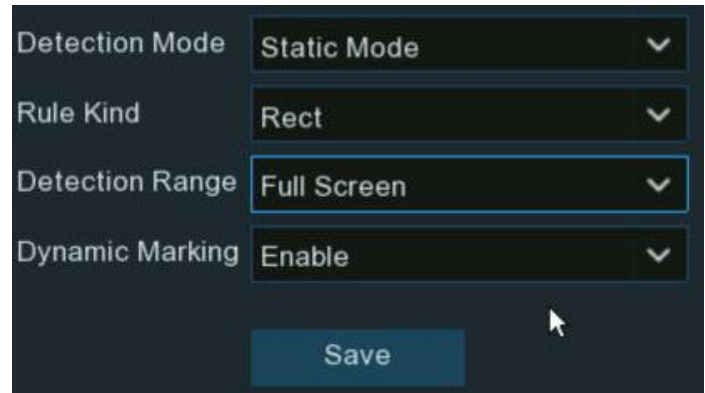
AI – AI SETUP, FD (FACE DETECTION) (CONTINUED)

- **Rule Kind:** Click the dropdown to choose between *Rect* (rectangular) and *Line* (linear) rule modes.

- **Rect:** Choose to enable face detection for an entire area (recommended).

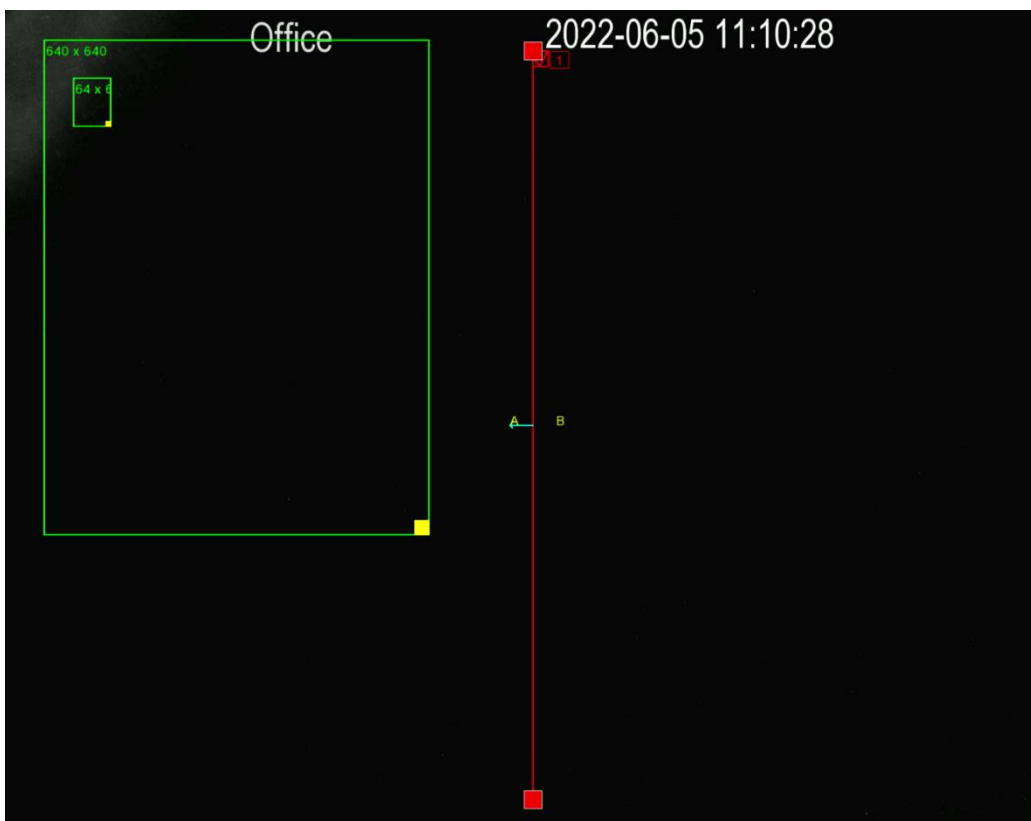
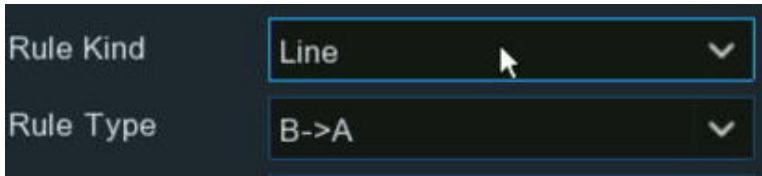
- **Full Screen:** Choose to set the entire screen as the face detection area.

- **Customize:** Choose to set a certain rectangular area of the screen as the face detection area. If chosen, a new screen will pop up to allow you to adjust the size and location of that area. Click inside the rectangle to drag it to a new location. Click the bottom right corner and drag to resize the rectangle.

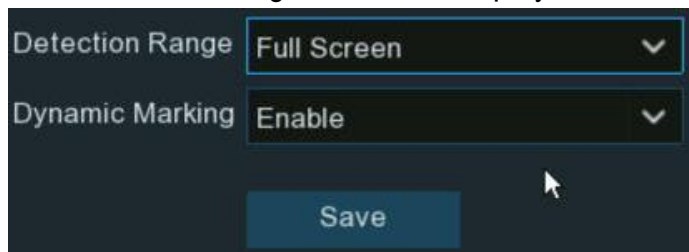


AI – AI SETUP, FD (FACE DETECTION) (CONTINUED)

- **Line:** Choose to enable face detection only for faces crossing a line in a particular direction. If chosen, a new screen will pop up to allow you to adjust the dividing line—its length, location, and angle.
 - **A->B:** Click to only detect faces crossing the line in the direction from side A to B.
 - **B->A:** Click to only detect faces crossing the line in the direction from side B to A.



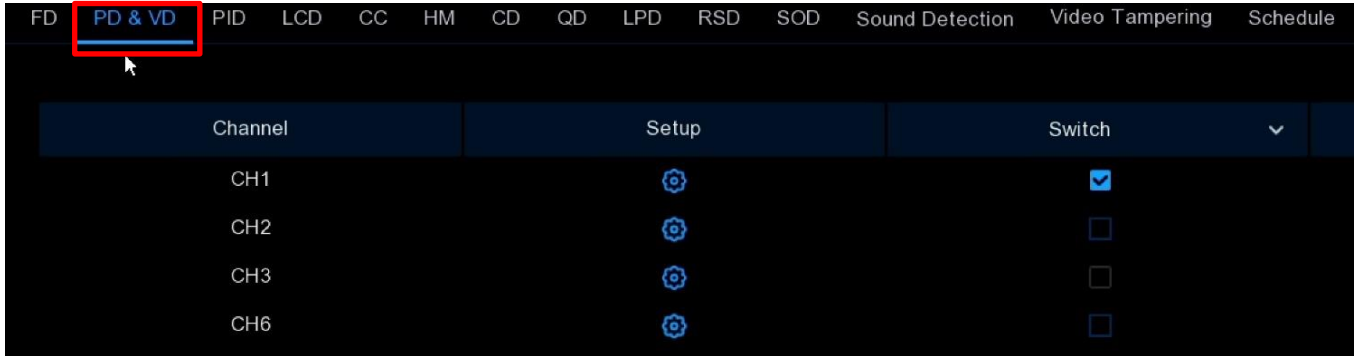
- **Dynamic Marking:** Click to disable or reenale the green tracking frame surrounding a detected face during *Live View* and playback.



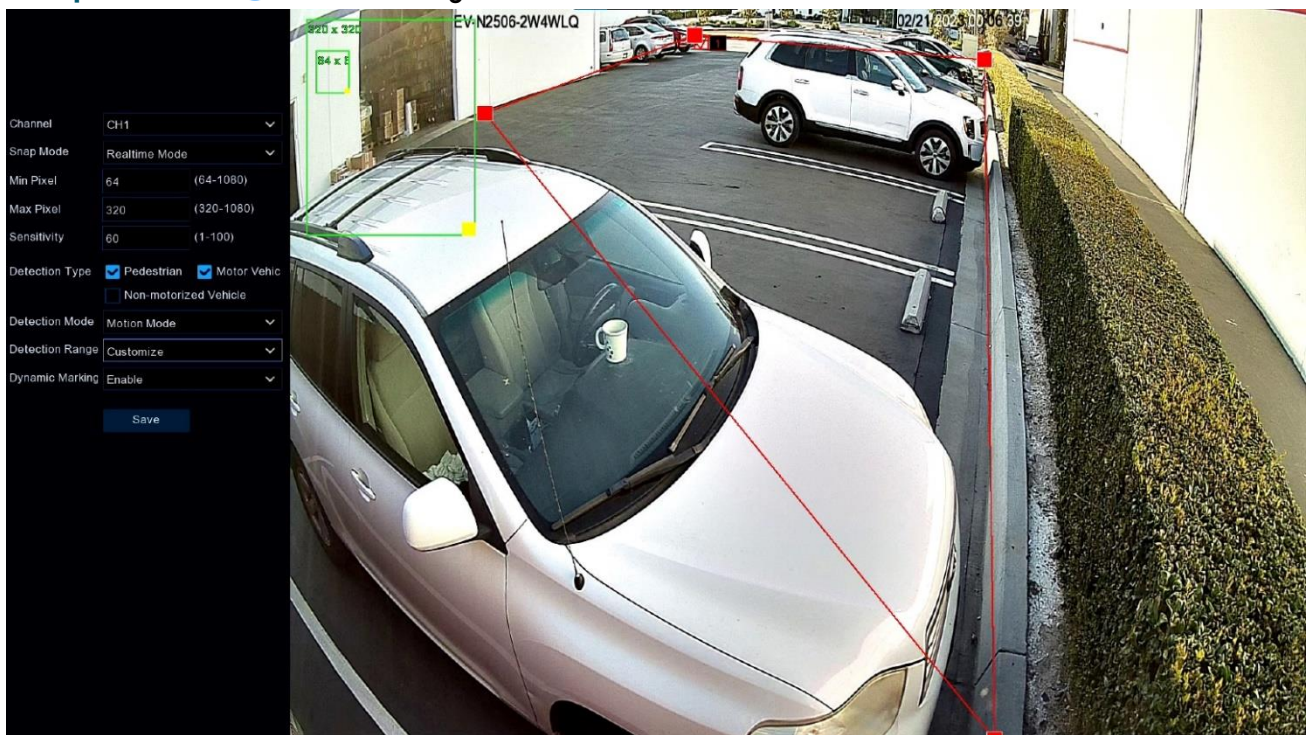
AI – AI SETUP (CONTINUED)

PD & VD (PEDESTRIAN AND VEHICLE DETECTION)

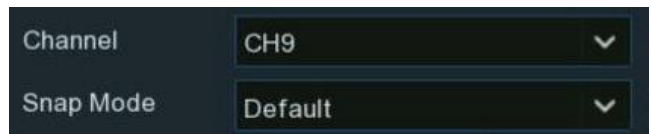
Click the PD&VD (Pedestrian and Vehicle Detection) tab to configure the NVR's recording and alerts when pedestrians and/or vehicles are detected.



- **Switch:** Click to enable or disable *Pedestrian and Vehicle Detection* for this channel.
- **Setup:** Click the icon to configure *Pedestrian and Vehicle Detection* for this channel.



- **Channel:** Click to select the channel that you want to configure.
- **Snap Mode:** Click to select how snapshots containing a recognized object are captured. This can affect the number of notifications you will receive.



- **Default:** Select to instruct the camera to capture a single, best snapshot of the object.

AI – AI SETUP, PD & VD (PEDESTRIAN AND VEHICLE DETECTION) (CONTINUED)

- **Realtime Mode:** Select to instruct the camera to track and capture objects entering and leaving the detection area (setup instructions below). You'll receive two notifications in the *Alarm Notification Panel* – one when the object is first detected and again as the object leaves the detection area. This is useful if you want to continuously monitor an object in an area and get alerts in real time (recommended).
- **Interval Mode:** Select to specify the number of snapshots to take and the time interval between snapshots.

Snap Mode	Default	▼
Min Pixel	64	(64-1080)
Max Pixel	320	(320-1080)
Sensitivity	60	(1-100)
Detection Type	<input type="checkbox"/> Pedestrian <input checked="" type="checkbox"/> Motor Vehicle <input type="checkbox"/> Non-motorized Vehicle	
Detection Mode	Motion Mode	▼
Detection Range	Customize	▼
Dynamic Marking	Enable	▼

- **Snap Num:** Enter the number of snapshots to take.
- **Snap Frequency:** Enter the time interval between snapshots.

- **Min Pixel:** Set the minimum object size (in pixels) that the camera will attempt to recognize. The smaller the number of pixels, the more objects the camera will try to recognize and at a farther distance. If you find that the camera is recognizing too many unwanted distant objects, try increasing the minimum pixel value to train the camera to look for larger objects that are typically at a closer distance.
- **Max Pixel:** The maximum object size (in pixels) that the camera will attempt to recognize. If you want the camera to detect objects in closer proximity, try increasing the maximum pixel value, otherwise leave the value at the default.
- **Sensitivity:** Click to adjust the sensitivity level of the detection area. The higher the number, the more sensitive it will be when detecting objects.
- **Detection Type:** Click to choose the type of objects to target for detection.
- **Detection Mode:** Click the dropdown to choose between *Static Mode*, to analyze all objects in the camera's field of view, or *Motion Mode*, to analyze only moving objects.
- **Detection Range:** Click to choose between *Full Screen* or *Customize* detection range.
 - **Full Screen:** Choose to make the entire screen the detection range.
 - **Customize:** Choose to set a rectangular area of the screen as the detection range area. Click inside the rectangle to drag to a new location. Click a corner and drag to resize.
- **Dynamic Marking:** Click to disable or reenab the green tracking frame surrounding a detected object during *Live View* and playback.

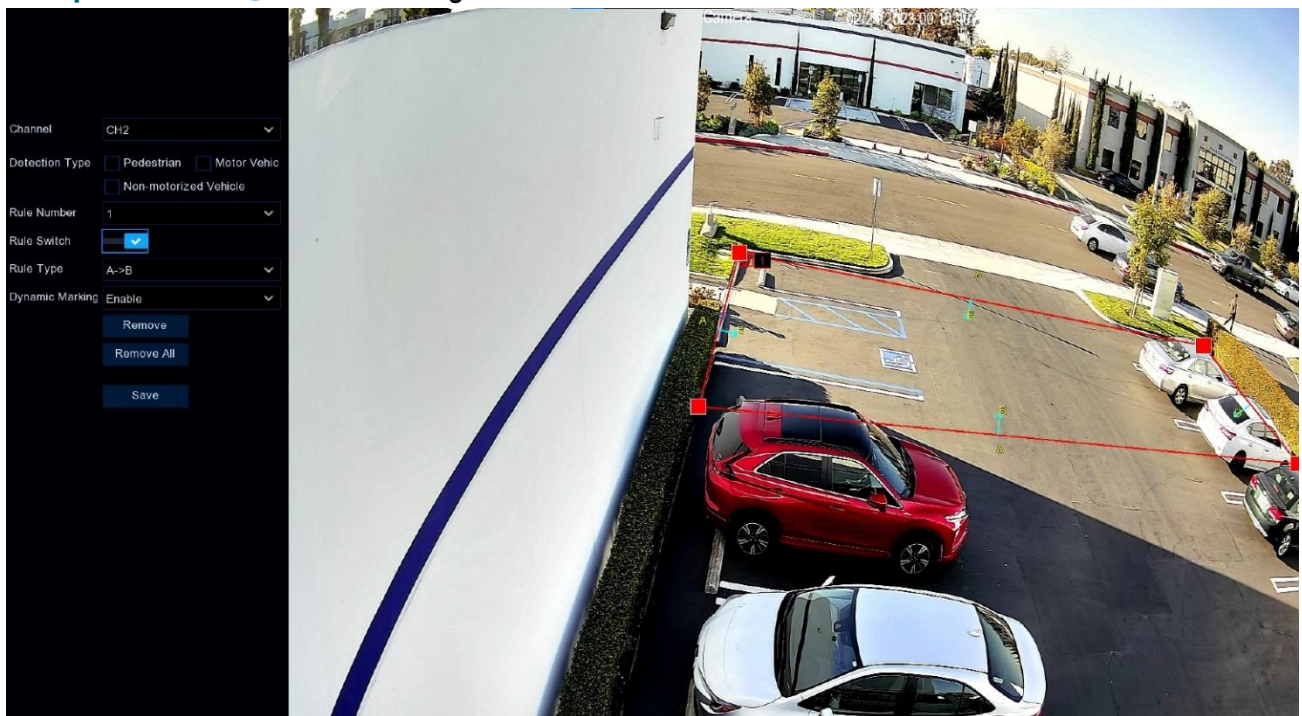
AI – AI SETUP (CONTINUED)

PID (PERIMETER INTRUSION DETECTION)

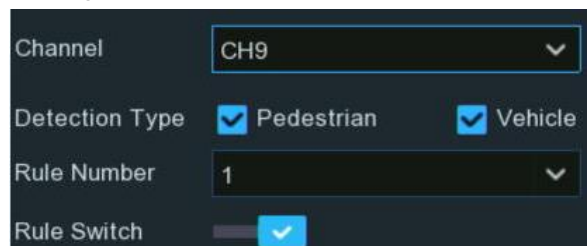
Perimeter Intrusion Detection detects people, vehicles, or other objects that enter or loiter in a predefined region. Click to activate and configure this function and the actions that should be taken.

Channel	Setup	Switch	Sensitivity
CH1		<input type="checkbox"/>	2
CH2		<input type="checkbox"/>	2
CH3		<input type="checkbox"/>	2
CH6		<input type="checkbox"/>	2

- **Switch:** Click to enable or disable *Perimeter Intrusion Detection* for this channel.
- **Sensitivity:** Click to adjust the sensitivity level of the perimeter intrusion region. The higher the number, the more sensitive it will be when detecting objects.
- **Setup:** Click the to configure *Perimeter Intrusion Detection* for this channel.



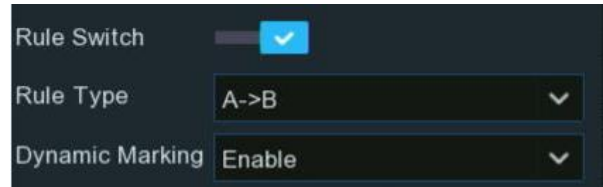
- **Channel:** Click to select the channel that you want to configure.
- **Detection Type:** Click to choose the type of object to target for detection.
- **Rule Number:** Click to choose a rule to configure or change.
- **Rule Switch:** Click to enable or disable detection for this rule.



AI – AI SETUP, PID (PERIMETER INTRUSION DETECTION) (CONTINUED)

- **Rule Type:** Click the dropdown to choose one of the following *Rule Types*.

- **A->B:** Choose to instruct the camera only to detect motion from A crossing to B.
- **B->A:** Choose to instruct the camera only to detect motion from B crossing to A.
- **A<->B:** Choose to instruct the camera to detect motion crossing in either direction.

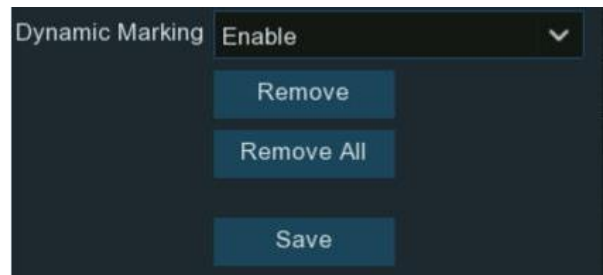


Click 4 points on the camera image to draw a virtual region. However, note that the shape must be a convex polygon. You cannot save a concave polygon.

To adjust the size of the region, click the red box in the region. The borders will change to red.

Click and drag to move the entire region or click and drag any corner to resize the region.

- **Dynamic Marking:** Click to disable or reenale the green tracking frame surrounding a detected object during *Live View* and playback.
- **Remove:** To remove one of the regions from the camera image, click a red box connected to the region and click the *Remove* button.
- **Remove All:** Click *Remove All* to delete all regions.
- **Save:** Click *Save* to save your settings.



NOTES

- The perimeter should not be too close to the edges/corners of the camera image. Doing so may result in failure to detect the target as it enters from outside the image.
- The shape of the regions should not be too narrow/small. Doing so may result in failure to detect the target as it exits across the perimeter.

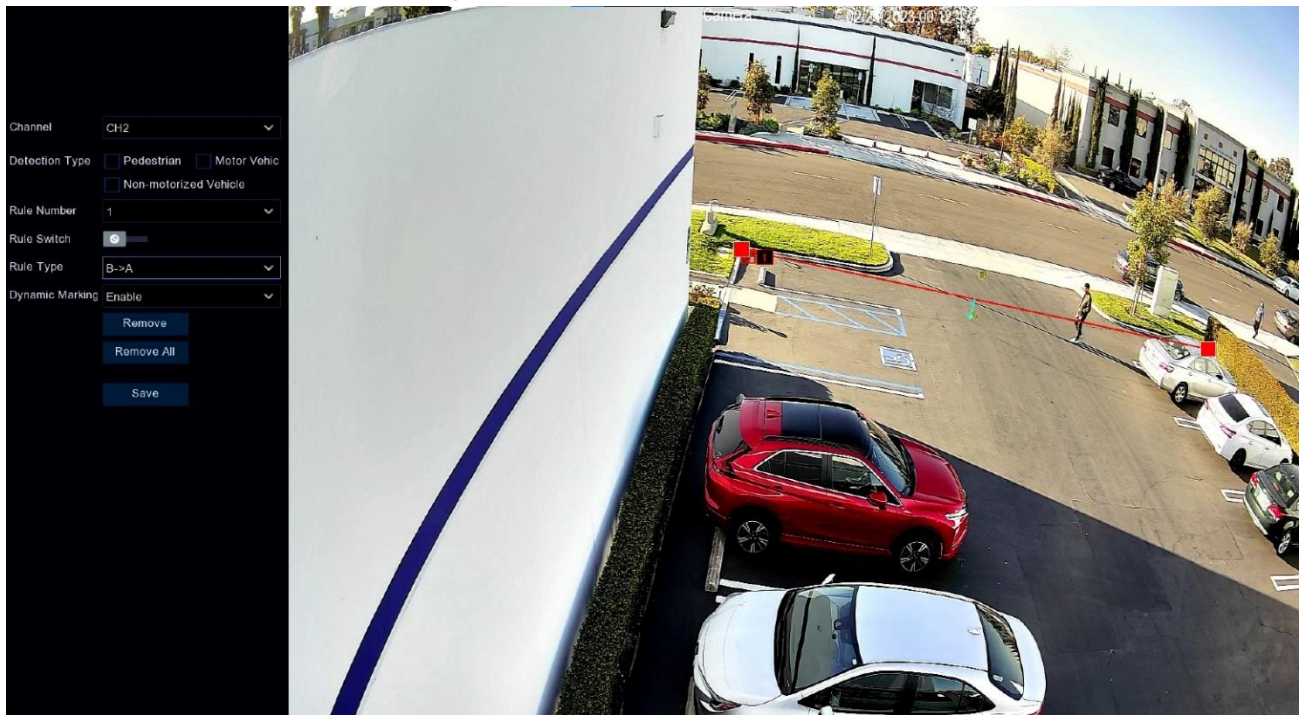
AI – AI SETUP (CONTINUED)

LCD (LINE CROSSING DETECTION)

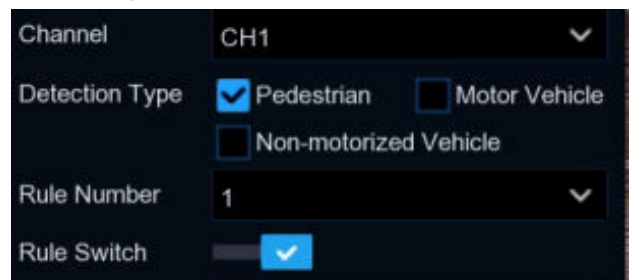
Line Crossing Detection detects people, vehicles, or other objects that cross a predefined virtual line. Click to activate and configure this function and the actions that should be taken.



- **Switch:** Click to enable or disable *Line Crossing Detection* for this channel.
- **Sensitivity:** Click to adjust the sensitivity level. The higher the number, the more sensitive it will be when detecting objects crossing the line.
- **Setup:** Click the ⚙️ icon to configure *Line Crossing Detection* for this channel.



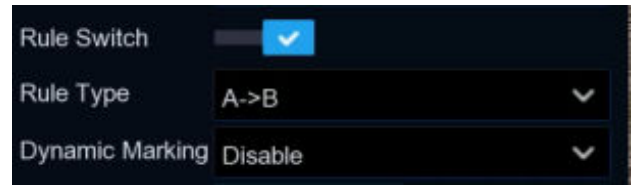
- **Channel:** Click to select the channel that you want to configure.
- **Detection Type:** Click to choose the type(s) of object to target for detection.
- **Rule Number:** Click to choose a rule to configure or change.
- **Rule Switch:** Click to enable or disable detection for this rule.



AI – AI SETUP, LCD (LINE CROSSING DETECTION) (CONTINUED)

- **Rule Type:** Click the dropdown to choose one of the following *Rule Types*.

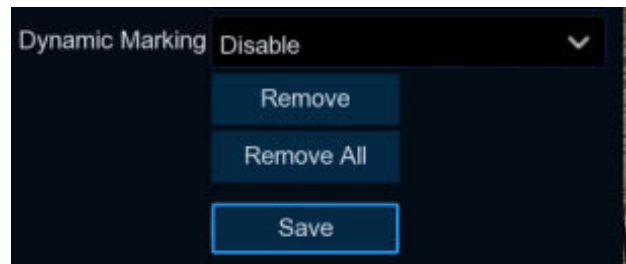
- **A->B:** Choose to instruct the camera only to detect motion from A crossing to B.
- **B->A:** Choose to instruct the camera only to detect motion from B crossing to A.
- **A<->B:** Choose to instruct the camera to detect motion crossing in either direction.



Click 2 points on the camera image to draw a virtual line.

To adjust the size of the line, click a red box on the line. Click and drag to move the entire line or click and drag either endpoint to resize it.

- **Dynamic Marking:** Click to disable or reenale the green tracking frame surrounding a detected object during *Live View* and playback.
- **Remove:** To remove one of the lines from the camera image, click a red box connected to the line and click *Remove* button.
- **Remove All:** Click *Remove All* to delete all lines.
- **Save:** Click *Save* to save your settings.



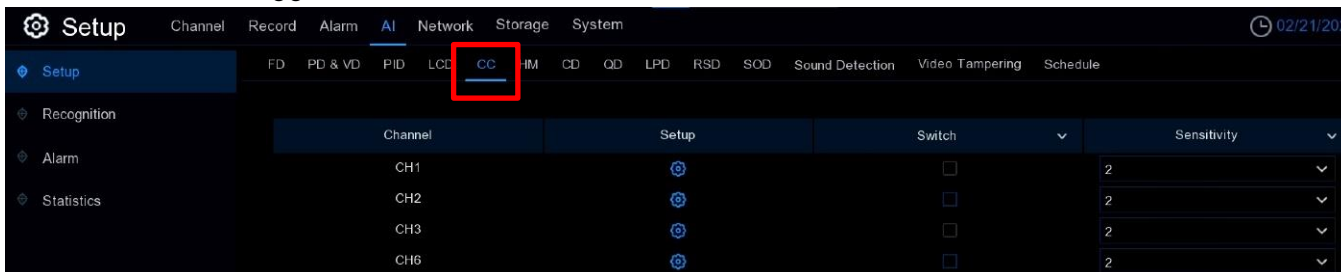
NOTES


- The lines should not be too close to the edges/corners of the camera image. Doing so may result in failure to detect the target as it crosses from outside the image.
- The lines should not be too short. Doing so may result in failure to detect the target as it outside one end.

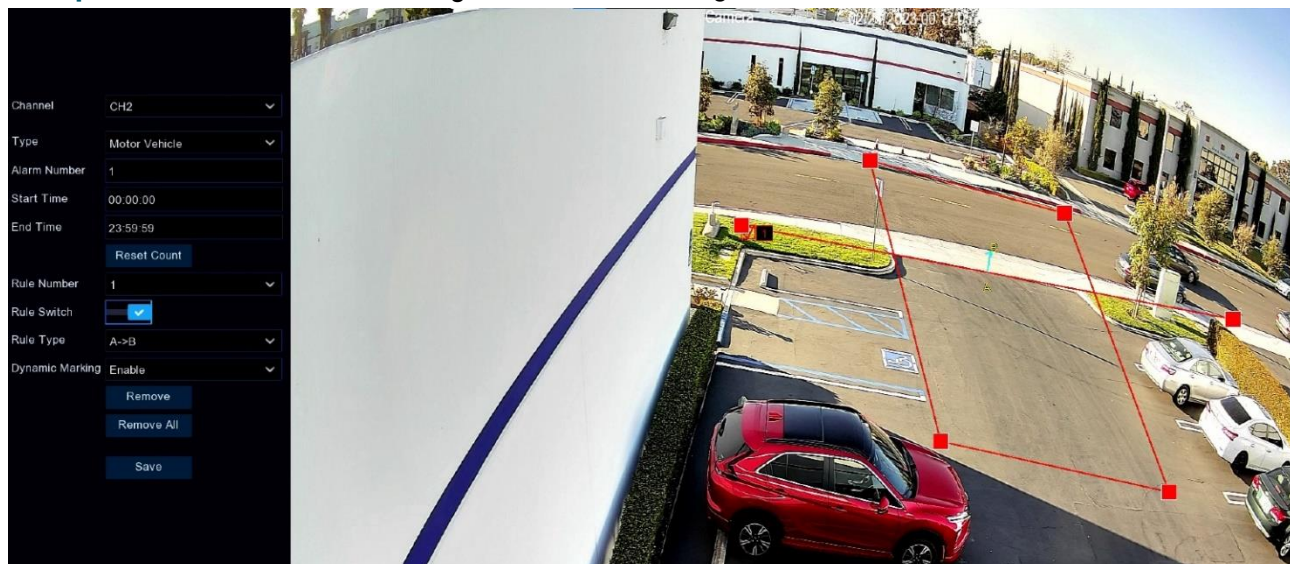
AI – AI SETUP (CONTINUED)

CC (CROSS COUNTING DETECTION)

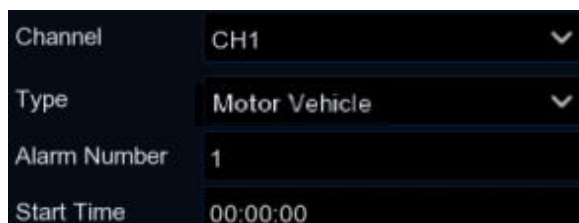
Click the CC (Cross Counting Detection) tab to enable counting the number of times an object or person has crossed a line from a particular direction and configure the actions that should be taken when an alarm is triggered.



- **Switch:** Click to enable or disable Cross Counting Detection for this channel.
- **Sensitivity:** Click to adjust the sensitivity level. The higher the number, the more sensitive it will be in detecting objects crossing the line.
- **Setup:** Click the  icon to configure Cross Counting Detection conditions for this channel.



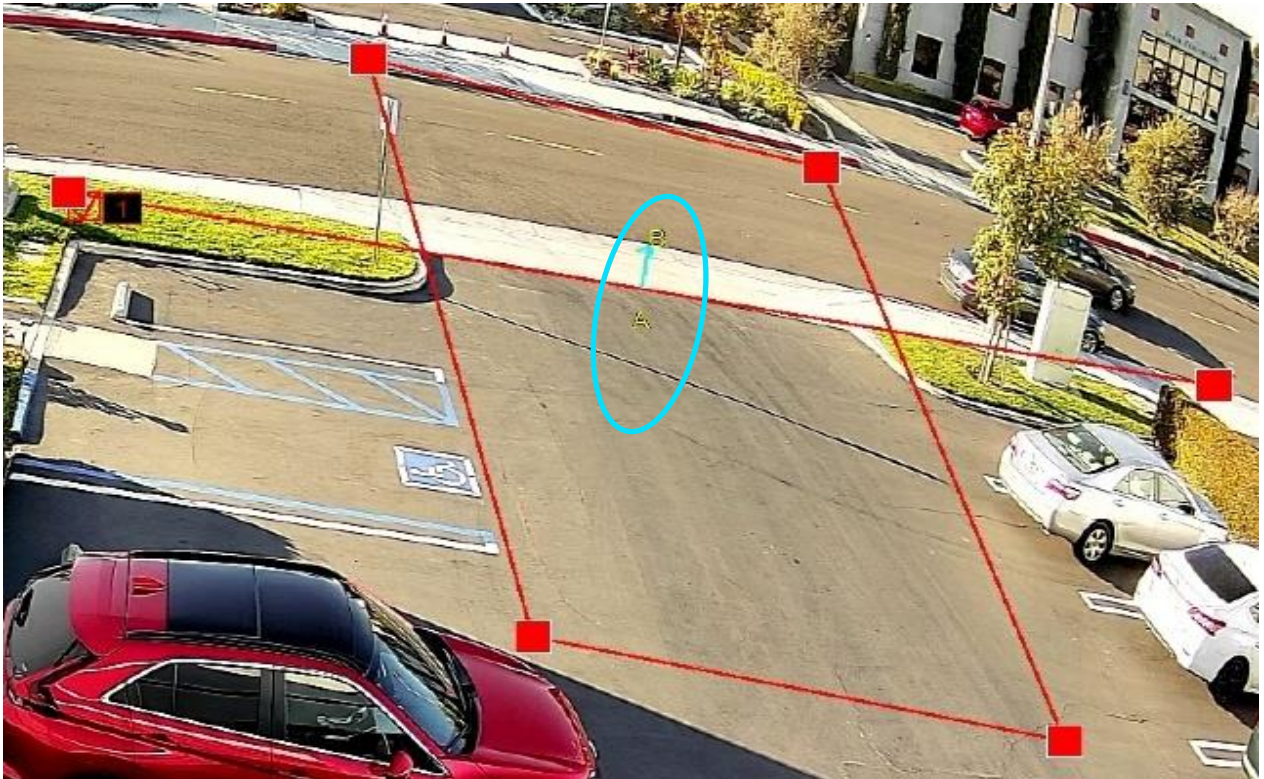
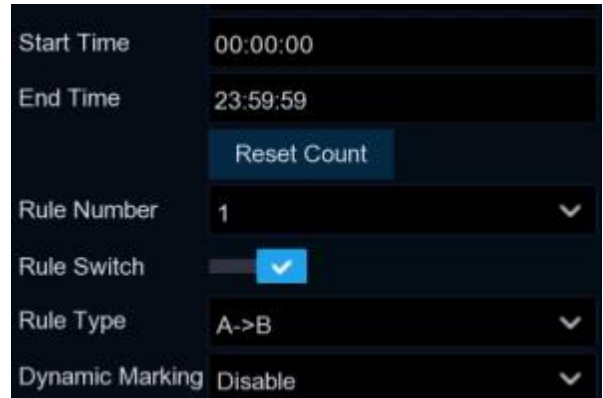
- **Channel:** Click to select the channel you want to configure.
- **Detection Type:** Click to choose the type of object to target for detection.
- **Alarm Number:** Click to choose a total number allowable for entries minus exits.



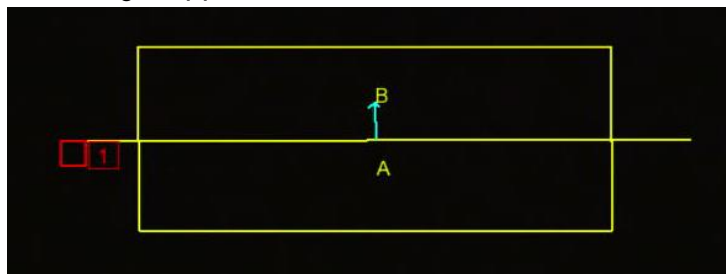
EXAMPLE: If you have set an alarm number of 200 and the total number of entries at some point reaches 601 while the total number of exits has been 400 (601-400=201), the NVR will send an alert since the total (201) has exceeded the alarm number.

AI – AI SETUP, CC (CROSS COUNTING DETECTION) (CONTINUED)

- **Start Time:** Enter the detection start time.
- **End Time:** Enter the detection end time.
- **Rule Switch:** Click to enable or disable detection for this rule.
- **Rule Type:** Click the dropdown to choose one of the following *Rule Types*.
 - **A->B:** Choose to instruct the camera to add 1 to the *entry number* when detecting motion crossing from A to B and 1 to the *exit number* when detecting motion crossing from B to A.
 - **B->A:** Choose to instruct the camera to add 1 to the *entry number* when detecting motion crossing from B to A and 1 to the *exit number* when detecting motion crossing from A to B.



Click 2 points on the camera image to draw a virtual line. As you draw the line you will also see a rectangle appear with the line.

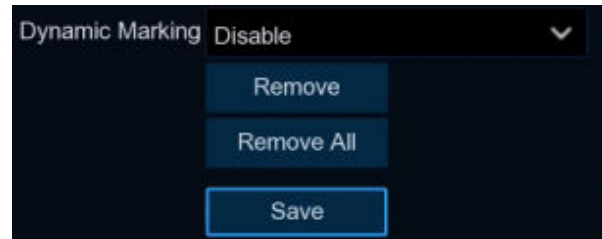


AI – AI SETUP, CC (CROSS COUNTING DETECTION) (CONTINUED)

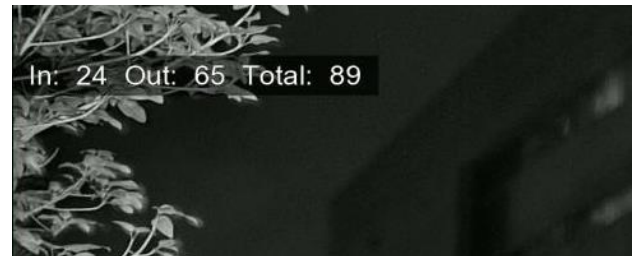
Only when an object crossing the line you have drawn has touched part of the rectangle's border on both sides of that line will the crossing be recorded as complete, therefore adjust the size of the rectangular box according to the mounting position of camera and the size of expected target for detection.

To adjust the size of the line, click a red box on the line. Click and drag to move the entire line or click and drag either endpoint to resize it or adjust the angle. Adjust the rectangle's size and shape by clicking on any of the corner boxes and dragging.

- **Remove:** To remove the line from the camera image, click a red box connected to the line and click *Remove* button.
- **Remove All:** Click *Remove All* to delete all lines.
- **Save:** Click to save your settings.
- **Reset Count:** Click to clear the *Cross Counting* statistics and return them to zero.



NOTE: The *Cross Counting* statistics will be displayed on the top left corner of the screen. The *Total* shown here is the sum of both entries and exits added together, i.e. the total crossings. It is not the difference between the two numbers. Therefore, for example, it would not show the total number of people in a room and would not show how close you were to an alarm event.



- **Dynamic Marking:** Click to disable or reenable the green tracking frame surrounding a detected object during *Live View* and playback.

NOTES

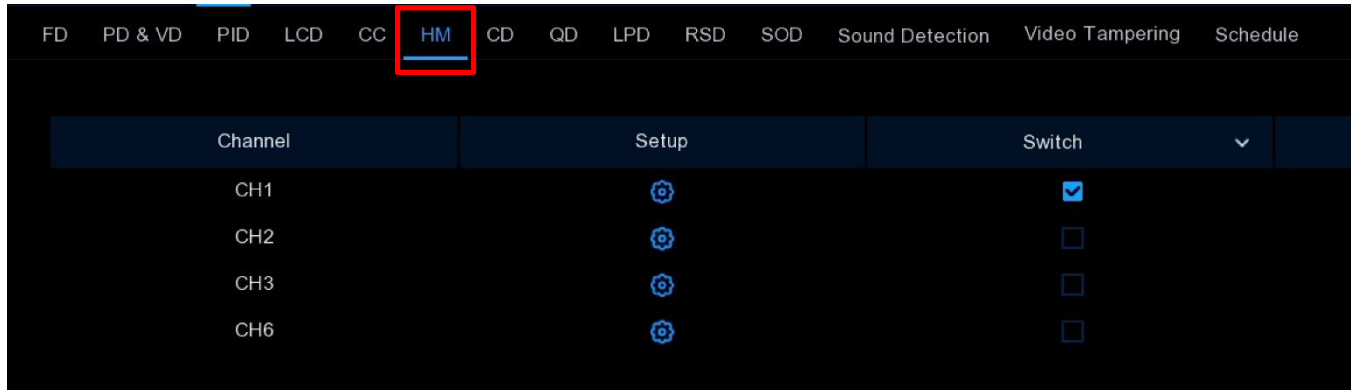
- The lines should not be placed too close to the edges of the camera image. Doing so may result in a failure to trigger an alarm when the target crosses them.
- The lines should not be too short. Lines that are too short may result in a failure to trigger an alarm when the target crosses them.

AI – AI SETUP (CONTINUED)

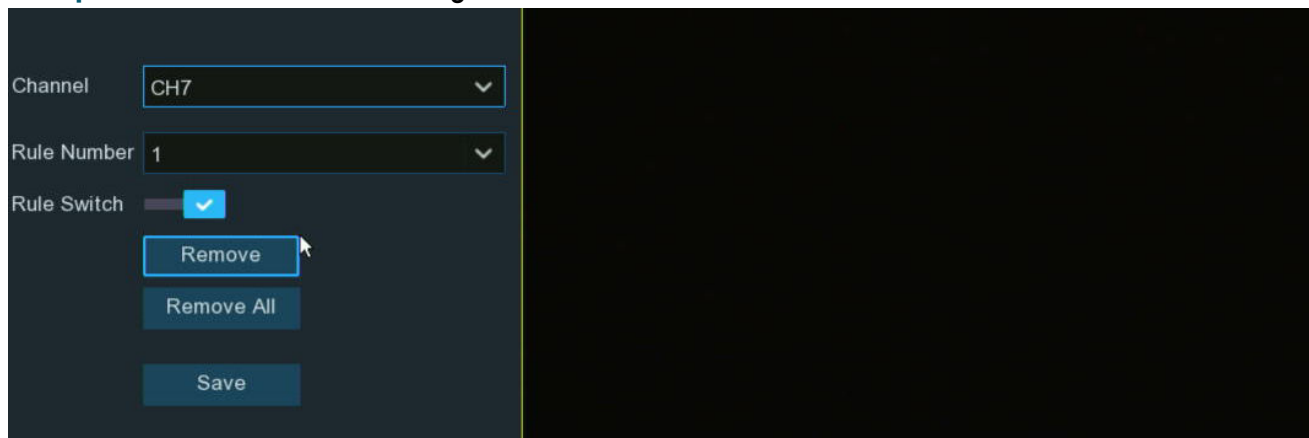
HM (HEAT MAP)

Heat Map is a video analytics tool which provides a graphic overlay in the form of a heat map display of the area showing the frequency of motion detected.

This is especially useful for retail businesses to track customer movement to better understand consumer behavior. It can also be used to evaluate traffic in crowded areas such as amusement parks or museums.



- **Switch:** Click to enable or disable the *Heat Map* function for this channel.
- **Setup:** Click the icon to configure the detection area.



- **Channel:** Click to select the channel you want to configure.
- **Rule Number:** Only one rule is available for this function.
- **Rule Switch:** Click to enable or disable the function. By default, the entire image will be activated as a heat map region. To modify the region, click the red box in the top left corner. The borders will change to red. Drag any of the red boxes to adjust the heat map region.
- **Save:** Click to save your settings.
- **Remove All:** Click to delete the region.

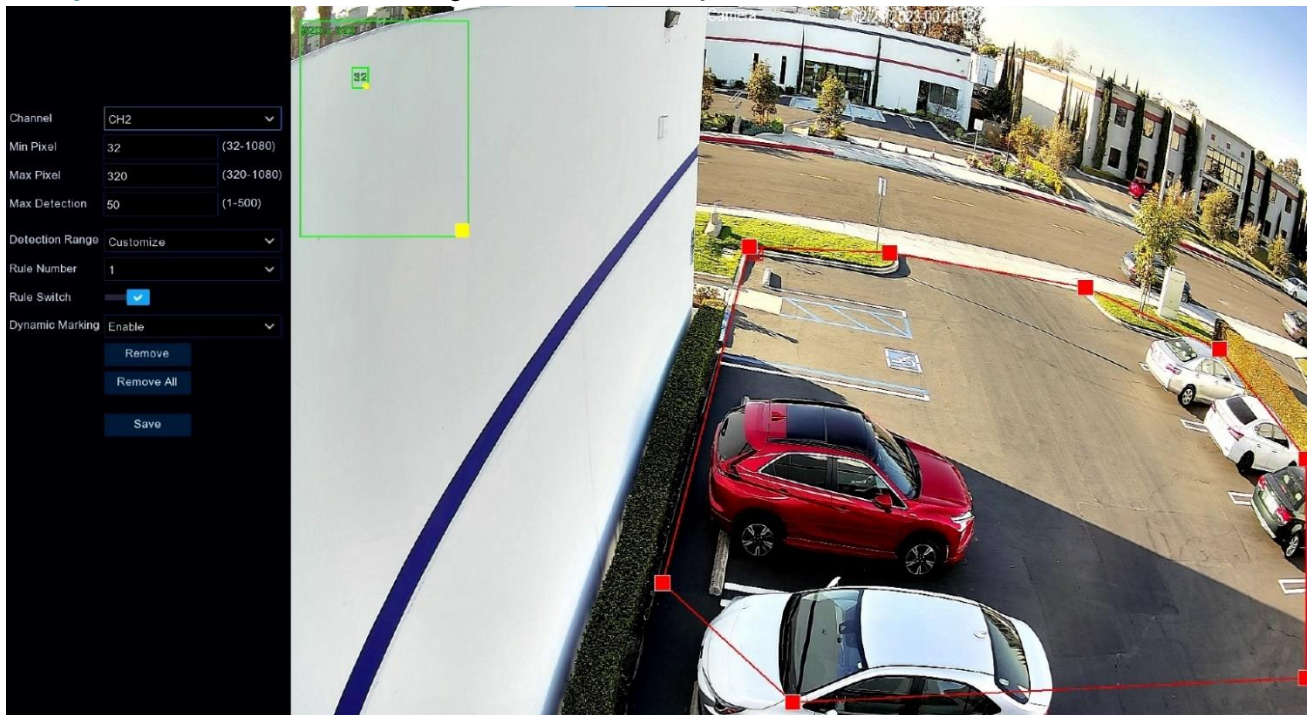
AI – AI SETUP (CONTINUED)

CD (CROWD DENSITY DETECTION)

Crowd Density Detection is based on face detection technology and is useful for detecting large gatherings in order to maintain order in a particular area. When the camera detects that the total number of people in a certain area exceeds a preset number, the system will send an alert.

Channel	Setup	Switch	Sensitivity
CH1		<input type="checkbox"/>	2
CH2		<input type="checkbox"/>	2
CH3		<input type="checkbox"/>	2
CH6		<input type="checkbox"/>	2

- **Switch:** Click to enable or disable *Crowd Density Detection* for this channel.
- **Sensitivity:** Click to adjust the sensitivity level. The higher the number, the more sensitive its detection will be.
- **Setup:** Click the icon to configure *Crowd Density Detection* conditions for this channel.



- **Channel:** Click to select the channel you want to configure.
- **Min/Max Pixel:** Click to choose the minimum and maximum pixels for face size.



AI – AI SETUP, CD (CROWD DENSITY DETECTION) (CONTINUED)

- **Max Detection:** Click to set a maximum allowable number of people. When the total number of people detected in the selected area exceeds the preset allowable number, the system will send an alert.
- **Detection Range:** Choose the detection area.
 - **Full Screen:** Choose to enable detection throughout the entire screen area.
 - **Customize:** Click up to 8 points to draw a virtual area for detection.
- **Rule Switch:** Click the checkbox to enable or disable this function.
- **Dynamic Marking:** Click and select *Disable* to remove the green tracking frame surrounding a detected object from the *Live View*.
- **Remove:** Click *Remove* to remove the selected custom region.
- **Remove All:** Click *Remove All* to remove all custom regions.
- **Save:** Click to save your settings.

The screenshot shows a configuration panel for AI detection settings. It includes a dropdown for 'Channel' set to 'CH2', input fields for 'Min Pixel' (32), 'Max Pixel' (320), and 'Max Detection' (50), each with a range indicator. The 'Detection Range' is set to 'Customize'. 'Rule Number' is set to '1'. The 'Rule Switch' is checked. 'Dynamic Marking' is set to 'Enable'. At the bottom are buttons for 'Remove', 'Remove All', and 'Save'.

Channel	CH2	▼
Min Pixel	32	(32-1080)
Max Pixel	320	(320-1080)
Max Detection	50	(1-500)
Detection Range	Customize	▼
Rule Number	1	▼
Rule Switch	<input checked="" type="checkbox"/>	
Dynamic Marking	Enable	▼
	Remove	
	Remove All	
	Save	

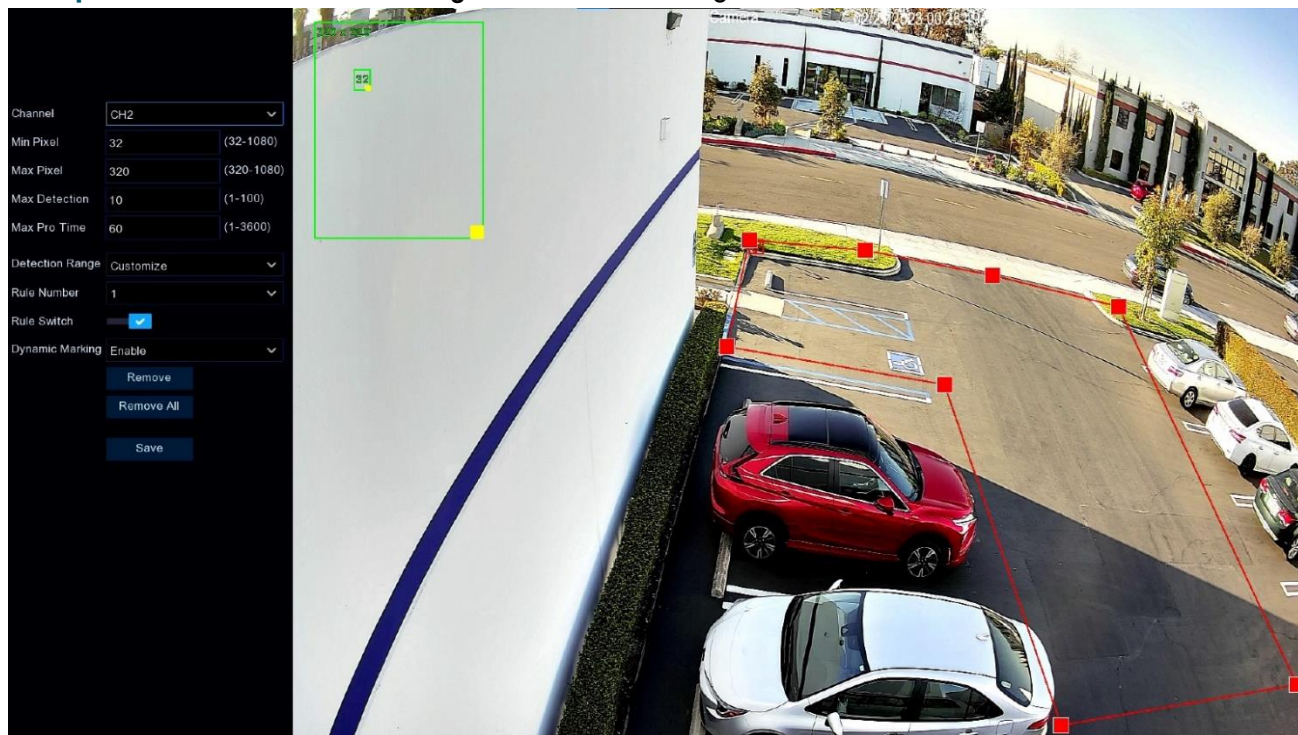
AI – AI SETUP (CONTINUED)

QD (QUEUE LENGTH DETECTION)

Queue Length Detection is used to detect the status of a queue, including length and staying time.

Channel	Setup	Switch	Sensitivity
CH1		<input type="checkbox"/>	2
CH2		<input type="checkbox"/>	2
CH3		<input type="checkbox"/>	2
CH6		<input type="checkbox"/>	2

- **Switch:** Click to enable or disable *Queue Length Detection* for this channel.
- **Sensitivity:** Click to adjust the sensitivity level. The higher the number, the more sensitive it will be in detecting objects in the queue.
- **Setup:** Click the icon to configure *Cross Counting Detection* conditions for this channel.



- **Channel:** Click to select the channel you want to configure.
- **Min/Max Pixel:** Click to choose the minimum and maximum pixels for face sizes.
- **Max Detection:** Click to set the maximum allowable number for the queue. When the total number of people in the line within the detection area exceeds the preset allowable number, the system will send an alert.

Channel	CH2	
Min Pixel	32	(32-1080)
Max Pixel	320	(320-1080)
Max Detection	10	(1-100)

AI – AI SETUP, QD (QUEUE LENGTH DETECTION) (CONTINUED)

- **Max Pro Time:** Click to set the maximum queue time in seconds. The NVR sends an alert if the time spent in the queue exceeds the set time.
- **Detection Range:** Choose the detection area.
 - **Full Screen:** Choose to enable detection throughout the entire screen area.
 - **Customize:** Click up to 8 points to draw a virtual area for detection.
- **Rule Switch:** Click the checkbox to enable or disable this function.
- **Dynamic Marking:** Click and choose *Disable* to remove the green tracking frame surrounding a detected object from the *Live View* and during playback.
- **Remove:** Click *Remove* to remove the selected custom region.
- **Remove All:** Click *Remove All* to remove all custom regions.
- **Save:** Click to save your settings.

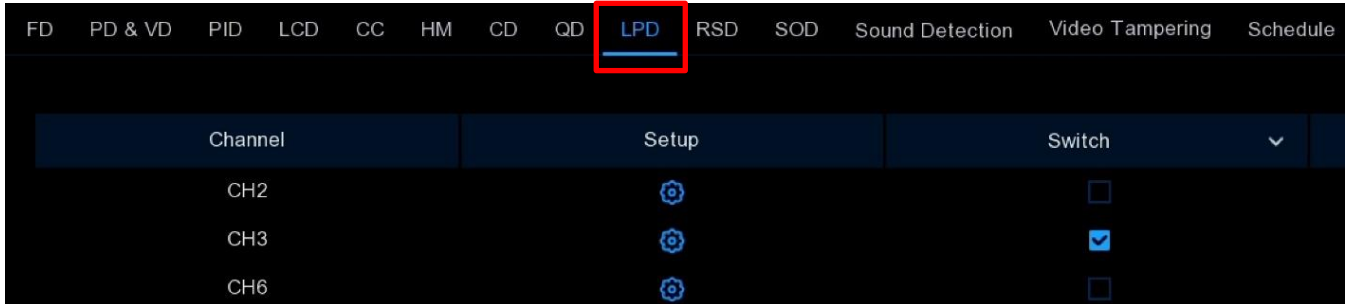
Channel	CH2	
Min Pixel	32	(32-1080)
Max Pixel	320	(320-1080)
Max Detection	10	(1-100)
Max Pro Time	60	(1-3600)
Detection Range	Customize	
Rule Number	1	
Rule Switch	<input checked="" type="checkbox"/>	
Dynamic Marking	Enable	

Remove
Remove All
Save

LPD (LICENSE PLATE DETECTION)

(Only available with select 4K cameras)

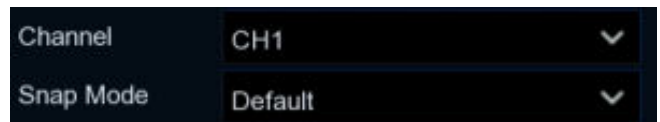
License Plate Detection, also called Automatic License/Number Plate Recognition (ANPR) can detect and record vehicle license plate numbers.



- **Switch:** Click to enable or disable the License Plate Detection function for this channel.
- **Setup:** Click the icon to configure the detection conditions.



- **Channel:** Click to select the channel you want to configure.
- **Snap Mode:** Click to select how snapshots containing a recognized license plate will be captured. This can affect the number of license recognition notifications that you will receive.
 - **Default Mode:** Choose to capture a single, best snapshot of the license plate.



AI – AI SETUP, LPD (LICENSE PLATE DETECTION) (CONTINUED)

- **Realtime Mode:** Choose to configure the camera to track and capture the license plate of vehicles entering and leaving the detection area. There will be two alarm notifications in the *Alarm Notification Panel* – once when the license plate is first detected and again as the vehicle leaves the detection area. This is useful if you want to continuously monitor vehicles' presence in an area and get alerts in real-time.
- **Interval Mode:** Choose to specify the number of snapshots to take and the time interval between snapshots.
 - **Snap Num:** Select the number of snapshots to take.
 - **Snap Frequency:** Set the time interval between snapshots.

Channel	CH1	▼
Snap Mode	Default	▼
Min Pixel	64	(64-1080)
Max Pixel	640	(320-1080)
Sensitivity	60	
Detection Type	American license plate	▼
Detection Mode	Motion Mode	▼
Detection Range	Customize	▼
Dynamic Marking	Disable	▼
LPD Enhance	Disable	▼
Day Level	220	
Night Level	99	

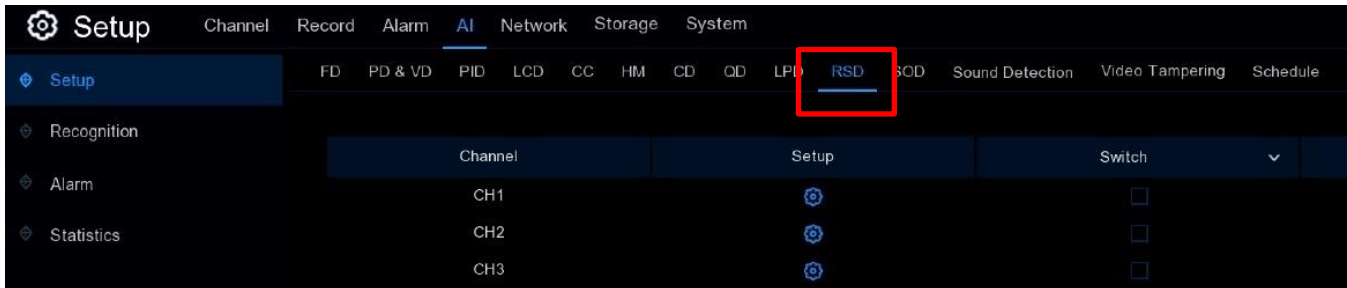
Save

- **Min/Max Pixel:** Click to set the minimum & maximum size of the saved license plate in pixels.
- **Sensitivity:** Click to adjust the level of sensitivity. The higher the number, the more sensitive the detection will be.
- **Detection Type:** Click to choose the type of vehicle license plate used in your area.
 - **European License Plate:** Choose the elongated license plates typical in European countries.
 - **American License Plate:** Choose the smaller license plates typical in the United States.
- **Detection Mode:** Click to choose whether to detect all or only moving vehicles.
 - **Static Mode:** Choose to analyze all vehicle license plates in the camera's field of view.
 - **Motion Mode:** Choose to analyze only the license plates of moving vehicles.
- **Detection Range:** Click to set or limit the detection area.
 - **Full Screen:** Choose to enable the entire screen as the detection region.
 - **Customize:** Choose to adjust the size of the detection region.
- **Dynamic Marking:** Click and choose *Disable* to remove the green tracking frame surrounding a detected object from the *Live View* and during playback.
- **Save:** Click to save your settings.

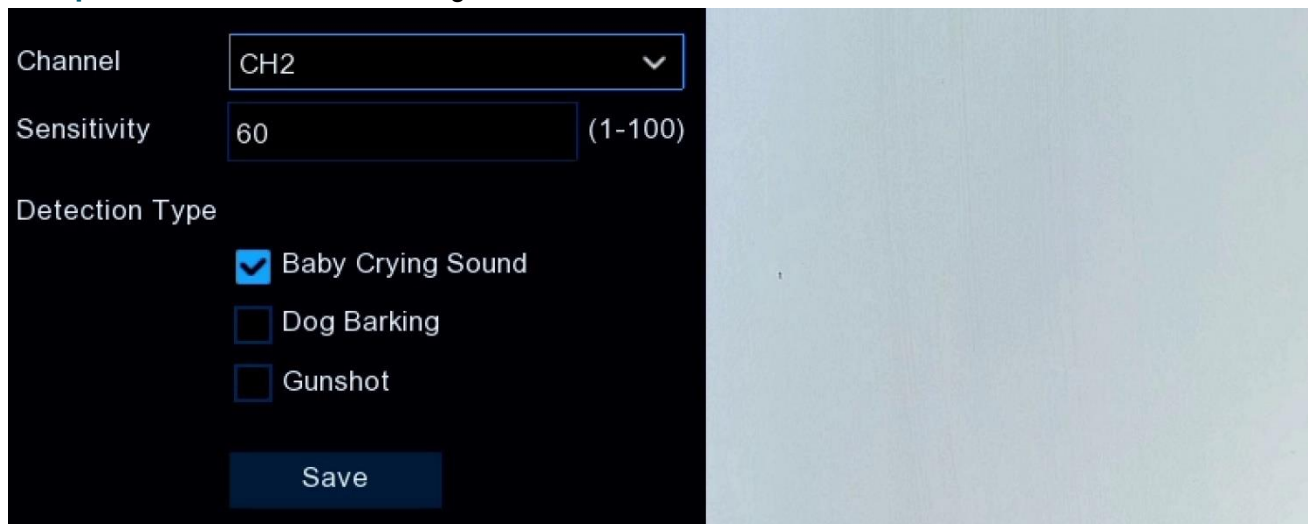
AI – AI SETUP (CONTINUED)

RSD (RARE SOUND DETECTION)

Rare Sound Detection alerts you when your NVR detects certain abnormal sounds, including a crying baby, barking dog, and gunshots, and certain actions can be taken when the alarm is triggered.



- **Switch:** Click to enable or disable *Rare Sound Detection* for this channel.
- **Setup:** Click the icon to configure *Rare Sound Detection* conditions for this channel.



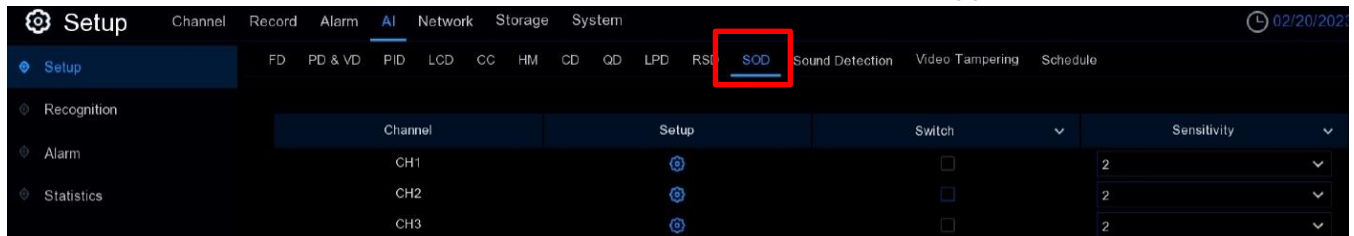
- **Channel:** Click to select the channel you want to configure.
- **Sensitivity:** Click to adjust the sensitivity level. The higher the number, the more sensitive the detection.
- **Detection Type:** Check the box for the detection types desired below.
 - **Baby Crying Sound:** Check to enable an alert when a crying baby is detected.
 - **Dog Barking:** Check to enable an alert when a barking dog is detected.
 - **Gunshot:** Check to enable an alert when a gunshot is detected.
- **Save:** Click to save your settings.

NOTE: Need a [disclaimer here](#).

AI – AI SETUP (CONTINUED)

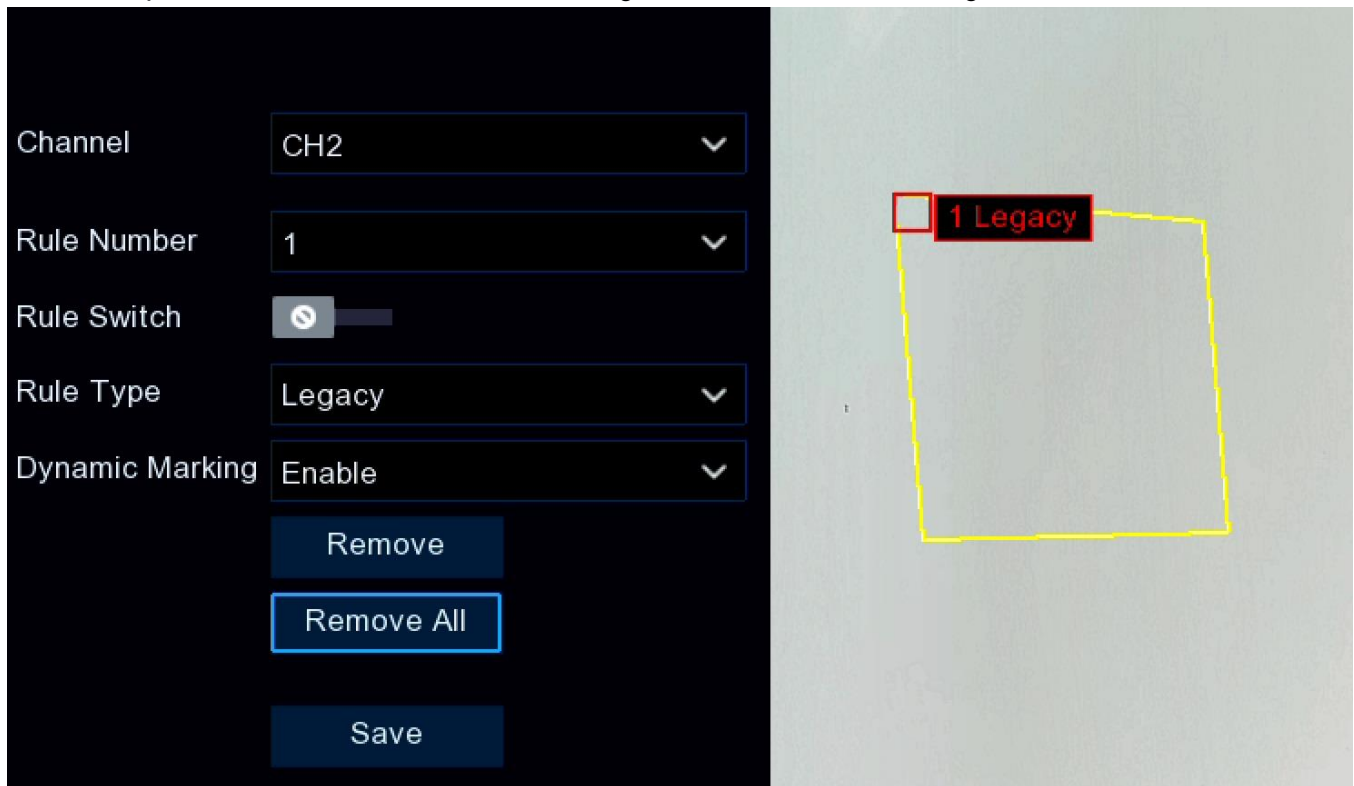
SOD (STATIONARY OBJECT DETECTION)

Click on the SOD lower tab on the AI tab of the Setup screen to configure the SOD (Stationary Object Detection). This function is useful for detecting objects that may have been left or lost in the predefined region, such as baggage, purses, dangerous materials, etc., or for detecting objects that have been removed so that actions can be taken when the alarm is triggered.



- **Switch:** Check to enable SOD function for this channel.
- **Sensitivity:** Click to set the sensitivity level from 1 to 4 (lowest to highest level, respectively).

Click Setup icon  to draw a virtual focus region over the camera image for this channel.



- **Channel:** Choose a channel to configure.
- **Rule Number:** Choose a number for this rule (1~4) to number the SOD focus area.
- **Rule Switch:** Enable or Disable SOD detection.

AI – AI SETUP, SOD (STATIONARY OBJECT DETECTION) (CONTINUED)

- **Rule Type:** Choose from among the following types of rules.
 - **Legacy:** The NVR will only detect objects left behind, i.e., objects that normally aren't there but may have been left, either accidentally or for some other reason.
 - **Lost:** The NVR will only detect lost objects, i.e., objects that should be there but have been removed or are missing.
 - **Legacy & Lost:** The NVR will detect both objects left behind and lost objects.

Click 4 points on the camera image to draw a virtual region. However, note that the shape must be a convex polygon. You cannot save a concave polygon.

To adjust the size of the region, click the red box in the region. The borders will change to red.

Click and drag to move the entire region or click and drag any corner to resize the region.

- **Remove:** To remove one of the regions from the camera image, click the red box in the region and click *Remove* button.
- **Remove All:** Click *Remove All* to delete all regions.
- **Save:** Click *Save* to save your settings.

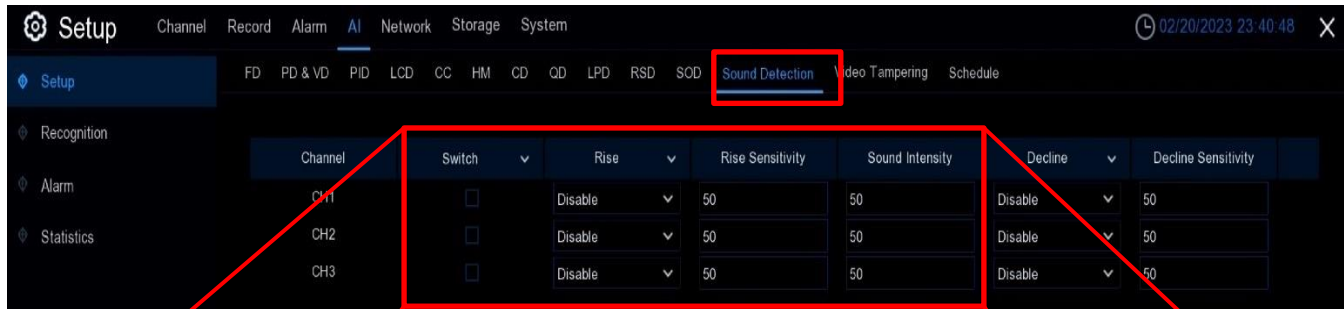
NOTES

- The detection region must be greater than or equal to the size of the detected object.
- The detected object cannot be covered by another object.

AI – AI SETUP (CONTINUED)

SOUND DETECTION

Click on the *Sound Detection* lower tab on the *AI* tab of the *Setup* screen to configure alerts when your NVR detects audio that matches or exceeds the set trigger level so that actions can be taken when the alarm is triggered.



Scroll right for more columns

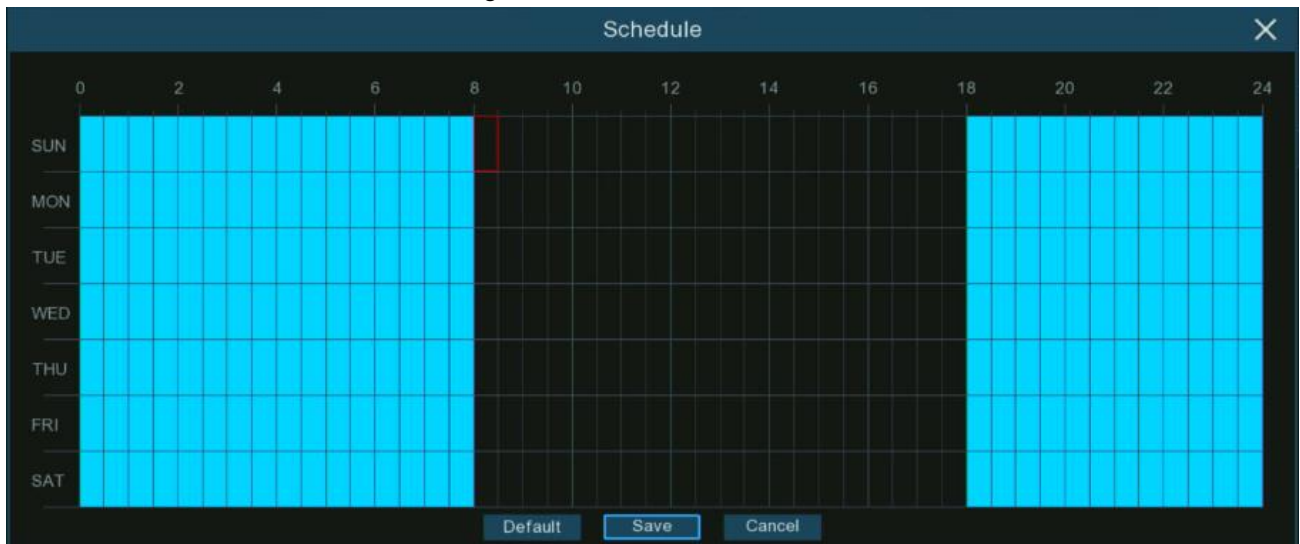
- **Switch:** Click to enable or disable sound detection.
- **Rise:** Click to enable or disable sound rise detection to trigger an alert when there is a sudden increase in the sound level.
- **Rise Sensitivity:** Click to adjust the sensitivity level for detecting a sudden increase in sound. The higher the number, the greater the sensitivity.
- **Sound Intensity:** Set a threshold level for sound intensity detection, the lower value, the greater the sensitivity.

AI – AI SETUP, SOUND DETECTION (CONTINUED)



Scroll left for more columns

- **Decline:** Click to enable or disable sound decline detection to trigger an alert when there is a sudden drop in the sound level.
- **Decline Sensitivity:** Click to adjust the sensitivity level for detecting a sudden drop in sound. The higher the number, the greater the sensitivity.
- **Schedule:** Click to set a schedule for this function. In the popup below, each square represents 30 minutes. Click on a particular square to change it or click and drag the mouse over a range of squares to cover a continuous period. The sound detection will be activated during times shown in blue and inactivated during times shown in black.

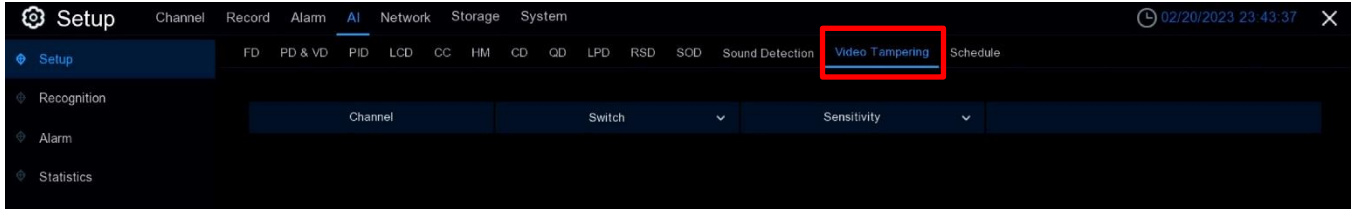


AI – AI SETUP (CONTINUED)

VIDEO TAMPERING

(Available in the Future)

Click on the *Video Tampering* lower tab on the *AI* tab of the *Setup* screen to configure alerts when your NVR detects the occlusion of camera images so that desired actions can be taken.



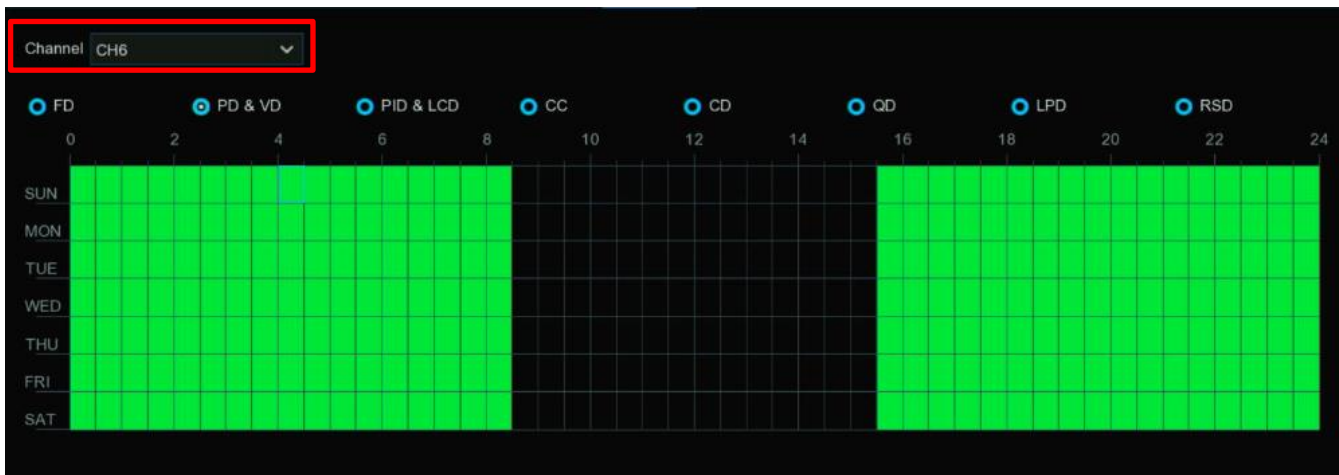
AI – AI SETUP (CONTINUED)

SCHEDULE

On the *Setup* screen, click the *Schedule* menu at the top to configure the recording schedule for AI detection functions.



A setup screen will appear similar to one of the two screenshots below, depending on your camera firmware.



Interface A

1. Choose the *Channel* you want to set.
2. Click on a radio button to choose one of the detection modes (While each channel may use multiple detection modes, you must schedule each separately).
3. If desired, set a time schedule (default, active 24 hours/day, 7 days/week) for the selected detection mode and channel. Green squares represent times when deterrence is active.
 - a. Click on an individual square to change (each square represents 30 minutes).
 - b. **OR** click and drag to select a group of squares corresponding to a period of time.

AI – AI SETUP, SCHEDULE (CONTINUED)

4. The set schedule is valid only for the selected mode and channel. If you want to use the same schedule for other channels, click *Copy*.
5. Click *Save* to save changes made.
6. Repeat the process to schedule other detection modes on the same channel or set up other channels.
7. Right-click to exit.



Interface B

1. Choose the *Channel* you want to set.
2. Check the *Enable* button to activate the *AI Recording Schedule*.
3. Click a radio button to choose a detection mode. Note that while each channel may use multiple detection modes, you must schedule each separately. However, the modes with red radio buttons are mutually exclusive such that only one of them can be activated at the same time.
4. If desired, set a time schedule (default, active 24 hours/day, 7 days/week) for the selected detection mode on this channel. Green squares represent times when deterrence is active. Gray blocks represent times that are occupied and unable to be selected. Black blocks are available for selection.
 - a. Click on an individual square to change (each square represents 30 minutes).
 - b. **OR** click and drag to select a group of squares corresponding to a period of time.
5. The set schedule is valid only for the selected detection mode and channel. If you want to use the same schedule for other channels, click *Copy*.
6. Click *Apply* to save.
7. Repeat to set a schedule for other detection modes on the same channel or other channels (Note that no two red modes may be scheduled at the same time on the same channel).
8. Right-click to exit.

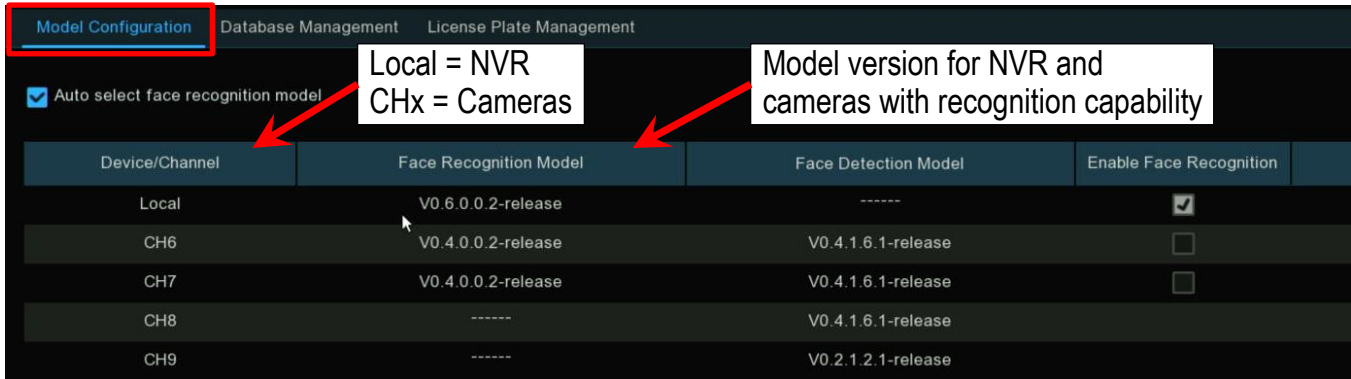
AI (CONTINUED)

AI RECOGNITION

To use *Face Detection* and *License Plate Detection*, you must first configure their recognition algorithm models and manage their database.

MODEL CONFIGURATION

You must choose a *Face Recognition AI Algorithm Model*. To do so, click the *Model Configuration* tab from the Setup screen.



The *Face Recognition AI Algorithm* is composed of two parts: *Detection* and *Recognition*.

- *Detection* is basically for detecting and capturing facial images. Generally, the detection capability is a part of the IP camera.
- *Recognition* is the process of extracting, analyzing, and comparing facial features. The recognition capability is a function of the NVR and of some IP cameras.

The first time you use the *Face Recognition AI* function, the system will select an appropriate recognition model to fully implement detection and recognition.

To manually choose the recognition model, uncheck the *Auto select face recognition model* and check the box of the model you want to enable in the *Enable Face Recognition* column.

AI – AI RECOGNITION, MODEL CONFIGURATION (CONTINUED)

RULES AND ADVICE FOR MANUAL SELECTION

- 1. At least one face recognition algorithm model must be enabled, otherwise face recognition will not function.



- 2. You can enable either the NVR or the individual cameras for face recognition. You cannot select both.
- 3. Different recognition models may not be selected together.
- 4. Newer recognition model versions are recommended due to their improved algorithm optimization and updated database.
- 5. The recognition models you choose must be the same version as this helps decrease the analysis load on a single NVR or camera and accelerates the recognition.

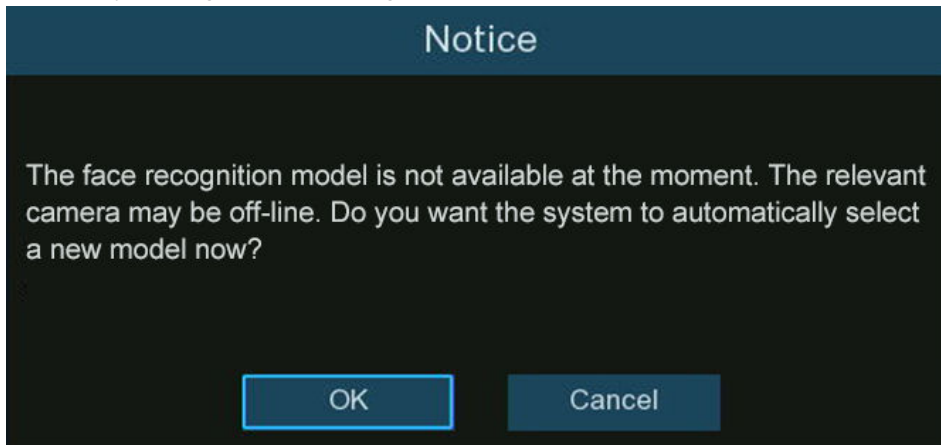
Device/Channel	Face Recognition Model	Face Detection Model	Enable Face Recognition
Local	V0.6.0.0.2-release	-----	<input type="checkbox"/>
CH1	V0.4.0.0.2-release	V0.4.1.6.1-release	<input checked="" type="checkbox"/>
CH2	V0.2.0.5.1-beta	V0.2.1.2.1-release	<input type="checkbox"/>
CH3	V0.3.0.0.1-release	V0.3.1.2.1-release	<input type="checkbox"/>
CH6	V0.4.0.0.2-release	V0.4.1.6.1-release	<input checked="" type="checkbox"/>
CH7	V0.4.0.0.2-release	V0.4.1.6.1-release	<input checked="" type="checkbox"/>
CH8	-----	V0.4.1.6.1-release	<input type="checkbox"/>
CH9	-----	V0.2.1.2.1-release	<input type="checkbox"/>
CH12	V0.4.0.0.2-release	V0.4.1.6.1-release	<input checked="" type="checkbox"/>

Select versions that are identical

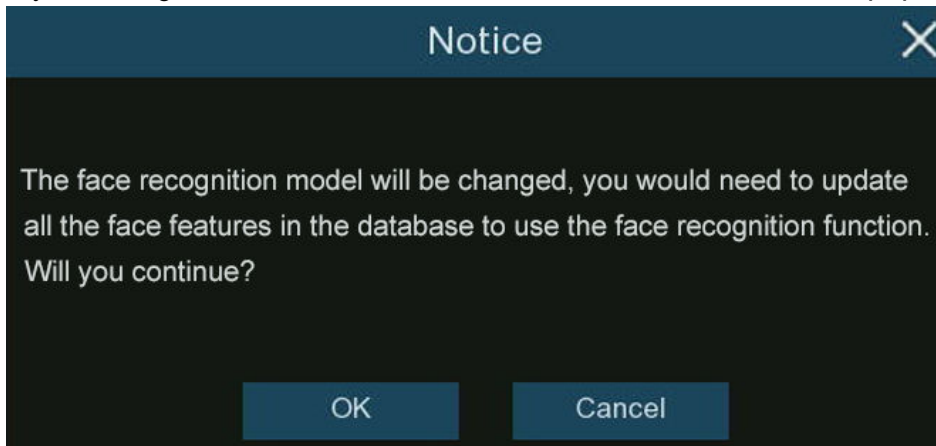
If one or more selected cameras (but not all) are offline, the recognition model will be automatically assigned to the rest of selected camera(s).

AI – AI RECOGNITION, MODEL CONFIGURATION, RULES AND ADVICE FOR MANUAL SELECTION (CONTINUED)

6. When a model is enabled on a single camera and that camera is offline, face recognition will stop working. The system will send an alert notification as shown below. Click *OK* to let the system automatically select a new recognition model. If you click *Cancel*, you will need to manually configure the recognition model later.

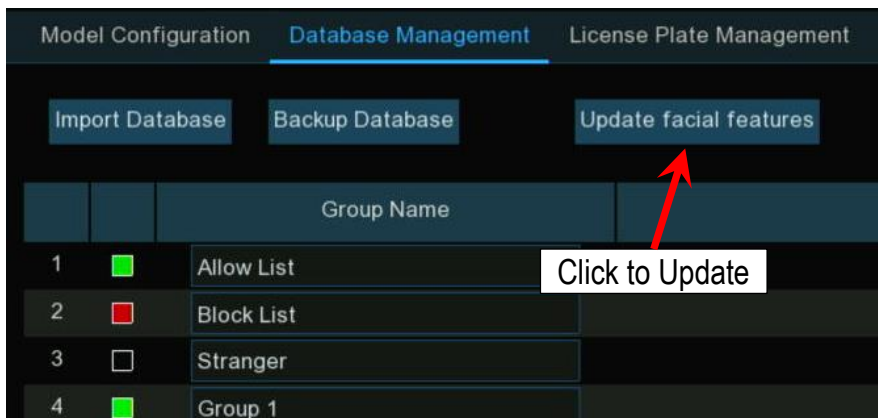
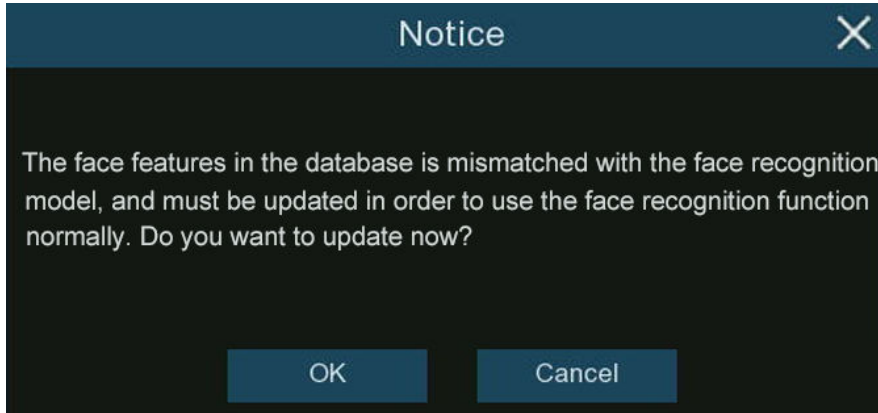


7. If you change the model to a different version, a notification will pop up. Click *OK* to continue.



AI – AI RECOGNITION, MODEL CONFIGURATION, RULES AND ADVICE FOR MANUAL SELECTION (CONTINUED)

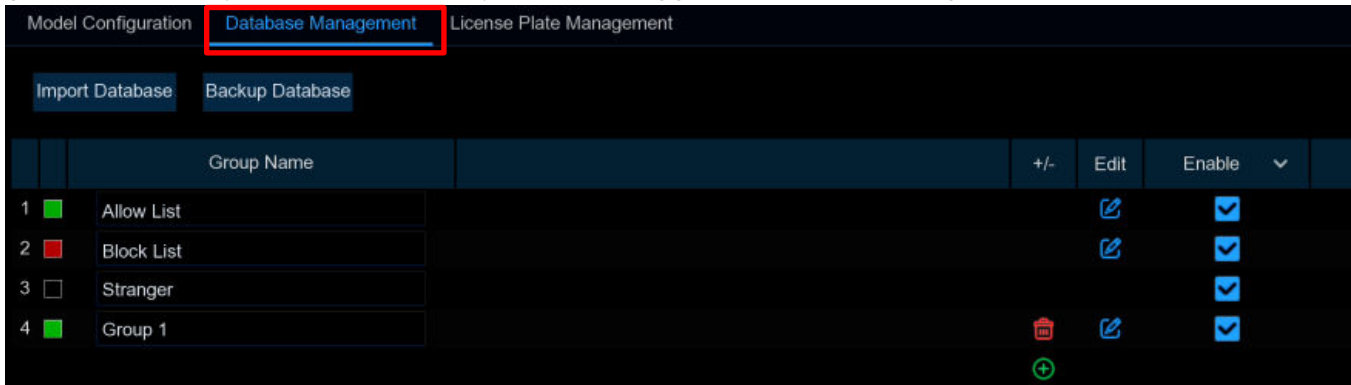
- 8. If the recognition model changes to a different version, a notification will pop up. Click OK to continue. If you click Cancel, you must go to the Database Management menu and click the Update facial features button to update the database.



AI – AI RECOGNITION (CONTINUED)

FACE RECOGNITION DATABASE MANAGEMENT

You can create and manage the face profiles in a database to classify various people into different groups to identify them more quickly onsite to trigger immediate intelligent alarms. See below.



There are three default groups.

- **Allow List:** This list defines a group of people who are considered acceptable or trusted, such as family members, colleagues, frequent customers, etc.
- **Block List:** This list defines a group of people who are unacceptable or untrusted.
- **Stranger:** All ungrouped people will be identified as strangers.

Click the *Add* icon to create or the *Delete* icon to delete a customized group.


To back up your database, insert a USB drive in the NVR's USB port and click the *Backup Database* button. The exported database can then be restored to the NVR or copied to another NVR using the *Import Database* button (Note that this will overwrite all existing settings and face profiles).

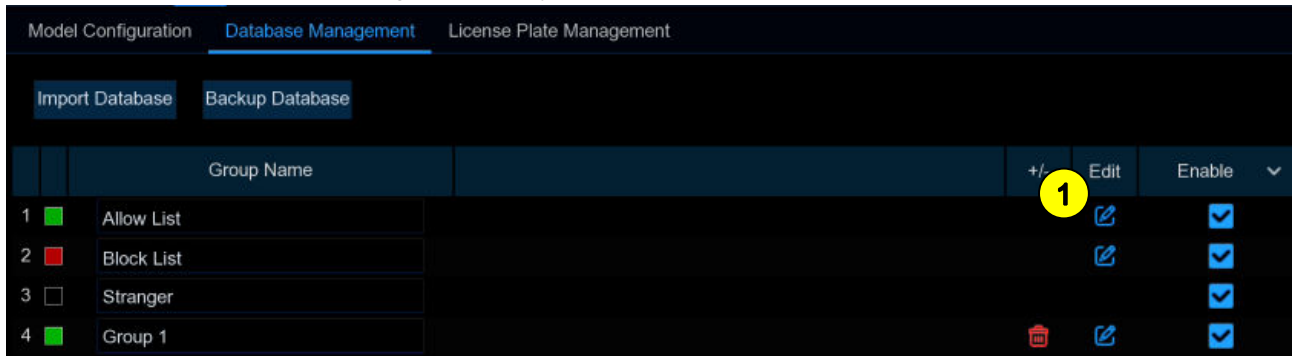
Check the box in the *Enable* column beside a group to enable that group. You must create face profiles (add face images) to the groups to make best use of the recognition abilities.

AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT (CONTINUED)

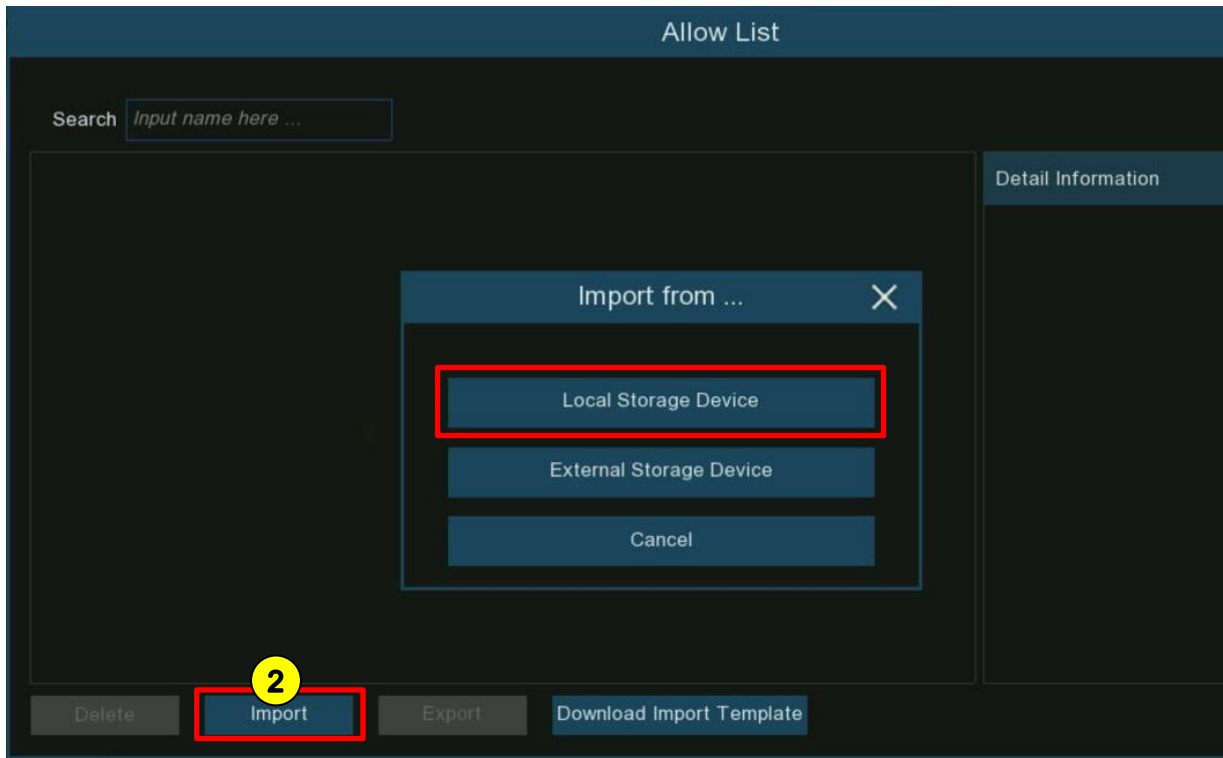
CREATE FACE PROFILES FROM LOCAL STORAGE

This section will show how to create face profiles from face images that have been captured and stored on your NVR (recommended).

- 1 Click the *Edit* icon  of the group that you would like to create face profiles for.

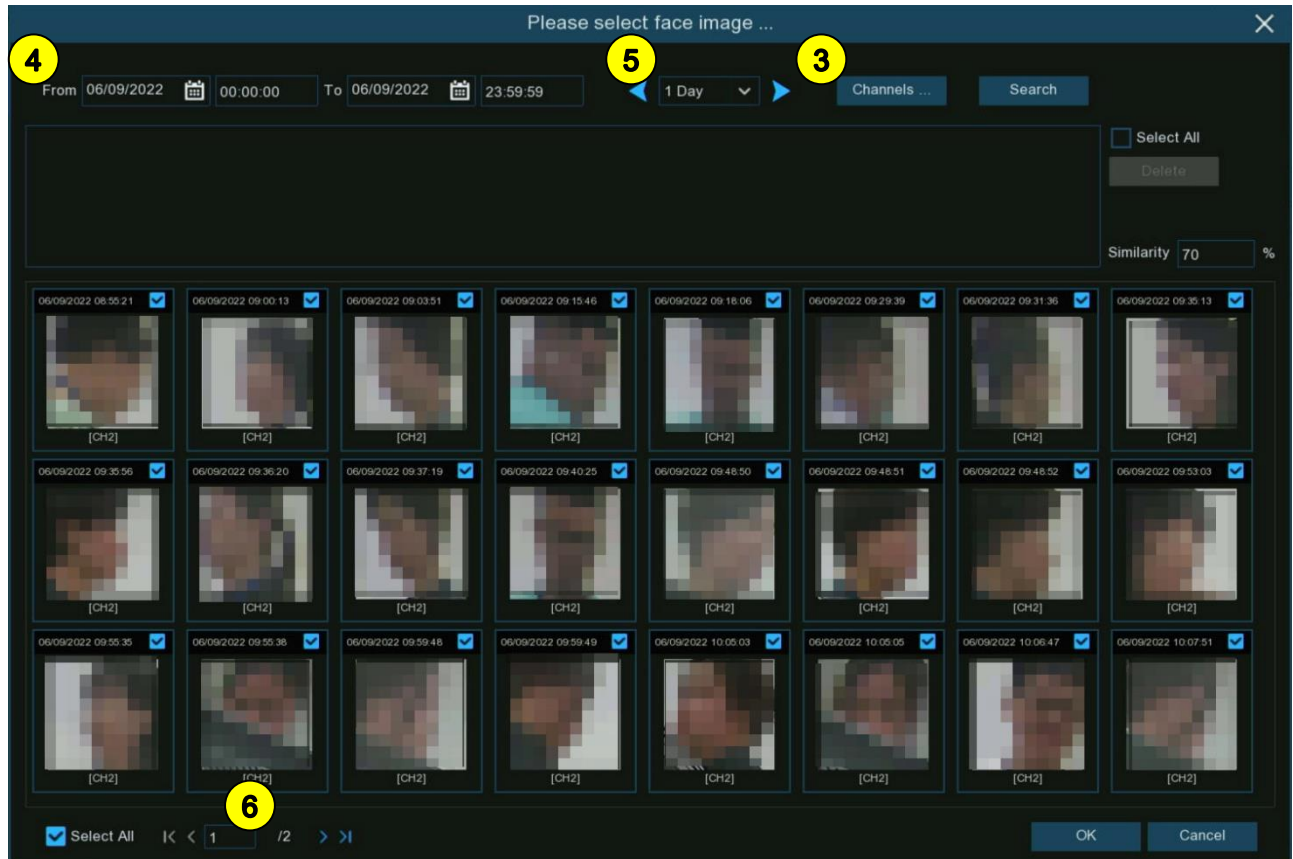


- 2 From the *Group* window, click the *Import* button, then the *Local Storage Device* button.



AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE FACE PROFILES FROM LOCAL STORAGE (CONTINUED)

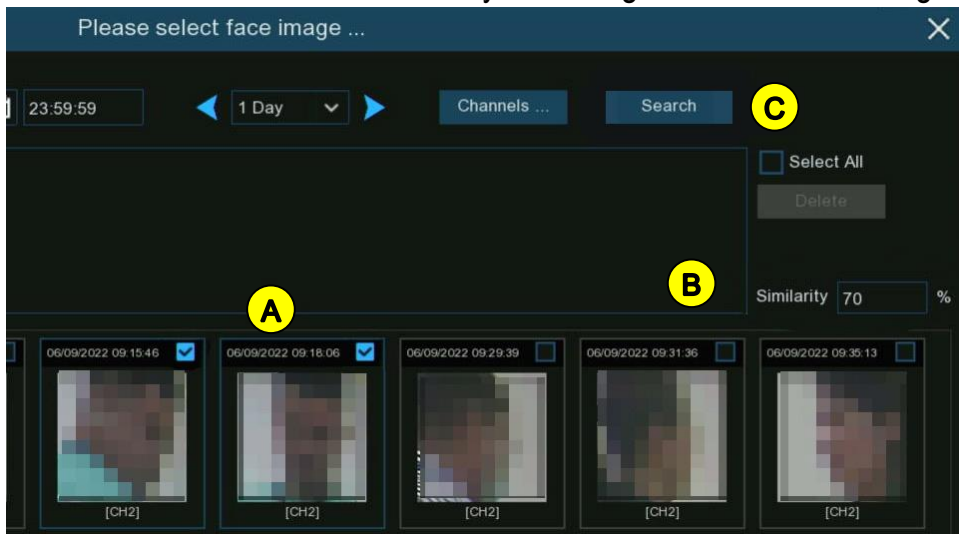
- 3 By default, the NVR will search all channels, but you can specify the cameras you want to search on by clicking the *Channels...* button.



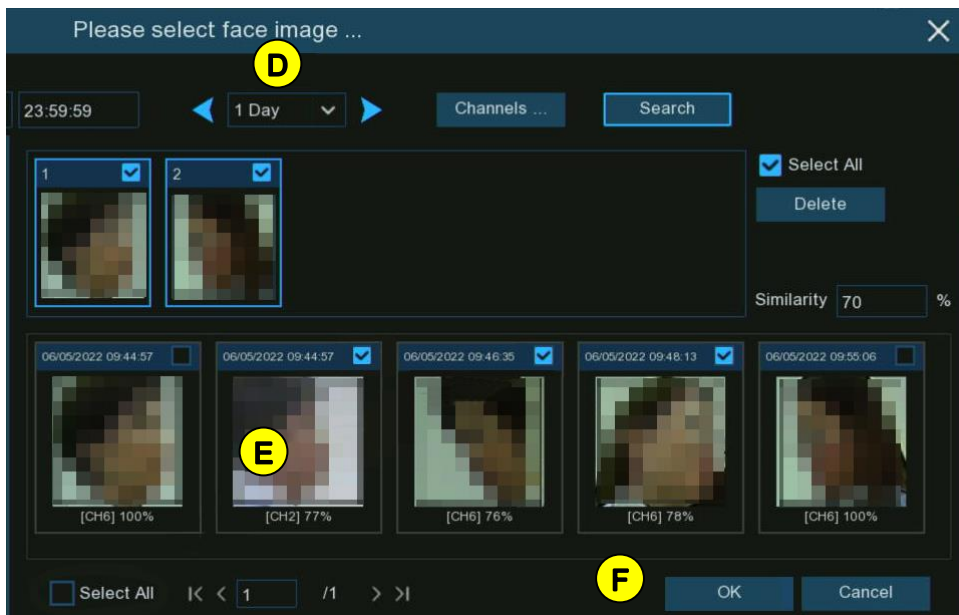
- 4 Use the from/to date and time boxes to narrow the search range.
- 5 Choose a duration in days and use the arrow icons to quickly move to the previous or next day(s) to display face images from those periods.
- 6 The search results will be displayed in the face list automatically as you scroll with the arrows at the bottom.

AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE FACE PROFILES FROM LOCAL STORAGE (CONTINUED)

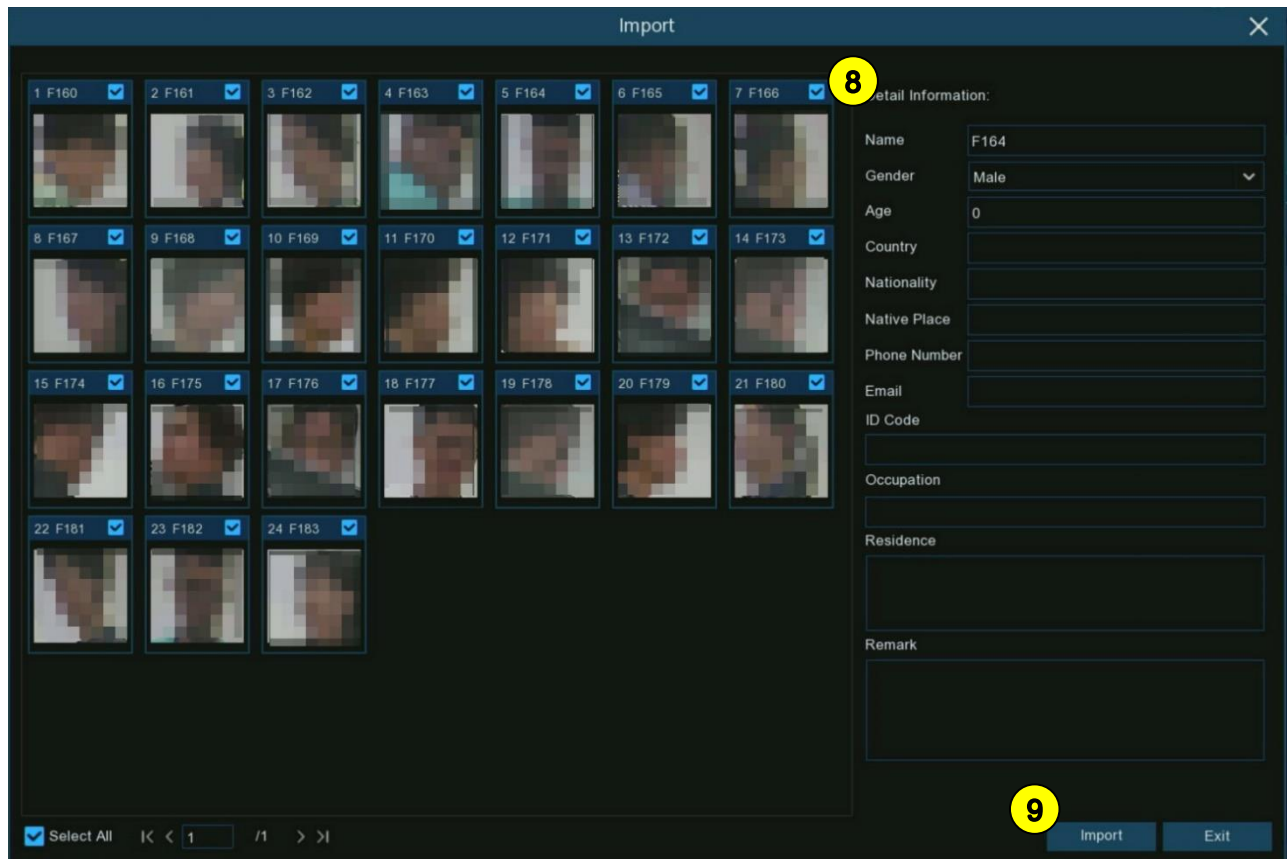
7. You can narrow the search result by searching for other similar images.



- A** Select one or more target images from the search results.
- B** Set the *Similarity* threshold value (%). The higher the value, the more precise the result.
- C** Click the *Search* button to search for more faces like the ones selected in A above, with a similarity equal to or greater than the specified value.



- D** To expand your search time period, change the day duration and use the arrow icons to move forward or backwards in time to display more images for those time periods.
- E** Check the box for individual images or check the *Select All* box to select all the images on the current search page.
- F** Once you've finished with your selection, click the *OK* button to go to the *Profile Edit* page.

AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE FACE PROFILES FROM LOCAL STORAGE (CONTINUED)

Profile Edit Page

- 8** Click on an image or group of images and enter their details in the *Detail Information* panel. Each image is given a face ID as its name by default.
- 9** When finished, click the *Import* button. A face profile has now been created and assigned to this image or group of images.

AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT (CONTINUED)

CREATE INDIVIDUAL FACE PROFILES FROM EXTERNAL STORAGE

You can also create face profiles from images stored on a USB drive.

- Supported image formats – JPG, JPEG, PNG, BMP
- Supported image dimensions – from 80x80 to 800x800 pixels
- Maximum supported size - 500KB

1 Insert the USB drive into the NVR's USB port. Supported image files will be marked with a green checkmark ✓ while unsupported files will be marked with a red X mark.

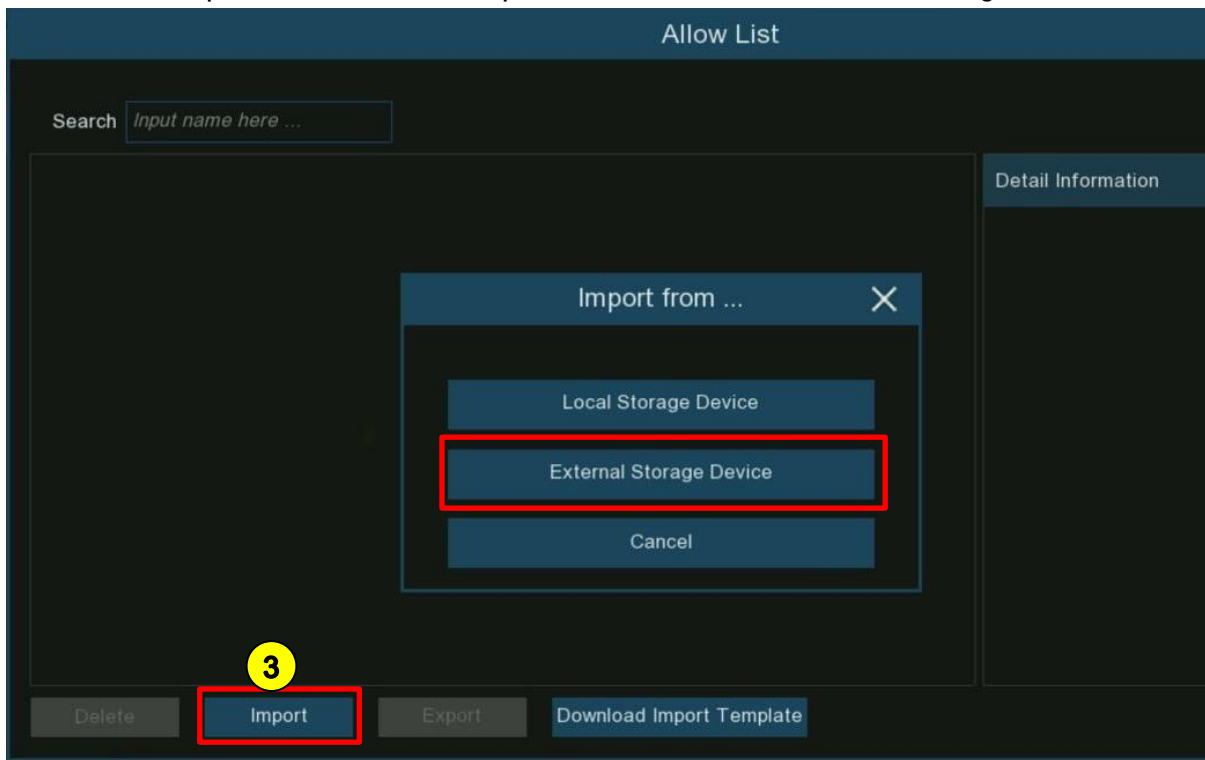
Name	Type	Size	Dimensions
Anna.jpeg ✓	JPEG File	32 KB	700 x 720
Jack.jpeg ✓	JPEG File	88 KB	800 x 683
David.jpg ✗	JPG File	168 KB	800 x 891
Jenny.jpeg ✗	JPEG File	82 KB	1000 x 1000
Selina.jpg ✗	JPG File	626 KB	800 x 683
Victoria.jpg ✗	JPG File	4,371 KB	6000 x 4000

2 Click the Edit icon of the group that you would like to create face profiles for.

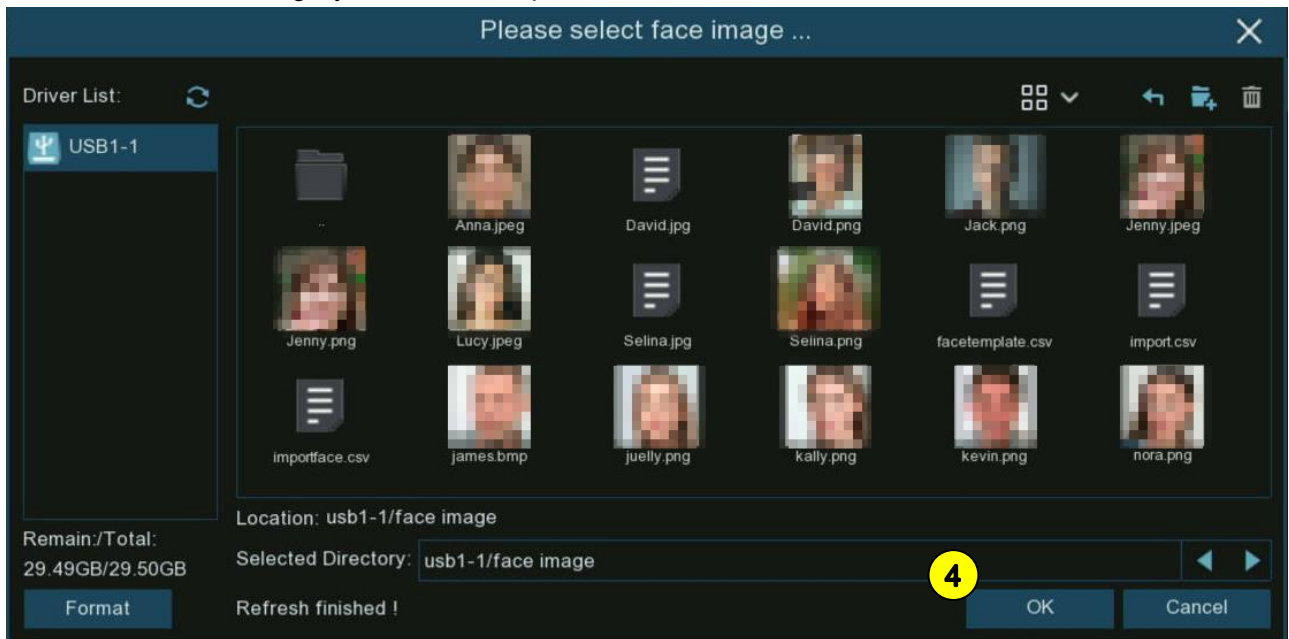


AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE INDIVIDUAL FACE PROFILES FROM EXTERNAL STORAGE (CONTINUED)

3 From the Group window, click the *Import* button, then the *External Storage Device* button.

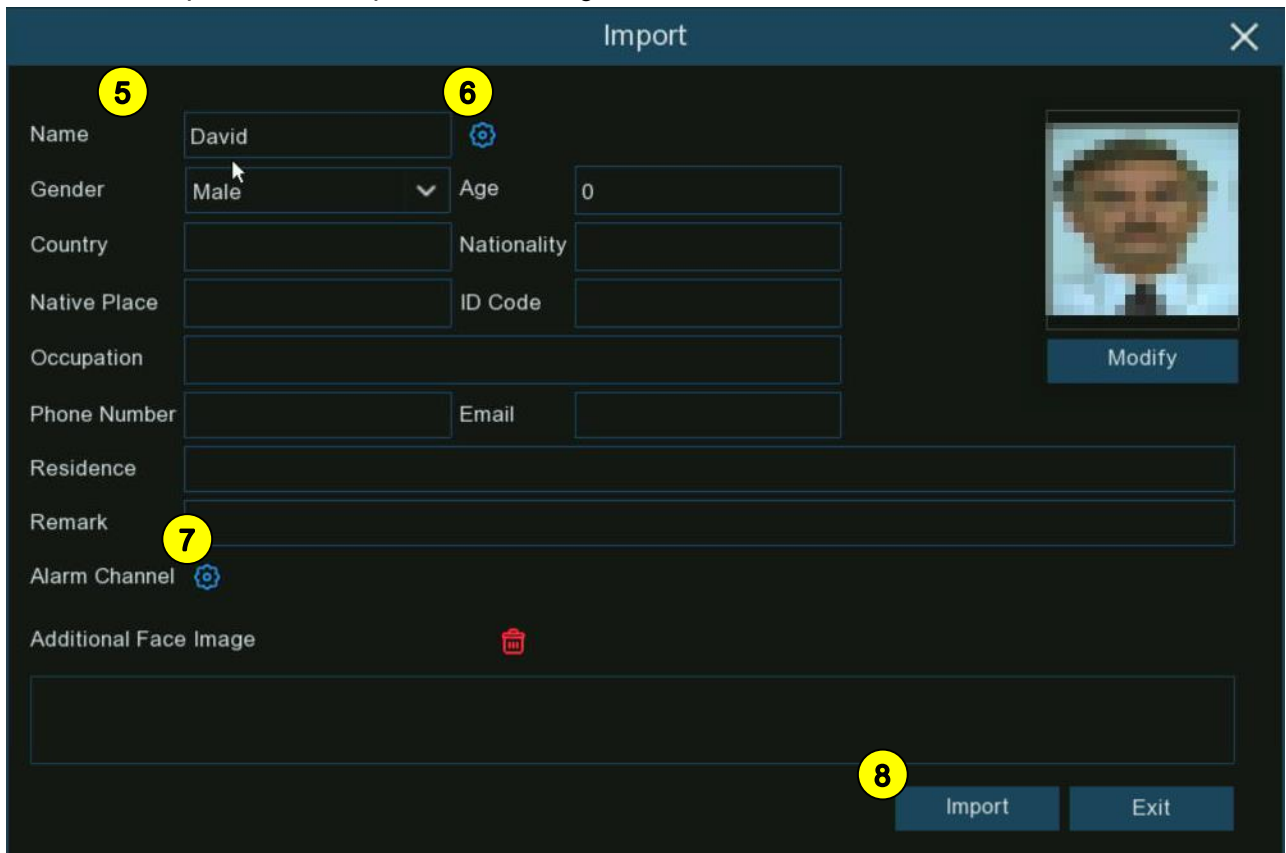



4 Click on the face image you want to import and click OK.

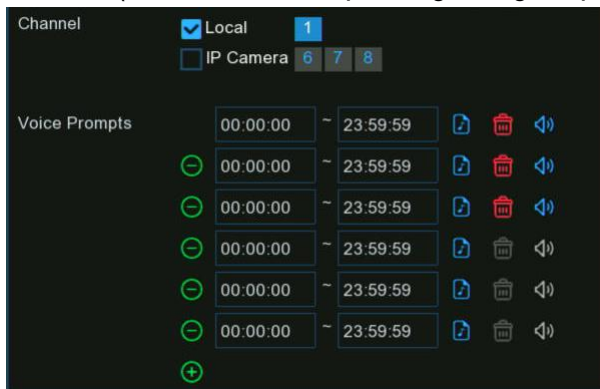



AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE INDIVIDUAL FACE PROFILES FROM EXTERNAL STORAGE (CONTINUED)

- 5 Edit the face profile for the person including whatever data is desired.




- 6 Click setup icon  next to the Name entry box to configure a voice prompt for the person if desired (See Voice Prompts beginning on pg. 98 for more information).

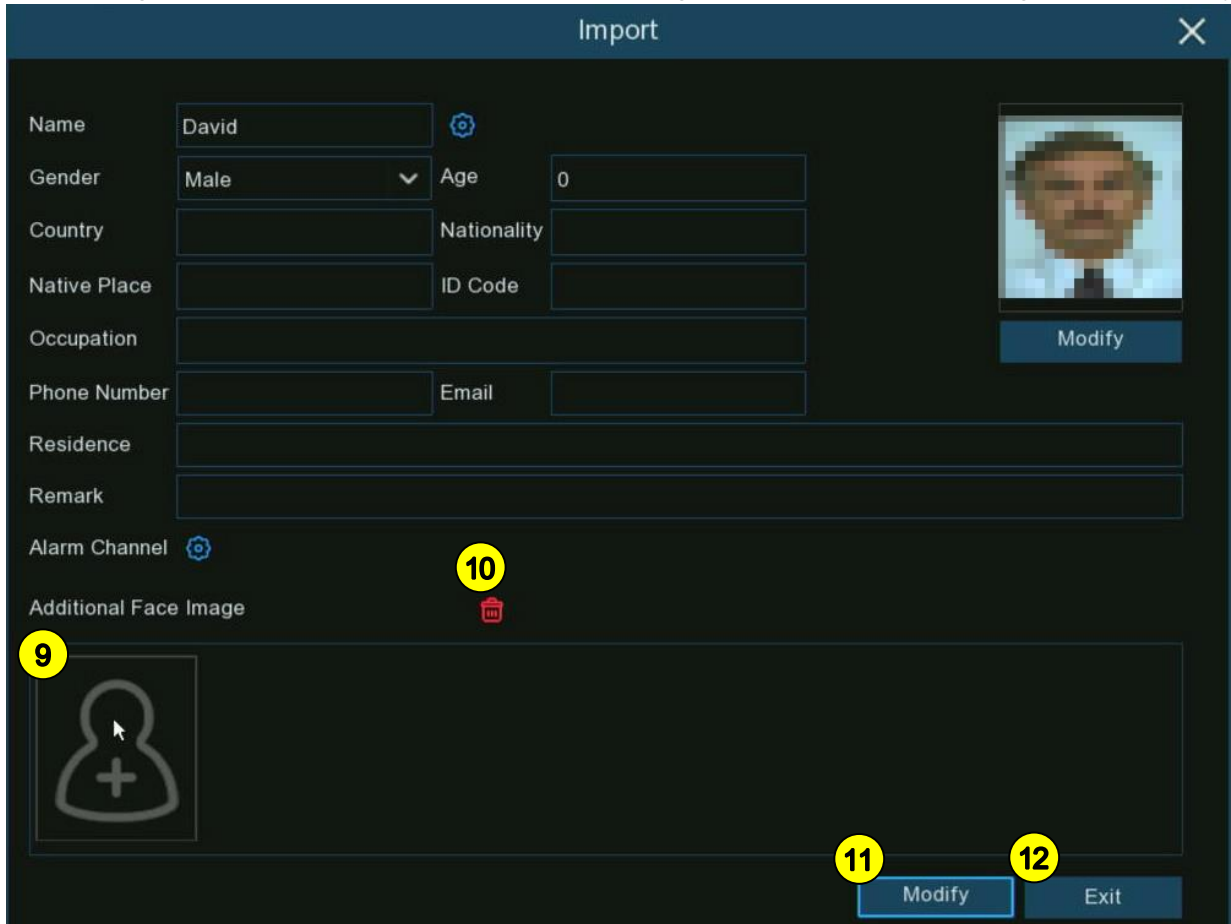


- 7 Click the Alarm Channel Setup icon  to select and configure any cameras that should trigger an alert when this face is detected and captured by them during the time frames selected.

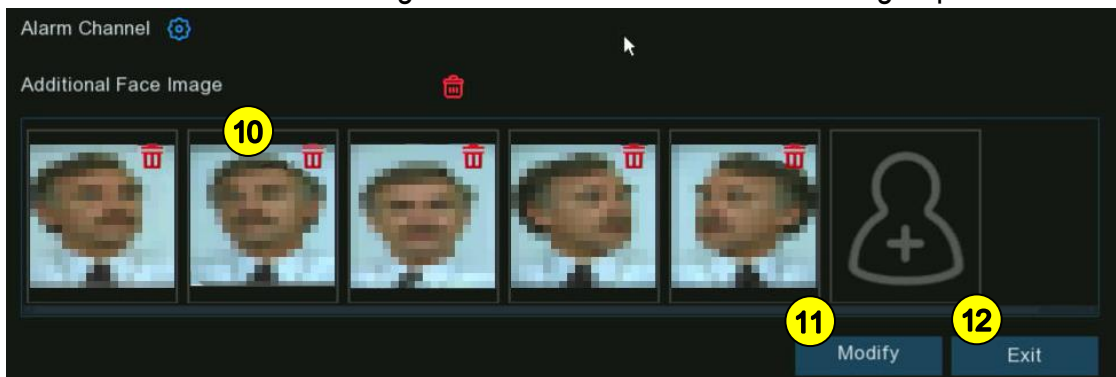
- 8 Click Import to import the face profile.


AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE INDIVIDUAL FACE PROFILES FROM EXTERNAL STORAGE (CONTINUED)

9 You should now see a new icon  in the *Additional Face Image* window. Here you can add more images of the same person from various angles to improve face recognition accuracy.



Click the  icon to add images from local and/or external storage up to a maximum of 10.




- 10. Click the *Delete* icon  next to any image to delete it or the icon above to delete all.
- 11. Click the *Modify* button to accept all changes and finish.
- 12. Click the *Exit* button or right click to exit.

AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT (CONTINUED)

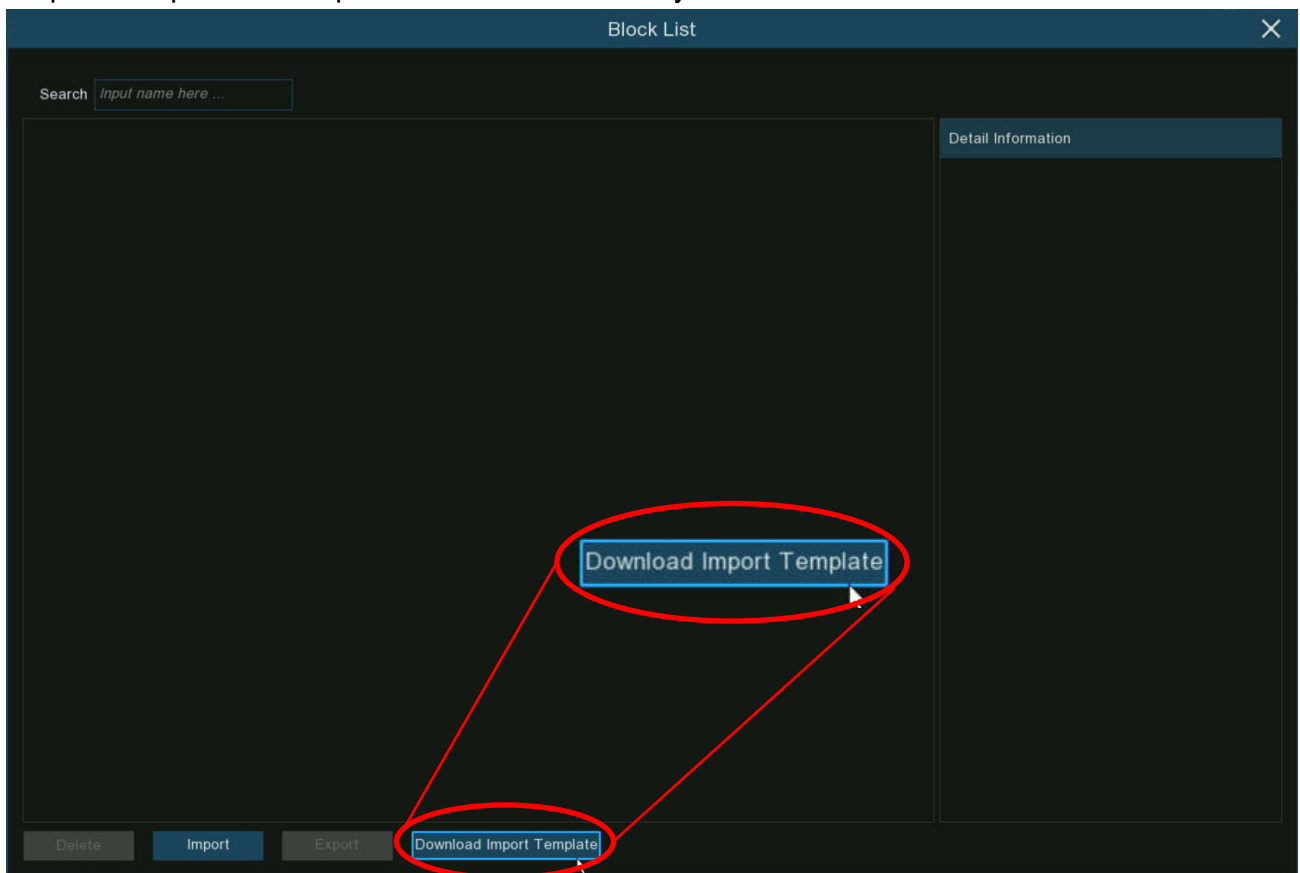
CREATE BULK FACE PROFILES FROM EXTERNAL STORAGE

To create a batch of profiles together from image files on a USB drive, insert your USB drive into the NVR's USB port and proceed as follows.

1. Click the *Edit* icon  of the group that you want to create face profiles for.

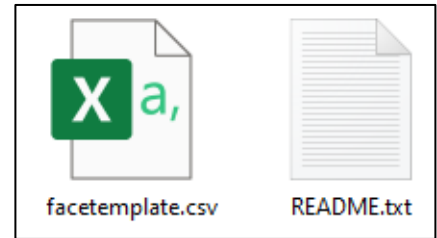


2. In the group window, click the *Download Import Template* button. A zip file with the name "import_template_enu.zip" will be downloaded to your USB drive

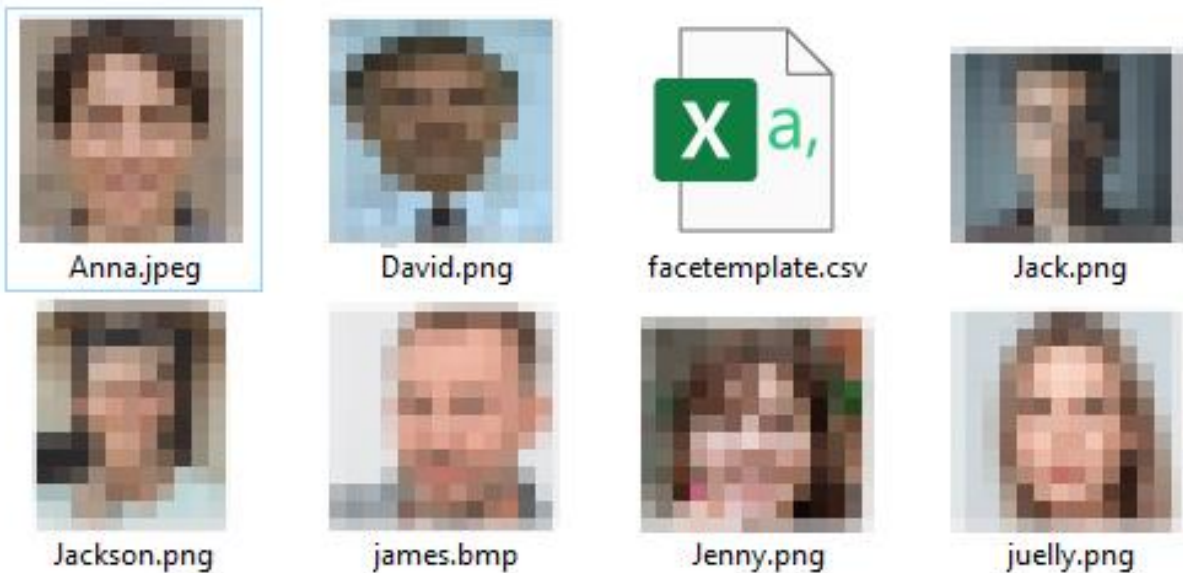


AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE BULK FACE PROFILES FROM EXTERNAL STORAGE (CONTINUED)

- 3. Remove the USB drive from the DVR and plug it in to a computer USB port. Unzip the file to find two files as shown on the right.
- 4. Create and name a new folder to hold your database.
- 5. Copy the "facetemplate.csv" file and your face image files into this new folder.
 - Supported image formats – JPG, JPEG, PNG, BMP
 - Supported image dimensions – from 80x80 to 800x800 pixels
 - Maximum supported size - 500KB



face images [dropdown] [refresh] Search face images



AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE BULK FACE PROFILES FROM EXTERNAL STORAGE (CONTINUED)

6. Open the "facetemplate.csv" file in *Excel* or another spreadsheet editing app. You should see something similar to the spreadsheet screen shown below.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
name	gender	age	image pat	country	nation	nativepos	idcode	occupaito	phone	email	domicile	remark			
xxxx	male	30	face/impc	China	Han natio	ZhuHai	20200903	zhuhai	1.46E+15	12348545	zhuhai	bukeyishuruzhongwen,bixuyongutf8			

- **Column A:** Person's name
- **Column B:** Gender
- **Column C:** Age
- **Column D:** Complete image filename, e.g., "David.png".
- **Column E:** Nationality
- **Column F:** Ethnicity (if necessary)
- **Column G:** Native place (hometown)
- **Column H:** ID
- **Column I:** Occupation or position
- **Column J:** Phone number
- **Column K:** Email address
- **Column L:** Residence address
- **Column M:** Remarks column

AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE BULK FACE PROFILES FROM EXTERNAL STORAGE (CONTINUED)

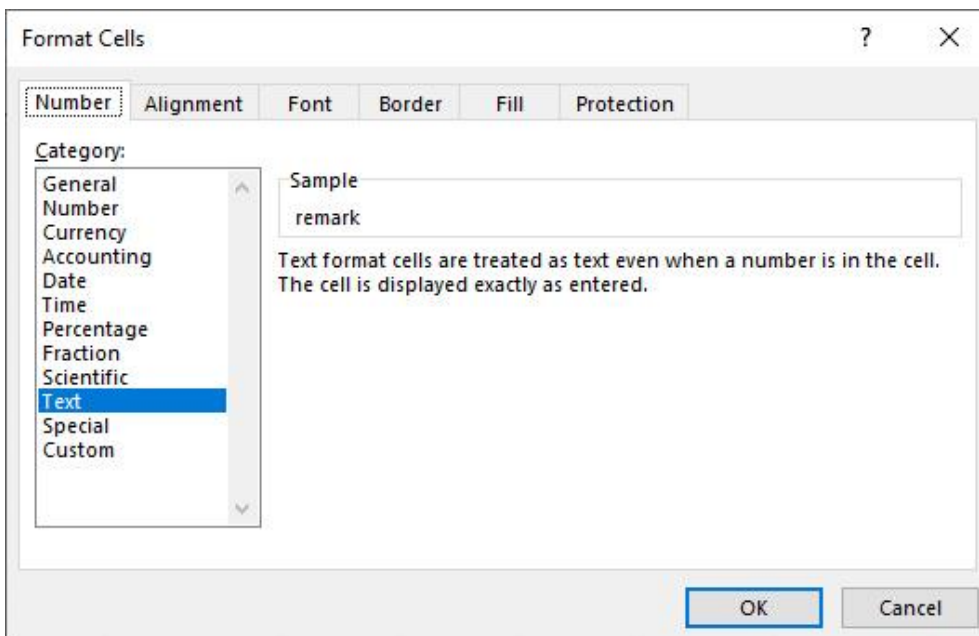
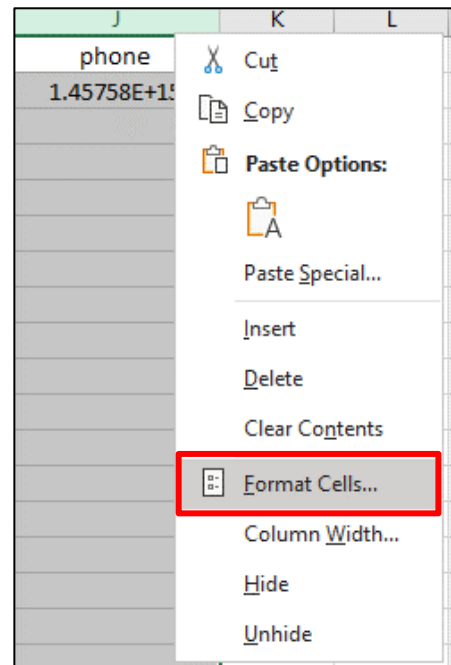
7. Enter the correct values in the cells according to the sample illustration below.

name	gender	age	image path	country	nation	nativepos	idcode	occupaiton	phone	email	domicile	remark
Anna Joyce	Female	30	Anna.jpeg	UK	English	England	123456789	Professor	07-123 456 789	test@xxxxx.com	No. xx, Downing Street, London	Test
Nora Martins	Female	30	nora.png	UK	English	England	123456790	Professor	07-123 456 790	test@xxxxx.com	No. xx, Downing Street, London	Test
Shelly Clinton	Female	30	shelly.jpeg	UK	English	England	123456791	Editor	07-123 456 791	test@xxxxx.com	No. xx, Downing Street, London	Test
Sinna Donald	Female	30	sinna.png	UK	English	England	123456792	Photographer	07-123 456 792	test@xxxxx.com	No. xx, Downing Street, London	Test
James Timothy	Male	30	james.bmp	UK	English	England	123456793	Director	07-123 456 793	test@xxxxx.com	No. xx, Downing Street, London	Test
Juelly Smith	Female	30	juelly.png	UK	English	England	123456794	Cashier	07-123 456 794	test@xxxxx.com	No. xx, Downing Street, London	Test
Kally Jones	Female	30	kally.png	UK	English	England	123456795	Reporter	07-123 456 795	test@xxxxx.com	No. xx, Downing Street, London	Test
Kevin Williams	Male	30	kevin.png	UK	English	England	123456796	Manager	07-123 456 796	test@xxxxx.com	No. xx, Downing Street, London	Test
Jenny Brown	Female	30	Jenny.png	UK	English	England	123456797	Guide	07-123 456 797	test@xxxxx.com	No. xx, Downing Street, London	Test
Lucy Taylor	Female	30	Lucy.jpeg	UK	English	England	123456798	Operator	07-123 456 798	test@xxxxx.com	No. xx, Downing Street, London	Test
David Wilson	Male	30	David.png	UK	English	England	123456799	Scientist	07-123 456 799	test@xxxxx.com	No. xx, Downing Street, London	Test
Jack Davis	Male	30	Jack.png	UK	English	England	123456800	Professor	07-123 456 800	test@xxxxx.com	No. xx, Downing Street, London	Test


IMPORTANT:

If you enter a number that is more than 11 digits with no other characters in between, the system will convert the number to scientific notation, e.g., 1.23457E+11. In such a situation, you will need to set the format of the cell or column the *Text* format.

- Select the column to format.
- Right-click inside the selected column. A menu will pop up as shown on the right.
- Click the *Format Cells...* option.
- A new window will pop up (see below). On the *Number* tab, in the list of options, select the *Text* format option and click *OK*.

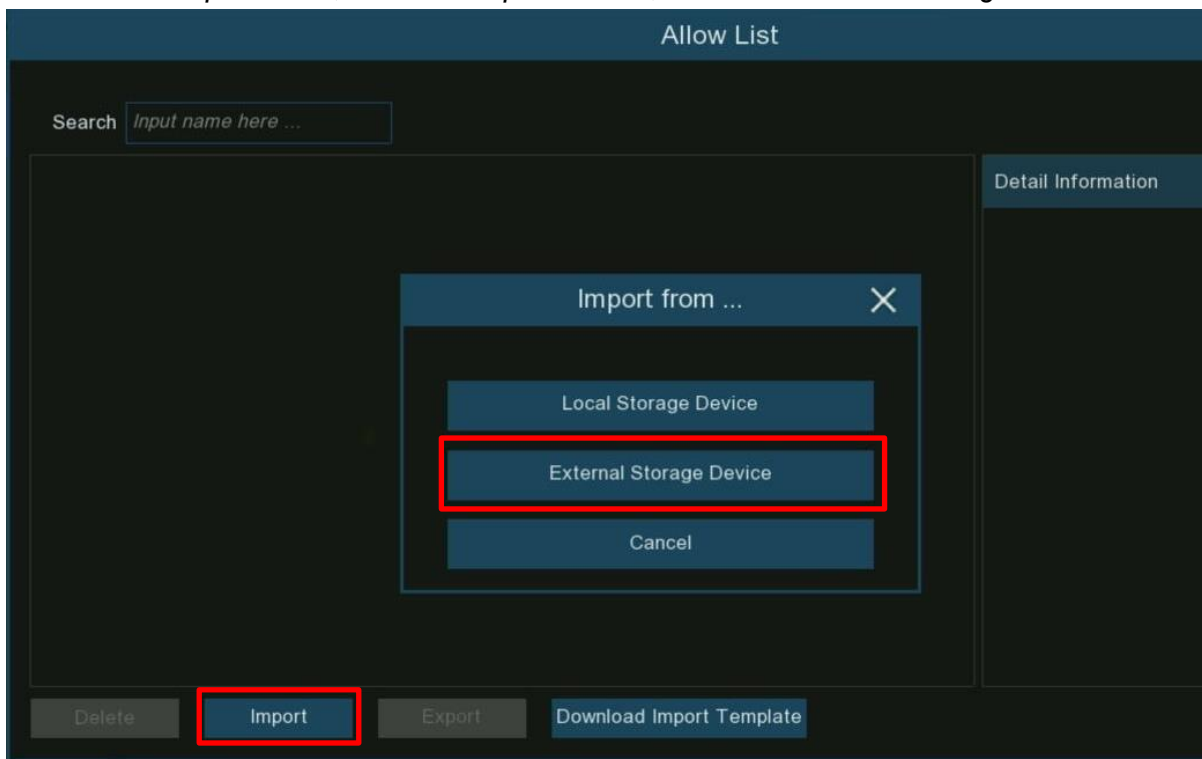


AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE BULK FACE PROFILES FROM EXTERNAL STORAGE (CONTINUED)

- 8. Save the CSV file making sure to set the file type as CSV UTF-8.
- 9. Copy the entire folder, including the images and the "facetemplate.csv" file to your USB drive.
- 10. Insert the USB drive into the USB port of your NVR.
- 11. Click the *Edit* icon  of the group that these face profiles should belong to.

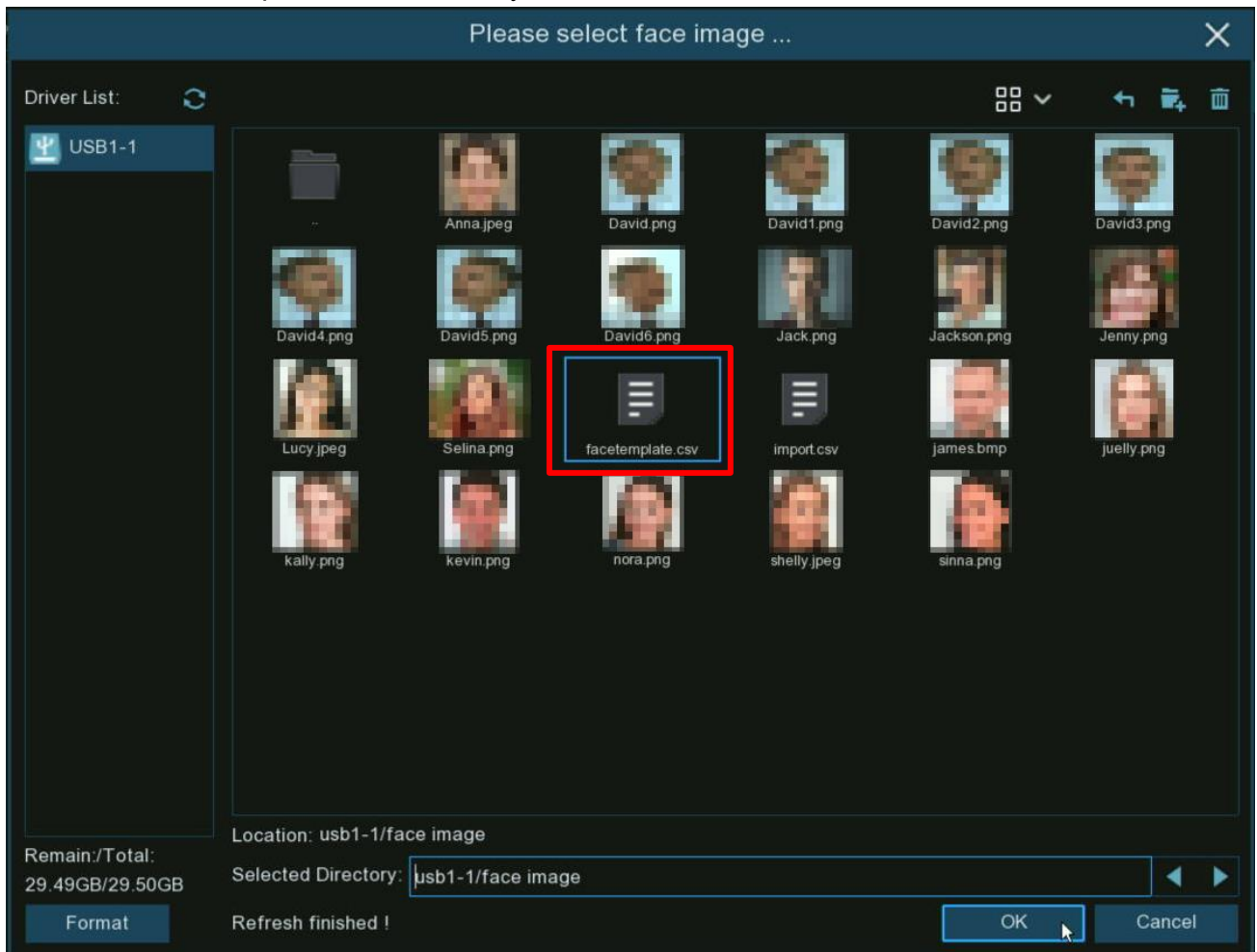


- 12. From the *Group* window, click the *Import* button, then the *External Storage Device* button.



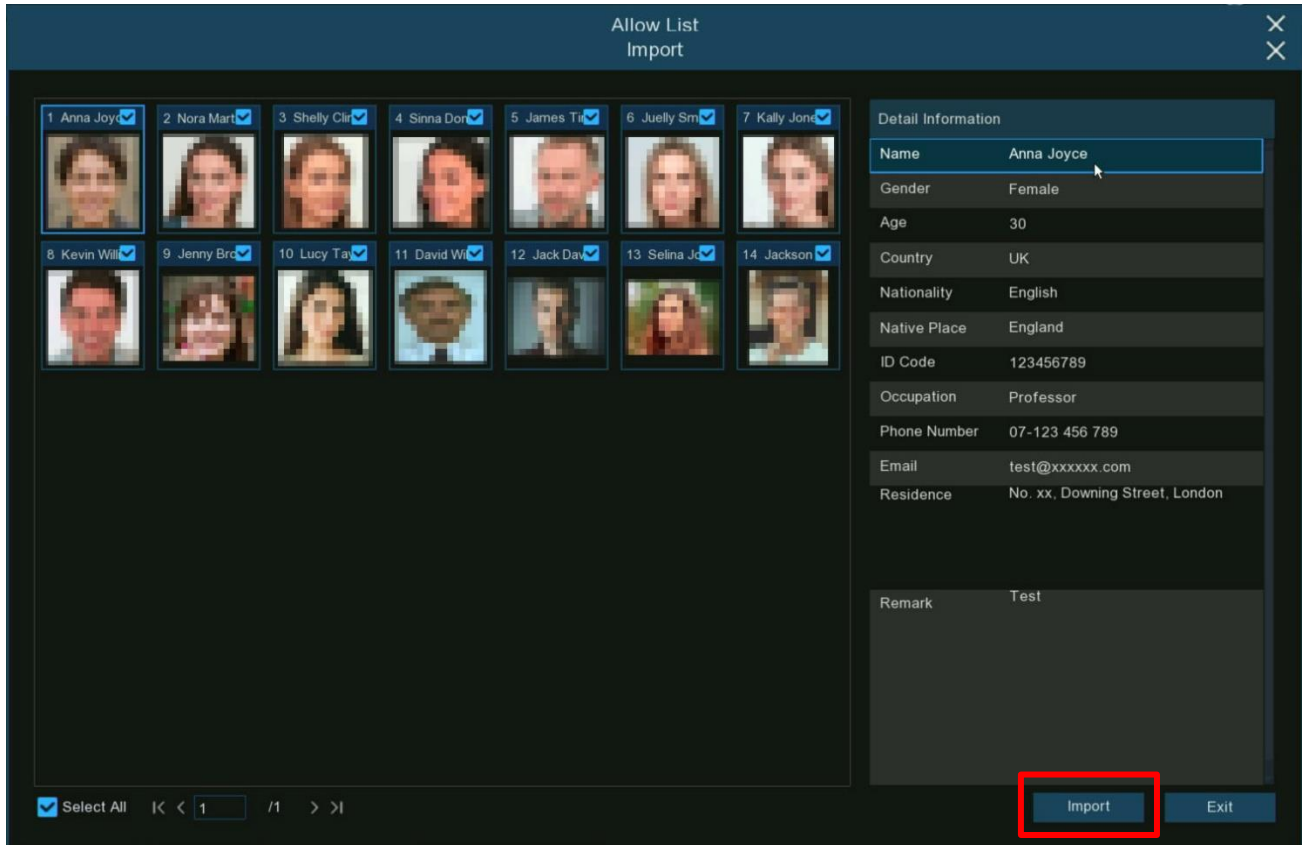
AI – AI RECOGNITION, *FACE RECOGNITION DATABASE MANAGEMENT*, CREATE BULK FACE PROFILES FROM EXTERNAL STORAGE (CONTINUED)

13. Select the "facetemplate.csv" file from your USB drive and click OK.



AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, CREATE BULK FACE PROFILES FROM EXTERNAL STORAGE (CONTINUED)

14. The face profiles will be shown here. Click on any image to see its details on the right. Click the *Import* button to import the profiles into the NVR.



You should see a success popup as shown below.



AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT (CONTINUED)

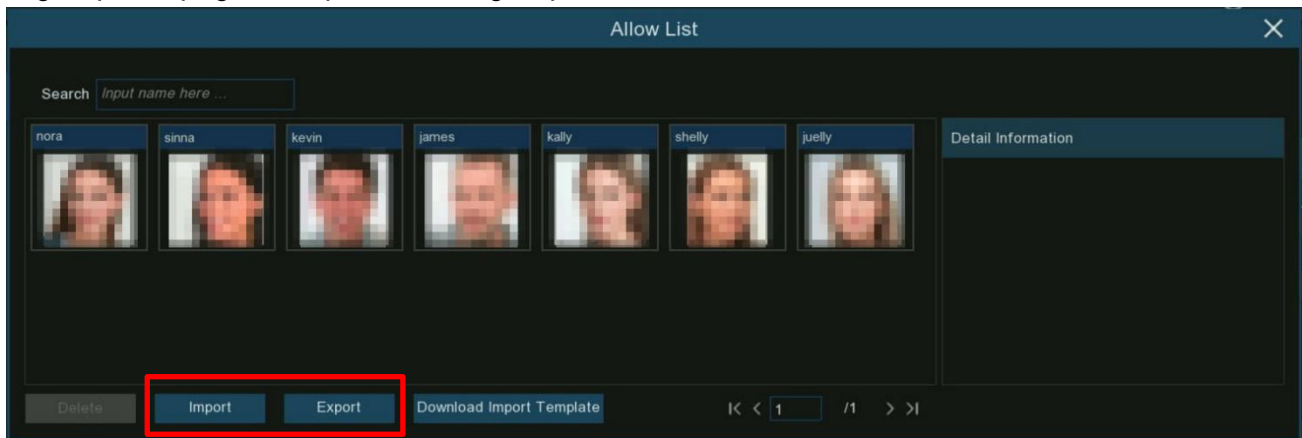
EDIT FACE PROFILES

To edit or delete a face profile, proceed as follows.

1. Click the *Edit* icon  of the group that you want to edit.



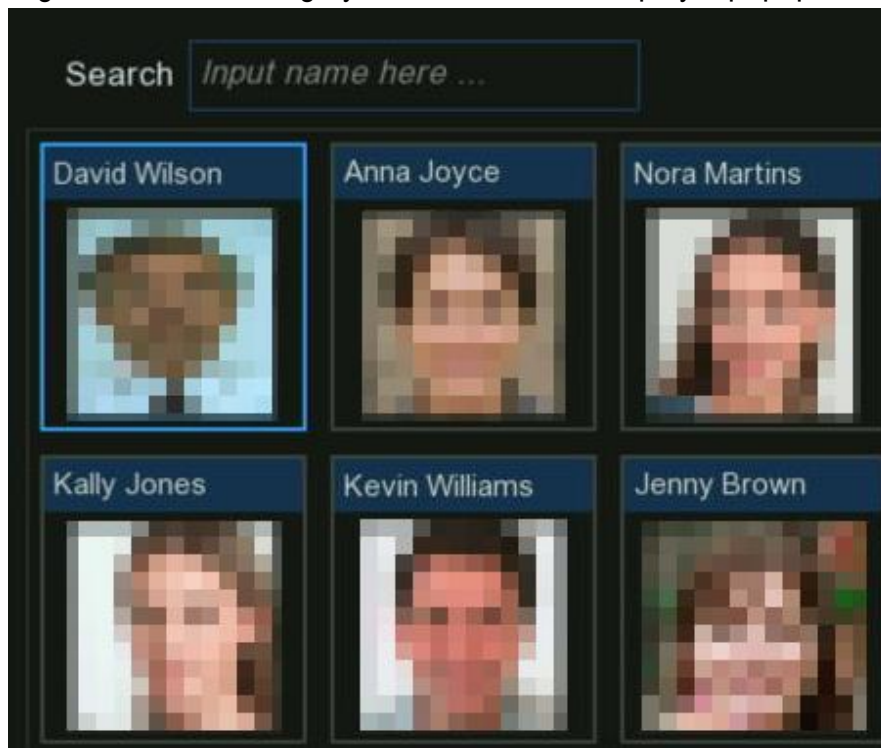
2. A group edit page will open for that group.



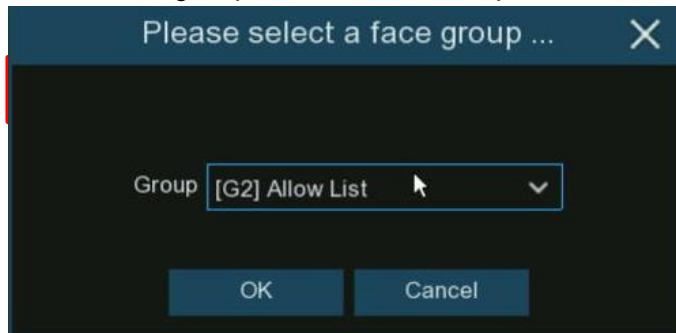
- **Import:** Click to import face images (see *Create Face Profiles from Local Storage* beginning on pg. 144 for more information).
- **Export:** Click to export face images to a USB drive.
 - Click the *Export* button to export all images in this group.
 - Click on one image then the *Export* button to export an individual image.
 - Click and drag the cursor to select multiple images and click the *Export* button to export the selected images.

AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, EDIT FACE PROFILES (CONTINUED)

3. Right click on the image you want to edit to display a popup menu.



4. In the popup are four choices.
- **Edit:** Click to edit the face profile (see *Create Individual Face Profiles from External Storage* beginning on pg. 148 for more information).
 - **Move To:** Click to move the face to another group.
 - Choose the group to move the face profile to and click OK.



- **Delete:** Click to delete the selected face profile.

AI – AI RECOGNITION, FACE RECOGNITION DATABASE MANAGEMENT, EDIT FACE PROFILES (CONTINUED)

- **Detail Information:** Click to view or modify the details of the selected face profile.

Detail Information ✕

Group	<input type="text" value="Block List"/>			
Name	<input type="text" value="David Wilson"/>	Gender	<input type="text" value="Male"/>	
Age	<input type="text" value="30"/>	Country	<input type="text" value="UK"/>	
Nationality	<input type="text" value="English"/>	Native Place	<input type="text" value="England"/>	
ID Code	<input type="text" value="123456799"/>			
Occupation	<input type="text" value="Scientist"/>			
Phone Number	<input type="text" value="07-123 456 799"/>	Email	<input type="text" value="test@xxxxxx.com"/>	
Residence	<input type="text" value="No. xx, Downing Street, London"/>			
Remark	<input type="text" value="Test 88"/>			

Additional Face Image

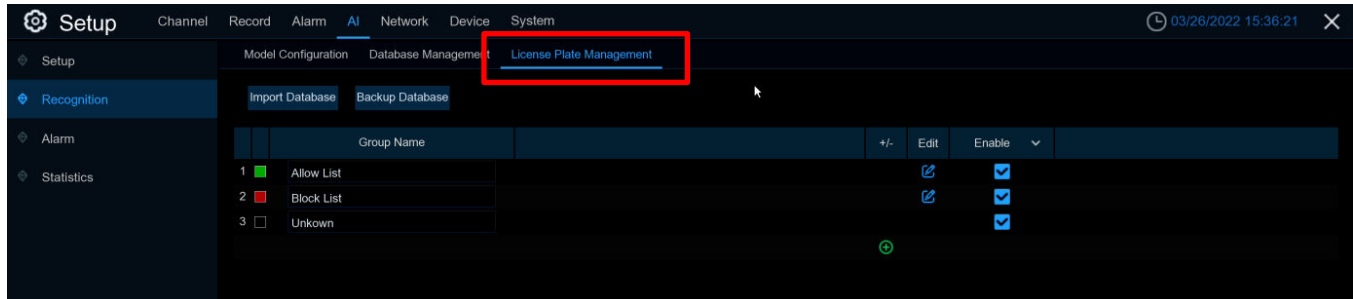


ModifyExit

AI – AI RECOGNITION (CONTINUED)

LICENSE PLATE MANAGEMENT

You can create and manage the vehicle license plate profiles in a database to classify various vehicles into different groups to identify them more quickly onsite to trigger immediate intelligent alarms as described below.



There are three default groups.

- **Allow List:** This list defines a list of vehicles that are considered acceptable or trusted.
- **Block List:** This list defines a list of vehicles that are considered unacceptable or untrusted.
- **Unknown:** All ungrouped vehicles will be identified as unknown.

Click the *Add* icon to create or the *Delete* icon to delete a customized group.

To back up your database, insert a USB drive in the NVR's USB port and click the *Backup Database* button. The exported database can then be restored to the NVR or copied to another NVR using the *Import Database* button (Note that this will overwrite all existing settings and vehicle profiles).


Check the box in the *Enable* column beside a group to enable that group. You must create vehicle license profiles (add license plate numbers) to the groups to make best use of the recognition abilities.

NOTE: The maximum number of vehicle license profiles per group is 5,000.

AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT (CONTINUED)

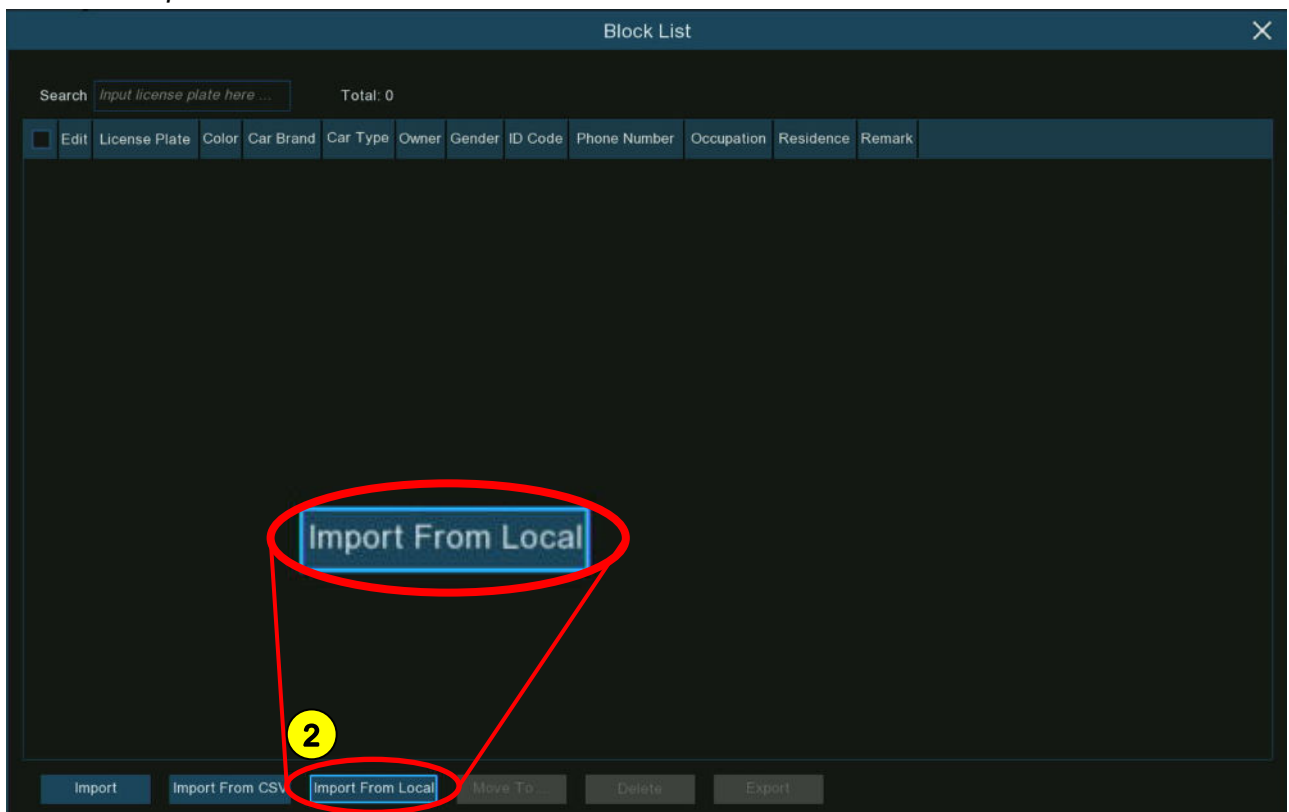
CREATE LICENSE PROFILES FROM LOCAL STORAGE DEVICE

This section will show how to create face profiles from face images that have been captured and stored on your NVR (recommended).

- 1 Click the *Edit* icon  of the group that you would like to create vehicle license profiles for.

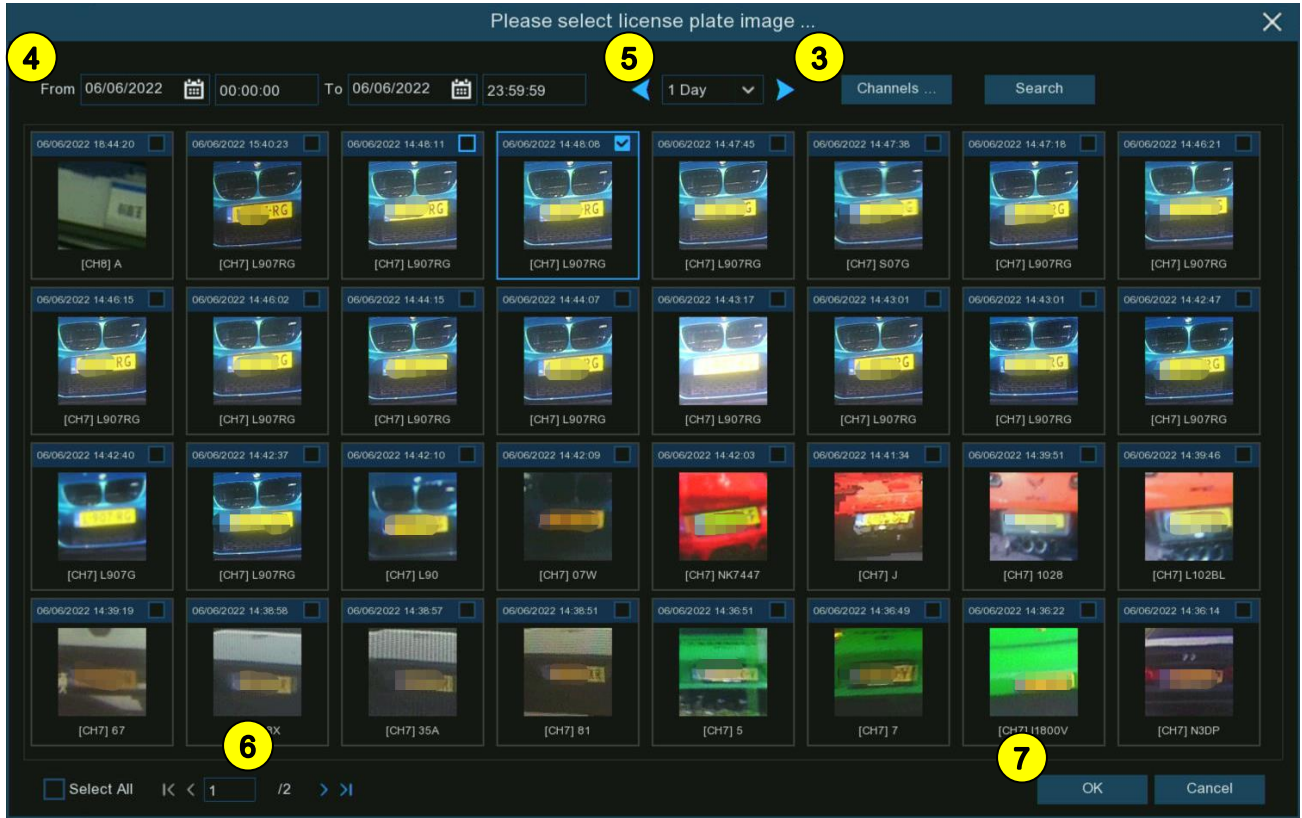


- 2 Click the *Import from Local* button.



AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT, CREATE LICENSE PROFILES FROM LOCAL STORAGE DEVICE (CONTINUED)

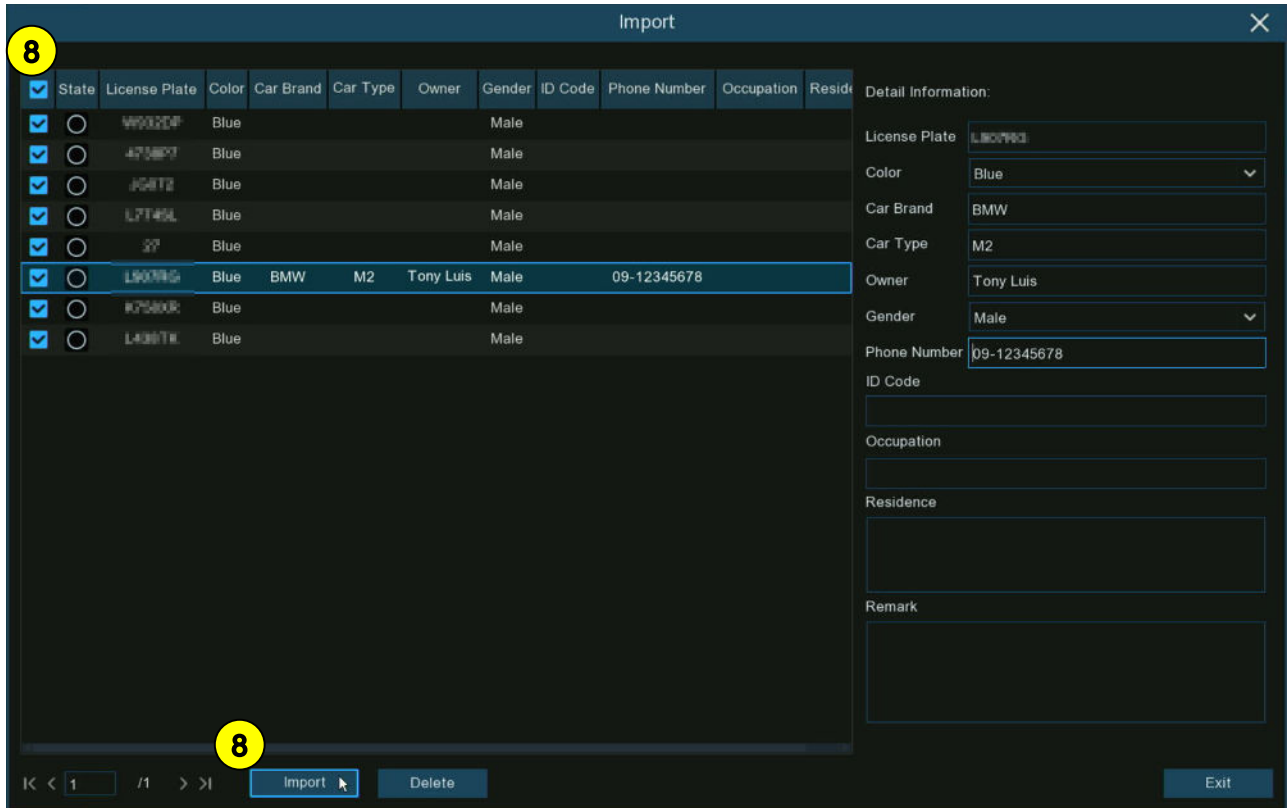
- 3 By default, the NVR will search all channels, but you can specify the cameras you want to search on by clicking the *Channels...* button.



- 4 Use the from/to date and time boxes to narrow the search range.
- 5 Choose a duration in days and use the arrow icons to quickly move to the previous or next day(s) to display vehicle license plate images from those periods.
- 6 The search results will be displayed in the face list automatically as you scroll with the arrows at the bottom.
- 7 Check the box at the top right corner of a license plate image to select the images you want to import and click OK.

AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT, CREATE LICENSE PROFILES FROM LOCAL STORAGE DEVICE (CONTINUED)


- 8 You will now see a list of license plate numbers. If you click on one of the license numbers, its detailed information will be listed to the right. You can edit the information including the license number; color, make, and model of the vehicle; and the owner's profile. Click the *Import* button after finishing and the selected license numbers will be imported.



AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT (CONTINUED)

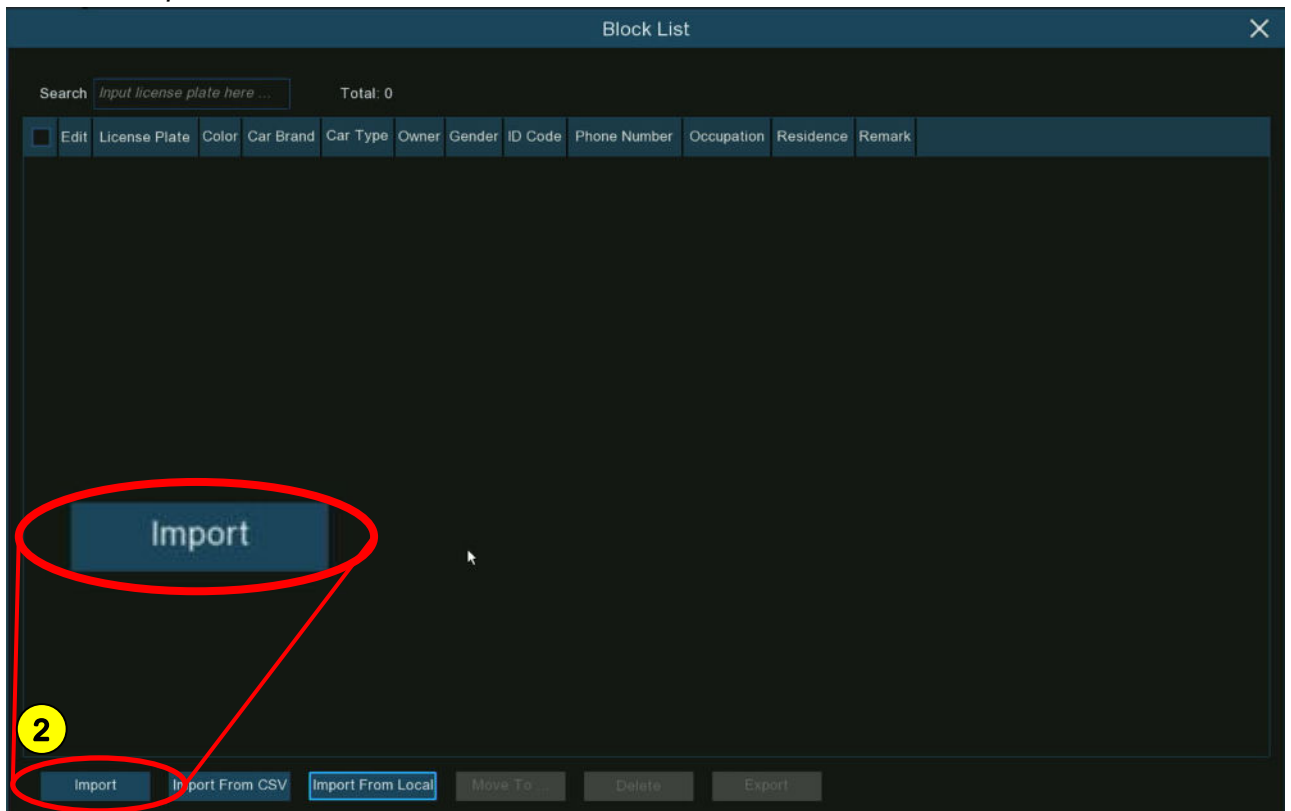
CREATE LICENSE PROFILES MANUALLY

This section will show how to create vehicle license profiles manually.

- 1 Click the *Edit* icon  of the group that you would like to create vehicle license profiles for.



- 2 Click the *Import* button.




AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT, CREATE LICENSE PROFILES MANUALLY (CONTINUED)

- 3 Edit the vehicle license profile for the person including license number, color, make/model, and owner information.

The screenshot shows the 'Import' dialog box with the following fields and values:

- License Plate: 12-89-LM (with a gear icon next to it)
- Color: Green
- Car Brand: BMW
- Car Type: X5
- Owner: DAVID JAMES
- Gender: Male
- ID Code: 333333333
- Occupation: CEO
- Phone Number: 09-888888888
- Residence: London
- Remark: Boss
- Alarm Channel: (with a gear icon next to it)


Buttons at the bottom: Import, Exit

- 4 Click setup icon  next to the *License Plate* entry box to configure a voice prompt for the person if desired (See *Voice Prompts* beginning on pg. 98 for more information).

The screenshot shows the 'Voice Prompts' configuration window with the following details:

- Channel: Local (1), IP Camera (6, 7, 8)
- Voice Prompts list:


Time Range	Edit	Delete	Play
00:00:00 ~ 23:59:59			
00:00:00 ~ 23:59:59			
00:00:00 ~ 23:59:59			
00:00:00 ~ 23:59:59			
00:00:00 ~ 23:59:59			
00:00:00 ~ 23:59:59			

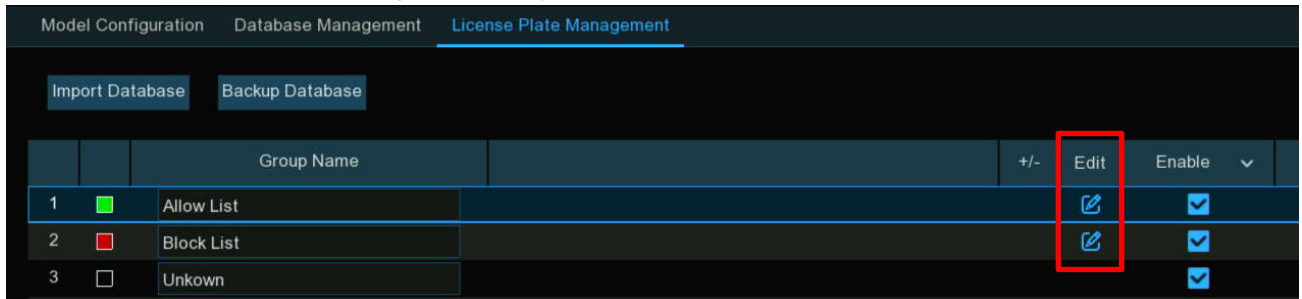
- 5 Click the *Alarm Channel Setup* icon  to select and configure any cameras that should trigger an alert when this vehicle license is detected and captured by them during the time frames selected.
- 6 Click *Import* to import the face profile and *Exit* to finish.

AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT (CONTINUED)

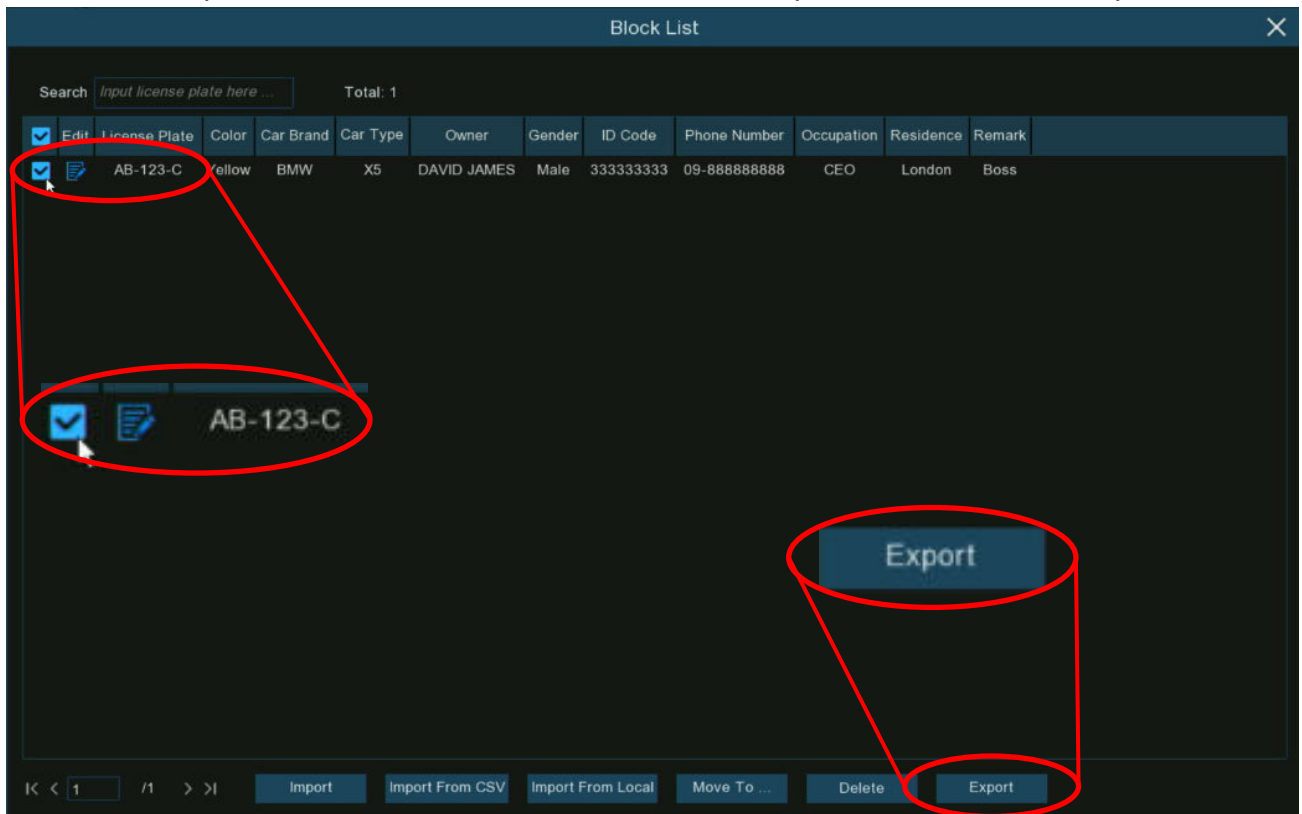
CREATE BULK LICENSE PROFILES

To create a batch of profiles together from image files on a USB, insert your USB drive into the NVR's USB port and proceed as follows.

1. Click the *Edit* icon  of the group that you want to create face profiles for.

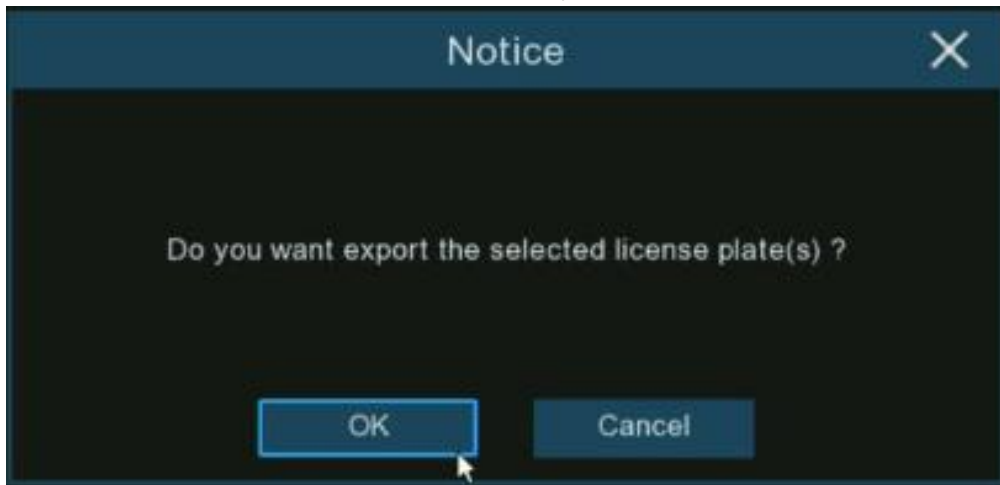


2. From the *Group* window, select at least one of the license profiles and click the *Export* button.

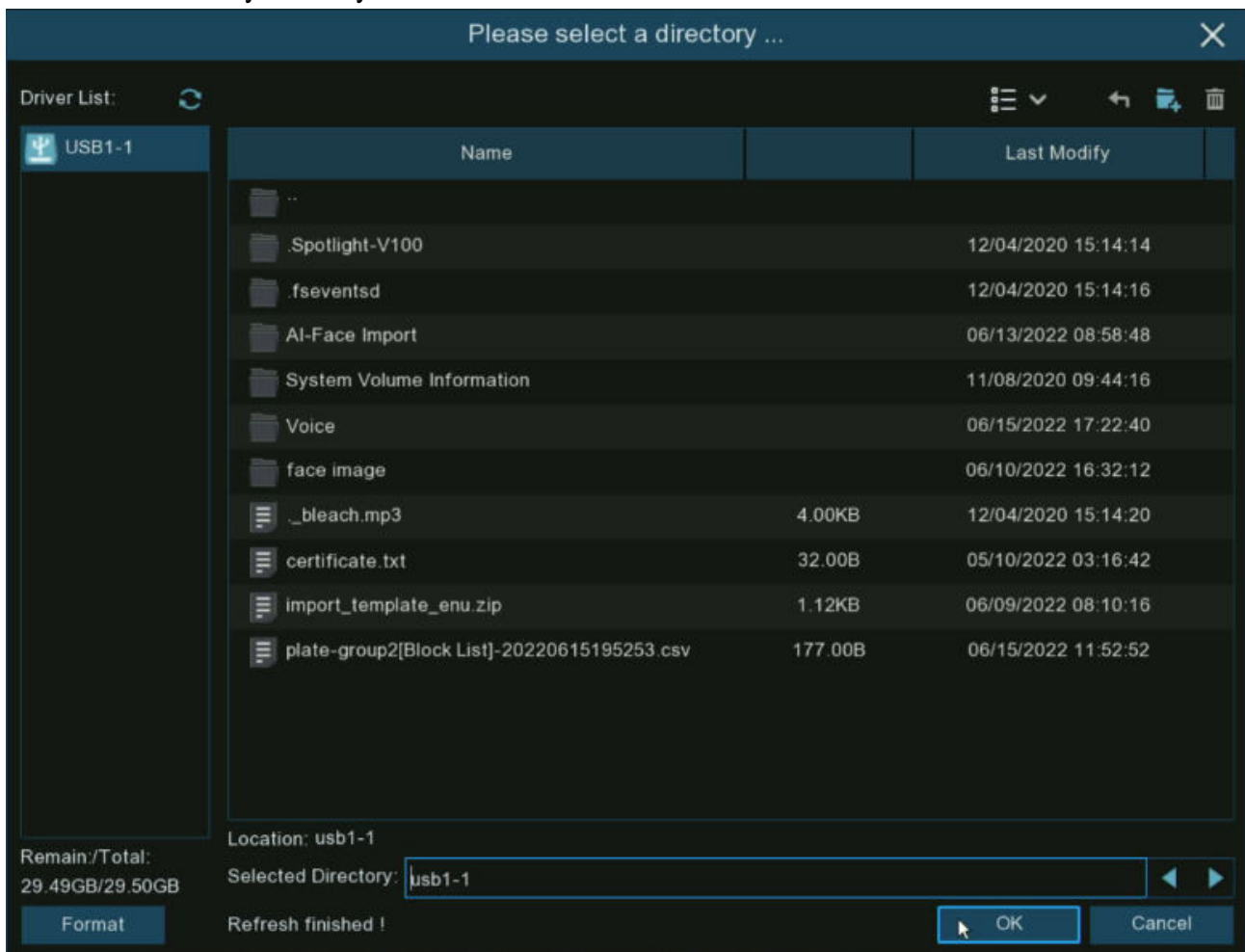


AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT, CREATE BULK LICENSE PROFILES
(CONTINUED)

3. A CSV file will be exported and saved to your USB drive. Click OK in the following popup.



4. Select the directory where you want to save the file and click OK.



AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT, CREATE BULK LICENSE PROFILES (CONTINUED)

5. Open the "facetemplate.csv" file in *Excel* or another spreadsheet editing app. You should see something similar to the spreadsheet screen shown below.

A	B	C	D	E	F	G	H	I	J	K
License Plate	Color	Car Brand	Car Type	Owner	Gender	ID Code	Phone Number	Occupation	Residence	Remark
AB-123-C	blue	BMW	X5	David James	male	1.23457E+17	09-788 788 788	CEO	No. 10, xxx Road, London	Boss

- **Column A:** Vehicle license number
- **Column B:** Vehicle color
- **Column C:** Vehicle make (manufacturer)
- **Column D:** Vehicle model/type
- **Column E:** Vehicle owner/driver
- **Column F:** Owner's gender
- **Column G:** Owner's ID
- **Column H:** Owner's phone
- **Column I:** Owner's occupation or position
- **Column J:** Owner's residence address
- **Column K:** Remarks column

AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT, CREATE BULK LICENSE PROFILES
(CONTINUED)

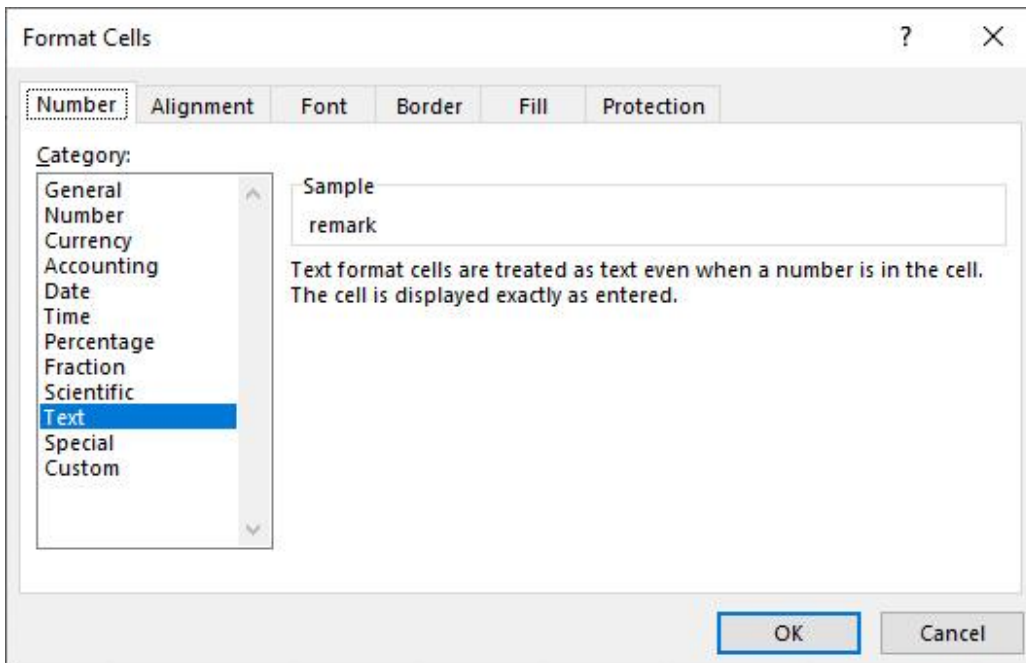
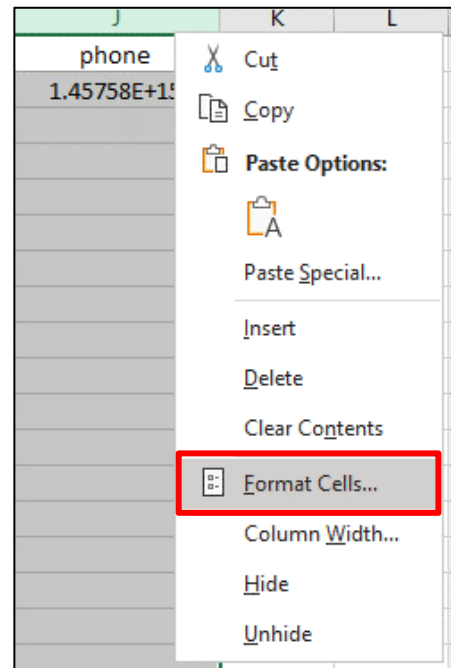
6. Enter the correct values in the cells according to the sample illustration below.

License Plate	Color	Car Brand	Car Type	Owner	Gender	ID Code	Phone Number	Occupation	Residence	Remark
AB-123-2	blue	BMW	X5	Anna Joyce	Female	12345678911111	09-788 788 788	Professor	No. 10, xxx Road, London	
AB-123-3	yellow	Lamborghini	Huracan	Nora Martins	Female	12345678911111	09-788 788 789	Professor	No. 11, xxx Road, London	Boss
AB-123-4	black	Volkswagen	Bora	Shelly Clinton	Female	12345678911111	09-788 788 790	Editor	No. 12, xxx Road, London	
AB-123-5	green	Hyundai	Tucson	Sinna Donald	Female	12345678911111	09-788 788 791	Photographer	No. 13, xxx Road, London	
AB-123-6	black	Toyota	Highlander	James Timothy	Male	12345678911111	09-788 788 792	Director	No. 14, xxx Road, London	
AB-123-7	white	Honda	Accord	Juelly Smith	Female	12345678911111	09-788 788 793	Cashier	No. 15, xxx Road, London	
AB-123-8	black	Peugeot	4008	Kally Jones	Female	12345678911111	09-788 788 794	Reporter	No. 16, xxx Road, London	
AB-123-9	black	Chevrolet	Blazer	Kevin Williams	Male	12345678911111	09-788 788 795	Manager	No. 17, xxx Road, London	


IMPORTANT:

If you enter a number that is more than 11 digits with no other characters in between, the system will convert the number to scientific notation, e.g., 1.23457E+11. In such a situation, you will need to set the format of the cell or column the *Text* format.

- Select the column to format.
- Right-click inside the selected column. A menu will pop up as shown on the right.
- Click the *Format Cells...* option.
- A new window will pop up (see below). On the *Number* tab, in the list of options, select the *Text* format option and click *OK*.

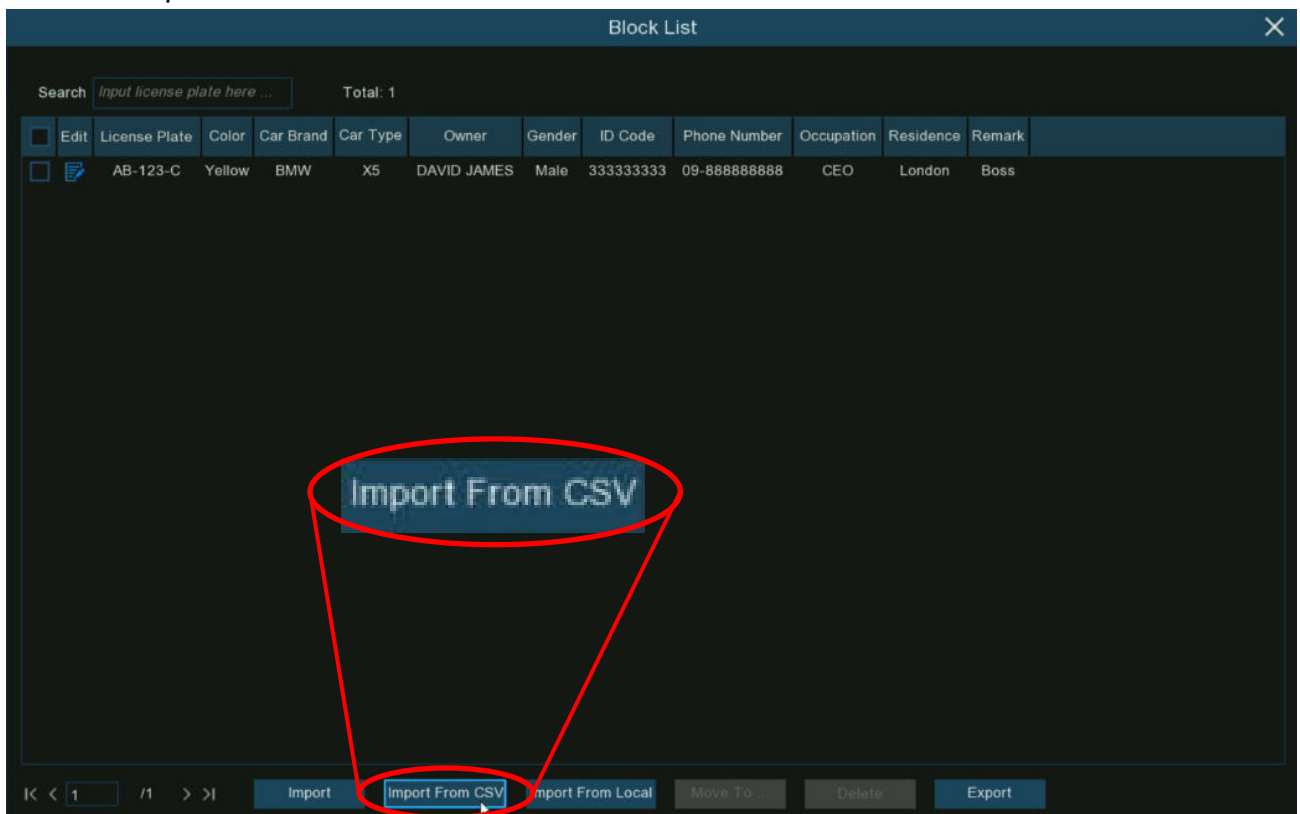


AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT, CREATE BULK LICENSE PROFILES
(CONTINUED)

7. Save the file ensuring that the file type is *CSV UTF-8*.
8. Copy and paste the CSV file to your USB drive.
9. Insert the USB drive into the USB port of your NVR.
10. Click the *Edit* icon  of the group that these vehicle license profiles should belong to.

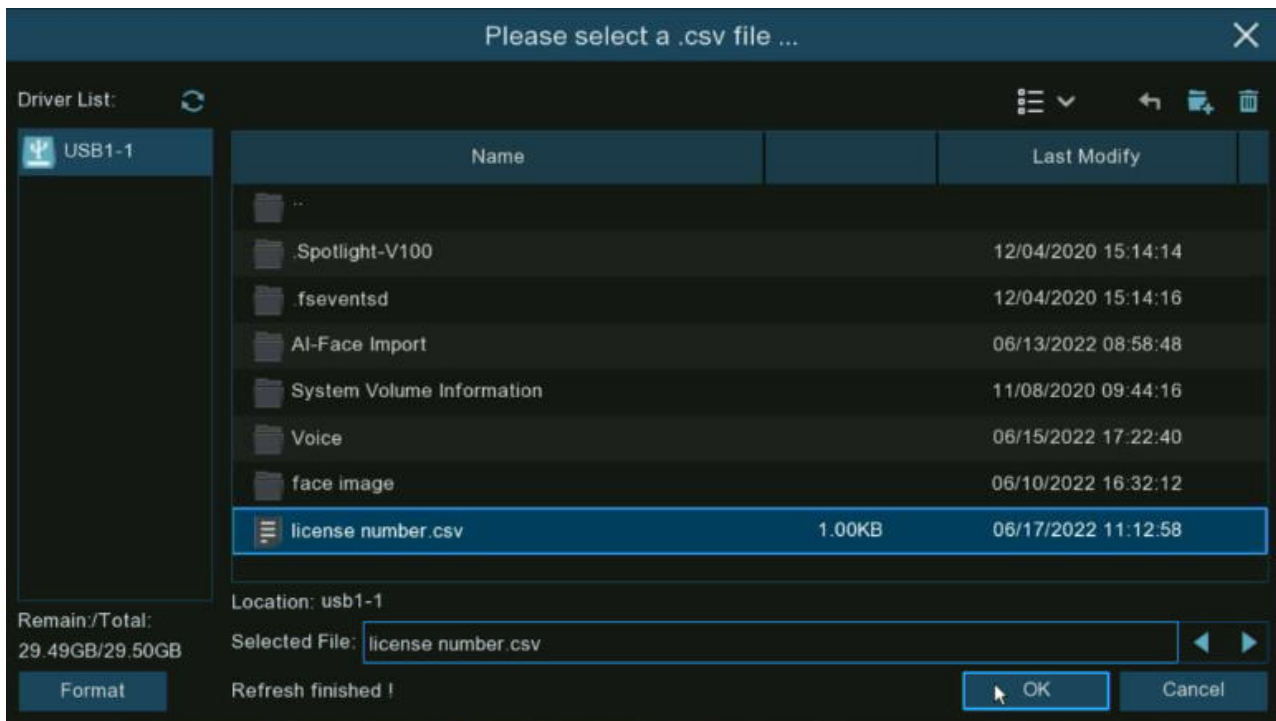


11. Click the *Import from CSV* button.

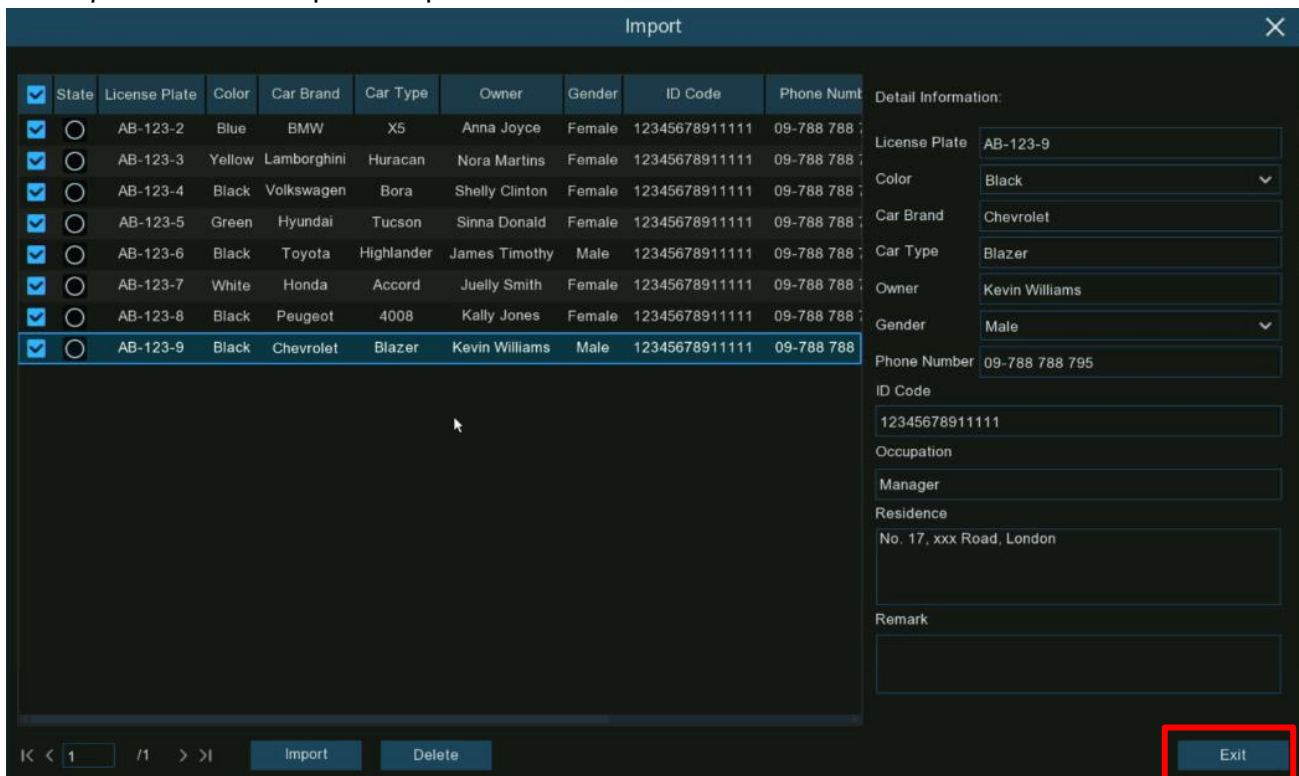


AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT, CREATE BULK LICENSE PROFILES
(CONTINUED)

12. Choose the correct CSV file from the USB drive and click OK.




13. The license numbers will be shown here. Click on any line to see its details on the right. Click the *Import* button to import the profiles into the NVR. Click the *Exit* button to finish.




AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT (CONTINUED)

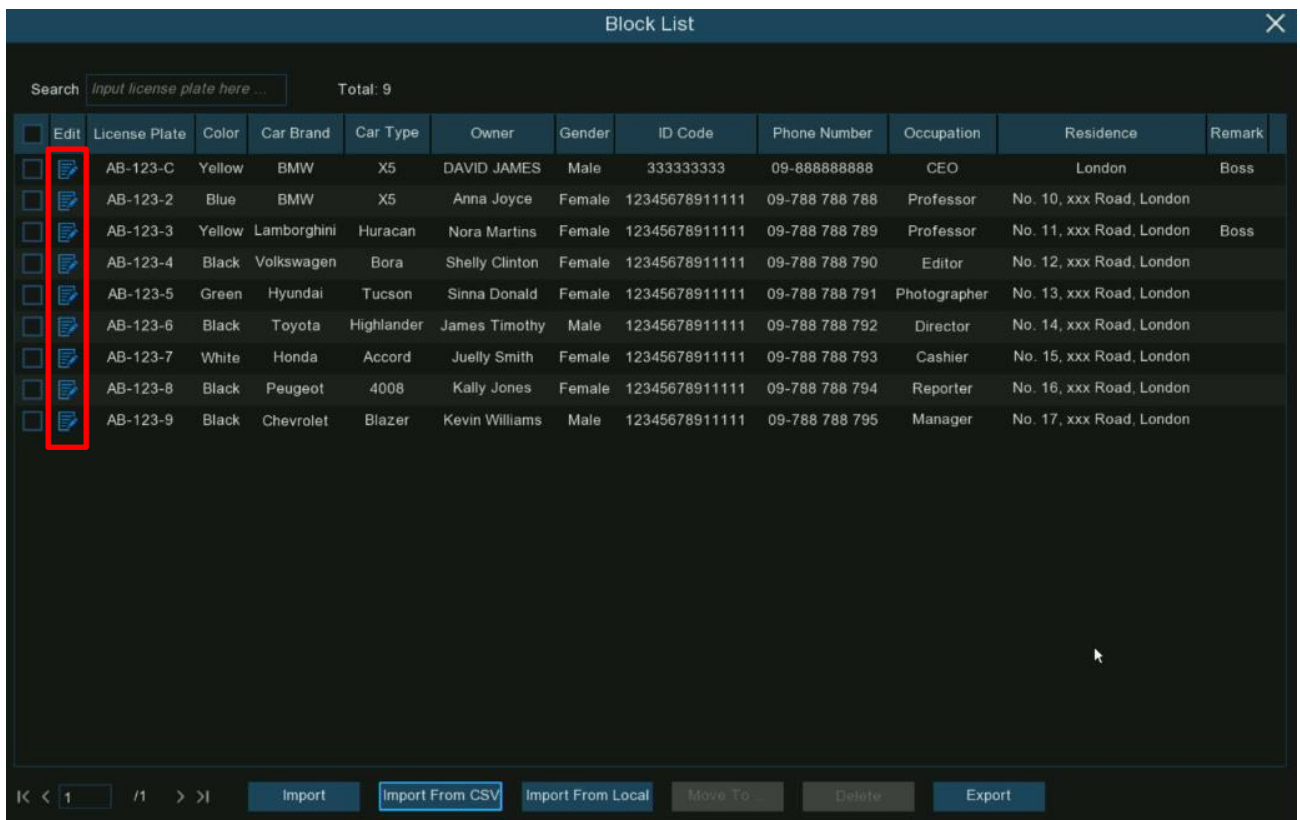
EDIT LICENSE PROFILES

To edit or delete a vehicle license profile, proceed as follows.

1. Click the *Edit* icon  of the group that you want to edit license profiles for.



2. A group edit page will open for that group. To modify the information for a license profile, click the edit icon  in front of its license number.



AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT, EDIT LICENSE PROFILES (CONTINUED)

- 3. Modify any information as needed and click the *Modify* button to apply and *Exit* to finish and return to the list.

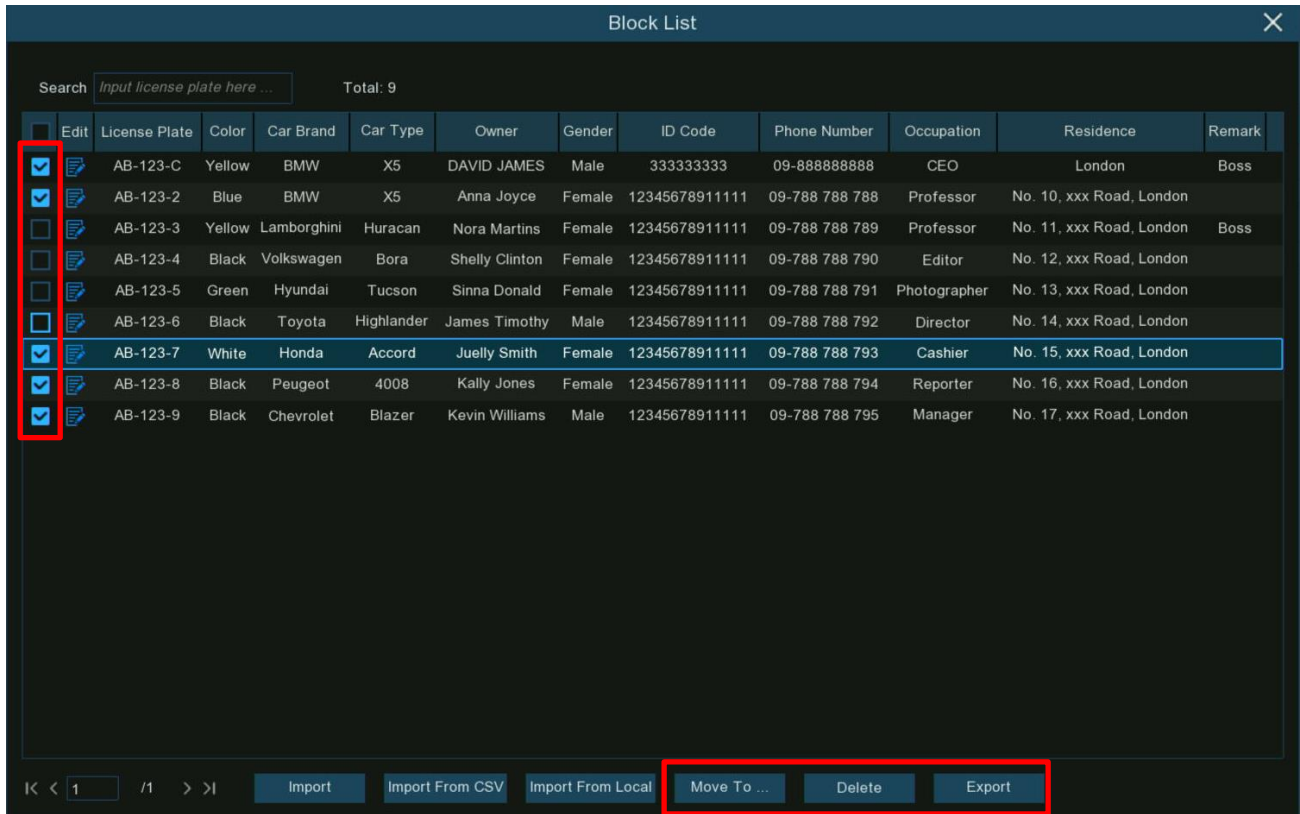
The screenshot shows a 'Modify' dialog box with the following fields and values:

License Plate	AB-123-C		
Color	Yellow		
Car Brand	BMW	Car Type	X5
Owner	DAVID JAMES	Gender	Male
ID Code	33333333	Occupation	CEO
Phone Number	09-88888888		
Residence	London		
Remark	Boss		
Alarm Channel			

Buttons: **Modify** | **Exit**

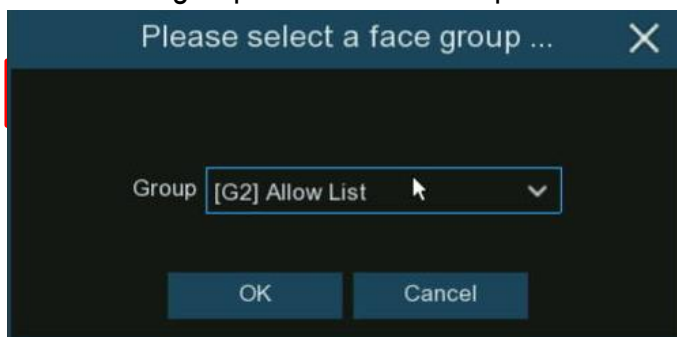
AI – AI RECOGNITION, LICENSE PLATE MANAGEMENT, EDIT LICENSE PROFILES (CONTINUED)

4. To delete, move, or export license profiles, proceed as follows.



Check the box to the left of the profiles you wish to handle.

- **Move To:** Click to move the profiles to another group.
 - Choose the group to move the face profile to and click OK.



- **Delete:** Click to delete the selected profiles.
- **Export:** Click to export the profiles to a USB drive as a CSV file.

AI (CONTINUED)

AI ALARM SETTINGS

From the *AI* menu at the top, click the *Alarm* menu in the sidebar to configure the desired alarm actions when an event occurs.


FR (FACE RECOGNITION) ALARM SETTINGS









To configure the alarm actions for different groups when faces are detected, proceed as follows.

Group Name	Enable Alarm	Policy	Similarity	Alarm	Alarm Schedule	Alarm Channel
1 Allow List	<input checked="" type="checkbox"/>	Allow	≥ 70 %	⚙️	⚙️	⚙️
2 Block List	<input checked="" type="checkbox"/>	Deny	≥ 70 %	⚙️	⚙️	⚙️
3 Stranger	<input checked="" type="checkbox"/>	Stranger	< 70 %	⚙️	⚙️	⚙️


- Enable Alarm:** Check the box of the groups for which you want to enable the alarm function. If not enabled, no actions specified for the group such as alarm notifications will be triggered by your NVR. It is strongly recommended that the *Enable* checkbox for the *Stranger* group be checked so that the NVR will save images of every face detected to the database, including face images that do not match any existing face profiles. You can use these captured face images later to create or improve face profiles in the *Allow List* or *Block List* groups.
- Policy:** This setting is non-configurable for the three preset face groups. However, if you create a custom group, you can set the policy for that group to either *Allow* or *Deny* (basically the same as the *Block List* group).
- Similarity:** Set how closely, in percentage terms, the detected face must match a face profile in the group to be considered a recognized match (default, 70%). A higher percentage will result in fewer false recognition results.

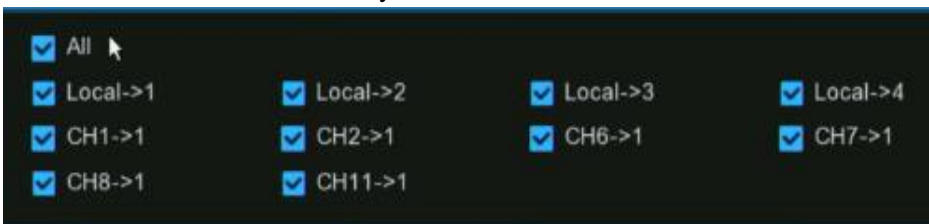
AI – AI ALARM SETTINGS, FR (FACE RECOGNITION) ALARM SETTINGS (CONTINUED)

- **Alarm:** Click the  icon for a group to specify the actions to be taken by your NVR when a face recognition event has occurred for a profile in the selected group.

Alarm [Allow List]							
Channel	Buzzer	Alarm Out	Latch Time	Face Capture	Save Background	Show Thumbnail	Send Email
CH1	Disable		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CH2	Disable		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CH3	Disable		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CH4	Disable		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CH5	Disable		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CH6	Disable		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CH7	Disable		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CH8	Disable		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Scroll right for more columns

- **Buzzer:** Enable to instruct the NVR's buzzer to sound an alert for a predetermined duration when an alarm event is detected.
- **Alarm Out:** Enable to instruct the NVR to trigger an external alarm for a predetermined duration when an alarm event is detected if the NVR or connected IP camera supports connections to external relay devices. Click the , to choose the external connection.



- **Local->x:** Click to choose external alarm devices connected to the NVR.
- **Chx->1:** Click to choose external alarm devices connected to IP cameras.
- **Latch Time:** Click to configure the external alarm duration when triggered.
- **Face Capture:** Check this box to enable the snapshot of a recognized face to be saved to the face profile database on your NVR. Enabling this allows you to add more facial images to profiles later to improve face recognition accuracy.
- **Save Background:** Check this box to enable the background to be saved along with the face image (recommended).
- **Show Thumbnail:** Check this box to enable generation of a facial recognition event notification that includes a snapshot of the recognized face via the *Alarm Notification Panel* in *Live View* mode. Disabling this option will stop facial recognition events from appearing in the *Alarm Notification Panel*.

AI – AI ALARM SETTINGS, FR (FACE RECOGNITION) ALARM SETTINGS (CONTINUED)

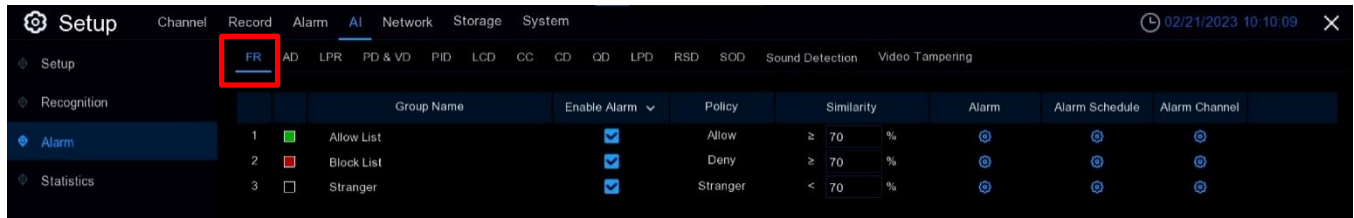
Alarm [Allow List]						✕
Save Background ▾	Show Thumbnail ▾	Send Email ▾	FTP Picture Upload ▾	Pito Cloud ▾	Voice Prompts	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Scroll left for more columns

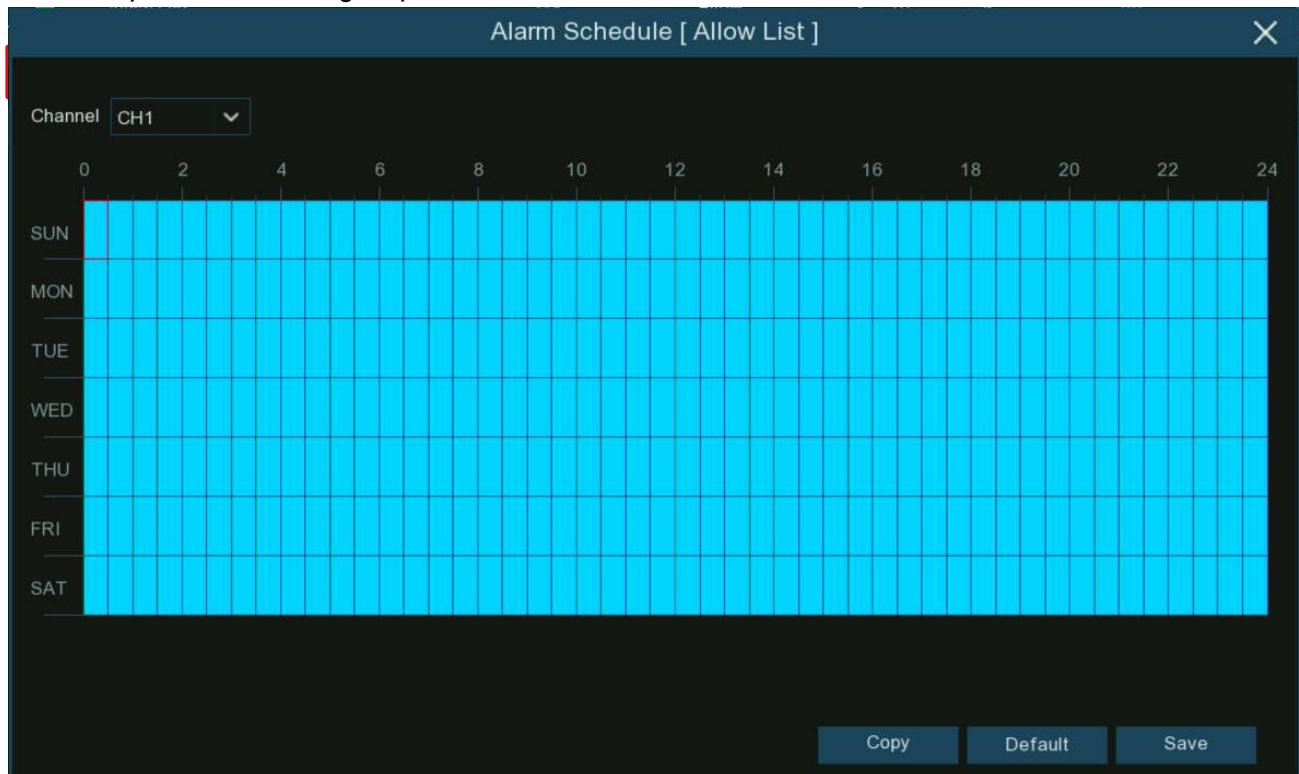
- **Send Email:** Check this box to enable an email alert when an alarm event is detected.
- **FTP Picture Upload:** Check this box to enable copying snapshots to your FTP server when the detection is triggered.
- **Picture to Cloud:** Check this box to enable copying snapshots to *Dropbox* or *Google Drive* when the detection is triggered.
- **Voice Prompts:** Click the icon to enable and configure a custom voice alert when detection is triggered if your NVR is connected to a speaker. For details on adding a custom voice alert, see *Voice Prompts* on pg. 98.
- **Default:** Click to revert to default settings.
- **Copy:** Click to apply all settings to the other connected cameras.
- **Save:** Click to save settings.

AI – AI ALARM SETTINGS, FR (FACE RECOGNITION) ALARM SETTINGS (CONTINUED)

Saving takes you back to the main FR Alarm Settings screen



- **Alarm Schedule:** Click the icon in this column to configure the schedule for when the actions specified for the group will take effect.

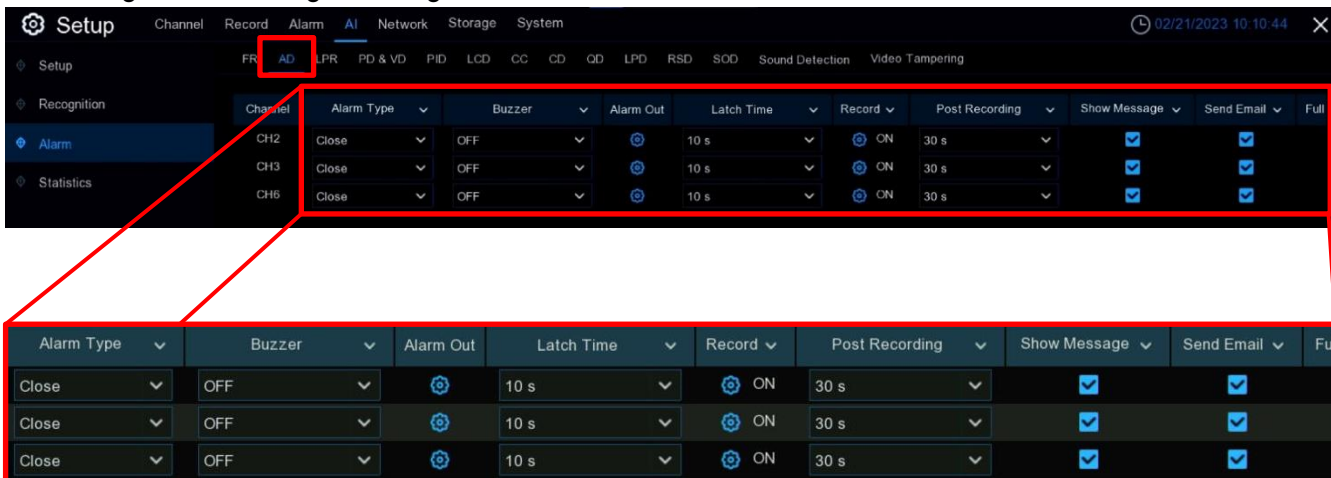


- **Channel:** Select a channel to configure.
To set the schedule, click on single blocks or click and drag to select blocks of time. Blue blocks indicate times when alarms are active. The schedule is valid only for the selected channel.
- **Copy:** Click to apply the same schedule to other channels.
- **Save:** Click to save settings.
- **Alarm Channel:** Click the setup icon in this column to select the channels where the NVR will trigger an alert when faces are detected and captured by those channels.

AI – AI ALARM SETTINGS (CONTINUED)

AD (ATTRIBUTION DETECTION) ALARM SETTINGS

Attribute Detection is a function for detecting certain facial features and triggering an alarm according to the settings. Configure as instructed below.



- **Alarm Type:** Click to choose an alarm trigger condition.
 - **No Mask:** Select to instruct the NVR to trigger an alert when detecting a person who is not wearing a facemask.
 - **Wear Mask:** Select to instruct the NVR to trigger an alert when detecting a person who is wearing a facemask.
 - **Close:** Select to disable facemask detection.

NOTE: To enable the *Facemask Detection*, you must enable both *Face Detection* and *Face Attribute* function for the selected camera. To receive alerts in real-time, you must set the *Snap Mode* to *Real-Time*. For more information, see *FD (Face Detection)* beginning on pg. 110.

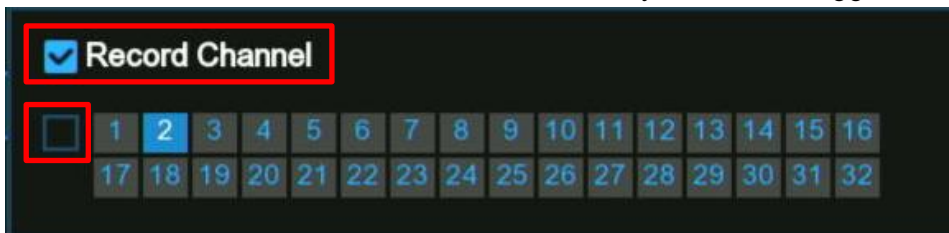
- **Buzzer:** Enable to instruct the NVR's buzzer to sound an alert for a predetermined duration when an alarm event is detected. Click the dropdown to select a duration.
- **Alarm Out:** Click the icon to configure the triggering of external alarms if the NVR or connected IP camera supports connections to an external relay.



- **Local->x:** Click to choose external alarm devices connected to the NVR.
- **Chx->1:** Click to choose external alarm devices connected to IP cameras.

AI – AI ALARM SETTINGS, AD (ATTRIBUTION DETECTION) ALARM SETTINGS (CONTINUED)

- **Latch Time:** Click to configure the external alarm duration when triggered.
- **Record:** Click to enable the NVR to trigger additional cameras to start recording when motion is detected. Click the drop-down arrow ▼ at the top of the column to select or deselect all channels.
 - Click the ⚙️ icon to open the popup shown below and click the *Record Channel* checkbox in the upper left corner to enable recording.
 - Click the checkbox beside the rows of channel numbers to select all channels.
 - **OR** click on the individual camera number that you want to trigger for recording.



- **Post Recording:** Click to change the duration for your NVR to continue recording after an event has occurred.
- **Show Message:** Click to enable/disable the onscreen alarm icon **S** when triggered.
- **Send Email:** Click to enable/disable sending an email alert when an alarm event is detected.
- **Full Screen:** Click to enable/disable full-screen view in *Live View* mode when triggered.
- **Voice Prompts:** Click to select a customized voice alert when an alarm is triggered if your NVR is connected to a speaker. For details on adding a customized voice alert, see *Voice Prompts* on pg. 98.
- **Default:** Click *Default* to revert to default settings.
- **Copy:** Click the *Copy* button at the bottom of the screen to apply all settings to other connected cameras.
- **Apply:** Click *Apply* to save settings.

AI – AI ALARM SETTINGS (CONTINUED)

LPR (LICENSE PLATE RECOGNITION) ALARM SETTINGS

To configure alarm actions for different groups when vehicle license plates are detected, follow the steps below.



Enable Alarm	Policy	Fault-tolerant	Alarm	Alarm Schedule	Alarm Channel
<input checked="" type="checkbox"/>	Allow	≤ 1 character(s)			
<input checked="" type="checkbox"/>	Deny	≤ 2 character(s)			
<input checked="" type="checkbox"/>	Unkown	> 1 character(s)			

- Enable Alarm:** Check the boxes in this column for the groups you want to enable this alarm function for. If not enabled, no actions specified for the group such as alarm notifications will be triggered by your NVR. It is strongly recommended that the *Enable* checkbox for the *Unknown* group be checked so that the NVR will save images of every license plate detected to the database, including those that do not match any existing license profiles. You can later use these captured images to create or improve license profiles in the *Allow List* or *Block List* groups.
- Policy:** This setting is non-configurable for the three preset license groups. However, if you create a custom group, you can set the policy that group to either *Allow* or *Deny*.


AI – AI ALARM SETTINGS, LPR (LICENSE PLATE RECOGNITION) ALARM SETTINGS (CONTINUED)

- Fault Tolerance:** Set how many characters in a license plate may vary from a license profile in the group to be considered a recognized match. Variations in image resolution, light, camera angles, vehicle speed, and many other things may affect character recognition. If the number of characters that differ between the detected license number and a license profile in the group does not exceed the set value, the detected license will be considered a recognized match.

Recognized License Number	Profile License Number	Fault Tolerance	Recognition Result
AB123C	AB-123-C	≤2 characters	True
AB123C	AB-123-C	≤0 or 1 character	False
A8I23C	AB123C	≤2 characters	True
A8I23C	AB123C	≤0 or 1 character	False
B594SB	B734KB	≤3 characters	True
B594SB	B734KB	≤2 character	False
AB132C	AB123C	≤2 characters	True
AB123C	AB123C	≤0 or 1 character	False


NOTE: Only English letters and digits are recognized by the system. Special characters and symbols including underlines, slashes, hyphens, etc. will be excluded. If you have input any special symbols into the license number field when creating profiles, you should set the *Fault Tolerance* to take account of that.

AI – AI ALARM SETTINGS, LPR (LICENSE PLATE RECOGNITION) ALARM SETTINGS
(CONTINUED)

- **Alarm:** Click the  icon for a group to specify the actions to be taken by your NVR when a license recognition event has occurred for a profile in the selected group.

Alarm [Allow List]					
Buzzer	Alarm Out	Latch Time	License Plate Caputre	Save Background	Show Thumbnail
10 s		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 s		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 s		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 s		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 s		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 s		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 s		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 s		10 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

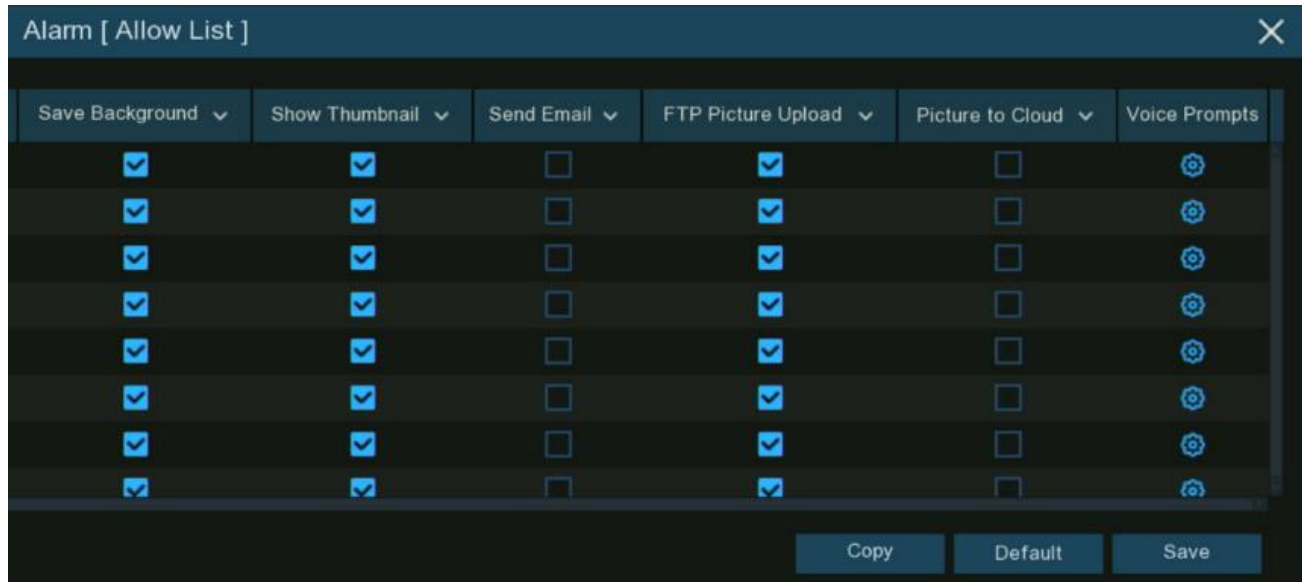
Scroll right for more columns

- **Buzzer:** Enable to instruct the NVR's buzzer to sound an alert for a predetermined duration when an alarm event is detected.
- **Alarm Out:** Enable to instruct the NVR to trigger an external alarm for a predetermined duration when an alarm event is detected if the NVR or connected IP camera supports connections to external relay devices. Click the , to choose the external connection.



- **Local->x:** Click to choose external alarm devices connected to the NVR.
- **Chx->1:** Click to choose external alarm devices connected to IP cameras.
- **Latch Time:** Click to configure the external alarm duration when triggered.
- **License Plate Capture:** Check this box to enable the snapshot of a recognized license plate to be saved to the license profile database on your NVR. Enabling this allows you to add more license plate images to profiles later to improve recognition accuracy.
- **Save Background:** Check this box to enable the background to be saved along with the license plate image (recommended).

AI – AI ALARM SETTINGS, LPR (LICENSE PLATE RECOGNITION) ALARM SETTINGS (CONTINUED)

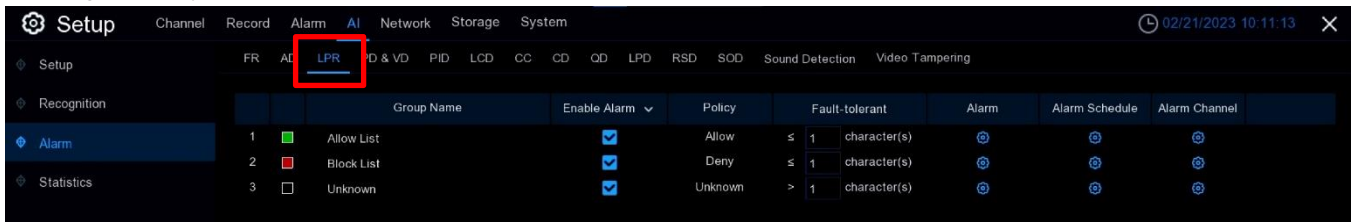


Scroll left for more columns

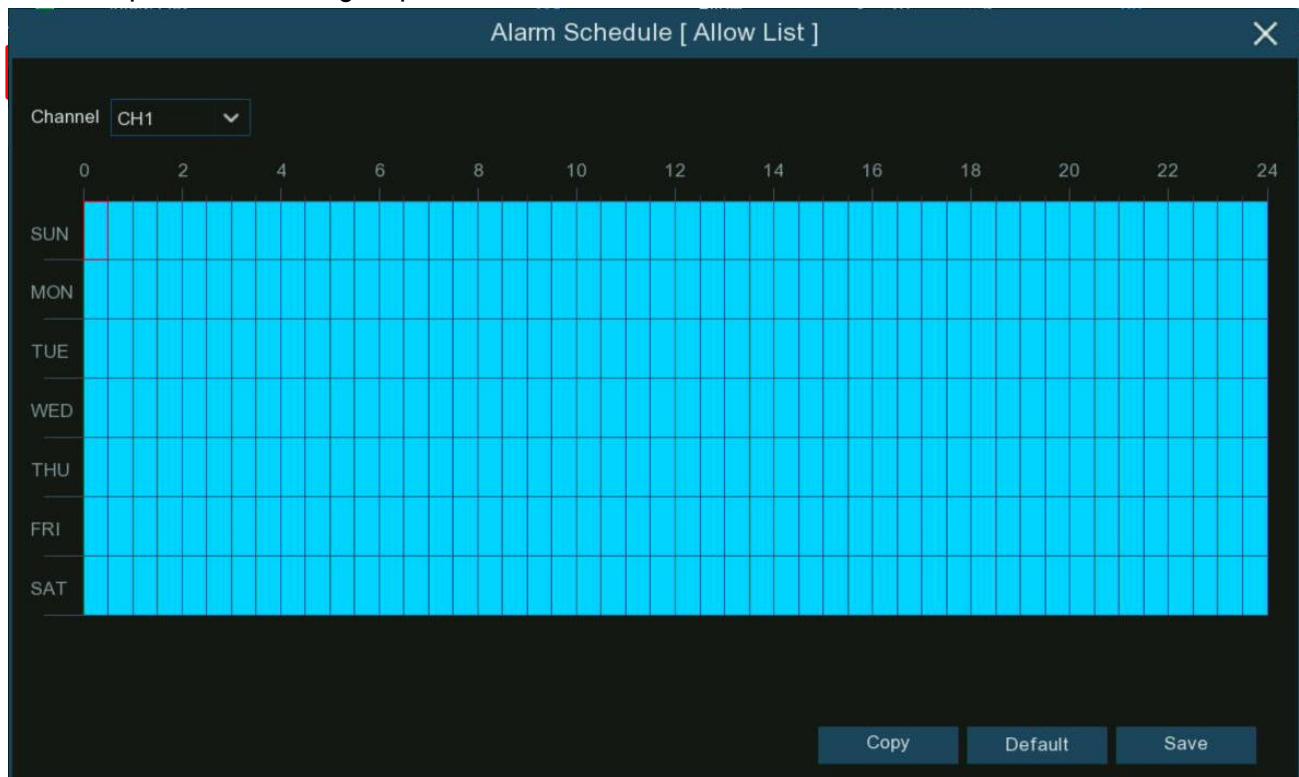
- **Show Thumbnail:** Check this box to enable triggering a license plate recognition event notification that includes a snapshot of the recognized license plate via the *Alarm Notification Panel* in *Live View* mode. Disabling this option will stop license plate recognition events from appearing in the *Alarm Notification Panel*.
- **Send Email:** Check this box to enable an email alert when an alarm event is detected.
- **FTP Picture Upload:** Check this box to enable copying snapshots to your FTP server when the detection is triggered.
- **Picture to Cloud:** Check this box to enable copying snapshots to Dropbox or Google Drive when the detection is triggered.
- **Voice Prompts:** Click the icon to enable and configure a custom voice alert when detection is triggered if your NVR is connected to a speaker. For details on adding a customized voice alert, see *Voice Prompts* on pg. 98.
- **Default:** Click to revert to default settings.
- **Copy:** Click to apply all settings to the other connected cameras.
- **Save:** Click to save settings.

AI – AI ALARM SETTINGS, LPR (LICENSE PLATE RECOGNITION) ALARM SETTINGS
(CONTINUED)

Saving takes you back to the main LPR Alarm Settings screen



- **Alarm Schedule:** Click the icon in this column to configure the schedule for when the actions specified for the group will take effect.

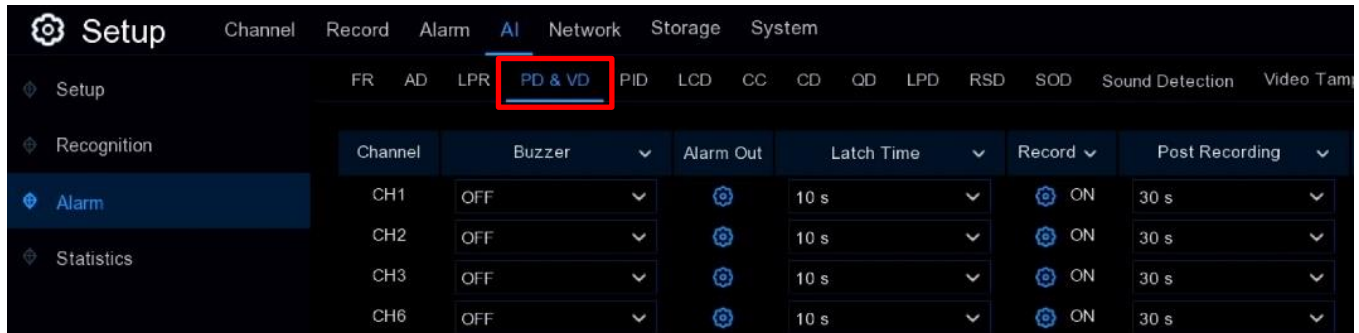


- **Channel:** Select a channel to configure.
To set the schedule, click on single blocks or click and drag to select blocks of time. Blue blocks indicate times when alarms are active. The schedule is valid only for the selected channel.
- **Copy:** Click to apply the same schedule to other channels.
- **Save:** Click to save settings.
- **Alarm Channel:** Click the setup icon in this column to select the channels where the NVR will trigger an alert when license plates are detected and captured by those channels.

AI – AI ALARM SETTINGS (CONTINUED)

PD & VD (PEDESTRIAN & VEHICLE DETECTION) ALARM SETTINGS

To configure the alarm actions for different groups when pedestrians and/or vehicles are detected, proceed as follows.

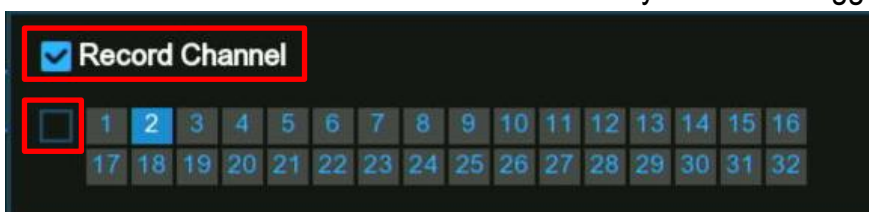


Scroll right for more columns

- **Buzzer:** Enable to instruct the NVR's buzzer to sound an alert for a predetermined duration when an alarm event is detected.
- **Alarm Out:** Enable to instruct the NVR to trigger an external alarm for a predetermined duration when an alarm event is detected if the NVR or connected IP camera supports connections to external relay devices. Click the icon, to choose the external connection.



- **Local->x:** Click to choose external alarm devices connected to the NVR.
- **Chx->1:** Click to choose external alarm devices connected to IP cameras.
- **Latch Time:** Click to configure the external alarm duration when triggered.
- **Record:** Click to enable the NVR to start additional cameras recording when triggered. Click the drop-down arrow at the top of the column to select or deselect all channels.
 - Click the icon to open the popup shown below and click the *Record Channel* checkbox in the upper left corner to enable recording.
 - Click the checkbox beside the rows of channel numbers to select all channels.
 - **OR** click on the individual camera number that you want to trigger for recording.



AI – AI ALARM SETTINGS, PD & VD (PEDESTRIAN & VEHICLE DETECTION) ALARM SETTINGS (CONTINUED)

Record	Post Recording	Show Message	Send Email	FTP Picture Upload	Picture to Cloud	Full Screen	Voice Prompts
ON	30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ON	30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ON	30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ON	30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ON	30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ON	30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ON	30 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

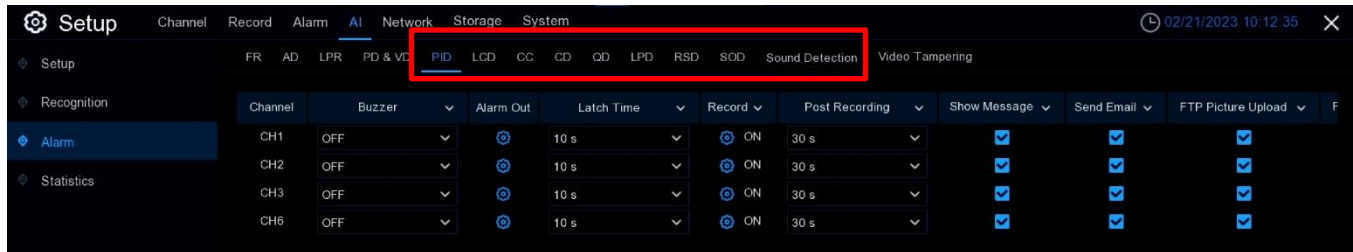
Scroll left for more columns

- **Post Recording:** Click to change the duration for your NVR to continue recording after an event has occurred.
- **Show Message:** Click to enable/disable the onscreen alarm icon when triggered.
- **Send Email:** Click to enable/disable sending an email alert when an alarm event is detected.
- **FTP Picture Upload:** Check this box to enable copying snapshots to your FTP server when the detection is triggered.
- **Picture to Cloud:** Check this box to enable copying snapshots to Dropbox or Google Drive when the detection is triggered.
- **Full Screen:** Click to enable/disable full-screen view in *Live View* mode when triggered.
- **Voice Prompts:** Click to select a customized voice alert when an alarm is triggered if your NVR is connected to a speaker. For details on adding a customized voice alert, see *Voice Prompts* on pg. 98.
- **Default:** Click *Default* to revert to default settings.
- **Copy:** Click the *Copy* button at the bottom of the screen to apply all settings to other connected cameras.
- **Apply:** Click *Apply* to save settings.

AI – AI ALARM SETTINGS (CONTINUED)

PID / LCD / CC / CD / QD / LPD / RSD / SOD / SOUND DETECTION ALARM SETTINGS

The instructions for configuring the Alarm Settings for PID, LCD, CC, CD, QD, LPD, RSD, SOD, and Sound Detection are the same as follows.



NOTE: LPD (License Plate Detection) is different from LPR (License Plate Recognition). LPD emphasizes the detection and takes action when license plates are detected whether the license plates are in the database or not. LPR emphasizes recognition and triggers alarm actions based on the results of recognition compared with those in the database.

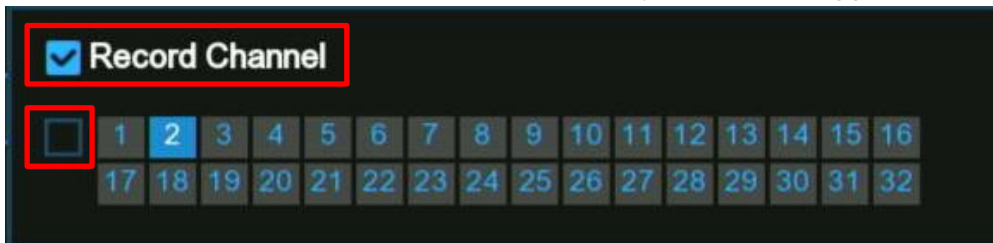
- **Buzzer:** Enable to instruct the NVR's buzzer to sound an alert for a predetermined duration when an alarm event is detected. Click the dropdown to select a duration.
- **Alarm Out:** Click the icon to configure the triggering of external alarms if the NVR or connected IP camera supports connections to an external relay.



- **Local->x:** Click to choose external alarm devices connected to the NVR.
- **Chx->1:** Click to choose external alarm devices connected to IP cameras.
- **Latch Time:** Click to configure the external alarm duration when triggered.

AI – AI ALARM SETTINGS, *PID / LCD / CC / CD / QD / LPD / RSD / SOD / SOUND* DETECTION ALARM SETTINGS (CONTINUED)

- **Record:** Click to enable the NVR to trigger additional cameras to start recording when triggered. Click the drop-down arrow ▼ at the top of the column to select or deselect all channels.
 - Click the ⚙️ icon to open the popup shown below and click the *Record Channel* checkbox in the upper left corner to enable recording.
 - Click the checkbox beside the rows of channel numbers to select all channels.
 - **OR** click on the individual camera number that you want to trigger for recording.



- **Post Recording:** Click to change the duration for your NVR to continue recording after an event has occurred.
- **Show Message:** Click to enable/disable the onscreen alarm icon **S** when triggered.
- **Send Email:** Click to enable/disable sending an email alert when an alarm event is detected.
- **FTP Picture Upload:** Check this box to enable copying snapshots to your FTP server when the detection is triggered.
- **FTP Video Upload:** Check this box to enable copying videoclips to your FTP server when the detection is triggered.
- **Picture to Cloud:** Check this box to enable copying snapshots to Dropbox or Google Drive when the detection is triggered.
- **Video to Cloud:** Check this box to enable copying videoclips to Dropbox or Google Drive when the detection is triggered.
- **Full Screen:** Click to enable/disable full-screen view in *Live View* mode when triggered.
- **Voice Prompts:** Click to select a customized voice alert when an alarm is triggered if your NVR is connected to a speaker. For details on adding a customized voice alert, see *Voice Prompts* on pg. 98.
- **Default:** Click *Default* to revert to default settings.
- **Copy:** Click the *Copy* button at the bottom of the screen to apply all settings to other connected cameras.
- **Apply:** Click *Apply* to save settings.

AI (CONTINUED)

STATISTICS

You can retrieve and display statistical data from the NVR relating to the detection of objects when related *AI Detection* is enabled on the camera by clicking on the *Statistics* menu in the sidebar.



AI – STATISTICS (CONTINUED)

FR (FACE RECOGNITION) STATISTICS

The NVR can retrieve and present statistical data on the identification of faces when the camera's *Face Recognition* is enabled. The bar graph displays the number of faces that were detected during a particular time period while the pie chart displays the percentage share and frequency of detected faces belonging to each group.



- **Groups:** Select the groups from which the face recognition data should be obtained. By default, all groups are selected.
- **Channels:** Select the channels from which the face recognition data should be obtained. By default, all channels are selected.
- **Day/Week/Month/Quarter/Year:** Click the drop-down menu to select the duration blocks from which the face recognition data should be obtained.
- **Calendar:** Change the start date of the selected time period. Click ◀ or ▶ icon to move to the previous or next period.
- **Export:** Export the facial recognition data for the selected time period to a USB drive. The file will be saved as a CSV file. You can open the file in *Excel* (or similar spreadsheet application) to further analyze the data.

AI – STATISTICS (CONTINUED)

PD & VD (PEDESTRIAN & VEHICLE DETECTION) STATISTICS

The NVR can retrieve and present statistical data on the identification of objects when the camera's *Pedestrian and Vehicle Analytics* is enabled. The bar graph displays the number of pedestrians and/or vehicles that were detected during a particular time period.

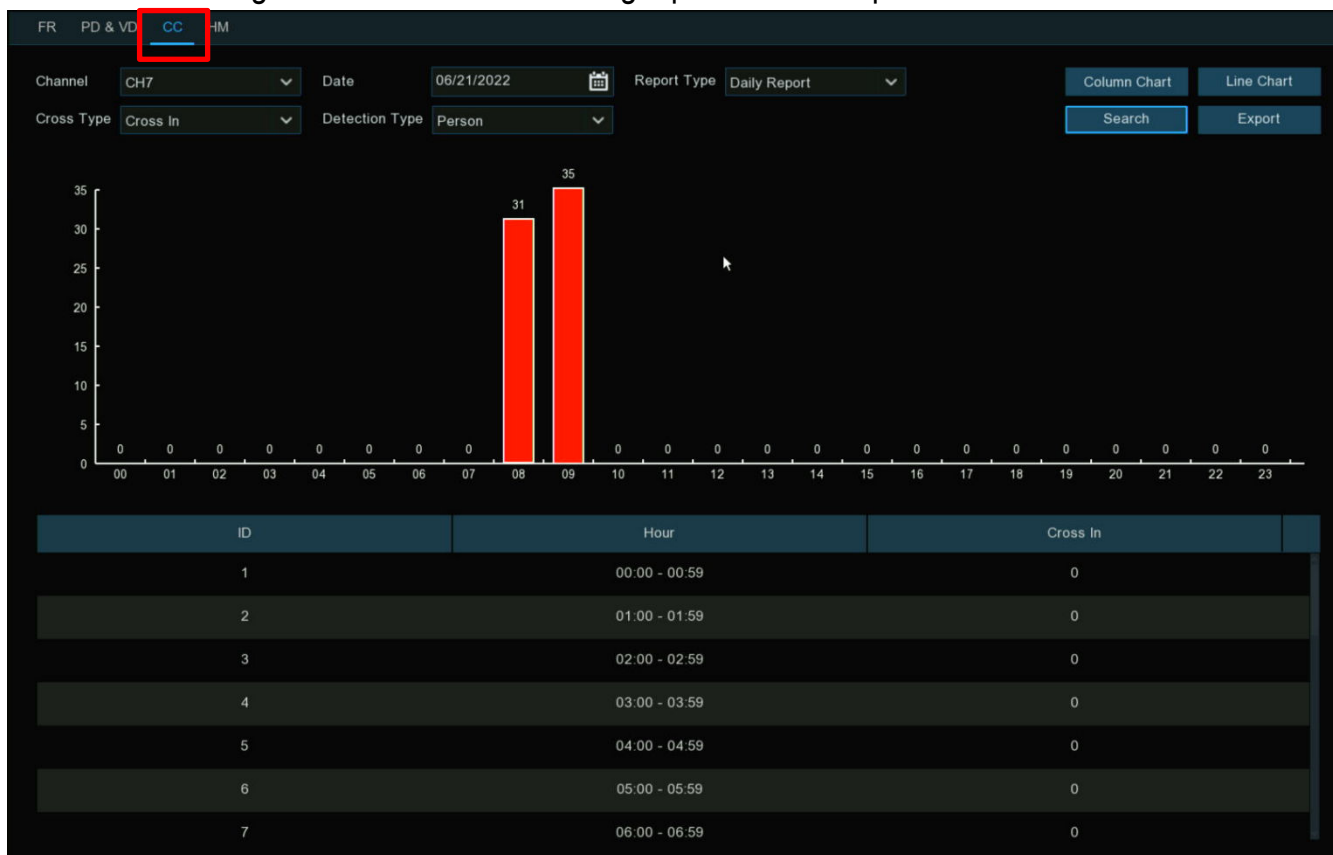


- **Intelligent:** Click to select the detection types from which the pedestrian & vehicle detection data is obtained. By default, all types are selected.
- **Channels:** Click to select the channels from which the pedestrian & vehicle detection data should be obtained. By default, all channels are selected.
- **Day/Week/Month/Quarter/Year:** Click the drop-down menu to select the duration blocks from which the pedestrian & vehicle detection data should be obtained.
- **Calendar:** Change the start date of the selected time period. Click the ◀ or ▶ icon to move to the previous or next period.
- **Export:** Export the pedestrian & vehicle detection data for the selected time period to a USB drive. The file will be saved as a CSV file. You can open the file in *Excel* (or similar spreadsheet application) to further analyze the data.

AI – STATISTICS (CONTINUED)

CC (CROSS COUNTING) STATISTICS

The NVR can retrieve and present statistical data on the number of times an object or person has crossed a line when the camera's *Cross Counting Detection* is enabled. A graph displays the number of crossings that were detected during a particular time period.

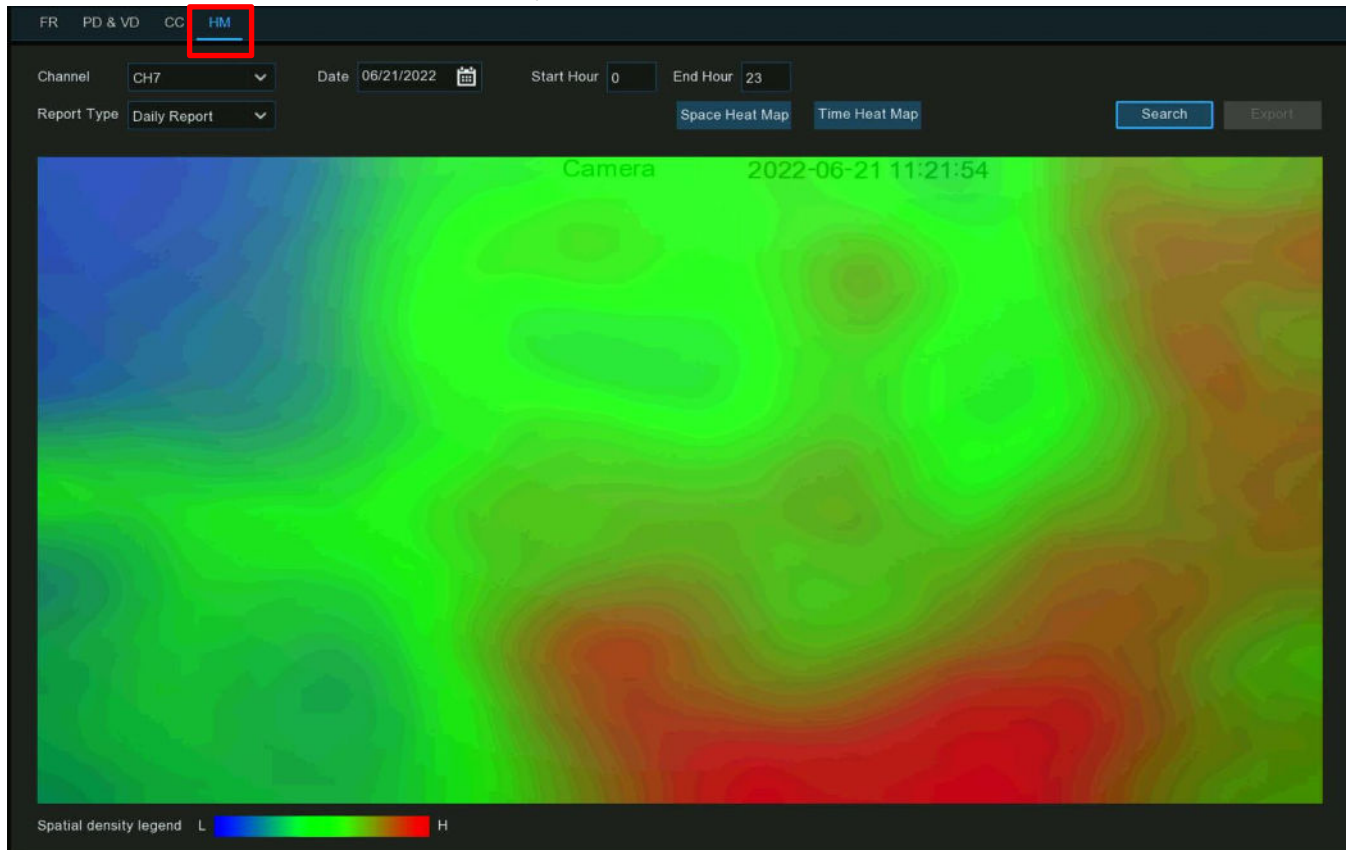


- **Channel:** Select the channel from which the detection data should be obtained.
- **Date:** Select the date for the search.
- **Report Type:** Select either *Daily* (default), *Weekly*, *Monthly*, or *Annual*.
- **Cross Type:** Select the direction of crossings to search, either *Cross In* or *Cross Out*.
- **Detection Type:** Select what kinds of detections you want to report, from *Motion* (i.e., any moving object), *Person*, *Motor Vehicle*, or *Non-Motor Vehicle*.
- **Column Chart:** Click to display the data as a bar graph (default, shown above).
- **Line Chart:** Click to display the data as a line graph.
- **Search:** Click to display the results of your search.
- **Export:** Export the cross counting detection data for the selected time period to a USB drive. The file will be saved as a CSV file. You can open the file in *Excel* (or similar spreadsheet application) to further analyze the data.

AI – STATISTICS (CONTINUED)

HM (HEAT MAP) STATISTICS

The NVR can retrieve and present statistical data on the detection of objects when the camera's *Heat Map Analytics* is enabled. The color map gives you a visual display showing the area and frequency of motion detected during a particular time period. Warm colors represent high frequency and cool colors represent low frequency.



- **Channel:** Select the channel from which the heat map data should be obtained.
- **Date:** Select the date for the search.
- **Start/End Hour:** Select the start and end hours for the search.
- **Report Type:** Select either *Daily* (default), *Weekly*, *Monthly*, or *Annual*.
- **Space Heat Map:** Select to display according to spatial density of motion (default).
- **Time Heat Map:** Select to display according to frequency of motion over time.
- **Search:** Click to display the results of your search.

NETWORK

Click on the *Network* menu in *System Setup* to configure all network parameters.

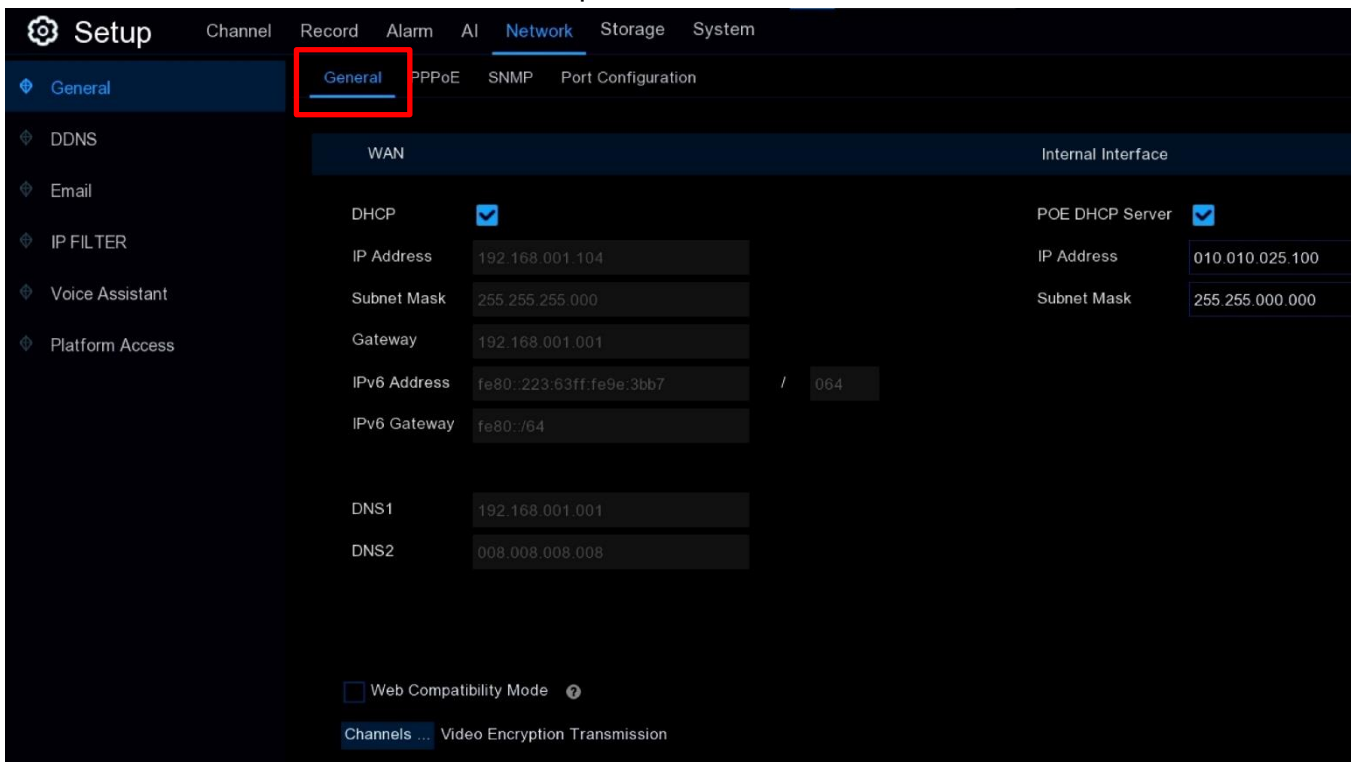


GENERAL SETTINGS

Click the *General* tab in the sidebar to configure basic network parameters including *PPoE*, *SNMP* and *Port Configuration*.

GENERAL

Click the *General* tab to set basic network parameters.



- **DHCP:** Check this box if your router supports DHCP (Dynamic Host Configuration Protocol) to allow the router to automatically assign all the network parameters for your NVR (especially recommended for initial installations).

NETWORK – GENERAL SETTINGS, GENERAL (CONTINUED)

If DHCP is not enabled, the following options can be changed (for advanced users).

- **IP Address:** The IP address identifies the NVR in the network. It consists of four groups of numbers between 0 to 255, separated by periods (for example, 192.168.001.100).
- **Subnet Mask:** This allows the flow of network traffic between hosts to be segregated based on network configuration. A typical address might be 255.255.255.0 or something similar.
- **Gateway:** This allows your NVR to connect to the internet and is typically the same IP address as your modem or router. The format of the *Gateway* address is the same as the *IP Address* (for example, 192.168.001.001).
- **DNS1/DNS2:** Enter the DNS settings for your internet service provider. DNS1 is the primary DNS server and DNS2 is a secondary DNS server. Usually, it should be enough just to enter the DNS1 server address.
- **IPv6 Address:** Enter the IPv6 IP address if your network service supports IPv6. This address consists of eight groups of characters between 0000 and FFFF, separated by periods (for example, ABCD:EF01:2345:6789:ABCD:EF01:2345:6789).
- **Web Compatibility Mode:** If you are unable to login to the NVR webpage with https protocol, enable the compatibility mode and try again. Otherwise, leave this disabled.
- **Channels...:** The default, *Video Encryption Transmission*, encrypts the audio and video streams in transit to the web or VMS for security.

An NVR with PoE ports will also show the following *Internal Interface*.

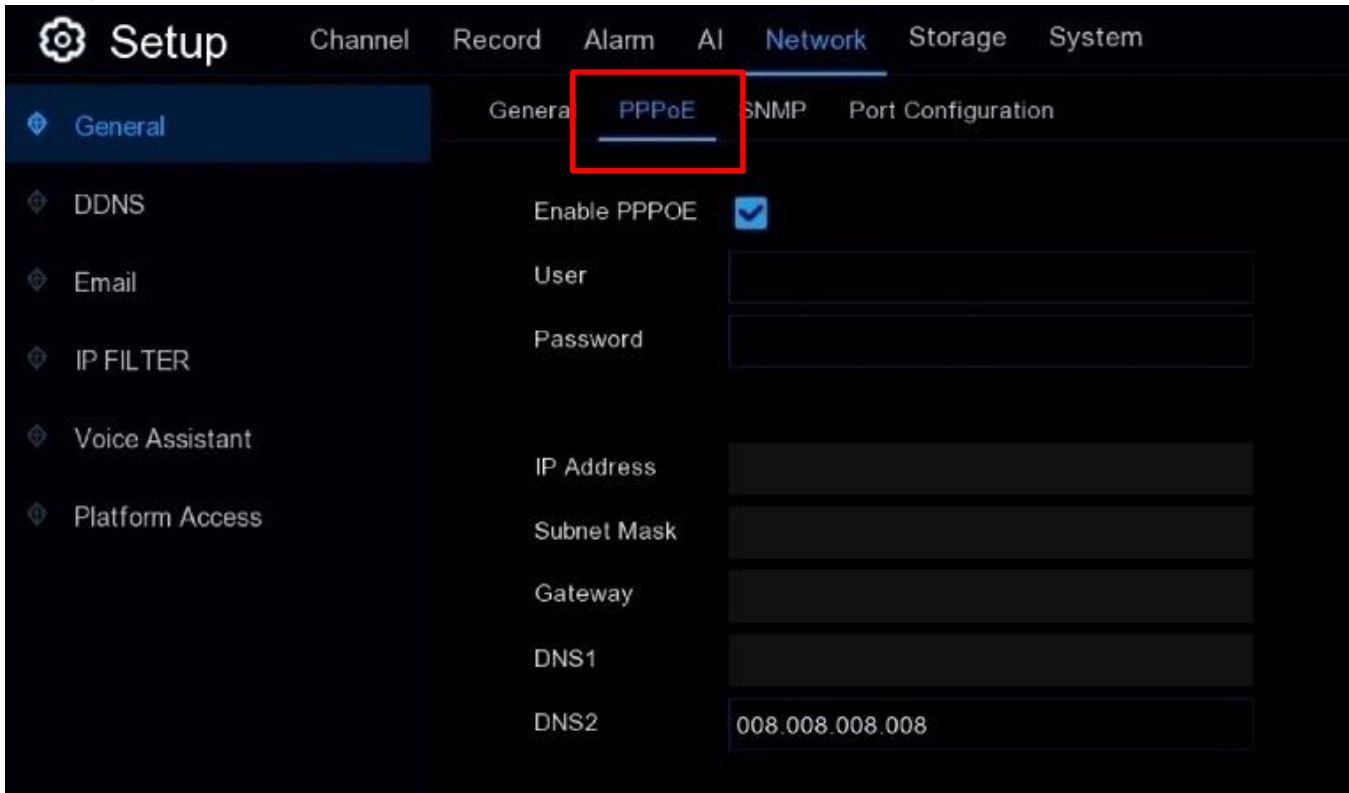
Internal Interface	
POE DHCP Server	<input checked="" type="checkbox"/>
IP Address	010.010.025.100
Subnet Mask	255.255.000.000

- **PoE DHCP Server:** Check this box to enable DHCP (Dynamic Host Configuration Protocol) to allow the NVR to automatically assign an IP address to each IP camera connected to the PoE ports.
- **IP Address:** This allows you to assign the *IP Address* for the internal PoE router. *However, this must be left on the default setting.*
- **Subnet Mask:** This allows you to assign the *Subnet Mask* for the internal PoE router. *However, this must be left on the default setting.*

NETWORK – GENERAL SETTINGS (CONTINUED)

PPPoE SETTINGS

Click the PPPoE tab to configure this protocol that allows the NVR to connect to the network more directly via a DSL modem.



The screenshot shows the 'Setup' menu with 'Network' selected. Under 'Network', the 'PPPoE' tab is highlighted with a red box. The 'PPPoE' configuration page includes a sidebar with 'General' selected and a main area with the following settings:

Setting	Value
Enable PPPOE	<input checked="" type="checkbox"/>
User	
Password	
IP Address	
Subnet Mask	
Gateway	
DNS1	
DNS2	008.008.008.008

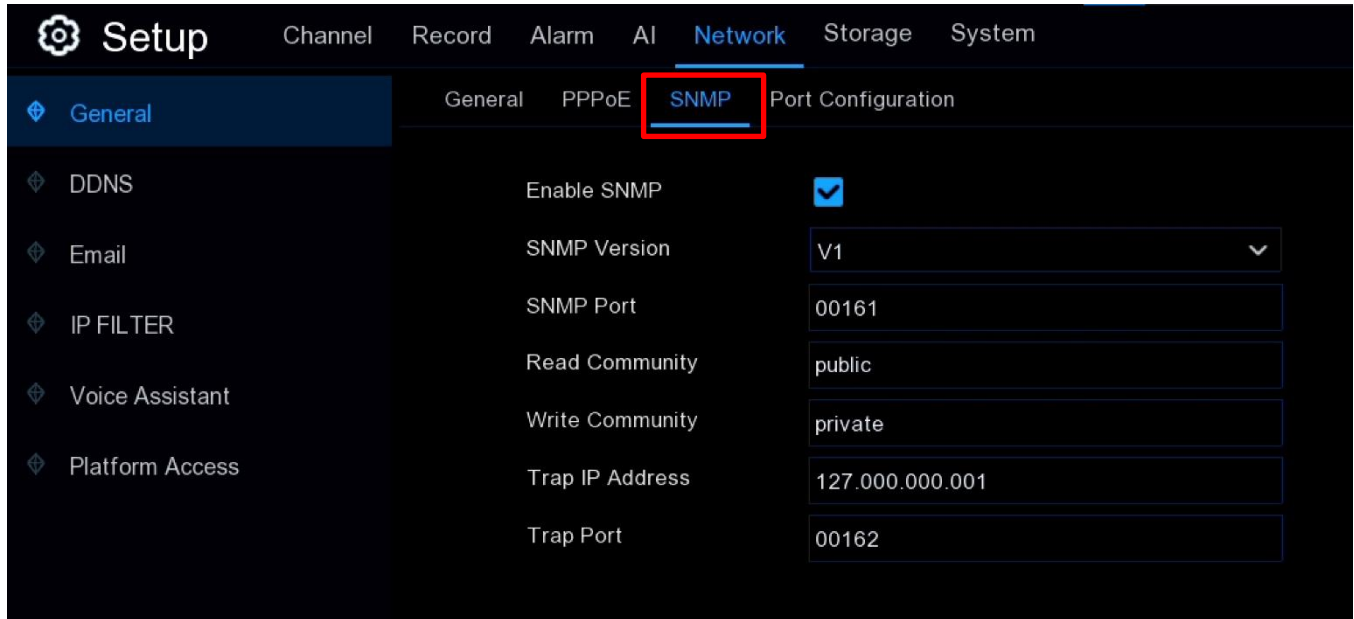
- **Enable PPPoE:** Check this box to enable.
- **User:** Enter the username provided by your ISP.
- **Password:** Enter the password provided by your ISP.
- **Apply:** Click to save settings. The system will reboot to activate PPPoE.

NETWORK – GENERAL SETTINGS (CONTINUED)

SNMP

SNMP (Simple Network Management Protocol) is an Internet Standard protocol for collecting and organizing information about managed devices on IP networks and for modifying that information to change device behavior.

With SNMP, you can connect the NVR to third-party network management platforms and get the NVR's information, such as firmware version, device type, resolution, frame rate, and more.



NETWORK – GENERAL SETTINGS (CONTINUED)

PORT CONFIGURATION

Click the Port Configuration tab.

Service	Protocol	Internal Port	External Port	UPNP Status	Mapping Strategy	UPNP
Http/Https/RTSP	TCP	00080	00080	Inactive	Auto	<input checked="" type="checkbox"/>
Client	TCP	09000	09000	Inactive	Auto	<input type="checkbox"/>

Service	Protocol	Internal Port	External Port	UPNP Status	Mapping Strategy	UPNP
Http/Https/RTSP	TCP	00080	13181	Inactive	Auto	<input checked="" type="checkbox"/>
Client	TCP	09000	57826	Inactive	Auto	<input type="checkbox"/>

- **Http/Https/RTSP:** This port is mainly used for a website or third-party streaming player to log into your NVR using RTSP (Real Time Streaming Protocol). If the default port (80) is already in use by other devices in the network, you may need to change this.
- **Client Port:** This is the internal port that your NVR uses to send information. The default port number (9000) is not used by many devices but if you have another NVR-like device, you may need to change this.
- **Internal Port:** This port is mainly used to access the NVR from the same LAN.

NETWORK – GENERAL SETTINGS, PORT CONFIGURATION (CONTINUED)

- **External Port:** This port is mainly used to access the NVR from a different LAN or the Internet. If you want to access your NVR from the Internet, you need to manually configure the connection, a task for advanced users. This task can also be accomplished much more simply using *UPNP* (see below).
- **UPNP:** Check the box in this column to enable this network protocol allowing network-connected devices to automatically obtain and forward the ports from the router.

External Port	UPNP Status	Mapping Strategy	UPNP
13181	Activate	Auto <input type="button" value="v"/>	<input checked="" type="checkbox"/>
57826	Activate	Auto <input type="button" value="v"/>	<input checked="" type="checkbox"/>

- **UPNP Status:** Click to activate UPNP for this port.
- **Mapping Strategy:** Click to determine how the ports will be mapped (only applies if UPNP is connected and activated).
 - **Auto:** Choose to allow the external port to be automatically obtained from your router.
 - **Manual:** Choose to configure the external port manually.
- **P2P Switch:** Check this box at the bottom of the page to enable.

External IP	<input type="text" value="172.16.3.90"/>
P2P Switch	<input checked="" type="checkbox"/>

NETWORK (CONTINUED)

DDNS

DDNS provides a static address to simplify remote connection to your NVR. To use the DDNS, you need to first create an account on the web page of a DDNS service provider. Click the *DDNS* tab in the sidebar to configure.

The screenshot shows the 'Setup' interface with the 'Network' tab selected. The 'DDNS' sub-tab is active and highlighted with a red box. The configuration options are as follows:

Option	Value
DDNS	<input checked="" type="checkbox"/>
Server	NO_IP
Hostname	
User	
Password	

A 'Test' button is located at the bottom right of the configuration area.

- **DDNS:** Check this box to enable.
- **Server:** Select the preferred DDNS server (DDNS_3322, DYNDNS, NO_IP, CHANGEIP, DNSEXIT) from the dropdown.
- **Hostname:** Enter the domain name you created at the DDNS service provider. This will be the address you will use when you want to connect remotely to the NVR from a computer (for example: nvr.no-ip.org).
- **User/Password:** Enter the username and password you obtained when creating an account at the DDNS service provider.
- **Test:** Click to test the DDNS settings. If the result returned is *Network is unreachable* or *DNS is incorrect*, check that your network is working properly and whether all DDNS information is entered correctly.

NETWORK (CONTINUED)

EMAIL SETTINGS

Email notifications are important for alerting you when an alarm is triggered, the hard drive is full, a hard drive error occurs, or video loss occurs and is also important when you need to reset your password. To configure the *Email* settings, go to the *Email* tab in the sidebar.

The screenshot shows the 'Setup' interface with the 'Network' tab selected. The 'Email Configuration' sub-tab is active. The 'Email' option in the left sidebar is highlighted with a red box. The configuration fields are as follows:

Setting	Value
Email	<input checked="" type="checkbox"/>
Encryption	Auto
SMTP Port	00587
SMTP Server	smtp.abcdef.com
User Name	xxxxxxx@seco-larm.com
Password	••••••••
Sender	NVRNotification
Receiver 1	xyz@seco-larm.com
Receiver 2	
Receiver 3	
Interval	3 Min

A 'Test' button is located at the bottom of the configuration area.

NETWORK – EMAIL SETTINGS (CONTINUED)

EMAIL CONFIGURATION

For basic configuration, click the *Email Configuration* tab.

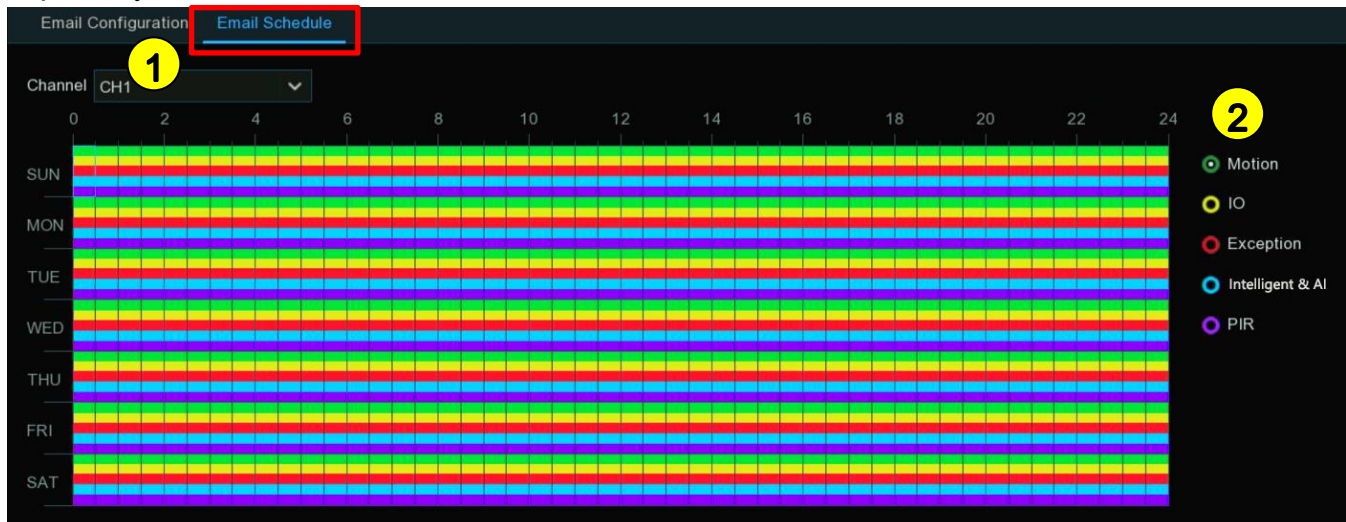
The screenshot shows the 'Setup' menu with 'Network' selected. Under 'Network', 'Email Configuration' is the active sub-tab. The 'Email' configuration section is expanded, showing a list of settings on the left and their values on the right. The 'Email' checkbox is checked. The 'Encryption' dropdown is set to 'Auto'. The 'SMTP Port' is '00025'. The 'SMTP Server', 'User Name', 'Password', 'Sender', 'Receiver 1', 'Receiver 2', and 'Receiver 3' fields are empty. The 'Interval' dropdown is set to '3 Min'. A 'Test' button is located at the bottom right of the configuration area.

- **Email:** Check the box to enable.
- **Encryption:** Click the dropdown if your email server requires SSL or TLS verification. If you are unsure, set to *Auto*.
- **SMTP Port:** Enter the SMTP port of your email server.
- **SMTP Server:** Enter the SMTP server address of your email.
- **User Name:** Enter your email address.
- **Password:** Enter your email's password.
- **Receiver 1~3:** Enter the email addresses to send email alerts to.
- **Interval:** Enter the length of time that must elapse after your NVR sends an email alert before it will send another.
- **Test:** Click to instruct the system to send an automated email message to your inbox to test the email configuration. If you receive the test email, the configuration parameters are correct.

NETWORK – EMAIL SETTINGS (CONTINUED)

EMAIL SCHEDULE

If you enable email alerts, the alerts will be sent immediately 24 hours a day by default. However, you can schedule when your NVR can send alerts, if desired, and each camera can be scheduled separately.

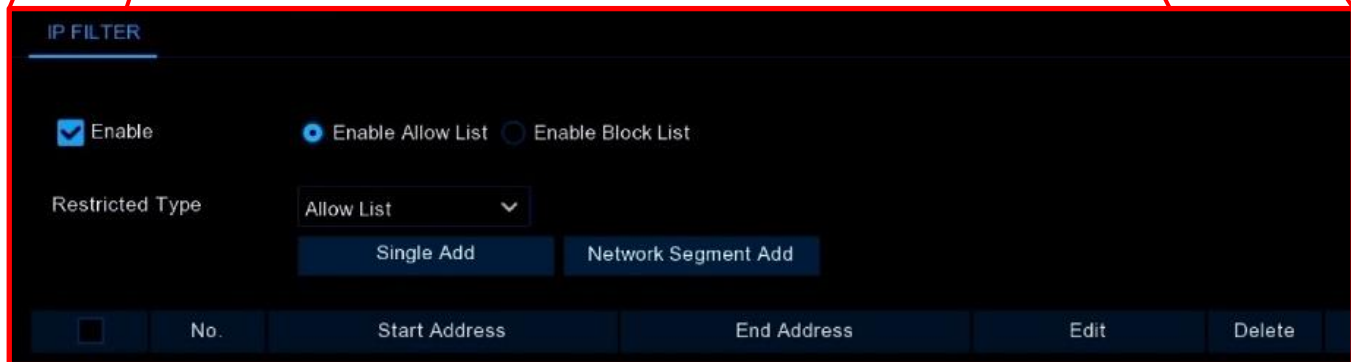
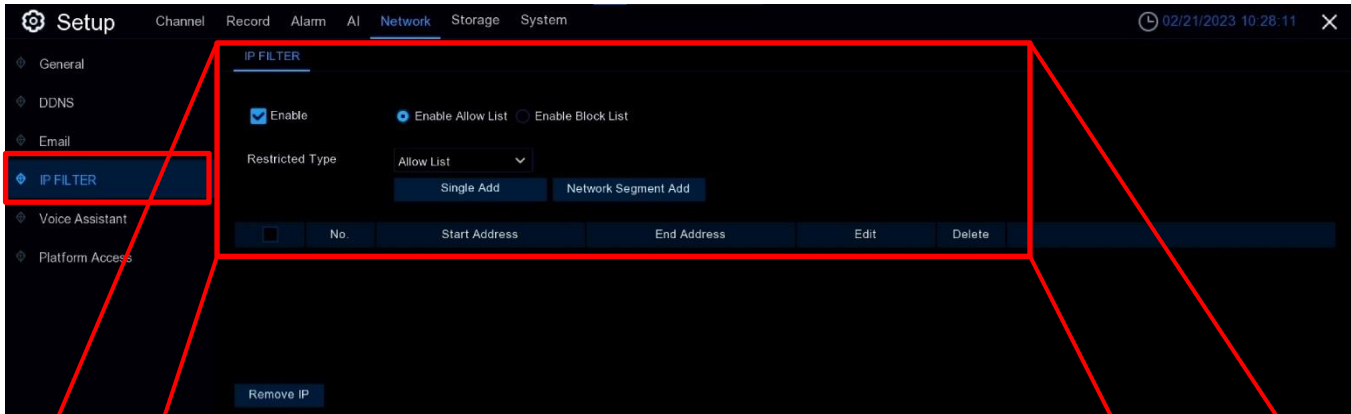


- 1 Select a *Channel* to configure.
- 2 Click your choice of one of the *Alarm Type* radio buttons.
 - Motion:** The NVR will send email alerts for motion detection events.
 - IO:** The NVR will send email alerts for I/O triggered events.
 - Exception:** The NVR will send email alerts for exception events which include no space left on the hard drive, a hard drive error, or if one of the channels has lost its camera feed.
 - Intelligent & AI:** The NVR will send email alerts for Intelligent or AI detection events.
 - PIR:** The NVR will send email alerts for PIR events.
3. Click the color corresponding to the selected *Alarm Types* and drag the cursor to mark the desired time slots for this selection.
4. Repeat steps 2 and 3 to set a schedule for other *Alarm Types* if desired.
5. The set schedule is valid only for the selected channel. If you want to use the same schedule for other channels, use the *Copy* function.
6. Click *Apply* to save your settings.

NETWORK (CONTINUED)

IP FILTER

IP Filtering is a great way to limit access to your network devices for specific groups of IP addresses. For example, if you have a malicious user attacking your network, you could add a filter to prevent access to your devices from a single IP address or a block of IP addresses related to that user. To configure the *IP Filter* settings, go to the *IP Filter* tab in the sidebar.



- **Enable:** Check the box to enable IP filtering.
- **Enable Allow List:** Click the box to enable the filtering of a range of IP addresses that you define as ones that you want to be allowed to access your NVR.
 - **Restricted Type:** Choose *Allow List* from the dropdown.
 - **Single Add:** Click to enter a single IP address.
 - **Network Segment Add:** Click to add a block of IP addresses by entering the starting and ending addresses in the range.
 - **Save:** Click to save settings so that only IP addresses from the *Allow List* can now access your NVR.

NETWORK – IP FILTER (CONTINUED)

IP FILTER

Enable Enable Allow List Enable Block List

Restricted Type: Allow List

Single Add Network Segment Add

No.	Start Address	End Address	Edit	Delete
-----	---------------	-------------	------	--------

- **Enable Block List:** Click the box to enable the filtering of a range of IP addresses that you define as ones that are forbidden from accessing your NVR in order to prevent unauthorized or malicious IP addresses from logging in.
 - **Restricted Type:** Choose *Block List* from the dropdown.
 - **Single IP Address:** Click to enter a single IP address.
 - **IP Address Range:** Click to add a block of IP addresses by entering the starting and ending addresses in the range.
 - **Save:** Click to save settings so IP addresses from the *Block List* can no longer access the NVR.

NETWORK *(CONTINUED)*

VOICE ASSISTANT



VOICE ASSISTANT WITH AMAZON FIRE TV STICK



NETWORK – VOICE ASSISTANT (CONTINUED)

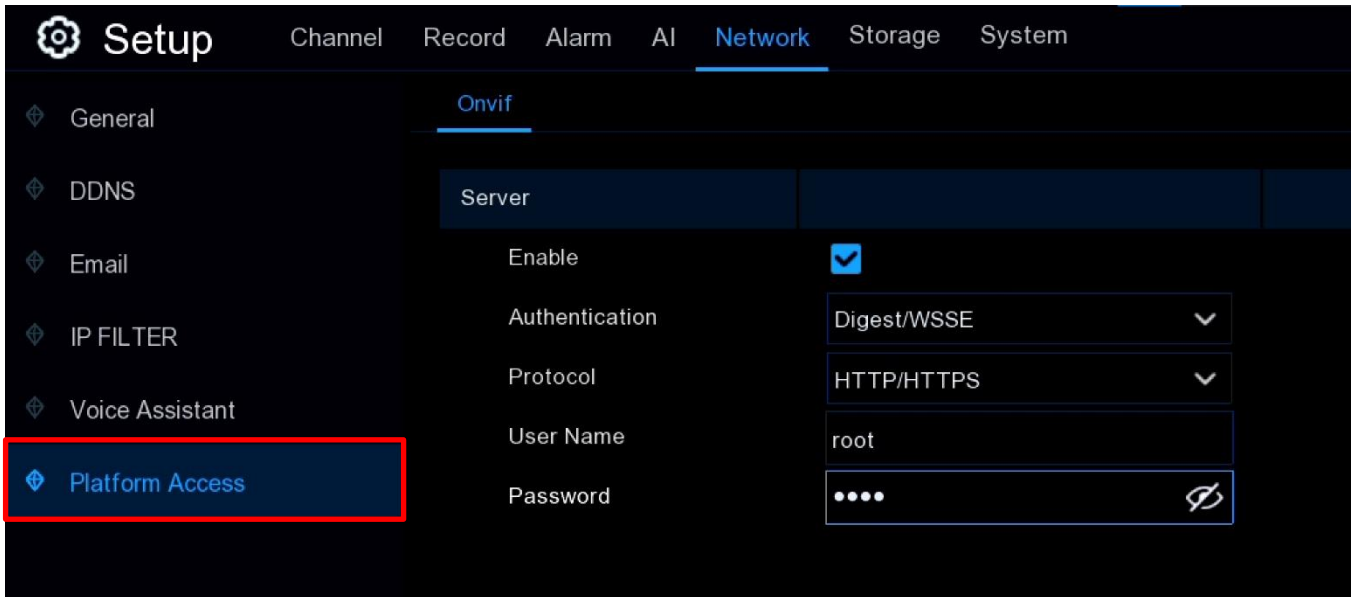
VOICE ASSISTANT WITH GOOGLE CHROMECAST



NETWORK (CONTINUED)

PLATFORM ACCESS

This function is mainly used to connect third-party platforms, such as ECMS/NVMS via ONVIF protocols.

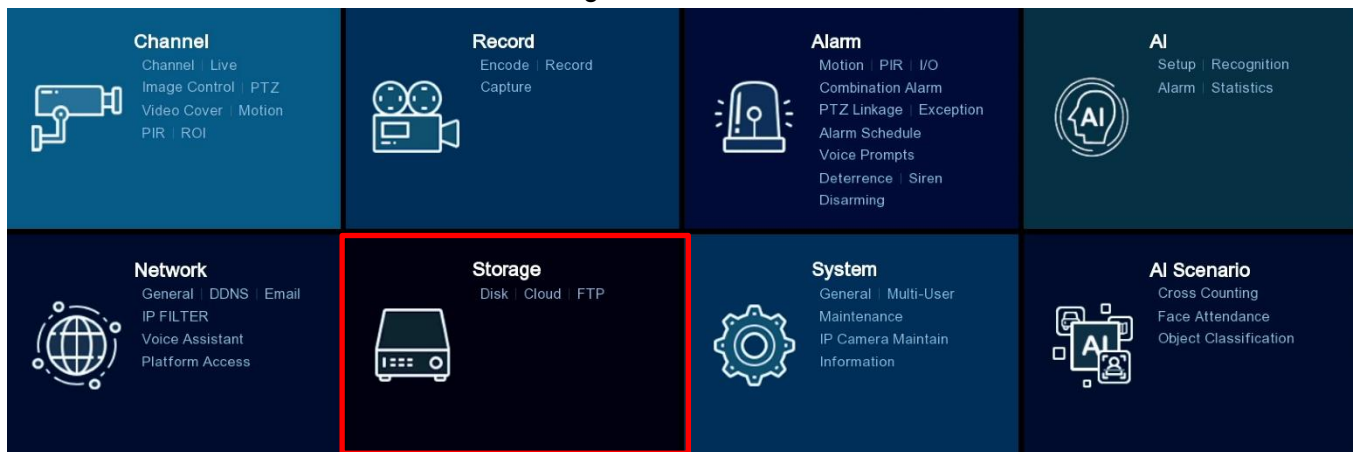


- **Enable:** Check the box to enable.
- **Authentication:** Click the dropdown to set the login authentication type. Options include *Digest_sha256*, *Digest*, *Digest/WSSE*, *WSSE*, and *None*. Choose the one that matches your third-party platform.
- **Protocol:** Click the dropdown to choose *HTTP*, *HTTPS*, or *HTTP/HTTPS*.
- **User Name:** Set a username for the platform connection.
- **Password:** Set a password for the platform connection.

NOTE: Only images from *Channel 1* will be displayed on the third-party platform.

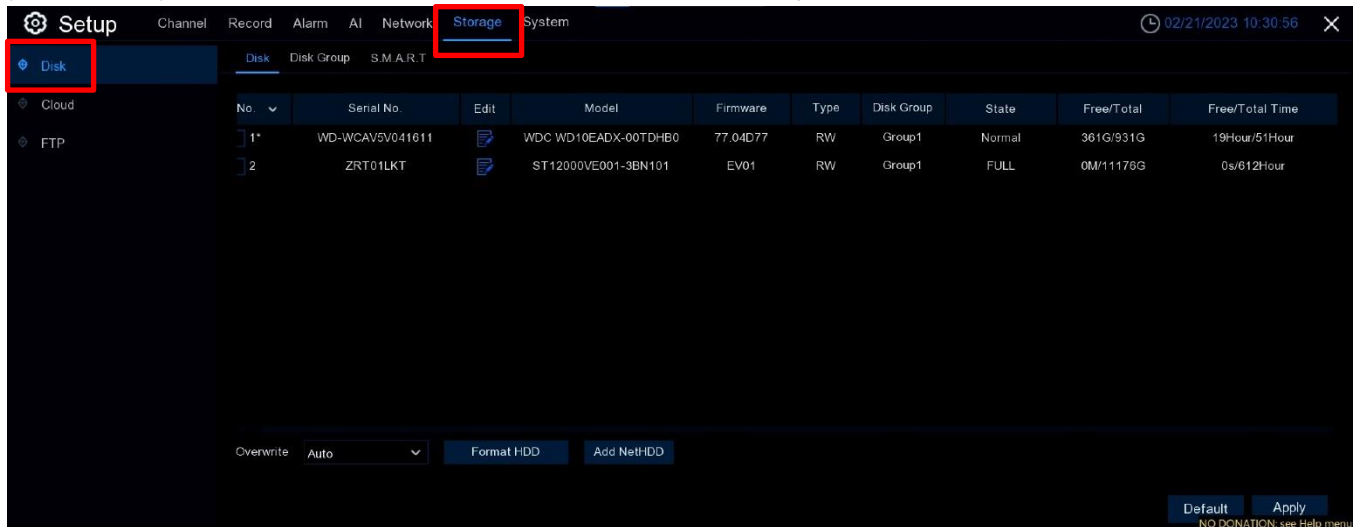
STORAGE

Click on the *Storage* menu in *System Setup* to configure all storage devices, including the internal hard drives, external NAS, and cloud storage.



DISK

Click the *Disk* tab in the sidebar to format your NVR's hard drive and configure other connected drives. Installed drives will be listed here for selection. (Note that, if you install a new hard drive in your NVR, you must format the drive before it can be used).



- **Format HDD:** Check the box by one of the hard drives on the list and click the *Format HDD* button at the bottom of the screen to format it. Three options will appear.
 - **Format the entire hard disk:** Select to erase all data. Anything previously recorded, including events, log files and analytic information will be erased.
 - **Only format the record partition:** All recorded data, such as videos, snapshots and log files will be erased. All analytic information will be retained.
 - **Only format the general partition:** All AI related data, i.e., analytic information will be erased. Videos, snapshots, and log files will be retained.

STORAGE – DISK (CONTINUED)


- **Overwrite:** Click to configure what the NVR should do when the hard drive becomes full.
 - **Auto:** The default setting instructs the NVR to overwrite the oldest files as the hard drive becomes full. This is recommended as it ensures that your NVR will not stop recording data due to lack of storage space.
 - **Custom:** Choose to select the number of days that recordings should be kept before being overwritten. For example, if you choose 7 days, only the last 7 days' recordings are retained.
 - **OFF:** Choose to prevent all overwriting. However, if this setting is chosen, you must regularly check your disk status to prevent a disk-full state which would result in all recording being stopped.
- **Add NetHDD:** Click this button to add an NAS.

The screenshot shows a configuration window titled "Add NetHDD" with a close button in the top right corner. The window contains the following fields and controls:

- Mounting type:** A dropdown menu currently set to "NFS".
- Server IP:** A text input field containing "000.000.000.000".
- Directory Name:** An empty text input field.
- Disk size:** A dropdown menu set to "Default" and a unit selector set to "GB".
- Buttons:** "Test" and "Add NetHDD" buttons are located at the bottom of the window.

- **Mounting Type:** Click to choose the mounting type between either *NFS* or *SMB/CIFS*. If you choose *SMB/CIFS*, you will also need to enter the NAS account name and password.
- **Server IP:** Enter the NAS IP address.
- **Directory Name:** Enter the directory where you want to save your data.
- **Disk Size:** Click to set the NAS capacity.
- **Test:** Click to test the NAS connection.
- **Add NetHDD:** Click to add the NAS as configured.

STORAGE – DISK (CONTINUED)

If your NVR supports multiple hard drives and more than 1 hard drive is installed in your NVR, the edit icon  will also appear onscreen. Click this icon to edit the drive as shown below right.

- **Disk Type:** Click to set how the disk should be used.
 - **Read Write:** Choose *Allow List* from the dropdown.
 - **Read Only:** Click to enter a single IP address.
 - **Redundant:** Click to add a block of IP addresses by entering the starting and ending addresses in the range.

HDD ID:	Disk 1
Disk Type	Read Write Disk
Disk Group	Record Disk Group 1

NOTES:


- Redundant disks can only support the saving of *Mainstream* recordings.
 - If the *Disk Type* is changed, the hard drives may temporarily be unmounted and offline. Please wait until the drives can be remounted.
- **Disk Group:** Click to assign the drives into different groups for recording (see *Disk Group* beginning on pg. 215 for more information).

STORAGE – DISK (CONTINUED)

DISK GROUP

If your NVR supports multiple hard drives and more than 1 hard drive is installed in your NVR, you will see this menu to allow you to assign different cameras to record in different groups. This reduces the loading on a single hard drive and extend its life.

The screenshot shows the 'Disk Group' configuration page. At the top, there are three tabs: 'Disk', 'Disk Group' (which is selected and underlined), and 'S.M.A.R.T.'. Below the tabs, there are two dropdown menus. The first is labeled 'Disk Group Type' and has 'Record Disk Group' selected. The second is labeled 'Disk Group' and has 'Record Disk Group 1' selected. Below these are two buttons: 'Select All' and 'Invert Selection'. At the bottom, there is a row of 16 checkboxes labeled 'IP Camera' followed by numbers 1 through 16. The first checkbox is checked, and all 16 checkboxes are highlighted in blue.

1. From the *Disk List* (see previous section), click the edit icon  for the drive you want to configure and select its *Disk Type* and *Disk Group*.
2. Return to the *Disk Group* page (above) and choose a *Disk Group Type*. If all hard drives have been set as *Read Write*, the only choice here will be *Record Disk Group*. If one or more drives have been set as *Redundant*, the *Redundant Disk Group* will also be an available choice.
3. Choose the *Disk Group*.
4. Select the *Record Channel*. This indicates which cameras will be recorded and saved to the hard drives in the selected group (maximum of 16 cameras per group).
5. Click *Apply* to save your settings.

STORAGE – DISK (CONTINUED)**S.M.A.R.T.**

This function is used to display technical information for the hard drive installed in your NVR and perform tests to evaluate and detect potential drive errors.

ID	Attribute Name	Status	Flags	Value	Worst	Threshold	Raw Value
0x1	Raw Read Error Rate	OK	2f	200	200	51	255
0x3	Spin Up Time	OK	27	229	196	21	4525

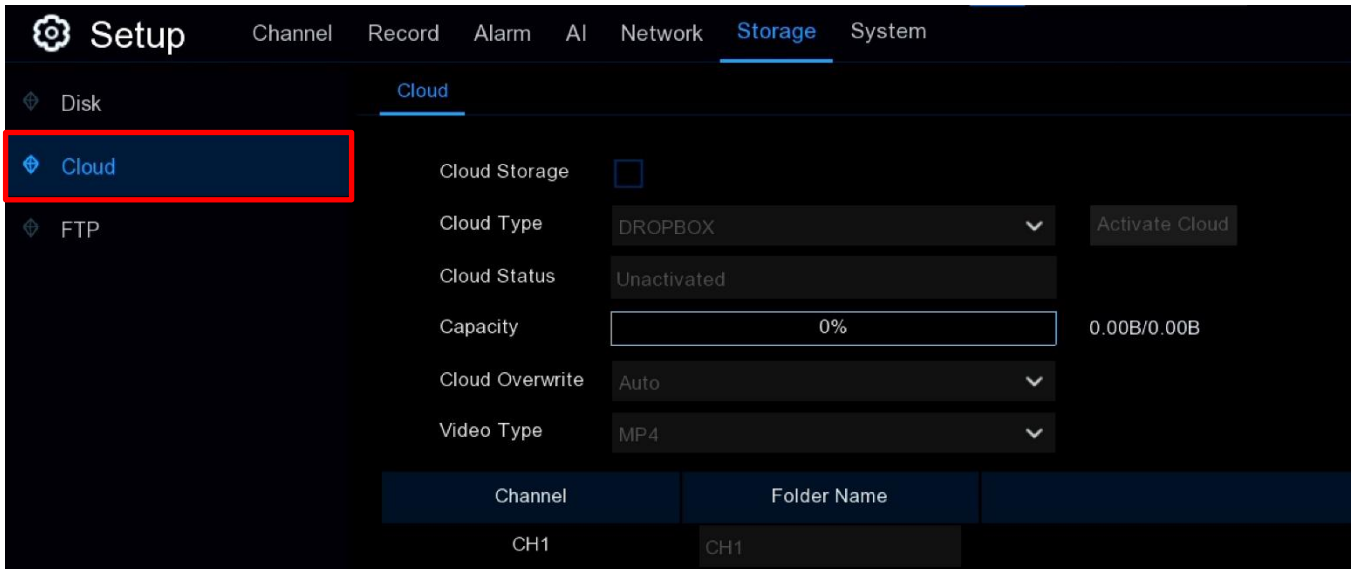
- **HDD ID:** Click the dropdown to choose a drive to test if there is more than one drive.
- **Self Check Type:** Click the dropdown to choose the type of test from among the three listed below.
 - **Short:** Choose to verify major hard drive components such as read/write heads, electronics, and internal memory.
 - **Long:** Choose to verify all the above and perform a surface scan to reveal problematic areas (if any) and force bad sector relocation.
 - **Conveyance:** Choose this very quick test to verify that the mechanical parts of the hard drive are working properly.

While performing a test, your NVR will continue to work as normal. If an error is found, the drive can continue to be used, but with some risk of loss of recording data. It is recommended that the drive be replaced as soon as practical.

STORAGE (CONTINUED)

CLOUD STORAGE

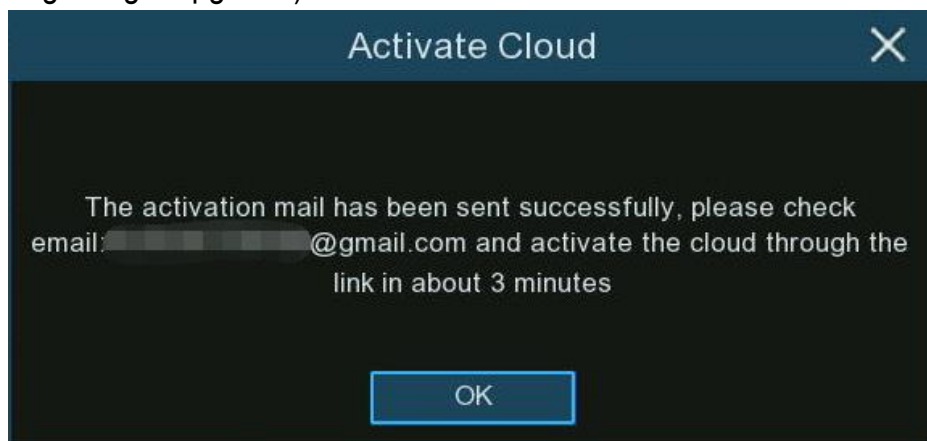
The NVR can copy snapshots and video recordings to Dropbox™ or Google Drive™, services that allows you to store and share snapshots and video recordings for ready access as needed.



- **Cloud Storage:** Check this box to enable *Cloud Storage*.
- **Cloud Type:** Click to choose *Dropbox* or *Google Drive*.

NOTE: The following instructions assume that you already have a *Dropbox* or *Google Drive* account. If not, you should first set up the account you wish to use and proceed as instructed below.

- **Activate Cloud:** Click this button to activate the chosen service. You should see this popup and receive an email at the address you used on the Email setup page (see *Email Settings* beginning on pg. 204).



- **Cloud Status:** This box indicates whether the service has been activated or not.

STORAGE – CLOUD STORAGE (CONTINUED)

- **Capacity:** After the service has been activated, this box will display the amount of free space available.
- **Cloud Overwrite:** Click this dropdown to configure what the NVR should do when the hard drive becomes full.
 - **Auto:** The default setting instructs the NVR to overwrite the oldest files as the hard drive becomes full. This is recommended as it ensures that your NVR will not stop recording data due to lack of storage space.
 - **Custom:** Choose to select the number of days recordings should be kept before being overwritten. For example, if you choose the option of 7 days, only the last 7 days' recordings are kept on the drive.
 - **OFF:** Choose this option to prevent all overwriting. However, if this setting is chosen, you must regularly check your disk status to prevent a disk-full state resulting in stopping of all recording.
- **Video Type:** Click to choose the video format you want to use for uploads.
- **Channel:** Click to choose a channel for this configuration.
- **Folder Name:** Click to create a folder for this channel to save its uploaded files.

DROPBOX SETTINGS

Before activation as described in the previous section, you should first set up your *Dropbox* account.

When you have an account set up and after you click the *Activate Cloud* button as described in the previous section you will receive an email to the email address you set in the *Email Setup* (see *Email Settings* beginning on pg. 204 for more detail).

Follow the instructions in this email and on the *Dropbox* setup page to complete the activation.

GOOGLE DRIVE SETTINGS

Before activation as described in the previous section, you should first set up your *Google Drive* account.

When you have an account set up and after you click the *Activate Cloud* button as described in the previous section you will receive an email to the email address you set in the *Email Setup* (see *Email Settings* beginning on pg. 204 for more detail).

Follow the instructions in this email and on the *Google Drive* setup page to complete the activation.

STORAGE (CONTINUED)

FTP SETTINGS

To configure the FTP settings for uploading captured snapshots or videos to your FTP server settings go to the *FTP* tab in the sidebar.

The screenshot shows the 'Setup' interface with the 'Storage' tab selected. The 'FTP' sub-tab is active and highlighted in the sidebar. The configuration options are as follows:

Setting	Value
FTP Enable	<input checked="" type="checkbox"/>
Server IP	<input type="text"/>
Port	00021
User Name	<input type="text"/>
Password	<input type="text"/>
Picture Quality	Higher
Video Stream Type	Substream
Max Package Interval	30 Min
Directory Name	<input type="text"/>

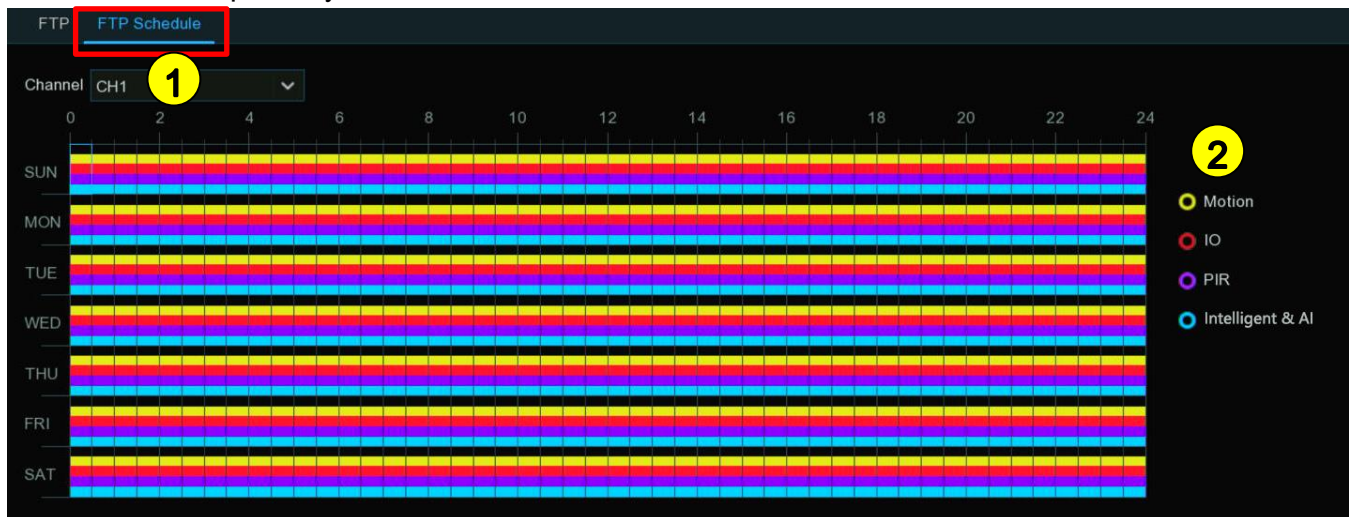
Buttons: Test FTP, Motion, PIR Alarm Settings, I/O

- **FTP Enable:** Click the box to enable.
- **Server IP:** Enter IP address or domain name of your FTP server.
- **Port:** Enter the FTP port for file exchanges.
- **User Name / Password:** Enter the username and password of FTP server.
- **Picture Quality:** Choose the image quality of snapshots that to upload.
- **Video Stream Type:** Choose either *Mainstream* or *Substream* for the video to upload.
- **Max. Package Interval:** Set the maximum duration of each video to upload.
- **Directory Name:** Enter the name of the directory on your FTP server where you want to save uploaded pictures and videos.
- **Test:** Click to instruct the system to send an automated file to your FTP server to test the FTP configuration. If you receive the message, "Write to file succeeded!", the configuration parameters are correct.

STORAGE – FTP SETTINGS (CONTINUED)

FTP SCHEDULE

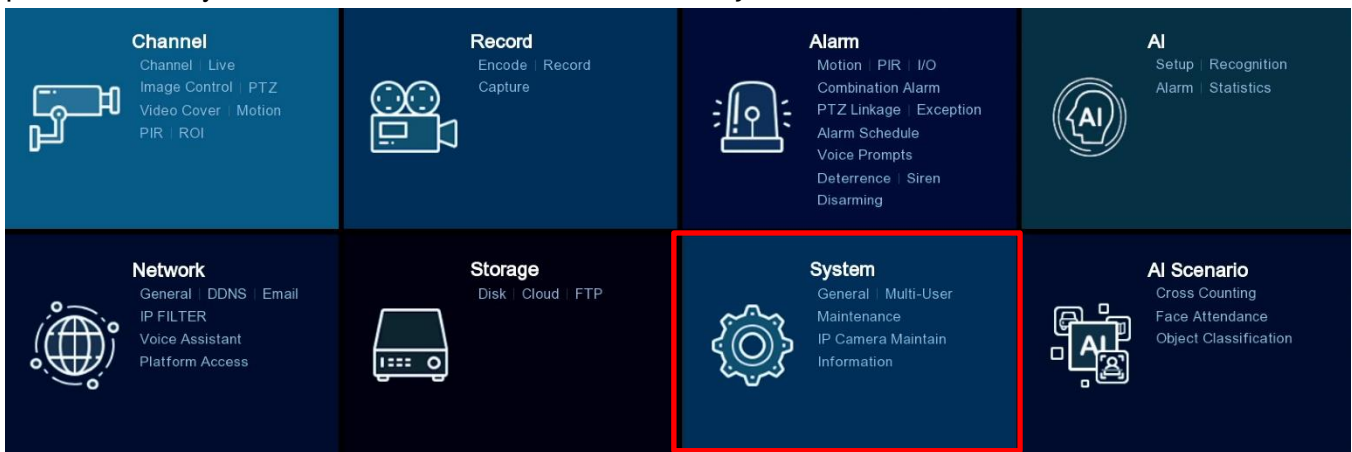
If you enable FTP upload, alarm images or videos will be uploaded immediately 24 hours a day by default. However, you can schedule when your NVR can upload, if desired, and each camera can be scheduled separately.



- 1 Select a *Channel* to configure.
- 2 Click your choice of one of the *Alarm Type* radio buttons.
 - Motion:** The NVR will upload for motion detection events.
 - IO:** The NVR will upload for I/O triggered events.
 - PIR:** The NVR will upload for PIR events.
 - Intelligent & AI:** The NVR will upload for Intelligent or AI detection events.
3. Click the color corresponding to the selected *Alarm Types* and drag the cursor to mark the desired time slots for this selection.
4. Repeat steps 2 and 3 to set a schedule for other *Alarm Types* if desired.
5. The set schedule is valid only for the selected channel. If you want to use the same schedule for other channels, use the *Copy* function.
6. Click *Apply* to save your settings.

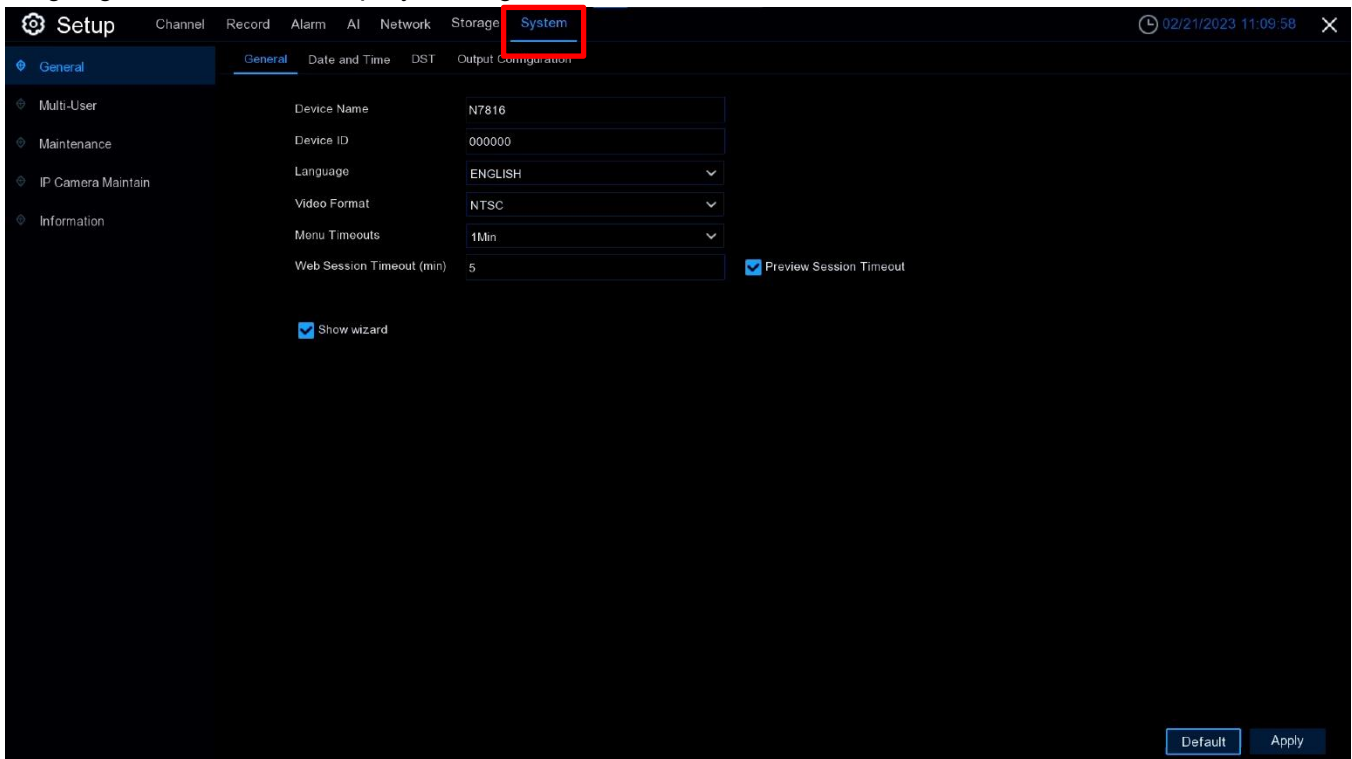
SYSTEM CONFIGURATION

Change general system information such as date, time and region, edit passwords and permissions, system maintenance, and more on the *System* tab.



GENERAL SETTINGS

From there, click on the *General* tab in the sidebar to configure general system information such as language, date & time, display settings, and more.



SYSTEM CONFIGURATION – GENERAL SETTINGS (CONTINUED)

GENERAL

General	Date and Time	DST	Output Configuration
Device Name	DRN-116Q		
Device ID	000000		
Language	ENGLISH		
Video Format	NTSC		
Menu Timeouts	OFF		
Web Session Timeout (min)	1440		<input checked="" type="checkbox"/> Preview Session Timeout
<input checked="" type="checkbox"/> Show wizard			

- **Device Name:** Click to rename your NVR (if desired). The name can include both letters and digits.
- **Device ID:** Click to enter the desired ID for your NVR. The device ID is used to identify the NVR and can only be composed of digits. This can be useful if, for example, two NVRs are installed in the same place. If you need to operate the NVRs with a remote control, both NVRs might receive the signal and respond. However, if the Device ID is 000000 for one and 111111 for the other, you could enter the Device ID 000000 in the remote control's login page so that it would only control that NVR and repeat with a different remote for the second.
- **Language:** Click to select a language for the system menus. Currently, available languages are English, Spanish, and French.
- **Video Format:** Click to select the correct video standard for your region.
- **Menu Timeouts:** Click to select how long the idle period can be before the NVR will return to the main menu. You can disable this by selecting *OFF*. However, if *OFF* is selected, password protection will be disabled until you manually exit the setup.
- **Web Session Timeouts:** Click to enter how long the idle period can be (in minutes, from 5 to 1,440 minutes) before the NVR will exit web access when idle in the setting page.
- **Preview Session Timeout (min):** Check this box to if you also want this to apply to the *Live View* web access page when idle.
- **Show Wizard:** Check to display the *Startup Wizard* each time you turn on or reboot your NVR.

SYSTEM CONFIGURATION – GENERAL SETTINGS (CONTINUED)

DATE AND TIME

Click the *Date and Time* tab to set general date and time related settings.

General **Date and Time** DST Output Configuration

Static NTP

Date 02/21/2023

Time 11:11:41

Date Format MM/DD/YYYY

Time Format 24Hour

Time Zone GMT-08:00

Server Address pool.ntp.org

Update Now

Choose one of two radio buttons for *Static* or *NTP* followed by the other selections.

- **Static:** Select to manually set and regularly update the date time. If chosen, you should be sure to check the time on a regular basis to ensure that the date and time remains accurate.
- **NTP:** Select to instruct the NVR to automatically adjust the date and time by connecting to an *Internet Time Server* to update the time daily.
- **Date:** Click the calendar icon to change the date.
- **Time:** Click to change the time.
- **Date Format:** Click to select your chosen date format.
- **Time Format:** Click to select your chosen time format.
- **Time Zone:** Click to select the correct time zone for your area.
- **Server Address:** Click to choose a time server to use for setting the correct time. (The default server, pool.ntp.org, is recommended.)
- **Update Now:** Click to force the NVR to poll the time server and update the date and time now.

SYSTEM CONFIGURATION – GENERAL SETTINGS (CONTINUED)

DST (DAYLIGHT SAVING TIME)

General	Date and Time	DST	Output Configuration
Enable DST	<input checked="" type="checkbox"/>		
Time Offset	1Hour	▼	
DST Mode	Week	▼	
Start Time	Mar.	▼	The 2nd
			Sun.
			02:00:00
End Time	Nov.	▼	The 1st
			Sun.
			02:00:00

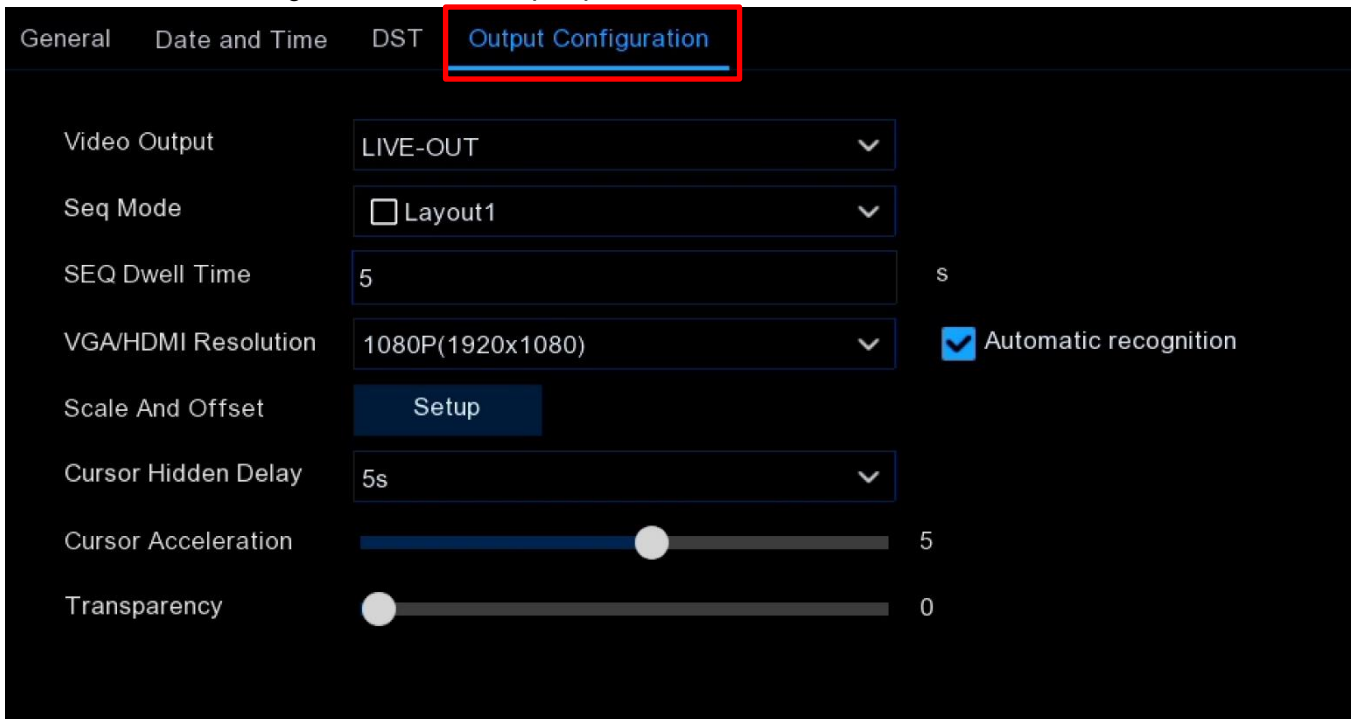
- **Enable DST:** Check to allow your NVR to automatically adjust for *Daylight Saving Time*.
- **Time Offset:** Click to adjust the amount of offset time (normally 1 hour).
- **DST Mode:** Click to set the mode, either by the week or day. In *Week* mode, you set DST based on what week it starts (default, recommended) which usually remains the same year to year. In *Day* mode, you must set the actual beginning and ending dates each year.
- **Start Time / End Time:** Click to set the starting and ending time for DST in your area.

NOTE: Even if you have enabled *NTP*, you should still enable *DST* (see the previous section, *NTP (Network Time Protocol)*) since this instructs the NVR whether you wish to follow the DST standard.

SYSTEM CONFIGURATION – GENERAL SETTINGS (CONTINUED)

OUTPUT CONFIGURATION

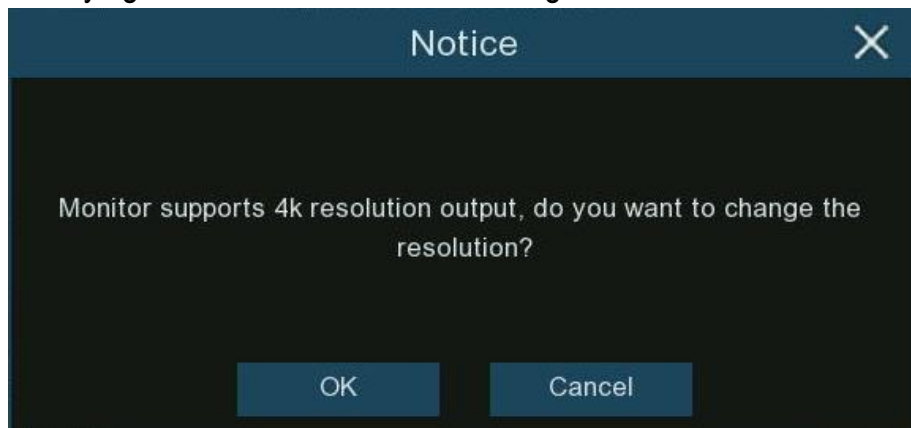
Click this tab to configure the video output parameters.



The screenshot shows the 'Output Configuration' settings page. The 'Output Configuration' tab is highlighted with a red box. The settings are as follows:

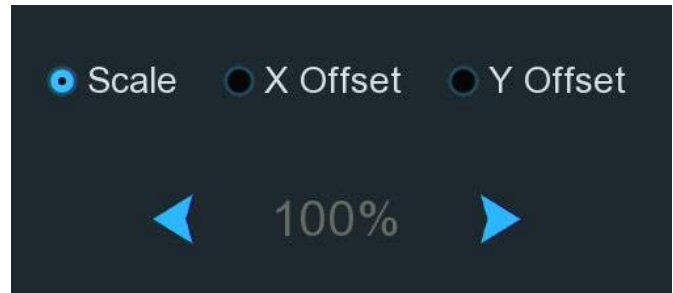
- Video Output: LIVE-OUT
- Seq Mode: Layout1
- SEQ Dwell Time: 5 s
- VGA/HDMI Resolution: 1080P(1920x1080) Automatic recognition
- Scale And Offset: Setup
- Cursor Hidden Delay: 5s
- Cursor Acceleration: 5
- Transparency: 0

- **Video Output:** This should remain at the default *LIVE-OUT* setting.
- **SEQ Mode:** Click to select how many video channels to display at once when the NVR is in sequence mode.
- **SEQ Dwell Time:** Click to enter (in seconds, max. 300) the maximum duration to display video channels in sequence mode before displaying the next in the sequence.
- **VGA/HDMI Resolution:** Click to set the VGA/HDMI output resolution.
- **Auto Recognition:** Check this box to automatically set the resolution to whatever is compatible with the connected monitor when the DVR boots. Each time the system starts, it will suggest modifying the resolution if it detects a higher resolution available.



SYSTEM CONFIGURATION – GENERAL SETTINGS, OUTPUT CONFIGURATION (CONTINUED)

- **Scale and Offset - Setup:** Click to configure the display window. From the popup window, choose the setting to adjust and click or long-click the ◀ or ▶ icons below, or use the mouse scroll wheel to make the adjustments.
 - **Scale:** Click this radio button to adjust the size of the display.
 - **X Offset:** Click this radio button to move the display left or right.
 - **Y Offset:** Click this radio button to move the display up or down.
- **Cursor Hidden Delay:** Click to select the length of inactivity before the cursor is hidden.
- **Cursor Acceleration:** Click to adjust the cursor speed.
- **Transparency:** Move the slider to adjust the display window transparency.



SYSTEM CONFIGURATION (CONTINUED)

MULTI-USER

Click this tab in the sidebar to configure the usernames, passwords, and user permissions.

No.	User Name	Level	User Enable	User Edit	Permission
1	admin	ADMIN	Enable		
2	user1	USER1	Enable		
3	user2	USER2	Enable		
4	user3	USER3	Enable		
5	user4	USER4	Enable		
6	user5	USER5	Disable		


Default User:










The system supports the two account types, the *admin* and the *user*.

- **Admin:** The system administrator has full control of the system and can change the passwords of both administrator and users and enable/disable password protection.
- **User:** Normal users only have access to live viewing, search, playback, and other functions. You may set up multiple user accounts with varying levels of access to the system.
- **Default User:** Click to select the default user for logging in to the system when the system starts. By default, this is the *admin* but if multiple user accounts have been created, click the drop-down menu to turn this *OFF*.

SYSTEM CONFIGURATION – MULTI-USER (CONTINUED)

EDIT USERS

To set a user's password, enable/disable the user, or set limitations on remote access by clicking on the *Edit* icon  in the *User Edit* column by the user.

Multi-User					
No.	User Name	Level	User Enable	User Edit	Permission
1	admin	ADMIN	Enable		
2	user1	USER1	Disable		
3	user2	USER2	Disable		
4	user3	USER3	Disable		
5	user4	USER4	Disable		

If you are editing the admin account, you will see the following screen.

User Edit ✕


Level ADMIN

User Name

Password Strength

Password

Confirm


Unlock Pattern Enable Enable  Draw

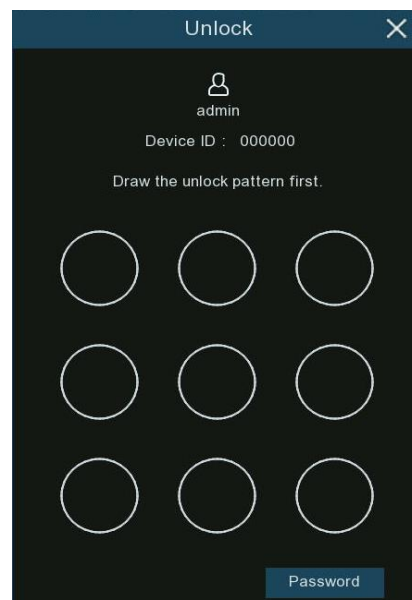
Limitation of Remote Access 3

Default
Save
Cancel

- **Password Strength:** As you enter or change the password, its relative strength will be shown here as you type.
- **Password/Confirm:** Enter 8~16 characters into the *Password* box, using at least two of the following types of characters—uppercase, lowercase, digits, and symbols—and enter the password again into the *Confirm* box.

SYSTEM CONFIGURATION – MULTI-USER, *EDIT USERS (CONTINUED)*

- **Unlock Pattern Enable:** Click enable/disable for this user. If you enable, click the *Draw* icon  to draw a pattern in the popup (see right) that you can use in place of a password to log in the next time.
- **Limitation of Remote Access:** Click to set a limit on the maximum number of remote accesses allowable from this account at the same time. Remote access includes but is not limited to web, CMS/VMS, the *SL Vision* mobile app, and third-party platforms.
- **Save:** Click to save the new password and settings. If you have changed the password, you will need to enter your old password to authenticate this change.




If you are editing a normal *user* account, you will see the following screen.










- **User Enable:** Click to enable/disable this user.
- **User Name:** Enter a username for this user.
- **Password Strength:** As you type in or change the password, its relative strength will be shown here as you type.

SYSTEM CONFIGURATION – MULTI-USER, *EDIT USERS (CONTINUED)*

- **Password/Confirm:** Enter 8~16 characters into the *Password* box, using at least two of the following types of characters—uppercase, lowercase, digits, and symbols—and enter the password again into the *Confirm* box.
- **Limitation of Remote Access:** Click to set a limit on the maximum number of remote accesses allowable from this account at the same time. Remote access includes but is not limited to web, CMS/VMS, the *SL Vision* mobile app, and third-party platforms.
- **Default:** Click to make the *Limitation of Remote Access* setting the default for all users.
- **Save:** Click to save the new password and settings.

EDIT USER PERMISSIONS

Only the administrator has full control of all system functions and can enable or disable individual user access to certain menus and functions. To do so, click the  icon in the *Permission* column by the user.

Multi-User					
No.	User Name	Level	User Enable	User Edit	Permission
1	admin	ADMIN	Enable		
2	user1	USER1	Disable		
3	user2	USER2	Disable		
4	user3	USER3	Disable		
5	user4	USER4	Disable		

SYSTEM CONFIGURATION – MULTI-USER, *EDIT USER PERMISSIONS (CONTINUED)*

In the popup make needed adjustments.

The screenshot shows a 'User Permission' configuration window for a user named 'user1'. The window has a dark blue header with a close button (X) in the top right corner. The 'User Name' field is highlighted with a red box and contains the text 'user1'. Below this, there are several rows of checkboxes, each with a small blue checkmark icon to its left. The first row contains: Log Search, Parameter, Auto Reboot, and Manual Record. The second row contains: Disk, Remote Login, SEQ Control, and Manual Capture. The third row contains: Audio, Database Management, License Plate Management, and Subuser Password Change. Below these are four sections, each starting with a blue checkmark icon and a section title: 'Backup', 'Live', 'Playback', and 'PTZ'. Each section has a row of checkboxes labeled 'IP Camera' followed by 16 numbered buttons (1 through 16). At the bottom of the window, there are four buttons: 'All', 'Clear', 'Save', and 'Cancel'.

- **User Name:** Note the *User Name* that you are now configuring.

Check the box of any system menus, capabilities, and cameras that this user should be able to access and uncheck any that they should *not* have access to.

- **All:** Click to easily check all boxes.
- **Clear:** Click to easily uncheck all boxes.
- **Save:** Click to save the permissions for this user.

SYSTEM CONFIGURATION (CONTINUED)

MAINTENANCE

From the *Maintenance* tab in the sidebar, you can search and view the system log, load default settings, upgrade the system, export and import system parameters, manage system auto reboot, and more.

The screenshot shows the 'Setup' interface with the 'System' tab selected. The sidebar on the left has the 'Maintenance' option highlighted with a red box. The main content area shows a 'Log' section with search filters for Start Date, End Date, Start Time, and End Time. Below the filters is a table of system logs.

Channel	Type	TIME	CON.	Access Source	RECORD	Playback
	Account	07/03/2022 09:04:30	admin Login	Local		
	System	07/03/2022 09:04:33	System Startup	Local		
	Storage	07/03/2022 09:04:35	WD-WCAV93VZ0RHX Disk Error	Local		
	Account	07/03/2022 09:04:46	admin Unlock	Local		
	Account	07/03/2022 09:04:47	admin Unlock	Local		
	Account	07/03/2022 09:04:49	admin Unlock	Local		
	Account	07/03/2022 09:04:52	admin Unlock	Local		
	Configuration	07/03/2022 09:04:54	Display Settings	Local		
	Configuration	07/03/2022 09:04:56	Video Settings	Local		
	Configuration	07/03/2022 09:04:57	Channel Add	Local		
	Configuration	07/03/2022 09:04:57	Channel Add	Local		
	Configuration	07/03/2022 09:04:57	Channel Add	Local		
	Configuration	07/03/2022 09:04:57	Channel Add	Local		
	Configuration	07/03/2022 09:04:57	Channel Add	Local		
	Configuration	07/03/2022 09:04:57	Channel Add	Local		

SYSTEM CONFIGURATION – MAINTENANCE (CONTINUED)

SYSTEM LOG

Click this tab to see a log of all actions and events that your NVR performs and detects. These log files can be searched, viewed, and copied to a USB drive for safekeeping.

Channel	Type	TIME	CON.	Access Source	RECORD	Playback
	Configuration	07/03/2022 09:04:57	Channel Add	Local		
	Configuration	07/03/2022 09:04:57	Channel Add	Local		
	Configuration	07/03/2022 09:04:57	Display Settings	Local		
CH1	Alarm	07/03/2022 09:04:59	Motion Start		No	
CH6	Alarm	07/03/2022 09:05:02	Motion Start		No	
CH2	Alarm	07/03/2022 09:05:03	Motion Start		No	
CH4	Alarm	07/03/2022 09:05:04	PIR Start		No	
CH10	Alarm	07/03/2022 09:05:07	Motion Start		No	
CH7	Alarm	07/03/2022 09:05:16	Motion Start		Yes	
CH8	Alarm	07/03/2022 09:05:17	Motion Start		Yes	
	Configuration	07/03/2022 09:05:18	Video Settings	Local		
CH8	Alarm	07/03/2022 09:06:08	Motion End		Yes	
CH10	Alarm	07/03/2022 09:06:47	Motion End		Yes	
CH10	Alarm	07/03/2022 09:06:52	Motion Start		Yes	
CH2	Alarm	07/03/2022 09:07:19	Motion End		Yes	

- **Start Date / End Date:** Click to select the date parameters for your search.
- **Start Time / End Time:** Click to select the time parameters for your search.
- **Log Type:** Click to narrow the search to a specific action that you want to view, otherwise leave at *All*.
- **Search:** Click to display a list of log files matching your search criteria. Double click on a file to display the log information.
- **Playback:** Click the play icon in this column to play the video segment of the event.
- **|< < 1 / x > >|:** Click the arrow icons at the bottom right to continue viewing other pages if the list is more than one page.
- **Backup:** Insert a USB drive into the NVR USB port and click to copy the log files that match your chosen search criteria.

SYSTEM CONFIGURATION – MAINTENANCE (CONTINUED)

LOAD DEFAULT

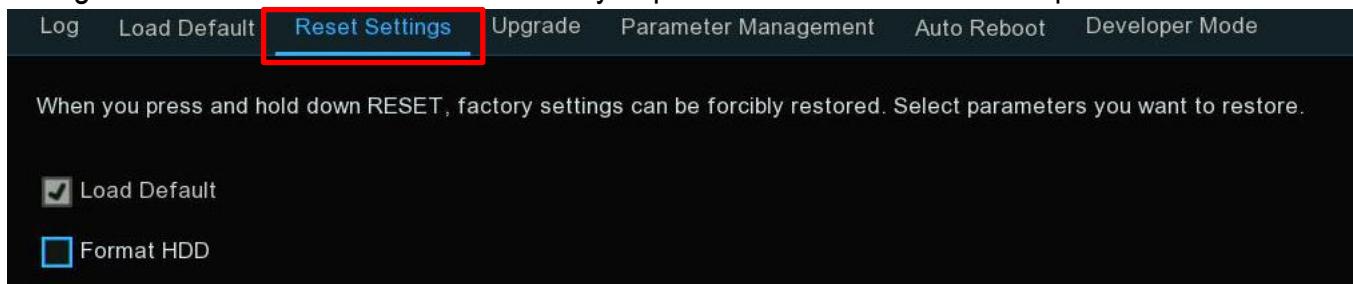
Click this tab to reset the NVR to its factory default settings. You can choose to reset all settings or just the settings on specific menus. This will not delete any recordings or snapshots from the hard drive.



- **Select All:** Check this box to easily select all checkboxes below.
OR, check any individual boxes to select only those menus.
- **Apply:** Click to load the factory settings for the items selected.

RESET SETTINGS

If your NVR has a reset button on the rear panel, you will also see this menu allowing you to change the action of the reset button when you press and hold it with a small pin for 10 seconds.



- **Load Default:** Check this box if you want the reset button to restore the NVR to factory default settings (default).
- **Format HDD:** Check this box if you want the reset button to format the internal hard drive.

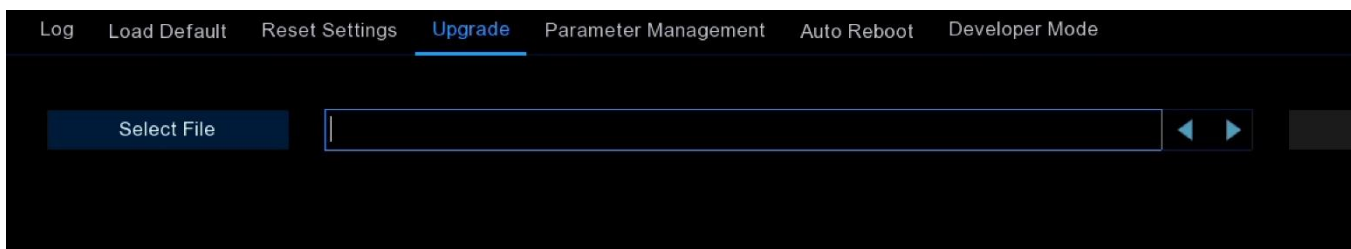
SYSTEM CONFIGURATION – MAINTENANCE (CONTINUED)

SYSTEM UPGRADE

From this menu you can update the firmware with an update file from a USB drive.



UPGRADE BY USB DRIVE

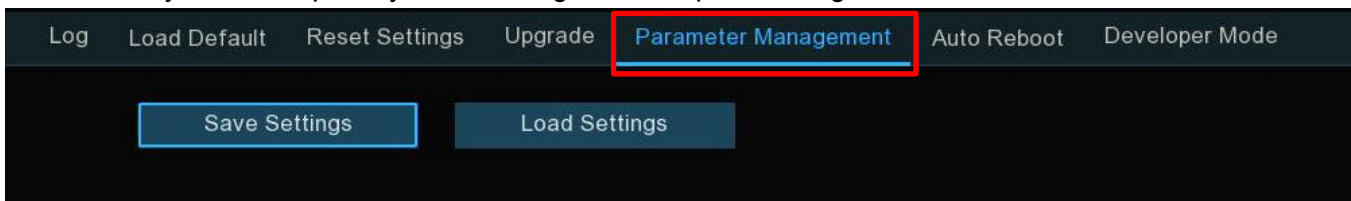


1. If you have a firmware update file, save it to a USB drive, plug the drive into the NVR's USB port.
2. On the *Upgrade* menu, click *Select File*, choose the firmware file from the USB drive, and click *OK*.
3. Click the *Upgrade* button. The firmware update process will start, and the NVR will reboot after the update is finished.

NOTE: The update may take 5~10 minutes. **Do not** power off the NVR or remove the USB from NVR during firmware upgrade.

PARAMETER MANAGEMENT

From here, you can export system settings to or import settings from a USB drive.



- **Save Settings:** Click to export a configuration file containing your custom settings.
- **Load Settings:** Click to import a configuration file containing your custom settings.

SYSTEM CONFIGURATION – MAINTENANCE (CONTINUED)

AUTO REBOOT

To preserve the integrity of the system, it is recommended that you regularly reboot the NVR. From this menu, you can enable the NVR to do so automatically and configure a schedule.

The screenshot shows the 'Auto Reboot' configuration page. The top navigation bar includes 'Log', 'Load Default', 'Reset Settings', 'Upgrade', 'Parameter Management', 'Auto Reboot' (highlighted with a red box), and 'Developer Mode'. The main content area has a dark background. At the top, 'Auto Reboot' is checked with a blue checkmark. Below this, there are three rows of configuration options: 'Time' set to 'Every Week', a day dropdown set to 'Sun.', and a time field set to '00:00'.

- **Auto Reboot:** Check this box to automate the rebooting.
- **Time:** Click the different dropdowns to set a daily, weekly, or monthly schedule.

DEVELOPER MODE

This mode is used by an authorized service profession for debugging and only used when requested by your authorized technician.

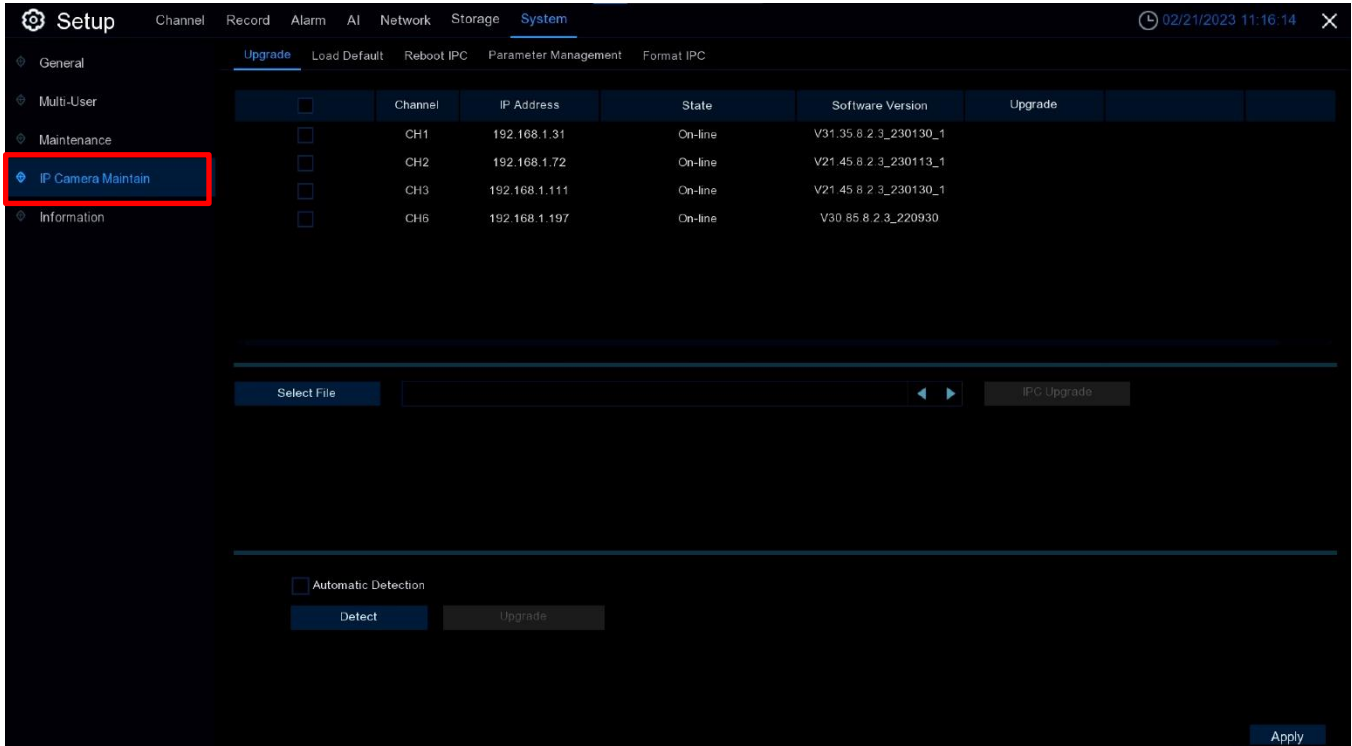
The screenshot shows the 'Developer Mode' configuration page. The top navigation bar includes 'Log', 'Load Default', 'Reset Settings', 'Upgrade', 'Parameter Management', 'Auto Reboot', and 'Developer Mode' (highlighted with a red box). The main content area has a dark background. At the top, 'Telnet' is unchecked. Below this, there is a 'Debug Log' dropdown menu set to 'Output to Terminal'. At the bottom, there are two buttons: 'Export Debug Log' and 'Delete Debug Log'.

- **Telnet:** Check to allow an authorized technician to connect to your NVR remotely. This should normally be **left unchecked** and only be checked when requested by an authorized technician.
- **Debug Log:** This dropdown is used by authorized professionals as they are determining the system's operating status.
 - **Disabled:** The debug log won't be saved.
 - **Output to Terminal:** The debug log will be output to the terminal port.
 - **Output to Disk:** The debug log will be saved to the NVR hard drive.
- **Export Debug Log:** Click to export the debug log from the hard drive to a USB drive.
- **Delete Debug Log:** Click to delete the debug log from the NVR hard drive.

SYSTEM CONFIGURATION (CONTINUED)

IP CAMERA MAINTENANCE

From the *System* menu, click the *IP Camera Maintain* menu in the sidebar to upgrade an IP camera's firmware or restore its default settings.



SYSTEM CONFIGURATION – IP CAMERA MAINTENANCE (CONTINUED)

UPGRADE IP CAMERA

<input type="checkbox"/>	Channel	IP Address	State	Software Version	Upgrade
<input type="checkbox"/>	CH1	192.168.1.31	On-line	V31.35.8.2.3_230130_1	
<input type="checkbox"/>	CH2	192.168.1.72	On-line	V21.45.8.2.3_230113_1	
<input type="checkbox"/>	CH3	192.168.1.111	On-line	V21.45.8.2.3_230130_1	
<input type="checkbox"/>	CH6	192.168.1.197	On-line	V30.85.8.2.3_220930	

Select File IPC Upgrade

Automatic Detection

Detect Upgrade

Click the check box next to the camera you want to upgrade.

- **Select File:** Insert the USB drive with the firmware upgrade file, click this dropdown to select the firmware upgrade file from the USB drive, and click *OK*.
- **IPC Upgrade:** Click to start the upgrade. You will be required to enter the admin password to authenticate. Please **do not** power off the NVR or IP camera and **do not** remove the USB drive until the upgrade is complete.
- **Automatic Detection:** For IP cameras which support online upgrades, you may check this box to enable the NVR to automatically check the server for firmware upgrades at regular intervals.
- **Detect:** Click to check immediately whether new firmware is available. If available, follow the onscreen instructions to install.

SYSTEM CONFIGURATION – IP CAMERA MAINTENANCE (CONTINUED)

LOAD IP CAMERA DEFAULT SETTINGS

Upgrade **Load Default** Reboot IPC Parameter Management Format IPC

<input type="checkbox"/>	Channel	IP Address	State	Software Version
<input checked="" type="checkbox"/>	CH1	192.168.1.31	On-line	V31.35.8.2.3_230130_1
<input checked="" type="checkbox"/>	CH2	192.168.1.72	On-line	V21.45.8.2.3_230113_1
<input type="checkbox"/>	CH3	192.168.1.111	On-line	V21.45.8.2.3_230130_1
<input type="checkbox"/>	CH4	192.168.1.30	On-line	v3.1.0.989_22051911_v1.0.0.30
<input type="checkbox"/>	CH5	192.168.1.32	On-line	V1.0.0.1
<input type="checkbox"/>	CH6	192.168.1.197	On-line	V30.85.8.2.3_220930

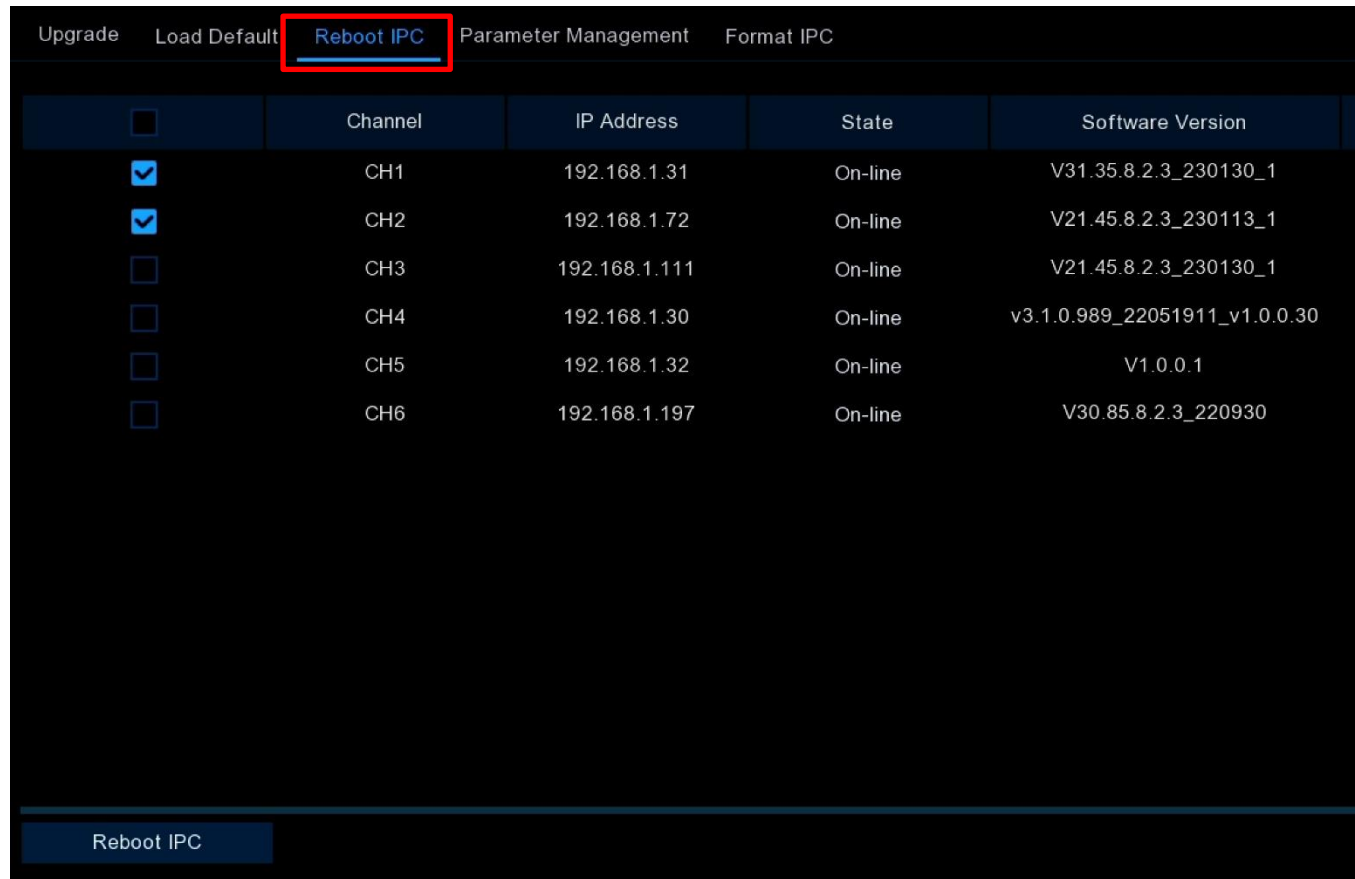
Load Default

Click the check box next to the camera you want to restore to default settings.

- **Load Default:** Click to restore settings. You will be required to enter the admin password to authenticate.

SYSTEM CONFIGURATION – IP CAMERA MAINTENANCE (CONTINUED)

REBOOT IP CAMERA



Upgrade Load Default **Reboot IPC** Parameter Management Format IPC

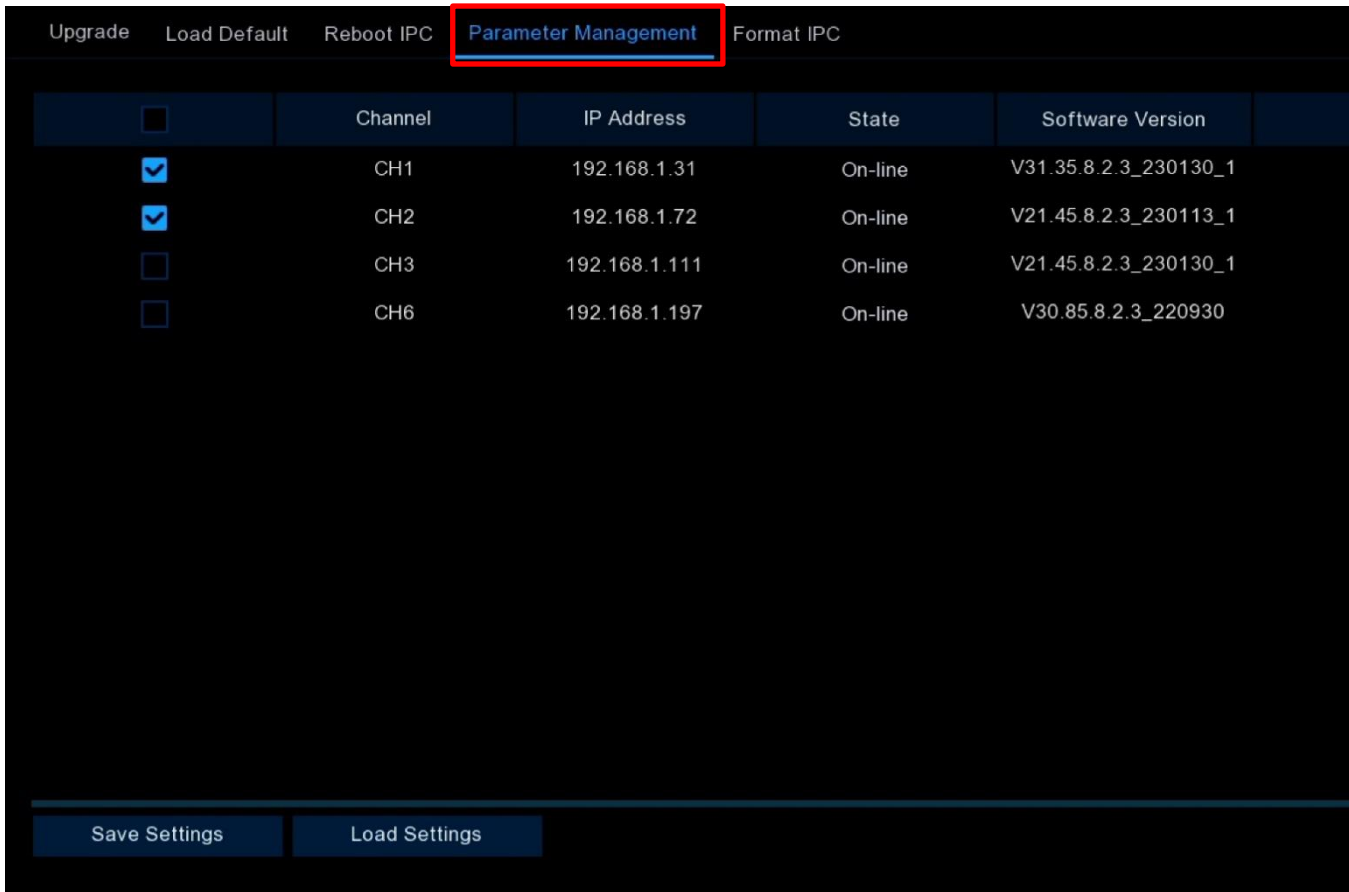
<input type="checkbox"/>	Channel	IP Address	State	Software Version
<input checked="" type="checkbox"/>	CH1	192.168.1.31	On-line	V31.35.8.2.3_230130_1
<input checked="" type="checkbox"/>	CH2	192.168.1.72	On-line	V21.45.8.2.3_230113_1
<input type="checkbox"/>	CH3	192.168.1.111	On-line	V21.45.8.2.3_230130_1
<input type="checkbox"/>	CH4	192.168.1.30	On-line	v3.1.0.989_22051911_v1.0.0.30
<input type="checkbox"/>	CH5	192.168.1.32	On-line	V1.0.0.1
<input type="checkbox"/>	CH6	192.168.1.197	On-line	V30.85.8.2.3_220930

Reboot IPC

- **Reboot IPC:** If you should have issues with a camera that you can't solve, you can check the box next to one or more cameras and click this button to reboot the selected cameras.

SYSTEM CONFIGURATION – IP CAMERA MAINTENANCE (CONTINUED)

PARAMETER MANAGEMENT



The screenshot displays the 'Parameter Management' interface. At the top, there are navigation buttons: 'Upgrade', 'Load Default', 'Reboot IPC', 'Parameter Management' (highlighted with a red box), and 'Format IPC'. Below this is a table with the following data:

	Channel	IP Address	State	Software Version
<input type="checkbox"/>	CH1	192.168.1.31	On-line	V31.35.8.2.3_230130_1
<input checked="" type="checkbox"/>	CH2	192.168.1.72	On-line	V21.45.8.2.3_230113_1
<input checked="" type="checkbox"/>	CH3	192.168.1.111	On-line	V21.45.8.2.3_230130_1
<input type="checkbox"/>	CH6	192.168.1.197	On-line	V30.85.8.2.3_220930

At the bottom of the interface, there are two buttons: 'Save Settings' and 'Load Settings'.

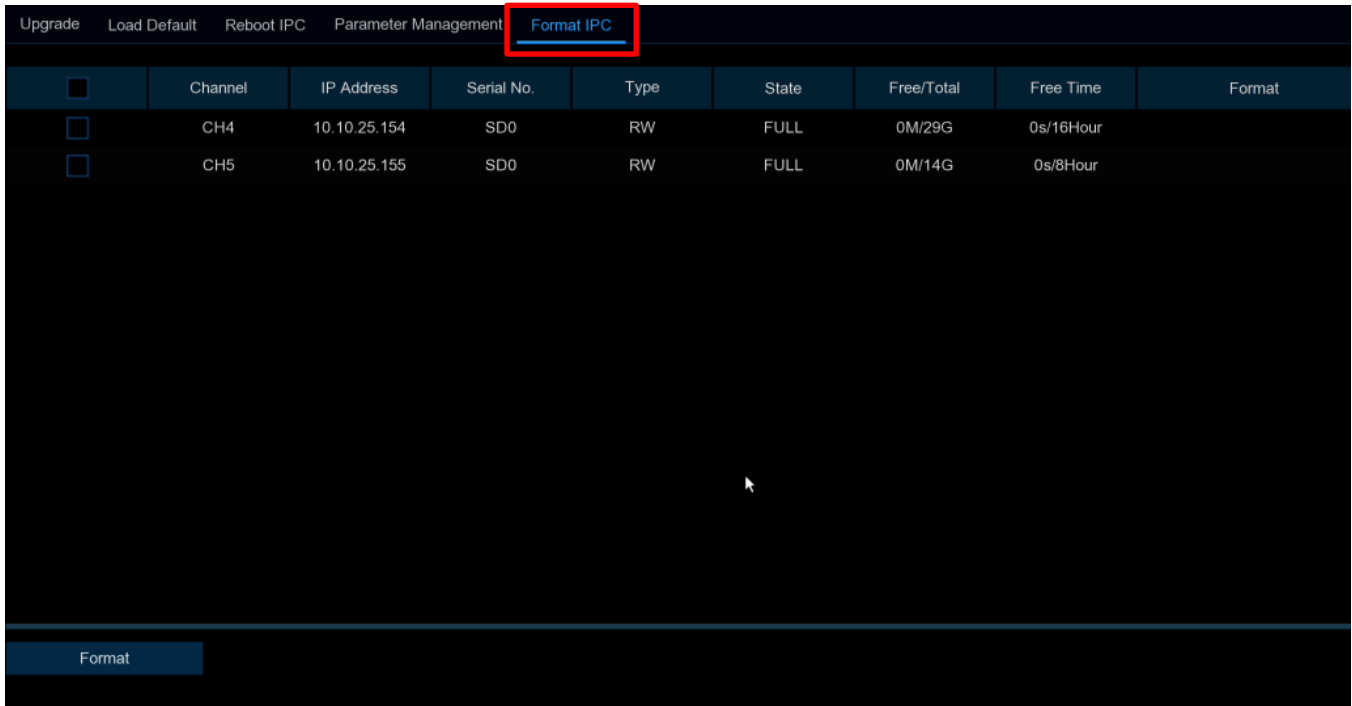
Click the box next to one or more cameras and insert a USB drive into the NVR's USB port.

- **Save Settings:** Click to export the configuration file containing all custom settings of the selected cameras to your USB drive.
- **Save Settings:** Click to import a configuration file containing all custom settings from your USB drive and apply to the selected cameras.

SYSTEM CONFIGURATION – IP CAMERA MAINTENANCE (CONTINUED)

FORMAT IP CAMERA

From this menu you can format the SD card installed on a supported IP camera.



Check the box next to the camera with the SD card you need to format.

- **Format:** Click to format the SD card.

SYSTEM CONFIGURATION (CONTINUED)

SYSTEM INFORMATION

Click on the *Information* tab in the sidebar of the System menu to view the *System Information*, *Channel Information*, *Record Information*, and *Network Status*.

The screenshot shows the SECO-LARM system configuration interface. At the top, there is a navigation bar with tabs for Setup, Channel, Record, Alarm, AI, Network, Storage, and System. The System tab is active. Below this, there is a sub-menu with tabs for Information, Channel Information, Record Info, and Network State. The Information tab is selected. The main content area displays system information in a table format. On the right side, there is a QR code and the text 'SECO-LARM' and 'Scan QR for P2P ID'. The 'Information' tab in the sidebar is highlighted with a red box.

Category	Property	Value
General	Device ID	000000
Multi-User	Device Name	DRN-116Q
Maintenance	Device Type	N7816
IP Camera Maintain	Hardware Version	DM-439
Information	Software Version	V8.2.3-20230131_1
	IE Client Version	V1.3.1.59
	Video Format	NTSC
	HDD Volume	12107G
	IP Address	192.168.1.104
	IPv6 Address	fe80::223:63ff:fe9e:3bb7 / 64
	Http/Https/RTSP	80,80
	Client	9000,9000
	MAC Address	98-23-63-9E-3B-B7
	Network State	Connected
	P2P ID	192.168.1.104

SYSTEM CONFIGURATION – SYSTEM INFORMATION (CONTINUED)

SYSTEM INFORMATION

Click the *Information* tab at the top to display technical information about your NVR, including hardware/software version, IP address, network ports, MAC address, and more.

Information	Channel Information	Record Info	Network State
Device ID	000000		
Device Name	DRN-116Q		
Device Type	N7816		
Hardware Version	DM-439		
Software Version	V8.2.3-20230131_1		
IE Client Version	V1.3.1.59		
Video Format	NTSC		
HDD Volume	12107G		
IP Address	192.168.1.104		
IPv6 Address	fe80::223:63ff:fe9e:3bb7 / 64		
Http/Https/RTSP	80,80		
Client	9000,9000		
MAC Address			
Network State	Connected		
P2P ID			

SECO-LARM[®]

Scan QR for P2P ID

If your NVR supports P2P, you will find the *P2P ID* and a *P2P* QR code on the information page. Scan this QR code from the information screen with the *SL Vision* mobile app to view the NVR remotely.

SYSTEM CONFIGURATION – SYSTEM INFORMATION (CONTINUED)

CHANNEL INFORMATION

View channel information for each connected camera including alias, Mainstream, and Substream recording specifications, motion detection status and privacy zone on the *Channel Information* tab.

Channel	Alias	State	Mainstream	Substream	Mobilestream	Motion Detection	Privacy Zone
CH1	CH1	On-line	2592x1944, 30Fps, 4Mbps	1280x 720, 20Fps, 1024Kbps	640x 480, 10Fps, 512Kbps	Support	Support
CH2	CH2	On-line	1920x1080, 25Fps, 4Mbps	1280x 720, 20Fps, 1024Kbps	640x 480, 25Fps, 512Kbps	Support	Support
CH3	CH3	On-line	3840x2160, 15Fps, 4Mbps	1280x 720, 10Fps, 1.5Mbps	Nonsupport	Support	Support
CH4	CH4	On-line	2592x1944, 15Fps, 4Mbps	640x 480, 15Fps, 2Mbps	Nonsupport	Support	Support

RECORD INFORMATION

View recording information for each connected camera such as bit rate, stream type, recording resolution and frame rate (FPS) from the *Record Information* tab.

Channel	Record State	Record Switch	Stream Type	Resolution	FPS	Bitrate
CH1	ON	Enable	DualStream	2592x1944 1280x720	30Fps 20Fps	4Mbps 1024Kbps
CH2	ON	Enable	DualStream	1920x1080 1280x720	25Fps 20Fps	4Mbps 1024Kbps
CH3	ON	Enable	DualStream	3840x2160 1280x720	15Fps 10Fps	4Mbps 1.5Mbps
CH4	ON	Enable	DualStream	2592x1944 640x480	15Fps 15Fps	4Mbps 2Mbps

SYSTEM CONFIGURATION – SYSTEM INFORMATION (CONTINUED)

NETWORK STATE

Click the Network State tab to display the network settings used by your NVR.

Attribute	Value
WAN	
IP Address	192.168.1.104
Subnet Mask	255.255.255.0
Gateway	192.168.1.1
MAC Address	88:25:35:35:35:35
IPv6 Address	fe80::223:63ff:fe9e:3bb7 / 64
IPv6 Gateway	fe80::/64
DHCP	Disable
Internal Interface	
IP Address	10.10.25.100
Subnet Mask	255.255.0.0
DNS1	192.168.1.1
DNS2	8.8.8.8
PPPoE	Disable
Port	
Http/Https/RTSP	80,80,Inactive,Disable
Client	9000,9000,Inactive,Disable
Total Band Width:	112Mbps
Used Band Width:	43Mbps

- **Total Bandwidth:** Here you can view the total input bandwidth available for the NVR.
- **Used Bandwidth:** Here you can view the input bandwidth being used by the NVR.

AI Scenario

Finally, on the main *System Setup* menu, click on the *AI Scenario* to set up specific AI scenarios.



CROSS COUNTING

You can set up an *AI Scenario* based on the *Cross Counting* function to help control the numbers of customers/visitors/vehicles in public places, such as restaurants, parks, zoos, theaters, museums, car parks, etc.

The interface shows a multi-camera view with a cross-counting overlay. The overlay displays a green pedestrian icon, a count of 7 available, and a table of counts for four channels (CH1, CH2, CH3, CH4) across different times of day.

Channel	Type	07:00	08:00	09:00	10:00	11:00	12:00
CH1	Enter	-	-	-	-	-	-
	Exit	-	-	-	-	-	-
CH2	Enter	-	-	-	-	-	-
	Exit	-	-	-	-	-	-
CH3	Enter	-	-	-	-	-	-
	Exit	-	-	-	-	-	-
CH4	Enter	0	0	0	0	0	4
	Exit	0	0	0	0	0	1
	Inside	0	0	0	0	0	3

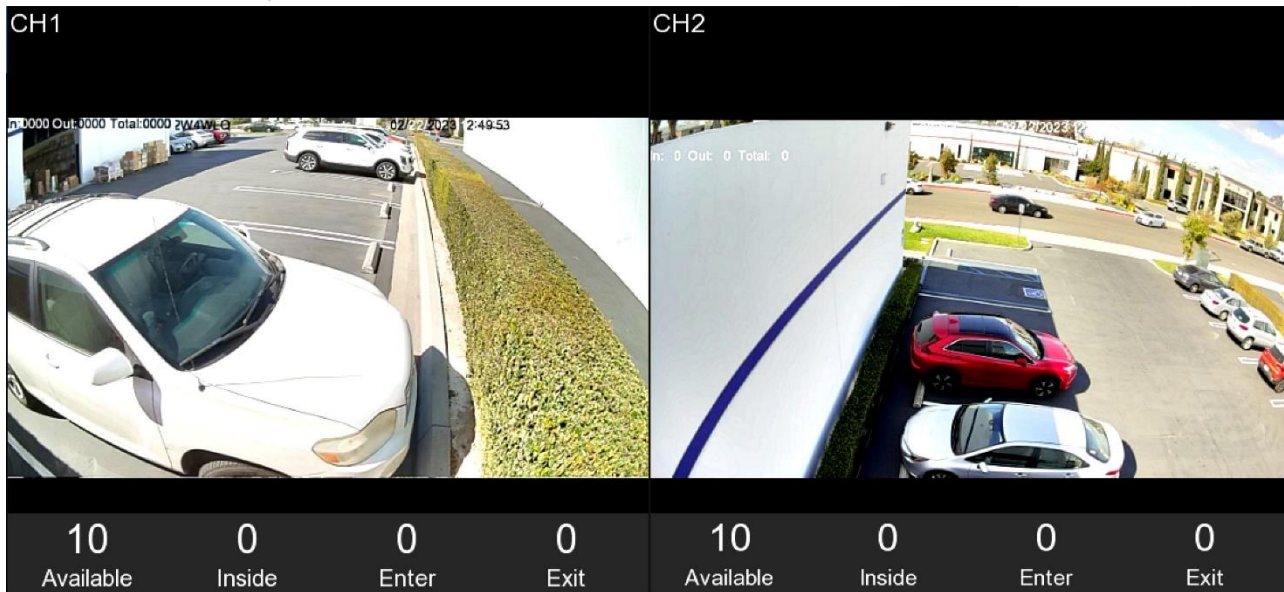
CROSS COUNTING (CONTINUED)

REAL-TIME DISPLAY AND CONTROLS

1. A Navigation Bar is at the top left of the display.

	Icon	Definition
	Channel View Mode:	Click to count and view the real-time results of individual cameras. This would be typically used for smaller places with a single entrance and exit.
	Group View Mode:	Click to count and view the real-time results of camera groups. This would typically be used for larger places with multiple entrances and exits monitored by multiple cameras.
	Data Search:	Click to search the counting data results.
	Configuration:	Click to configure the settings.

2. Real-Time Counting Statistics are found below the *Live View* camera shots.



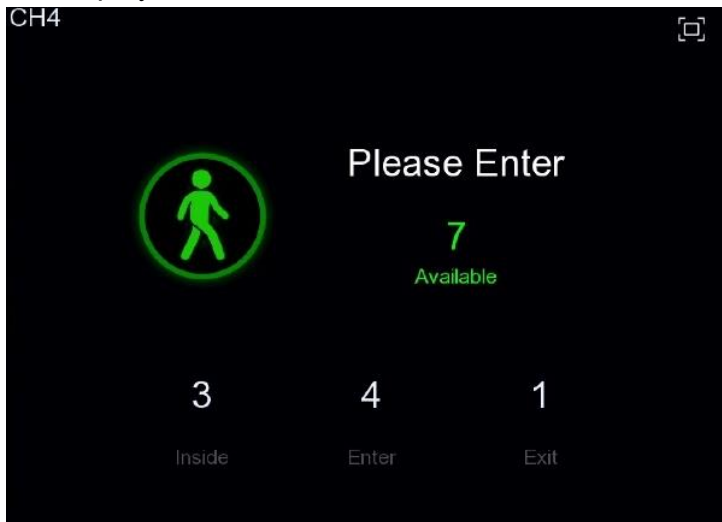
- **Available:** Remaining allowable "spaces" available
- **Inside:** Current number inside the controlled area
- **Enter:** Total number of recorded entries
- **Exit:** Total number of recorded exits

CROSS COUNTING – REAL-TIME DISPLAY AND CONTROLS (CONTINUED)

3. At the bottom of the display are the *Screen Display Control* icons.

Icon	Definition
	Click to select the screen display layout between 4, 6, or 9 channels.
	Click to show or hide the real-time data on the display.
	Click to clear the counting data for the selected channel.
	Click to clear the counting data for all channels.

4. *Real-Time Counting Statistics Information* for the selected channel is shown at the top right of the display.



- **Available:** Remaining allowable "spaces" available
- **Inside:** Current number inside the controlled area
- **Enter:** Total number of recorded entries
- **Exit:** Total number of recorded exits



A green icon indicates the remaining allowable "spaces" available is greater than 0.




A red icon indicates the allowable "spaces" have been reached or exceeded.

CROSS COUNTING – REAL-TIME DISPLAY AND CONTROLS (CONTINUED)

- A Statistics Data Chart is shown at the bottom right of the display. This chart shows the full day's data of all active channels. Use the mouse scroll wheel to move the timeline left or right.

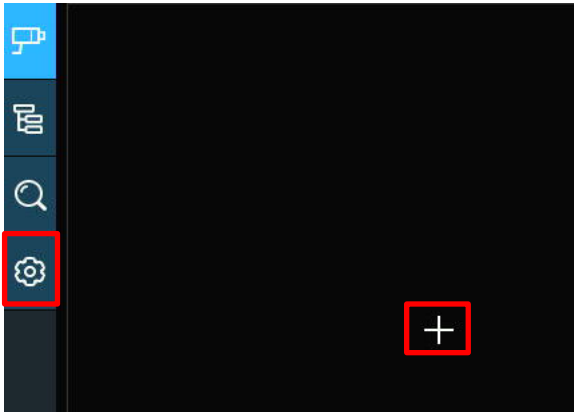
Channel	Type	09:00	10:00	11:00	12:00	13:00	14:00
CH1	Enter	0	0	34	48	29	21
	Exit	0	0	28	8	15	17
	Inside	0	0	6	46	60	64
CH2	Enter	0	0	38	5	28	42
	Exit	0	0	27	16	28	29
	Inside	0	0	11	0	0	13
CH6	Enter	0	0	183	53	239	296
	Exit	0	0	165	63	210	293
	Inside	0	0	18	8	37	40
CH7	Enter	0	0	134	47	152	197
	Exit	0	0	118	63	147	197
	Inside	0	0	16	0	5	5

- Click the  icon at the top right of the display to view the *Real-time Counting Statistics Information* full screen. Right click to exit.

CROSS COUNTING (CONTINUED)

CHANNEL VIEW MODE SETTINGS

To configure the settings, click the add icon **+** or setup icon **⚙** from the *Real-Time Display*.



In the screen below, you'll focus on the settings in the *Channel* section in the top half of the screen.

Image Configuration

Advertise Mode Keep Aspect Ratio

SEQ Dwell Time 3 Image

Describe: Set the advertising picture, whether the advertising picture is stretched or not, and the advertising polling time

Channel

Channel	Enable	Capacity	Setup	Alarm
CH1	<input type="checkbox"/>	10		
CH2	<input checked="" type="checkbox"/>	10		
CH3	<input type="checkbox"/>	10		
CH4	<input checked="" type="checkbox"/>	10		
CH5	<input type="checkbox"/>	10		
CH6	<input checked="" type="checkbox"/>	10		
CH7	<input type="checkbox"/>	10		
CH8	<input checked="" type="checkbox"/>	10		




Group

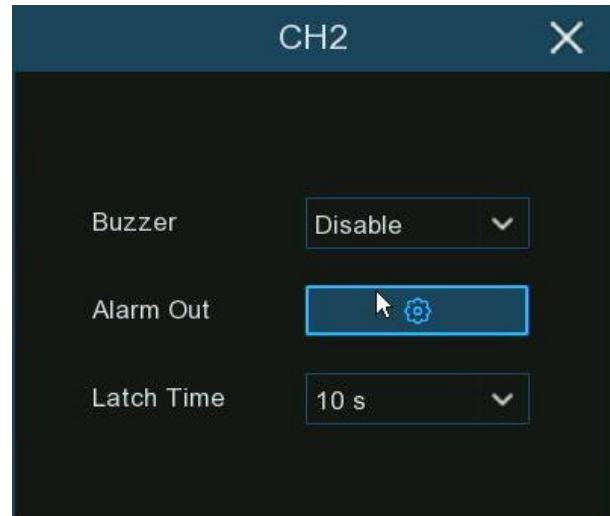
Group	Add IP Camera	Enable	Capacity	Start Time	End Time	Type	Alarm
Group 1		<input type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 2		<input checked="" type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 3		<input type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 4		<input checked="" type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 5		<input type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 6		<input checked="" type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 7		<input type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 8		<input checked="" type="checkbox"/>	10	00:00:00	23:59:59	Person	

Apply

- **Enable:** Check the box in this column for the channels that you want to use for counting. If the camera on that channel supports AI functions, the icon in the *Setup* and *Alarm* columns will be blue but will be gray if the camera does not support the AI functions.

CROSS COUNTING – CHANNEL VIEW MODE SETTINGS (CONTINUED)

- **Capacity:** Set the maximum number for each channel. This will be the total number allowed in the controlled space at any one time (*entries minus exits*).
- **Setup:** Click the  icon in this column for the camera that you want to configure the detection conditions for (see *CC (Cross Counting Detection)* beginning on pg. 121 for more information).
- **Alarm:** Click the  icon in this column for a camera to configure the alarm actions that should be taken when the *Available* number reaches 0 (see popup shown at right). Right click to close and save settings when finished.
 - **Buzzer:** Click to set the duration in seconds or to disable.
 - **Alarm Out:** Click to configure an external alarm device if available and supported by your NVR.
 - **Latch Time:** Click to configure the external alarm duration.
- **Apply:** Click to save your settings.
- **Channel View Icon** : Click to view the live images and counting data of all active channels.




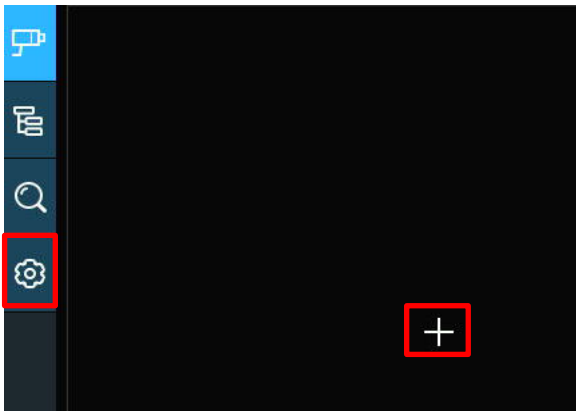
The Channel View Mode interface displays four camera channels (CH1-CH4) with their respective live feeds and counting data. A 'Please Enter' popup is overlaid on the right side, showing a green pedestrian icon and the number 7 Available. Below the popup are three buttons: 3 Inside, 4 Enter, and 1 Exit.

Channel	Type	07:00	08:00	09:00	10:00	11:00	12:00
CH1	Enter	-	-	-	-	-	-
	Exit	-	-	-	-	-	-
CH2	Enter	-	-	-	-	-	-
	Exit	-	-	-	-	-	-
CH3	Enter	-	-	-	-	-	-
	Exit	-	-	-	-	-	-
CH4	Enter	0	0	0	0	0	4
	Exit	0	0	0	0	0	1
	Inside	0	0	0	0	0	3

CROSS COUNTING (CONTINUED)

GROUP VIEW MODE SETTINGS

To configure *Group View* settings, click the add **+** or setup  icon from the *Real-Time Display*.



In the screen below, focus on the settings in the *Group* section in the bottom half of the screen.

Image Configuration

Advertise Mode Keep Aspect Ratio

SEQ Dwell Time Image

Describe: Set the advertising picture, whether the advertising picture is stretched or not, and the advertising polling time


Channel

Channel	Enable	Capacity	Setup	Alarm
CH1	<input type="checkbox"/>	10		
CH2	<input checked="" type="checkbox"/>	10		
CH3	<input type="checkbox"/>	10		
CH4	<input checked="" type="checkbox"/>	10		
CH5	<input type="checkbox"/>	10		
CH6	<input checked="" type="checkbox"/>	10		
CH7	<input type="checkbox"/>	10		
CH8	<input checked="" type="checkbox"/>	10		



Group

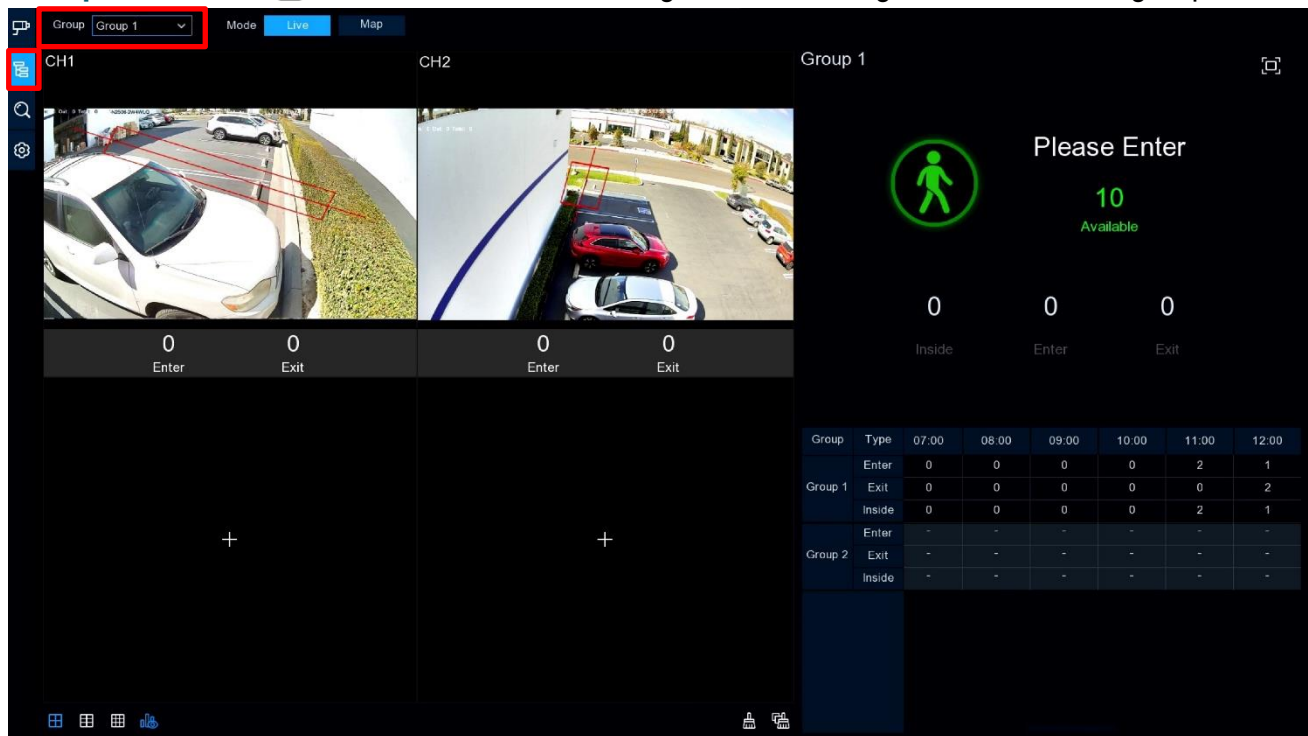
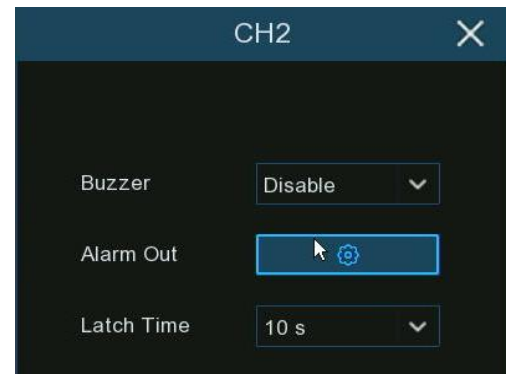
Group	Add IP Camera	Enable	Capacity	Start Time	End Time	Type	Alarm
Group 1		<input type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 2		<input checked="" type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 3		<input type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 4		<input checked="" type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 5		<input type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 6		<input checked="" type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 7		<input type="checkbox"/>	10	00:00:00	23:59:59	Person	
Group 8		<input checked="" type="checkbox"/>	10	00:00:00	23:59:59	Person	

Apply

- **Add IP Camera:** Click the icon  in this column next to a group to add cameras to the group (maximum of 8 groups, each camera can only be assigned to a single group). A channel already enabled in the *Channel View* mode cannot be added to a group.

CROSS COUNTING – GROUP VIEW MODE SETTINGS (CONTINUED)

- **Enable:** Check the box in this column for each group that you want to use for counting.
- **Capacity:** Set the maximum number for each group. This will be the total number allowed in the space controlled by this group at any one time (*entries minus exits*).
- **Start Time / End Time:** Click to start and end time for counting for each group.
- **Type:** Choose the detection type.
 - **Person:** Choose to target persons.
 - **Vehicle:** Choose to target moving vehicles.
 - **Motion:** Choose to target any moving objects.
- **Alarm:** Click the  icon in this column for the group you want to configure alarm actions for when the *Available* number reaches 0 (see popup at right). Right click to close and save settings when finished.
 - **Buzzer:** Click to set the duration in seconds or disable.
 - **Alarm Out:** Click to configure an external alarm device if available and supported by your NVR.
 - **Latch Time:** Click to set the external alarm duration.
- **Apply:** Click to save your settings.
- **Group View Icon** : Click to view the live images and counting data of all active groups.








- **Group:** Click to choose the group that you want to view live images and counting data for.

CROSS COUNTING – GROUP VIEW MODE SETTINGS (CONTINUED)

- **Map:** Click to configure settings for displaying the counting data in *Map* mode.


The screenshot shows the 'Map' mode interface. At the top, 'Group 1' is selected, and the 'Mode' is set to 'Live'. The 'Map' button is highlighted in red. Below the map, there are four camera channel icons (CH1, CH2, CH3, CH4) with 'Enter' and 'Exit' counts. On the right, a 'Please Enter' section shows a green person icon, a large green '9' with 'Available' below it, and three buttons labeled '1 Inside', '2 Enter', and '1 Exit'. At the bottom right, a table shows counting data for Group 1.

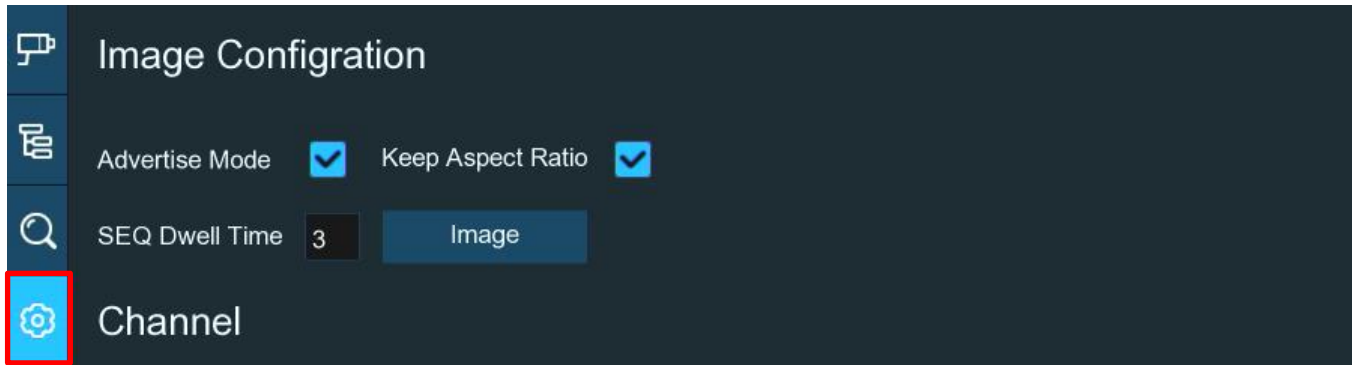
Group	Type	04:00	05:00	06:00	07:00	08:00	09:00
Group 1	Enter	0	0	0	0	0	2
	Exit	0	0	0	0	0	1
	Inside	0	0	0	0	0	1

-  Click to add a map image from a USB drive.
-  Click to adjust the site of the IP cameras. Click and hold a channel icon  and move one by one to adjust the position of each of your IP cameras on the map.
-  Click to display the map in full screen.
-  Click to exit full screen.

CROSS COUNTING (CONTINUED)




ADVERTISEMENT MODE

The system also supports showing an advertisement in Cross Counting mode. To do so, as above, click the setup icon  from the *Navigation Bar* of the *Real-Time Display* to show the following.




- **Advertise Mode:** Check this box to enable.
- **Image:** Click to load advertisement images from your USB drive. The NVR supports up to 16 images in JPG, PNG, or BMP format with a maximum resolution of 2560x1600.



Click the add icon  to add images. Select an image and click the delete icon  to delete it. When finished, click the close icon  or right click to return to the previous page.

- **Keep Aspect Ratio:** Check this box to ensure that your images are displayed in their original aspect ratio. Uncheck to allow the pictures to be stretched for full screen display.
- **SEQ Dwell Time:** Click to set how long, in seconds, each image will stay on the screen.
- **Apply:** Click to save your settings.

CROSS COUNTING – ADVERTISEMENT MODE (CONTINUED)

Return to the *Channel View* or *Group View* and click the full screen icon  in the upper right corner to display your advertisement photos along with real-time counting data for the selected channels or groups.




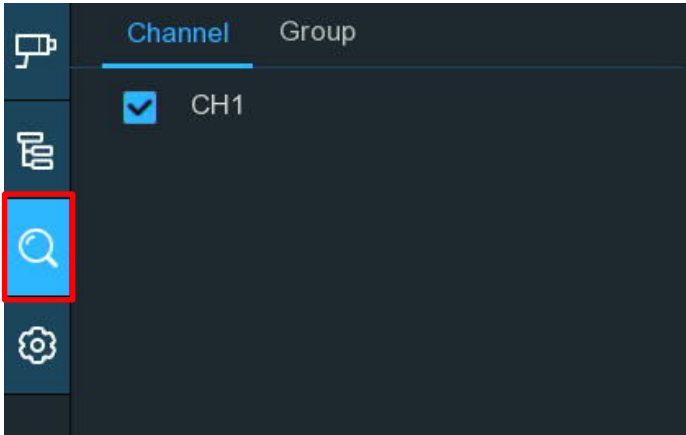
The advertisement features a white ENFORCER IP 5MP Turret Camera (model EV-N2506-2W4WQ) against a colorful geometric background. To the right of the camera, a green pedestrian icon is shown within a circular frame, indicating a detected person. Below the icon, the text 'Please Enter' is displayed, followed by a large green number '8' and the word 'Available' in green. Further down, the counts are broken down: '2 Inside', '6 Enter', and '4 Exit'.

Category	Count
Available	8
Inside	2
Enter	6
Exit	4

CROSS COUNTING (CONTINUED)


SEARCH COUNTING DATA

To search through your counting data, click the *Search* icon  from the *Navigation Bar* of the *Real-Time Display* to show the following.







- **Channel/Group:** Click the Channel or Group tab to search for them separately and choose the channels or groups that you want to search.



- **Date:** Choose the search duration (day, week, month, year) and a date to search.
- **Type:** Choose the type of target for your search (people, vehicle, motion).
- **Search:** Click the  button to display the results on the right.

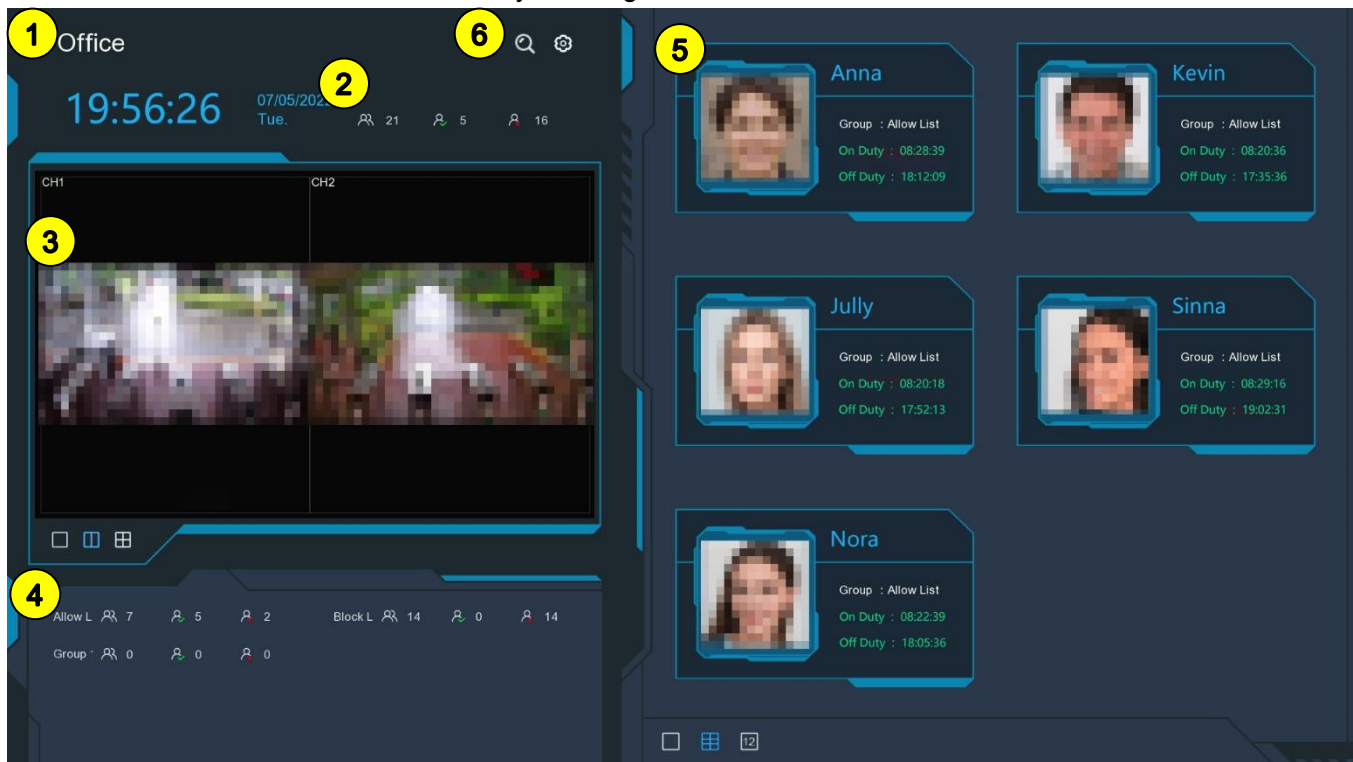
CROSS COUNTING – SEARCH COUNTING DATA (CONTINUED)

When the results are displayed, you will also see 4 icons above and to the right of the graph.

-  Click to display the results in a bar graph.
-  Click to display the result in a line graph.
-  Click to display the results in detail chart.
-  Click to export the results to a USB drive.

FACE ATTENDANCE

You can set up an *AI Scenario* based on the *Face Detection* function to view and visually check real-time statistical attendance data by clicking the *Face Attendance* tab on the *AI Scenario* screen.



1 The name of this attendance group is displayed in the upper left.

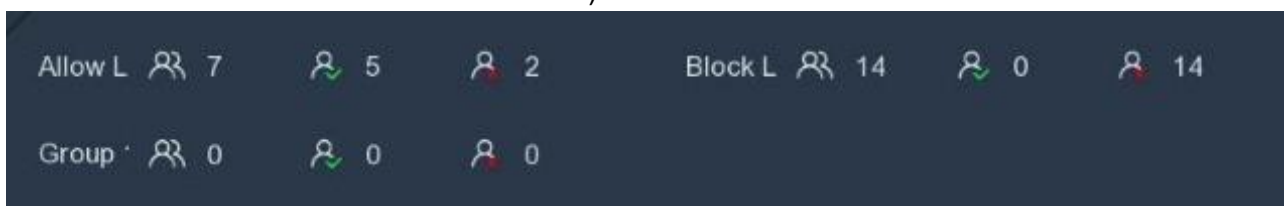
2 Overall statistical attendance data is shown here.






- The total number of people who should be in attendance.
- The number of people who are currently in attendance.
- The number of people who are not in attendance.

3 The current *Live View* is displayed showing the related channel feeds. Click the screen layout icons in the lower left corner to change the display layout. Click an icon again to display the next page.



4 Individual statistical attendance data for each group is shown here (arranged with the same icons as the overall attendance data above).

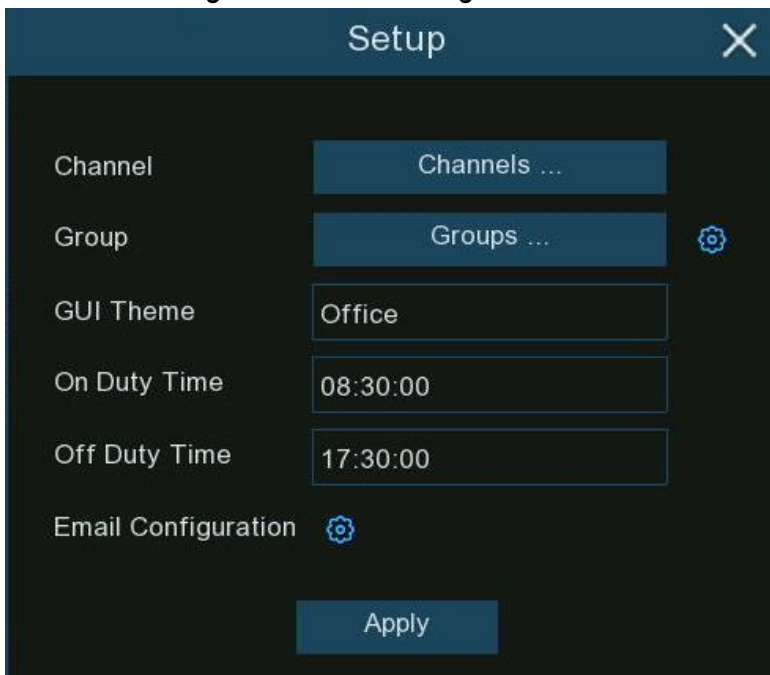



FACE ATTENDANCE (CONTINUED)

- 5 Thumbnails of the most recent persons who have been checked in/out along with their *Name/ID*, *Group*, *On Duty* (i.e., the time they were checked in), and *Off Duty* (i.e., the time they were checked out). Abnormal check-in or check-out times will be displayed in red. Click the screen layout icons    in the lower left corner to change this display layout.




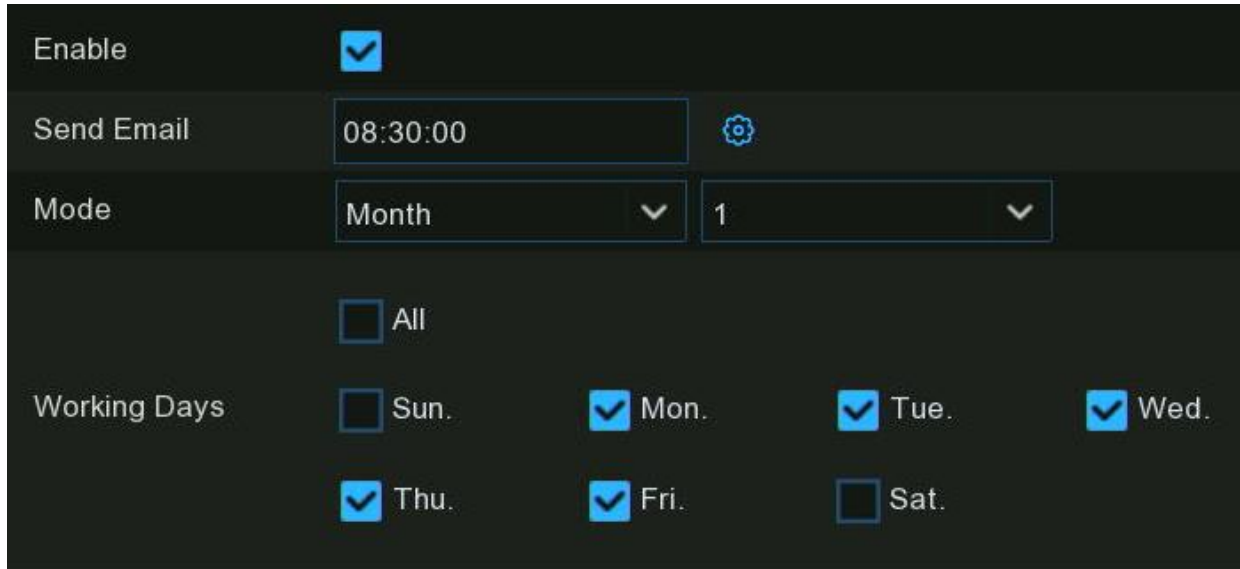
- 6 At the top are two more icons. Click the search icon  to search the face attendance data (see *Face Recognition Database Management* beginning on pg. 143 for more information). Click the settings icon  to configure the *Face Attendance* settings.





- o **Channels:** Click to choose the channels to configure for this function.
- o **Groups:** Click to choose the groups to configure for this function. To edit the group database, click the  icon (see *Face Recognition Database Management* beginning on pg. 143 for more information).

FACE ATTENDANCE (CONTINUED)

- **GUI Theme:** Click to name this attendance group.
- **On Duty Time:** Click to set the time when the group members should have arrived.
- **Off Duty Time:** Click to set the time when the group members can leave.
- **Email Configuration:** Click the  icon enable to email the attendance statistical data on a regular basis and set its schedule.

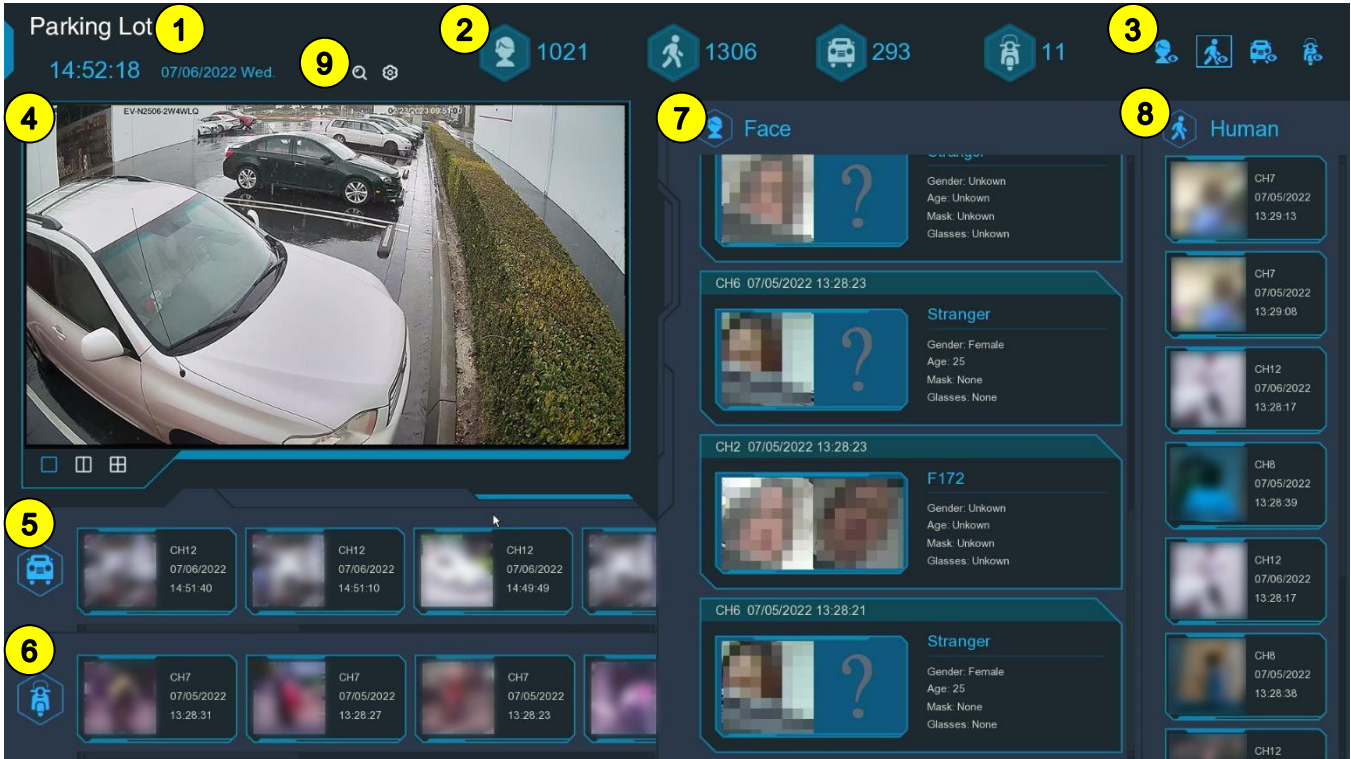


Enable	<input checked="" type="checkbox"/>
Send Email	08:30:00 
Mode	Month <input type="checkbox"/> 1 <input type="checkbox"/>
Working Days	<input type="checkbox"/> All
	<input type="checkbox"/> Sun. <input checked="" type="checkbox"/> Mon. <input checked="" type="checkbox"/> Tue. <input checked="" type="checkbox"/> Wed.
	<input checked="" type="checkbox"/> Thu. <input checked="" type="checkbox"/> Fri. <input type="checkbox"/> Sat.

- **Enable:** Check this box to enable.
- **Send Email:** Set a time for sending the email. Click the setting  icon to configure your email (see *Email Configuration* beginning on pg. 205 for more information).
- **Mode:** Click the two dropdowns to set an interval (*Day, Week, or Month*) and the number of said intervals between each email.
- **Working Days:** Click the normal working days that will be used for the statistical data.

OBJECT CLASSIFICATION

You can set up an *AI Scenario* based on the *Face Detection* and *Human and Vehicle* functions to classify and count the number of detected faces, people, motor vehicles, and non-motorized vehicles over a specified time period. On the *AI Scenario* screen, click the *Object Classification* tab.











- 1 The name of this object classification group is displayed in the upper left.
- 2 Overall statistical data of all detected objects within a selected time period are shown here in their respective categories of *Faces*, *Humans*, *Motorized Vehicles*, and *Non-Motorized Vehicles*.



OBJECT CLASSIFICATION (CONTINUED)

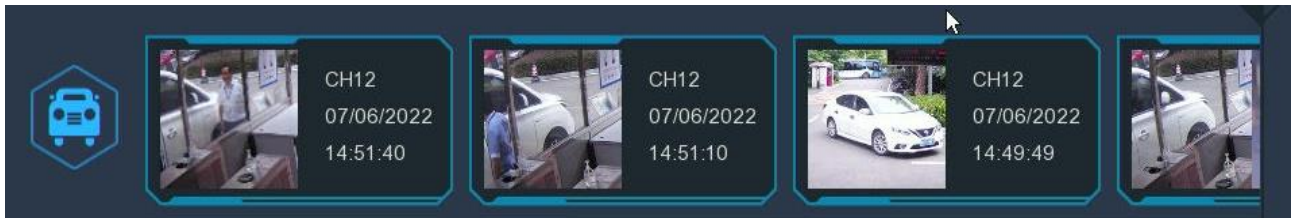
3 Click these icons to either display or hide the objects represented.



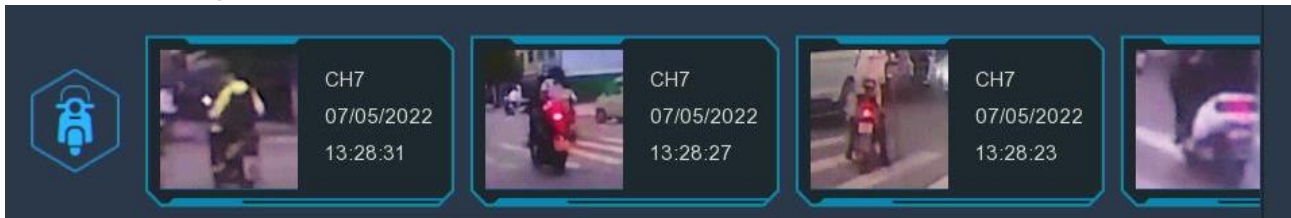
-   Click to show/hide *Face* images.
-   Click to show/hide *Human* images.
-   Click to show/hide *Motorized Vehicle* images.
-   Click to show/hide *Non-Motorized Vehicle* images.

4 The current *Live View* is displayed showing the related channel feeds. Click the screen layout icons in the lower left corner to change the display layout. Click an icon again to display the next page.

5 Notifications of detected *Motorized Vehicles* are shown here. Use the mouse wheel to scroll left and right.



6 Notifications of detected *Non-Motorized Vehicles* are shown here. Use the mouse wheel to scroll left and right.



OBJECT CLASSIFICATION (CONTINUED)


- 7 Notifications of detected *Face* images are shown here. Use the mouse wheel to scroll up and down.



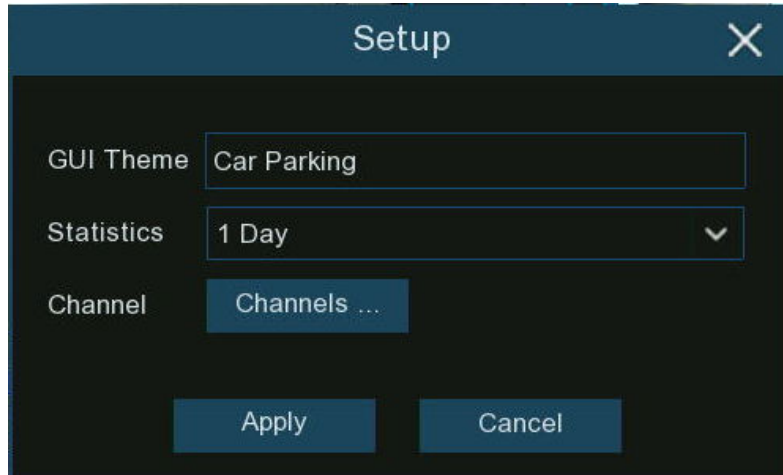
- 8 Notifications of detected *Human* images are shown here. Use the mouse wheel to scroll up and down.



OBJECT CLASSIFICATION (CONTINUED)

9 At the top are two more icons. Click the search icon  to search the recordings of human and vehicle detections (see *Human and Vehicle* beginning on pg. 308 for more information).

10. Click the settings icon  to configure the *Object Classification* settings.



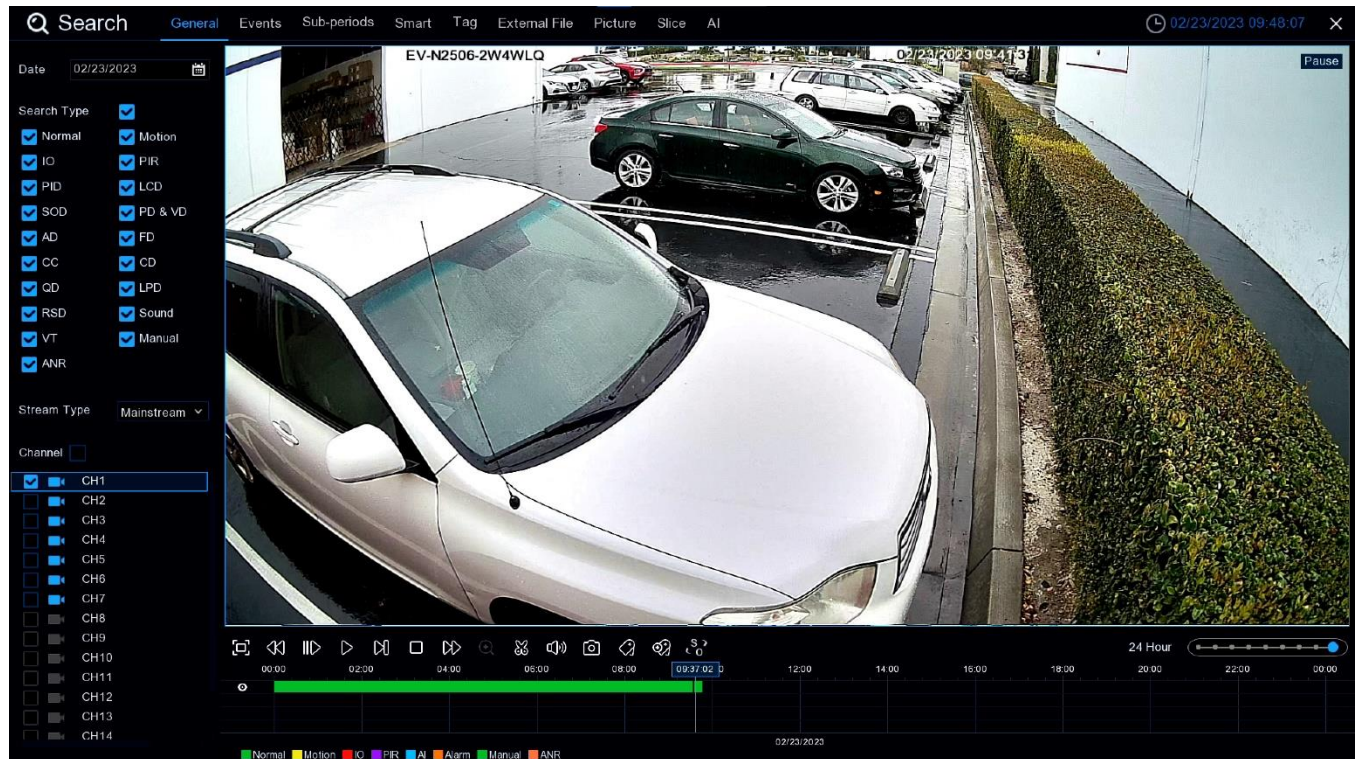
- **GUI Theme:** Click to name this object classification.
- **Statistics:** Click choose the time period to show the data for.
- **Channels:** Click to choose the channels you want to show data for.
- **Apply:** Click to save these settings and return to the previous screen.

Search, Playback, and Backup

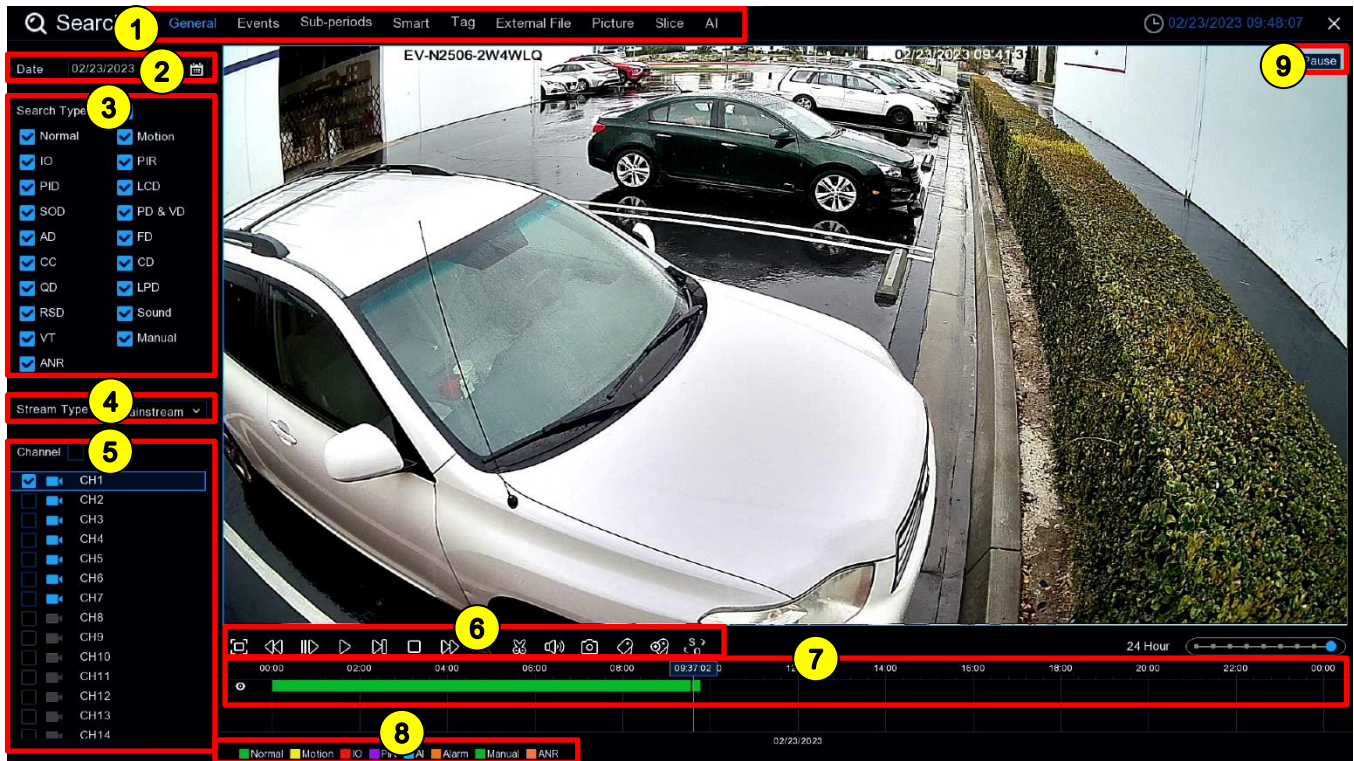
The *Search* function allows you to search for and play previously recorded videos and snapshots stored on your NVR hard drive. You can choose video that matches a recording schedule, manual recordings, or alarm events.

The *Backup* function gives you the ability to save important events (both videos and snapshots) to a USB drive.

Click the  *Search* icon in the *Start Menu* to enter the search menu.



SEARCH AND PLAY IN GENERAL



- 1 **Search Options:** Click one of the tabs to choose between various search and playback event options: *General, Events, Sub-Periods, Smart, Tag, External File, Picture, Slice, or AI.*
- 2 **Search Date:** Click the calendar icon to select a date to search on. Dates underlined in red indicate the existence of recordings on those dates.
- 3 **Search Type:** Check the box next to the event type that you want to search for or leave all boxes checked.
- 4 **Stream Type:** Select the video stream to search. The default is *Mainstream*. If dual-stream recording is enabled, *Substream* will also be an option.
- 5 **Channel Selection:** Check the box next to the channels you want to search and play.

SEARCH AND PLAY IN GENERAL (CONTINUED)

6 Playback Control Bar: Control the video playback from this bar. The various icons are defined in the chart below.



Icon	Definition
	Enlarge the playback video to full screen.
	Rewind. Subsequent presses will change the rewind speed.
	Slow play. Subsequent presses will change the playback speed
	Play (normal speed)
	Pause
	Play frame-by-frame. Click once to play a frame of the video.
	Stop playback/
	Fast forward. Subsequent presses will change the forward speed
	Select a camera and click this icon. Use the scroll wheel of your mouse to zoom in and zoom out of the image. Use the picture-in-picture screen to select a different area to view. Right-click to exit.
	Click to edit the video by marking in and out points which you can then copy to a USB drive (for more information, see <i>Video Segment Backup</i> beginning on pg. 271).
	Click to adjust the audio output volume.
	Click to save a snapshot of the current camera image and save to the USB drive.
	Add a tag. Tagging allows you to mark the location of information within a video for faster searches (for more information on tags, see <i>Tag Search and Playback</i> on pg. 284). Select a camera, pause the video when you see a person or object to be tagged, the press to add a tag (multiple tags can be created).
	Add a named tag (same as above but with the ability to name the tag).
	Click to switch the image scale for all playing cameras between original and stretch.

SEARCH AND PLAY IN GENERAL (CONTINUED)

- 7 Timeline:** Quickly see and locate the playback position by clicking on the timeline. You can zoom in or zoom out the timeline by using the timeframe options for precise location.



- 8 Event Type Indicator:** The color on the timeline indicates the video event type.

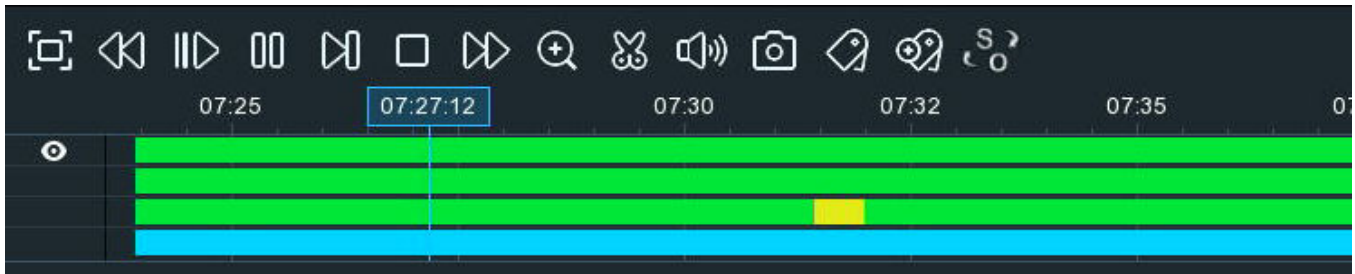



- 9 Playback Status:** The current playback status is shown in the top right corner of the live display.

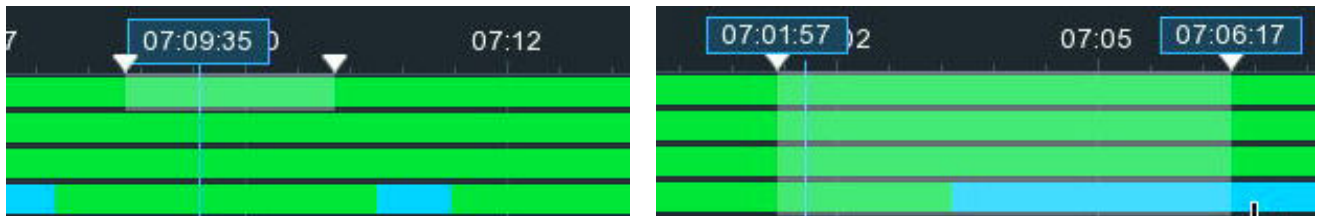
SEARCH AND PLAY IN GENERAL (CONTINUED)




VIDEO SEGMENT BACKUP

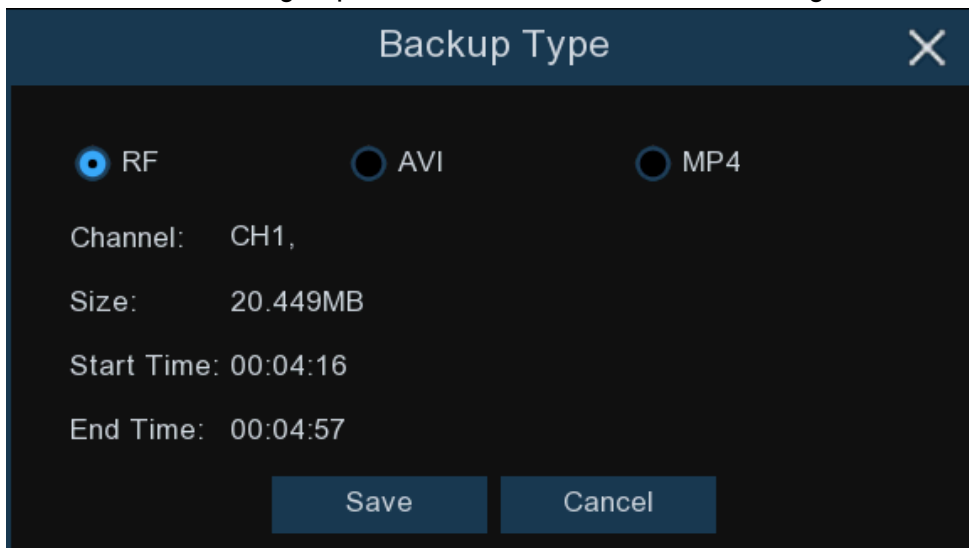
To back up a segment of a video you are viewing or have marked, proceed as follows.



1. Insert a USB drive into the NVR's USB port.
2. Search and start playing a video.
3. Click on the timeline where you want to cut a segment.
4. Click the  icon. You will then see two white triangles on the timeline. Move them left or right to adjust the start and end of the section of the video that you want to edit. If want to select multiple channels, click on the start time and drag to select more channels, then rightward to the end position and release.

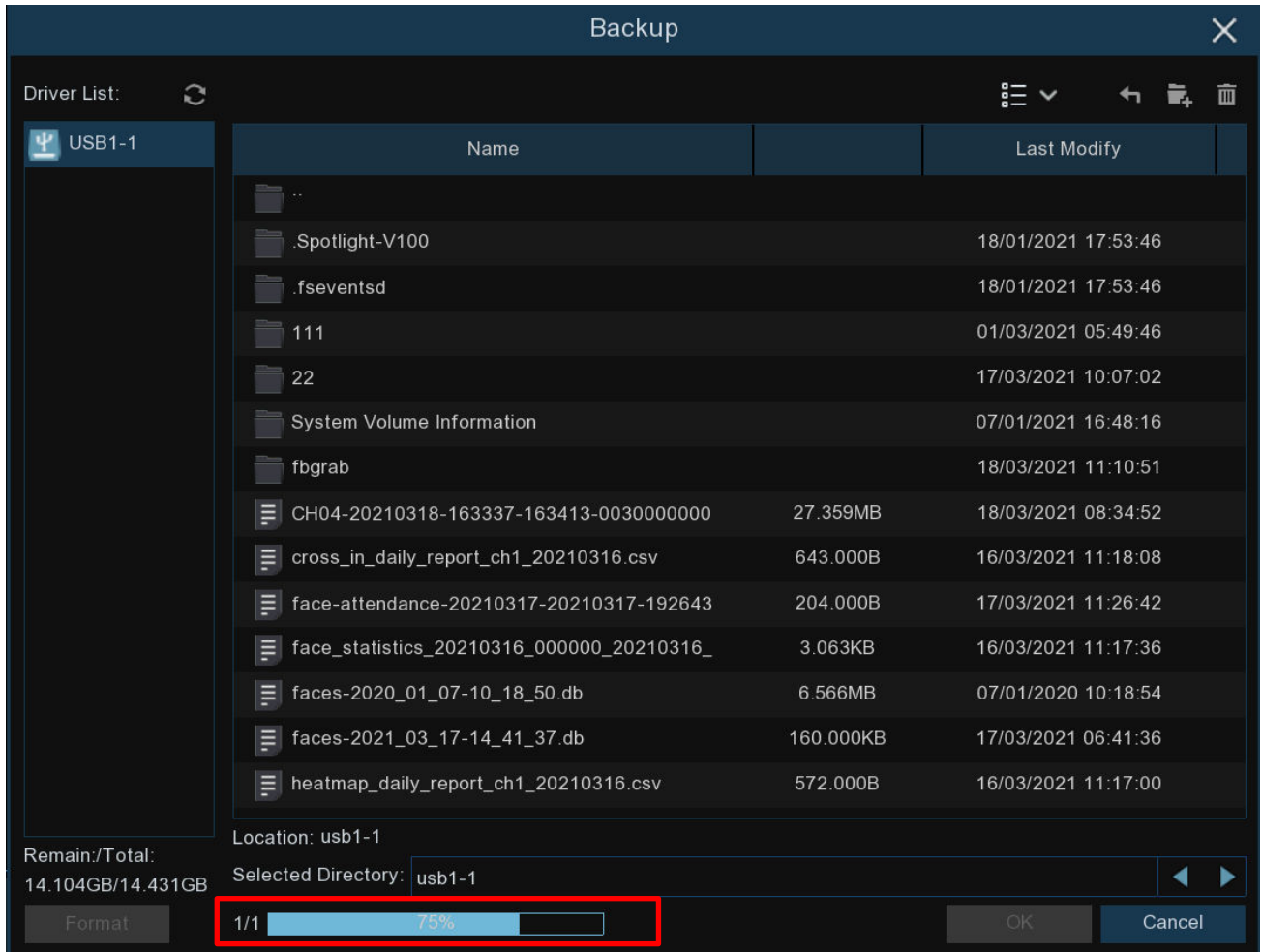


5. The  icon changes to disk  icon. Click the  icon to save the video segment.
6. Select a file type for your backup files and note the file size indicated on the popup. Ensure your USB drive has enough space and click Save to save the segments.



SEARCH AND PLAY IN GENERAL – VIDEO SEGMENT BACKUP (CONTINUED)

- 7. Choose the directory on your USB drive and click OK. The progress bar at the bottom of the window shows the backup progress. Do not remove the USB drive until complete.



SEARCH, PLAY, AND BACK UP EVENT RECORDINGS

Event search lets you view a list of recordings related to events conveniently filtered by channel, start/end time, and recording type and easily back up selected events to a USB drive. To start, click the *Events* tab.



- 1 **Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate the existence of recordings on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 **Search Type:** Check the box next to the event type that you want to search for or leave all boxes checked.
- 3 **Stream Type:** Select the video stream to search. The default is *Mainstream*. If dual-stream recording is enabled, *Substream* will also be an option.
- 4 **Channel Selection:** Check the box next to the channels you want to search and play. The icon of the selected camera will change to blue.
- 5 **Search:** Click to display the results on the right.
- 6 **Search Results:** A thumbnail of each event that matches your search criteria will be displayed in the result window. Use the arrow icons at the bottom right of the result window to scroll back and forth between pages or type in the number of a specific page.



SEARCH, PLAY, AND BACK UP EVENT RECORDINGS (CONTINUED)

7 Information: See the information for the selected event thumbnail here.



8 Descending Order: Check this box below the results to view the events in descending order.



9 Select: Check the box above desired event thumbnails or check this box to select all events on the current page.



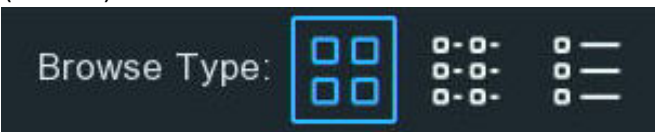
10 Control: Click the backup icon to save selected events to a USB drive. Click the play icon to enter the playback window (see Event Playback Control beginning on pg. 275 for more information).



11 Totals: The number and total size of selected event(s) will be displayed here.



12 Browse Type: Click these icons to change how the events are displayed between Thumbnail (default), List, or Detail.



In the Detail view, you can lock events to keep them from being overwritten on the hard drive. Click the lock icon to lock or the unlock icon to unlock events.



<input checked="" type="checkbox"/>	11	CH11	SMN	07/07/2022	07:54:02	07:54:32	7.93MB		
<input checked="" type="checkbox"/>	12	CH11	MN	07/07/2022	07:54:28	07:55:04	9.52MB		
<input checked="" type="checkbox"/>	13	CH11	SMN	07/07/2022	07:54:58	07:55:36	10.00MB		

SEARCH, PLAY, AND BACK UP EVENT RECORDINGS (CONTINUED)

EVENT PLAYBACK CONTROL

To playback events, click the *Events* tab.



- 1 Event List:** Select the events you wish to playback here. Use the arrow icons at the bottom of the list to scroll back and forth between pages or type in the number of a specific page. Double-click an event to play it immediately.
- 2 Control:** Click the backup icon  to save selected events to a USB drive. Click the play icon  to enter the playback window.

SEARCH, PLAY, AND BACK UP EVENT RECORDINGS – EVENT PLAYBACK CONTROL

(CONTINUED)

3 Playback Control Bar: Control the video playback from this bar (various icons defined below).



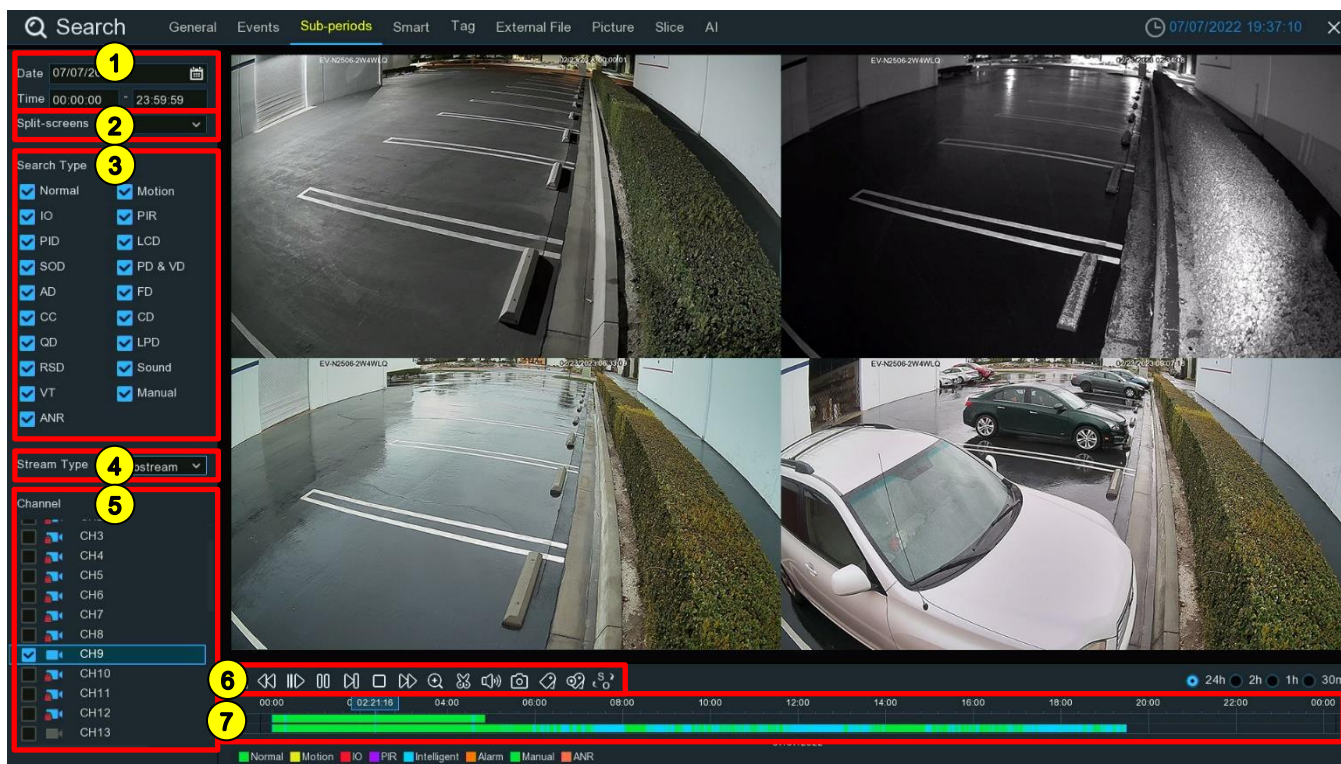
Icon	Definition
	Return to the event search page.
	Enlarge the playback video to full screen.
	Rewind. Subsequent presses will change the rewind speed.
	Slow play. Subsequent presses will change the playback speed
	Play (normal speed)
	Pause
	Play frame-by-frame. Click once to play a frame of the video.
	Stop playback/
	Fast forward. Subsequent presses will change the forward speed
	Select a camera and click. Scroll to zoom in and out of the image. Use the picture-in-picture screen to select a different area to view. Right-click to exit.
	Click to edit the video by marking in and out points which you can then copy to a USB drive (for more information, see <i>Video Segment Backup</i> beginning on pg. 271).
	Click to adjust the audio output volume.
	Click to save a snapshot of the current camera image and save to the USB drive.
	Add a tag. Tagging allows you to mark the location of information for faster searches (for more detail, see <i>Tag Search and Playback</i> on pg. 284). Select a camera, pause the video at the proper point, then click to add a tag (multiple tags can be created).
	Add a named tag (same as above but with the ability to name the tag).
	Click to switch the image scale for all playing cameras between original and stretch.

4 Timeline: Quickly see and locate the playback position by clicking on the timeline. You can zoom in or zoom out the timeline by using the timeframe options for precise location.




SUB-PERIODS PLAYBACK

Sub-Periods Playback allows you to simultaneously play video segments from a single channel split into equal time periods. The recordings are divided into equal-length segments, the number of segments depending on the selected split-screen mode. For example, if the video is one hour and *Split-Screens* is set to 4, the video will be divided into 4 segments of 15 minutes, all 4 played simultaneously, each in one screen section. To use, click the *Sub-Periods* tab on the *Search* screen.


















- 1 **Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate the existence recordings on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 **Split-Screens:** Select the number of equal-length video segments you want the recordings to be divided into for simultaneous playback.
- 3 **Search Type:** Check the box next to the recording types that you want to search for or leave all boxes checked.
- 4 **Stream Type:** Select the video stream to search. The default is *Mainstream*. If dual-stream recording is enabled, *Substream* will also be an option.
- 5 **Channel Selection:** Check the box next to the channels you want to search and play. Note that you can only search and play one channel at a time.

SUB-PERIODS PLAYBACK (CONTINUED)

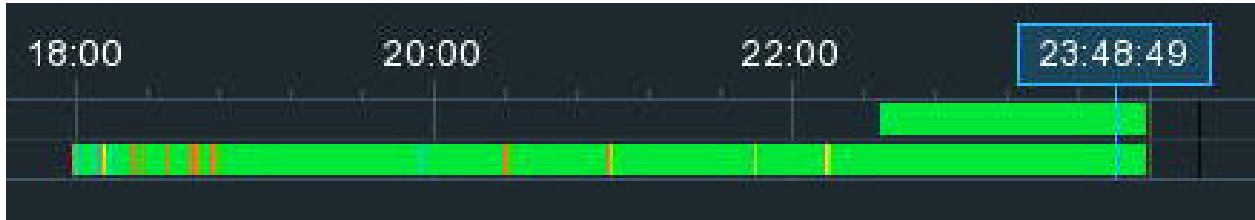
- 6 Playback Control Bar:** Control the video playback from this bar. The various icons are defined in the chart below. Click the play icon  to start playing.



Icon	Definition
	Enlarge the playback video to full screen.
	Rewind. Subsequent presses will change the rewind speed.
	Slow play. Subsequent presses will change the playback speed
	Play (normal speed)
	Pause
	Play frame-by-frame. Click once to play a frame of the video.
	Stop playback/
	Fast forward. Subsequent presses will change the forward speed
	Select a camera and click this icon. Use the scroll wheel of your mouse to zoom in and zoom out of the image. Use the picture-in-picture screen to select a different area to view. Right-click to exit.
	Click to edit the video by marking start and end points which you can then copy to a USB drive (for more information, see <i>Video Segment Backup</i> beginning on pg. 271).
	Click to adjust the audio output volume.
	Click to save a snapshot of the current camera image and save to the USB drive.
	Add a tag. Tagging allows you to mark the location of information within a video for faster searches (for more information on tags, see <i>Tag Search and Playback</i> on pg. 284). Select a camera, pause the video when you see a person or object to be tagged, the press to add a tag (multiple tags can be created).
	Add a named tag (same as above but with the ability to name the tag).
	Click to switch the image scale for all playing cameras between original and stretch.

SUB-PERIODS PLAYBACK (CONTINUED)

- 7 **Timeline:** Click on any one of the split-screens. The time period of the selected video segment will be displayed on the timeline. The top timeline color bar indicates the time span of the video split-screen you have clicked. The bottom timeline color bar indicates the time span for the entire selected recording.



SMART SEARCH AND PLAYBACK


The *Smart* search function allows you to quickly search and play motion events in a supported camera, whether motion detection is enabled in this camera or not by defining one or more specific areas of the video to make it easier to find what you are searching for. To start, click the *Smart* tab on the *Search* screen.


















- 1 **Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate the existence of recordings on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 **Search Type:** Check the box next to the event type that you want to search for or check the box next to *Search Type* to search for all.
- 3 **Channel Selection:** Check the box next to the channel you want to search and play. Note that you may search only one channel at a time.
- 4 **Time Slot:** The *Smart* search results will be highlighted in dark blue in the time slot bar above the timeline.




SMART SEARCH AND PLAYBACK (CONTINUED)

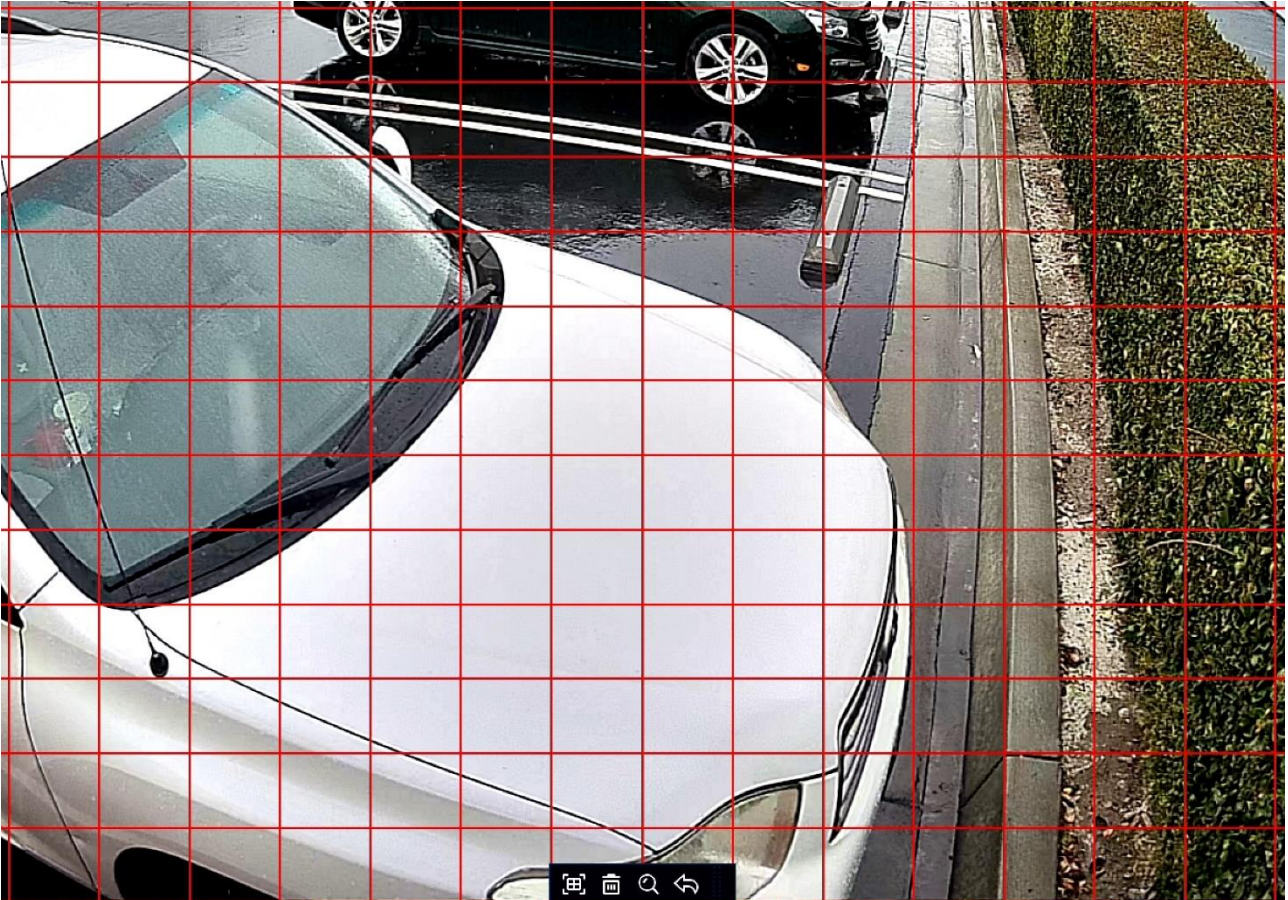
5 Playback Control Bar: Control the video playback from this bar. The various icons are defined in the chart below. Click the play icon  to start playing.



Icon	Definition
	Enlarge the playback video to full screen.
	Rewind. Subsequent presses will change the rewind speed.
	Slow play. Subsequent presses will change the playback speed
	Play (normal speed)
	Pause
	Play frame-by-frame. Click once to play a frame of the video.
	Stop playback/
	Fast forward. Subsequent presses will change the forward speed
	Select a camera and click this icon. Use the scroll wheel of your mouse to zoom in and zoom out of the image. Use the picture-in-picture screen to select a different area to view. Right-click to exit.
	Click to adjust the audio output volume.
	Click to save a snapshot of the current camera image and save to the USB drive.
	<i>Smart Search</i>
	Add a tag. Tagging allows you to mark the location of information within a video for faster searches (for more information on tags, see <i>Tag Search and Playback</i> on pg. 284). Select a camera, pause the video when you see a person or object to be tagged, the press to add a tag (multiple tags can be created).
	Add a named tag (same as above but with the ability to name the tag).
	Click to switch the image scale for all playing cameras between original and stretch.





SMART SEARCH AND PLAYBACK (CONTINUED)

6. **Smart Search:** Narrow the search further by defining one or more specific areas of the video. Click the  icon on the *Playback Control Bar*. The camera will be shown full screen and the *Smart* mode controls will now be visible.





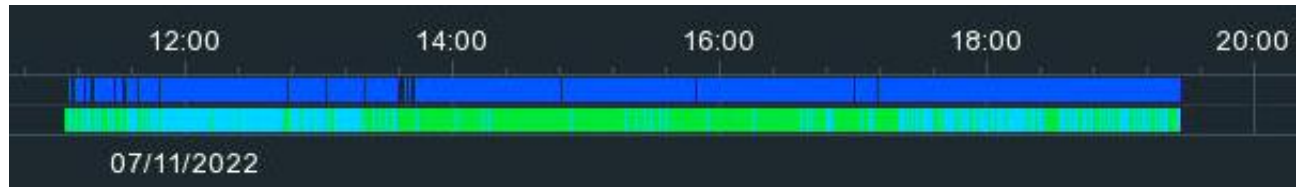
The *Smart Control Bar* will appear at the bottom of the screen. Click near the top right corner and drag to move it to another part of the display if desired.



-  Select the full screen as the detection area.
-  Delete all areas created.
-  Search and play video based on the areas defined.
-  Return to the playback interface.

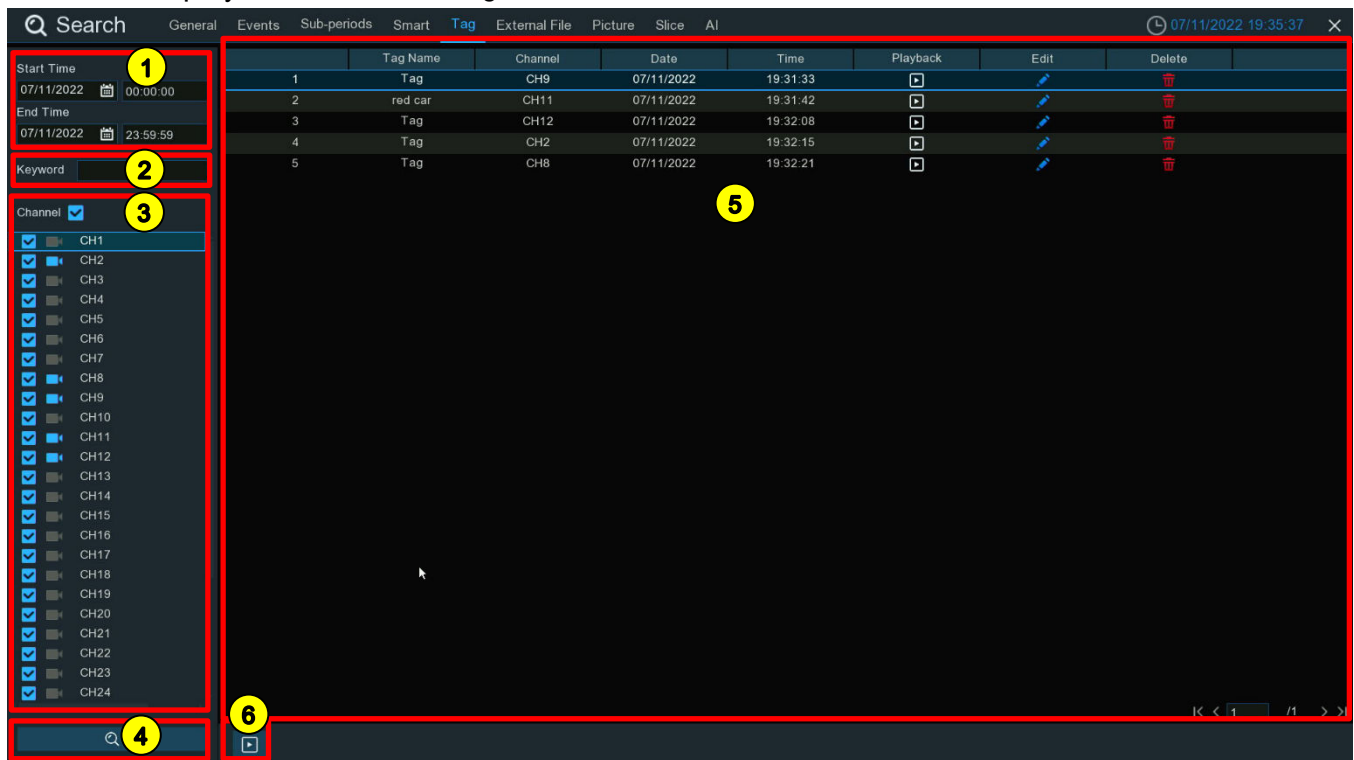
SMART SEARCH AND PLAYBACK (CONTINUED)


7. To define one or more specific areas, click the icon  to delete all already selected areas and click and drag to select the area that you want to define. Multiple areas can be defined.
8. When finished, click the Search icon  to search recordings based on the areas defined. You'll be returned to the playback interface where segments matching your search criteria will be shown in dark blue above the timeline.



TAG SEARCH AND PLAYBACK


Tag search lets you search, play, and manage the contents based on tags that you have added in Live View or playback. Click the *Tag* tab on the Search screen.

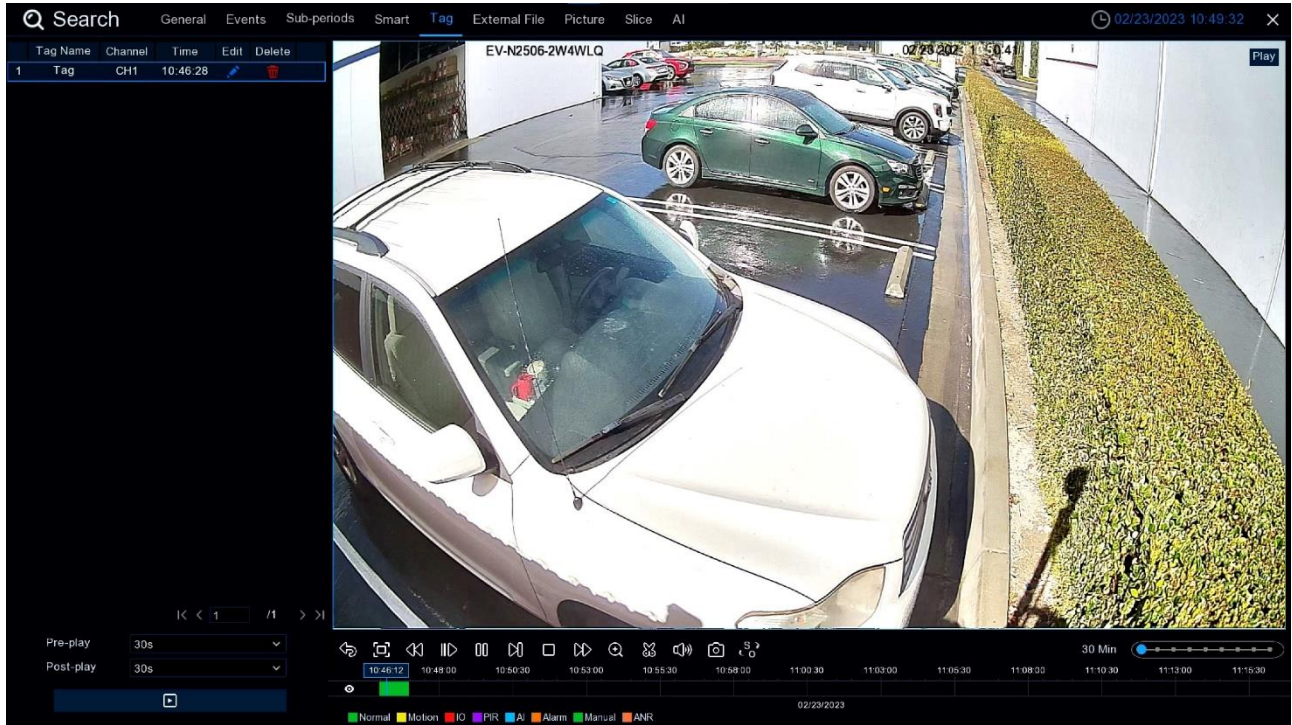




- 1 Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate the existence of tags on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 Keyword:** If you have created one or more named tags, enter the tag name (case sensitive).
- 3 Channel Selection:** Check the box next to the channel you want to search.
- 4 Search:** Click the  button to display the results on the right.
- 5 Search Results:** A list of tags matching your search criteria will be displayed here. Use the arrow icons at the bottom right of the result window to scroll back and forth between pages or type in the number of a specific page.



TAG SEARCH AND PLAYBACK (CONTINUED)

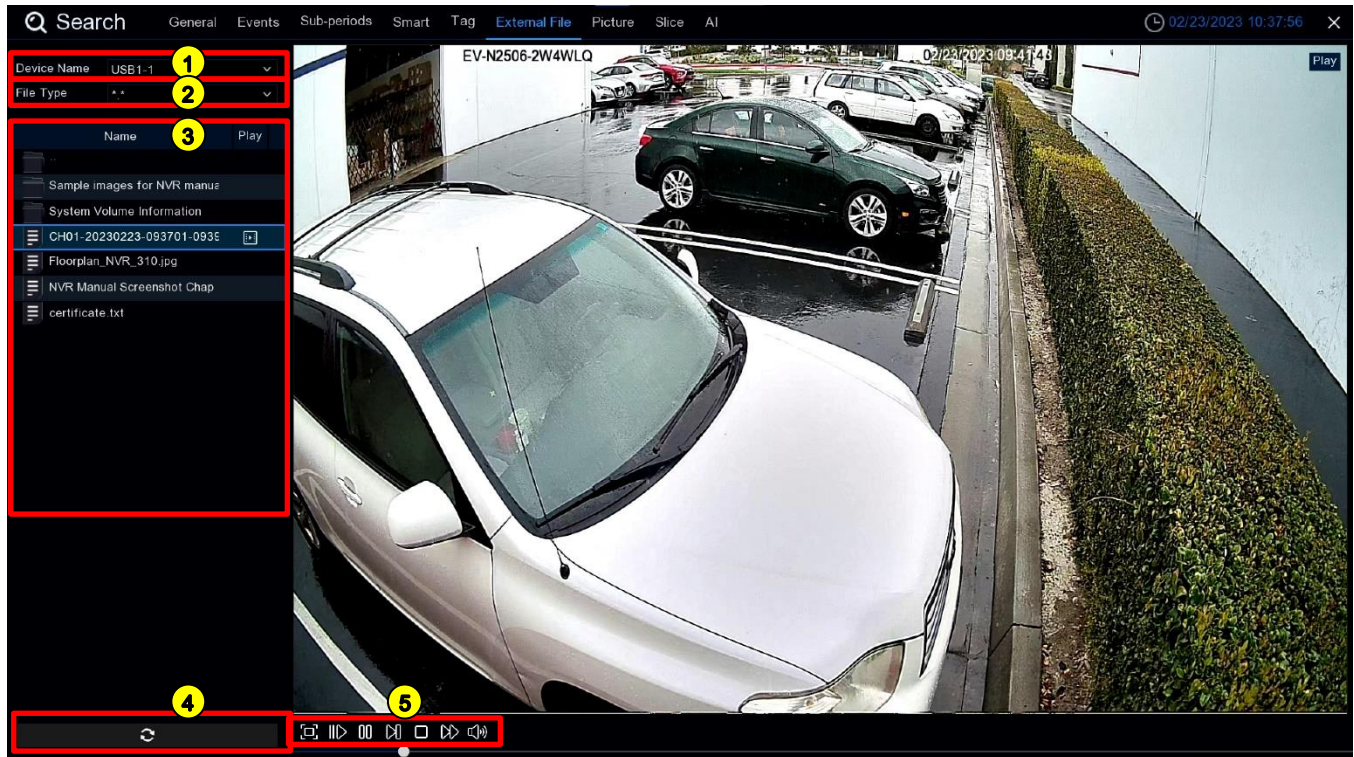
6 Playback: Click the play icon  to start playing.




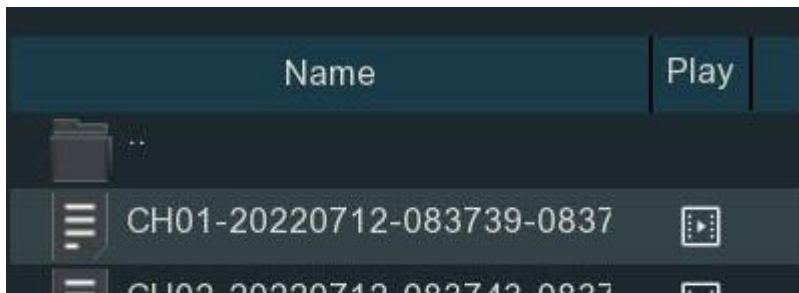
7. **Tag Edit/Delete:** To modify the tag name, click the  icon. Click the  icon to delete the tag.
8. **Pre-Play/Post-Play:** Click to adjust the duration to allow for more context before and/or after the tag.

PLAY EXTERNAL FILES

The NVR can also play files from a USB drive. Click the *External File* tab on the Search screen.




- 1 **Device Name:** If multiple USB drives are connected, click the dropdown to select the correct drive.
- 2 **File Type:** Select the file type you want to search and play. Leave default to search all supported formats.
- 3 **File Folder:** Select the folder where the video files are saved. Double-click an event to play or click the play  icon to the right of the file.

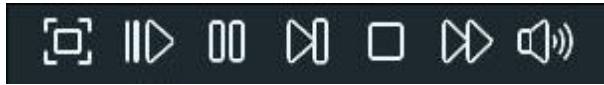











- 4 **Refresh:** To refresh the USB drive, click this button.



PLAY EXTERNAL FILES (CONTINUED)

- 5 Playback Control Bar:** Control the video playback from this bar. The various icons are defined in the chart below. Click the play icon  to start playing.




Icon	Definition
	Enlarge the playback video to full screen.
	Rewind. Subsequent presses will change the rewind speed.
	Slow play. Subsequent presses will change the playback speed
	Play (normal speed)
	Pause
	Play frame-by-frame. Click once to play a frame of the video.
	Stop playback/
	Fast forward. Subsequent presses will change the forward speed
	Click to adjust the audio output volume.

SEARCH AND VIEW SNAPSHOTS

Click the *Picture* tab on the *Search* screen to search, view, and copy snapshots to a USB drive.

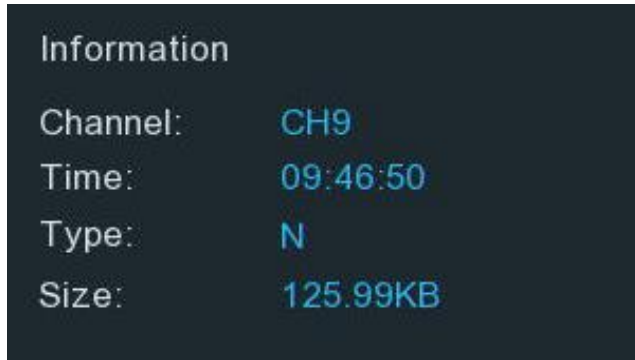


- 1 **Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate snapshots were taken on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 **Search Type:** Check the box next to the event type that you want to search for or leave all boxes checked.
- 3 **Channel Selection:** Check the box next to the channels you want to search. The icon of the selected camera will change to blue.
- 4 **Search:** Click the  button to display the results on the right.
- 5 **Search Results:** A thumbnail of each event that matches your search criteria will be displayed in the result window. Use the arrow icons at the bottom right of the result window to scroll back and forth between pages or type in the number of a specific page.

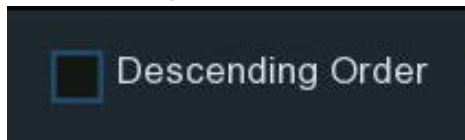


SEARCH AND VIEW SNAPSHOTS (CONTINUED)

- 6 **Information:** See the information for the selected event thumbnail here.





- 7 **Descending Order:** Check this box below the results to view the events in descending order.



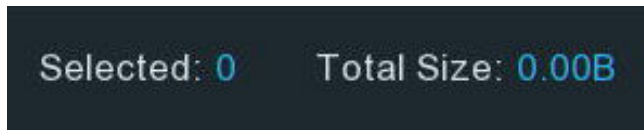
- 8 **Select:** Check the box above desired event thumbnails or check this box to select all events on the current page.



- 9 **Control:** Click the backup icon  to save selected snapshots to a USB drive. Click the play icon  to enter the slideshow window (see *Playing a Slideshow* beginning on pg. 290 for more information).



- 10 **Totals:** The number and total size of selected event(s) will be displayed here.

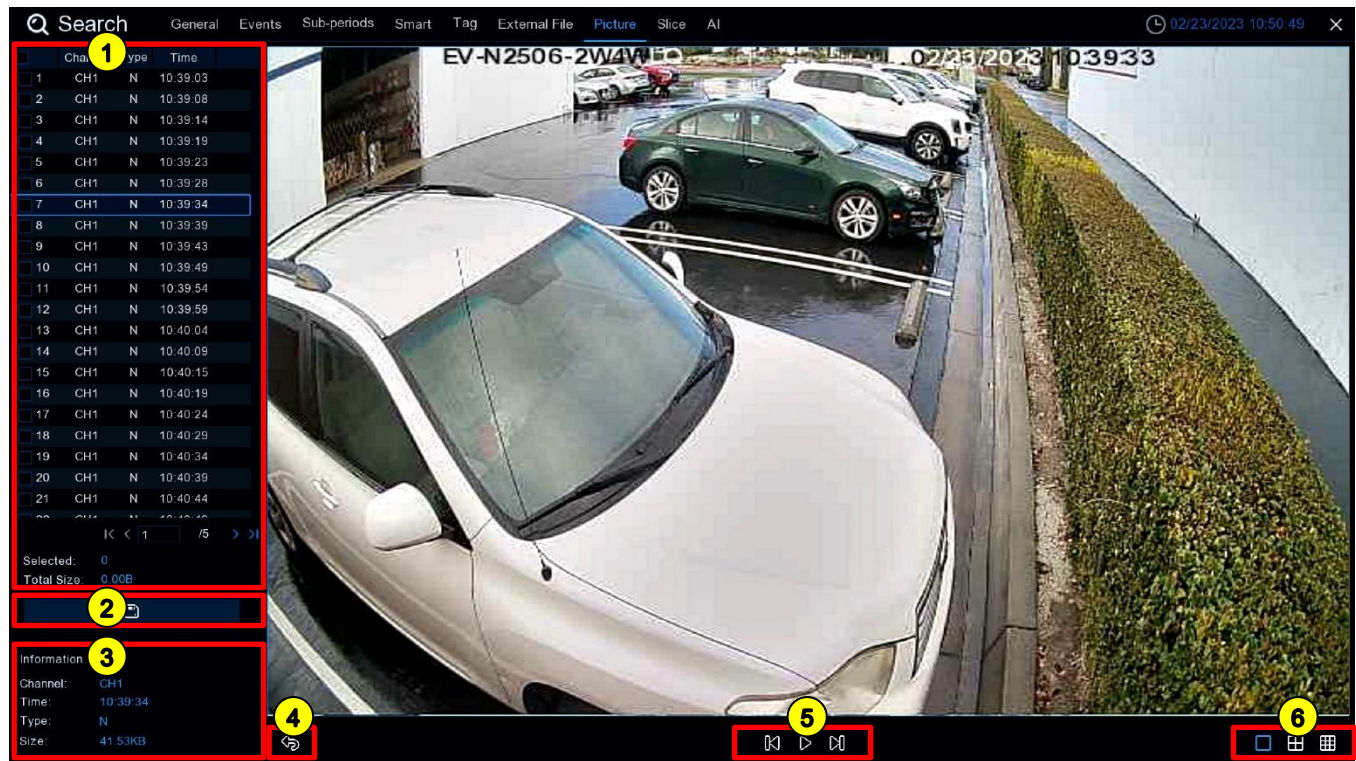


- 11 **Browse Type:** Click these icons to change how the events are displayed between *Thumbnail* (default), *List*, or *Detail*.



PLAYING A SLIDESHOW

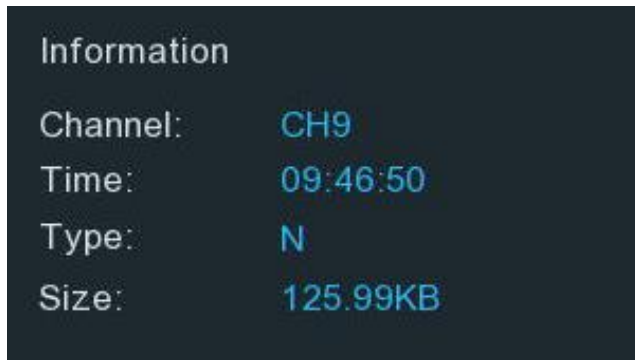
Play already selected snapshots in a slideshow from the following screen.




1 Snapshot List: Selected will be displayed here. Use the arrow icons at the bottom of the list to scroll back and forth between pages or type in the number of a specific page.

2 Save Copy: Select a snapshot and click  to copy it to a USB drive.

3 Information: See the information for the selected snapshot here.



4 Go Back: Click  to go back to the previous screen.

SEARCH AND VIEW SNAPSHOTS – PLAYING A SLIDESHOW (CONTINUED)

- 5 **Playback Control Bar:** Control the video playback from this bar. The various icons are defined in the chart below.



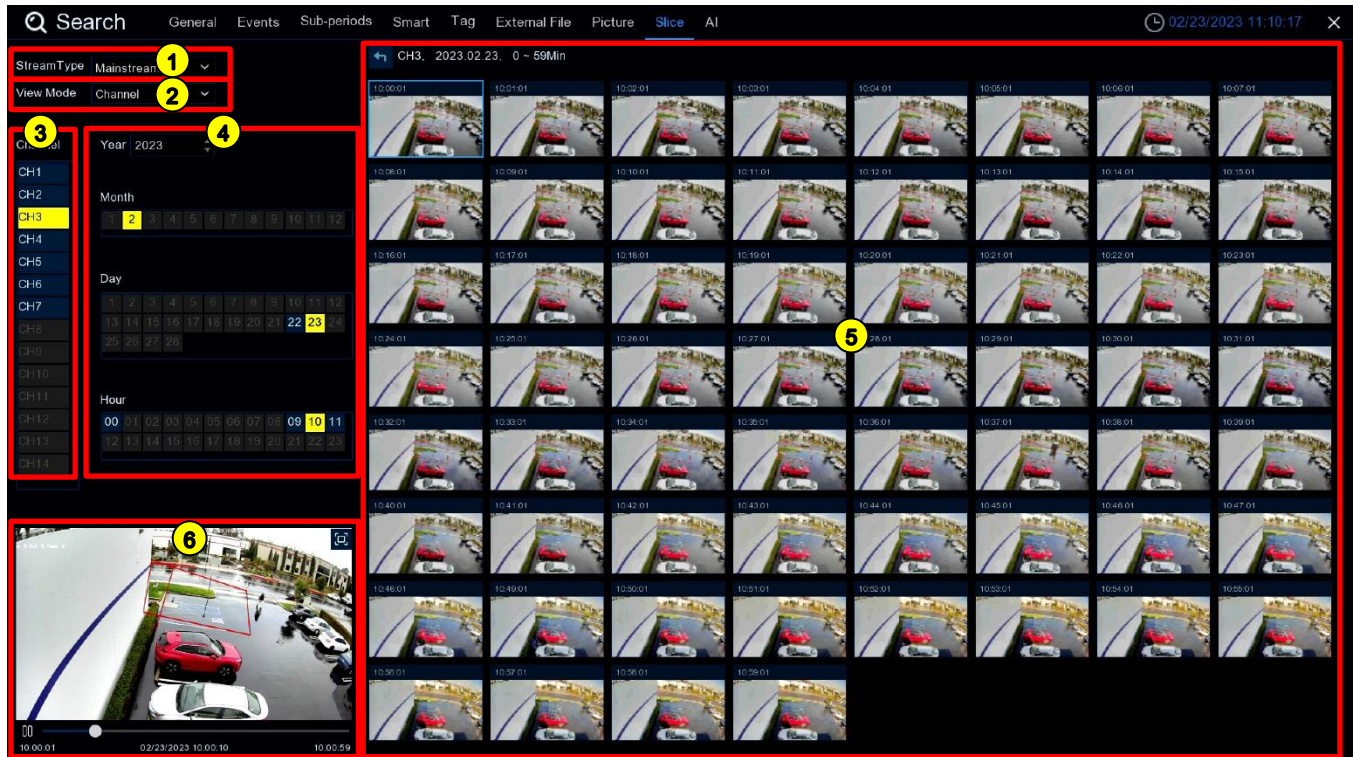
Icon	Definition
	Pause the slideshow.
	When the slideshow is paused, click to view the previous snapshot.
	Play the slideshow
	When the slideshow is paused, click to view the next snapshot.

- 6 **View:** Click these icons to select how many snapshots that you want to view at once between 1 (default), 4, or 9.




SLICE SEARCH

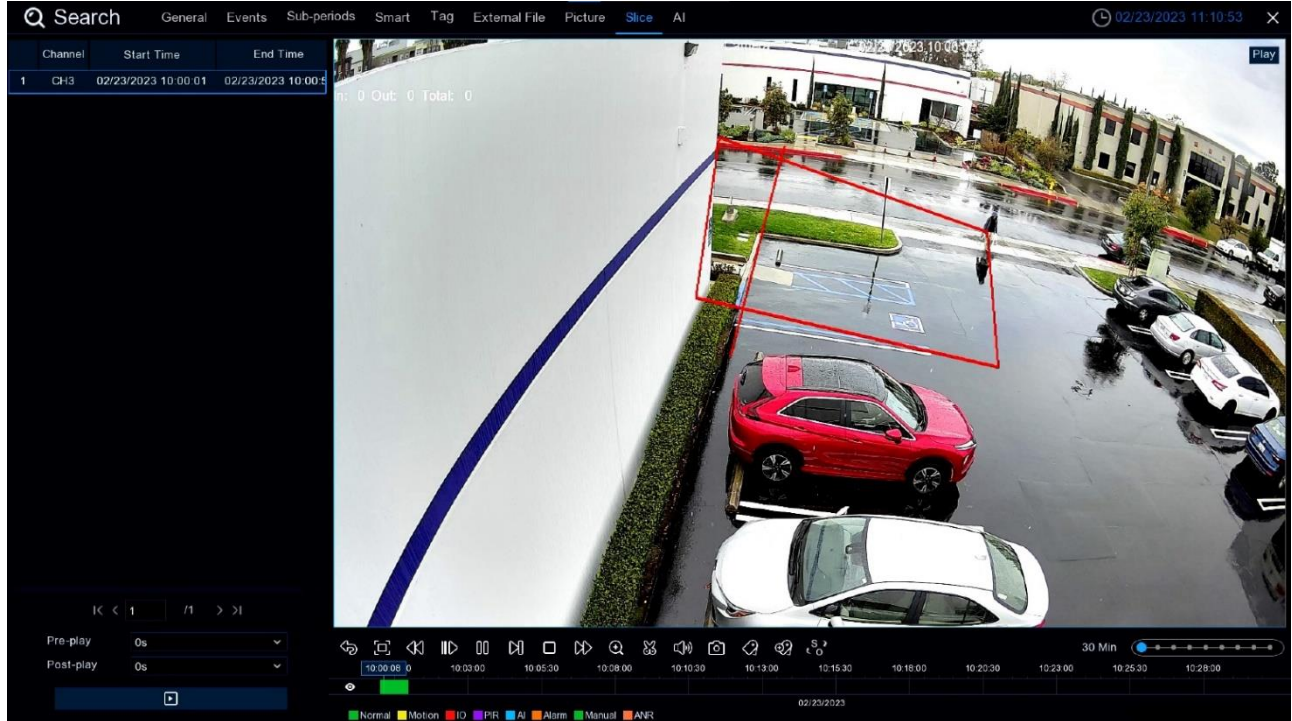
Slice cuts recordings into one-minute segments to help you quickly find what you want.



- 1 **Stream Type:** Select the video stream to search. The default is *Mainstream*. If dual-stream recording is enabled, *Substream* will also be an option.
- 2 **View Mode:** Select the View Mode:
 - o **Channel:** Choose to focus the search primarily on what happened at different times for the selected camera.
 - o **Time:** Choose to focus the search primarily on what happened on different cameras during a certain time period.
- 3 **Channel:** Check the box next to the channel you want to search. Only one channel can be searched at once.
- 4 **Year/Month/Day/Hour:** Choose the year, then check the month, day, and hour to narrow your search to a single hour.
- 5 **Search Results:** When all other settings have been selected, a thumbnail image of each 60-second segment of the selected hour will be displayed in the result window.

SLICE SEARCH (CONTINUED)

- 6 **Preview:** Click on any one of the thumbnail images to preview that segment in the window on the bottom left of the screen. Click the  icon to view the video full screen and make a backup.



AI SEARCH

AI Search lets you search *Face Detection*, *License Plates*, *Human & Vehicle Detection*, *PID & LCD*, *Repeat Visitors*, and *Face Attendance* events. To start, click the *Events* tab.

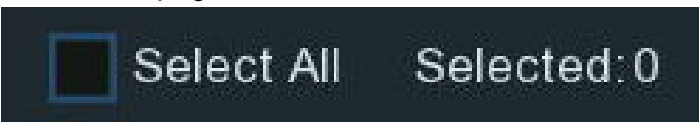
FACE DETECTION EVENTS

The screenshot shows the AI Search interface for Face Detection Events. The interface includes a search bar with filters for Date/Time, Groups, Attributes, Channels, Sort By, and Alarm Group. A grid of face images is displayed, and a search button is visible. Red boxes and yellow circles highlight specific UI elements corresponding to the numbered instructions below.

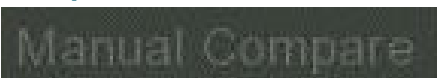
- 1 **Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate the existence of face images on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 **Groups...:** Click to select the groups where your targeted face profiles are saved.
- 3 **Attributes...:** If you have enabled the *Face Attributes* detection (see *FD (Face Detection)* beginning on pg. 110 for more details), you can click here to select the attribute(s) for your search.
- 4 **Channels...:** Click if you want to select specific channels to search (the default is *All Channels*).
- 5 **Search:** Click to search and display the results on the right.
- 6 **Sort By:** Select whether to display the images in ascending or descending order by time.
- 7 **Alarm Group...:** Click to narrow your search by selecting specific alarm group(s).

AI SEARCH – FACE DETECTION EVENTS (CONTINUED)

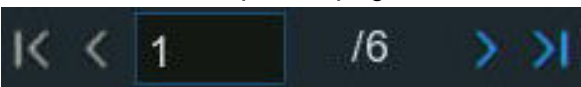
- 8 **Select All:** Check the box above desired thumbnails or check this box to select all events on the current page.



- 9 **Compare:** Select one or more images and click this button to compare with other images.






- 10 **Results Navigation:** Use the arrow icons to scroll back and forth between pages or type in the number of a specific page.



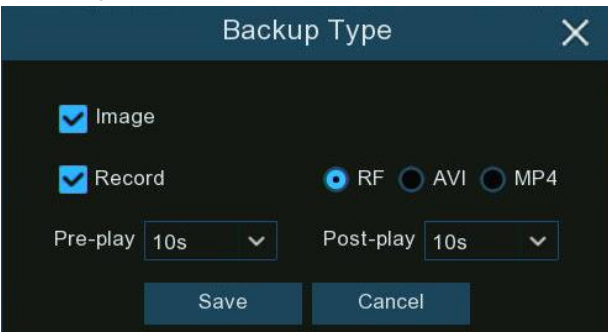
- 11 **Browse Type:** Click these icons to change how the events are displayed between Thumbnail 1 (default), Thumbnail 2, List, or Detail.



- 12 **Control:** Click the backup icon  to save selected face images to a USB drive. Click the play icon  to enter the playback window (see *Event Playback Control* beginning on pg. 275 for more information) or click  to add some time before and after the event and then play (see *Playing Events* beginning on pg. 296 for more information).



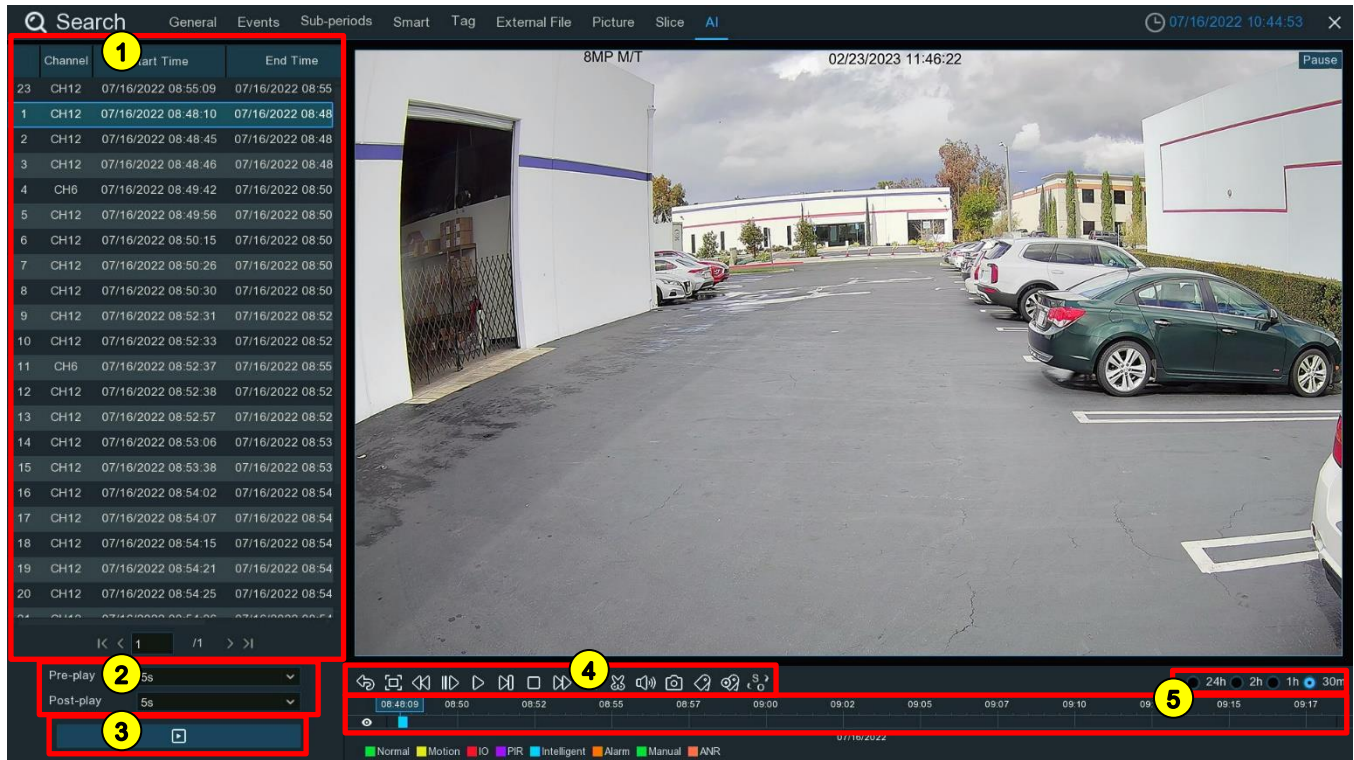
To save video files also, check the *Record* box in the popup, select the video format, adjust the length of time before and after the events, and click *Save*.



AI SEARCH – FACE DETECTION EVENTS (CONTINUED)

PLAYING EVENTS

If you click the play icon to play selected events, you should see a screen similar to the one below.



- 1 **Event List:** Use the arrow icons at the bottom of the list to scroll back and forth between pages or type in the number of a specific page. Double-click an event to play it immediately.
- 2 **Pre-Play/Post-Play:** Click to adjust the duration to allow for more context before and/or after the event.
- 3 **Play:** Click the icon to play.

AI SEARCH – FACE DETECTION EVENTS, PLAYING EVENTS (CONTINUED)

4 Playback Control Bar: Control the video playback from this bar (various icons defined below).



Icon	Definition
	Return to the event search page.
	Enlarge the playback video to full screen.
	Rewind. Subsequent presses will change the rewind speed.
	Slow play. Subsequent presses will change the playback speed
	Play (normal speed)
	Pause
	Play frame-by-frame. Click once to play a frame of the video.
	Stop playback/
	Fast forward. Subsequent presses will change the forward speed
	Select a camera and click this icon. Scroll to zoom in and out of the image. Use the picture-in-picture screen to select a different area to view. Right-click to exit.
	Click to edit the video by marking in and out points which you can then copy to a USB drive (for more information, see <i>Video Segment Backup</i> beginning on pg. 271).
	Click to adjust the audio output volume.
	Click to save a snapshot of the current camera image and save to the USB drive.
	Add a tag. Tagging allows you to mark the location of information for faster searches (for more detail, see <i>Tag Search and Playback</i> on pg. 284). Select a camera, pause the video at the proper point, then click to add a tag (multiple tags can be created).
	Add a named tag (same as above but with the ability to name the tag).
	Click to switch the image scale for all playing cameras between original and stretch.

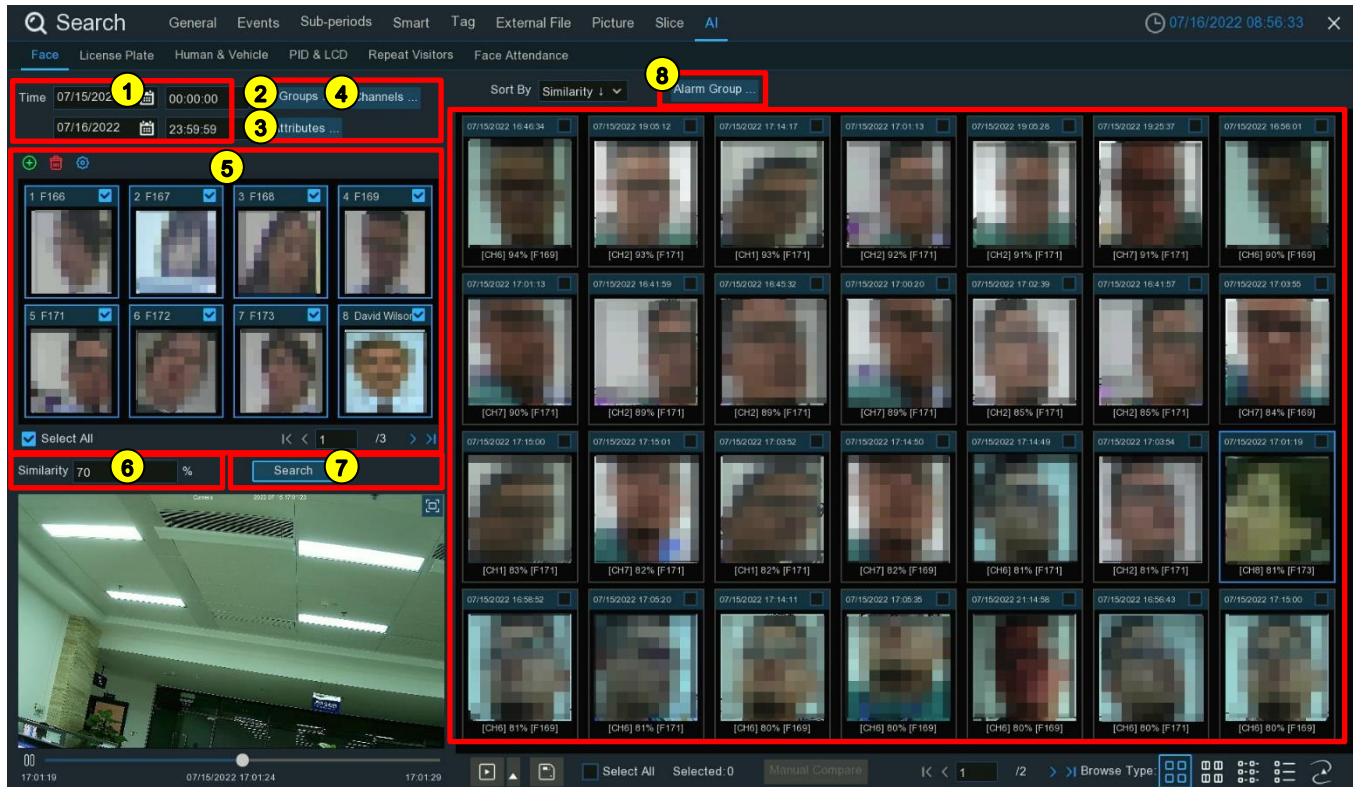
5 Timeline: Quickly see and locate the playback position by clicking on the timeline. You can zoom in or zoom out on the timeline by using the timeframe options for precise location.



AI SEARCH – FACE DETECTION EVENTS (CONTINUED)

SEARCH AND COMPARE FACE IMAGES (RECOGNITION)

You can select one or more face profiles from your face recognition database and search recordings to find face images that match specific search criteria.





- 1 **Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate the existence of snapshots taken on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 **Groups...:** Click to select the groups where your targeted face profiles are saved.
- 3 **Attributes...:** If you have enabled the *Face Attributes* detection (see *FD (Face Detection)* beginning on pg. 110 for more details), you can click here to select the attribute(s) for your search.
- 4 **Channels...:** Click if you want to select specific channels to search (the default is *All Channels*).

AI SEARCH – FACE DETECTION EVENTS, SEARCH AND COMPARE FACE IMAGES
(RECOGNITION) (CONTINUED)


- 5 Selection Display:** All face profiles in your selected group(s) will be displayed in the display window.

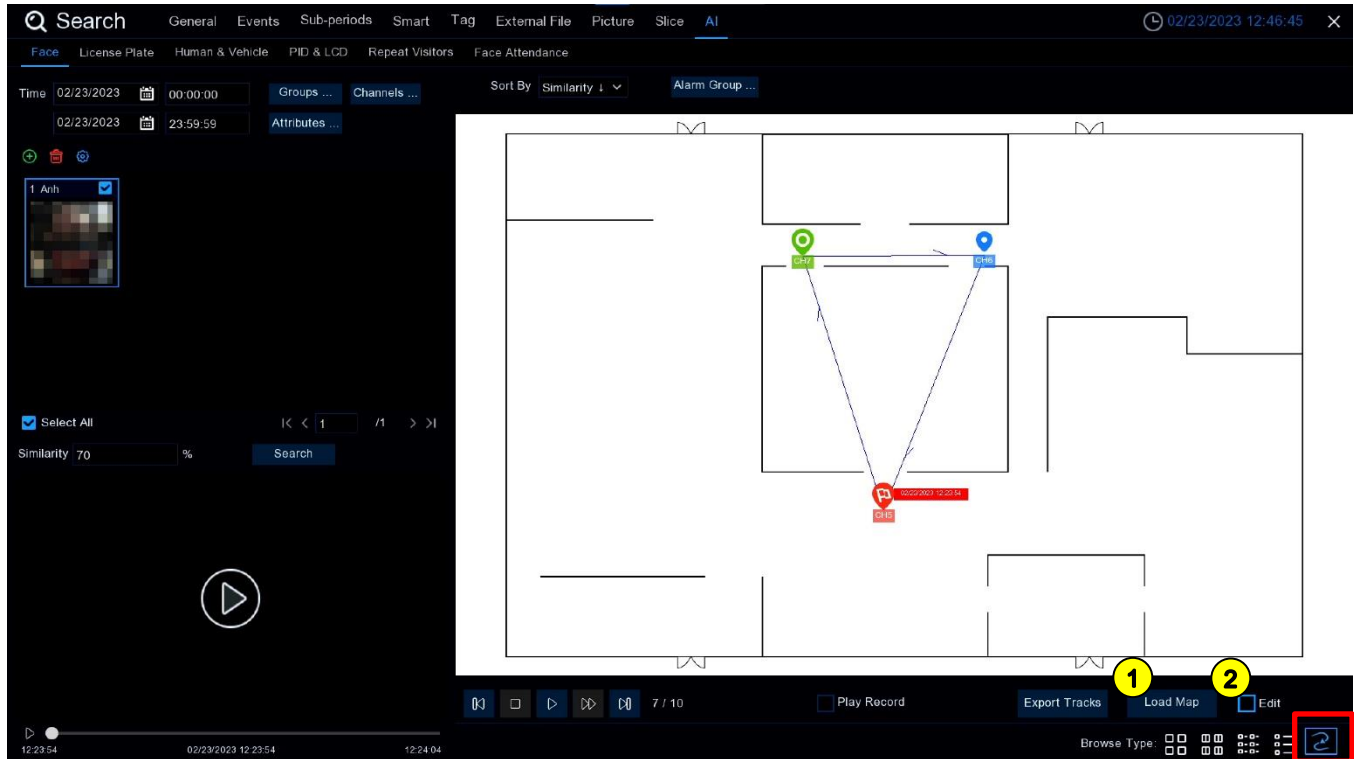


- **Select All:** All face profiles are selected by default. Uncheck this box to deselect all.
 - Check/uncheck the box above each image to select/deselect it.
 - Select one or more images and click the  icon to delete the selected images.
 - Click the add  icon and select face images from internal or external storage to add more targeted face images.
- 6 Similarity:** Set how closely, in percentage terms, the detected face must match a targeted face to be considered a recognized match. The default threshold is 70%. A higher similarity percentage will result in fewer false recognition results.
- 7 Search:** Click to search and display the results on the right.
- 8 Alarm Group...:** Click to narrow your search by selecting specific alarm group(s) (default, all alarm groups).

AI SEARCH – FACE DETECTION EVENTS (CONTINUED)


TRACKING FACES

The *Tracking* function allows you to easily track someone's appearance/disappearance over time among your designated cameras if you load a map and place your cameras on the map. To start, click the tracking icon  in the bottom right corner of the *Face* search page.

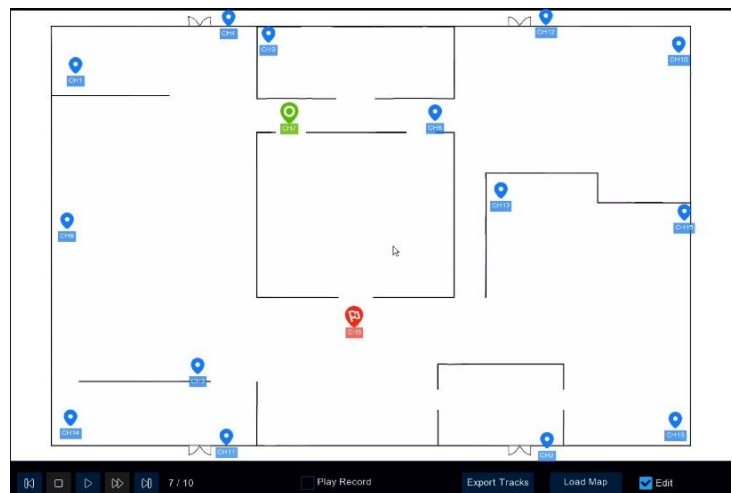


NOTE: Steps 1 and 2 are only required for initial setup or when other changes are made to cameras and their location.

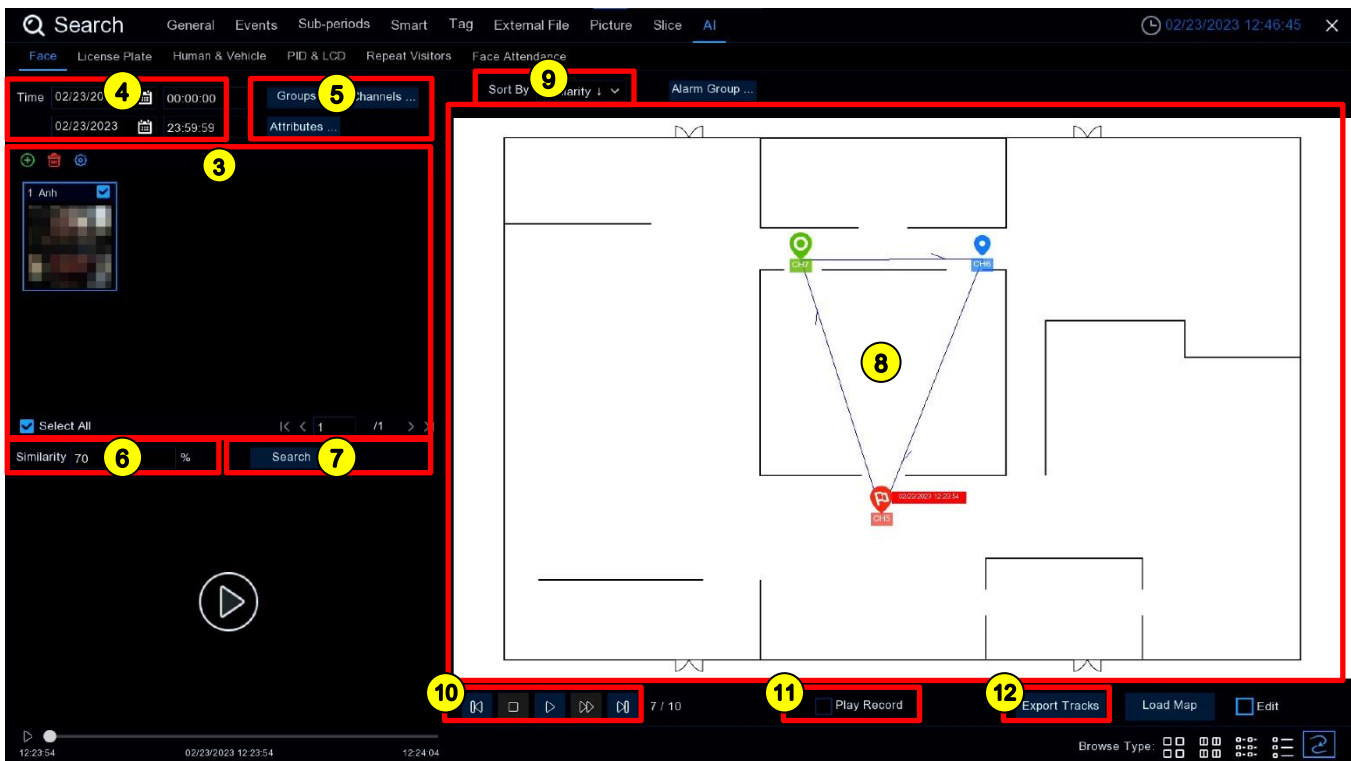
1 Load Map: Click to load a map image from your USB drive.


2 Edit: Check to place your cameras. Camera site icons  labeled with their NVR channel number will appear on the map screen.

- Click and drag the icons to the positions on the map where the corresponding cameras are installed.
- When all icons are placed correctly, uncheck the *Edit* checkbox.



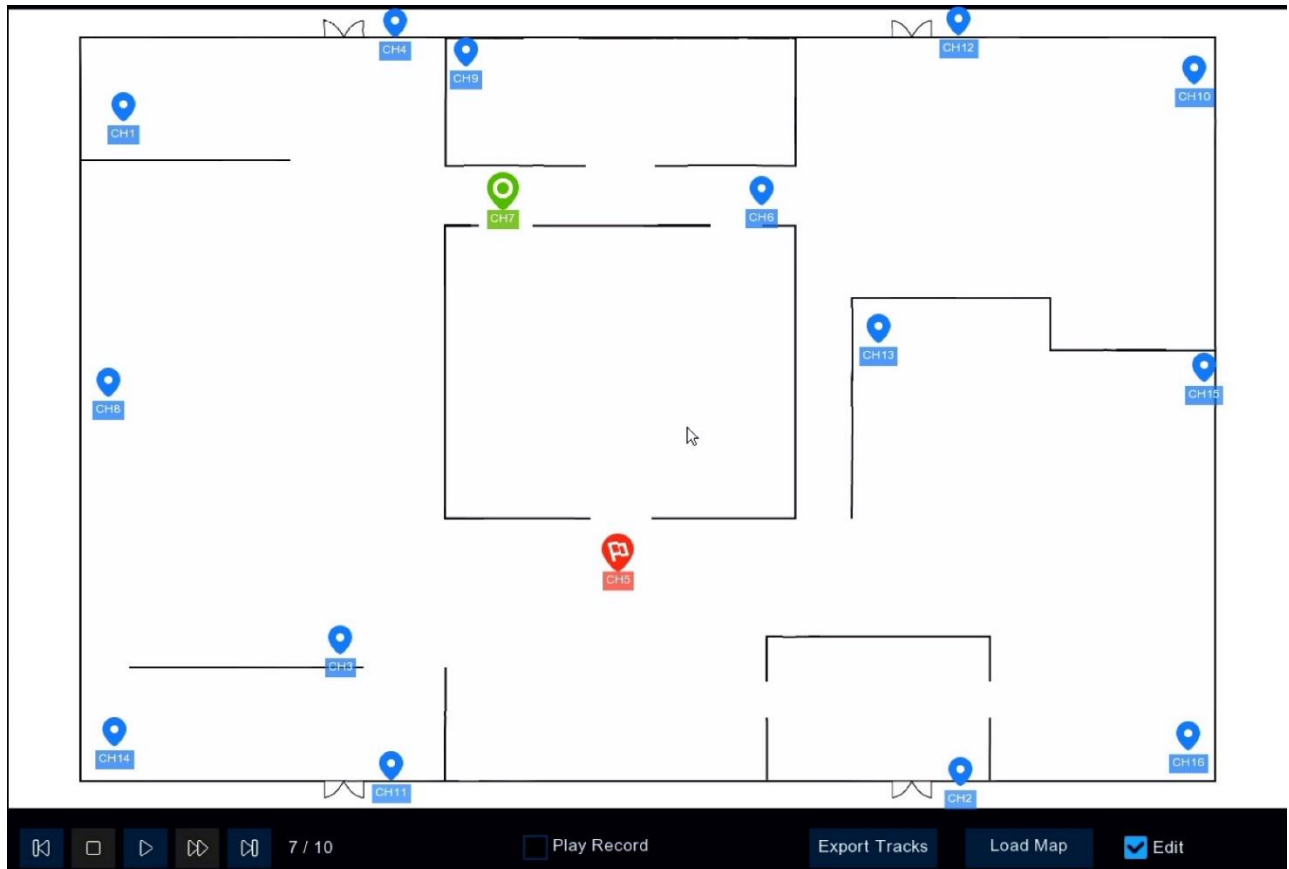
AI SEARCH – FACE DETECTION EVENTS, TRACKING FACES (CONTINUED)







- 3 **Selection Display:** Click the add icon  and select a face image from an internal or external storage device. Note that the system can track only one face at a time.
- 4 **Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate the existence of snapshots taken on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 5 **Channels...:** Click if you want to select specific channels to search (the default is *All Channels*).
- 6 **Similarity:** Set how closely, in percentage terms, the detected face must match a targeted face to be considered a recognized match. The default threshold is 70%. A higher similarity % will result in fewer false recognition results.
- 7 **Search:** Click to search and display the results on the right.

AI SEARCH – FACE DETECTION EVENTS, TRACKING FACES (CONTINUED)


- 8 **Search Results:** After processing, camera site icons are displayed on the map with different colors and illustrations to display when and where the person was first detected continuing to when they were last detected by a camera.

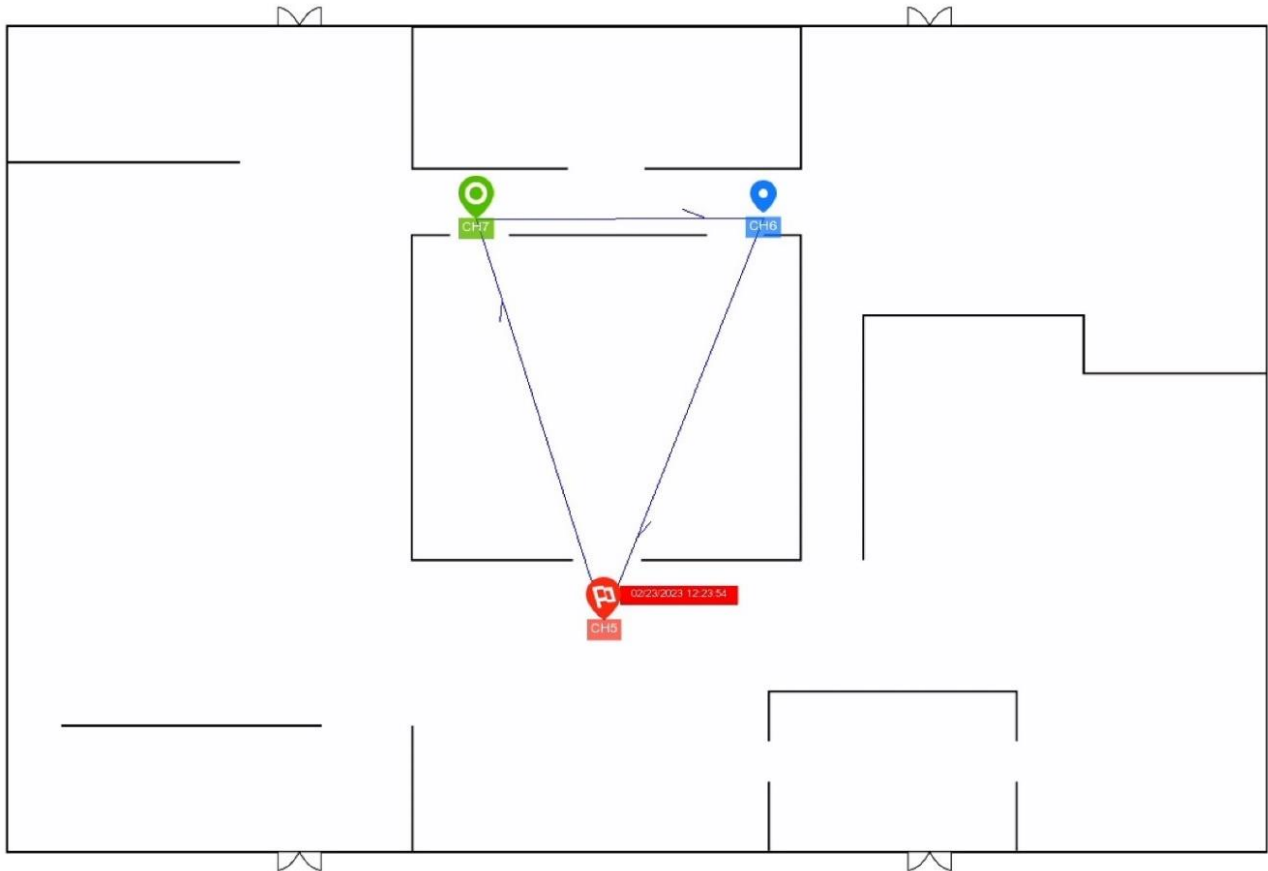


-  Denotes the camera where the face was first detected.
-  Denotes the camera where the face was last detected.
-  Overlapping icons denote the camera where the face was detected first and last.
-  Denotes waypoints between the first and last detections.

- 9 **Sort By:** Click to change the sort settings to *Time* ↑ to sort the events from oldest to newest.







AI SEARCH – FACE DETECTION EVENTS, TRACKING FACES (CONTINUED)

- 10 Playback Control Bar:** Click the  icon to start playing an animation demonstration of the person's movement track.



Control the video playback from this bar. The various icons are defined in the chart below.



Icon	Definition
	Click to move to previous location.
	Stop playback
	Play
	Pause
	Click to adjust the playback speed.
	Click to move to the next location.

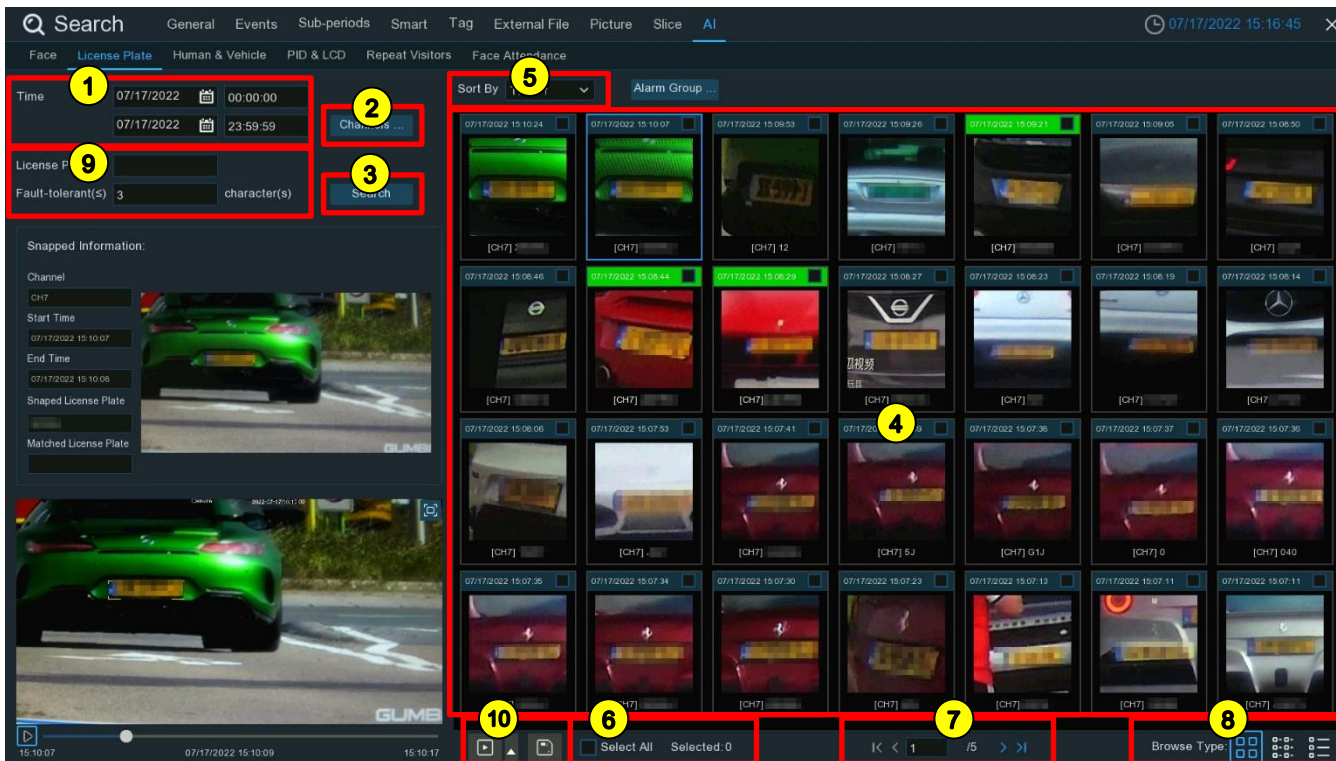
AI SEARCH – FACE DETECTION EVENTS, TRACKING FACES (CONTINUED)

- 11 Play Record:** Check this box at the bottom of the screen to play the movement animation together with the event recording.
- 12 Export Tracks:** Click to export the tracking data for the selected time period to a USB drive as an Excel compatible file. You can open the file in a spreadsheet app to further analyze the data.

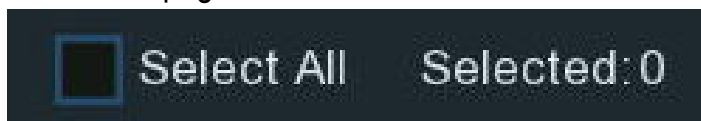
AI SEARCH (CONTINUED)

LICENSE PLATE SEARCH

Click the *License Plate* tab to enter the license search section. If you have enabled *License Plate Detection* in cameras, you will see the license detection events captured on the current day.

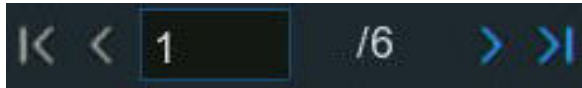


- 1 **Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate that license plates were detected on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 **Channels...:** Click if you want to select specific channels to search (the default is *All Channels*).
- 3 **Search:** Click to search and display the results on the right.
- 4 **Search Results:** The search result will be displayed here. Click on any of the thumbnails to display its information in the window to the left and playback the recording in the preview window bottom left.
- 5 **Sort By:** Select whether to display the images in ascending or descending order by time.
- 6 **Select All:** Check the box above desired thumbnails or check this box to select all events on the current page.



AI SEARCH – LICENSE PLATE SEARCH (CONTINUED)

- 7 **Results Navigation:** Use the arrow icons to scroll back and forth between pages or type in the number of a specific page.



- 8 **Browse Type:** Click these icons to change how the events are displayed between *Thumbnail* (default), *List*, or *Detail*.






- 9 **License Plate/Fault Tolerance:** Click to narrow the search by entering a license plate and a *Fault Tolerance* number. The latter sets how many characters in a license plate may vary from a license profile in the group to be considered a recognized match. Variations in image resolution, light, camera angles, vehicle speed, and many other things may affect character recognition. If the number of characters that differ between the detected license number and a license profile in the group does not exceed the set value, the detected license will be considered a recognized match. See the following chart for examples.

Recognized Number	Profile Number	Fault Tolerance	Recognition Result
AB123C	AB-123-C	≤2 characters	True
AB123C	AB-123-C	≤0 or 1 character	False
A8I23C	AB123C	≤2 characters	True
A8I23C	AB123C	≤0 or 1 character	False
B594SB	B734KB	≤3 characters	True
B594SB	B734KB	≤2 character	False
AB132C	AB123C	≤2 characters	True
AB123C	AB123C	≤1 or 1 character	True

Examples of True and False Results

NOTE: Only English letters and digits are recognized by the system. Special characters and symbols including underlines, slashes, hyphens, etc. will be excluded. If you have input any special symbols into the license number field when creating profiles, you should set the *Fault Tolerance* to take account of that.

AI SEARCH – LICENSE PLATE SEARCH (CONTINUED)

- 10 Control:** Click the backup icon  to save selected license plate images to a USB drive. Click the play icon  to enter the playback window (see *Event Playback Control* beginning on pg. 275 for more information) or click  to add some time before and after the event and play (see *Playing Events* beginning on pg. 296 for more information).



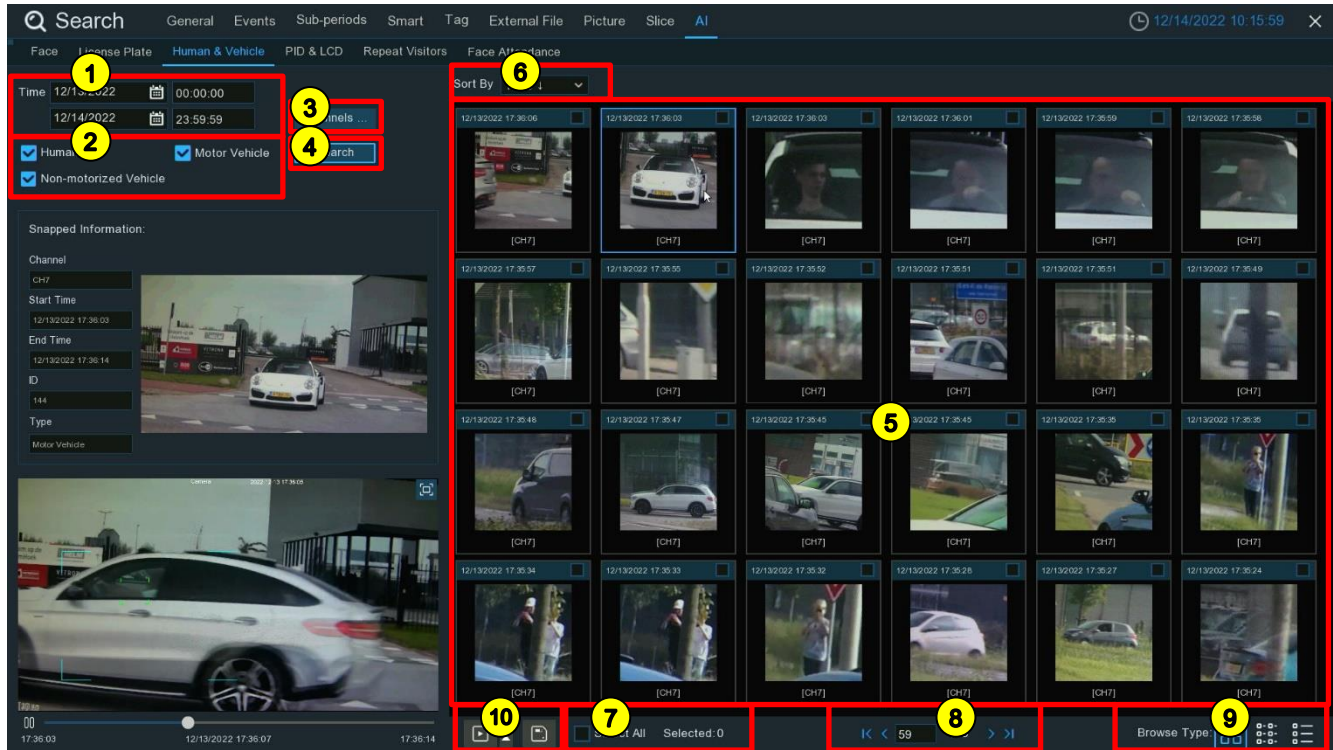
To also save video files, check the *Record* box in the popup, select the video format, adjust the length of time before and after the events, and click *Save*.



AI SEARCH (CONTINUED)

HUMAN AND VEHICLE

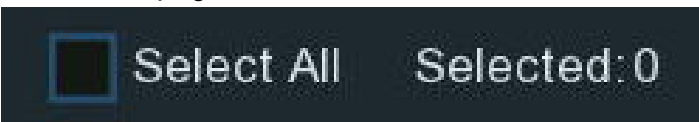
Click the *Human & Vehicle* tab to set up intelligent detection for both. If you have enabled *Human & Vehicle Detection* on your cameras, you will see the related detection events captured on the current day.



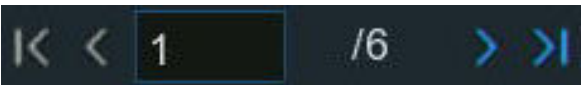
- 1 Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate humans and/or vehicles were detected on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 Target:** Check the box to select the target type(s) you want to search for.
- 3 Channels...:** Click if you want to select specific channels to search (the default is *All Channels*).
- 4 Search:** Click to start the search.
- 5 Search Results:** The search result will be displayed here. Click any of the thumbnails to display its information in the area to the left and playback the video in the preview window bottom left.
- 6 Sort By:** Select whether to display the images in ascending or descending order by time.

AI SEARCH – HUMAN AND VEHICLE (CONTINUED)

- 7 **Select All:** Check the box above desired thumbnails or check this box to select all events on the current page.






- 8 **Results Navigation:** Use the arrow icons to scroll back and forth between pages or type in the number of a specific page.



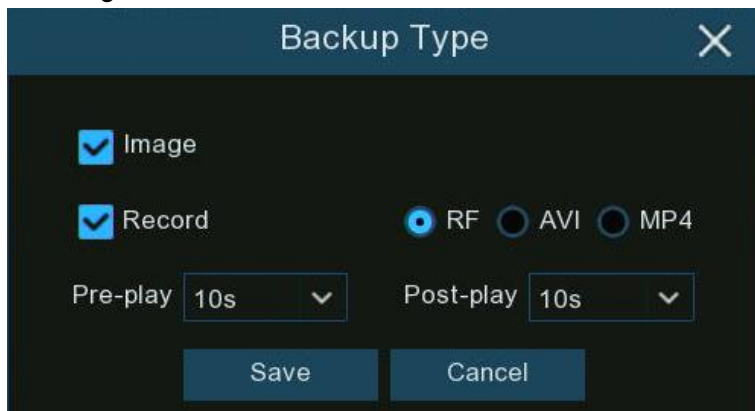
- 9 **Browse Type:** Click these icons to change how the events are displayed between *Thumbnail* (default), *List*, or *Detail*.



- 10 **Control:** Click the backup icon  to save selected images to a USB drive. Click the play icon  to enter the playback window (see *Event Playback Control* beginning on pg. 275 for more information) or click  to add some time before and after the event and then play (see *Playing Events* beginning on pg. 296 for more information).



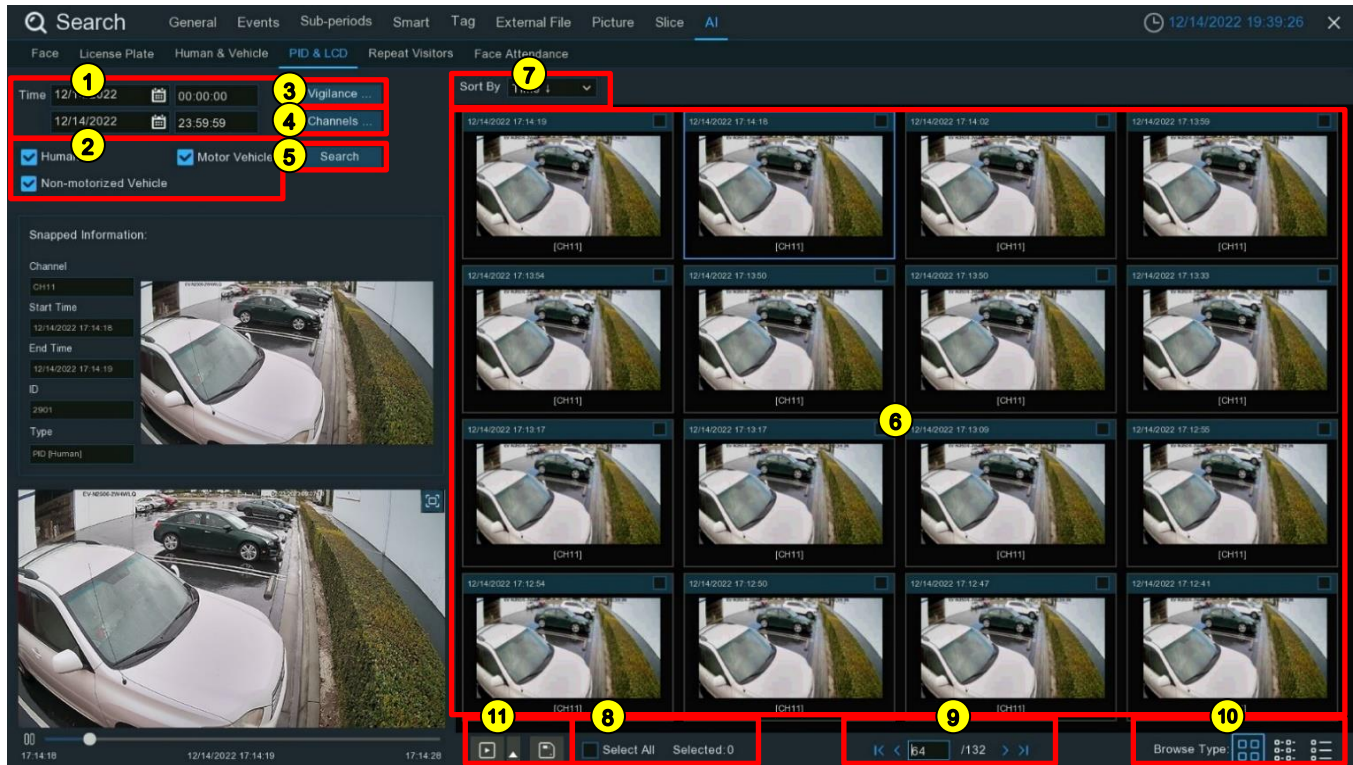
To also save video files, check the *Record* box in the popup, select the video format, adjust the length of time before and after the events, and click *Save*.



AI SEARCH (CONTINUED)

PIC AND LCD

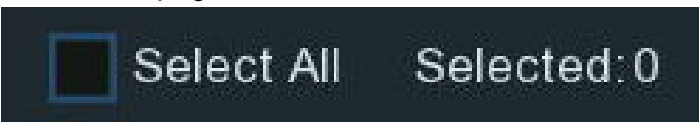
Click the *PID & LCD* tab to enter the *PID (Perimeter Intrusion Detection) & LCD (Line Crossing Detection)* event search section, if you have enabled the *PID* and/or *LCD* in cameras, you will see the detection events captured on the current day.



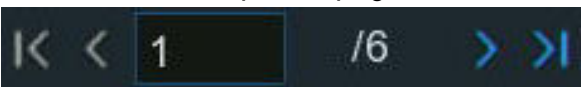
- 1 Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate that humans and/or vehicles were detected on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 Target:** Check the box to select the target type(s) you want to search for.
- 3 Vigilance:** Click and select PID and/or LCD.
- 4 Channels...:** Click if you want to select specific channels to search (the default is *All Channels*).
- 5 Search:** Click to start the search.
- 6 Search Results:** The search result will be displayed here. Click any of the thumbnails to display its information in the area to the left and playback the video in the preview window bottom left.
- 7 Sort By:** Select whether to display the images in ascending or descending order by time.

AI SEARCH – PIC AND LCD (CONTINUED)

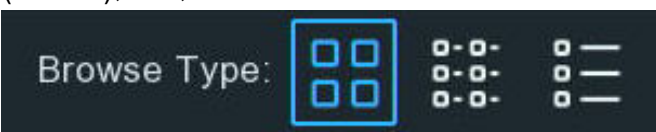
- 8 **Select All:** Check the box above desired thumbnails or check this box to select all events on the current page.






- 9 **Results Navigation:** Use the arrow icons to scroll back and forth between pages or type in the number of a specific page.



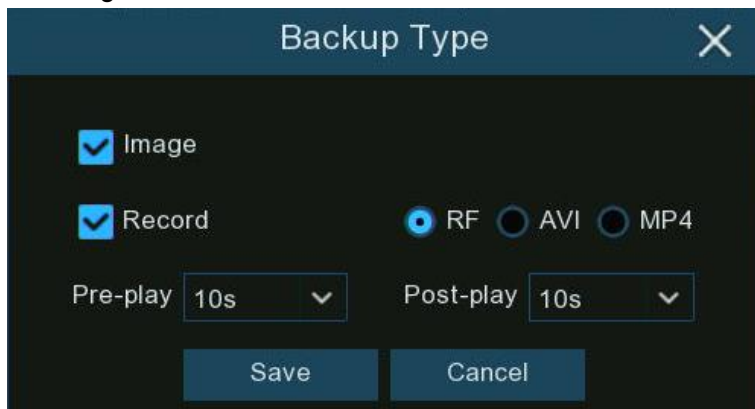
- 10 **Browse Type:** Click these icons to change how the events are displayed between *Thumbnail* (default), *List*, or *Detail*.



- 11 **Control:** Click the backup icon  to save selected images to a USB drive. Click the play icon  to enter the playback window (see *Event Playback Control* beginning on pg. 275 for more information) or click  to add some time before and after the event and then play (see *Playing Events* beginning on pg. 296 for more information).



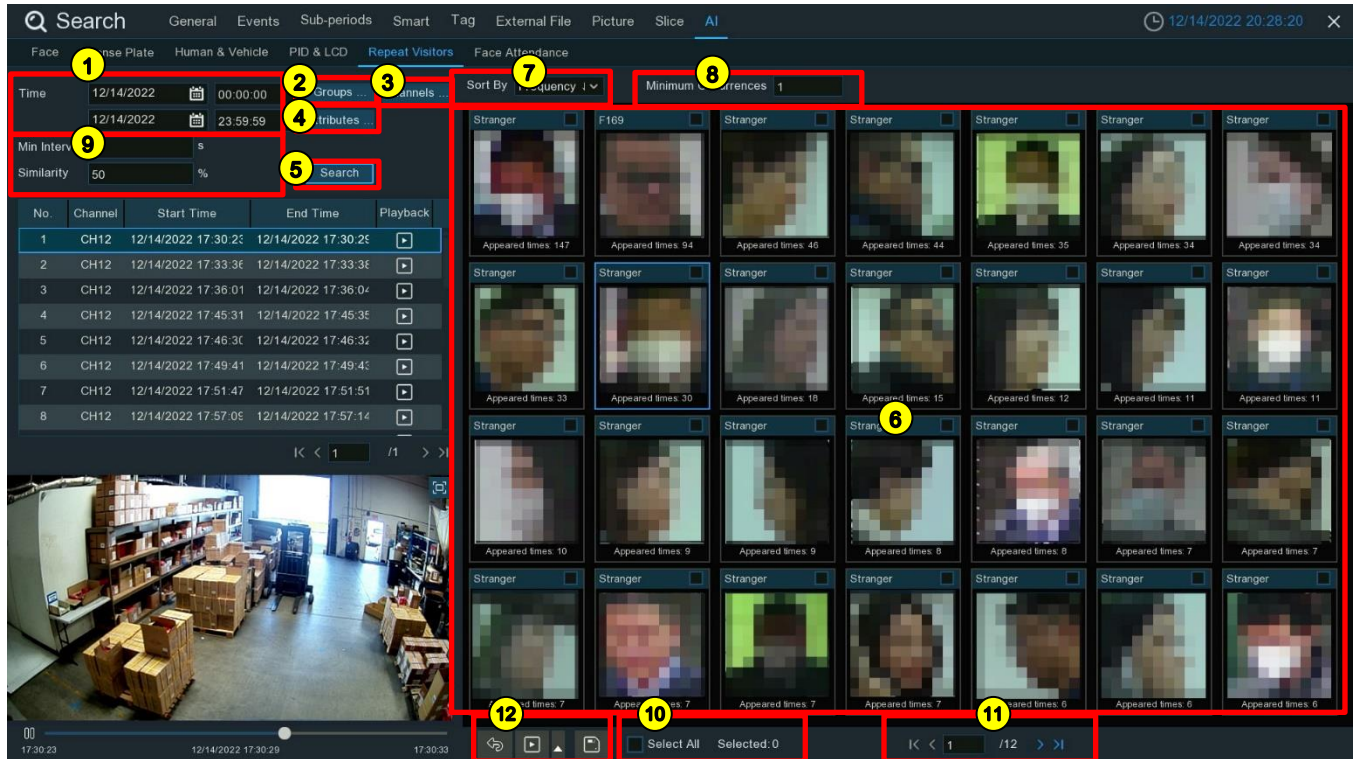
To also save video files, check the *Record* box in the popup, select the video format, adjust the length of time before and after the events, and click *Save*.



AI SEARCH (CONTINUED)

REPEAT VISITORS

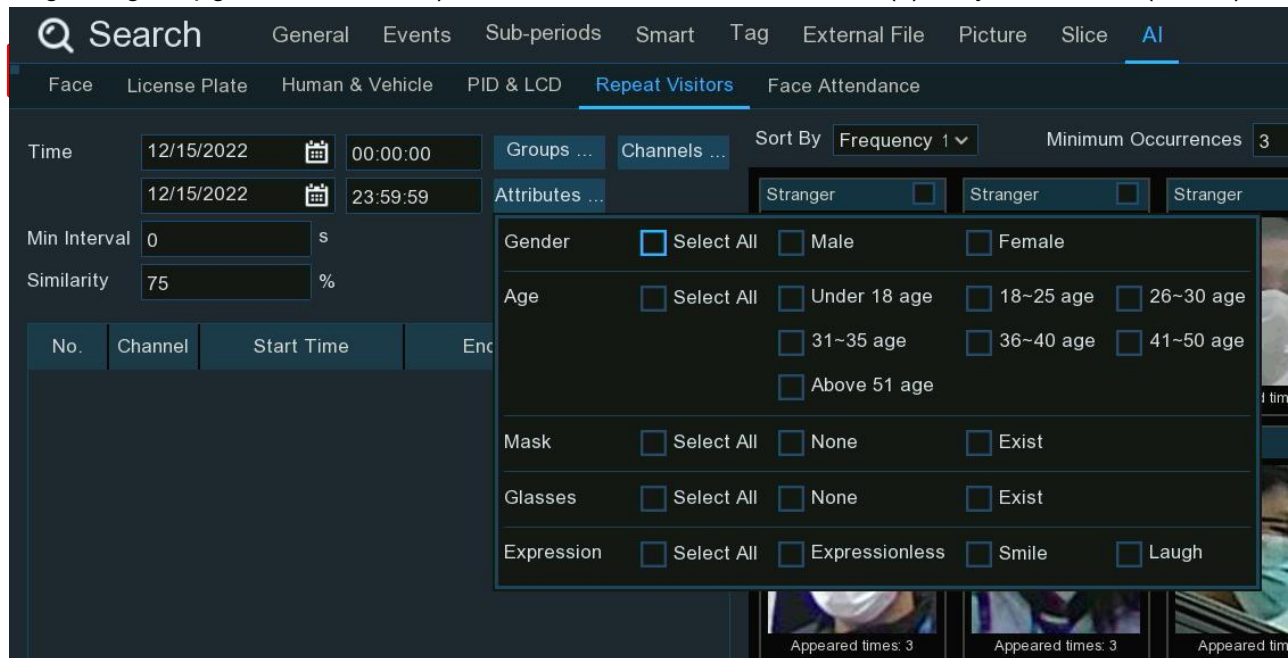
With this function, you can quickly find the frequency of visits by people during a specific time period. Click the *Repeat Visitors* tab on the AI menu.



- 1 **Date/Time:** Click the calendar icon to select a date to search on. Dates underlined in red indicate a detection on those dates. In the *Time* box, you can leave it at the full 24 hours for everything on that date or enter a specific start and end time.
- 2 **Groups...:** Click to select the groups where your targeted face profiles are saved if you only want to search for persons whose face profiles have been stored in certain groups. Otherwise, the default is *All* groups.
- 3 **Channels...:** Click if you want to select specific channels to search (the default is *All Channels*).

AI SEARCH – REPEAT VISITORS (CONTINUED)

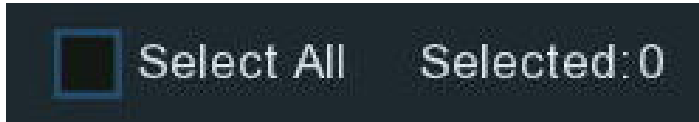
- 4 **Attributes...**: If you have enabled the *Face Attributes* detection (see *FD (Face Detection)* beginning on pg. 110 for details), click here to select the attribute(s) for your search (below).



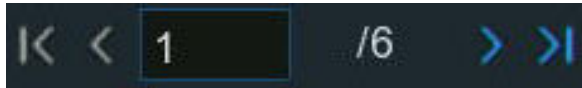
- 5 **Search:** Click to start the search.
- 6 **Search Results:** The search result will be displayed here. *Appeared Times* under each thumbnail image indicates how many times the person was captured during your search period. Click any of the thumbnails to display its information in the area to the left and playback the video in the preview window bottom left.
- 7 **Sort By:** Select to display images in ascending or descending order by time or frequency.
- 8 **Minimum Occurrences:** Enter a number to hide from the search any result whose number of appearances is less than the set minimum.
- 9 **Min. Interval/Similarity:** You can narrow your search further by adjusting these two settings.
- **Min. Interval:** Enter a duration in seconds to set the minimum time interval between detected images that will define them as distinct occurrences. For example, if the *Min. Interval* is set to 20 seconds, once a face image is detected on the selected date, all similar face images within the following 20 seconds will not display separately. The system only displays the first image captured every 20 seconds.
 - **Similarity:** Set how closely, in percentage terms, the detected face must match a targeted face to be considered a recognized match. The default threshold is 70%. A higher similarity percentage will result in fewer false recognition results.




AI SEARCH – REPEAT VISITORS (CONTINUED)

- 10 **Select All:** Check the box above desired thumbnails or check this box to select all events on the current page.



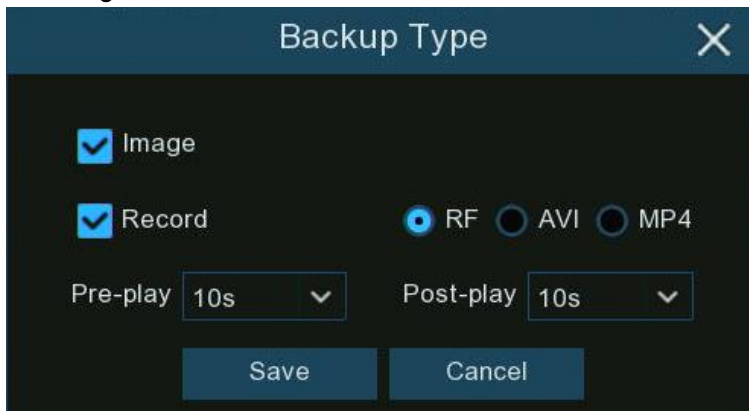
- 11 **Results Navigation:** Use the arrow icons to scroll back and forth between pages or type in the number of a specific page.



- 12 **Control:** Click the backup icon  to save selected images to a USB drive. Click the play icon  to enter the playback window (see *Event Playback Control* beginning on pg. 275 for more information) or click  to add some time before and after the event and then play (see *Playing Events* beginning on pg. 296 for more information).



To also save video files, check the *Record* box in the popup, select the video format, adjust the length of time before and after the events, and click *Save*.




AI SEARCH (CONTINUED)



FACE ATTENDANCE

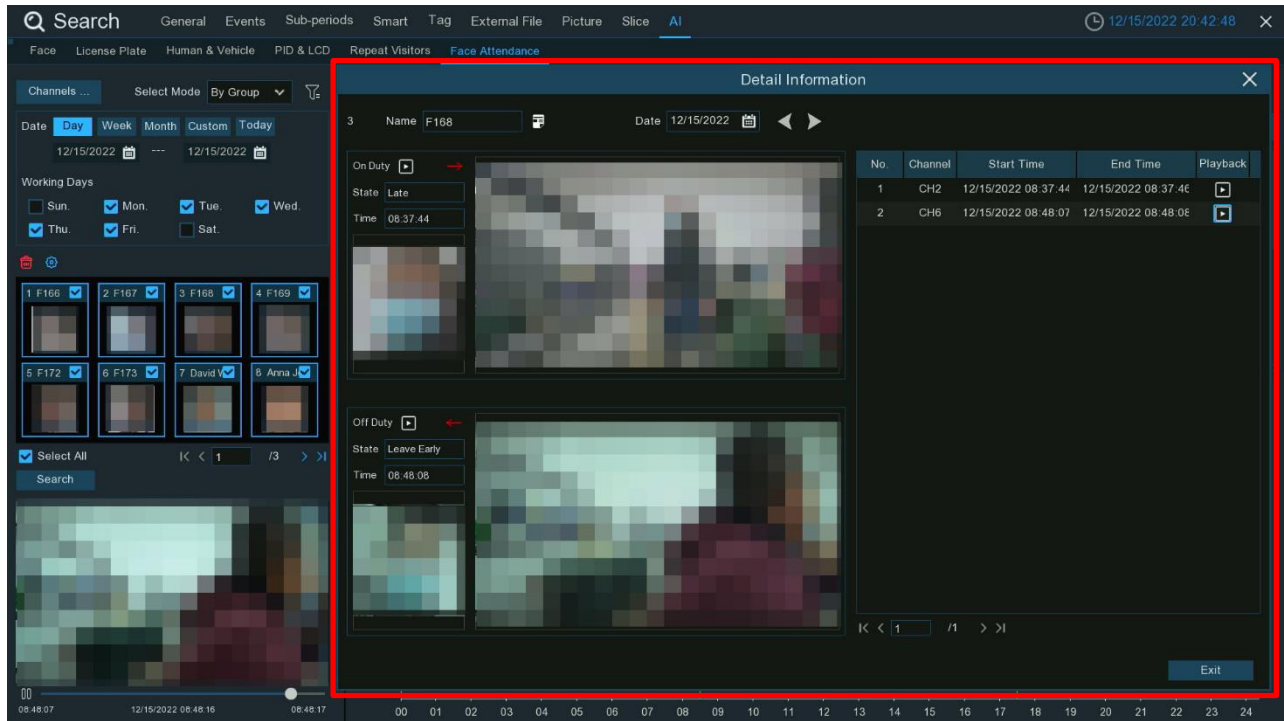
Face Attendance can be used to help keep attendance records by checking faces entering and leaving. This can be of some help in analyzing absenteeism, late arrivals, and early departures. However, since there is always some risk of false detections or detection failures, *Face Attendance* **should not** be used as your ultimate or only attendance checking measure. Click the *Face Attendance* tab of the *AI* menu to start.

The screenshot displays the 'Face Attendance' search interface. On the left, there are filters for 'Channels...', 'Select Mode', 'Date', and 'Working Days'. The 'Date' filter is set to 'Month' for '12/05/2022'. The 'Working Days' are set to 'Sun', 'Mon', 'Tue', 'Wed', 'Thu', and 'Fri'. The 'Select Mode' is set to 'Group'. The 'On Duty Time' is 08:30:00 and 'Off Duty Time' is 17:30:00. The search results table shows 11 entries with columns for No., Name, Group, and attendance status for each day from 12/05 to 12/11. The legend at the bottom indicates: Normal (green check), Late (red arrow), Leave Early (red arrow), Late and Leave Early (red arrow), and Absence (yellow circle). The graph at the bottom shows on-duty and off-duty times for the selected group.

- 1 **Channels...:** Click if you want to select specific channels to search (the default is *All Channels*).
- 2 **Select Mode:** Select to choose whether to search by group or by person. If you choose *By Group*, all the persons in the selected group(s) will be searched. If you choose *By Person*, only the persons you select will be searched. Click the filter icon  to select the groups or persons to search. The selected persons will be displayed on the left.
- 3 **Date:** Click the desired search duration at *Day*, *Week*, *Month*, or *Custom* and choose *Today* or manually choose a date range.
- 4 **Working Days:** Check/uncheck to select/deselect the normal days when attendance is expected.
- 5 **On Duty Time / Off Duty Time:** Click to set the time when the group members should have arrived and when they can leave.

AI SEARCH – FACE ATTENDANCE (CONTINUED)

- 6 **Search:** Click to start the search.
- 7 **Detail:** Click on the detail icon  to see the captured images and videos of the first and last occurrence detected of the person on that day. Click the play icon  to quickly review the video.



- 8 **Export:** Click to export the data to your USB drive.
- 9 **Email:** Click to email the data.

Troubleshooting

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