GeoVision inc
The Vision of Security

GV-R Series SNVR

User's Manual



© 2024 GeoVision, Inc. All rights reserved.
Under the copyright laws, this manual may not be copied, in whole or in part, without the written consent of GeoVision.

Every effort has been made to ensure that the information in this manual is accurate. GeoVision, Inc. makes no expressed or implied warranty of any kind and assumes no responsibility for errors or omissions. No liability is assumed for incidental or consequential damages arising from the use of the information or products contained herein. Features and specifications are subject to change without notice.

GeoVision, Inc.
9F, No. 246, Sec. 1, Neihu Rd.,
Neihu District, Taipei, Taiwan
Tel: +886-2-8797-8377
Fax: +886-2-8797-8335
http://www.geovision.com.tw

Trademarks used in this manual: *GeoVision*, the *GeoVision* logo and GV series products are trademarks of GeoVision, Inc. *Windows* is the registered trademark of Microsoft Corporation.

August 2024

Scan the following QR codes for product warranty and technical support policy:

[Warranty]

[Technical Support Policy]

Preface

Welcome to the *GV-R Series SNVR User's Manual*.

IMPORTANT: The features described in the manual vary among SNVR models and firmware versions. Some features may not be available in your SNVR.

This Manual is designed for the following models:

Model
GV-RNVR256G0-N
GV-RNVR3240-N
GV-RNVRL810-P

The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.

Contents

Preface 1

Contents 1

SAFETY INSTRUCTION 4

Chapter 1 Product Overview 1

1.1 GV-RNVR256G0-N Front View 1
1.2 GV-RNVR256G0-N Rear View 2
1.3 GV-RNVR3240-N Front View 3
1.4 GV-RNVR3240-N Rear View 4
1.5 GV-RNVRL810-P Front View 5
1.6 GV-RNVRL810-P Rear View 6

Chapter 2 NVR Installation & Connection 7

2.1 HDD Installation 7
2.1.1 GV-RNVR256G0-N 7
2.1.2 GV-RNVR3240-N 9
2.1.3 GV-RNVRL810-P 10
2.2 Connection Diagram 11
2.3 Power Supply Connection 12

Chapter 3 NVR Common Operations 13

3.1 Using the Supplied Mouse 13
3.2 Using the Virtual Keyboard 13
3.3 Password 14
3.3.1 Password Generation 14
3.3.2 Reset Password 16

Chapter 4 NVR Starting up 20

4.1 Start Wizard 20
4.1.1 Start Wizard 21
4.1.2 Network Configuration 22
4.1.3 Date/Time 25
4.1.4 IP Camera 27
4.1.5 Disk 29
4.1.6 Resolution 30
4.1.7 Mobile 30
4.1.8 Summary 31
4.2 Live View Screen Overview 32
4.2.1 Camera Quick Toolbar 33
4.2.2 Taskbar 34
4.2.3 Status Bar 35
4.2.4 Start Menu 36

4.2.5 Fisheye Camera 39
4.2.6 Alarm Notification Panel 41

Chapter 5 NVR System Setup 42

5.1 Channel 42
5.1.1 IP Channels 42
5.1.2 Live 51
5.1.3 Image Control 53
5.1.4 PTZ 56
5.1.5 Motion 66
5.1.6 ROI 68
5.1.7 Video Cover / Privacy Zone 69
5.2 Record 70
5.2.1 Video Encoding 70
5.2.2 Audio Encoding 72
5.2.3 Record 73
5.2.4 Image Capture 75
5.3 Alarm 77
5.3.1 Motion 77
5.3.2 I/O Alarm 79
5.3.3 Intelligent Alarm 80
5.3.4 Combination Alarm 81
5.3.5 PTZ Linkage 83
5.3.6 Exception 84
5.3.7 Voice Prompts 85
5.3.8 Siren 89
5.3.9 Disarming 90
5.3.10 Alarm Schedule 92
5.4 AI 93
5.4.1 Setup 94
5.4.2 Face Recognition 118
5.4.3 Alarm 130
5.4.4 Statistics 138
5.5 Network 142
5.5.1 General 142
5.5.2 DDNS 149
5.5.3 Email 150
5.5.4 HTTPS 153
5.5.5 IP Filter 154
5.5.6 Voice Assistant 156
5.5.7 Platform Access 168
5.5.8 GV-VPN 172
5.6 Storage 173
5.6.1 Disk 173
5.6.2 Cloud 183

5.6.3 FTP 187
5.7 System 189
5.7.1 General 189
5.7.2 Multi-user 195
5.7.3 Maintenance 199
5.7.4 IP Camera Maintain 205
5.7.5 System Information 209

Chapter 6 AI Scenario 212

6.1 Cross Counting 212
6.1.1 Channel View Setup 215
6.1.2 Group View Setup 218
6.1.3 Advertise Mode 220
6.1.4 Search Counting Data 222
6.2 Face Attendance 223
6.3. Object Classification 225

Chapter 7 Search, Playback & Backup 227

7.1 Using Search Function 227
7.1.1 Search & Play Video in General 229
7.1.2 Event Search, Playback & Backup 231
7.1.3 Sub-periods Playback 234
7.1.4 Smart Search 235
7.1.5 Tag Search 237
7.1.6 Play External File 238
7.1.7 Picture Search & View 239
7.1.8 Slice Search 241
7.1.9 AI Search 242

Chapter 8 Remote Access via Web Client 259

8.1 Basic System Environment Requirements 259
8.2 Web Plugin Download and Installation 259
8.3 Web Client Manager 262
8.3.1 Live Interface 262
8.3.2 Playback 265
8.3.3 Remote Setting 271
8.3.4 Local Setting 271

Appendix 272

A. Supported Hard Disk Drives 272
B. Troubleshooting 273
C. Usage Maintenance 275

SAFETY INSTRUCTION

Carefully read the following safety instruction so as to avoid personal injuries and prevent the equipment and other connection devices from being damaged.

1. Power sources

Never operate the equipment by using unspecified power supply.

2. Never push objects of any kind through openings of NVR

Never push objects of any kind through openings of NVR so as to avoid electric shock or other accidents.

3. Do not put the equipment in the dusty field

Do not put the equipment in the dusty field.

4. Do not place the equipment under rain or humid environment

Do not place the equipment under humid environment like basement. If the equipment is accidentally in contact with water, unplug the power cable and immediately contact your local dealer.

5. Keep the surface of the equipment clean and dry

Use soft damp cloth to clean the outer case of NVR (do not use liquid aerosol cleaners)

6. Do not operate if any problems are found

If there are any strange smell or sound from NVR, unplug the power cable and contact the authorized dealer or service center.

7. Do not try to remove the upper cover

Warning: Do not remove the cap of NVR so as to avoid electric shock.

8. Handle with care

If NVR does not work normally because of hitting on the hard object, contact the authorized dealer for repair or replacement.

9. Use standard lithium battery (Use the batteries attached or specified by the manufacturer)

After cutting off the power supply, if the system clock cannot continue to work, replace the standard 3V lithium battery on the main board.

Warning: Turn off NVR before replacing the batteries, or you may be suffered from serious electric shock. Properly dispose of the used batteries.

10. Put the equipment in a place with good ventilation

The NVR system includes HDD, which produces large amount of heat during operation. As a result, do not block the ventilation openings (on the top, bottom, both sides and the reverse side) for cooling the system during operation. Install or put the equipment in the place with good ventilation.

11. The attached power adapter can only be used for 1 set of NVR. Do not connect more equipment, or NVR may be restarted repeatedly because of insufficient power.

12. Prevent the equipment from water dropping or splashing. Do not place objects containing water, such as flower vase, on the equipment.

13. Do not ingest battery, Chemical Burn Hazard,

This product contains a coin / button cell battery.

If the coin / button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.

Keep new and used batteries away from children.

If the battery compartment does not close securely, stop using the product and keep it away from children.

If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

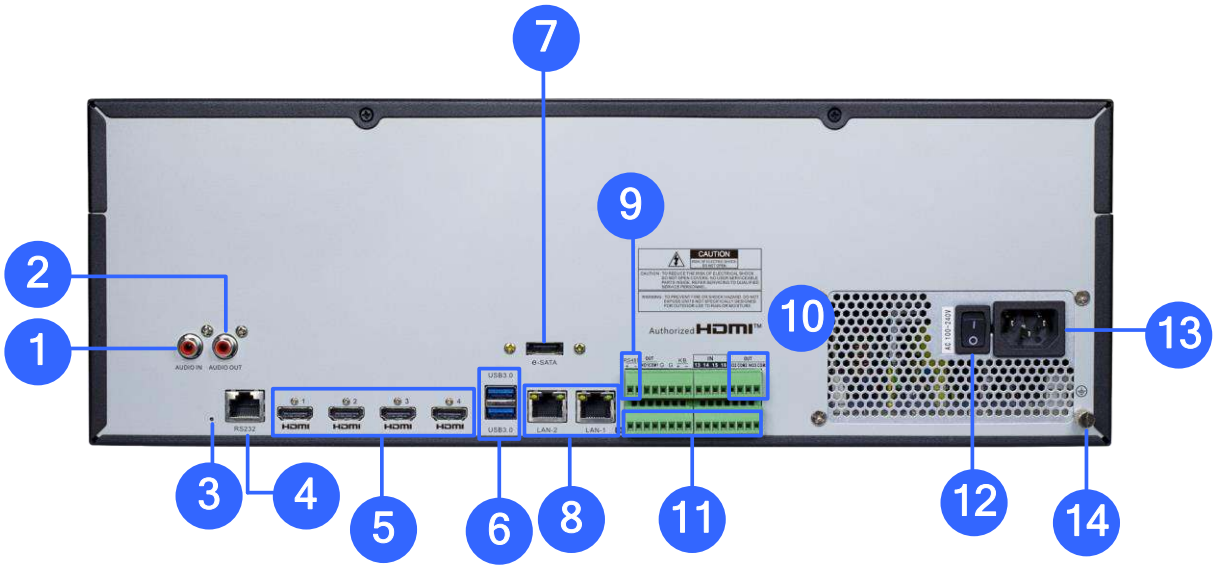
Chapter 1 Product Overview

1.1 GV-RNVR256G0-N Front View



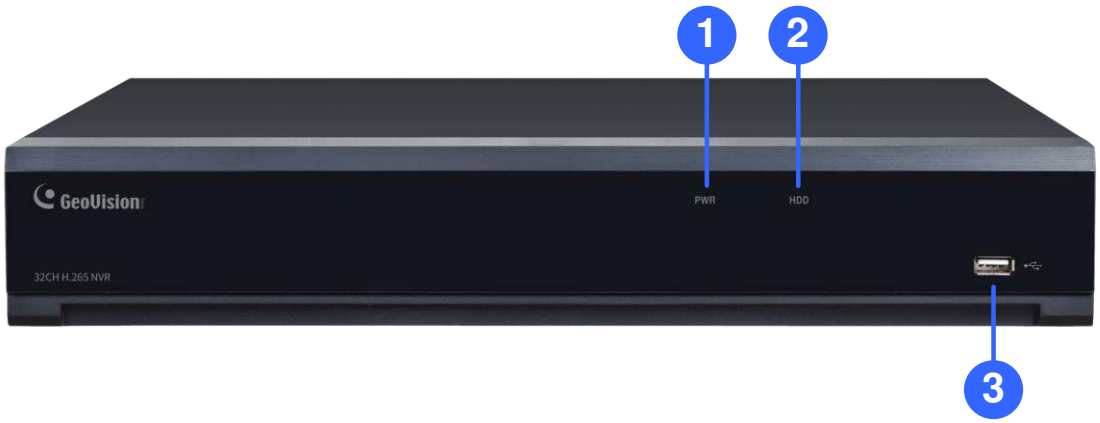
No.	Item	Status	Description
1.	Standby button		It is used to power on/off the system when the device has a constant power supply. You can press and hold the button for three seconds to shut down the device, and you can press and hold the key for 10 seconds to forcedly restart the device.
2.	Power LED	Solid on	The device is operating properly.
		Not lit	The device is shut down or not powered on.
3.	HDD LED	Lit green	The hard disk is operating properly and no data is read or written.
		Flash green	The hard disk is operating properly and there is data read or written.
		Not lit	The hard disk cannot be detected or the hard disk is faulty.
4.	LAN1 / 2 LED	Solid on	The device is connected to the network properly.
		Not lit	The device is disconnected from the network.
5.	USB Port		Connected to a mobile USB device or a mouse.

1.2 GV-RNVR256G0-N Rear View



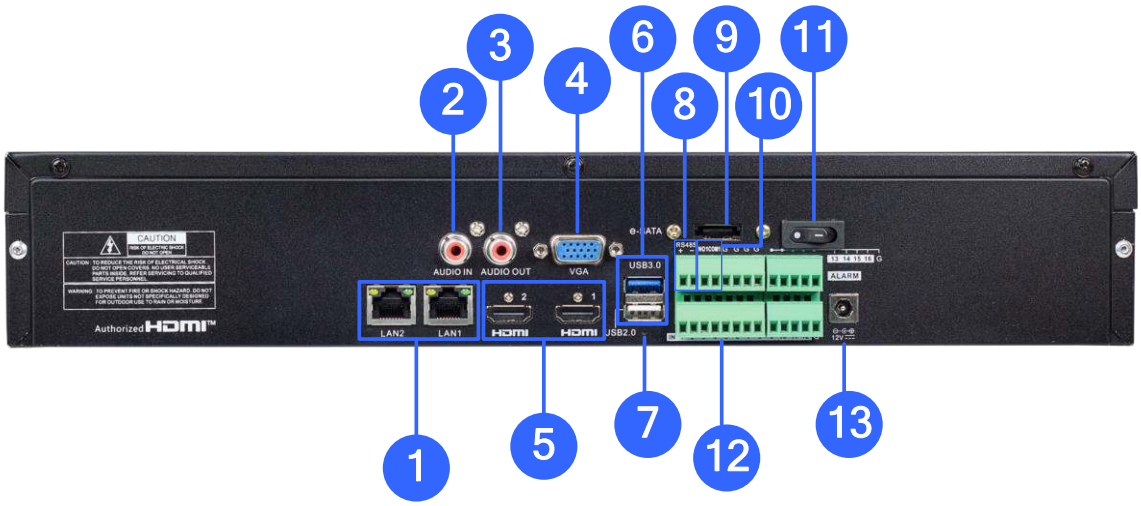
No.	Item	Description
1.	Audio input	Connected to an analog audio input device.
2.	Audio output	Connected to an analog audio output device.
3.	Reset button	Used to restore the factory settings. You can press and hold the button for 10 seconds to make the system automatically restore the factory settings, and the buzzer rings four times at the same time.
4.	RS232 interface	It is currently not functional.
5.	HDMI 1/2/3/4	Output interface of the device, supporting output with 8K/4K/1080p resolution.
6.	USB Port	Connect a USB device, such as USB mouse and USB flash disk.
7.	e-SATA	Connected to an external storage device. A maximum of one hard disk is supported.
8.	LAN1/2	Gigabit network interface for connecting network cables.
9.	RS-485 interface	Connected to a speed dome camera.
10.	Alarm output interface	Connected to alarm output devices.
11.	Alarm input interface	Connected to alarm input devices.
12.	Power switch	Used to power on/off the device.
13.	Power Port	Connect the attached power supply.
14.	Grounding Terminal	Connect to the grounding cable.
Note: The device only supports HDMI #1 output at 8K. If the output resolution of HDMI #1 is set to 8K, the maximum output resolution of HDMI #3 and #4 will be limited to 1080P, and HDMI #2 will be disabled.		

1.3 GV-RNVR3240-N Front View



No.	Item	Status	Description
1.	Power LED	Solid on	The device is operating properly.
		Not lit	The device is shut down or not powered on.
2.	HDD LED	Lit red	The hard disk is operating properly and no data is read or written.
		Flash red	The hard disk is operating properly and there is data read or written.
		Not lit	The hard disk cannot be detected or the hard disk is faulty.
3.	USB Port		Connected to a mobile USB device or a mouse.

1.4 GV-RNVR3240-N Rear View



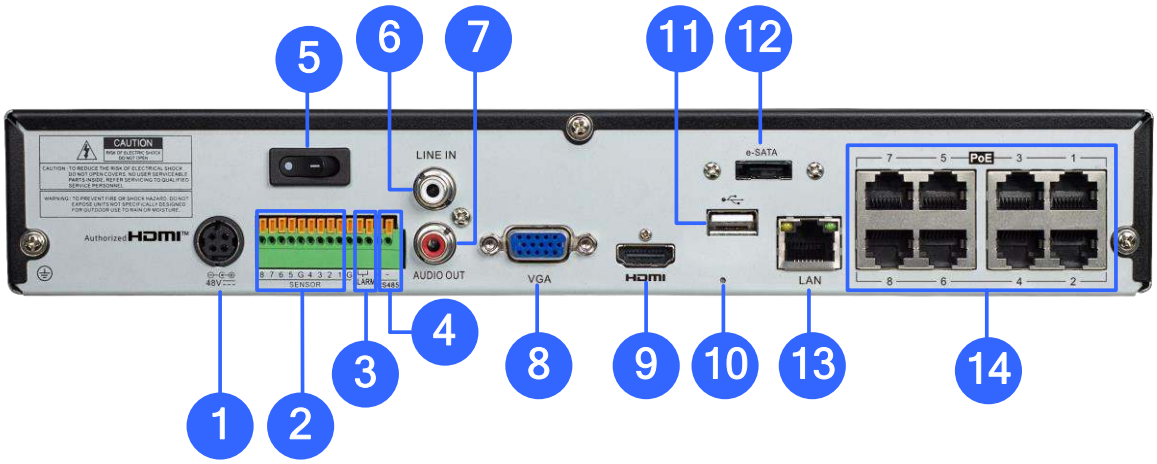
No.	Item	Description
1.	LAN1/2	Gigabit network interface for connecting network cables.
2.	Audio input	Connected to an analog audio input device.
3.	Audio output	Connected to an analog audio output device.
4.	VGA	Connected to a VGA monitor.
5.	HDMI 1/2	Output interface of the device, supporting output with up to 4K resolution.
6.	USB Port	Connect a USB device, such as USB mouse and USB flash disk.
7.	Reset button	Used to restore the factory settings. You can press and hold the button for 10 seconds to make the system automatically restore the factory settings, and the buzzer rings four times at the same time.
8.	RS-485 interface	Connected to a speed dome camera.
9.	e-SATA	Connected to an external storage device. A maximum of one hard disk is supported.
10.	Alarm output interface	Connected to alarm output devices.
11.	Power switch	Used to power on/off the device.
12.	Alarm input interface	Connected to alarm input devices.
13.	Power Port	Connect the attached power supply.
Note: The device only supports HDMI #1 output at 4K. The resolution of HDMI #1 and VGA outputs will be synchronized.		

1.5 GV-RNVRL810-P Front View



No.	Item	Status	Description
1.	Power LED	Solid on	The device is operating properly.
		Not lit	The device is shut down or not powered on.
2.	HDD LED	Lit red	The hard disk is operating properly and no data is read or written.
		Flash red	The hard disk is operating properly and there is data read or written.
		Not lit	The hard disk cannot be detected or the hard disk is faulty.
3.	USB Port		Connected to a mobile USB device or a mouse.

1.6 GV-RNVRL810-P Rear View



No.	Item	Description
1.	Power Port	Connect the attached power supply.
2.	Alarm input interface	Connected to alarm input devices.
3.	Alarm output interface	Connected to alarm output devices.
4.	RS-485 interface	Connected to a speed dome camera.
5.	Power switch	Used to power on/off the device.
6.	Audio input	Connected to an analog audio input device.
7.	Audio output	Connected to an analog audio output device.
8.	VGA	Connected to a VGA monitor.
9.	HDMI	Output interface of the device, supporting output with up to 4K resolution.
10.	Reset button	Used to restore the factory settings. You can press and hold the button for 10 seconds to make the system automatically restore the factory settings, and the buzzer rings four times at the same time.
11.	USB Port	Connect a USB device, such as USB mouse and USB flash disk.
12.	e-SATA	Connected to an external storage device. A maximum of one hard disk is supported.
13.	LAN	Gigabit network interface for connecting network cables.
14.	Megabit PoE ports	Connected to cameras, delivering power and network connection to the cameras.

Chapter 2 NVR Installation & Connection

2.1 HDD Installation

The number of 3.5" SATA hard drives that the NVR supports varies depending on the model. The following procedures are for reference only. The practical operation may be different depending on the NVR you purchased.

Caution: Do not install or remove the hard disk drive while the power is turned on.

2.1.1 GV-RNVR256G0-N

1. Remove the placeholder from the ejector lever.



2. Install the ejector lever of the hard drive
   Use screws to fix the hard drive on the ejector lever. You can distinguish between the left side and the right side in accordance with the indicators on the ejector lever.



3. Open the front panel
   Press the buckles on the two sides on the upper part of the front panel and pull the front panel outwards.



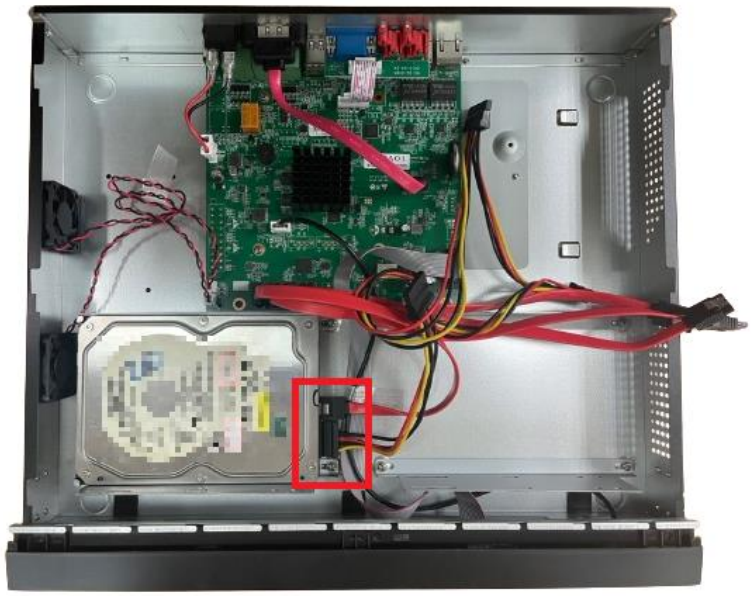
4. Insert the hard drive
   Align the hard drive slot and insert the hard drive gently and smoothly.



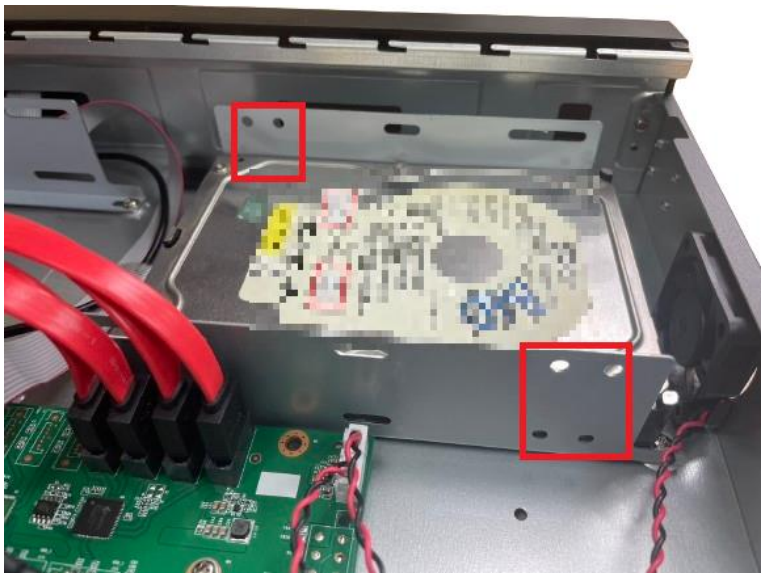
5. Buckle up the hard drive and close the front panel
   Push in the hard drive until you hear a click. After the hard drive is installed, close the front panel.

2.1.2 GV-RNVR3240-N

1. Connect the data and power cables to the hard disk drives and place them on the NVR case. Up to 2 hard disk drives can fit in one tray on each side.

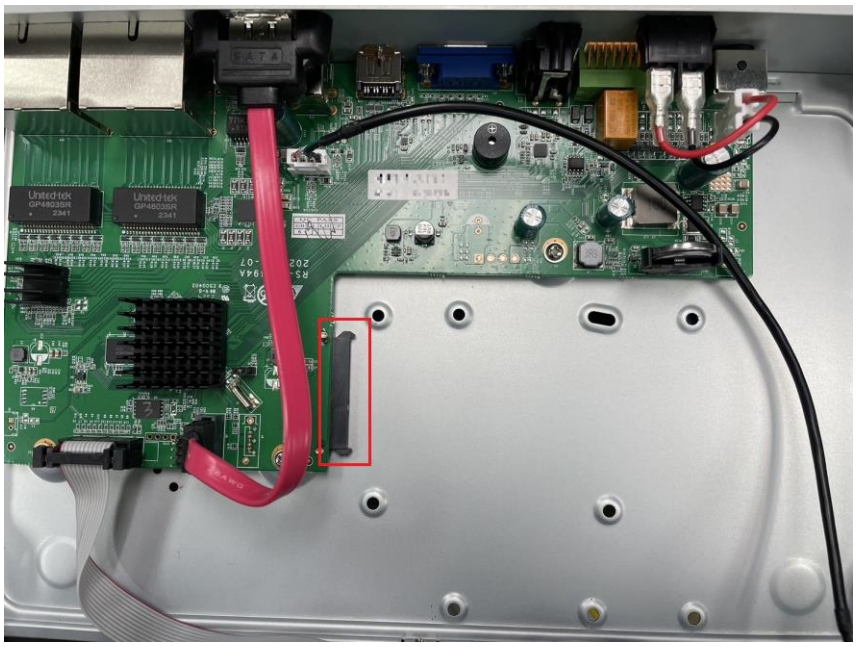


2. Secure the hard disk drives to the NVR with screws.

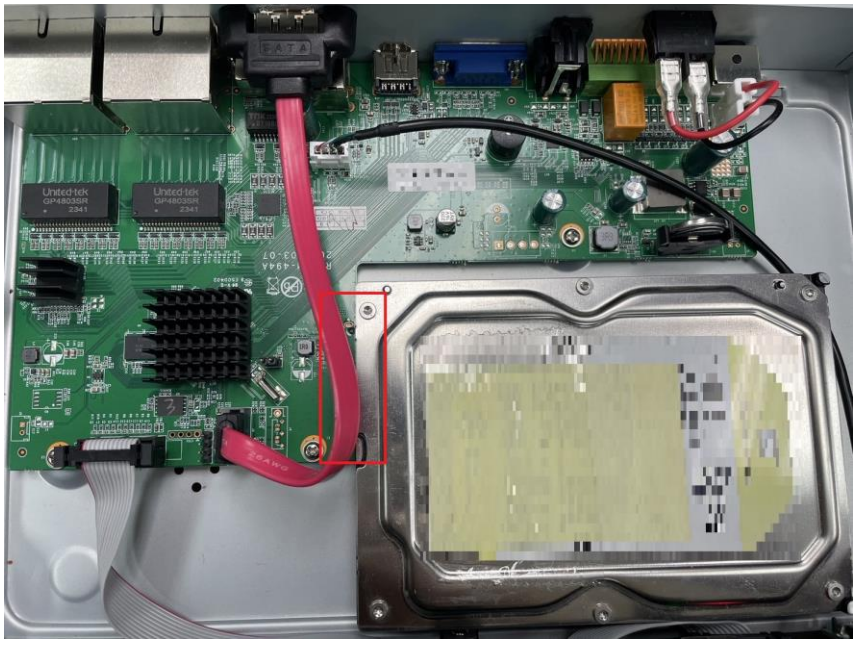


2.1.3 GV-RNVRL810-P

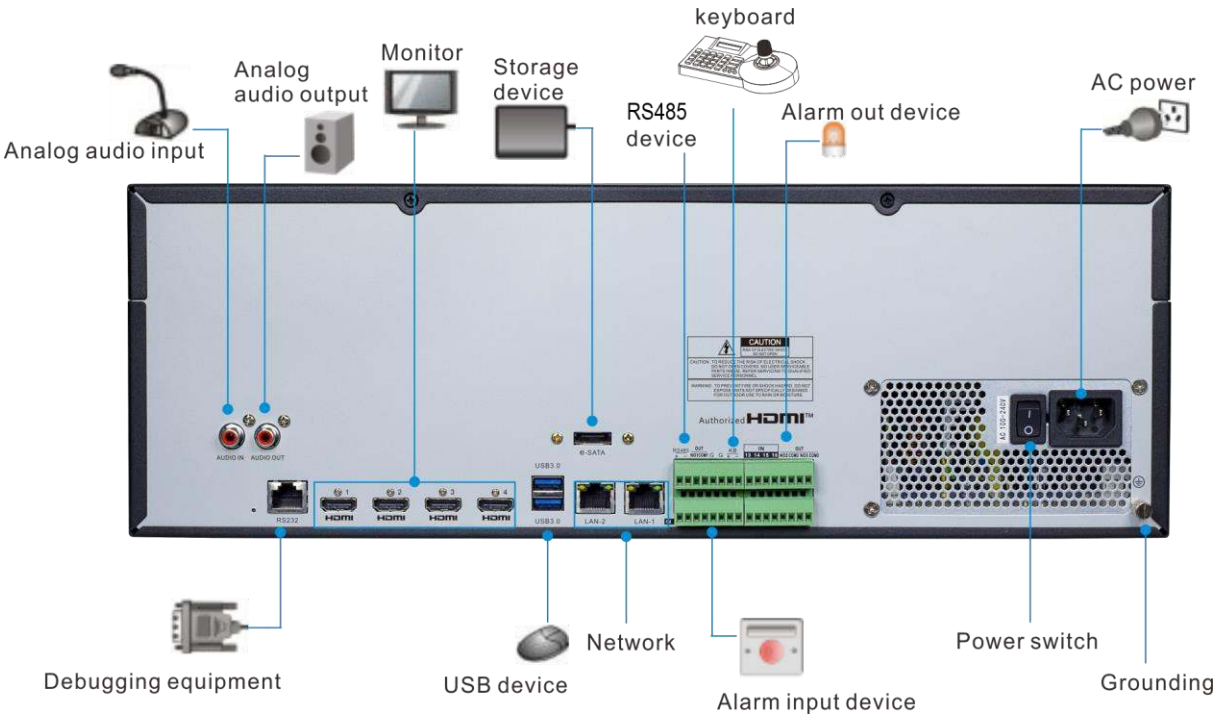
1. Align the hard drive with the power and data connectors indicated below.

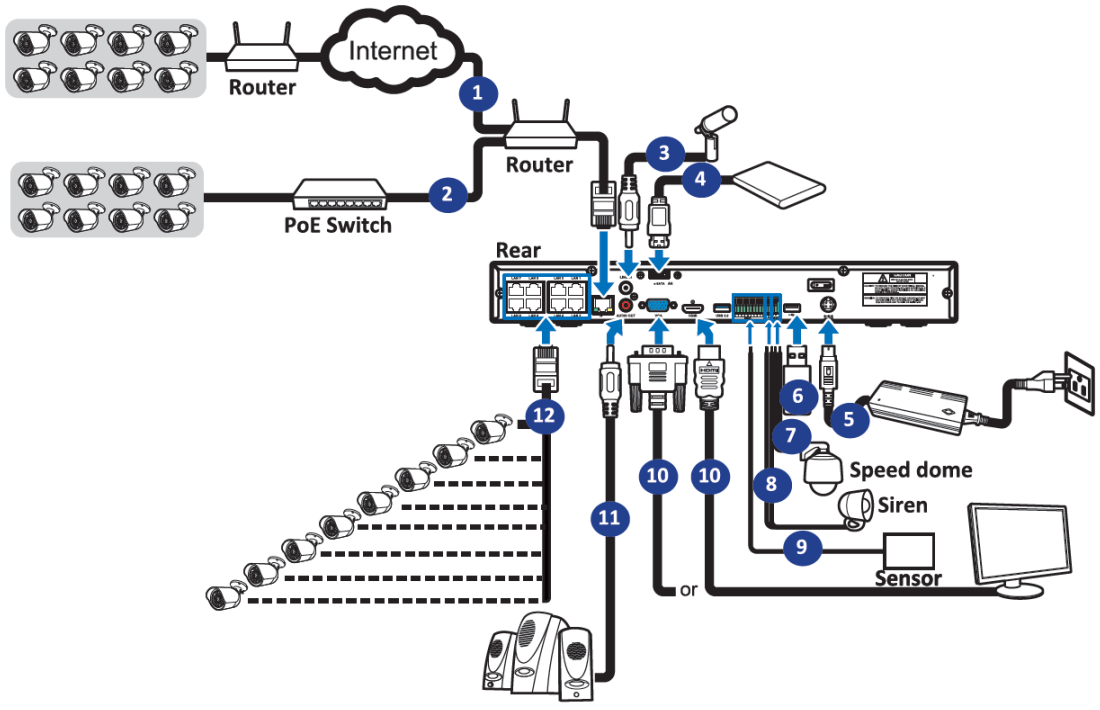


2. Mount the hard drive to finish the installation.



2.2 Connection Diagram





1. You can connect to other IP cameras remotely over the Internet.
2. Connect a CAT.5E or higher RJ45 Ethernet cable for local connectivity. You can connect to other IP cameras through your local network.
3. Two-way voice conversation with the remote PC.

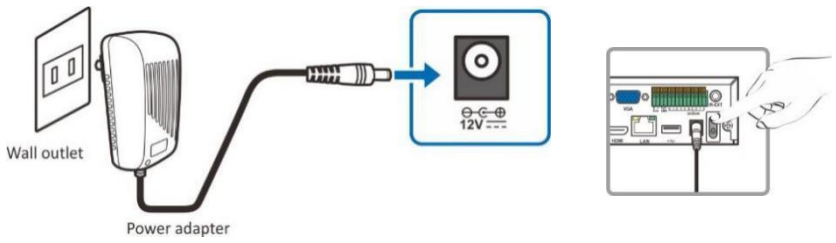
4. Connect an external hard disk drive to backup files stored on the NVR.
5. Connect the included power cable.
6. Use the USB flash disk for backup, camera, or system upgrade.
7. Connect a RS-485 device such as a speed dome camera.
8. Connect an external alarm output device such as siren.
9. Connect external alarm sensors.
10. Connect the video output of the NVR to the TV or monitor via HDMI or VGA connection.
11. Connect speakers if you want to listen to the live audio sound or audio playback from the NVR.
12. Connect the PoE IP cameras. It may take up to 1 minute for the cameras to start transmitting video to the NVR.

Note: Above connection diagram is for illustration purpose only. The interfaces in your actual product may vary with models.

2.3 Power Supply Connection

Caution: Only use the supplied power adapter that comes with the NVR.

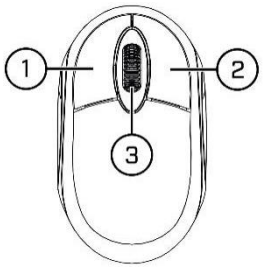
Connect one end of the power adapter to the power connector on the back of the NVR. Plug the other end of the power adapter into the wall outlet. And press the Power Switch to turn on the power.



Note: Above connection diagram is for illustration purpose only. The interfaces in your actual product may vary with models.

Chapter 3 NVR Common Operations

3.1 Using the Supplied Mouse



1. **Left Button:**
   - Click to select menu options.
   - During live viewing 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 viewing.
   - Click upon a channel on Live Viewing screen to open Camera Quick Toolbar.
   - Click and hold to drag sliders and scales on menu mode

2. **Right Button:**
   - Click once to open the Taskbar on the Live Viewing screen. View Taskbar on 4.2.2 Taskbar
   - In menus, click to go back / close menus.

3. **Scroll Wheel:**
   - In menus, scroll to move up / down through the menu content.
   - While hovering over the volume control wheel, scroll to turn system volume up / down.

3.2 Using the Virtual Keyboard

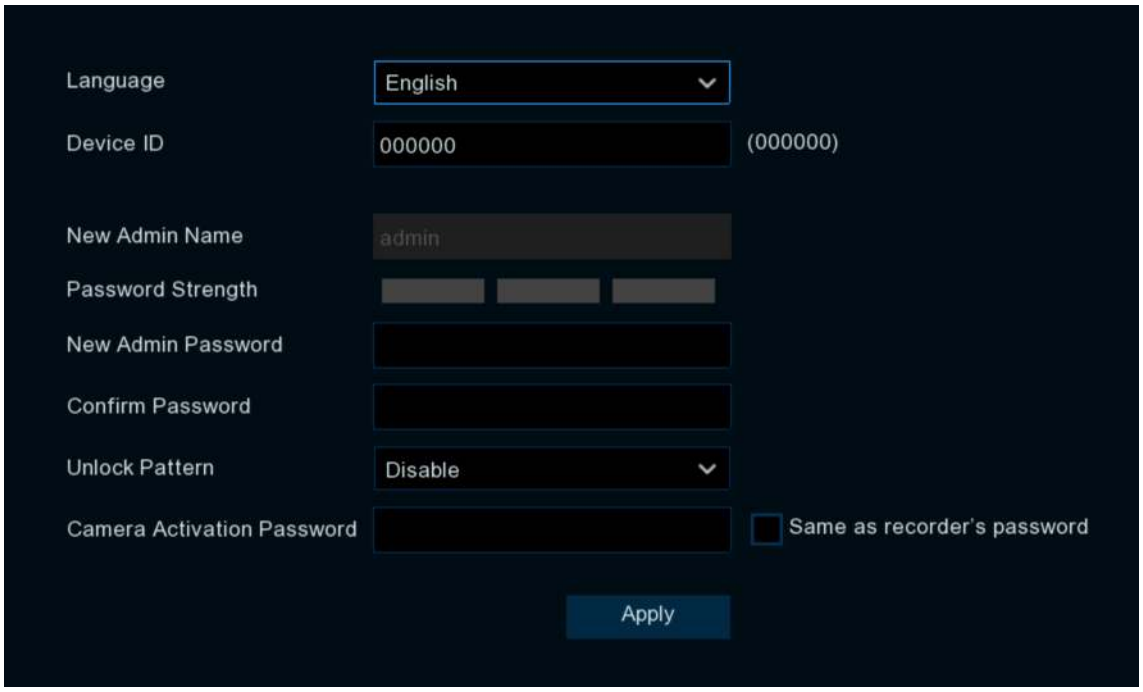
You will see the virtual keyboard automatically on the screen when you need to enter data



3.3 Password

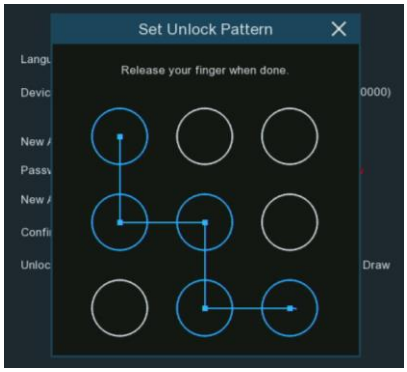
3.3.1 Password Generation

For the first time when you run the NVR, you must be required to set your own password immediately in order to protect your privacy. Be sure to record your username and password and save them in a secure place.



Language: Choose an OSD language.
Device ID: Input the device ID in the parentheses. Default ID is 000000. View more about Device ID on 5.7.1 General.
New Admin name: To set your own administrator name.
New Admin Password: To set your own password. The password must be a combination of 8 characters.
Confirm Password: Enter your own password again.
Unlock Pattern: Select **Enable** to draw your pattern lock.
Camera Activation Password: This password will be used to activate an inactivated camera that is connected to the NVR. When **Same as recorder's password** is unchecked, user-defined camera activation passwords are supported. When **Same as recorder's password** is checked, the device's login password will be automatically applied as the camera activation password.

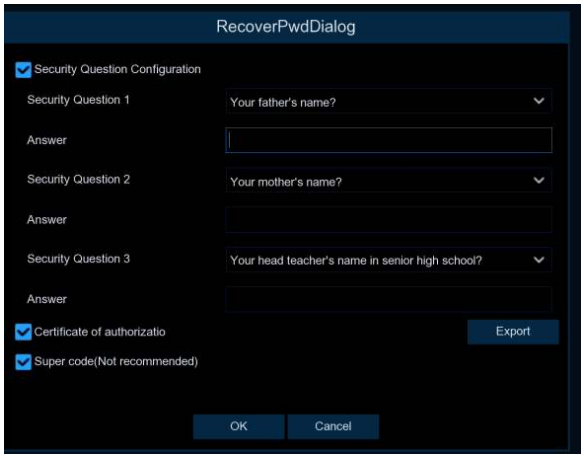
Click **Apply** to confirm your settings. The system will require to set the password recovery questions in case you forget the password.



Tick the box of **Security Question Configuration**, and then choose 3 questions and input your answer to each question.

If you tick the box of **Certificate of Authorization**, you need to click the **Export** button to save a secret key to your USB flash drive. It will help to reset the password with the secret key in future.

Super code: It is a backup method to reset your password. If you enable this function, a temporary & time-bound super code will be able to generated. It is allowed to login the system with the super code and create your new password. However, the super code is not recommended to be enabled for safety reason.



Caution: Make sure to enable at least one of the three password recovery methods to regain access in case you forget the password. If you select **Cancel,** you will not be able to recover your password if forgotten. In this case, the only way to regain access is to restore the device to its factory default settings using the Reset button on the device panel (see *Chapter 1 Product Overview*), and follow the onscreen instructions to set a new password.

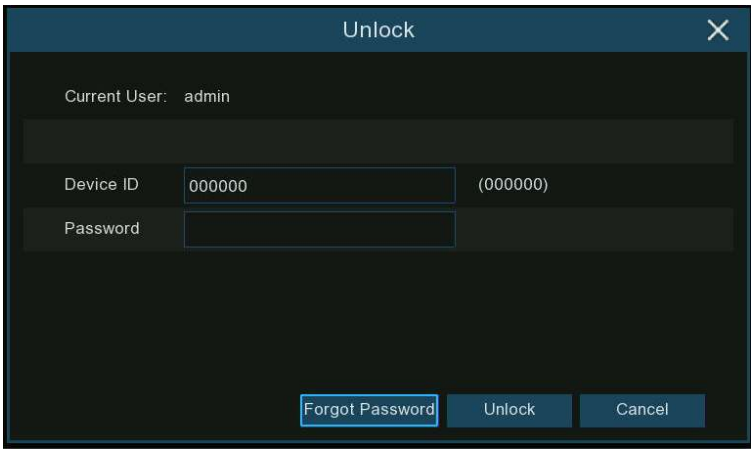
3.3.2 Reset Password

If you forget your password, you will be unable to login the system, reset your password with below methods:

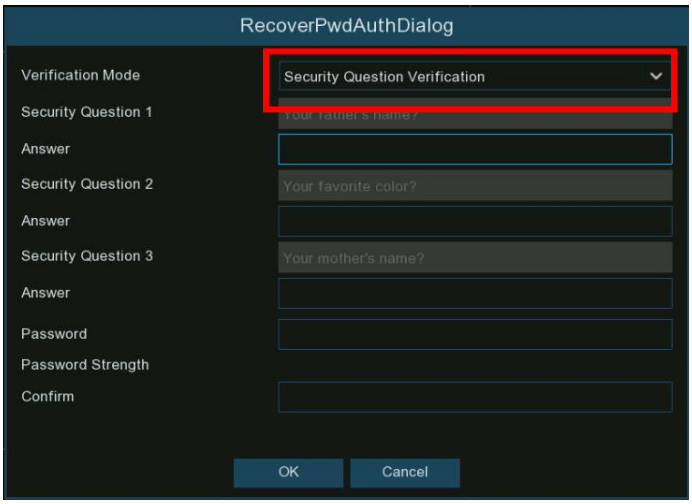
3.3.2.1 Reset with Password Recovery Questions

If you had enabled the password recovery questions in 3.3.1. Password Generation, you are able to reset your password with security questions.

1. Click the **Forgot Password** button on the login window.



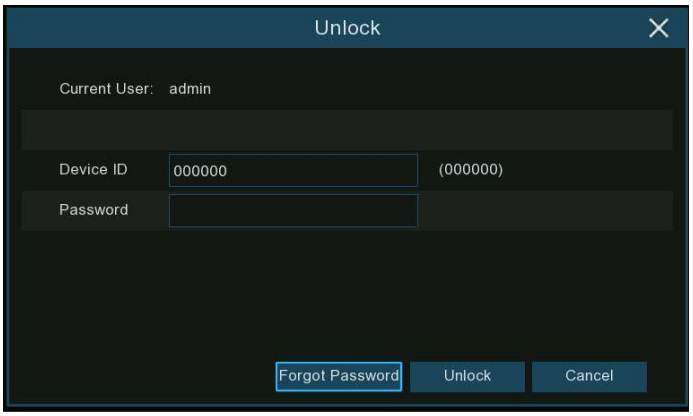
2. Choose **Security Question Verification**. Input the answer to each question and then input new password. Click **OK** to activate the new password.



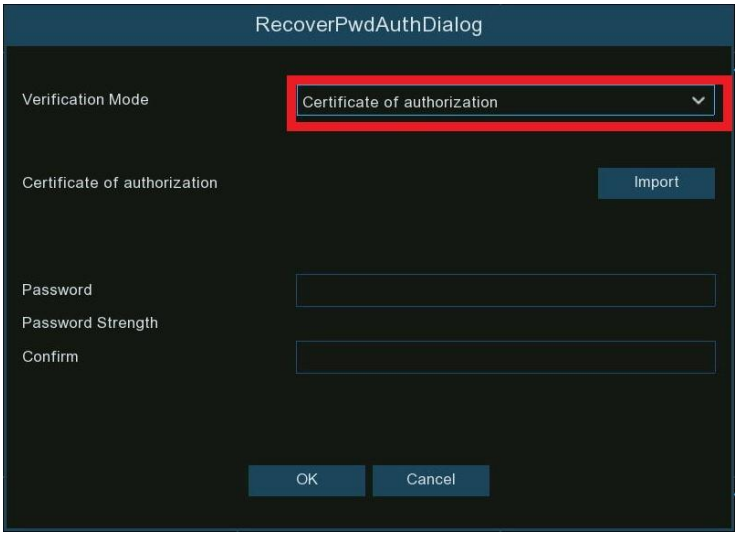
3.3.2.2 Reset with Secret Key

If you had exported the secret key in 3.3.1. Password Generation, you are able to reset your password with secret key.

1. Click the **Forgot Password** button on the login window.



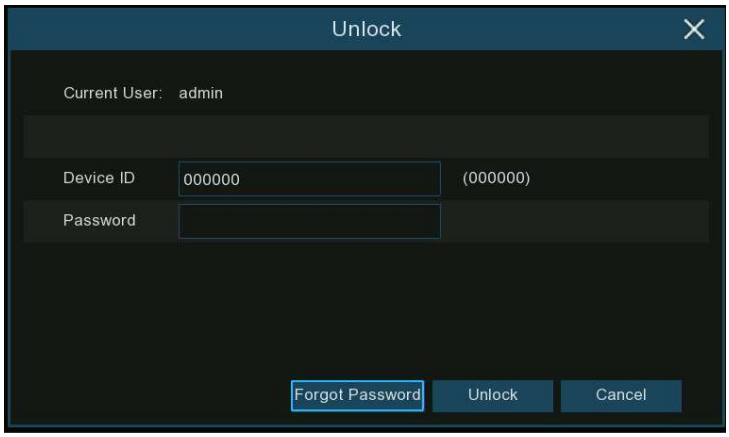
2. Choose **Certificate of Authorization**. Click **Import** button to load the secret key from your USB flash drive, and then input new password. Click **OK** to activate the new password.



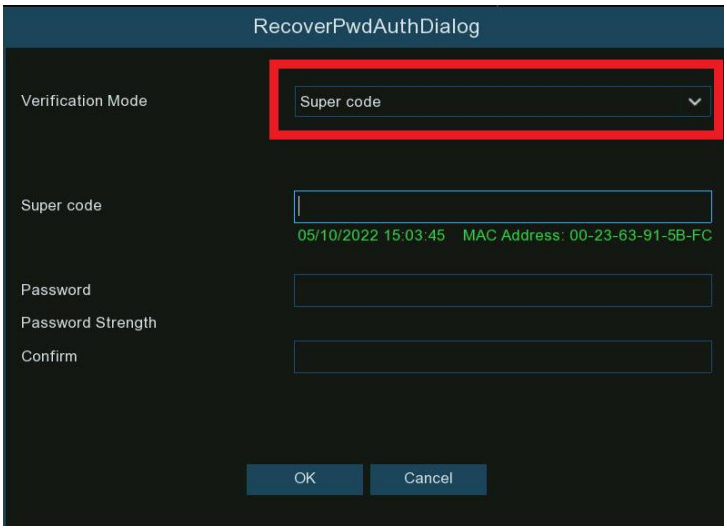
3.3.2.3 Reset with Super Code

If you had activated the Super Code in 3.3.1. Password Generation, you are able to reset your password with super code. Contact our support team for the super code before proceeding with the following steps.

1. Click the **Forgot Password** button on the login window.



2. Choose **Super Code**.
3. Provide the date and MAC address information to our support personnel at support@geovision.com.tw.
4. Input the Super Code you get from the technical personnel, and input the new password. Click **OK** to activate the new password.



3.3.2.4 Hard Reset

If you are unable to reset the password with any one of the methods mentioned above, you can try to hard reset your NVR.

GV-RNVR256G0-N



GV-RNVR3240-N



GV-RNVRL810-P



Press and hold for 10 seconds on the button with a small pin till the NVR beeps.

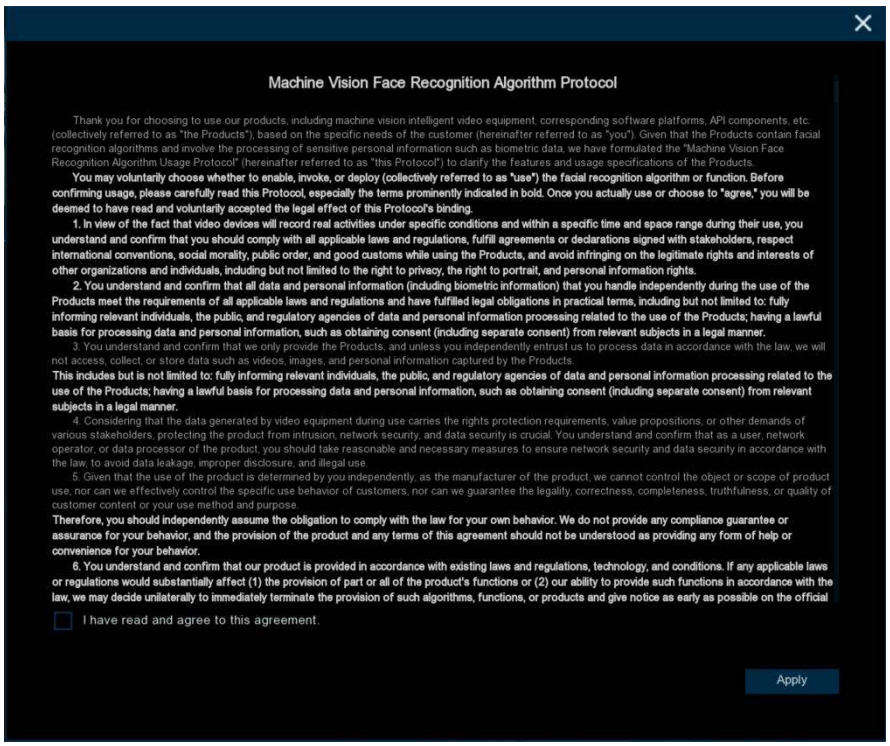
Caution: The hard reset will not only reset the password but also load all system settings to the default values. You self-defined settings will be lost.

Chapter 4 NVR Starting up

4.1 Start Wizard

Startup Wizard will help configure the system and get the NVR works quickly.

For models that support face recognition function. When you enter the system for the first time, the machine vision face recognition algorithm agreement will pop up. Check "I have read and agree to this agreement" and save it. When the device is connected to an AI camera that supports face recognition, the face recognition function can be enabled. Otherwise, the face recognition function will not be enabled.

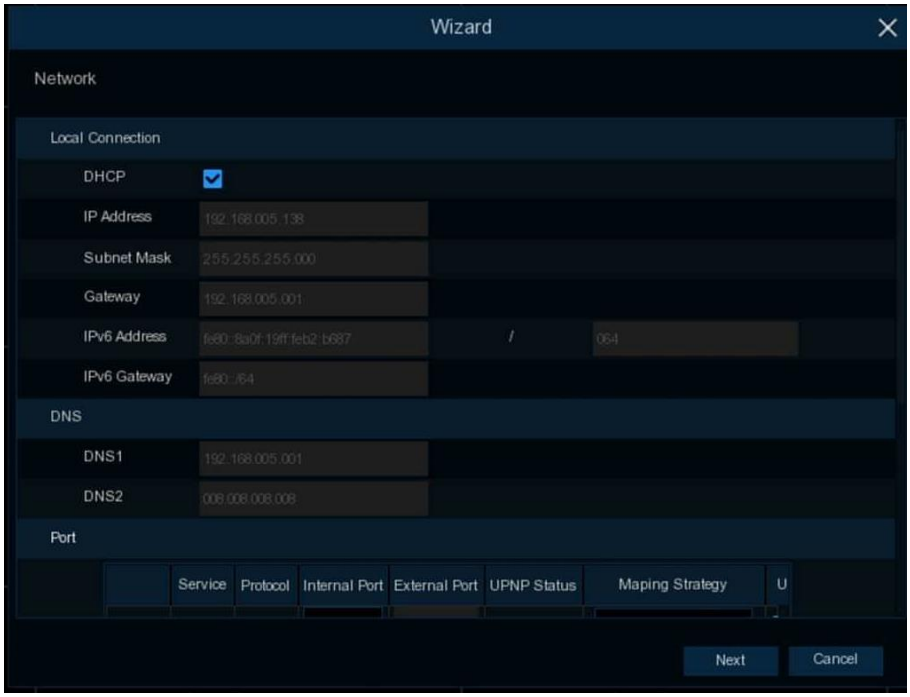


4.1.1 Start Wizard

Click the **Start Wizard** to proceed to the next step



4.1.2 Network Configuration



Network Card Mode: switch Single Address Mode or Double Address Mode, NVR will reboot after successful switching. (Note: Models with POE only support Double Address Mode)
Single Address Mode: Binds both ports to a single IP address. Selecting this mode can increase the bandwidth and form a redundant array of network cards, load sharing, one of the network port fails, the other network port immediately take over the load, the service will not be interrupted.
Double Address Mode: The two network ports are set up with different IP addresses, gateways, etc., and work independently of each other. The LAN port accessing the external network should be set as the default route.
Network Card Select: Toggles the display of network parameter information of LAN1 or LAN2, this option is grayed out and unavailable in single NIC mode.
DHCP IPv4: If you connect to a router that allows DHCP, check this box, the router will automatically assign all IPv4 protocol network parameters to the NVR, after unchecking the box, IP, Subnet Mask, Gateway, DNS will be automatically changed back to the parameters that were set when you unchecked the box the last time (Note: Currently the program does not support DHCP IPv6)

If you connect to a router allows to use DHCP, check the **DHCP** box. The router will assign automatically all the network parameters for your NVR. Unless the network is manually addressed below parameters:
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: Subnet mask is a network parameter which defines a range of IP addresses that can be used in a network. If IP address is like a street where you live then subnet mask is like a neighborhood. The subnet 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: Input the IPv6 address you got from your ISP. It consists of eight groups of numbers between 0 and FFFF separated by colons.

For example, "ABCD:EF01:2345:6789:ABCD:EF01:2345:6789"

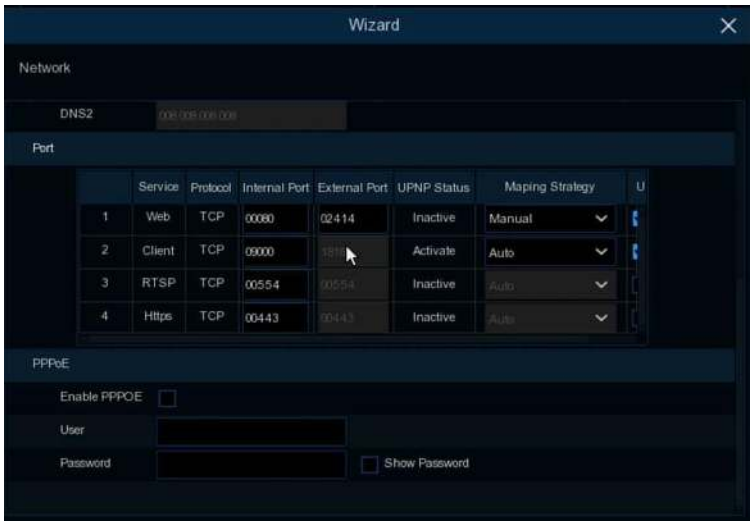
Subnet Prefix Length: subnet prefix length.

IPv6 Gateway: IPv6 gateway IP address of the network where the device is located.

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.

Default Route: In dual-address mode, set the LAN port accessing the external network as the default route. (Note: This option is grayed out in Single Address Mode)

Port



Web: This is the port that you will use to log in remotely to the NVR (e.g. using the Web Client). If the default port 80 is already taken by other applications, please change it.
Client: This is the port that the NVR will use to send information through (e.g. using the mobile app). If the default port 9000 is already taken by other applications, please change it.
RTSP: This is the port that the NVR will be allowed to transmit real-time streaming to other device (e.g. using a streaming Media player).
Https: This is the port that you will use to log in remotely to the NVR by browsers with https protocol.
Internal Port: Used for LAN connection.
External Port: Used for WAN / Internet connection.
UPNP: If you want to log in remotely to the NVR using Web Client, you need to complete the port forwarding in your router. Enable this option if your router supports the UPnP. In this case, you do not need to configure manually port forwarding on your router. If your router does not support UPnP, make sure the port forwarding is completed manually in your router.
Mapping Strategy: If you want the port randomly distributed by the router UPNP server, choose "**Auto**"; If you want to manually forwarded the port, choose "**Manual**".
PPPoE: This is a protocol that allows the NVR to connect to the network directly via a DSL modem.
Enable PPPOE: The NVR will reboot to activate the PPPoE setting after it is enabled.
PPPOE Network Card Select: Select the LAN port for dial-up access. (Note: This option is not shown in single NIC mode)
User: PPPOE user name.
Password: PPPOE password.

4.1.3 Date/Time

This menu allows you to configure the Date, Time, Date Format, Time Format, Time Zone, NTP and DST.

Date and Time

Click on the calendar icon to set the current system date.



Date: Click on the calendar icon to set the system date.

Time: Click to set the system time.

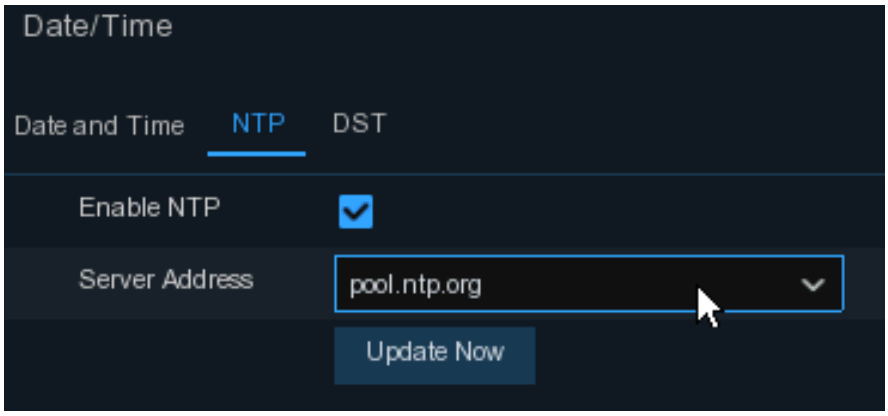
Date Format: Choose from the dropdown menu to set preferred date format.

Time Format: Choose time format between 24Hour and 12Hour.

Time Zone: Set the correct time zone.

NTP

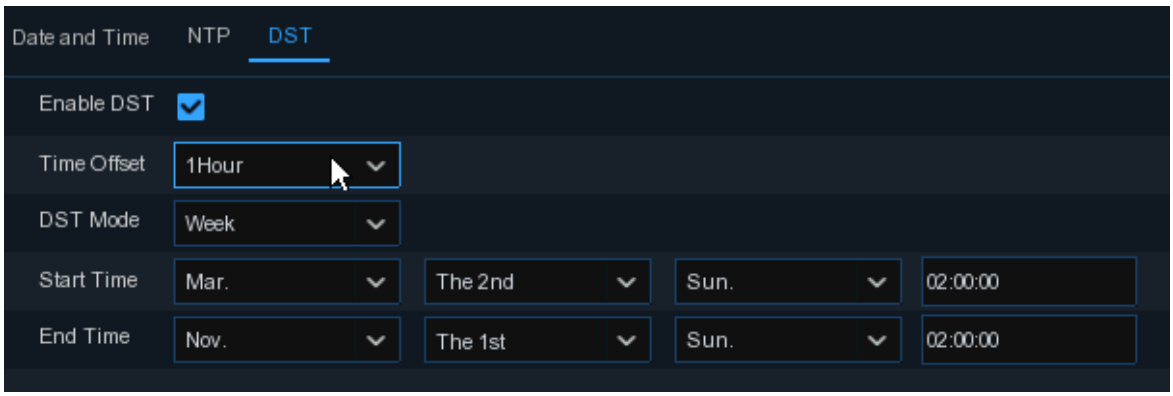
NTP stands for Network Time Protocol. This feature allows you to synchronize the date and time automatically on the NVR over Internet. Therefore, the NVR needs to be connected to the Internet.



Check the "**NTP**" box, and select the NTP server.

DST

DST stands for Daylight Savings Time.



DST: Enable if Daylight Saving Time (DST) is observed in your region

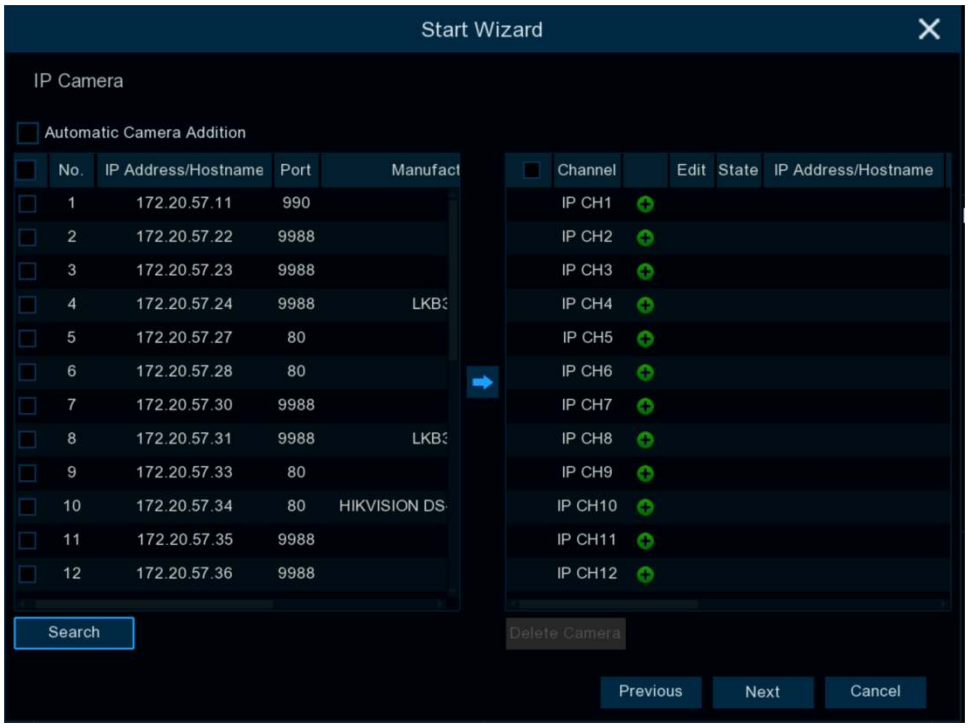
Time Offset: Select the amount of time to offset for DST

Time Mode: Choose to set the daylight-saving time in weeks or in days

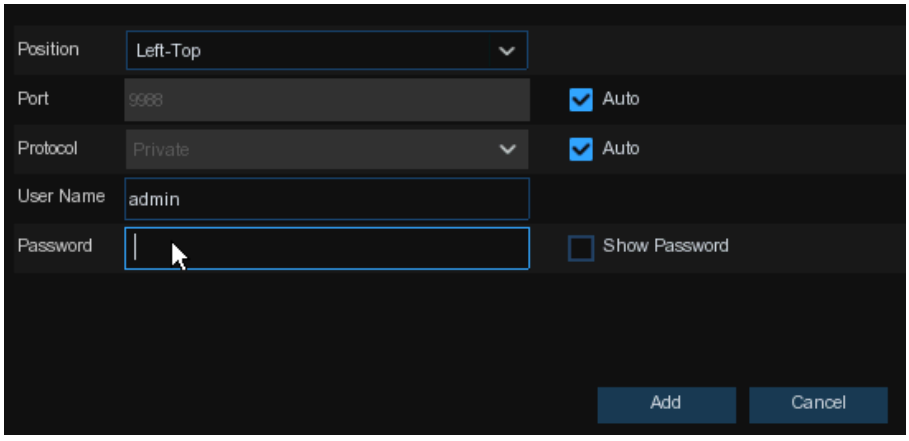
Start Time/End Time: Set the start time and end time for daylight saving

4.1.4 IP Camera

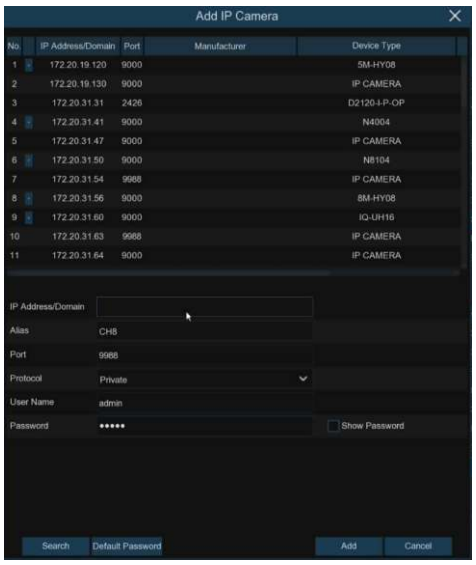
This menu allows you to add IP cameras to the NVR.



Click **Search** to search IP cameras in the same network. Choose the IP camera(s) you want to add, and then click icon to add to the NVR.



Enter the camera's user name & password to add the camera(s).
You can also click button to add individual IP camera to a single channel.



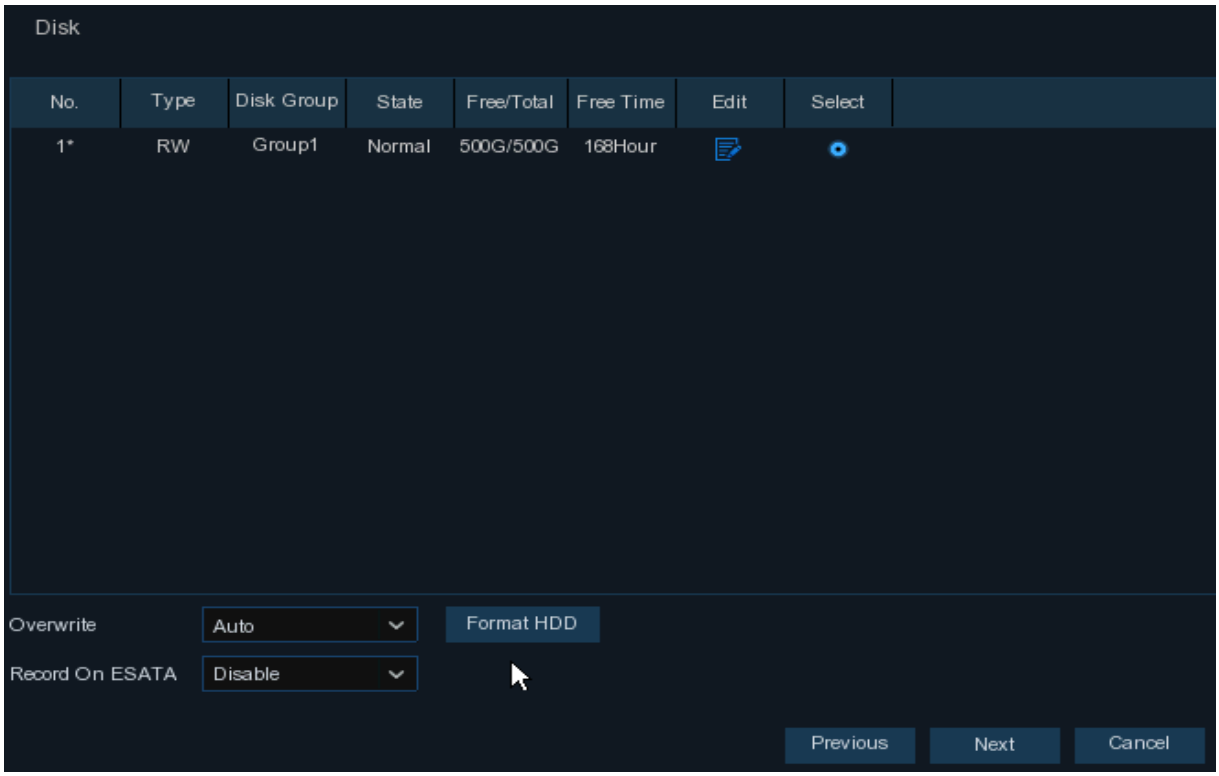
Click **Search** button to search IP cameras, and then click one of the IP cameras in the device list.
IP Address/Domain: IP address or domain name of the IP camera
Alias: Name of the IP camera
Position: Position to display the camera name on the screen.
Port: Port of the IP camera. It is set to 80 by default. Modify it if necessary.
Protocol: Choose the protocol of the IP camera from the dropdown menu

- Select **Onvif** for GV-IP cameras
- Select **Private** for GV-RBL5800 / RBL5811 / REB5800 / RFER12700
- Select **RTSP**, and type the commands as shown below:
  Main Stream: rtsp://IP address:port/rtsp/streaming?channel=xx&subtype=0
  Sub Stream: rtsp://IP address:port/rtsp/streaming?channel=xx&subtype=1

User Name: User Name of the IP camera
Password: Password of the IP camera
Bind channel: Choose a channel of the NVR you want to attach to
Automatic Camera Addition: Enable this function for the device to automatically add cameras to the channels where cameras are not added.

4.1.5 Disk

If the HDD is installed in the NVR for the first time, it must be formatted. Select the HDD and then click **Format HDD** button to format the HDD.



Overwrite: Use this option to overwrite the old recordings on the HDD when the HDD is full. For example, if you choose the option 7 days then only the last 7 days recordings are kept on the HDD. To prevent overwriting any old recordings, select Disable. If you have disabled this function, check the HDD status regularly, to make sure the HDD is not full.

Add NAS HDD: To add your NAS disk.

Record On ESATA: If your NVR comes with an e-SATA port on the rear panel, you can enable to record the video to e-SATA HDD.

4.1.6 Resolution

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



Note: If you connect to a 4K / 8K HDMI monitor, you can choose max. 4K (3840 x 2160) / 8K (7680 × 4320) resolution.

4.1.7 Mobile

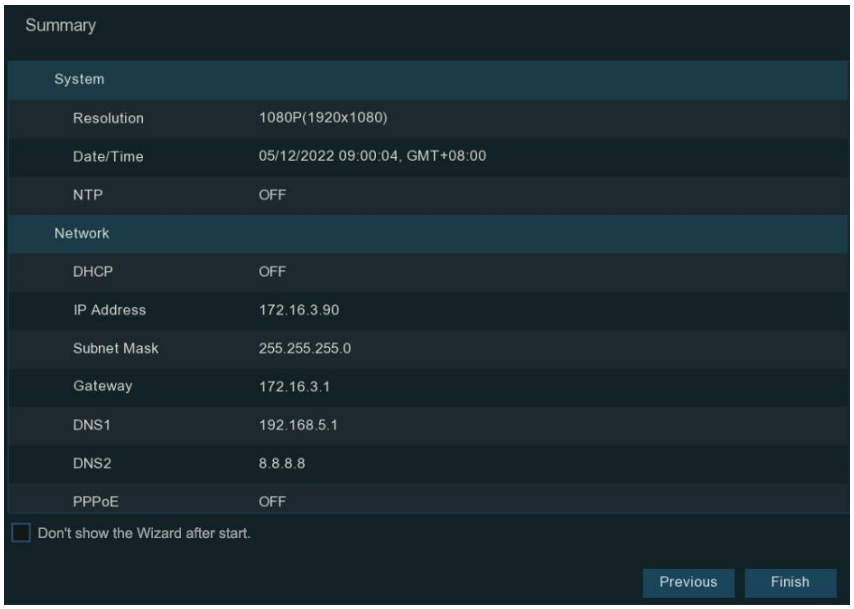
If your NVR come with a P2P ID, you can scan the QR code with your mobile app to view the NVR remotely.



4.1.8 Summary

You can check the system summary information you had set in the start wizard and finish the wizard.

Tick “**Don't show this window next time**" if you don’t want to display Start Wizard when system reboot next time. Click **Finish** button to save & exit.



4.2 Live View Screen Overview



Status Icons	
Icon	**Meaning**
	The camera is being recorded currently
	A motion alarm is happening
	An intelligent or Ai alarm is happening
	The external I/O alarm device is being triggered

HDD Error Icons	
Icon	**Meaning**
	HDD is uninstalled or in error
	HDD is unformatted
	HDD is full
	HDD is read-only

Channel Abnormal Message	
Message	**Meaning**
No Camera	No camera is added to this channel. You can click the add icon + to add a new camera.
Failed to connect to camera, please check the network connection!	The added camera is off-lined or lost connection. Please check the camera working status or network connection. You can click the edit icon to check the camera status.
User name or password error!	Incorrect user name or password of the camera. Click the edit icon to modify.
Resource Not Enough	No enough system resource to decode the camera images, please try to change the cameras to sub-stream mode; If there are 2 or more cameras are using MJPEG decoding, only 1 camera can be encoded at the same time.
No enough bandwidth for this camera!	The camera cannot get online because the total bitrate of all connected cameras exceeds the NVR's bandwidth limitation.

4.2.1 Camera Quick Toolbar

In live viewing, click the left button of your mouse on a connected camera to display the Camera Quick Toolbar.



Icon	Meaning
	Click to manually record the channel immediately. If the manually recording is in process, the icon will be in red color. Click one more time to stop manual record.
	Click to save a snapshot of the current camera image. Manual Capture must be enabled to use this feature. For details on enabling Manual Capture, see 5.2.4 Capture.
	Click to play the latest 5 minutes recording of this channel
	Click to enter PTZ control panel; Click to control zoom and focus of motorized varifocal lens
	Click to zoom-in the channel. Scroll the wheel button of your mouse to zoom in and zoom out the image.
	Click to adjust the image color of the channel.

HD SD	To switch the live view video stream between HD & SD. HD is mainstream images, SD is substream images.
	Click this button to enter fisheye mode. To use this button, device support is required and a fisheye camera should be connected first.
	Click to start two-way voice communication
	If your camera has white light LEDs, click this button to turn on or turn off the LEDs.
	If your camera has a built-in speaker, click this button to turn on or turn off the alarm sound.
	If your camera has warning light LEDs, click this button to turn on or turn off the LEDs.
	Tag button. It supports to fast search by adding a tag in live view. See more on 7.1.5 Tag Search.
AI	AI statistics. Hover the mouse upon the icon to view AI statistics when the AI function is activated in your NVR.

4.2.2 Taskbar

In the Taskbar, you are able to enter the system menu, start playback and change the live view display, etc.



Icon	Meaning
	Click to pop up the Start Menu
	Click to display multiple channels in live view screen
20 25 36	Click to display 20/25/36 channels in live view screen (only applicable to GV-RNVR256G0-N, GV-RNVR3240-N)
	Click to choose more display layouts in live view screen
	Click to start viewing channels in a sequence. You're able to set the sequence display mode on 5.7.1.3 Output Configuration.
	Quick playback. You can choose to play the recording for all channels from the beginning of the day, or you can choose the play the latest 5 seconds, 10 seconds, 30 seconds, 1 minute or 5 minutes by clicking the triangular button ▲.
	Click to adjust audio output volume
HD SD	Click to switch the live view image resolution for all channels between mainstream and substream.

	Click to switch the image scale for all channels between original and stretch.
	Click to switch among real-time, balanced, or smooth view. It affects the live view video quality by changing the bitrate and frame rate.
	Click this button to restore the scrambled channel positions.

4.2.3 Status Bar

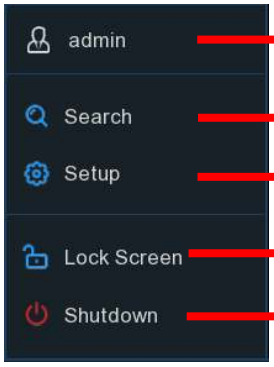
In the Status Bar, you are able to check the network connection status, turn on/off white light LEDs and alarm sound, start and stop manual record, check the system information, disable mouse and system time.



Icon	Meaning
	Fan status is normal Fan status is abnormal
	: Network is disconnected. : Network is connected but offline. : Network is well connected.
	The device is in arming status. The device is in disarming status.
	To turn on or turn off all the white light LEDs and alarm sound for available cameras.
	To operate manual record and manual relay alarm output
	To view system information, channel information, record info and network state.
	Click this button to switch the mouse between the primary screen and the secondary screen. To use this button, device support is required.

4.2.4 Start Menu

With the start menu, you can switch user, search & playback, enter system setup menu, lock & unlock the screen, shut down, reboot & logout the system.



To switch user. To enable multi-user, see 5.7.2 Multi-user.

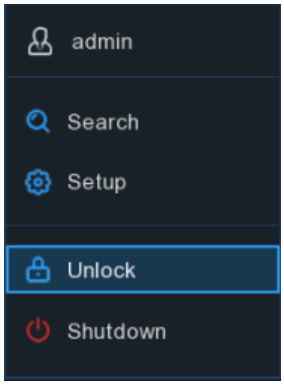
Search & Playback. See Chapter 7 Search, Playback & Backup

NVR System Setup. See Chapter 5 NVR System Setup

Lock & unlock screen. See 4.2.4.1 Unlock and Lock Screen.

Shutdown, reboot & logout the system. See 4.2.4.2 Shutdown.

4.2.4.1 Unlock and Lock Screen



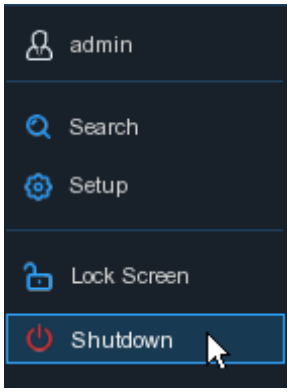
The screen will be locked to protect unauthorized OSD operation while the NVR is not in menu operation 1 minute.

If necessary, you can also lock the screen operation manually. To do so, go to Star Menu, and then click the Lock Screen icon to lock the system immediately.

If the system is locked, you can click the Unlock icon to unlock the system for further operation.

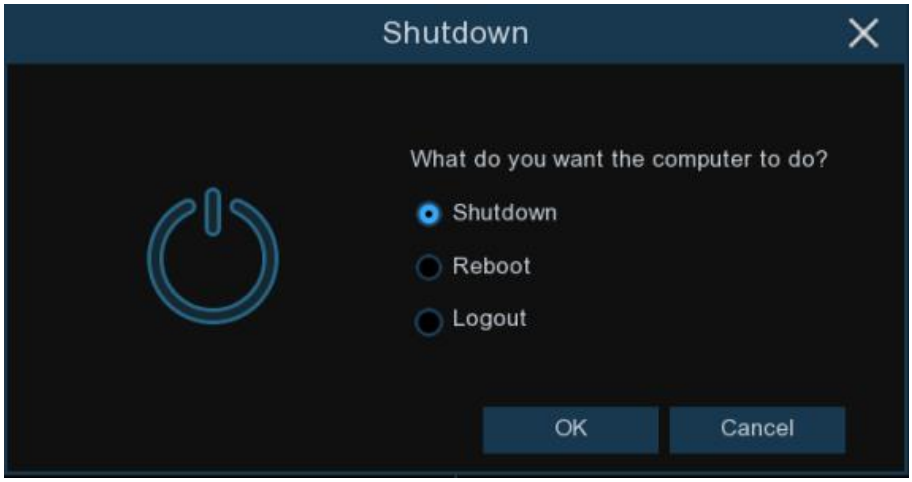
Note: To set up the duration of menu timeout or disable the timeout function, go to **General** > **System** > **Menu Timeouts** / **Idle Lock Time**.

4.2.4.2 Shutdown

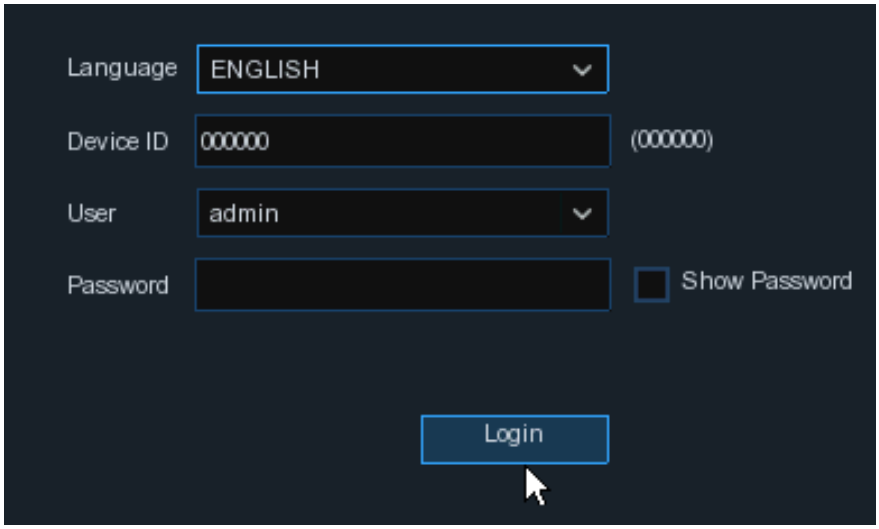


Item	Description
admin	To switch user. To enable multi-user, please view on 5.7.2. Multi-user.
Search	Search & Playback. View more on Chapter 7. Search, Playback & Backup.
Setup	NVR System Setup. View more on Chapter 5. System Setup
Lock Screen Unlock	Lock & unlock screen.
Shutdown	Shutdown, reboot & logout the system.

Click the **Shutdown** button from Star Menu, and the check the further action you want to move. Click **OK** button, system will require to input the Admin password to authenticate.



If you choose **Logout** the system, the live viewing screen will be disappeared. You will need to login the system for further operations.



4.2.5 Fisheye Camera

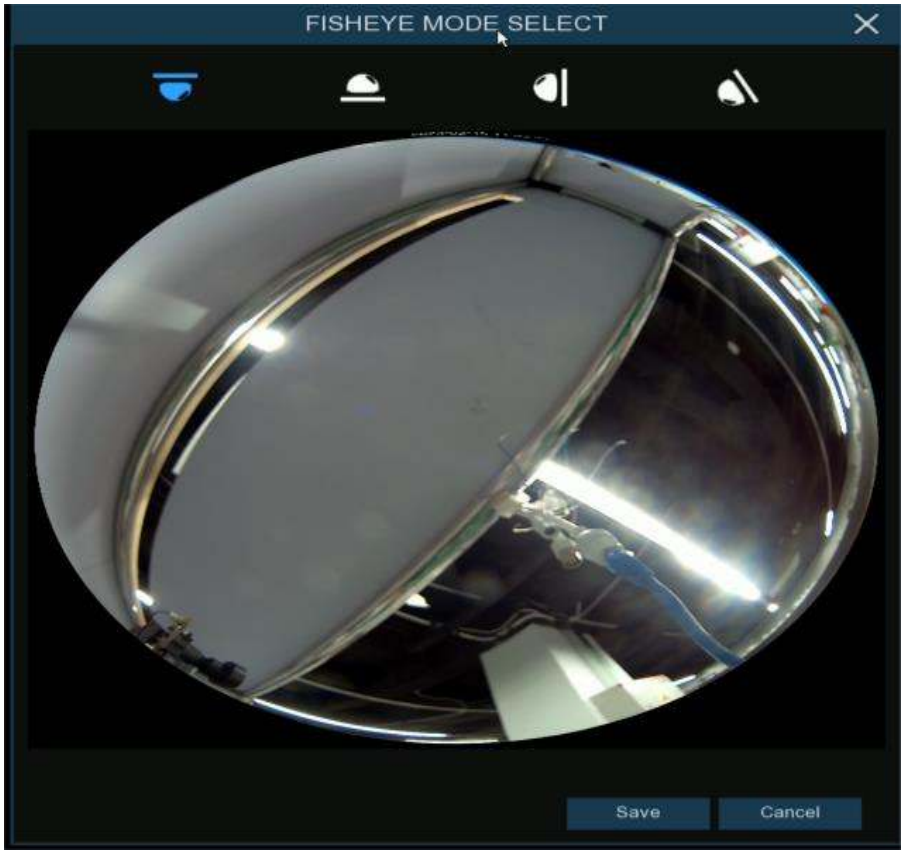
After a fisheye camera is added to the device and the device goes online, the fisheye operation icon is displayed in the shortcut menu of the preview channel area and the playback menu. You can click the button to open the fisheye-mode operation page.

Note:

1. Only GV-RNVR256G0-N supports fisheye dewarping. GV-RNVRL810-P / RNVR3240-N does not support fisheye dewarping.
2. A maximum of 1 channel is supported for fisheye dewarping.
3. Only Internet Explore supports the fisheye dewarping function on the Web interface.
4. Fisheye dewarping is not supported by playback recordings.
5. To enable the fisheye mode for other cameras, go to **Channel > Channel,** click the **Edit** icon on the desired camera, and select **Fisheye** for the **Camera Mode**.



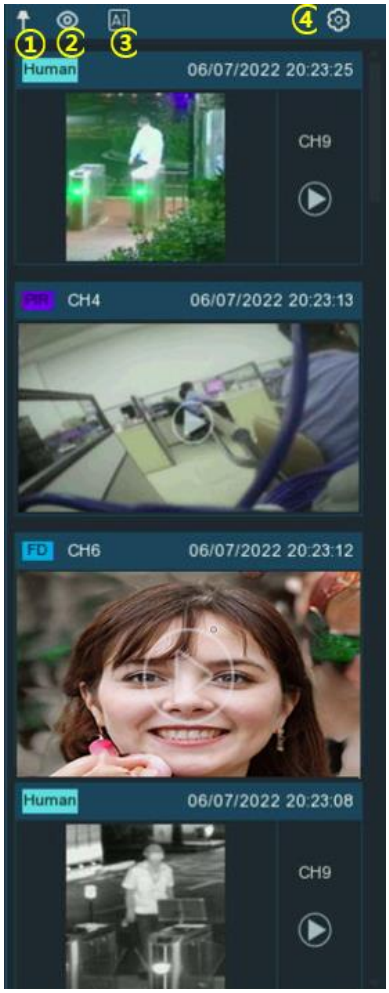
On the fisheye-mode operation page, click the button on the toolbar at the bottom to open the menu for setting the fisheye camera installation mode. Then, select the mode in accordance with the actual installation mode, and save the setting to make it take effect.



After the corresponding fisheye installation mode is set, the viewing modes supported in the selected installation mode are displayed on the toolbar at the bottom. You can switch the modes as needed and you can also drag and zoom the screen.



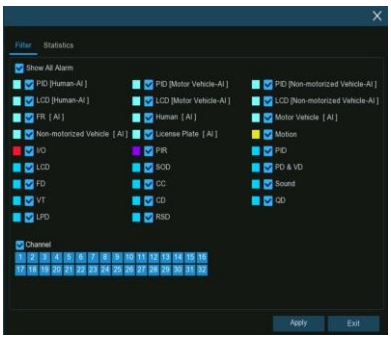
4.2.6 Alarm Notification Panel

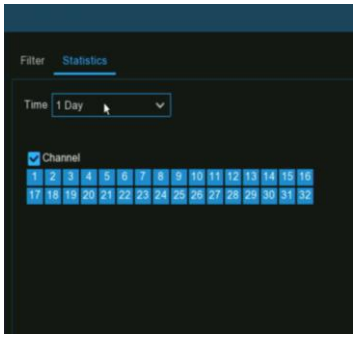


The Alarm Notification Panel displays thumbnails of alarm events that have occurred. Events are color-coded according to the event type. Use the mouse scroll wheel to scroll up and down (place the mouse cursor over the notification panel first). Click the play button next to or over the thumbnail to play the event.

1. Click to display the notification panel at all times.
2. Click to hide the notification panel.
3. Click to reveal AI statistics information.
4. Click to reveal the Filter and Statistics functions (shown below).

Use the Filter function to customize which alerts and which camera will appear in the notification panel. You can also customize the time duration and channels you want to display in AI statistics.





Chapter 5 NVR System Setup

You can configure the NVR for Channel, Record, Alarm, Network, Device & System from **Start Menu** → **Setup**.

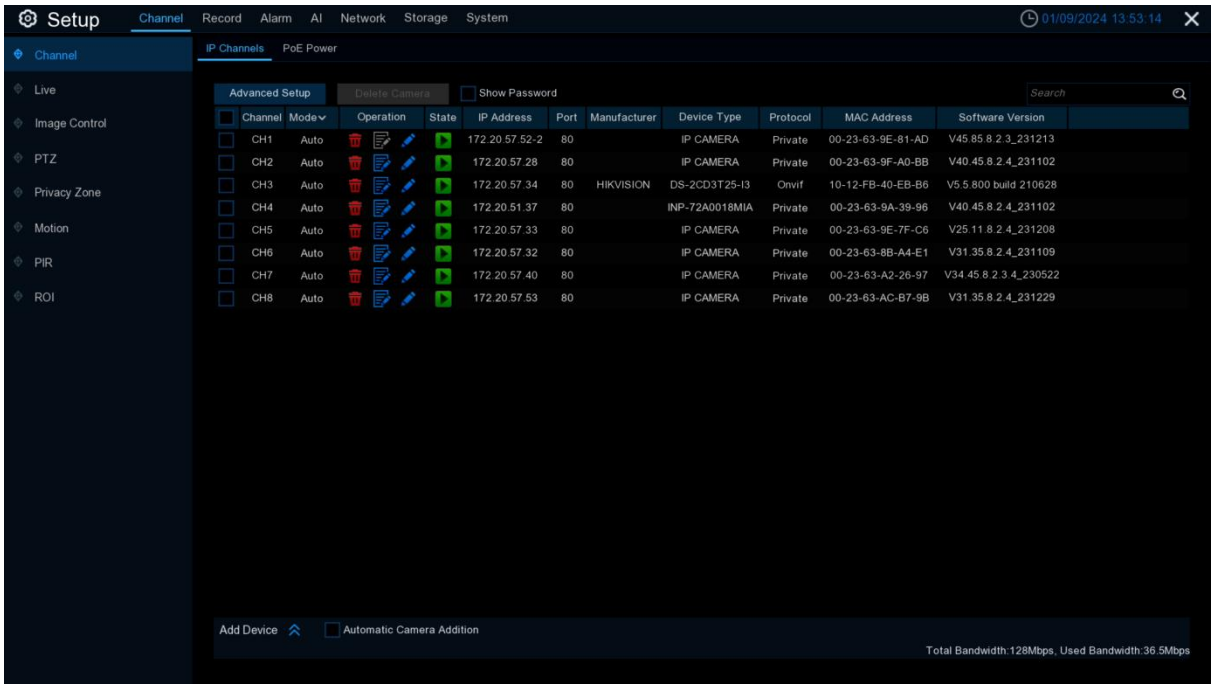


5.1 Channel

In this section, you can configure the camera, live view display, manage IP cameras, adjust IP camera's image, PTZ setup, motion setup, convert mode, and more.

5.1.1 IP Channels

You're able to add and delete IP cameras in this menu.



1. Click **Add Device** to expand and collapse the device search window.
   a. Click **Search** button to search and display the devices under the same LAN. Based on the search result, select one or more devices, and click Add to enter the corresponding information to complete the addition.
   b. Based on the search result, you can select multiple devices, click **Batch IP Modification**, set the correct information, you can batch IP modification for the selected cameras.
   c. Check **Automatic Camera Addition**, the device will automatically add cameras to the channels where cameras are not added.
2. Click the **Advanced Setup** button to enter the device's password to open the Advanced Setup page, where you can do the following:
   a. **Default Password:** Set the default password for the device to connect to the camera via Private/Onvif/RTSP protocol. The default password for the Private protocol can be used to activate the connected camera that is not activated. When Use the Admin password as camera activation/connection password is checked, the Private protocol will use the device administrator password for activation/connection of the accessed camera.
   b. **Modify Camera Password:** You can modify the password of the online camera.
   c. **Priority of PoE Channels** (only supported by PoE NVR):
      i. Enable the priority of PoE Channels. If the channel has been manually added cameras. Continue to access the camera on the corresponding PoE port of the channel. The manually added camera will be replaced with the PoE accessed camera. (Unchecked Remember My Selection, it will only take effect once)
      ii. Enable Manual Add Priority. If a camera has been manually added to a channel, continue to access the camera on the corresponding PoE port of the channel, and the previously manually added camera will not be replaced by a PoE-accessed camera. (Unchecked Remember My Selection, which takes effect only once)
      iii. If you do not enable any priority item. Cameras have been manually added to the current channel. Continue to access the camera on the corresponding PoE port of the channel. a pop-up window will prompt that the camera already exists on the current channel and ask whether to replace it.
   d. **Restore IP Channel Connection:** When the device forgets the password and resets the password by restoring the factory settings. You can click Restore IP Channel Connection to restore the channel connection parameters before restoring the factory settings, and add the original online camera with one click.
   e. **Export & Import Camera:** You can export the added IPC information as a backup. It can be used for re-importing or importing into other devices after the device is restored to factory settings (the exported information does not contain the connection password).
3. Select the camera that has been added to the device, click the **Delete Camera** button to delete the camera.
4. Check **Show Password**, enter the device password to verify that the camera has been added to the device connection password can be displayed.

Click the **Search** icon to search for online cameras on your LAN, select the camera you want to add and enter the correct information to add it.

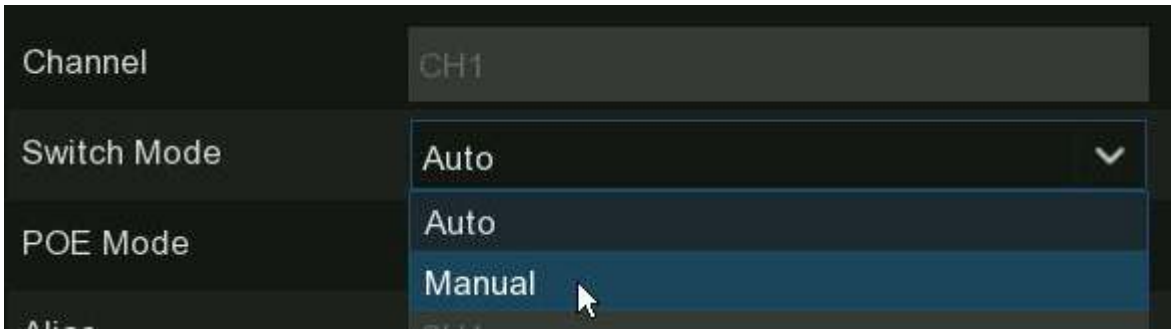
5.1.1.1 Connect External Cameras from LAN or Internet

If you want to connect to an IP camera from LAN or internet, please make sure your NVR is well-connected to the LAN and or internet.

If you want to all channels manually, click the drop-down arrow next to Switch Mode, and then select "**Manual**".

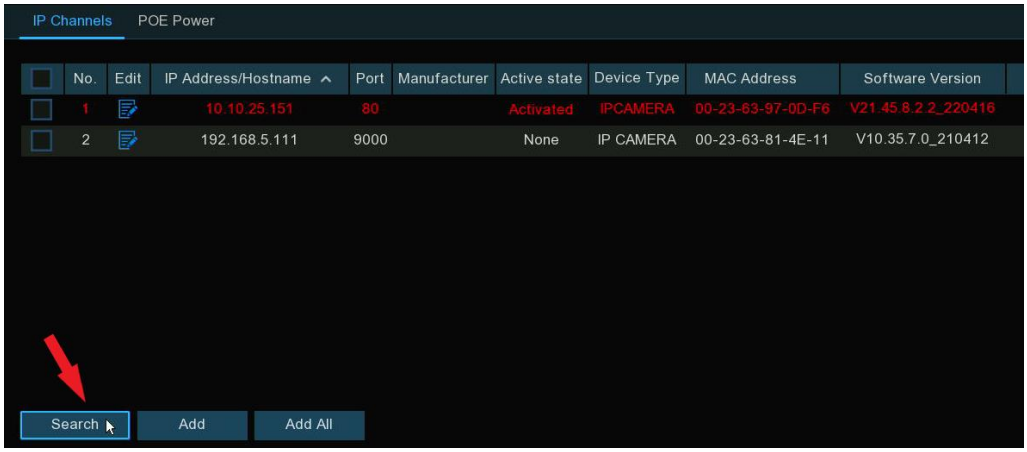


If you want to add an individual channel manually, click the edit icon in the channel list, and then click the drop-down arrow next to Switch Mode to select "**Manual**" and click **OK** to save.



5.1.1.1.1 Add Individual Camera in the LAN

1. Change the PoE mode to be Manual.
2. Click **Search** button, all available cameras in the LAN will be displayed.



3. Or click the Add icon in the channel list to add a camera to an individual channel. Click **Search** button, all available cameras in the LAN will be displayed.



4. Click on the camera you want to connect, and then complete below parameters, and input the user name and password of the camera and then click Add button.



Alias: To define the camera ID title you want to display in the live view screen.

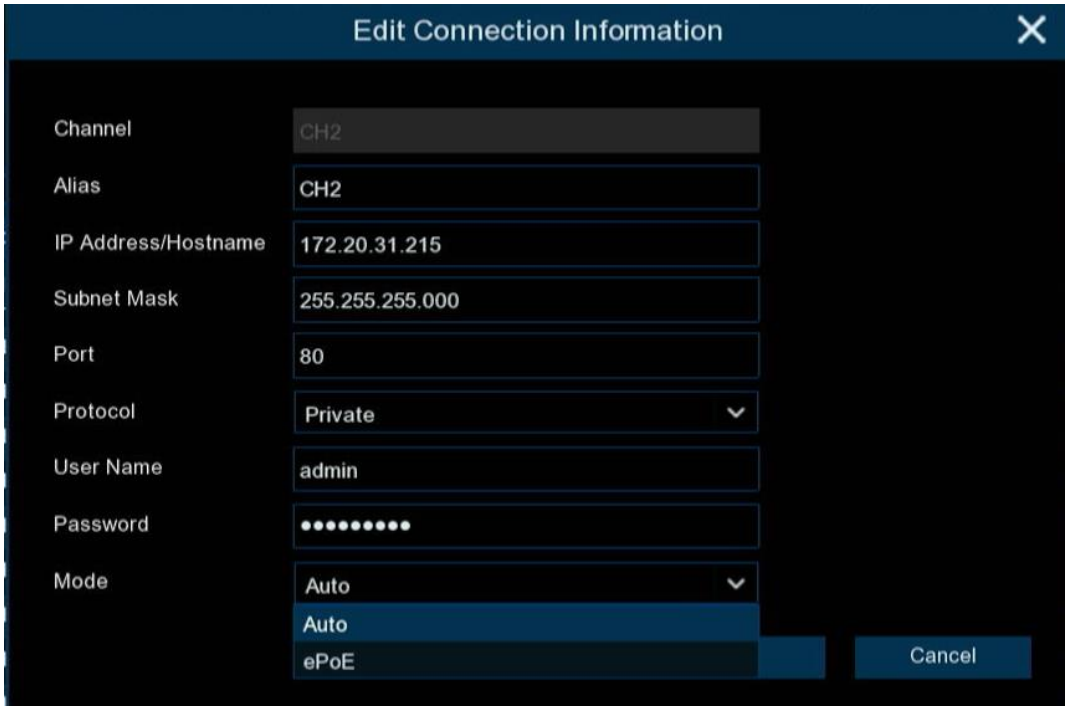
Port: Camera communication port. It is set to 80 by default. Modify it if necessary.

Protocol: To select the connection protocol.

- Select **Onvif** for GV-IP cameras
- Select **Private** for GV-RBL5800 / RBL5811 / REB5800 / RFER12700
- Select **RTSP**, and type the commands as shown below:
  Main Stream: rtsp://IP address:port/rtsp/streaming?channel=xx&subtype=0
  Sub Stream: rtsp://IP address:port/rtsp/streaming?channel=xx&subtype=1

Bind channel: To determine which channel you want to add the camera.

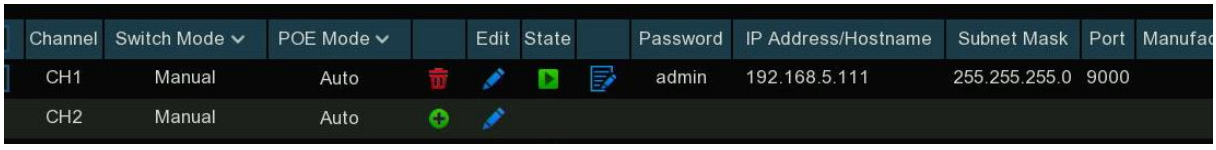
Mode: Click the Mode drop-down box to select auto or ePoE mode. Note the ePoE mode is only supported by models with PoE ports.



Note: In auto, the transmission bandwidth of 100Mbps supports a maximum transmission distance of about 120 meters; in ePOE mode will limit the transmission bandwidth to 10Mbps to expand the transmission distance to about 230 meters. (To ensure transmission stability, Cat5E or Cat6 cable is recommended)

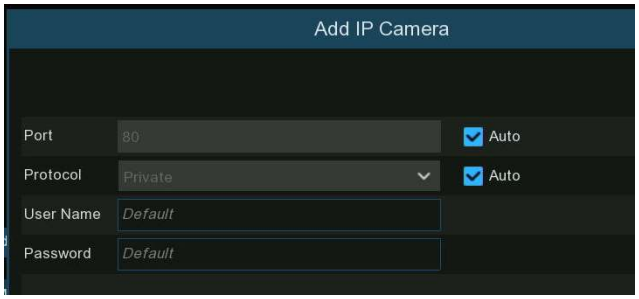
Click **Add** button.

5. The added camera will be displayed in the channel list.



5.1.1.1.2 Add Multiplex Cameras in the LAN

1. Click **Search** button, all available cameras in the LAN will be displayed. Or click **Add All** button, the NVR will search & add all available cameras in the LAN.
2. Select the cameras from the search result, and then click "**Add**". You would need to input the user name and password of the cameras. Please make sure all the cameras you want to add use the same user name and password. Otherwise, the cameras with different user name and password will be unable to get connected.



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



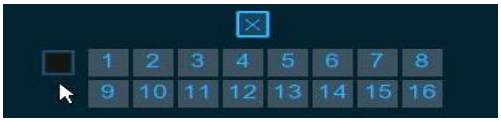
5.1.1.1.3 Add Cameras from Other NVR in the LAN

The NVR allows to add cameras from other NVRs in the local network.

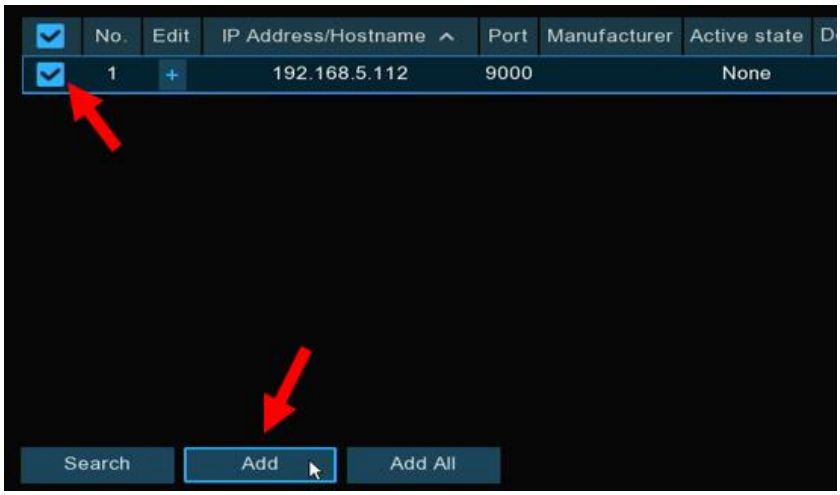
1. Click **Search** button, all available devices in the LAN will be displayed. There is an edit icon + displayed if the device is an NVR.



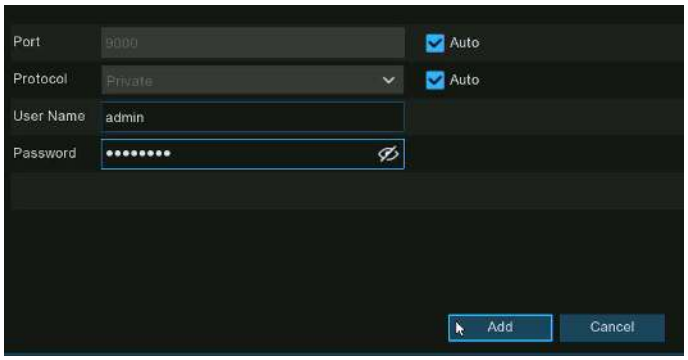
2. Click the edit icon + and select the camera channel one by one or tick the box to select all cameras. Click X icon to go back to search list.



3. Select the NVR in the search list, and then click **Add** button.



4. Input the user name and password of the NVR and then click **Add** button.



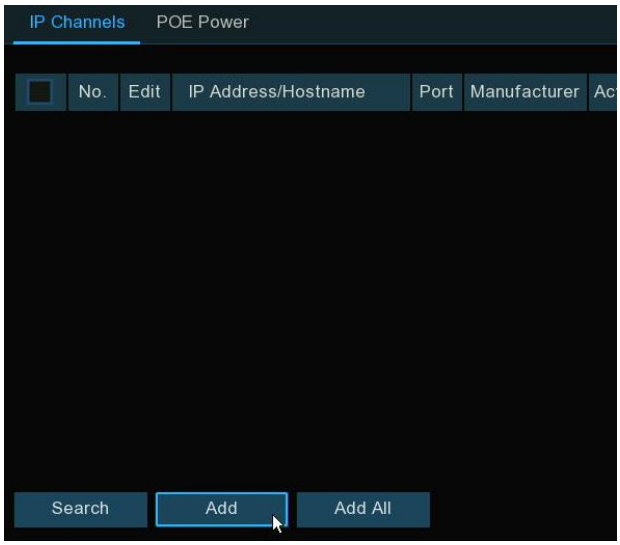
5. The added cameras will be displayed in the channel list.



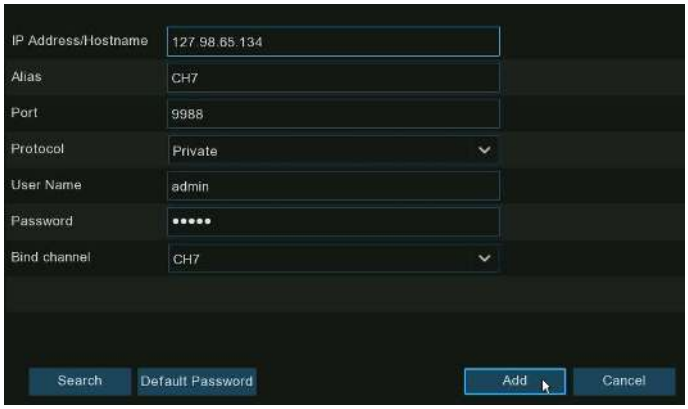
5.1.1.1.4 Add Cameras from the Internet

If your NVR is connected to internet, you're able to add cameras from internet with WAN IP address.

1. Click **Add** button in the search page.



2. Input the IP address or domain name, port, protocol, user name & password of the IP camera. Click **Add** button to add the camera.



5.1.1.2 PoE Power

In this page, you will find the real-time power consumption of each PoE port, total actual power & rated power.



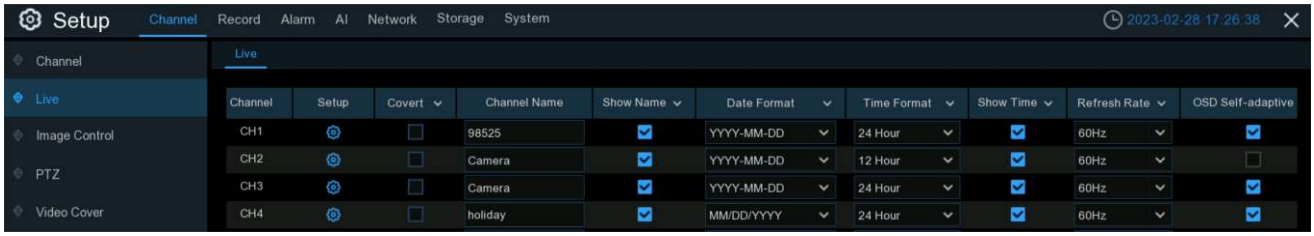
Actual power usage: Used power
Surplus power usage: remaining power

Note:

1. The total rated power of the device's POE interface is 58W maximum. The total rated power of the POE interface of different models of NVR is not the same).
2. The normal operating range of each POE port is 0 ~ 30W.
3. If the actual power of POE port is higher than the rated power, it will be reduced in the order of POE port closing until the actual power of POE port is lower than the rated power.

5.1.2 Live

To configure camera parameters.



Channel: Display channel number.

Setup: Click icon into the setup page.

Hide Preview: To hide the camera images in live view.

Convert: To hide the camera images in live view. If the covert is enabled, only live view images will be hidden. Recording images won't be affected. Enable this if your NVR and TV is in a public area (shop, warehouse, etc.), but you don't want others to see an image from the camera.

Channel Name: Give a name to the camera.

Show Name: Leave this enabled to display the camera name in Live View mode, otherwise click the checkbox to disable it. It affects both live view & recording images.

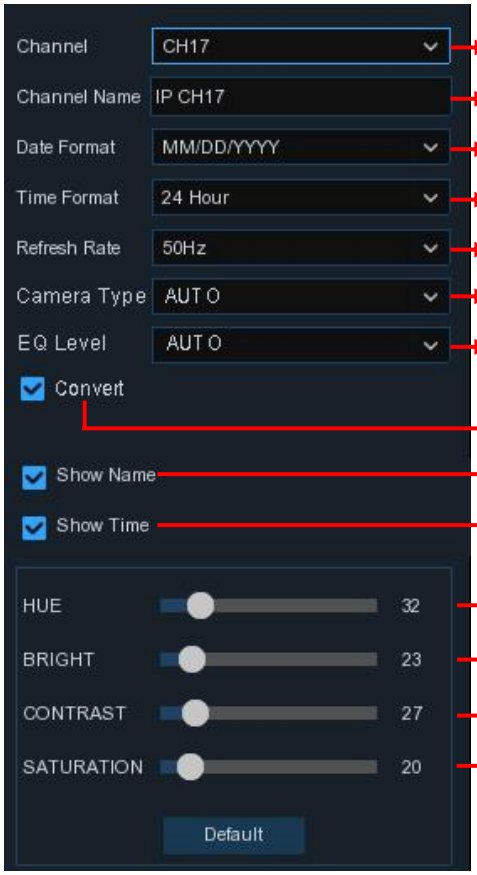
Date Format: To choose a date format.

Time Format: To choose a time format.

Show Time: Leave this enabled, as a timestamp will be embedded on all video recordings. Click the checkbox if you wish to disable it. It affects both live view & recording images.

Refresh Rate: Choose the right value according to the frequency of alternating current in your region.

OSD Self-adaptive / Auto Text Color: Used to set whether to change the font color of OSD in accordance with the screen background to ensure clear display.



Choose a channel to configure

Give a name to the camera

Date format to display for the camera (for IP camera only)

Time format to display for the camera (for IP camera only)

Refresh Rate of the camera (for IP camera only)

Choose a camera type (Auto, AHD, TVI, CVI) for analog camera

Choose an AHD EQ (Enhanced Quality) level depends on your camera video cable

Check the box If you want to hide the live image of this channel

To show the camera name in live view screen

To show the system time in live view screen

Adjust the Hue value for the image color

Adjust the Bright value for the image color

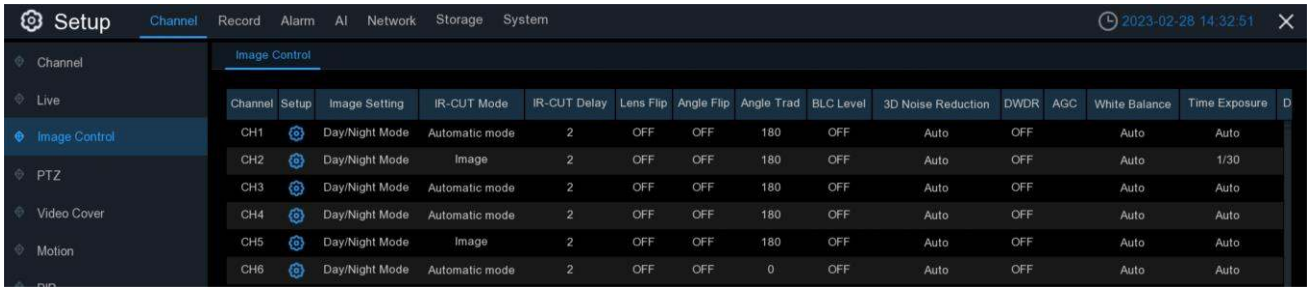
Adjust the Contrast value for the image color

Adjust the Saturation value for the image color

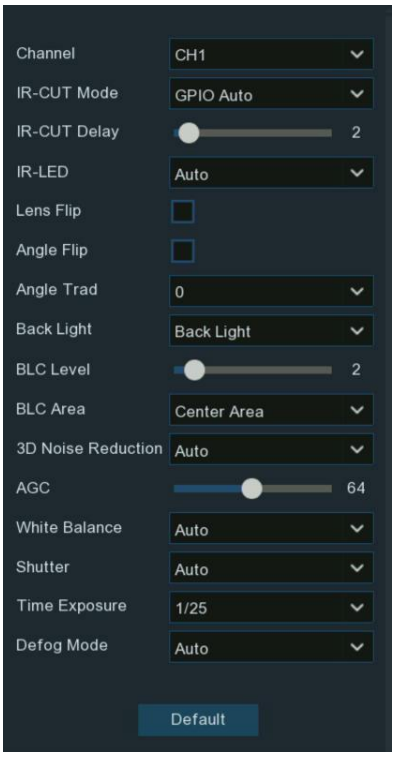
Click **Default** to load default settings, click **Apply** to save settings, click right buttons of your mouse to exit.

5.1.3 Image Control

This menu allows you to control image settings for supported IP cameras. If the camera is connected to the NVR with Onvif protocol, it might be not supported to configure.



Setup: Click icon into the setup page. The interface varies based on different models.





Channel: Choose a channel to configure.

IR-CUT Mode: Lets you choose how the camera handles color and how it manages the transition from daytime to night-time and vice versa:

- ➔ **GPIO AUTO** will instruct the camera to switch automatically from "Color Mode" to "Black White mode" and vice versa. It is accomplished through the light sensor.
- ➔ **Color Mode** will instruct the camera to operate in color mode only. In low light conditions, the color will be quite faint. Image clarity will also be reduced in low-light conditions.
- ➔ **Black White Mode** will instruct the camera to operate in black & white mode only.

➔ **Image Mode** will instruct the camera to switch automatically from "Color Mode" to "Black White mode" and vice versa. It is accomplished through the software.

➔ **B/W Schedule** allows to set the images as black & white color in a certain duration.

IR-CUT Delay: Controls the delay of the IR cut filter when transitioning from daytime to night-time. The default setting will be suitable for most camera locations but can be adjusted if needed. Click and hold the slider left or right to change. The higher the number, the greater the delay.

IR-LED: To configure the IR LRD lighting method.

➔ **Smart IR:** If you want the LED lighting to be managed by the system, then select this.

➔ **Manual**: You're able to configure the brightness of the LED lights including low-beam lights and high-beam lights individually.

➔ **OFF:** Turn off the LED light always

Vertical Flip: Invert the image up and down.

Horizontal Flip: Invert image orientation horizontally.

Corridor Mode: This allows you to make better use of the camera's vertical angle for an optimized view of long, narrow scenes. Enable this if your camera is viewing a narrow corridor.

Angle Trad / Adjustment: Rotate the image 180°.

Mirror: Turn the image upside down and/or horizontally reverse the orientation of the image.

Exposure Compensation: When the surrounding illumination and the object have large differences in brightness, you can enable the exposure compensation to get a better image.

➔ **DWDR:** Images produced by wide dynamic range (WDR) function 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 it is 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 bright spotlight-like 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 it is 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 it is enabled, click and hold the slider left or right to change the **BLC Level**.

➔ **Disable:** Disable exposure compensation.

White Balance: Used to set white balance. There are two mode options.

➔ **Auto**: In this mode, the white light is adjusted by the default parameters.

➔ **Manual**: In this mode, you can manually set the synthetic gained white light of red, green, and blue.

Shutter: Used to set the shutter exposure time. There are two mode options.

- ➔ **Auto**: In this mode, a proper exposure time is automatically selected in accordance with the configured **Time Exposure** value.
- ➔ **Manual**: In this mode, the configured **Time Exposure** value is used.

Time Exposure: Used to set the exposure time of the camera. This parameter is used together with the **Shutter** parameter.

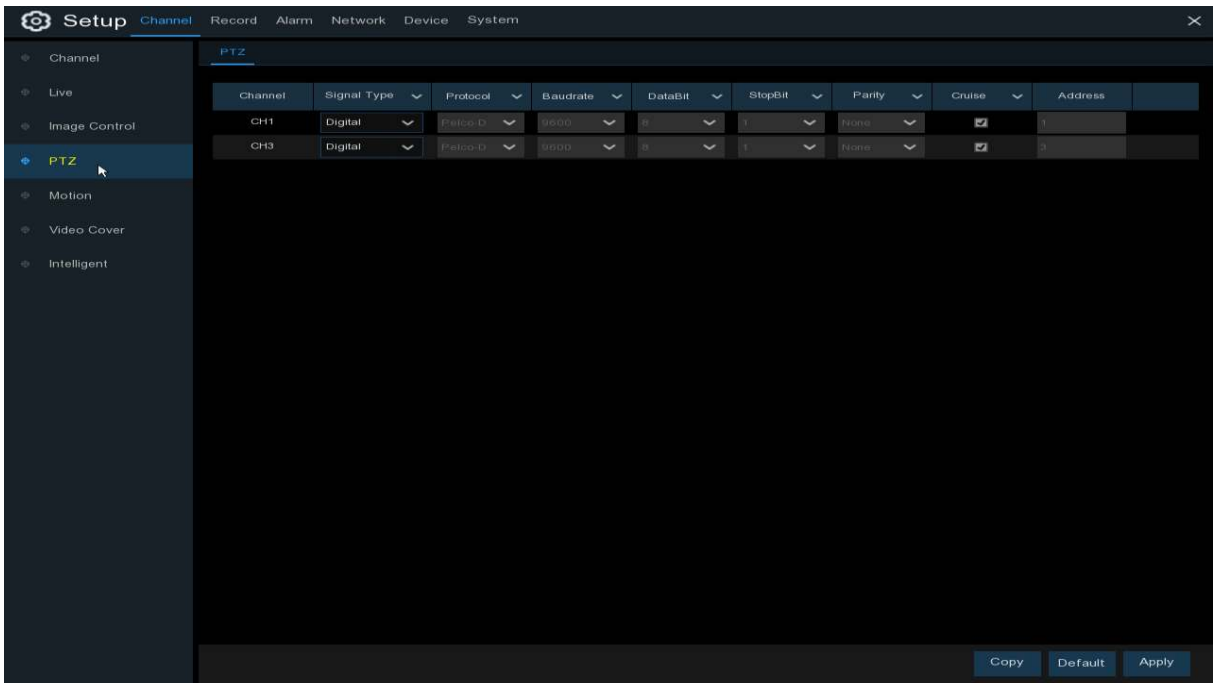
3D Noise Reduction: Used to reduce the noise in the image so as to make the image clearer. There are three mode options.

- ➔ **Auto**: In this mode, the camera automatically selects the noise reduction effect in accordance with algorithms.
- ➔ **OFF**: The noise reduction function is disabled.
- ➔ **Manual**: In this mode, image noise is reduced in accordance with the noise reduction coefficient manually configured.

Default: Click this button to restore the default image parameter setting.

5.1.4 PTZ

This menu allows you to configure the PTZ (Pan-Tilt-Zoom) settings for the dome camera.



Channel: Channel name
Signal Type: Analog for analog channels, Analog & Digital for IP channels.
Protocol: Choose the communication protocol between the PTZ capable camera and NVR. If your camera support UTC (Up the Coax) function, you can choose COAX1 or COAX2 to display your camera OSD menu or control the UTC PTZ function.
Baudrate: The speed of the information sent from the NVR to the PTZ-capable camera. Make sure it matches the compatibility level of your PTZ-capable camera.
DataBit / StopBit: The information between the NVR and PTZ-capable camera is sent in individual packages. The **DataBit** indicates the number of bits sent, while the **EndBit** indicates the end of the package and the beginning of the next (information) package. The available parameters for **DataBit** are: **8**, **7**, **6**, **5**. the available parameters for the **StopBit** are **1** or **2**.
Parity: For error check. See the documentation of your PTZ-capable camera, to configure this setting.
Cruise: Enable to use the Cruise mode. In order to use the Cruise mode, you need to set a number of preset points.
Address: Set the command address of the PTZ system. Be noted that each PTZ-capable camera needs a unique address to function properly

5.1.4.1 MFZ & PTZ control

In live viewing, click the left button of your mouse on a connected camera to pop up the Camera Quick Toolbar. Click the PTZ icon to enter PTZ control panel.



5.1.4.1.1 Controlling Your MFZ Camera

You're able to adjust the optical lens to zoom in or zoom out if a MFZ (Motorized Focus & Zoom) camera is connected.
In live viewing, click the left button of your mouse on the MFZ camera to pop up the Camera Quick Toolbar. Click the PTZ button to enter MFZ control panel.



Step: To set the steps of each movement of the MFZ lens
Zoom: To control the zoom in and zoom out:

- ➔ —: Single click on the button, the lens will perform one movement to zoom out the image and auto focus. Click and hold on the button to perform continuous movements till you release the mouse button.
- ➔ ┼: Single click on the button, the lens will perform one movement to zoom in the image and auto focus. Click and hold on the button to perform continuous movements till you release the mouse button.

Focus: To fine turn the focus by manual:

- ➔ —: A single click on the button, the lens will perform one movement to focus out the image. Click and hold on the button to perform continuous movements till you release the mouse button.
- ➔ ┼: A single click on the button, the lens will perform one movement to focus in the image. Click and hold on the button to perform continuous movements till you release the mouse button.

Auto Focus: Auto focus on the objects.

Restore: Restore the camera to default status.

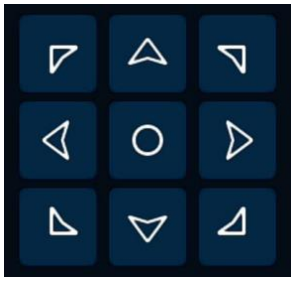
5.1.4.1.2 Controlling Your PTZ Camera

In live viewing, click the left button of your mouse on the PTZ camera to pop up the Camera Quick Toolbar. Click the PTZ button to enter PTZ control panel.



Mode: To control the PTZ camera by PTZ, Preset, Line Scan, Watch Mode, Tour and Pattern Scan.

Directional Buttons: Click and hold the directional buttons to move the camera in the direction selected. Click the middle button to continually rotate the camera towards the left (click the any directional button to stop). If you want to change the rotation speed, you need to stop the rotation firstly, and then start again after changing the speed.



Speed: Adjust the speed control to alter how fast or slow the camera will pan or tilt. Move the slider to decrease or increase the speed.



Lens Control Buttons: To control the optical zoom, focus length and iris of the lens.

➔ Single click on the button, the lens will perform one movement to zoom out the image and auto focus. Click and hold on the button to perform continuous movements till you release the mouse button.

➔ Single click on the button, the lens will perform one movement to zoom in the image and auto focus. Click and hold on the button to perform continuous movements till you release the mouse button.

➔ Click and hold the button to decrease the focal length.

➔ Click and hold the button to increase the focal length.

➔ Click to reduce the iris value, image will get darker.

➔ Click to increase the iris value, image will get brighter.

5.1.4.1.2.1 Controlling PTZ

In this section, you're able to control the Pan/Tilt/Zoom and more.

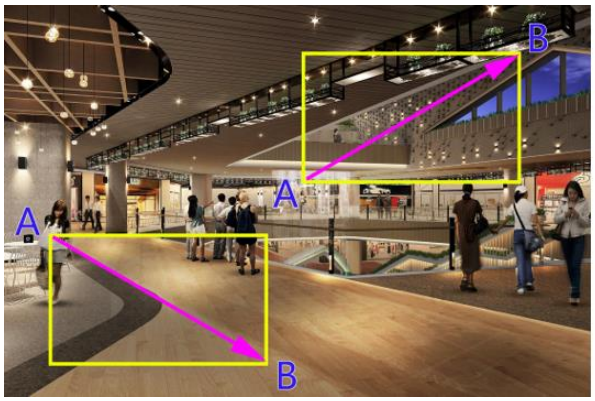
1. Select PTZ mode.
2. Click the directional buttons to move the camera
3. To adjust the speed to pan or tilt.
4. To control the optical zoom, focus and iris of the lens.
5. Using functional buttons:

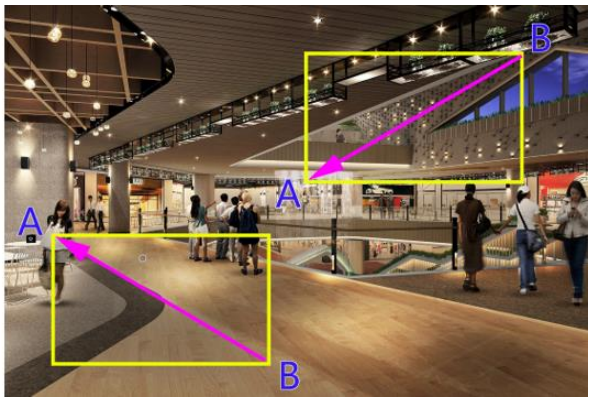
➔ 3D PTZ control. After clicking on this button, you're able to control the pan/tilt/zoom directly on the live view screen.

- Click on any point in the image, and then the image will be centered on the clicked point.
- Drag: You can zoom in or zoom out the image by dragging your mouse on the image:

Click on the image and hold the mouse to drag a rectangle from point A to point B, the camera will zoom in to get the objects closer.

Click on the image and hold the mouse to drag a rectangle from point B to point A, the camera will zoom out to get the objects farther.





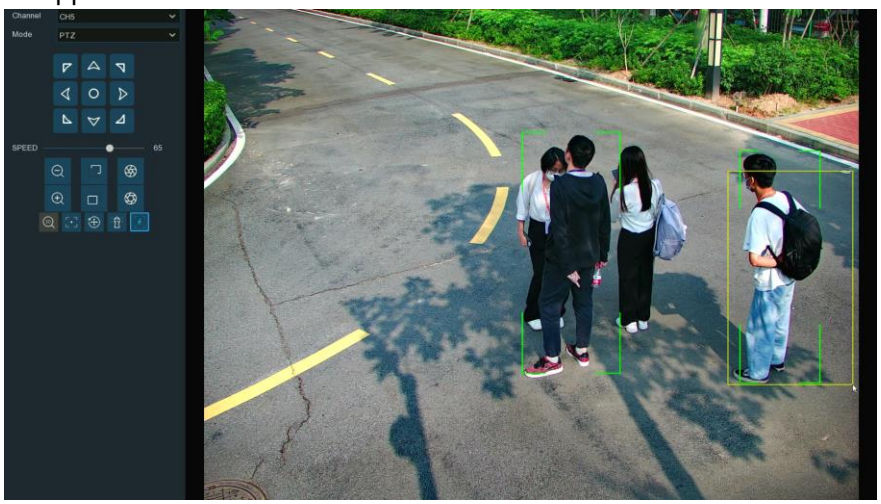
➔ Auto focus.

➔ Load default values. All the parameters you set will be lost and restored to default values.

➔ Start or stop Watch Mode. See more on 5.1.4.1.2.3 Watch Mode.

➔ If your PTZ camera supports auto tracking on the movement of human beings, you're able to control the tacking by manual if there are several detected targets to let the camera focused on a certain target. Before using this function, please make sure you have already activated the human detection function and enable the PTZ auto tracking function, view in 5.4.1.2. PD & VD (Human & Vehicle Detection).

Click the button, and then click and hold your mouse on the live view screen, drag a rectangle with yellow line to frame the targeted person. The camera will focus on the select person till he/she disappears from view.



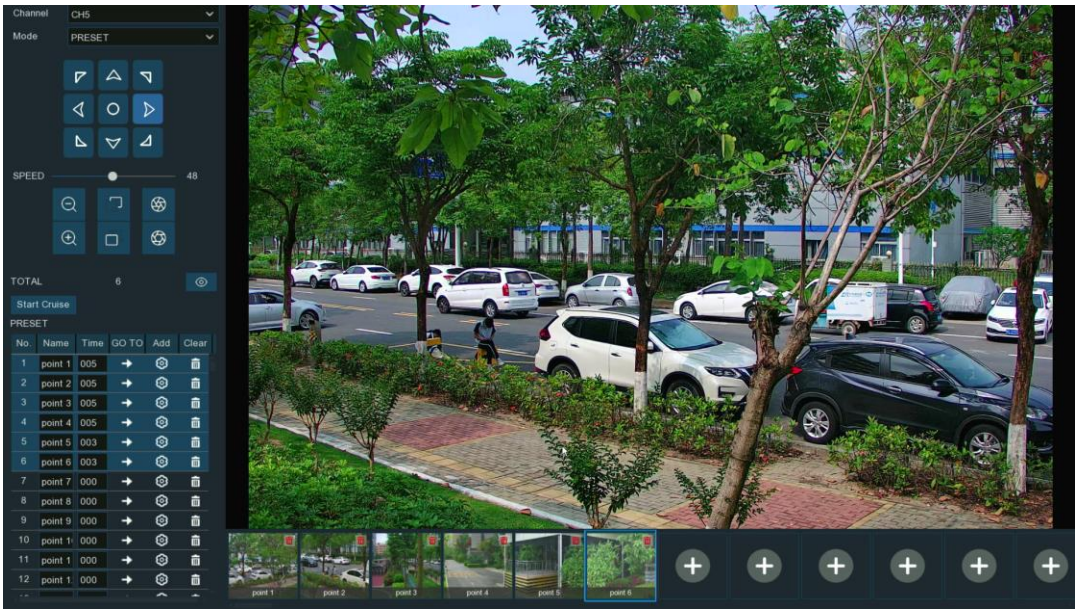
5.1.4.1.2.2 Preset Position

In this section, you're able to configure the preset positions. A preset position is a particular position within the image that you would like the camera to focus on. Up to 255 different preset positions can be created.



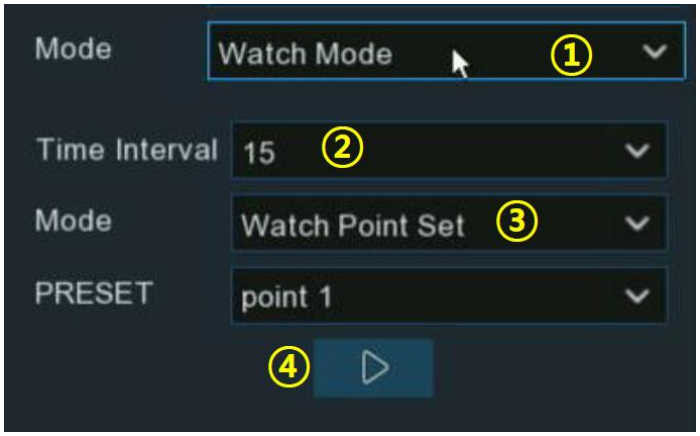
1. Select **PRESET** mode.
2. Adjust the speed control to alter how fast or slow the camera will pan or tilt.
3. Click and hold the directional buttons to move the camera in the direction selected.
4. Change the optical zoom, focus and iris of the lens if needed.
5. When the position is fixed, change the length of time (in seconds) the camera will stay at this position, before moving to the next position.
6. Click the add button to create the preset point.
7. Repeat step 1 to 6 to add more preset positions. The saved preset positions will be displayed with blue background.
8. Click the GO TO button , the camera will then move to that selected position.
9. Click **Start Cruise**, the camera will move to the preset positions in sequence. Click **Stop Cruise** to stop.
10. You can give a name to the preset position.
11. You can delete the preset position by clicking the Clear button .

12. Click the visual icon , you will see the thumbnail of preset position is displayed on the bottom of the live view image. You can go to, delete or add a preset position in the visual interface.



5.1.4.1.2.3 Watch Mode

Watch mode allows the camera to perform a preset action when there is no any operation to the camera, such as moving to a preset position, starting cruise, etc.



1. Select the **Watch Mode**.
2. Set the time interval. It means the length of time that must elapse before the watch mode is taken action. For example, the watch mode is activated and the interval is set to 15, the camera will perform the watching action if there is no operation to the camera in 15 seconds.
3. Choose the action when the watch mode is activated:
   - ➔ **Default Cruise:** The camera will be continually rotated towards the left
   - ➔ **Preset Position:** The camera will be moved to a selected preset position and stay.
   - ➔ **Line Scan:** The camera will be implemented the Line Scan. See more on 5.1.4.1.2.4 Line Scan.
   - ➔ **Tour:** The camera will be implemented the Tour. See more on 5.1.4.1.2.5 Tour.
   - ➔ **Pattern Scan:** The camera will be implemented the Pattern Scan. See more on 5.1.4.1.2.6 Pattern Scan.
4. Click ▷ button to start the Watch Mode. Press ☐ button to stop.

5.1.4.1.2.4 Line Scan

Line Scan allows the camera to automatically cruise between position A to position B horizontally.



1. Select **Line Scan** mode.
2. Adjust the speed control to alter how fast or slow 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, focus and iris of the lens if needed.
5. When the first position is fixed, click button to record this position A. Repeat step 3 & 4 to move the camera to another position. Click to record the position B.
6. Adjust the cruise speed.
7. Click button to start Line Scan. Press button to stop.

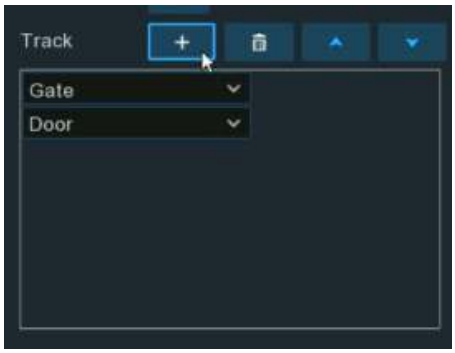
5.1.4.1.2.5 Tour

With the Tour function, you're able to configure maximum 4 tracks of auto cruise by choosing different preset positions.

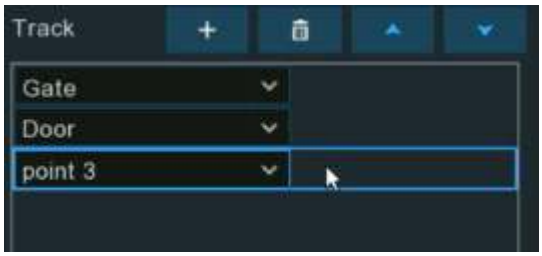


1. Select **Tour** mode.
2. Select a track. Maximum 4 tracks available.

3. Set the time interval. It means the length of time that the camera will stay in each preset position.
4. Click add button +, a position box will be added and displayed in the position list. Click the box to choose a preset position. Maximum 32 positions can be added to a track.



5. Click on the blank area on the right side of the position box, and then delete the preset position by clicking the delete button, or click ▲ / ▼ button to change its sequence.



6. Click ▷ button to save and start the tour. Press □ button to stop.

5.1.4.1.2.6 Pattern Scan

This is a function that allows the camera to implement auto cruise by following a pre-record route.

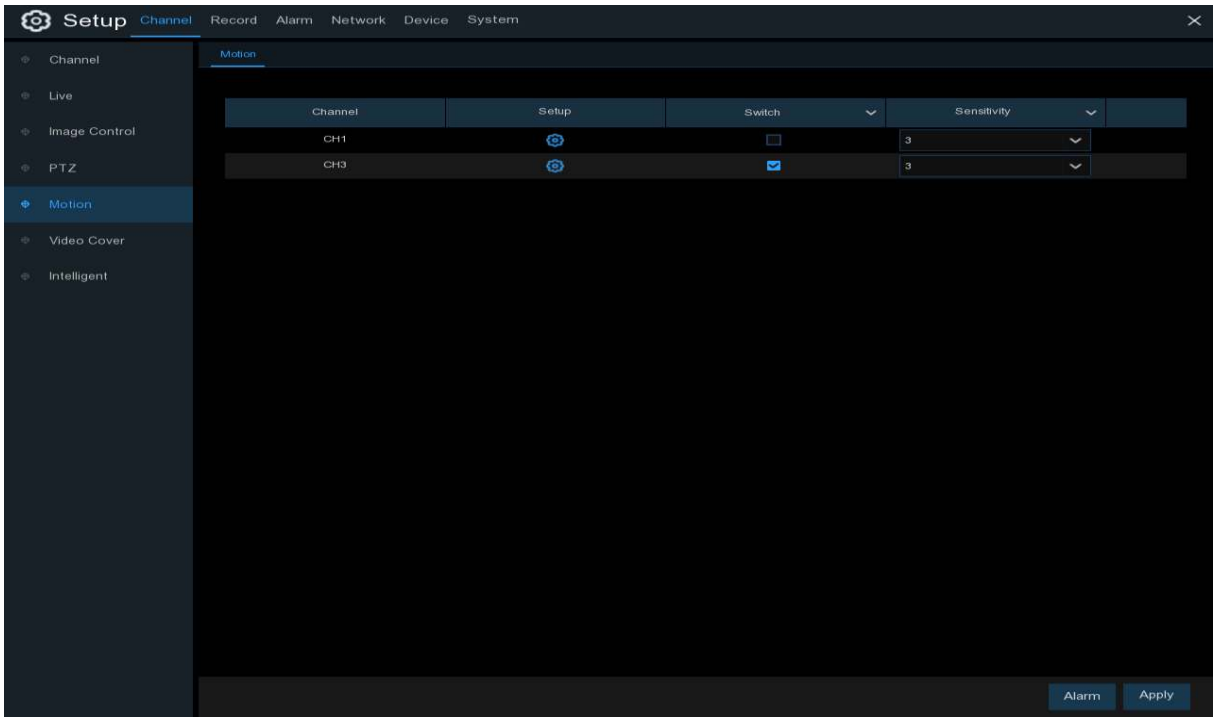


1. Select **Pattern Scan** mode.
2. Select a track. Maximum 4 tracks available.
3. Adjust the speed control to alter how fast or slow the camera will pan or tilt.
4. Click and hold the directional buttons to move the camera in the direction selected.

5. Change the optical zoom, focus and iris of the lens if needed.
6. When the start position is fixed, click ▷ button to start recording. Repeat step 4 & 5 to adjust the position. Press ☐ to finish the recording of route.
7. Click ▷ button, the camera will be moved exactly same as the route which was recorded in step 6, including zoom, focus, direction. Press ☐ to stop.

5.1.5 Motion

This menu allows you to configure motion parameters. When motion has been detected by one or more cameras, your NVR will alert you to a potential threat at your home. It does this by sending you an email alert with an attached image from the camera to use as a reference (if this option is enabled) and/or sending push notifications via the mobile app.



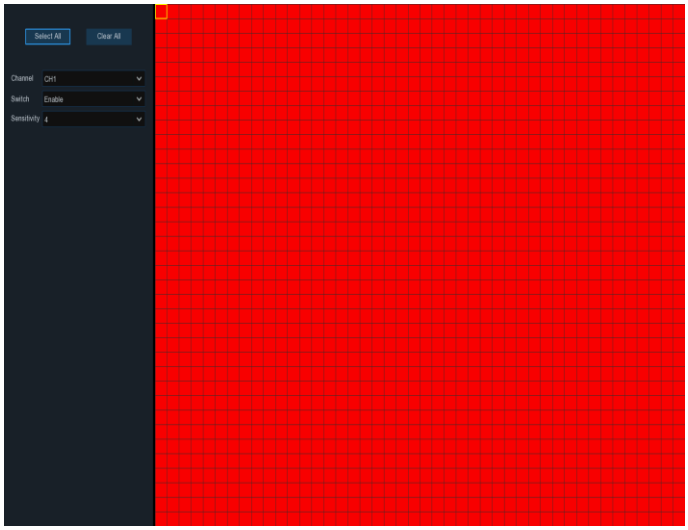
Switch: Enable or disable motion detection.
Sensitivity: Set the sensitivity level. Level 1 the lowest sensitivity level while level 8 is the highest sensitivity level.
SMD by Recorder: Used for the cameras that do not support intelligent motion detection.
SMD by Camera: Used for the IP cameras that support intelligent motion detection. There are 4 types available: Motion, Pedestrian, Vehicle, and Pedestrian & Vehicle.

- ➔ **Motion:** The camera will detect all motion events, including movements of human beings, vehicles, animals, trees, etc.

(Note: Some models of IP cameras support this function. The SMD by Recorder function will be grayed out and unavailable after connecting to this model of IP camera.)
If your camera or NVR supports smart motion detection (SMD), you'll be able to choose below advanced motion detection targets:

- ➔ **Pedestrian:** The camera only alert when the movements of human beings are detected.
- ➔ **Vehicle:** The camera only alert when the movements of vehicles are detected.
- ➔ **Pedestrian & Vehicle:** The camera only alert when the movements of human beings and/or vehicles are detected.

Motion Detection Area Setup: Click icon into the setup page.

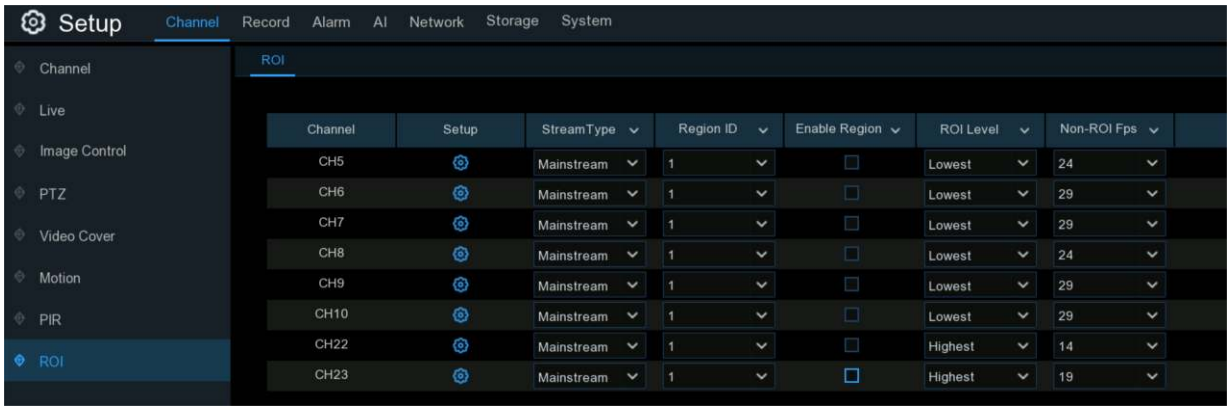


1. The whole screen is marked for motion detection (red blocks) as default. Optionally click "**Clear All**" to delete all the default detection area.
2. To create a new detection area, press and hold the left mouse button to select the cell or square that you want to start at, then click and drag to select the area that you want to create. Release the mouse to finish.
3. Multiple areas can be created. Each cell or square can be enabled to detect motion. The same action also applies when deleting an area.
4. Movement outside of the motion detection areas won't be detected therefore will not trigger recordings or event notifications.
5. Adjust the sensitivity if required, then right-click the mouse to exit.
6. Click "**Apply**" to save changes made.

5.1.6 ROI

Regions of Interest (ROIs) are selected regions for special attention in the video area. This function aims to improve the image encoding quality of the selected regions and reduce the encoding quality outside the selected regions, so as to ensure the image sharpness of the regions for special attention under the condition of constant bitrate.

Note: This function is only applicable when the NVR is connected to the following GV-IP cameras: RBL5800 / RBL5811 / REB5800 / RFER12700. It cannot be used with the H.264 and H.265 encoding types at the same time.



Stream Type: Select the stream type to set.
Region ID: Select the region ID to be set. You can set at most eight region IDs.
Enable Region: Used to set whether to enable the selected regions: The **Region ID** and **Enable Region** parameters of the selected regions are mutually independent and need to be configured separately.
ROI Level / **Video Quality:** Used to set the image quality of the selected regions. The higher the quality is, the clearer and the smoother the image is.
Non-ROI Fps / **RONI Frames:** Used to set the frame rate outside the selected regions.

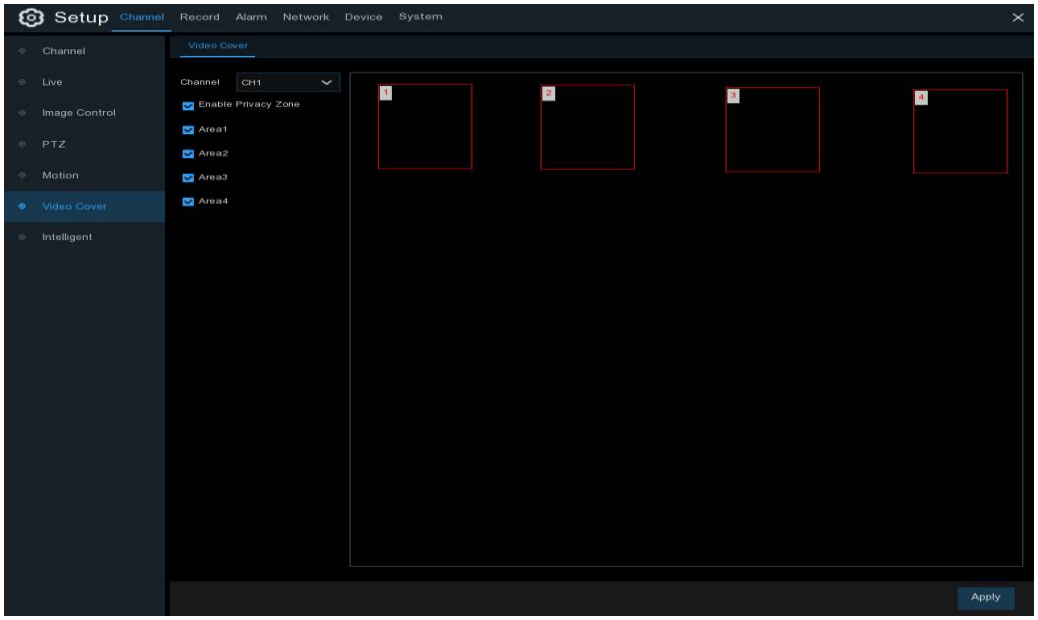
Setup: Click to open the setting page.



Area: Used to set whether to enable ROI selection. The configuration takes effect after you click **Apply**.

5.1.7 Video Cover / Privacy Zone

This menu allows you to create privacy zone(s) if you want to partially cover some certain part of the image. You can create up to 4 privacy zones in any size and location on the camera image. Enable the Privacy Zone, and choose how many zones you need. The zone(s) appear as “red box”. Click the edge of the red box and drag it to any size to create a privacy zone.



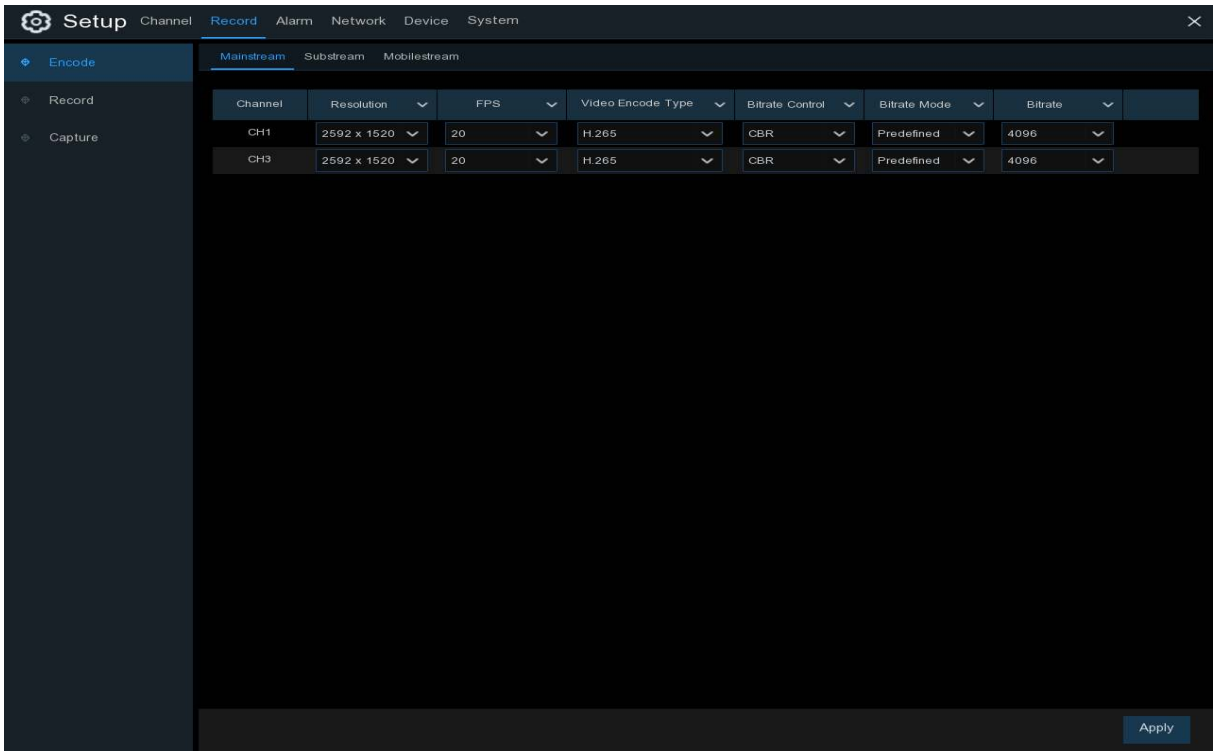
Note: The areas of privacy zones set will be invisible in both live view & recording video.

5.2 Record

The recording configuration options are available in the Record and Capture menus accessible from the Main Menu. From here, you can access and change the recording frame rate & resolution and recording schedule for each camera connected. You can also enable and set a schedule for your NVR to take a snapshot each time when an event occurs.

5.2.1 Video Encoding

This menu allows you to configure the recording video or network transmission picture quality. Generally, Mainstream defines the recording video quality which will be saved in the HDD; Substream defines the video quality which is being viewed via remote access, for example web client & CMS; Mobilestream defines the video quality which is being viewed via remote access via mobile devices.



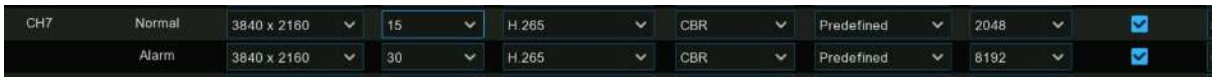
Resolution: This parameter defines how large the recorded image will be.
FPS: This parameter defines the number of frames per second the NVR will record.
Video Encode Type / Encoding Format: For IP camera only. NVR supports H.264 IP camera only. If you choose H.265, live view screen of the IP channel will display "Decoding Failed".
Bitrate Control / Encoding Mode: Select the bitrate level. For a simple scene, such as a gray wall is suitable constant bitrate (**CBR**). For more complex scene, such as a busy street is suitable variable bitrate (**VBR**).
Bitrate Mode / Config Mode: If you want to set the bitrate by yourself, then choose **User-defined** mode. If you want to select the predefined bitrate, choose **Predefined** mode.
Bitrate: This parameter corresponds to the speed of data transfer that the NVR will use to record video. Recordings that are encoded at higher bitrates, will be of better quality.

Video Quality: Available for VBR only, you can select the recording quality that will define the variable bitrate used, from lowest to highest.

Audio: If your camera has 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 the Audio streaming in 5.2.2. Audio Encoding if you want to record the audio streaming.

I Frame Interval: This configures 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 encoded. As the I-Frame increases, the number of partial frames also increases. Higher values are only recommended on networks with high reliability, otherwise leave the default selection.

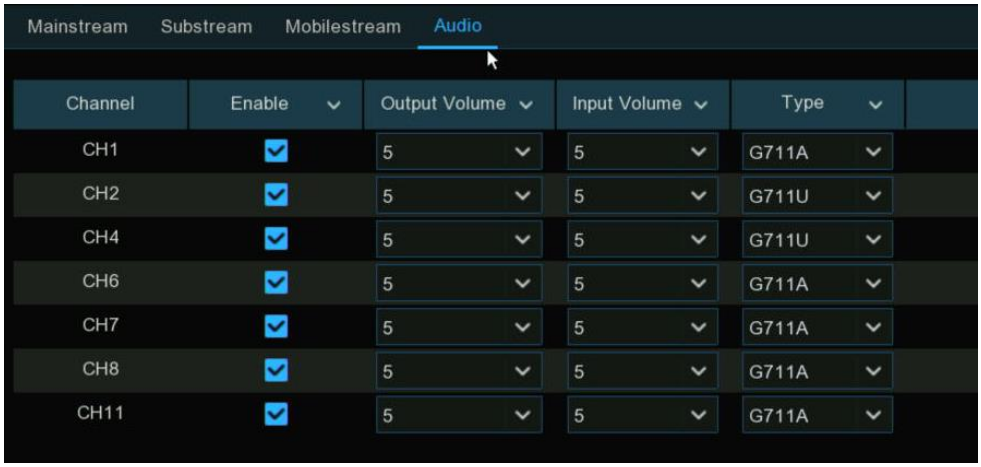
ETR: If your camera supports ETR function, it allows you to set independent video streaming for normal and alarm triggered recording.



For example, you can decrease the frame rate and bitrate to reduce the recording file size in normal recording, and increase the frame rate and bitrate to have clearer and more fluent camera images when an alarm event occurs. The **ETR** options are available for mainstream only.

5.2.2 Audio Encoding

If your camera has built-in microphone or external audio input device, you're able to activate the audio stream, define the input/output volume, and select the audio encode type.

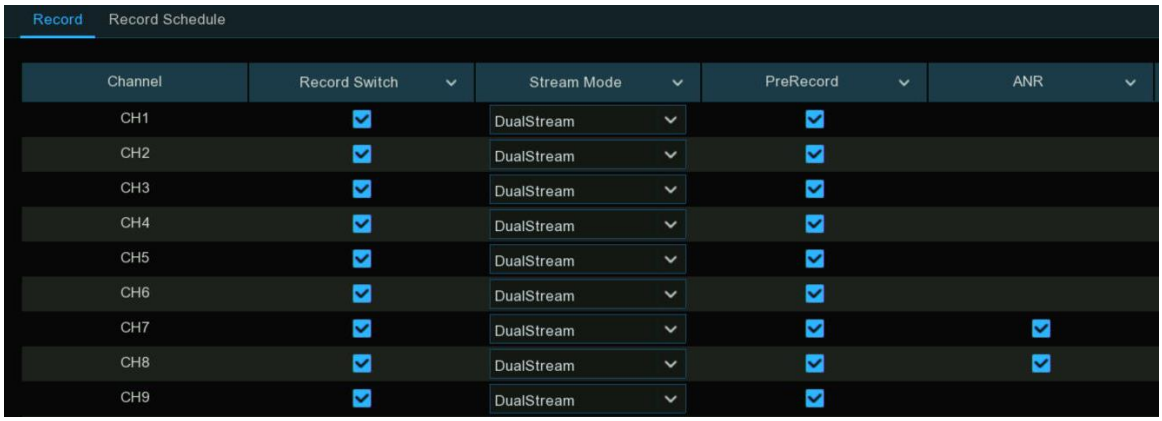


Enable: To turn on or turn off the audio streaming.
Output Volume / Local Audio Volume: To choose the audio output volume.
Input Volume: To choose the audio input volume.
Type: To choose the audio encoding codec.

5.2.3 Record

This menu allows you to configure the channel recording parameters.

5.2.3.1 Recording Configuration



Record Switch: Check to enable the recording in this channel.

Stream Mode: Choose the recording quality. If you choose Dualstream, the system will record in both Mainstream & Substream.

PreRecord: If this option is enabled, the NVR starts recording a few seconds before an alarm event occurs. Use this option if your primary recording type is motion or I/O alarm based.

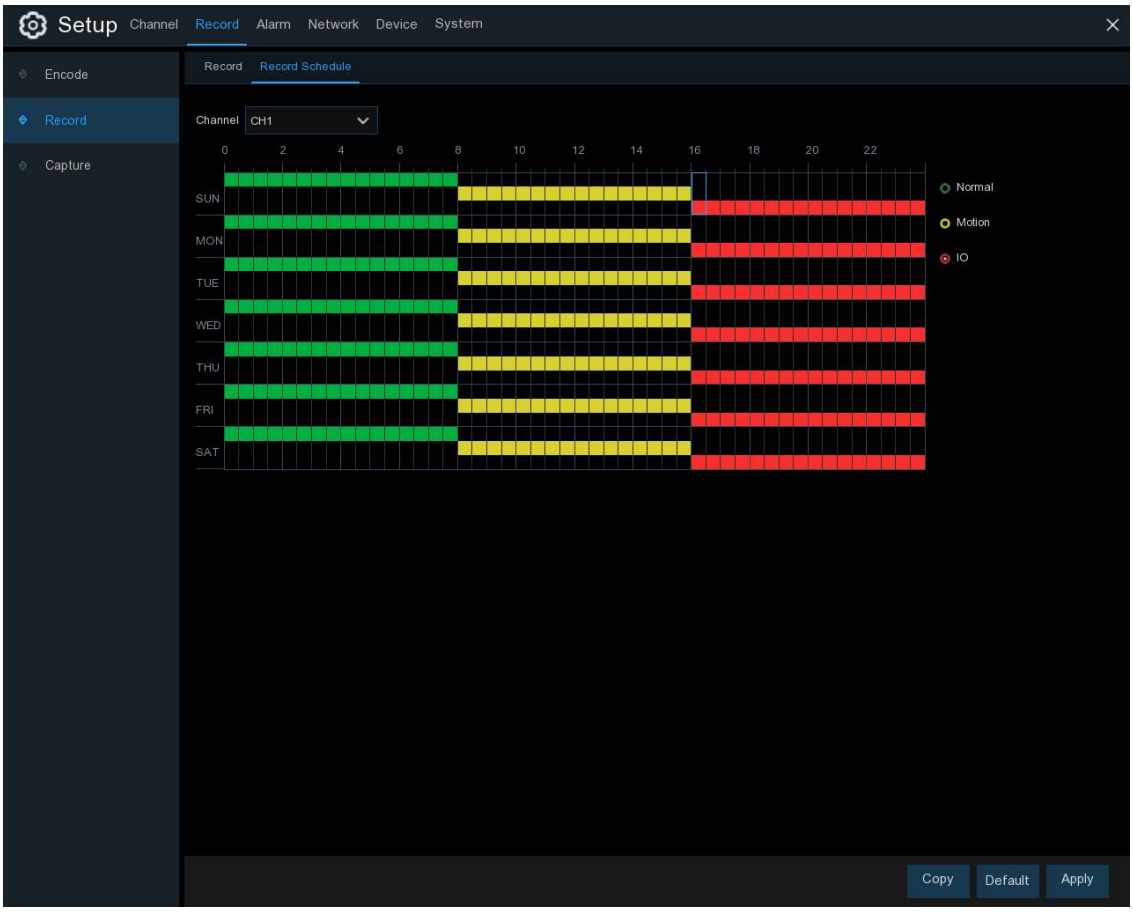
ANR: Generally, videos are stored in the NVR when network connection is normal between the NVR and cameras. With ANR (Automatic Network Replenishment) function, the camera would start continuous recording and store videos in SD card instead when the connection is lost. Once the network is restored, the video recordings will be sent back to NVR's storage. It is recommended to enable ANR if your camera supports this function.

5.2.3.2 Record Schedule

This menu allows you to specify when the NVR records video and defines the recording mode for each channel. The recording schedule lets you set up a schedule like, daily and hourly by normal (continuous) recording, motion recording, I/O alarm recording. To set the recording mode, click first on the mode radio button (Normal, Motion, IO), then drag the cursor to mark the slots. The recording schedule is valid only for one channel. If you want to use the same recording schedule for other channels, use **Copy** function. Click **Apply** to save your settings.

Channel: Select the channel to set its recording parameters.

Normal: When the time slot is marked green, this indicates the channel performs normal recording for that time slot.



Motion: When the time slot is marked yellow, this indicates the channel records only when a motion is detected during that time slot.

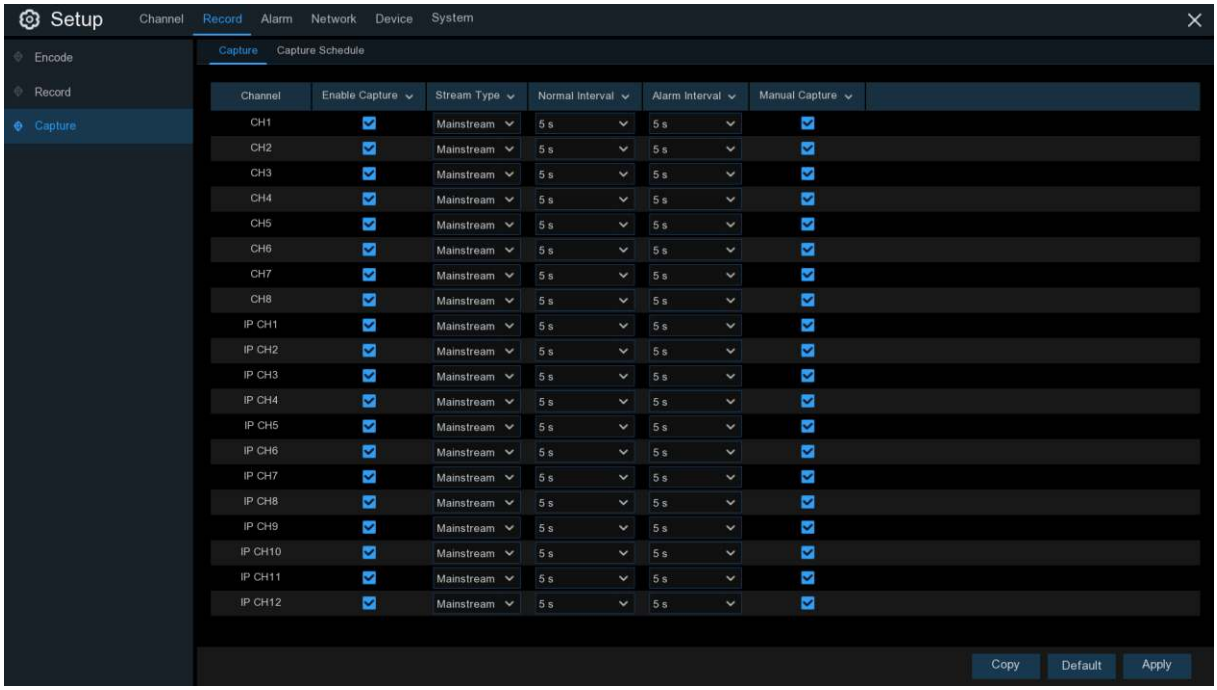
IO: When the time slot is marked red, this indicates the channel records only when the sensor is triggered during that time slot.

No Record: A time slot marked black means that there is no recording scheduled for the time slot.

5.2.4 Image Capture

You can enable and set a schedule for your NVR to take a snapshot each time an event occurs. It helps to find alarm events quickly and can also be used for timelapse photography.

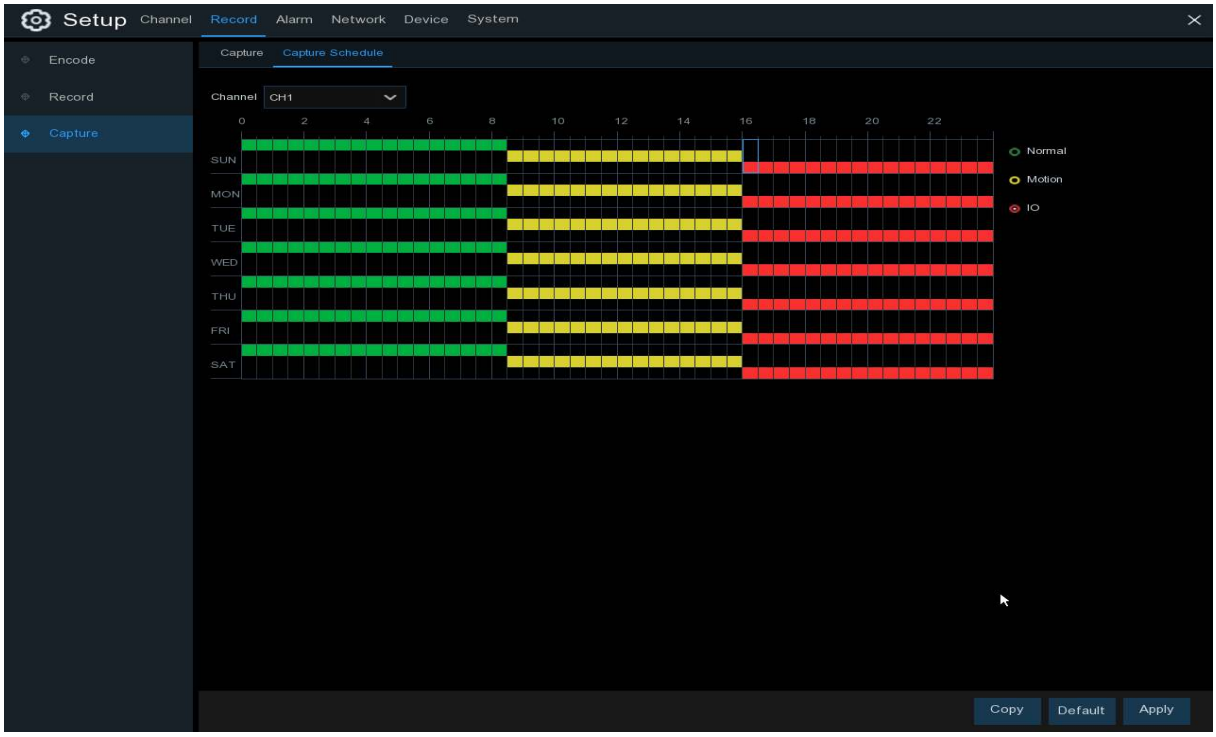
5.2.4.1 Capture



Auto Capture: When enabled, your NVR will take a snapshot each time an event occurs.
Enable Capture: Enable or disable automatic capturing on the channel.
Stream Type: Select the image resolution by mainstream or substream.
Normal Interval: Time interval to capture an image in normal recording.
Alarm Interval: Time interval to capture an image when motion or IO alarm is triggered
Manual Capture: Enable or disable manual capture in the channel

5.2.4.2 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 snapshots using a time interval (every 5 seconds, for example).



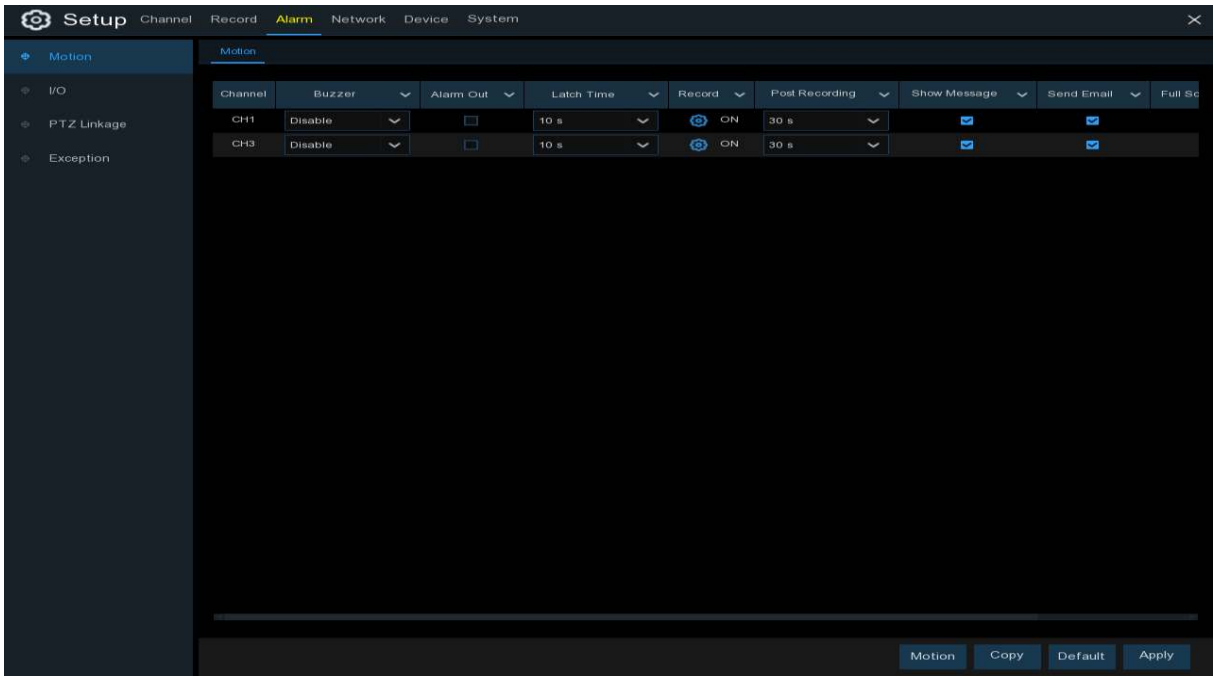
Channel: Select the channel to set its capture parameters.
Normal: When the time slot is marked green, this indicates the channel performs normal capture for that time slot.
Motion: When the time slot is marked yellow, this indicates the channel capture images only when a motion is detected during that time slot.
IO: When the time slot is marked red, this indicates the channel capture images only when the sensor is triggered during that time slot.
No Capture: A time slot marked black means that it won't capture any images for the time slot, but you can manually capture images if you enable the manual capture function in the channel.

5.3 Alarm

In this section, you can configure the alarm parameters.

5.3.1 Motion

Click **Alarm** button to configure the motion detection alarm function:



Channel: Channel name.
Buzzer: The NVR can use its internal buzzer to emit an alarm tone. You can set the buzzer duration in seconds when the motion is detected.

Alarm Out: If your NVR or IP camera supports to connect external replay output devices, the system can send an alert message to the external alarm devices. Click button, to choose the external alarm devices:



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

Latch Time: To configure the external alarm time when motion is detected.

Record / Channel: This option instructs your NVR to trigger additional cameras to start recording when motion is detected. Click the drop-down arrow to choose all channels to be recorded or not.

Click icon and choose which channel you want to record when the motion detection is triggered.



Post Recording: You can set how long after an event occurs that the NVR will continue to record. The recommended recording length is 30 seconds but it can be set higher up to 5 minutes.

Show Message: Check the box to display icon on the live view screen when the motion is detected.

Send Email: You can let the NVR to send you an auto-email when the motion is detected.

Full Screen: If this function is enabled and a motion is detected in a channel, you will see that channel in full screen.

FTP Upload: To upload alarm images/videos to FTP server when motion is detected. To enable FTP, see 5.6.3 FTP for details.

Picture/Video to Cloud: Click the checkbox to copy snapshots/videos to the cloud via Dropbox or Google Drive when the detection is triggered.

Voice Prompts: If your NVR connects with a speaker, you can select a customized alert voice when the detection is triggered. See how to add customized alert voice on 5.3.6 Voice Prompts.

Event push Platform: Click the checkbox, this type of message will be pushed to the client when an alarm is triggered.

Motion: To configure the motion detection. See more on 5.1.5. Motion.

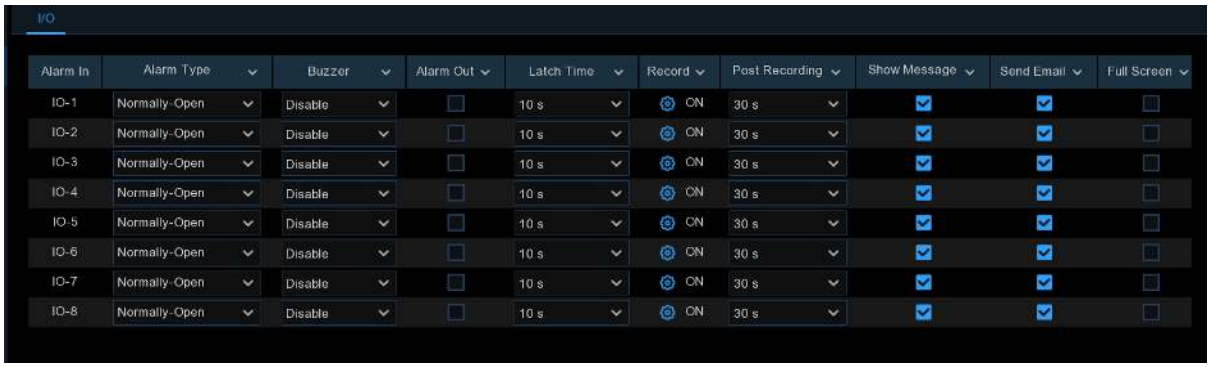
Default: Click "**Default**" to revert to default settings.

Copy: Use the "**Copy**" function to apply all settings to the other connected cameras.

Save: Click "**Save**" to save settings.

5.3.2 I/O Alarm

This is an optional function, it will appear if your NVR supports sensor I/O, you connect external sensor I/O alarm devices to work with the NVR.



Alarm In: I/O channel.

- **Local**: The external alarm devices connected to the NVR.
- **CHx<- 1**: The external alarm devices connected to IP cameras.

Alarm Type / IO State: There are 3 types for your choice: Normally-Open, Normally-Close, and OFF. Choose the one to match your sensor type, or choose OFF to close the sensor trigger function.

Buzzer: The NVR can use its internal buzzer to emit an alarm tone. You can set the buzzer duration in seconds when a sensor is triggered.

Alarm out: Tick to enable external alarm device to emit an alarm tone when a sensor is triggered. If your NVR or IP camera supports to connect external replay output devices, the system can send an alert message to the external alarm devices. Click button, to choose the external alarm devices:



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

Latch Time: you can set how long the buzzer will sound when external sensor is triggered (10s, 20s, 40s, and 60s).

Record / Channel: Click icon and choose which channel(s) you want to record when the motion detection is triggered.



Post Recording: You can set how long alarm record will last when alarm ends (30s, 1 minute, 2 minutes, 5 minutes).

Show Message: Display the alarm messages on the screen when sensor is triggered.

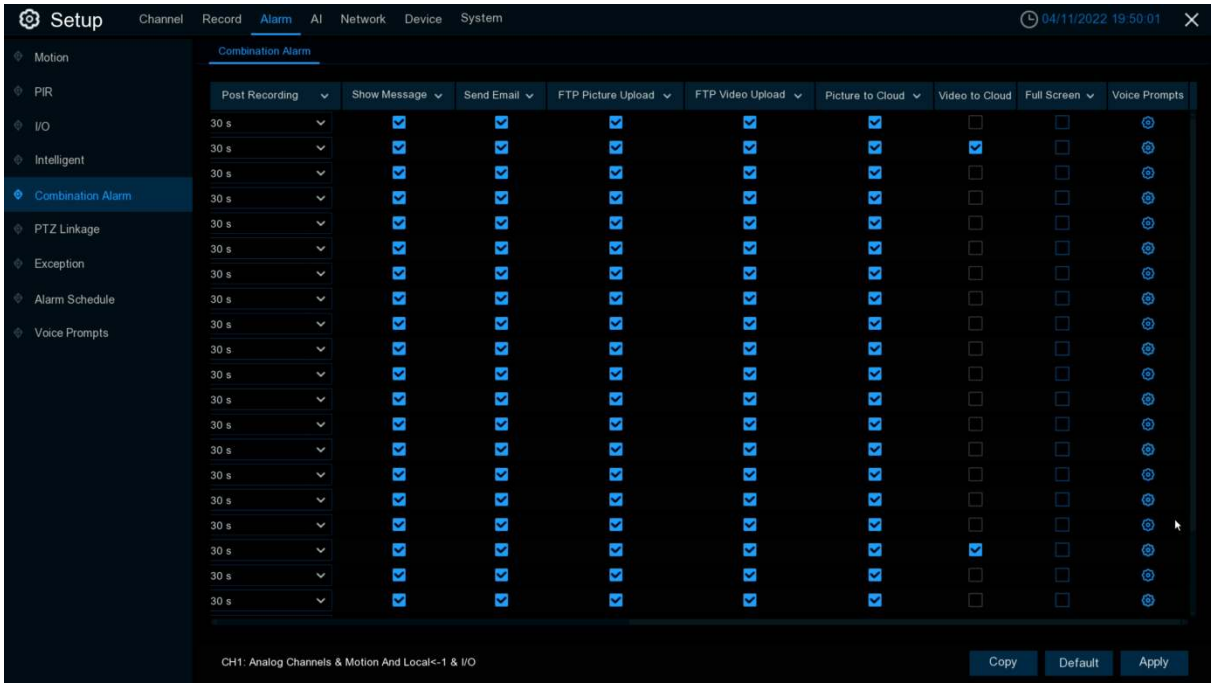
Send Email: Set to send email to specified email when sensor is triggered.
Full Screen: When sensor is triggered, the corresponding channel will be switched to the full screen mode.
FTP Picture/Video Upload: To upload alarm images/videos to FTP server when I/O alarm is triggered. To enable FTP, see 5.6.3 FTP for details.
Picture/Video to Cloud: Click the checkbox to copy snapshots/videos to the cloud via Dropbox or Google Drive when the detection is triggered.
Event push Platform: Click the checkbox, this type of message will be pushed to the client when an alarm is triggered.
Voice Prompts: If your NVR connects with a speaker, you can select a customized alert voice when the detection is triggered. See how to add customized alert voice on 5.3.6 Voice Prompts.
Default: Click "**Default**" to revert to default settings.
Copy: Use the "**Copy**" function to apply all settings to the other connected cameras.
Apply: Click "**Apply**" to save settings.

5.3.3 Intelligent Alarm

See *5.4.3.4 FD/PID/LCD/CC/CD/QD/RSD/SOD/Sound Detection/Video Tampering Alarm/Intrusion/Region Entrance/Exiting Alarms* for details.

5.3.4 Combination Alarm

Combination Alarm function allows to set a combination of 2 alarm types. The NVR will only alert when both the alarm types in the combination are triggered at the same time. This would help to minimize the false alarm rate.



Channel: Channel name.

Enable Alarm / Switch: Enable enables combination alarm (combination alarm system parameter of the channel configuration takes effect, alarm parameter set separately by the channel is not effective). **Disable** does not enable combination alarm (combination alarm system parameter configured by the channel is not effective, and event alarm system parameter set separately by the channel does take effect).

Channel combination alarm is enabled. **Combination Configure** selects two alarm types. When both alarms are triggered within the same time period, the notification information such as buzzer, mail, push, upload is enabled. When only one of the alarms is triggered or when it is not triggered or when alarms other than the combination occurs, email, push and other notifications will not be sent. Two alarm types can be combined casually.

Buzzer: The DVR can use its internal buzzer to sound an alarm. You can set the buzzer duration (in seconds) when triggering a combined alarm.

Alarm out: Check whether the external alarm device is triggered when the combination alarm is triggered.

Latch Time: You can set the duration of triggering the external alert devices (10s, 20s, 40s, and 1Min).

Record: Click icon and select the channel to record when triggering the combination alarm.



Post Recording: You can set the duration of continuous DVR recording after the event occurs. The suggested recording time is 30 seconds, but can be set to up to 5 minutes.

Show Message: Select this box to display the corresponding alert icon on the real-time display screen when a combined alarm is detected.

Send Email: Set to send email to specified email when sensor is triggered.

FTP Picture Upload: To upload alarm images to FTP server when I/O alarm is triggered. To enable FTP, please view 5.6.3 FTP.

FTP Video Upload: To upload alarm videos to FTP server when **Combination alarm** is triggered. To enable FTP, please view 5.6.3 FTP.

Picture to Cloud: To upload alarm images to cloud storage when **Combination alarm** is triggered. Please view 5.6.2 Cloud.

Video to Cloud: To upload alarm videos to cloud storage when **Combination alarm** is triggered. Please view 5.6.2 Cloud.

Full Screen: When **Combination alarm** is triggered, the corresponding channel will be switched to the full screen mode.

Event push Platform: Click the checkbox, this type of message will be pushed to the client when an alarm is triggered.

Voice Prompts: Voice prompts, when triggering **Combination alarm**, the audio file imported by the voice prompt (requiring IPC to support the voice prompt function) can be visible for details 5.3.7 Voice Prompts.

5.3.5 PTZ Linkage

If you had connected the PTZ cameras, you can set the linkage between PTZ cameras and Motion Alarm and/or external I/O sensor alarm. With the linkage function, you can turn your PTZ cameras focus to the preset point when a motion or I/O alarm happens.



Switch: Enable or disable the PTZ linkage function.

Alarm: Click button to choose the alarm source to enable the PTZ linkage function when the selected alarm occurs.

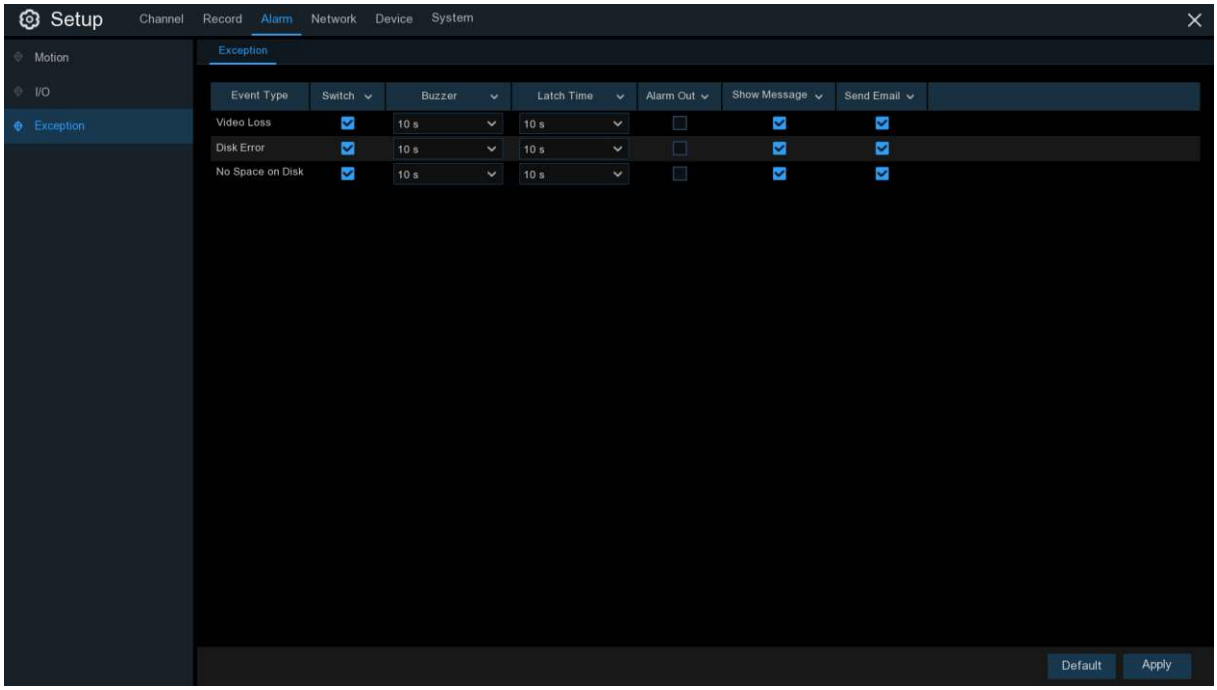
Motion: Motion detection alarm will trigger the PTZ linkage function it is checked.

IO: IO alarm will trigger the PTZ linkage function it is checked.

PTZ: Click icon to associate the PTZ cameras with preset points. View preset point at 5.1.4 PTZ control.

5.3.6 Exception

This menu allows you to set the type of events that you want the NVR to inform you.



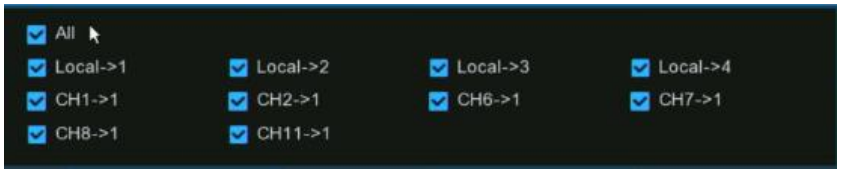
Event Type: Select the event type from below options:
- **No Space on Disk**: When an HDD is full.
- **Disk Error**: If the HDD is not detected properly.
- **Video Loss**: If a camera is not connected properly.
- Fan Abnormal: An alarm is raised when the fan fails to operate properly, the fan is faulty, the rotating speed is low, or the fan stops.

Switch: Check the box to enable the monitoring of the event.

Buzzer: Set the buzzer duration when the event occurs (Off/10s/20s/40s/60s). To disable buzzer, select **OFF.**

Latch Time: This is an optional function. Determine how long the external alarm device to sound (10s, 20s, 40s, 60s) if your NVR support to connect external alarm device.

Alarm Out: This is an optional function. Click to enable the external alarm device to sound.



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

Show Message: Check the box to display a message on the screen when No Space on Disk, Disk Error, or Video Loss event happens.

Send Email: Let the NVR to send you an auto-email when an event occurs.

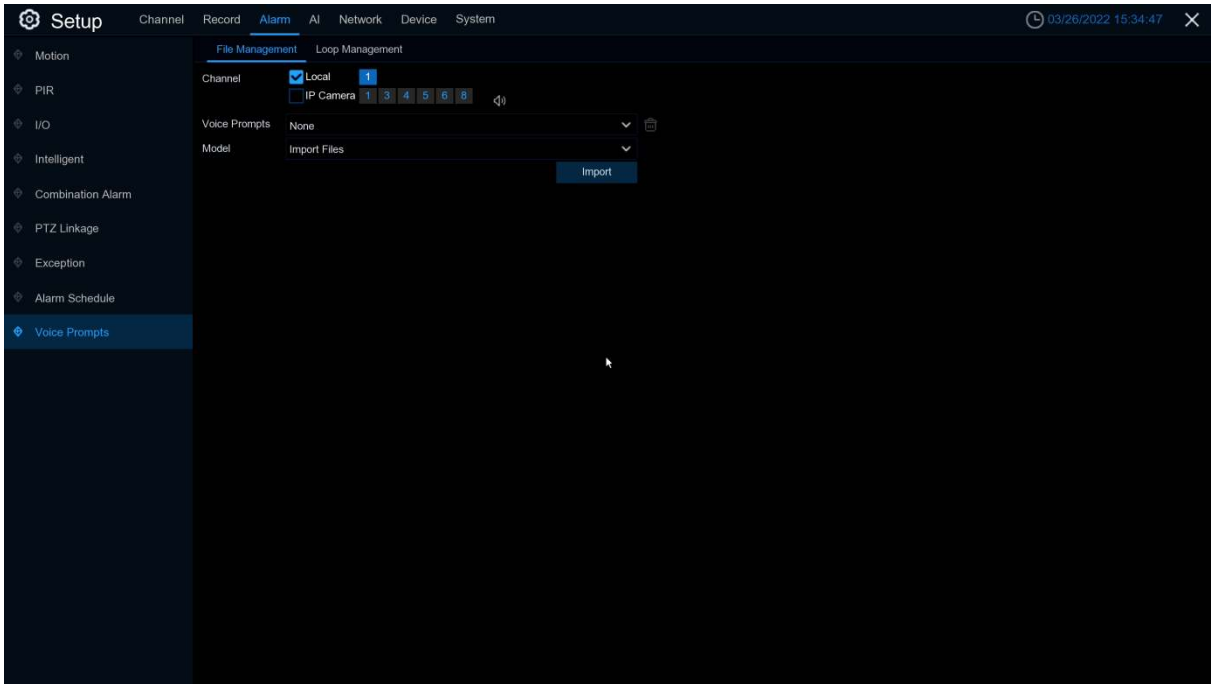
Voice Prompts: If your NVR connects with a speaker, you can select a customized alert voice when the detection is triggered. See how to add customized alert voice on 5.3.6 Voice Prompts.

5.3.7 Voice Prompts

This function is to realize the alarm linkage when the alarm occurs. The system collects the alarm signal and the voice broadcast equipment, and automatically or manually plays the associated audio to the "intrusion" object on the scene.

5.3.7.1 File Management

GV-RNVR256G0-N



The system provides 3 different methods to create customized voices: **Import Files**, **Local Conversion** and **Internet Server Conversion**

Click **Import** to import costumed audio using the following 3 methods:

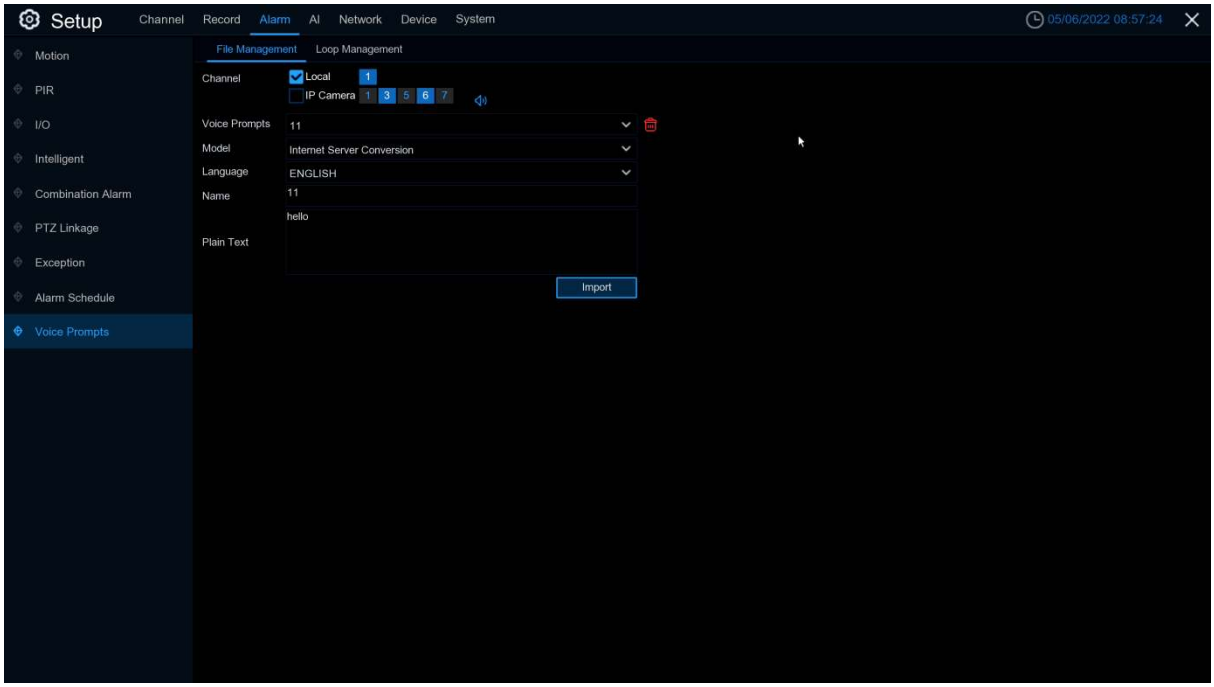
Import File: Local import (support the import of audio files in MP3, WMA, WAV format). Choose **Import Files** mode, and then click the **Import** button, and choose the audio file from your USB memory. It is allowed to add only 1 file at a time. You can add multiple files at a time in the web page.

Local Conversion: Local translation (input of text content to be translated, translated to audio file, and automatically saved to hard disk storage). Choose **Local Conversion** mode, and then input the name of the file & plain text. Click **Import** button, the system will convert the text you input into a voice file and save to the NVR storage.

Internet Server Conversion: Web server translation (by locally entering the translated text content, sent to the network server for translation into audio files, and automatically saved to the local hard disk storage).

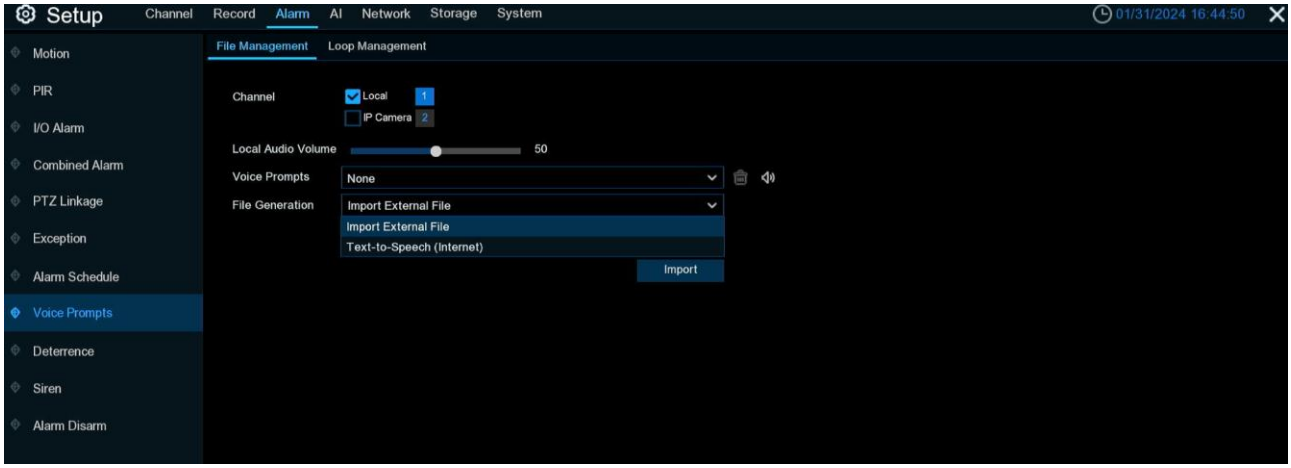
Internet Server Conversion has multiple language options**. Local Conversion** language selection is to English by default, and it doesn't choose any other language for the user.
The input box has a maximum allowed input length of 1,024 bytes. **Import File** import audio files, face database allow file size of 1~500K, non-face database allows file size of 1~5M.
After importing audio file, you can select which file to play in **Voice Prompt.**

Only Local is supported for the broadcast mode.



Local: Local broadcast (when choosing this broadcast mode, the audio output shall is connected to the device side)

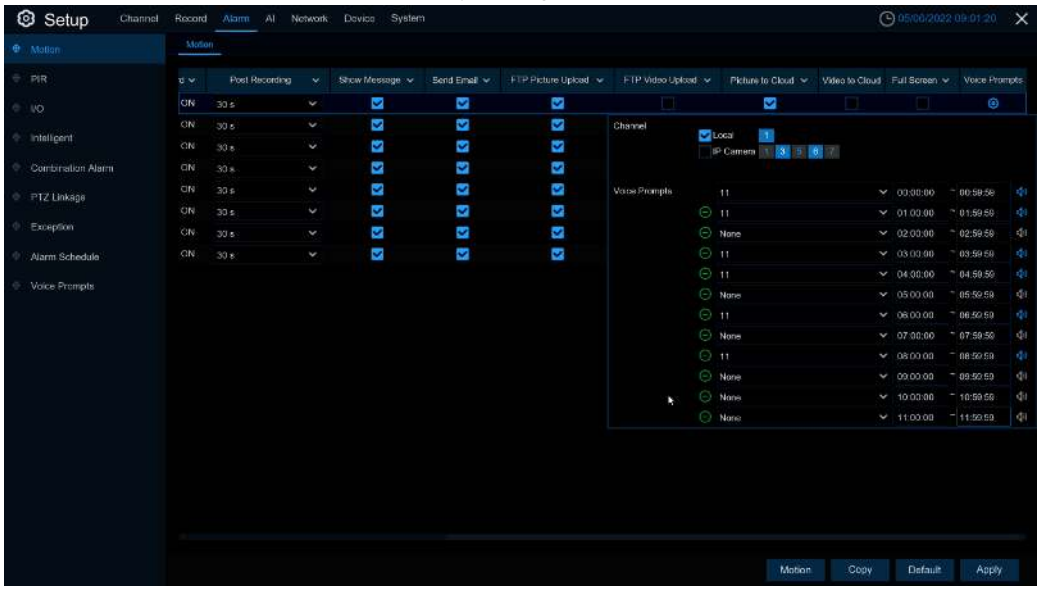
GV-RNVRL810-P / GV-RNVR3240-N



Click **Import** to import broadcast audio, support two kinds of audio import methods, respectively, Import External File, Text-to-Speech (Internet).
Import External File: Local import (supports importing MP3, WMA, WAV format audio files).

Text-to-Speech (Internet): Web server translation (by locally inputting the text content to be translated. Sent to the network server for translation into audio files. It is automatically saved to the local hard disk for storage).
The maximum input length of the text input box is 200 bytes.
Import File: Import audio file, the allowed file size for face and license plate library is 1~500K, and the allowed file size for non-face and license plate library is 1~5M.
After importing audio, it can be selected in Voice Prompts.
Voice Prompts: Support 2 kinds of Prompts, respectively: Local and IPC channel.
Local Audio Volume: you can adjust the volume output size of local broadcasting.
Local: local broadcasting (when selecting this type of broadcasting, the device side needs to be connected to the audio output device)
IP Camera: IP Camera Broadcasting (to select this broadcasting method, the camera program must have the voice broadcasting function, and at the same time, the camera side must support audio output).

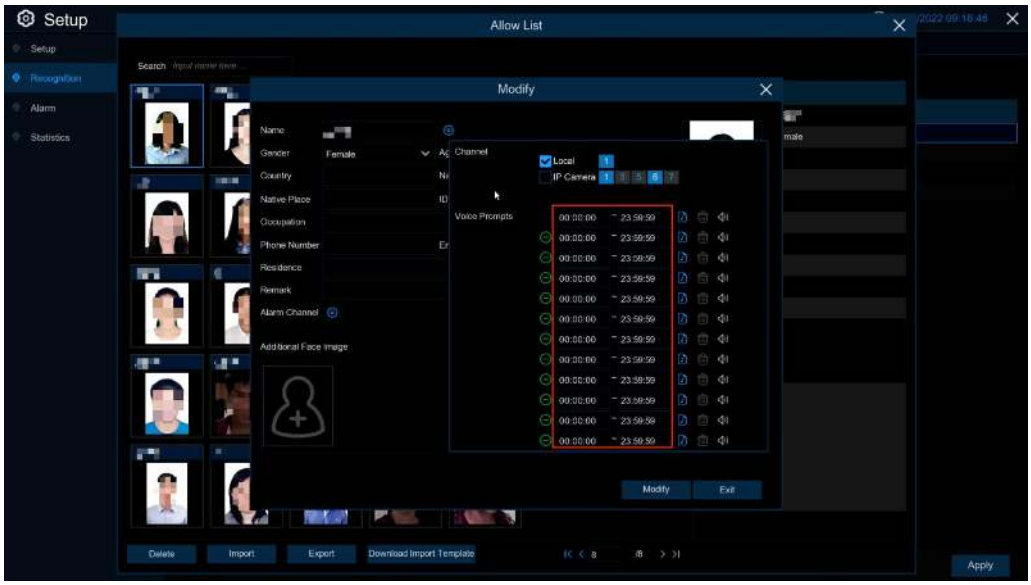
Voice Prompts setting by time period
An alarm type can support setting the voice broadcast of up to 12 time periods. There is no conflict between the start and end time of any time period.



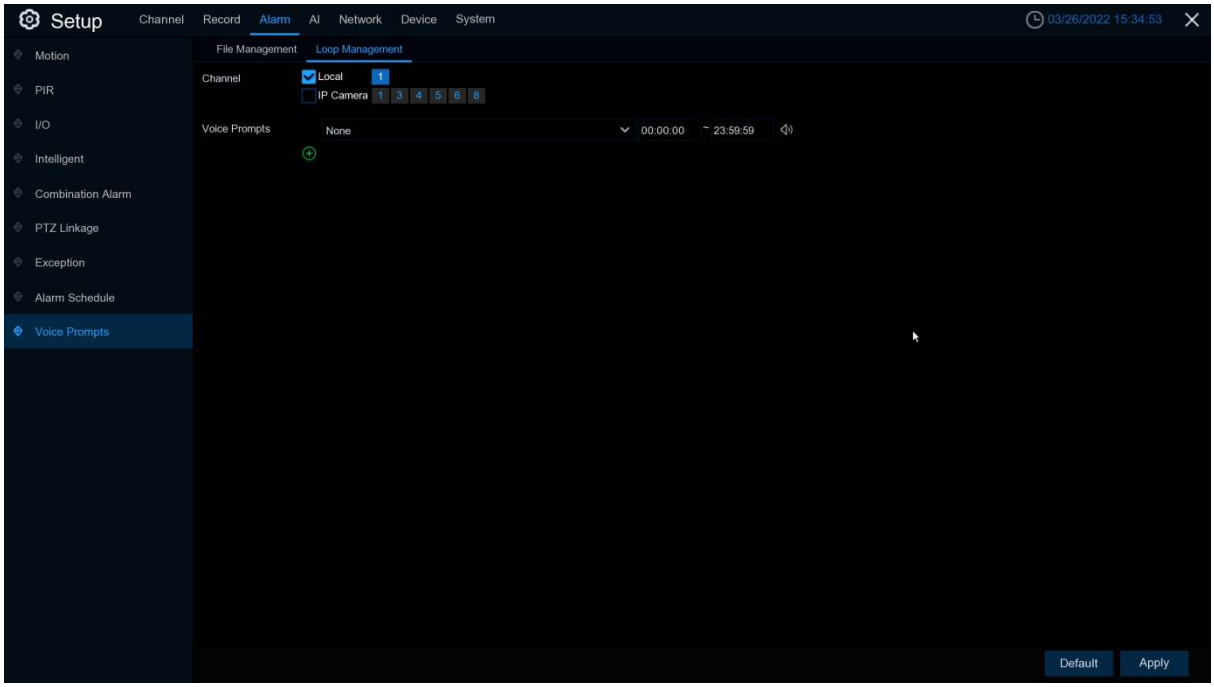
Voice broadcast setting based on face recognition: This function is to realize that when face recognition occurs, the system collects the alarm signal and the voice broadcast equipment for linkage, and automatically plays the associated audio to the scene "intrusion" object.

Note: Imported audio based on black and white list face images can only be used for the associated images.

When the face detection events occur, there will be a voice prompt.



5.3.7.2 Loop Management



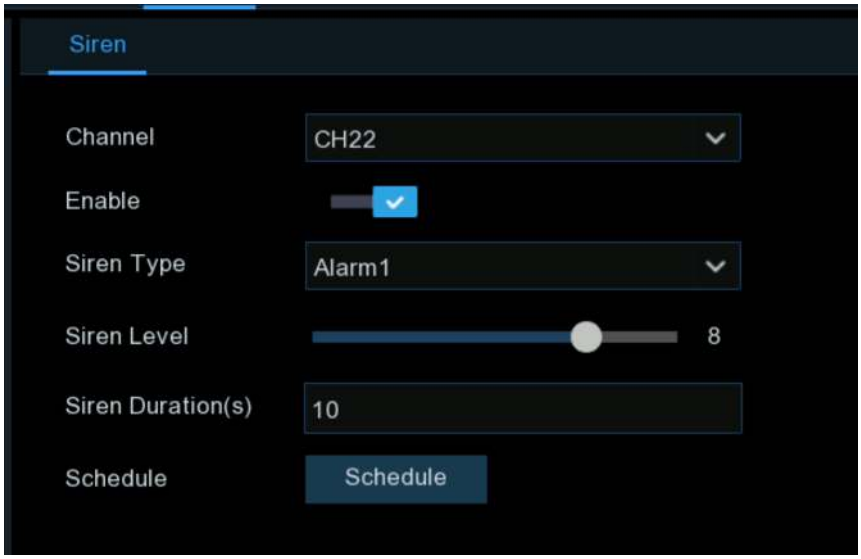
Voice Prompts selects the audio file, and after setting the time period, the selected audio file will be played repeatedly without alarm or hearing the audio file, supporting the voice broadcast for up to 12 time periods.

Local: Local broadcast (when choosing this broadcast mode, the audio output shall be connected to the device side)

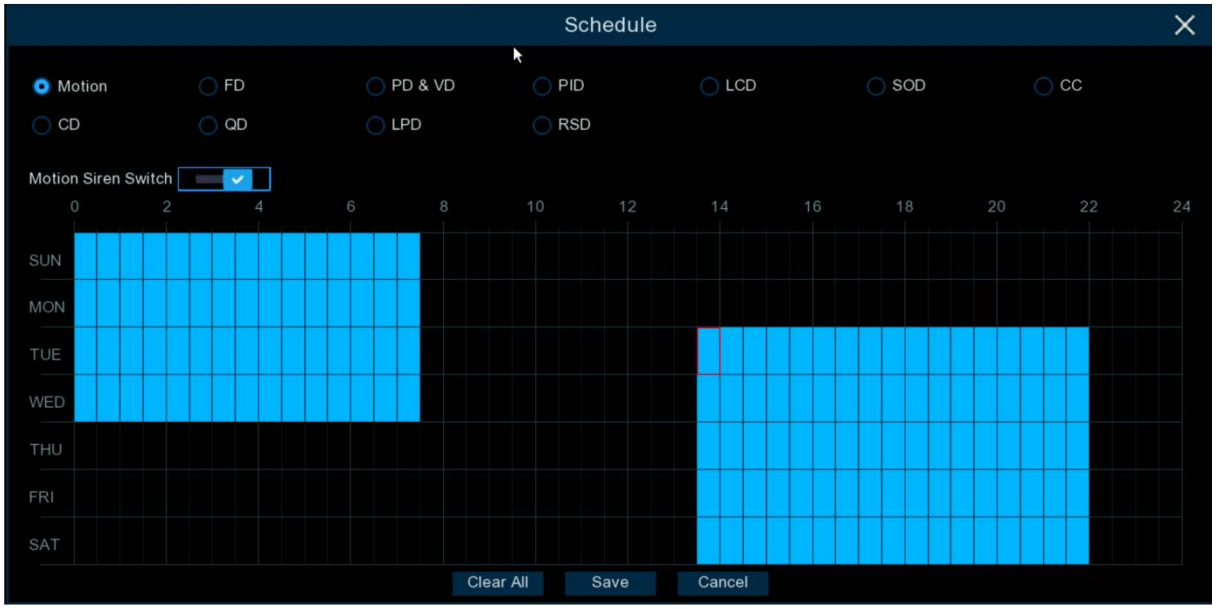
5.3.8 Siren

If the camera connected to the device has a built in speaker, you can set the siren related parameters in this module.

Note: This function is only applicable when the NVR is connected to the GV-RFER12700.



Channel: Select the switch channel.
Enable: Used to set whether to enable the siren function.
Siren Type: Used to select the siren audio file. By default, two audio files are provided. You can also import three customized audio files (of PCM format or WAV format). The audio sample rate of the imported file cannot exceed 8000 Hz, and the file size cannot exceed 256 KB. After you select a customized audio file to be imported, a **Delete** button appears on the right of the file, and you can click the **Delete** button to delete the audio file. (Note: This function is supported by some IP cameras only.)
File Name: If you select **User-defined** for **Siren Type**, you can enter the file name and click the **Import** button on the right to import the customized audio file from a USB flash disk.
Siren Level: Used to set the siren volume level, which ranges from 1 to 10. The higher the level is, the louder the volume is.
Siren Duration(s): Used to set the siren duration. You can adjust the value between 5 to 180 seconds.
Schedule: If the IP camera is connected to the NVR via the HTTP port, you can click the Schedule button to open the setting page.



If a channel is selected in the schedule, it indicates that the channel can trigger siren alarms during the corresponding period.

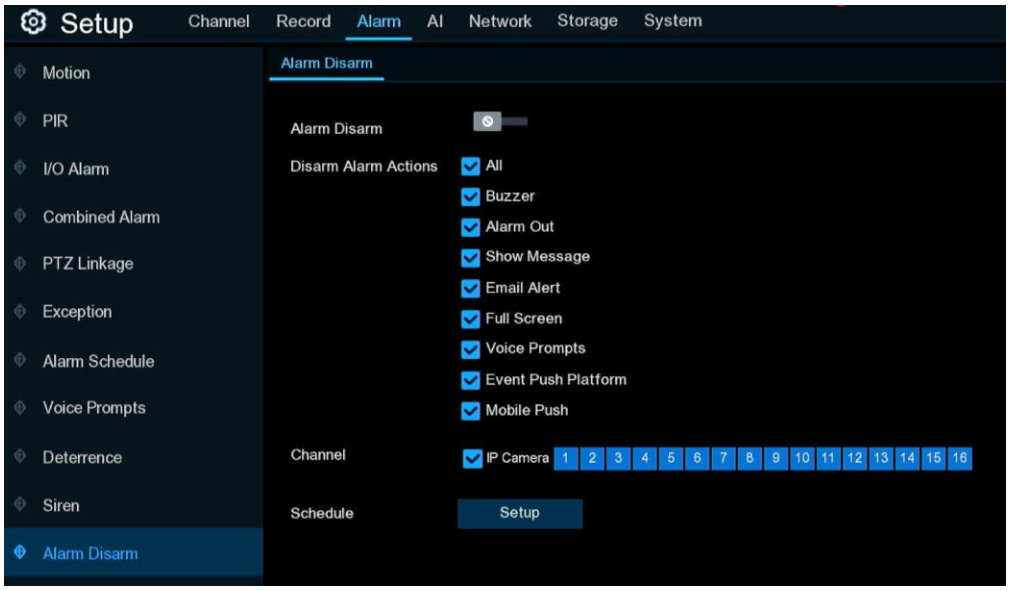
You can set the siren linkage alarm and effective time of a function by selecting the corresponding function sub-tab and switch.

Clear All: Click this button to clear the selected status on all sub-tabs.

5.3.9 Disarming

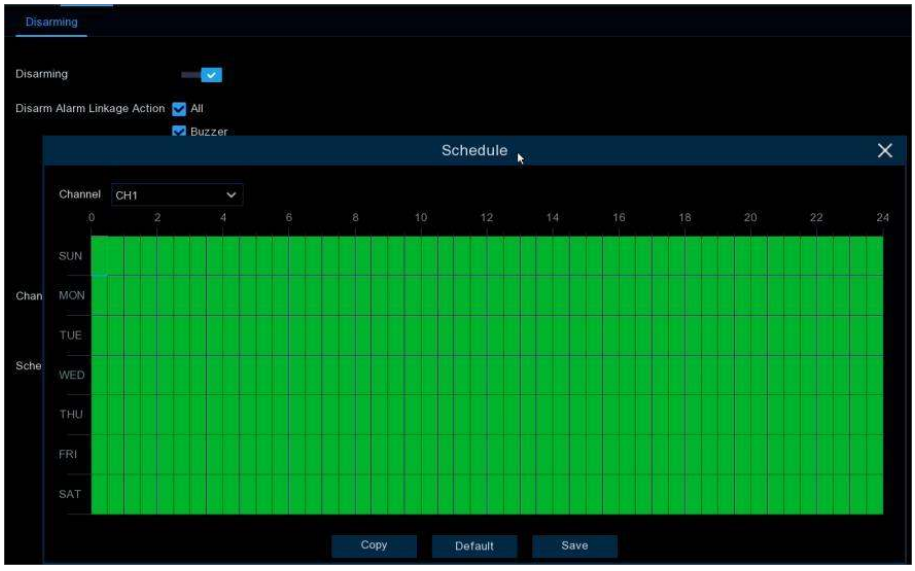
After the one-click disarming function is enabled, you can cancel the response of the device to various alarms. On this page you can set the relevant parameters including the disarming switch, channel, type, and schedule.

Note: The Exception system alarms are not controlled by one-click disarming.



Disarming / Alarm Disarm: Used to set whether to enable the one-click disarming function.

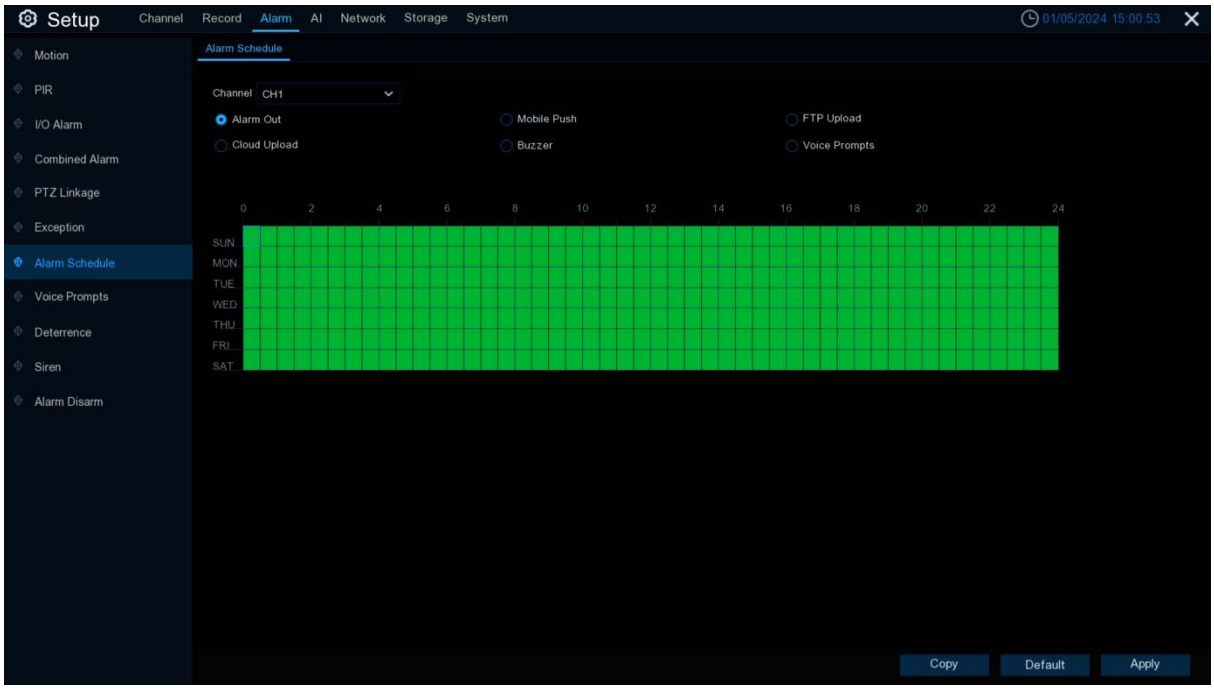
Disarm Alarm Linkage Action: Used to set the alarm linkage types to be disarmed.
All: Select or clear all the types.
Buzzer: Used to set whether to enable the buzzer. When the one-click disarming function is enabled, you can select this option to disable the buzzer.
Alarm Out: Used to set whether to enable external alarm output. When the one-click disarming function is enabled, you can select this option to disable the external alarm device when an alarm is triggered.
Show Message: Used to set whether to display messages. When the one-click disarming function is enabled, you can select this option to not display the alarm messages when motion is detected on the preview page.
Send Email: Used to set whether to send emails. When the one-click disarming function is enabled, you can select this option to make the NVR not automatically send an email when an alarm is triggered.
Full Screen: Used to set whether to display in full screen. When the one-click disarming function is enabled, you can select this option to make the channel configured with full-screen mode not enter full screen mode on the preview screen when the channel triggers an alarm.
Event push Platform: When the alarm is triggered, the device does not push the alarm information to the third-party platform.
Mobile Push: When one-key disarming is open, check Mobile Push, when alarm is triggered, the device will not push the alarm information to the app.
Voice Prompts: Used to set whether to enable voice prompts. When the one-click disarming function is enabled, you can select this option to disable voice prompts when a channel configured with voice prompts triggers an alarm.
Channel: Select the channels to be disarmed.



Schedule: Click the **Setup** button to open the schedule setting page.
If a channel is selected in the schedule, it indicates that the channel is in disarming status within the corresponding period.

5.3.10 Alarm Schedule

In this menu, users can set the time period for external alarm output devices, push, FTP upload, cloud upload, buzzer and other alarm response types to work through the schedules.



Channel: Select the channel and set its capture parameters.

When the time slot is marked in green, it means the channel is working for that time slot.

5.4 AI

The AI functions include **FD (Face Detection), PD & VD (Pedestrian and Vehicle Detection), PID (Perimeter Intrusion Detection), LCD (Line Crossing Detection), CC (Cross Counting), HM (Heat Map), CD (Crowd Density Detection), QD (Queue Length Detection),** and **RSD (Rare Sound Detection)**.

Note:

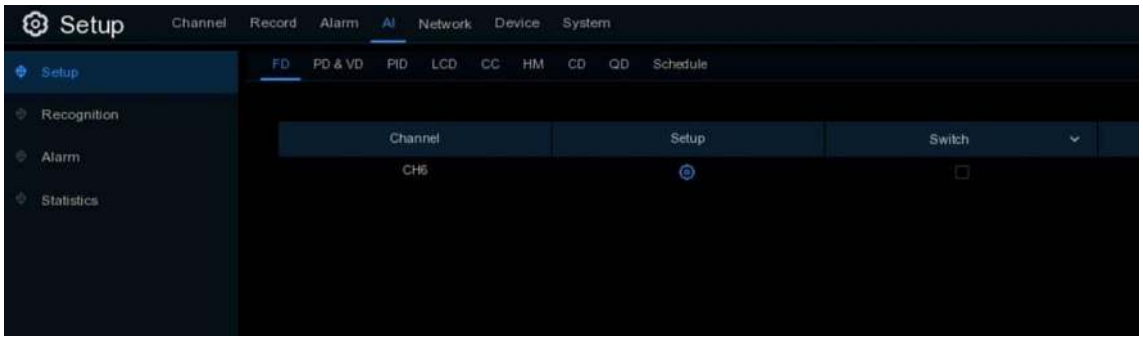
1. The AI functions are only supported by the following AI-capable GV-R Series IP cameras. Make sure to upgrade your camera to the latest firmware.
   - GV-RBL5800
   - GV-RBL5811
   - GV-REB5800
   - GV-RMS32810
2. To properly connect to the abovementioned IP cameras, make sure to the correct protocol (**Private**). See *4.1.4 IP Camera* for details.
3. The detection functions, including Face Detection, PD & VD, Perimeter Intrusion Detection, Line Crossing Detection, Cross Counting, Crowd Density Detection, and Queue Length Detection, might be mutually exclusive due to performance limitation. When the checkbox of **Switch** is in grey color and unable to check, that means another AI function was enabled in this camera already.

5.4.1 Setup

5.4.1.1 FD (Face Detection)

Face Detection function detects the faces of moving people appear in a pre-defined region, and a series of actions can be taken when the alarm is triggered.

Note: To enable the channel Face Detection function, you need to read and agree to the Face Recognition Service Agreement.



Switch: To enable or disable the face detection.
Click ⚙ to configure the face detection conditions.



Channel: Channel selection

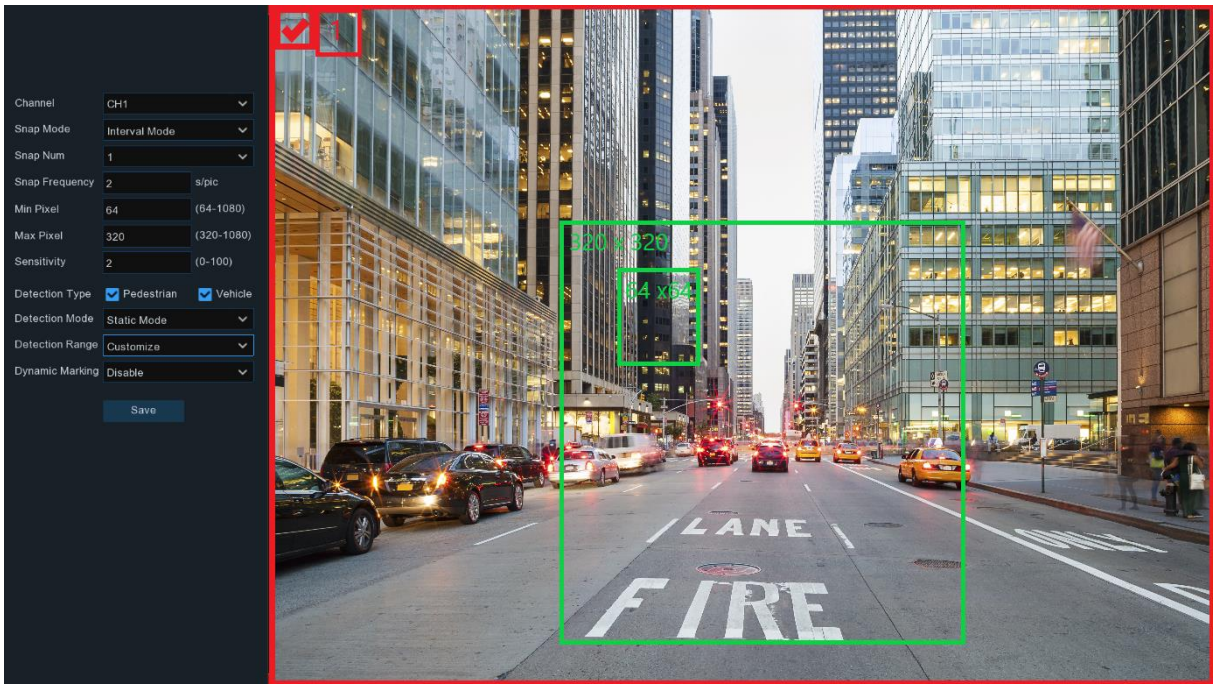
Snap / Capture Mode: There are "**Optimal Mode**" (automatically select & push the best image from all face images of the same person whose faces were captured during his/her duration of stay), "**Realtime Mode**" (push the first captured face image and push again the last captured face image from the same person) and "**Interval Mode**" (customized the capture time and interval).
Apply Mode / Face Angle: Set the face detection angle, including "**Frontal View**", "**Multi Angle**" and "**Customize / User-defined**" mode.
If "**Customize**" mode is selected:
Roll Range: Set the range of face rotation under the customize mode.
Pitch Range: Set the range of face pitch under the customize mode
Yaw Range: Set the range of face horizontal flipping under the customize mode.
Picture Quality: Set the picture quality.
Frontal View Default: To load default values of front view.
Multi Angle Default: To load default values of multi angle view.
Min Pixel: Set the minimum detection pixel box. The face can be recognized only when it is larger than the pixel box.
Max Pixel: Set the maximum detection pixel box. The face can be recognized only when it is smaller than the pixel box.
Face Enhance: Face enhancement makes it easier to recognize the moving faces, but it may lower the whole picture quality.
Face Attribute: Enable this function to detect mask, glasses and facial expression.
Detection Mode: Motion Mode will detect moving faces. Static Mode will detect both moving faces and still faces.
Rule Kind / Trigger Mode: Rect (rectangular) and **Line** (linear)
If you choose **Rect** mode, you can choose "**Full Screen**" or "**Customize / User-defined**" to adjust the shape of rectangular detection zone in the camera image. Faces appear in this zone will be detected and captured.
If you choose **Line** mode, you need to adjust the position, length of the line, and choose the detection direction from B→ A or A→B.
Dynamic Marking / Bounding Box: If you enable this option, a capture box will be displayed upon the face image in both live view images and recording files.

5.4.1.2 PD & VD (Pedestrian and Vehicle Detection)

Pedestrian and Vehicle Detection function detects the moving people / vehicles in a pre-defined region, and a series of actions can be taken when the alarm is triggered.



Switch: To enable or disable the Human & Vehicle detection.
Click ⚙ to configure the detection conditions.



Channel: Channel selection
Snap Mode / Capture Mode: There are "**Optimal Mode**" (automatically select & push the best image from all captured images of the same vehicle during its duration of stay), "**Realtime Mode**" (push the first captured image and push again the last captured image from the same vehicle) and "**Interval Mode**" (customized the capture time and interval).
Min Pixel: Set the minimum detection pixel box. The target objects can be recognized only when it is larger than the pixel box.
Max Pixel: Set the maximum detection pixel box. The target objects can be recognized only when it is smaller than the pixel box.
Sensitivity: Set the sensitivity level. Level 1 the lowest sensitivity level while level 100 is the highest sensitivity level.
Detection Type: Choose the detection target objects.

Detection Mode: Motion Mode will detect moving objects. Static Mode will detect both moving faces and still objects. Hybrid Mode means both static and moving targets are detected. Setting the motion mode can reduce false alarms.

Detection Range: Set the detection zone. You can choose "**Full Screen**" or "**Customize**" to adjust the shape of rectangular detection zone in the camera image. Target objects appear in this zone will be detected and captured.

Dynamic Marking / Bounding Box: If you enable this option, a capture box will be displayed upon the detected objects in both live view images and recording files.

PTZ Auto Tracking: If your PTZ camera is connected, you might see this function. Enable to activate the PTZ auto tracking function. View more on 5.1.4.1.2.1 Controlling PTZ.

5.4.1.3 PID (Perimeter Intrusion Detection)

Perimeter Intrusion Detection function detects people, vehicle or other objects which enter and loiter in a pre-defined virtual region, and some certain actions can be taken when the alarm is triggered.



Switch: To enable or disable the Perimeter Intrusion Detection.

Click ⚙ to configure the detection conditions.



Channel: Channel selection

Detection Type: Choose the detection target objects.

Rule Number: Max. 4 rules available.

Rule Switch: Activate or inactivate the rule.

Rule Type: Detection direction from B→ A, A→B or A←→B

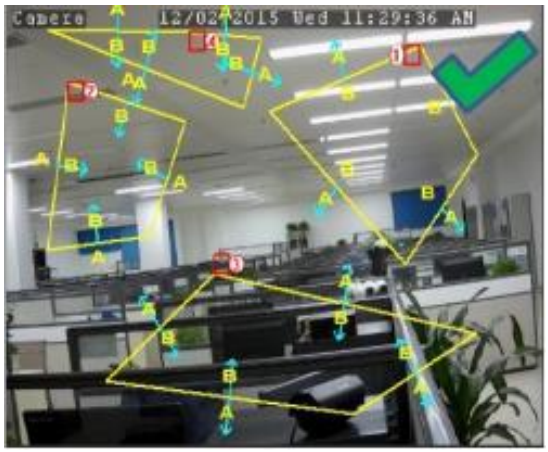
Dynamic Marking / Bounding Box: If you enable this option, the border of the detection zone will be displayed in both live view images and recording files.

1. Choose one of the **Rule Number**. It is the number of LCD lines. Maximum 4 lines you can draw.
2. Choose the detection target type.
3. To enable the detection in **Rule Switch**.

4. Choose a **Rule Type**.
   A→B: NVR will only detect the objects move from side A to side B;
   B→A: NVR will only detect the objects move from side B to side A;
   A←→B: NVR will detect the objects move from either side B to side A or side A to side B.
5. Use your mouse to click 4 points in the camera picture to draw a virtual region. The sharp of the region should be a convex polygon. Concave polygon will be not able to save.
6. Click **Save** to save your settings.
7. If you want to modify the position or sharp of region, click the red box in the region, the borders of the region will be changed to red color. Click and hold the left button of your mouse to move the position of the region, or drag the corners to resize the region.
8. If you want to remove one of the regions from the camera picture, click the red box in the region and then click **Remove** button. Click **Remove All** will delete all regions.

Notice:

1) The perimeter shall not be too close to the edges/corners of the camera picture, since it may fail to trigger the detection when the target pass through the edges/corners.
2) The shape of the regions shall not be too narrow/small, since it may fail to trigger the detection when the target passes through outside the perimeter.





5.4.1.4 LCD (Line Crossing Detection)

Line Crossing Detection function detects people, vehicle or other objects which cross a pre-defined virtual line, and some certain actions can be taken when the alarm is triggered.



Switch: Check the box to enable the LCD function.

Sensitivity: The sensitivity setting for triggering area intrusion detection, the higher the sensitivity setting, the easier it is to trigger the alarm.

Click **Setup** icon to configure the detection conditions.



Channel: Select the channel you want to configure

Target Validity: Used to adjust the detection validity of the target. The higher the validity, the more closely the target matches the set criteria, for example, a motor vehicle. However, higher validity levels also increase the risk of false negatives, while lower validity values may lead to false positives. The range is from 1 to 4, with lower values indicating higher confidence levels.

Min Pixel: Set the minimum detection pixel box. The target objects can be recognized only when it is larger than the pixel box.

Max Pixel: Set the maximum detection pixel box. The target objects can be recognized only when it is smaller than the pixel box.

Detection Type: Choose the detection target objects.

Rule Number: Max. 4 rules available.

Rule Switch: Activate or inactivate the rule
Dynamic Marking / Bounding Box: If you enable this option, the border of the detection zone will be displayed in both live view images and recording files.

1. Choose one of the **Rule Number**. It is the number of LCD lines. Maximum 4 lines you can draw.
2. Choose the detection target type.
3. To enable the detection in **Rule Switch**.
4. Choose a **Rule Type**.
   A→B: NVR will only detect the action from side A to side B;
   B→A: NVR will only detect the action from side B to side A;
   A←→B: NVR will detect the action from either side B to side A or side A to side B.
5. Use your mouse to click 2 points in the camera picture to draw a virtual line.
6. Click **Save** to save your settings.
7. If you want to modify the position or length of the line, click the red box in the line, the color of the line will be changed to red color. Click and hold the left button of your mouse to move the line, or drag the terminals to modify the length or position of the line.
8. If you want to remove one of the lines from the camera picture, click the red box in the line and then click **Remove** button. Click **Remove All** will delete all lines.

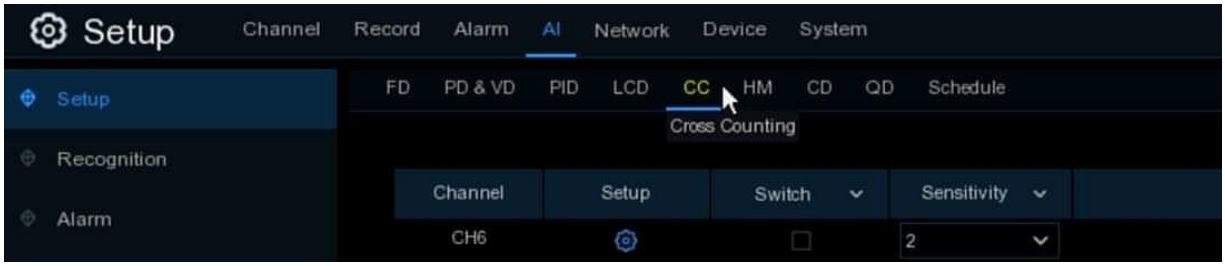
Notice:
1) The lines shall not be too close to the edges of the camera picture, to avoid any failure to trigger an alarm when the target cross through it.
2) The lines shall not be set too short, to avoid any failure to trigger an alarm when the target passes outside it.



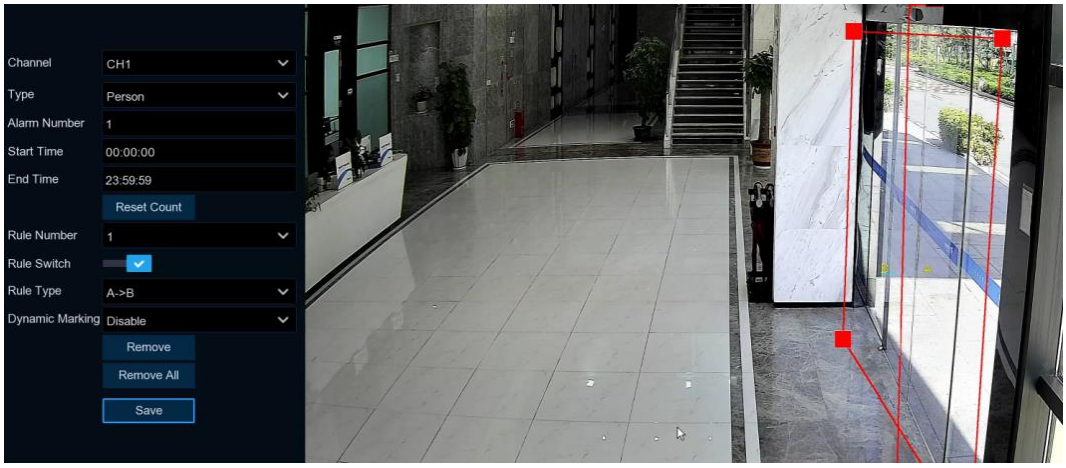


5.4.1.5 CC (Cross-Counting)

Cross-Counting function counts the times for moving objects or people across the virtual lines.



Switch: Check the box to enable the function.
Sensitivity: Set the sensitivity level. Level 1 the lowest sensitivity level while level 4 is the highest sensitivity level.
Click **Setup** icon to configure the detection conditions.



Channel: Select the channel you want to configure
Type: Choose the detection target objects. **Motion** will detect all moving objects, **Person** will detect human beings only, **Vehicle** will detect vehicles only.
Alarm Number: The NVR will send an alert if the number of entries minus the number of exits exceeds the alarm number. E.g., the number of entries is 601 while the number of exits is 400, and the alarm number you set is 200, 601-400 > 200, then the NVR will send an alert.
Start Time: Set the detection start time.
End Time: Set the detection end time.
Reset Count: Clear the counting number.
Rule Number: Only 1 rule available.
Rule Switch: Activate or inactivate the rule.

1. Choose the detection target type.
2. Set the **Alarm Number**, **Start Time** and **End Time**.
3. To enable the detection in **Rule Switch**.

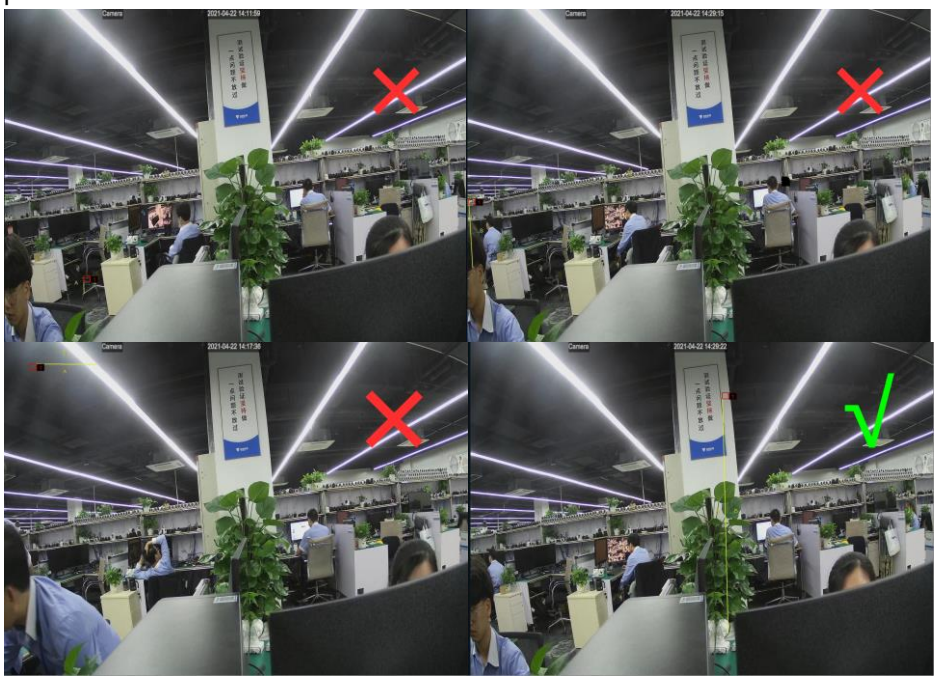
4. Choose a **Rule Type**.
   A→B: If a target object is detected moving from side A to side B, the system will count 1 to enter number; if a target object is detected moving from side B to side A, the system will count 1 to exit number.
   B→A: If a target object is detected moving from side B to side A, the system will count 1 to enter number; if a target object is detected moving from side A to side B, the system will count 1 to exit number.
5. Use your mouse to click 2 points in the camera picture to draw a virtual line.
6. Click **Save** to save your settings.
7. If you want to modify the position or length of the line, click the red box in the line, the color of the line will be changed to red color. Click and hold the left button of your mouse to move the line, or drag the terminals to modify the length or position of the line.
8. If you want to remove one of the lines from the camera picture, click the red box in the line and then click **Remove** button. Click **Remove All** will delete all lines.
9. The statistical data of cross counting will be displayed on the left top corner of the image.



10. If you want to clear the statistical data of cross counting, click the **Reset Count** button.
11. If you want the green tracking frame that surrounds a detected object to be invisible during live view mode and playback, then choose Disable in the **Dynamic Marking / Bounding Box.**

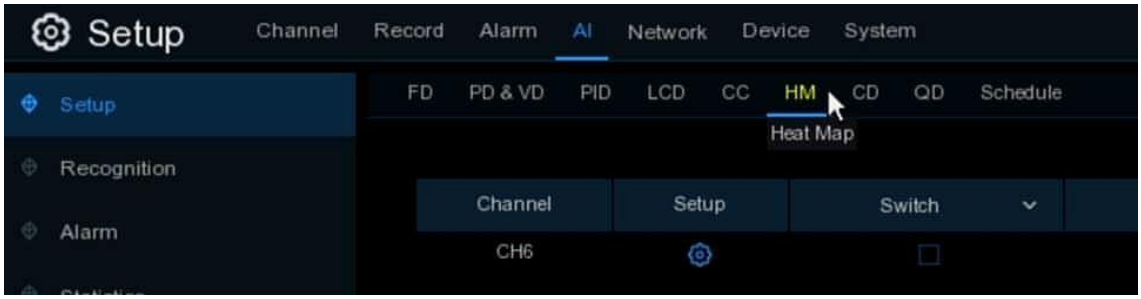
Notice:

1) The lines shall not be too close to the edges of the camera picture, to avoid any failure to trigger an alarm when the target cross through it.
2) The lines should be in the area that detected object can be reach.
3) The lines shall not be set too short, to avoid any failure to trigger an alarm when the target passes outside it.



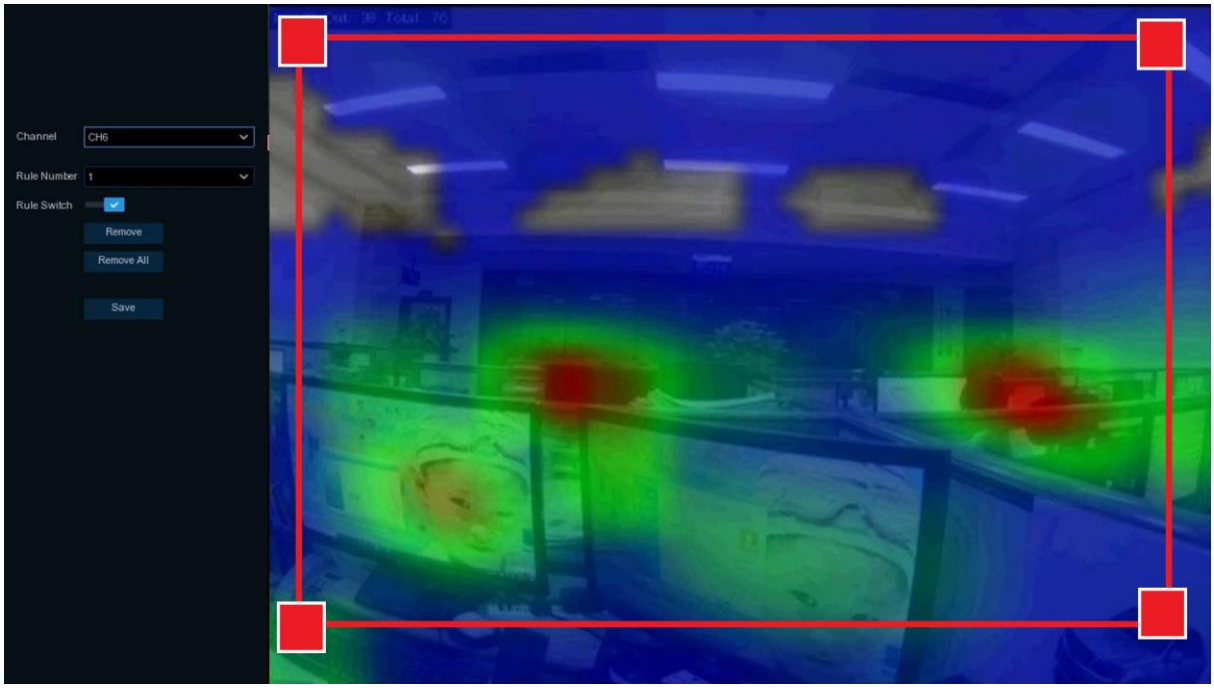
5.4.1.6 HM (Heat Map)

Automatically regular detect and count the movement of objects in the monitoring area. The frequency of people flows will be identified by different colors.



Switch: Check the box to enable LCD function.

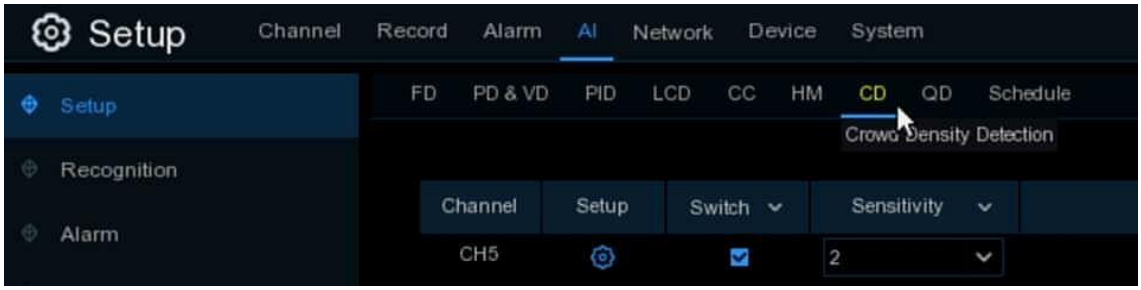
Click **Setup** icon to configure the detection conditions.



1. To enable the detection in **Rule Switch**.
2. Use your mouse to click 4 points in the camera picture to draw a virtual region. The sharp of the region should be a convex polygon. Concave polygon will be not able to save.
3. Click **Save** to save your settings.
4. If you want to modify the position or sharp of region, click the red box in the region, the borders of the region will be changed to red color. Click and hold the left button of your mouse to move the position of the region, or drag the corners to resize the region.
5. If you want to remove one of the regions from the camera picture, click the red box in the region and then click **Remove** button. Click **Remove All** will delete all regions.

5.4.1.7 CD (Crowd Density Detection)

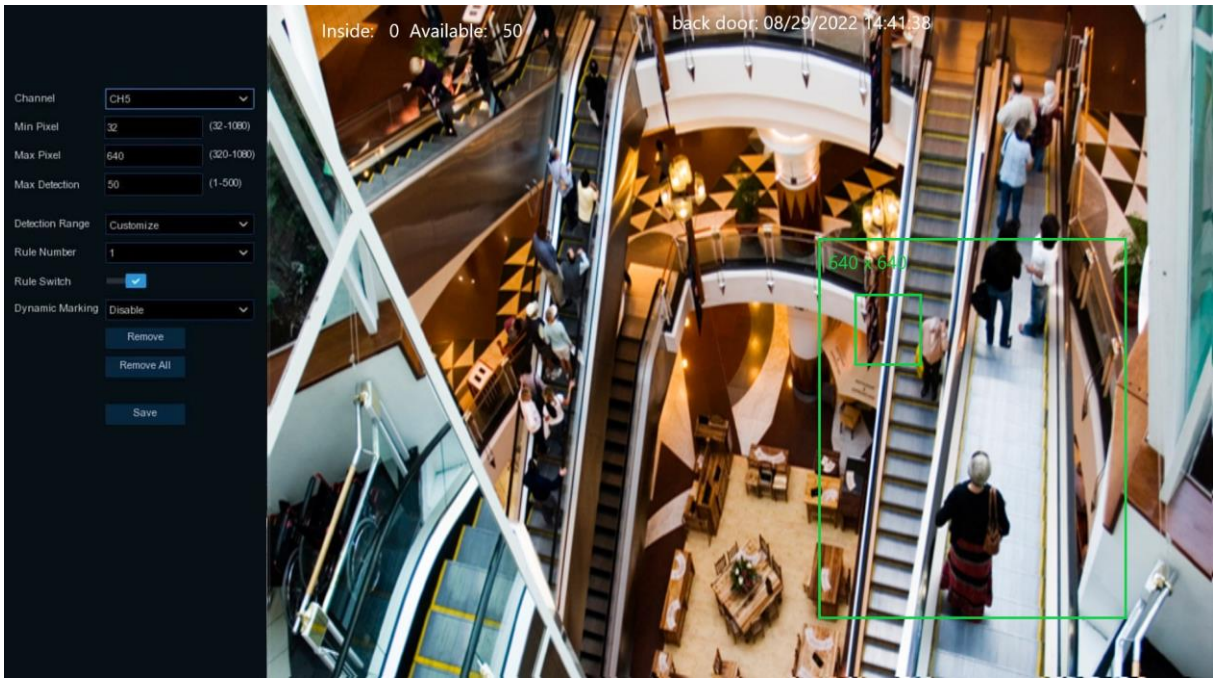
Crowd density detection is used to detect crowd gathering to maintain a controllable order in certain area.



Switch: Check the box to enable the CD function.

Sensitivity: Set the sensitivity level. Level 1 the lowest sensitivity level while level 4 is the highest sensitivity level.

Click **Setup** icon to configure the detection conditions.



Min Pixel: Set the minimum detection pixel box. The people can be recognized only when he/she is larger than the pixel box.

Max Pixel: Set the maximum detection pixel box. The people can be recognized only when he/she is smaller than the pixel box.

Max Detection / Capacity: The NVR will send an alert if the number of people inside the detection area exceeds the Max Detection number.

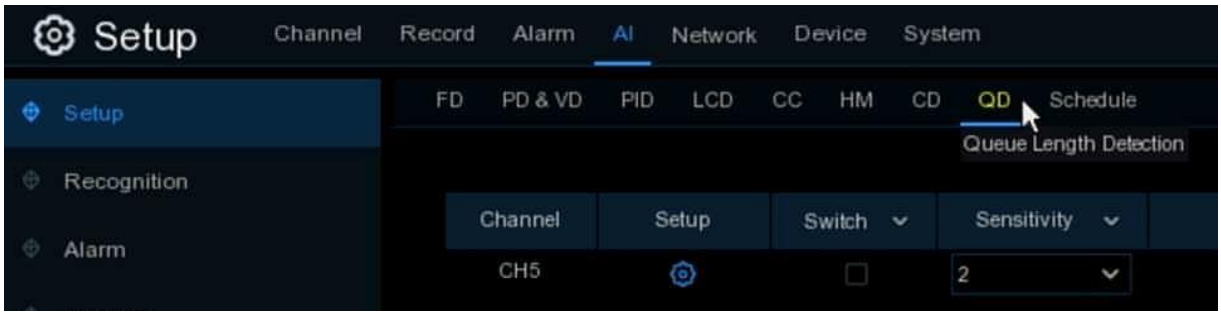
Dynamic Marking / Bounding Box: If you enable this option, the border of the detection zone will be displayed in both live view images and recording files.

1. Set the min. pixel and max. pixel.

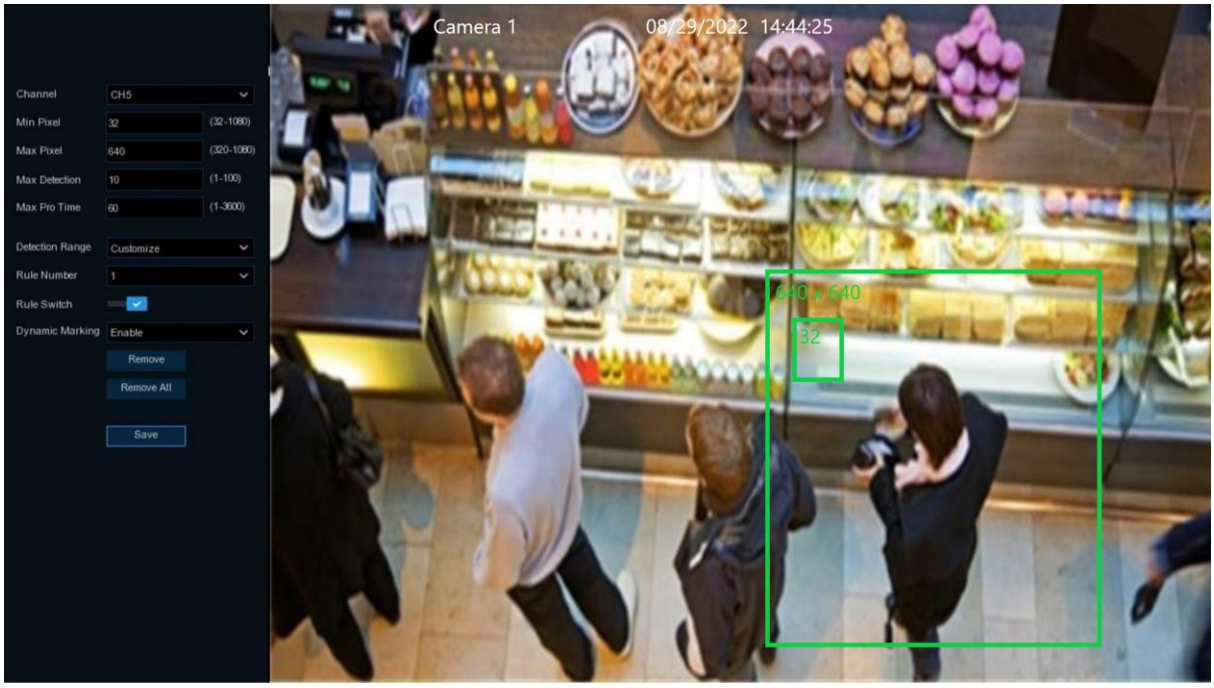
2. Set the limitation number in **Max. Detection / Capacity**.
3. To enable the detection in **Rule Switch**.
4. Set the **Detection Range** to be full screen or customize.
5. If you choose customized detection range, you will need to use your mouse to click 8 points in the camera picture to draw a virtual region.
6. Click **Save** to save your settings.
7. If you want to modify the position or sharp of region, click the red box in the region, the borders of the region will be changed to red color. Click and hold the left button of your mouse to move the position of the region, or drag the corners to resize the region.
8. If you want to remove one of the regions from the camera picture, click the red box in the region and then click **Remove** button. Click **Remove All** will delete all regions.

5.4.1.8 QD (Queue Length Detection)

Queue length detection is used to detect the status of a queue, including its length and stagnation time.



Switch: Check the box to enable the QD function.
Sensitivity: Set the sensitivity level. Level 1 the lowest sensitivity level while level 4 is the highest sensitivity level.
Click **Setup** icon to configure the detection conditions.

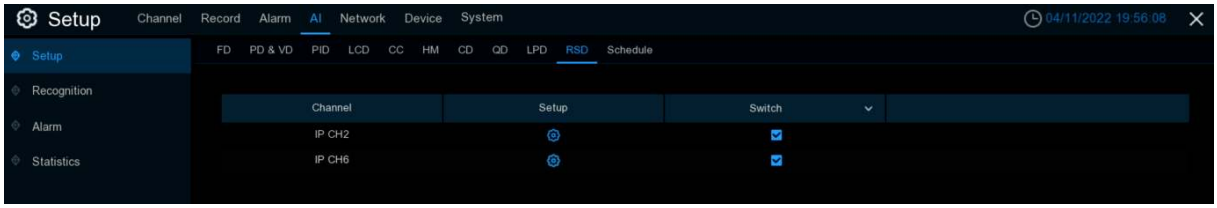


Min Pixel: Set the minimum detection pixel box. The people can be recognized only when he/she is larger than the pixel box.
Max Pixel: Set the maximum detection pixel box. The people can be recognized only when he/she is smaller than the pixel box.
Max Detection / Capacity: The NVR will send an alert if the number of crowds in the line inside the detection area exceeds the Max Detection number.
Max. Pro Time / Max. Staying Time: The NVR will send an alert if the stagnation time of the queue is longer than the given processing time.

Dynamic Marking / Bounding Box: If you enable this option, the border of the detection zone will be displayed in both live view images and recording files.

1. Set the min. pixel and max. pixel.
2. Set the limitation number in **Max. Detection**.
3. Set the limitation number in **Max. Pro Time**, the unit is second.
4. To enable the detection in **Rule Switch**.
5. Set the **Detection Range** to be full screen or customize.
6. If you choose customized detection range, you will need to use your mouse to click 8 points in the camera picture to draw a virtual region.
7. Click **Save** to save your settings.
8. If you want to modify the position or sharp of region, click the red box in the region, the borders of the region will be changed to red color. Click and hold the left button of your mouse to move the position of the region, or drag the corners to resize the region.
9. If you want to remove one of the regions from the camera picture, click the red box in the region and then click **Remove** button. Click **Remove All** will delete all regions.

5.4.1.9 RSD (Rare Sound Detection)



Setup: Click  to enter setup page.

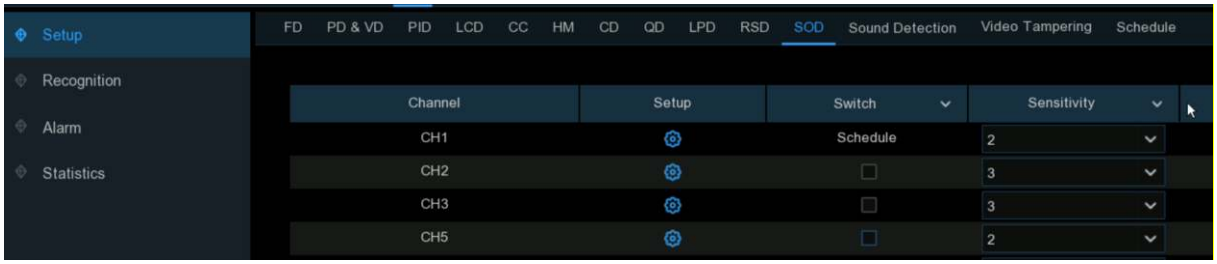
Switch: Enable or disable RSD function.



Channel: Channel selection.
Sensitivity: Sensitivity, 1 is the minimum,100 in the maximum.
Detection Type: Choose the detection type by clicking ☑ to enable detection for **Baby Crying Sound, Dog Barking,** or **Gunshot**.

5.4.1.10 SOD (Stationary Object Detection)

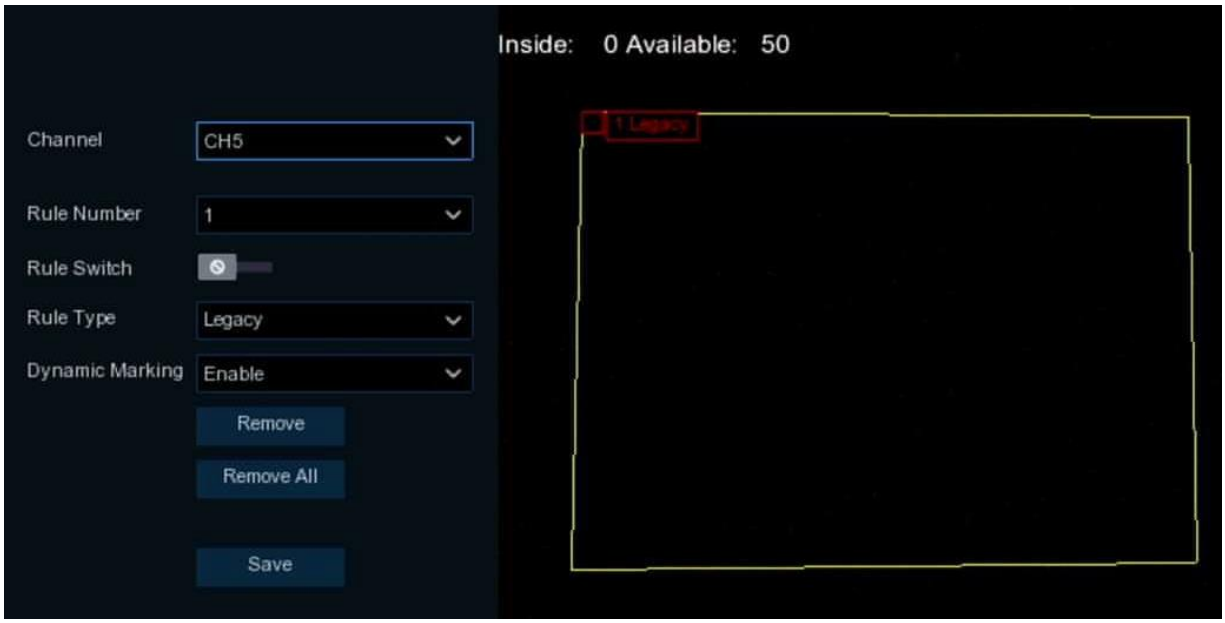
Stationary Object Detection function detects the objects left over or lost in the pre-defined region such as the baggage, purse, dangerous materials, etc., and a series of actions can be taken when the alarm is triggered.



Switch: Check the box to enable SOD function.

Sensitivity: Set the sensitivity level. Level 1 the lowest sensitivity level while level 4 is the highest sensitivity level.

Click **Setup** icon to draw a virtual region in the camera image.



Channel: Select the channel you want to configure

Rule Number: Max. 4 rules available.

Rule Switch: Activate or inactivate the rule

1. Choose one of the **Rule Number**. It is the number of SOD area. Maximum 4 areas you can set for SOD function.
2. To enable the detection in **Rule Switch**.
3. Choose a **Rule Type**.
   Legacy: NVR will only detect the left-over objects;
   Lost: NVR will only detect the lost objects;
   Lost & Legacy: NVR will detect both left-over & lost objects.

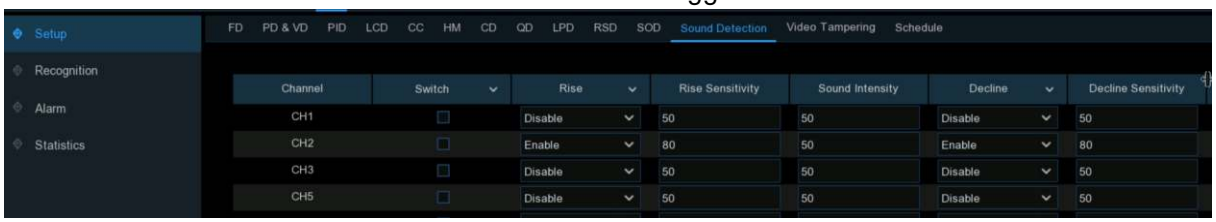
4. Use your mouse to click 4 points in the camera picture to draw a virtual region. The shape of the region should be a convex polygon. Concave polygon is not applicable.
5. Click **Save** to save your settings.
6. If you want to adjust the size of the region, click the red box in the region, the borders of the region will be changed to red color. Long press the left button of your mouse to move the whole region, or drag the corners to resize the region.
7. If you want to remove one of the regions from the camera picture, click the red box in the region and then click **Remove** button. Click **Remove All** will delete all regions.

Note:

1. The detection area shall be greater than or equal to the size of the detected object.
2. The detected object cannot be covered.

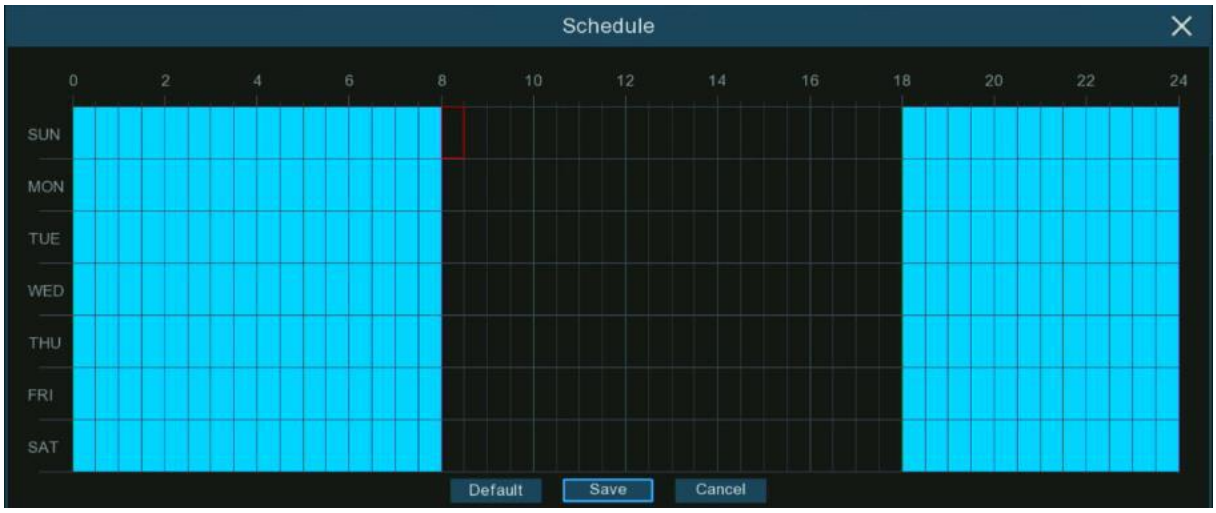
5.4.1.11 Sound Detection

With the sound detection, it can trigger an alarm while detecting the sound rise or decline, and some certain actions can be taken when the alarm is triggered.



Switch: Enable or disable sound detection.
Rise: Enable or disable sound rise detection.
Rise Sensitivity: Set the sensitivity level. Level 1 the lowest sensitivity level while level 100 is the highest sensitivity level.
Sound / Volume Intensity: Set a threshold of sound intensity, the lower value, the more sensitivity.
Decline: Enable or disable sound Decline detection.
Decline Sensitivity: Set the sensitivity level. Level 1 the lowest sensitivity level while level 100 is the highest sensitivity level.

Schedule: Each square represents 30 minutes. Using the mouse, click on a particular square to change or click and drag the mouse over the squares corresponding to your desired period. The sound detection will be activated if the time table is in blue color, oppositely the detection will be inactivated if the time table is in black color.



5.4.1.12 Video Tampering

Video Tampering detects the occlusion of camera images, and some certain actions can be taken when the alarm is triggered.



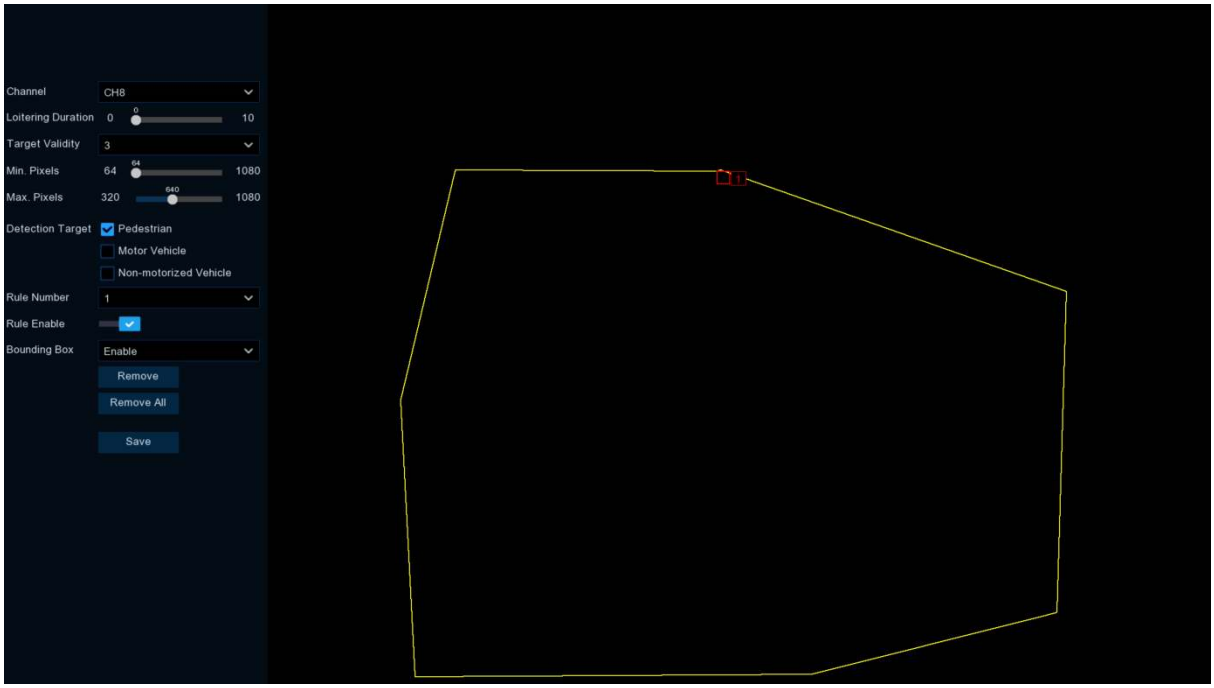
Switch: Enable or disable the function

Sensitivity: The sensitivity level is from 1 to 6, with a default value of 3. Higher sensitivity will be easier to trigger the detection.

5.4.1.13 Intrusion

Intrusion detection detects whether there is an object in the video to invade the set restricted area. Linkage alarm according to the judgment result.

Switch: Check the box to enable the Intrusion function.
Sensitivity: The sensitivity setting for triggering area intrusion detection, the higher the sensitivity setting, the easier it is to trigger the alarm.
Click **Setup** icon to configure the detection conditions.



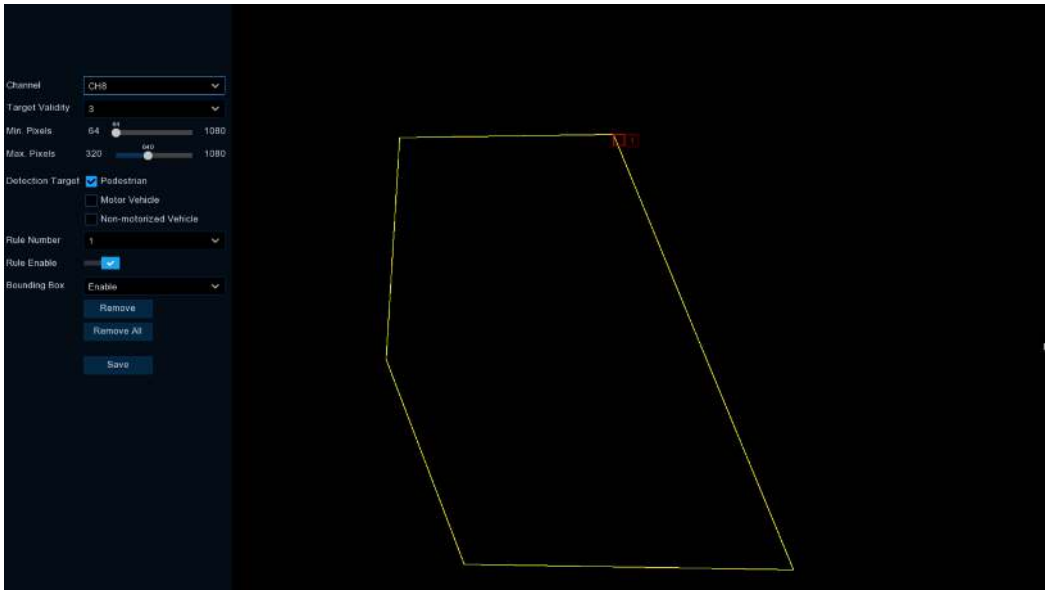
Channel: Select the channel you want to configure.
Time Threshold: Indicates that the target enters the alert area and stays there for the duration of the time before generating an alarm. For example, if it is set to 5, the alarm will be triggered immediately after the target invades the area for 5s, and the maximum duration can be set to 10s.
Target Validity: The similarity between the detection target and the set detection type. The alarm is triggered only when the set similarity level is reached or exceeded. The higher the setting level the higher the similarity requirement, the more obvious the desired target characteristics and the higher the alarm accuracy. Levels can be set from 1 to 4.1 represents a similarity of 80% or more,2 represents a similarity of 60% or more,3 represents a similarity of 40% or more,4 represents a similarity of 20% or more.
Min. Pixel: Sets the min recognized pixel. The target has to be larger than the set pixel to be recognized.
Max. Pixel: Sets the max recognized pixel. The target has to be smaller than the set pixels to be recognized.

Detection Target: Setting the detection type;
Pedestrian: Only intruding pedestrians are detected;
Motorized: Only intruding motorized vehicles are detected;
Non-Motorized: Only intruding non-motorized vehicles are detected;
Don't Select Any Type: All moving targets are detected.
Rule Number: Select the rule number, click the left mouse button in the right preview screen to draw the detection area connected with the first and last endpoints, and then click Save to complete the area drawing. When you need to clear the warning area, click "Remove" to delete the selected area; click "Remove All" to delete all areas.
Rule Enable: Enable detection in Rule Switch.
Bounding Box: When on, the target detection box is displayed in the live screen.

5.4.1.14 Region Entrance / Exiting

The Region Entrance / Exiting detection function can detect whether an object enters / leaves the set warning area and link the alarm according to the judgment result. The specific setting steps are shown below.

Switch: Check the box to enable the Intrusion function.
Sensitivity: The sensitivity setting for triggering area intrusion detection, the higher the sensitivity setting, the easier it is to trigger the alarm.
Click **Setup** icon to configure the detection conditions.



Channel: Select the channel you want to configure.

Target Validity: The similarity between the detection target and the set detection type. The alarm is triggered only when the set similarity level is reached or exceeded. The higher the setting level the higher the similarity requirement, the more obvious the desired target characteristics and the higher the alarm accuracy. Levels can be set from 1 to 4.1 represents a similarity of 80% or more,2 represents a similarity of 60% or more,3 represents a similarity of 40% or more,4 represents a similarity of 20% or more.
Min. Pixel: Sets the min recognized pixel. The target has to be larger than the set pixel to be recognized.
Max. Pixel: Sets the max recognized pixel. The target has to be smaller than the set pixels to be recognized.
Detection Target: Setting the detection type;
Pedestrian: Only Enter Region pedestrians are detected;
Motorized: Only Enter Region motorized vehicles are detected;
Non-Motorized: Only Enter Region non-motorized vehicles are detected;
Don't Select Any Type: All moving targets are detected.
Rule Number: Select the rule number, click the left mouse button in the right preview screen to draw the detection area connected with the first and last endpoints, and then click Save to complete the area drawing. When you need to clear the warning area, click "Remove" to delete the selected area; click "Remove All" to delete all areas.
Rule Enable: Enable detection in Rule Switch.
Bounding Box: When on, the target detection box is displayed in the live screen.

5.4.1.15 Schedule



In order to active the AI function, you need to config the schedule. The schedule will be active in 24 hours x 7 days.
To set the schedule, choose one channel then click on one of the detection items on the right side, then drag the cursor to mark the slots. The schedule is valid only for the selected channel each time when you set. If you want to use the same schedule for other channels, use **Copy** function. Click **Save** to save your settings.
Functions are mutually exclusive: Functions that are mutually exclusive with the selected function.

5.4.2 Face Recognition

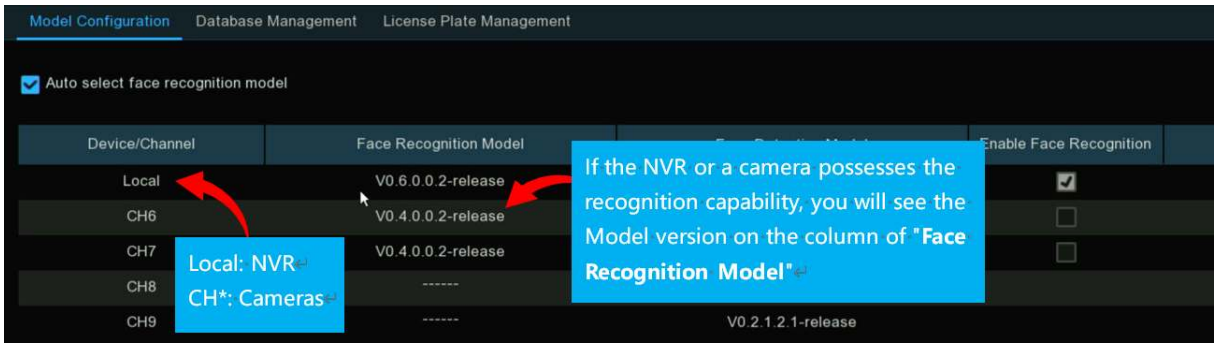
To start face recognition, you need to configure the face recognition algorithm model and database.

Note:

1. For **GV-RNVR256G0-N**, the function is only applicable when connected to the following R Series AI-capable GV-IP cameras. Make sure **Face Detection** is enabled on the cameras.
   - GV-RBL5800
   - GV-RBL5811
   - GV-REB5800
   - GV-RMS32810
2. For **GV-RNVRL810-P** / **GV-RNVR3240-N,** the function is only applicable when connected to the following R Series AI-capable GV-IP cameras. Makre sure **Face Recognition** is enabled on the cameras.
   - GV-RBL5800
   - GV-RBL5811
   - GV-REB5800
   - GV-RMS32810
3. To see AI applications for different scenarios using Face Recognition results, see *7.1.9.5 Face Attendance, 7.1.9.1 Face Search,* and *7.1.9.4 Repeat Visitors.*

5.4.2.1 Model Configuration

To choose the face algorithm model. Auto select recognition model is recommended. Face Recognition is enabled by default.



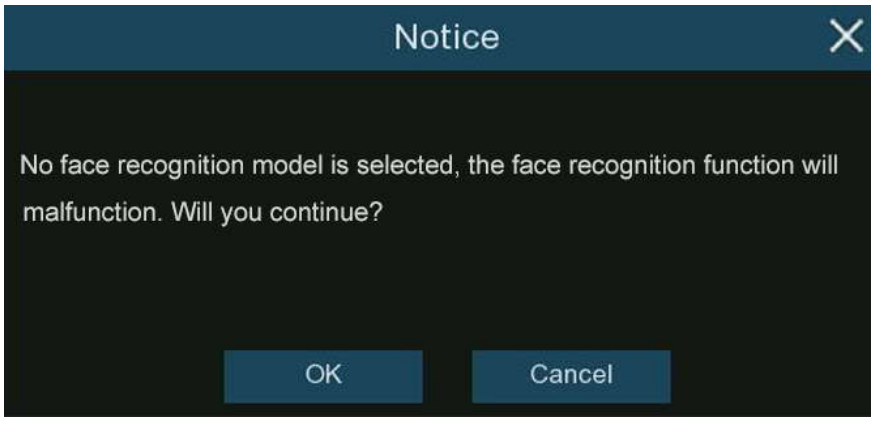
The face AI algorithm mainly includes two parts: Detection and Recognition.

- ➔ Detection is mostly used to detect and capture face images. Generally, the detection capability is possessed by IP cameras.
- ➔ Recognition is mostly used to extract, analyze and compare the face features. Recognition capability is possessed by the NVR and some of IP cameras.

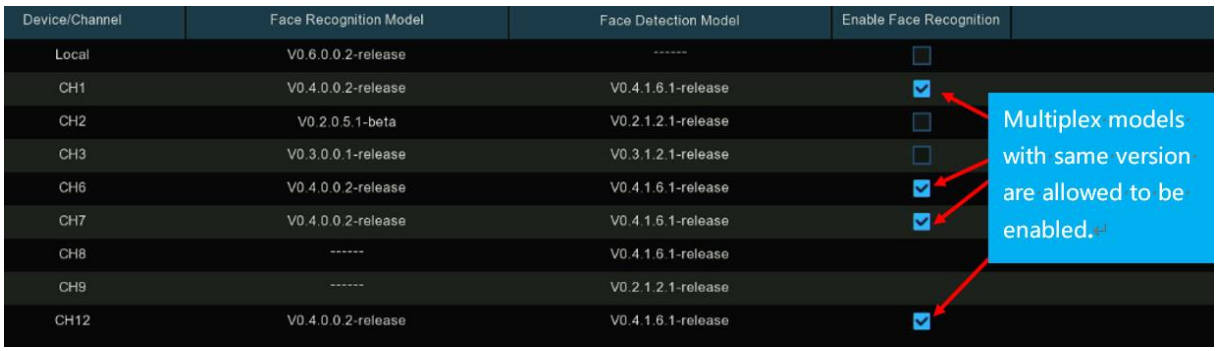
To fully implement the face detection and recognition function, the system will select a face recognition model automatically when you use the face AI function at the first time.
If you want to choose the model by manual, untick the checkbox of "**Auto select recognition model**", and then tick the checkbox of the model you want to enable.

Rules & advices for manual selection:

1. At least one face recognition algorithm model must be enabled, otherwise the face recognition function would malfunction.

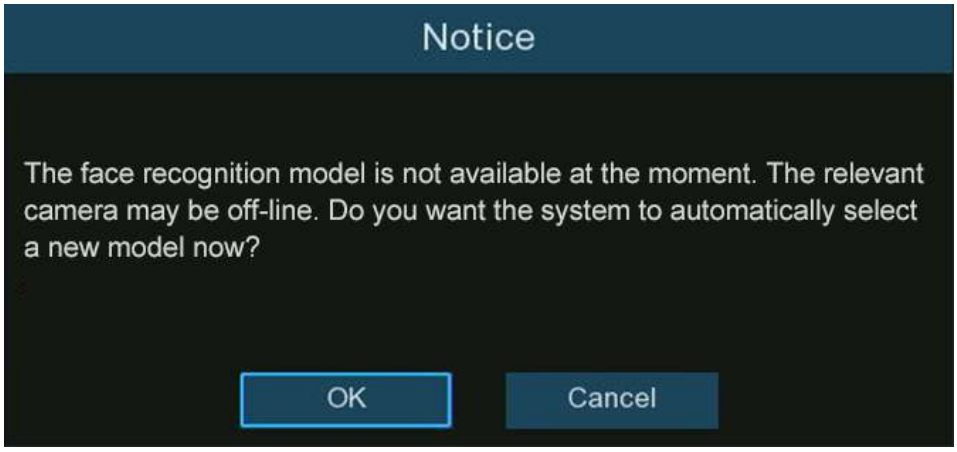


2. Between NVR and camera, you can only select either-or.
3. Models with across versions are disallowed to be selected.
4. Newer version (with bigger digital sequence) is preferred to be selected due to its algorithm optimization and database update.
5. Multiplex models with same version are allowed & recommended to be enabled. This would help to decrease the analysis loading on a single NVR or camera and accelerate the recognition.

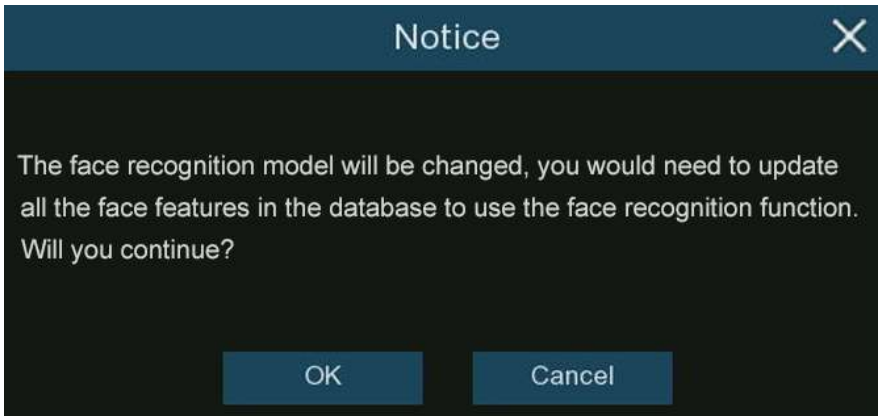


If one or more selected cameras (not all) are off-line, the recognition mission will be automatically assigned to the rest of selected camera(s).

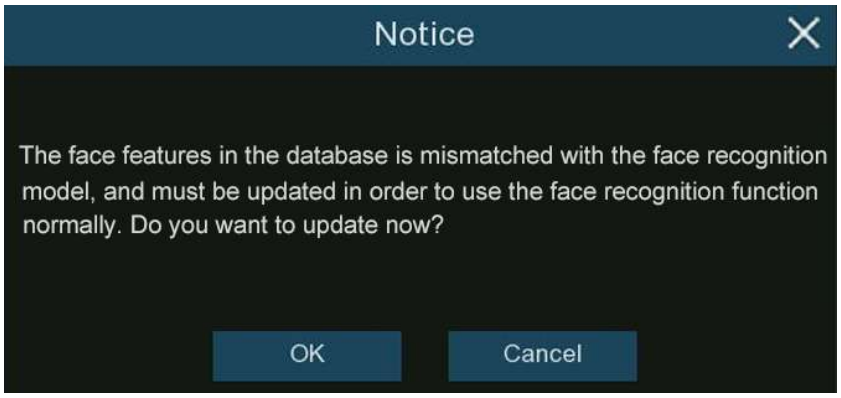
6. When the Model is enabled on a single camera and if the camera is off-line, the face recognition will stop working. System will send an alert notification shown as below. Click "**OK**" to let the system automatically select a new model. If you click "**Cancel**", you would need to configure the recognition model by manual later.

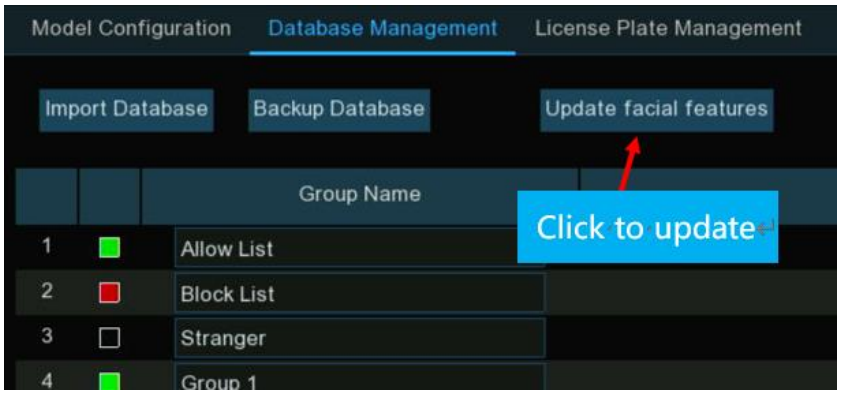


7. If you want to change the model to a different version, the system would send you a notice, click "**OK**" to continue.



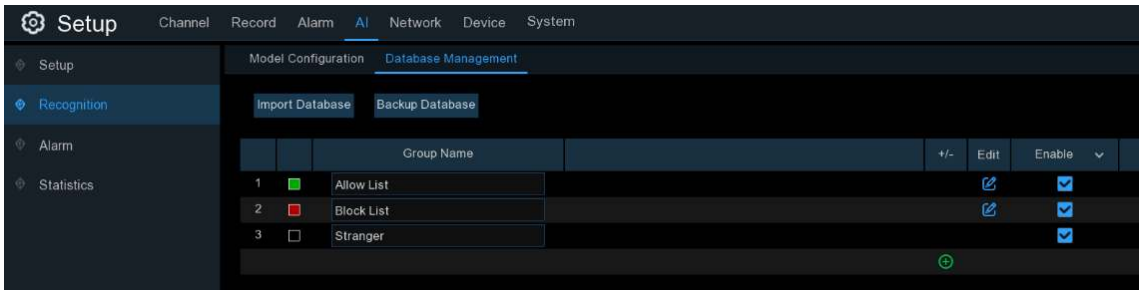
8. If the recognition model has been changed to a different version, the system would send you a notice, click "**OK**" to continue. If you click "**Cancel**", you would need to go to "**Database Management**" menu and then click "**Update facial features**" button to update the database.





5.4.2.2 Database Management

You're able to create and manage the face profiles (database) to classify different people into different groups in order to quickly identify people in remote and realize intelligent alarm beforehand.



There are 3 default groups: **Allow List, Block List,** and **Stranger:**

- ➔ **Allow List:** Mostly used to define a list of people that are regarded as acceptable or trustworthy, such as family members, colleagues, frequent customers, etc.
- ➔ **Block List:** Mostly used to define a list of people that are regarded as unacceptable or untrustworthy and should be excluded or avoided.
- ➔ **Stranger:** All ungrouped people will be identified as stranger.

You can use the add icon and delete icon to add or delete customized groups.

Import Database: Import database from USB memory / local HDD storage. Note that this will overwrite the existing settings and face profiles.

Backup Database: Export database to USB memory / local HDD storage.

Enable: Check to enable the group.

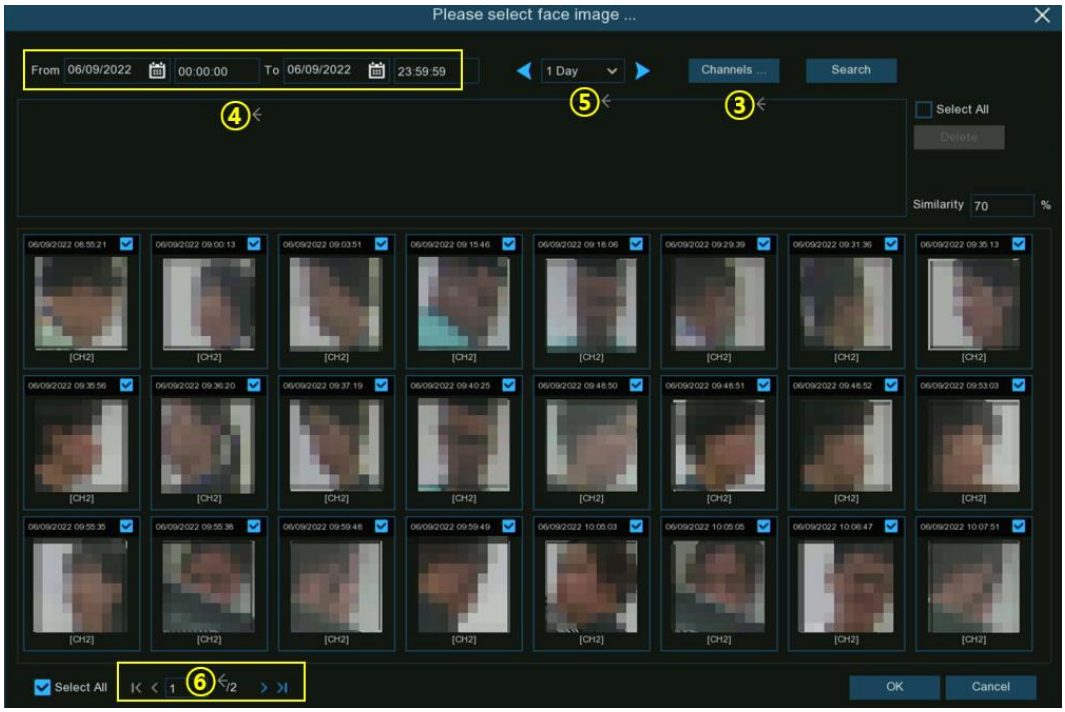
5.4.2.2.1 Creating Face Profiles from Local Storage Device

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

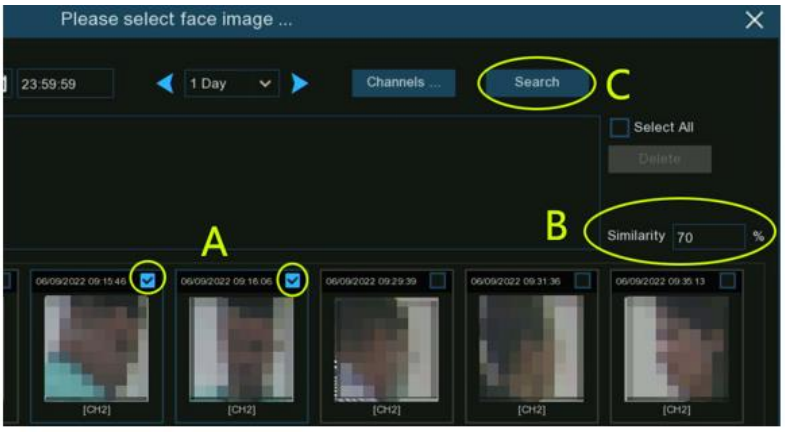
1. Click the "**Edit**" button of the group that you would like to create face profiles for.

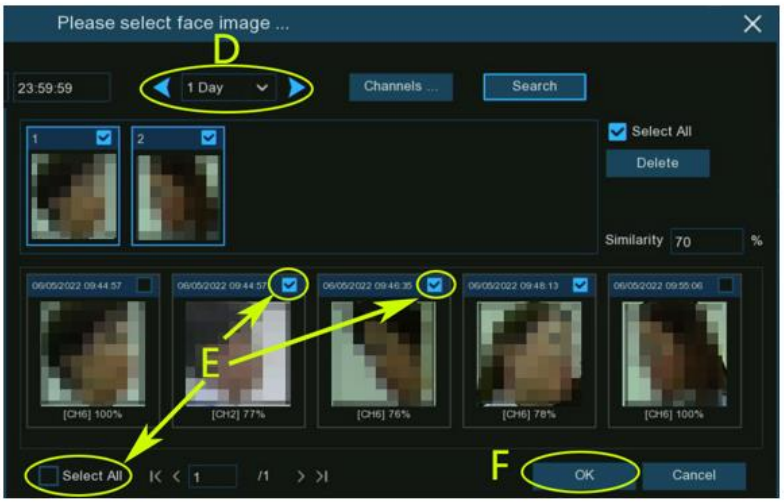


2. From the Group window, click the "**Import**" button, then click the "**Local Storage Device**" button. This page appears.



3. **Channels:** All channels are set to search by default. You can specify the cameras you want to search on.
4. Use the calendar to specify the date range.
5. Choose the day duration, and then use the arrow buttons to quickly display face images from the previous or next day(s).
6. The search result will be displayed in the face list automatically. Use the arrow buttons to display previous or next page of results.
7. You can narrow the search result by using the similarity:





A. First, select the targeted face image(s) from the search result.

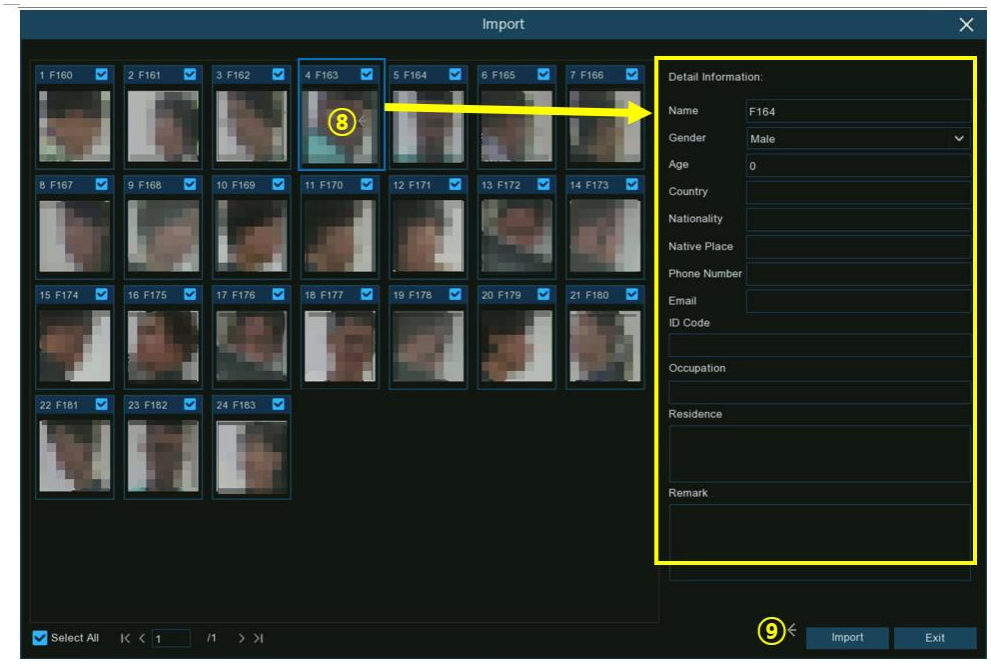
B. And then set the **Similarity** value. It is the face similarity threshold (%). The higher the number is, the more precise the result will be.

C. Click **Search** button, the system will search for faces with an equal or greater similarity than the specified value.

D. If you want to search from other days, choose the day duration, and then use the arrow buttons to quickly display face images from the previous or next day(s).

E. Tick the checkbox to select individual face image, or tick "**Select All**" to select all face images in current page of search result.

F. Once you've selected one or more face images, click the "**OK**" button. The system will go to profile edit page.



8. Click on a face image, then enter their identification details, such as the person's name and age. By default, each face image is given a face ID as its name.
9. When finished, click "**Import**" button. The face profile is now created and assigned to the group.

5.4.2.2.2 Creating Individual Face Profile from External Storage Device

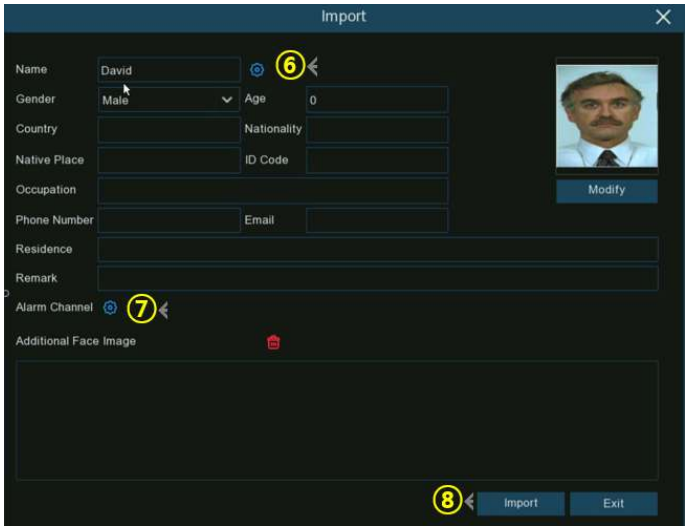
1. Copy the face images to your USB flash drive, and then insert the USB device into the USB port of the NVR.

> **Note:** The supported formats of face image are ".jpg", ".jpeg", ".png", and ".bmp". The supported dimension of the image is from 80 x 80 to 800 x 800 pixels, and the maximum supported size is 500KB.

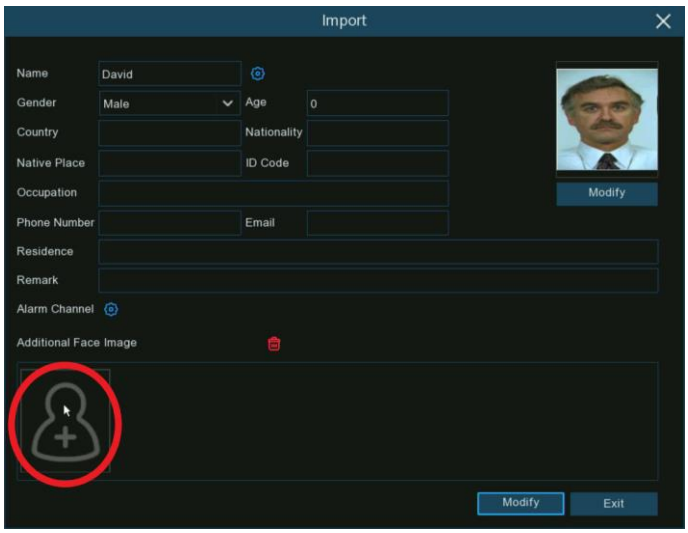
2. Click the "**Edit**" button of the group that you would like to create face profiles for.



3. From the Group window, click the "**Import**" button, then click the "**External Storage Device**" button.
4. Click on the face image you want to import, and click **OK**.
5. Edit the face profile of the people.



6. Click setup button to configure the voice prompt for the person. View more on 5.3.7. Voice Prompts to learn how to configure this function. Note that the voice file you import here takes effect only to this person. If you had set several periods of time, you would need to import voice file for each period.
7. Click setup button to configure the **Alarm Channel**. The system will alert when the face is detected and captured by the selected cameras.
8. Click **Import** button to import the face profile.
9. Now you will see an add button displayed in the **Additional Face Image** window. You are able to add additional face images at different angles for the same person to improve face recognition accuracy from local and/or external storage device by clicking the add button . Maximum 10 images allowed to add.



Click delete button to delete select image.

Click **Modify** button to finish, then click **Exit** button or right click your mouse to exit.

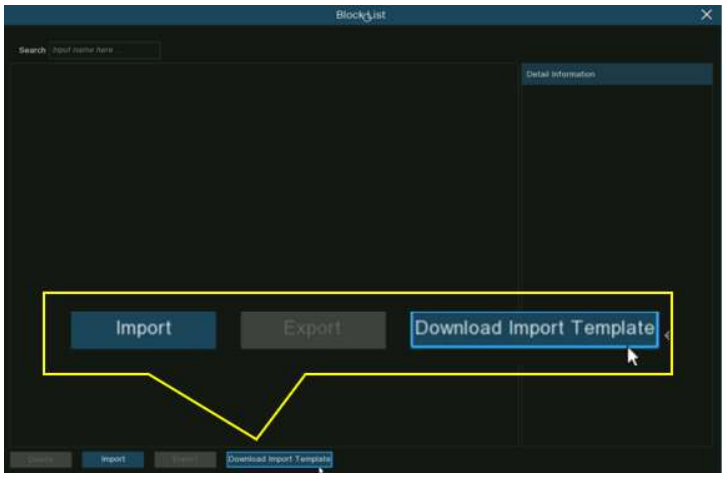
5.4.2.2.3 Creating Bulk Face Profiles from External Storage Device

If you want to create a batch of face profiles at once, please proceed as below:

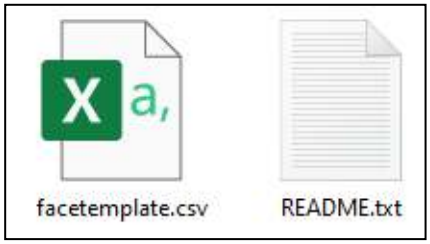
1. Click the "**Edit**" button of the group that you would like to create face profiles for.



2. From the Group window, you will find the " **Download Import Template** " button.



3. Insert your USB flash drive, and then click the **Download Import Template button**, a zip file named "import_template_enu.zip" will be downloaded into your USB flash drive.
4. Unzip the file, and you will get 2 files shown as below.

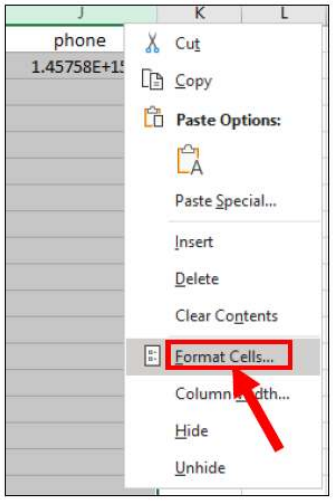


5. Create and name a new folder.

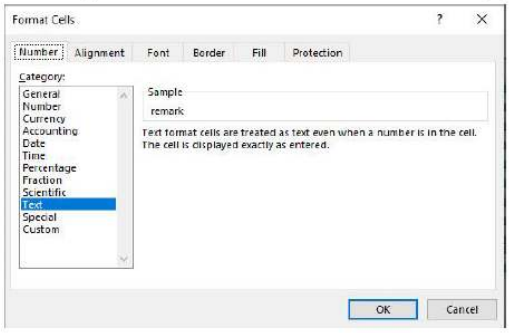
6. Copy the “facetemplate.csv” file and the face images into the folder. Make sure the formats of face image are ".jpg", ".jpeg", ".png", or ".bmp", the dimension is between 80x80 and 800x800 pixels, and the size is no more than 500KB.
7. Double click on the “facetemplate.csv” file to run it with Excel. The content is shown as below:

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

8. Edit the cells according to your actual conditions as illustrated as below:



Please Note: if you input a number uninterruptedly more than 11 digits in a cell, the system will display the number in scientific notation, e.g., "1.23457E+11". If so, you would need to adjust the format of the column to be "Text":
Select the column (especially the column of ID code and phone number) and then click right button of your mouse. Click "**Format Cells...**" on the pop-up menu.



Choose "**Text**", and then click "**OK**" button.

phone
1.45758E+15

NG

phone
014575767676

Good

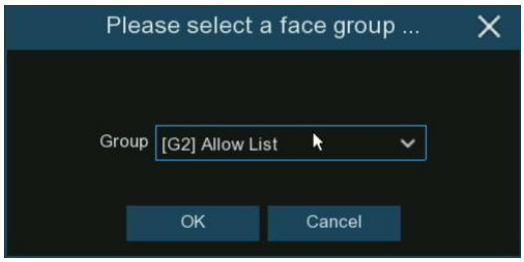
9. Save the .csv file. Make sure the file is saved as CSV UTF-8 type.
10. Copy the whole folder, including the face images and the "facetemplate.csv", and paste it to your USB flash drive.
11. Insert the USB flash drive into the USB port of your NVR.
12. Click the "**Edit**" button of the group that you would like to create face profiles for.
13. From the Group window, click the "**Import**" button, then click the "**External Storage Device**" button.
14. Find out and click on the "facetemplate.csv" file from your USB flash drive, and then click OK.
15. The face profiles are shown. Click **Import** button to import the face profiles into the NVR.

5.4.2.2.4 Editing Face Profiles

If you want to edit or delete a face profile, please proceed as below:

1. Click on the edit button  of the group you want to edit
2. In the group edit page, you're able to execute below operations:
   - ➔ **Import:** To import face images. View on 5.4.2.2 Database Management.
   - ➔ **Export:** To export face image(s) to external USB flash drive.
     - Click **Export** button directly to export all face images in this group.
     - Click on one of the face images, and then click **Export** button to export an individual image.
     - Click and hold the left button of your mouse, then drag the cursor to select multiple images, and then click **Export** button to export the selected images.
3. Move the mouse cursor upon the image you want to edit and then click left button of your mouse to select it. Click right button of your mouse to display a pop-up menu.
4. With the pop-up menu, you're able to:
   - ➔ **Edit:** Click to edit the face profile. Check how to edit the profile on 5.4.2.2.2 Creating Individual Face Profiles from External Storage Device.
   - ➔ **Move To:** Click to move the face to another group.

Choose the targeted group, and then click OK.

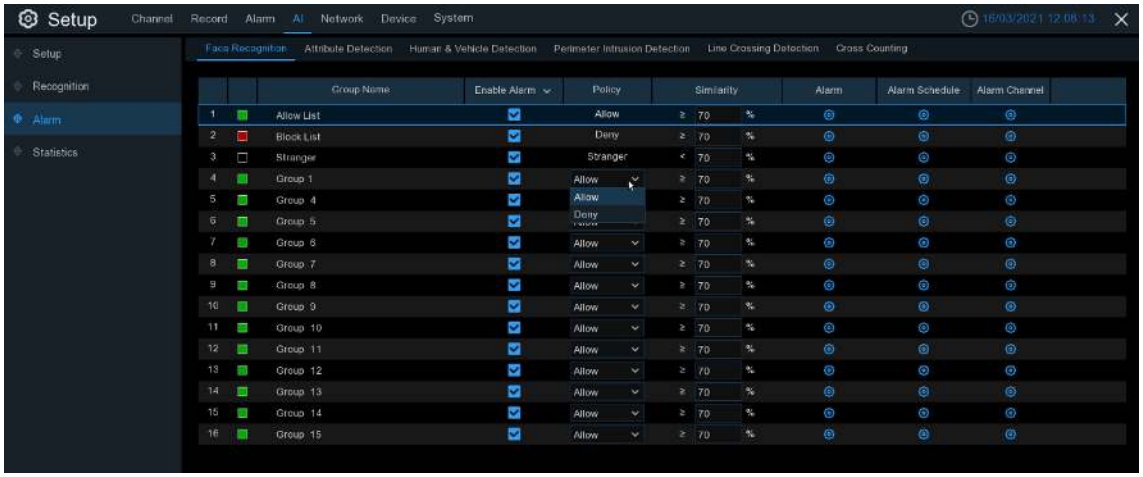


   - ➔ **Delete:** To delete the select face profile.
   - ➔ **Detail Information:** Click to view the details of the selected face profile.

5.4.3 Alarm

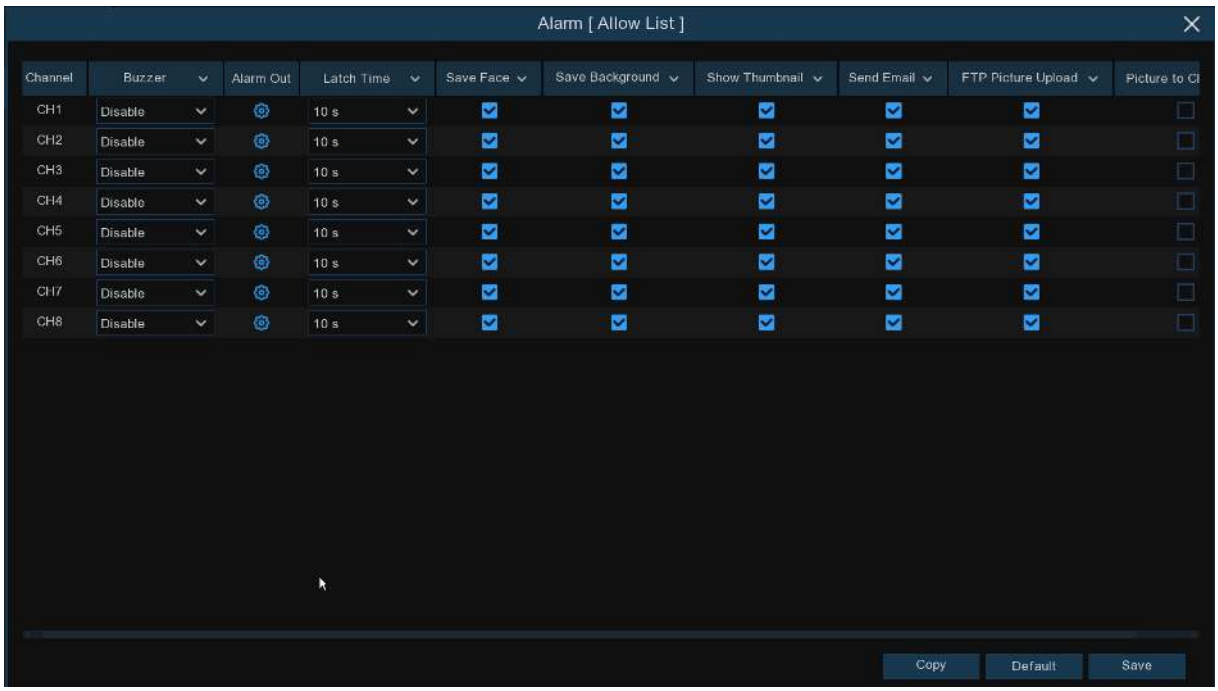
5.4.3.1 FR (Face Recognition)

To configure alarm actions for different face groups when faces detected.



Enable Alarm: Tick the checkbox of the group(s) you want to enable alarm function. If the checkbox isn't enabled, no actions specified for the group such as alarm notifications will be actioned by your NVR. It is strongly recommended that the "Enable" checkbox for the "Stranger" group remains ticked. This allows your NVR to save the images of every single face detected, including those that do not match any existing face profiles to the database. You can use these captured face images later to create or improve face profiles in the Allow List & Block List groups.
Policy: To set the group to be **Allow** list or **Deny** list.
Similarity: Set the similarity of comparison.
Alarm Channel: To choose which channel(s) will be applied to the alarm setting.

Alarm: Click ⚙ to configure the alarm actions.



Buzzer: The NVR can use its internal buzzer to emit an alarm tone. You can set the buzzer duration in seconds when an alarm is triggered.

Alarm Out: If your NVR or IP camera supports to connect external replay output devices, the system can send an alert message to the external alarm devices. Click ⚙ button, to choose the external alarm devices:



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

Latch Time: To configure the external alarm time when an alarm is triggered.

Face Capture: To save the captured face.

Save Background: To save the whole image when an alarm is triggered.

Show Thumbnail: To pop-up the thumbnail image in live view screen when an alarm is triggered.

Send Email: You can let the NVR to send you an auto-email when an alarm is triggered.

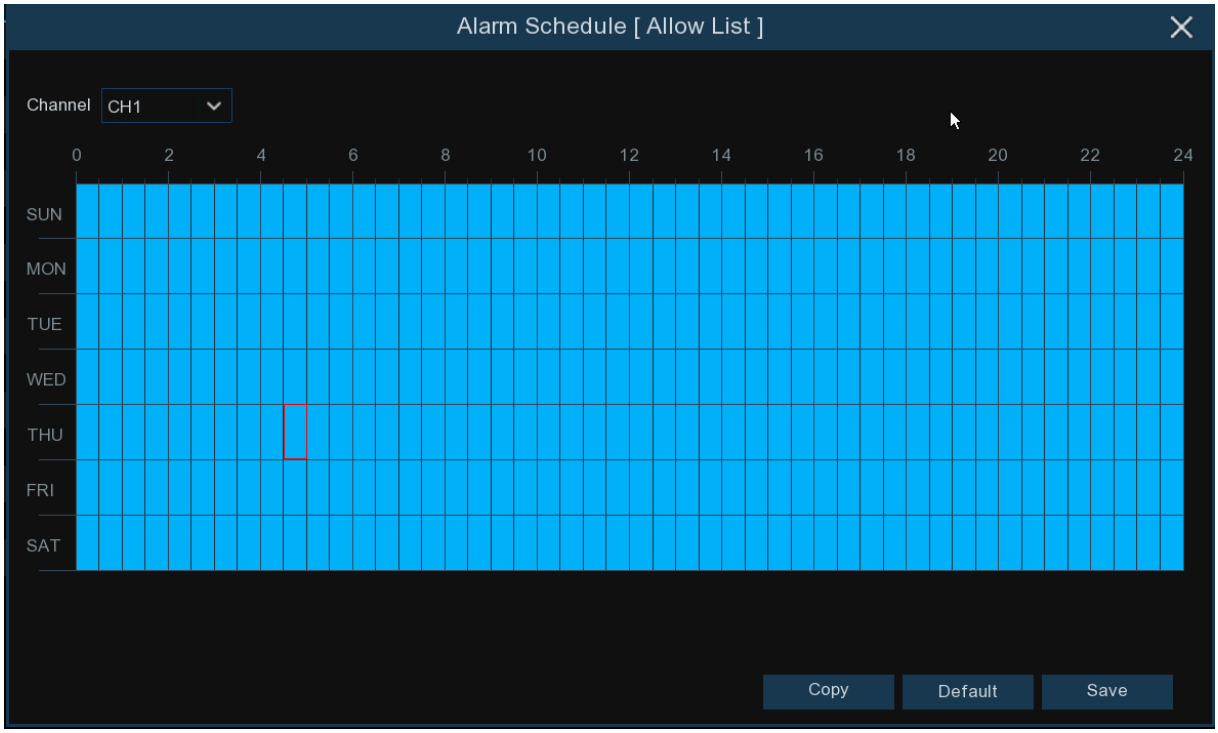
FTP Picture Upload: To upload alarm images to FTP server when an alarm is triggered. To enable FTP, please view 5.6.3 FTP.

Picture to Cloud: To upload alarm images to Cloud server when an alarm is triggered. To enable Cloud, please view 5.6.2 Cloud.

Voice Prompts: If your NVR connects with a speaker, you can select a customized alert voice when the detection is triggered. See how to add customized alert voice on 5.3.6 Voice Prompts.

Event Push Platform: When an alarm is detected, it will send an alarm message to the third-party platform that the device is connected to.

Default: Click "**Default**" to revert to default settings.
Copy: Use the "**Copy**" function to apply all settings to the other connected cameras.
Save: Click "**Save**" to save settings.
Alarm Schedule: Click icon to configure the alarm schedule for each channel.



Channel: Select the channel to set its capture parameters.
To set the schedule, choose one channel then drag the cursor to mark the slots. The blue blocks in the time slots will be active for alarm. The schedule is valid only for the selected channel each time when you set. If you want to use the same schedule for other channels, use **Copy** function. Click **Save** to save your settings.

5.4.3.2 AD (Attribute Detection) / Face Attributes

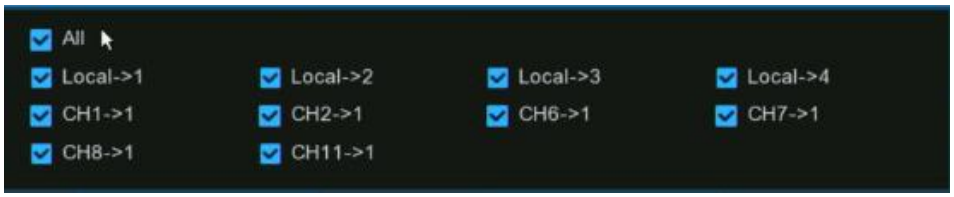
Attribute detection is a function to detect people's facial features and send an alarm according to the settings. This is applicable for **Face Detection** function.



Alarm Type: Select the alarm trigger condition. If the selection is "**No Mask**", the NVR will send an alarm if it detects a person doesn't wear a face mask. If the selection is "**Wear Mask**", the NVR will send an alarm if it detects a person wears a face mask. Select "**Close**" to disable the face mask detection.

Buzzer: The NVR can use its internal buzzer to emit an alarm tone. You can set the buzzer duration in seconds when an alarm is triggered.

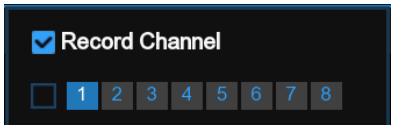
Alarm Out: If your NVR or IP camera supports to connect external replay output devices, the system can send an alert message to the external alarm devices. Click button, to choose the external alarm devices:



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

Latch Time: To configure the external alarm time when an alarm is triggered.

Record: Click icon and choose which channel(s) you want to record when the alarm is triggered.



Post Recording: You can set how long after an event occurs that the NVR will continue to record. The recommended recording length is 30 seconds but it can be set higher up to 5 minutes.

Show Message: Check the box to display "**S**" icon on the live view screen when the alarm is triggered.

Send Email: You can let the NVR to send you an auto-email when an alarm is triggered.

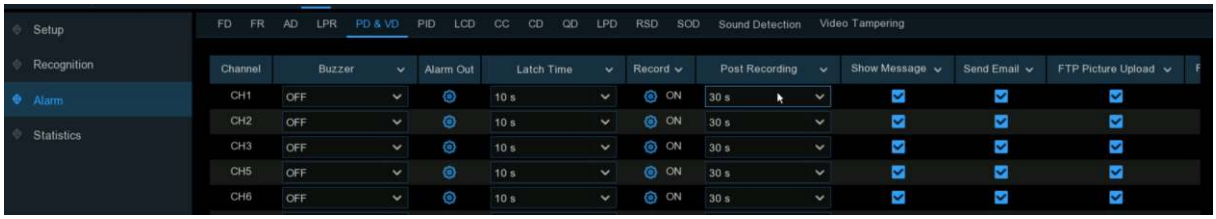
Full Screen: If this function is enabled and an alarm is triggered in a channel, you will see its full screen images in live view.

Event Push Platform: When an alarm is detected, it will send an alarm message to the third-party platform that the device is connected to.

Voice Prompts: If your NVR connects with a speaker, you can select a customized alert voice when the detection is triggered. See how to add customized alert voice on 5.3.6 Voice Prompts.
Default: Click "**Default**" to revert to default settings.
Copy: Use the "**Copy**" function to apply all settings to the other connected cameras.
Apply: Click "**Apply**" to save settings.

5.4.3.3 PD & VD (Human & Vehicle Detection) Alarm

To configure alarm actions when human beings and/or vehicles are detected.



Buzzer: When alarm event is detected, you can enable the NVR's buzzer to alert you for a predetermined amount of time. Click the drop-down menu to select a time.
Alarm Out: If your NVR or IP camera supports to connect external replay output devices, the system can send an alert message to the external alarm devices. Click button, to choose the external alarm devices:



Local: External alarm devices connected to the NVR.
CHx->1: External alarm devices connected to IP cameras.
Latch Time: To configure the external alarm time when the detection is triggered.
Record: This option instructs your NVR to trigger additional cameras to start recording when motion is detected. Click the drop-down arrow to choose all channels to be recorded or not.

Click button, click the "Record Channel" checkbox to enable recording. Click the checkbox in front of the channel number to select all channels or click on the individual camera number that you want to trigger for recording.

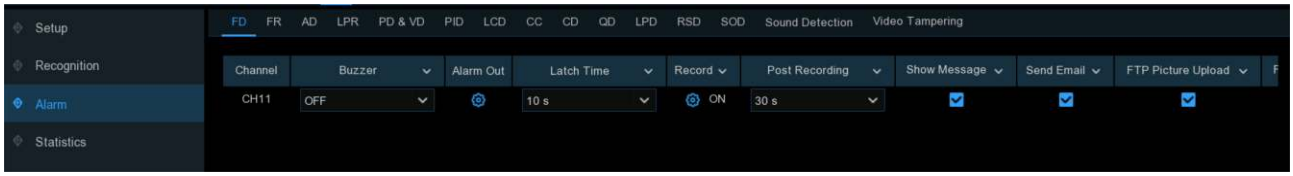


Post Recording: This option instructs your NVR to record for a set time after an event has occurred. For most instances, the default selection will be suitable, however, you can change this if you wish.

Show Message: When the detection is triggered, the alarm icon  will appear on screen.
Send Email: An email alert will be sent when alarm event is detected. Click the checkbox if you want to disable this.
FTP Picture Upload: Click the checkbox to copy snapshots to your ftp server when the detection is triggered.
FTP Video Upload: Click the checkbox to copy videos to your ftp server when the detection is triggered.
Picture to Cloud: Click the checkbox to copy snapshots to the cloud via Dropbox or Google Drive when the detection is triggered.
Video to Cloud: Click the checkbox to copy videos to the cloud via Dropbox or Google Drive when the detection is triggered.
Full Screen: Click the checkbox to view the camera full-screen in Live View mode when the detection is triggered.
Event Push Platform: When an alarm is detected, it will send an alarm message to the third-party platform that the device is connected to.
Voice Prompts: If your NVR connects with a speaker, you can select a customized alert voice when the detection is triggered. See how to add customized alert voice on 5.3.6 Voice Prompts.
Default: Click "**Default**" to revert to default settings.
Copy: Use the "**Copy**" function to apply all settings to the other connected cameras.
Apply: Click "**Apply**" to save settings.

5.4.3.4 FD/PID/LCD/CC/CD/QD/RSD/SOD/Sound Detection/Video Tampering Alarm/Intrusion/Region Entrance/Exiting Alarms

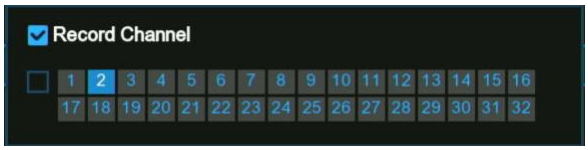
The setting method to configure alarm actions is same for FD, PID, LCD, CC, CD, QD, RSD, SOD, Sound Detection and Video Tampering.



Buzzer: When alarm event is detected, you can enable the NVR's buzzer to alert you for a predetermined amount of time. Click the drop-down menu to select a time.
Alarm Out: If your NVR or IP camera supports to connect external replay output devices, the system can send an alert message to the external alarm devices. Click button, to choose the external alarm devices:



Local: External alarm devices connected to the NVR.
CHx->1: External alarm devices connected to IP cameras.
Latch Time: To configure the external alarm time when the detection is triggered.
Record: This option instructs your NVR to trigger additional cameras to start recording when motion is detected. Click the drop-down arrow to choose all channels to be recorded or not. Click button, click the "Record Channel" checkbox to enable recording. Click the checkbox in front of the channel number to select all channels or click on the individual camera number that you want to trigger for recording.



Post Recording: This option instructs your NVR to record for a set time after an event has occurred. For most instances, the default selection will be suitable, however, you can change this if you wish.

Show Message: When the detection is triggered, the alarm icon will appear on screen.
Send Email: An email alert will be sent when alarm event is detected. Click the checkbox if you want to disable this.

FTP Picture Upload: Click the checkbox to copy snapshots to your ftp server when the detection is triggered.
FTP Video Upload: Click the checkbox to copy videos to your ftp server when the detection is triggered.
Picture to Cloud: Click the checkbox to copy snapshots to the cloud via Dropbox or Google Drive when the detection is triggered.
Video to Cloud: Click the checkbox to copy videos to the cloud via Dropbox or Google Drive when the detection is triggered.
Full Screen: Click the checkbox to view the camera full-screen in Live View mode when the detection is triggered.
Event Push Platform: When an alarm is detected, it will send an alarm message to the third-party platform that the device is connected to.
Voice Prompts: If your NVR connects with a speaker, you can select a customized alert voice when the detection is triggered. See how to add customized alert voice on 5.3.6 Voice Prompts.
Default: Click "**Default**" to revert to default settings.
Copy: Use the "**Copy**" function to apply all settings to the other connected cameras.
Apply: Click "**Apply**" to save settings.

5.4.4 Statistics

You are able to check and manage the statistics of **FR (Face Recognition), PD&VD (Pedestrian and Vehicle Detection), CC (Cross Counting)**, and **HM (Heat Map)** in this section.

5.4.4.1 FR (Face Recognition)

You can check the face recognition statistics in a certain period.



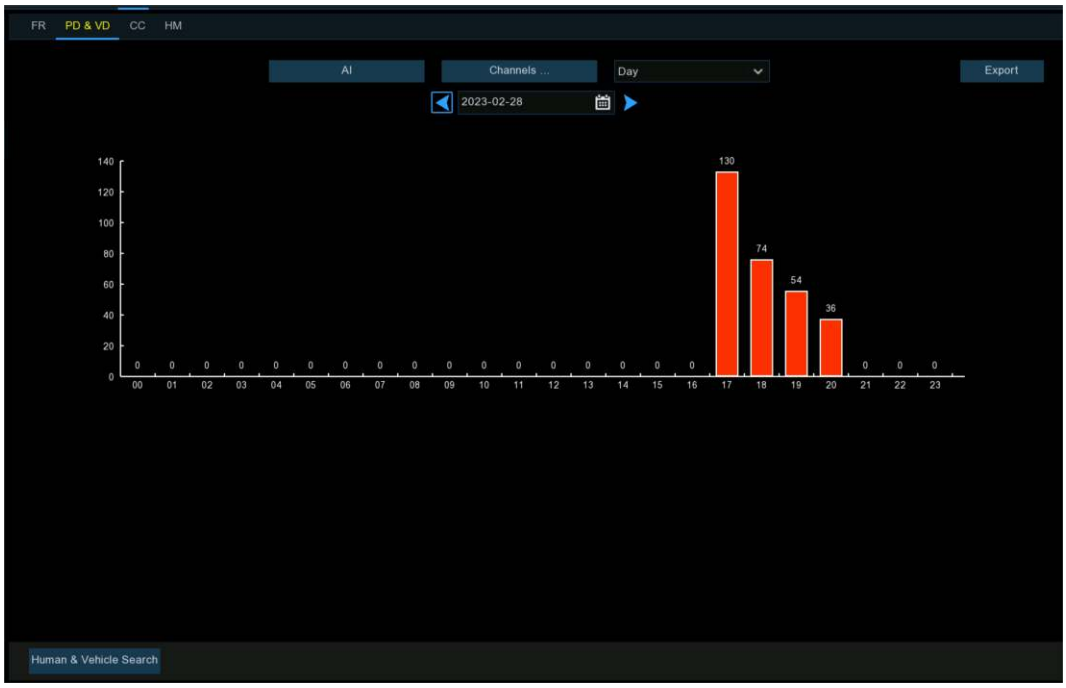
1. Choose the group(s) and channel(s).
2. Select the period from day, week, month, quarter and year.
3. Click the calendar icon to choose the date, and click ◀ or ▶ button to move to last or next period.
4. The statistics will be displayed in pie chart and column chart.
5. Click **Export** button if you want to export the data to USB memory.

Note: See the following sections for the functions of **Face Search, Repeat Visitors,** and **Face Attendance:**

- *7.1.9.1 Face Search*
- *7.1.9.4 Repeat Visitors*
- *7.1.9.5 Face Attendance*

5.4.4.2 PD&VD (Pedestrian and Vehicle Detection)

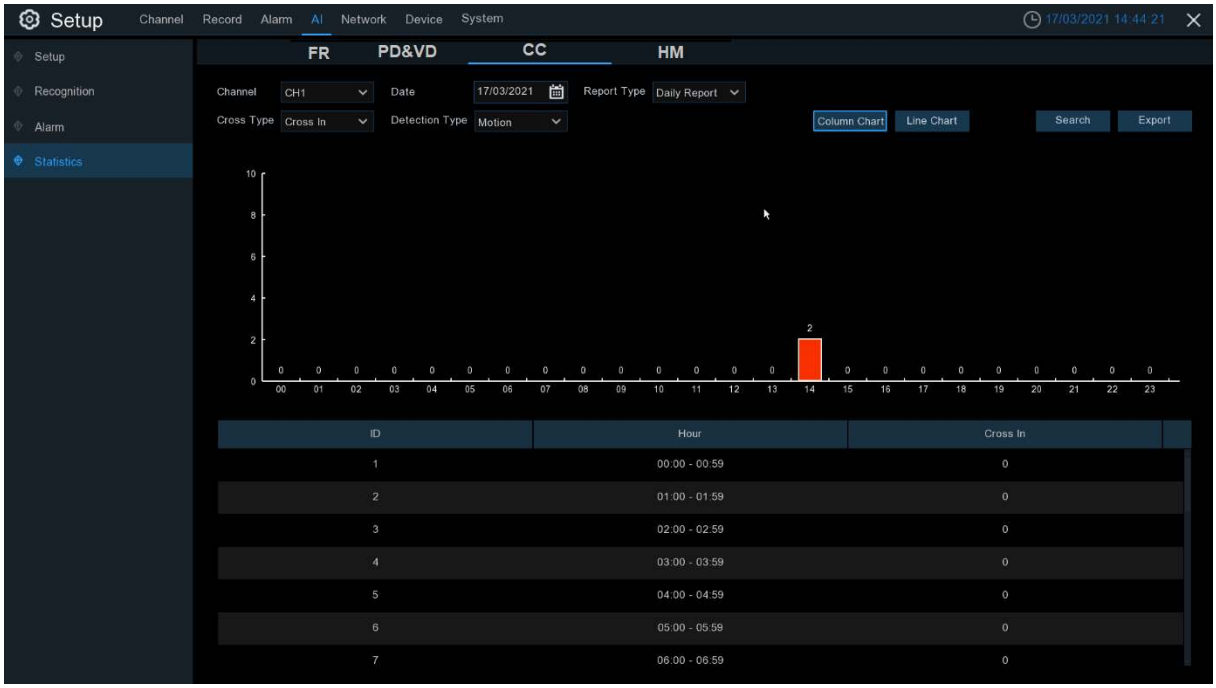
You can check the face recognition statistics in a certain period.



1. Choose the detection type in **Intelligent** / **AI.**
2. Choose the channel(s).
3. Select the period from day, week, month, quarter and year.
4. Click the calendar icon to choose the date, and click ◀ or ▶button to move to last or next period.
4. The statistics will be displayed in pie chart and column chart.
5. Click **Export** button if you want to export the data to USB memory.

5.4.4.3 CC (Cross-Counting)

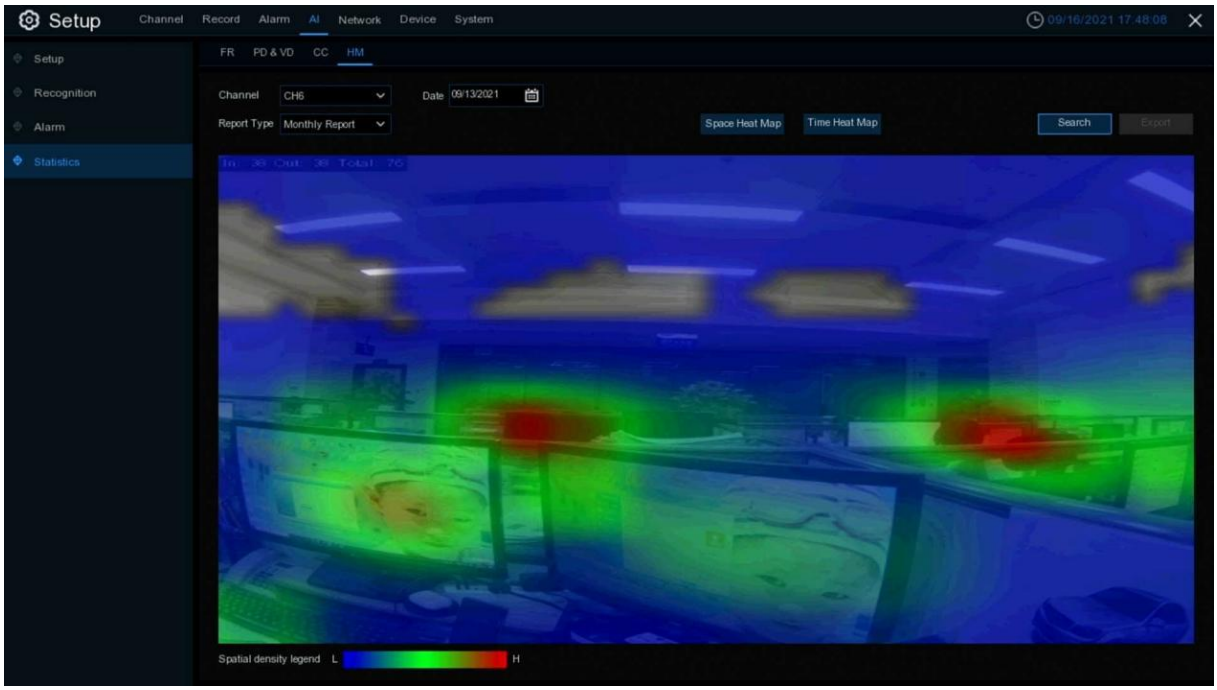
You can check the cross counting statistics in a certain period.



1. Choose the channel & date.
2. Choose the **Report Type**: Daily, Weekly, Monthly or Annually.
3. Choose the **Cross Type**: Cross In or Cross Out.
4. Choose the **Detection Type**: Motion, Person or Vehicle.
5. Click **Search** button, the result will be displayed in either **Column Chart** or **Line Chart**.
6. Click **Export** button if you want to export the data to USB memory.

5.4.4.4 HM (Heat Map)

You can check the heat map statistics in a certain period.



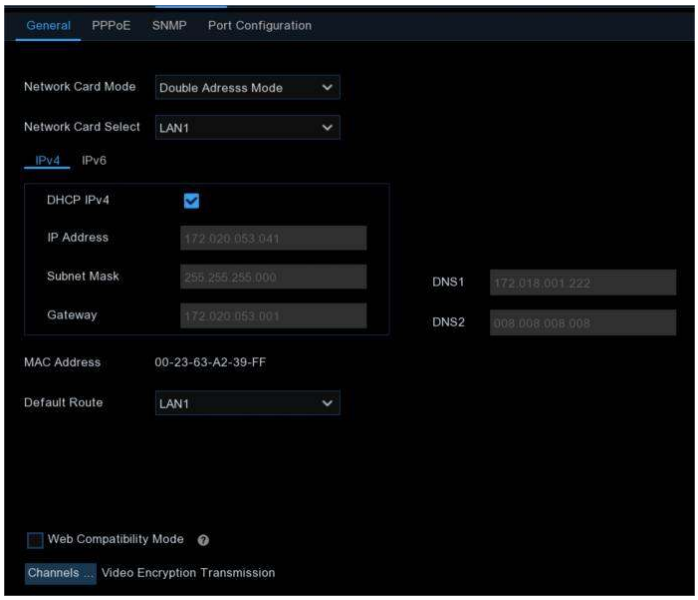
1. Choose the channel & date.
2. Choose the **Report Type**: Daily, Weekly, Monthly or Annually.
3. Set the **Start Hour** / **End Hour**.
4. Click **Search** button, the result will be displayed in either **Column Chart** or **Line Chart**.
5. The result can be displayed by Space & Time.

5.5 Network

This menu allows you to configure network parameters, such as PPPoE, DHCP. The most common types are DHCP. Most probably your network type is DHCP, unless the network is manually addressed. If you need an authentication user name and password to the Internet, then choose PPPoE.

5.5.1 General

5.5.1.1 General



Network Card Mode: Used for switching between Single Address Mode and Double Address Mode. After switching succeeds, the NVR is restarted.

Single Address Mode: In Single Address Mode, two network ports are bound to one IP address. You can select this mode to increase the bandwidth and form a redundant network card array to share the load. If one network port fails, the other network port will immediately take over all the load and the service will not be interrupted.

Double Address Mode: In Double Address Mode, two network ports are configured with IP addresses and gateways of different network segments respectively, and the two network ports are operating independently of each other. The LAN port for connecting the external network should be configured as the default route.

Network Card Select: Used for setting whether to display the network parameter information of LAN1 or LAN2. This option is not available in Single Address Mode.

DHCP IPv4: To connect a router that allows DHCP, select this option. the router automatically assigns all the IPv4 network parameters to the NVR. If you do not select this option, the IP address, subnet mask, gateway, and DNS will automatically change back to the setting when you unchecked the option last time. (Note: Currently, DHCP IPv6 is not supported.)

IP Address: The IP address is the identification of the NVR in the network. An IP address consists of four numbers between 0 and 255, separated by periods, for example, 192.168.001.100.

Subnet Mask: A subnet mask is a network parameter that defines the range of IP addresses that can be used in the network. A subnet address consists of four numbers, separated by periods, for example, 255.255.000.000.

Gateway: The IP address of the gateway of the network where the device is located. The default value is 192.168.001.001.

DNS1/DNS2: DNS1 is the preferred DNS server and DNS2 is the alternate DNS server.

IPv6 Address: The IPv6 address is the identification of the NVR in the network. An IPv6 address consists of eight numbers between 0 and FFFF, separated by colons. For example, ABCD:EF01:2345:6789:ABCD:EF01:2345:6789.

Subnet Prefix Length: Subnet prefix length.

IPv6 Gateway: The IP address of the IPv6 gateway of the network where the device is located.

Default Route: In the dual-access mode, set the LAN port to the external network as the default route. Note that this option is unavailable for Single Address Mode.

Web Compatibility Mode: If the device cannot be accessed through the Web, you can select this option to have a try. Insecure encryption is used when this option is enabled. Thus you must be careful in selecting this option.

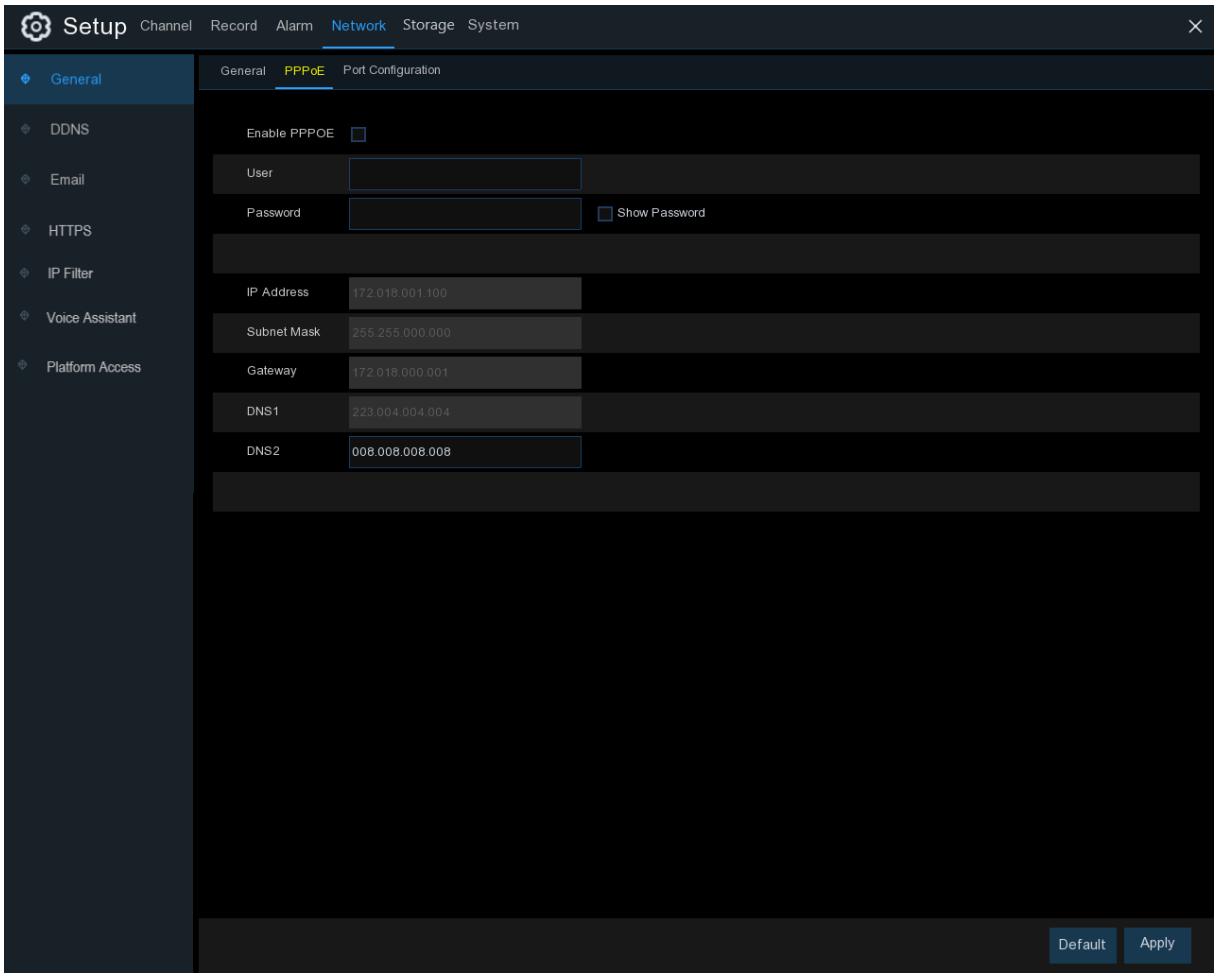
Channels…: Click this button to set the channels for encrypting and transmitting video streams to clients.

Video Encryption Transmission:

Note:

1. In Single Network Card Mode, the device can access the network through either of the two LAN ports. If both LAN ports are connected to network cables, they must be connected to the same switch.
2. In Double Network Card Mode, the two LAN ports cannot be connected to the same switch.

5.5.1.2 PPPoE



This is an advanced protocol that allows the NVR to connect to the network more directly via DSL modem.

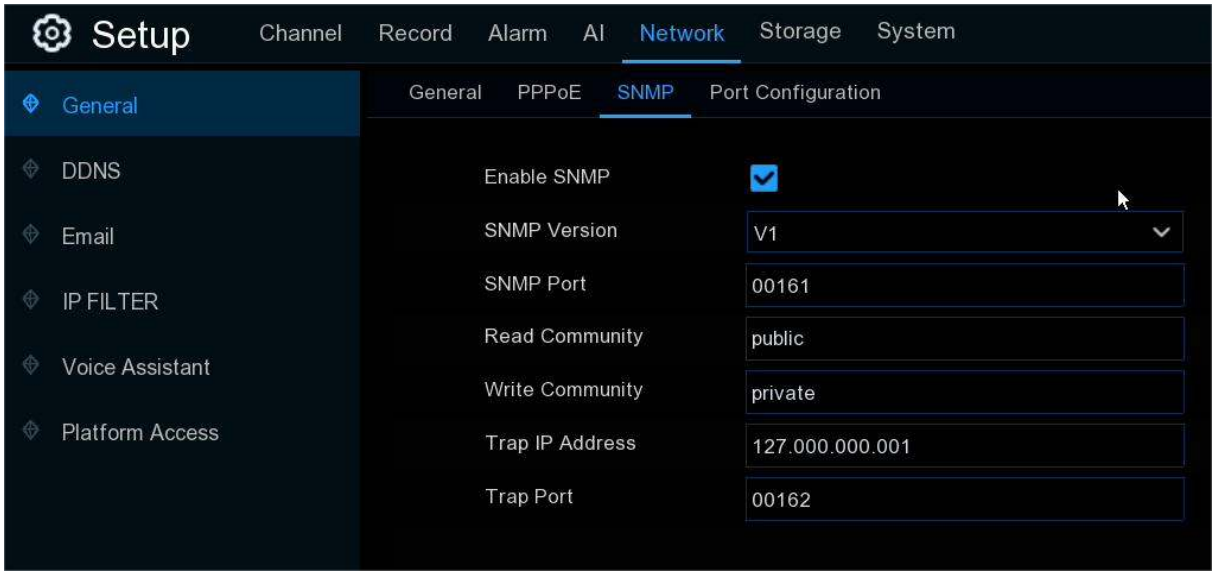
Check the “Enable PPPOE” box, and then enter the User name & Password of the PPPoE.

Click **Apply** to save, system will reboot to active the PPPoE setting.

5.5.1.3 SNMP

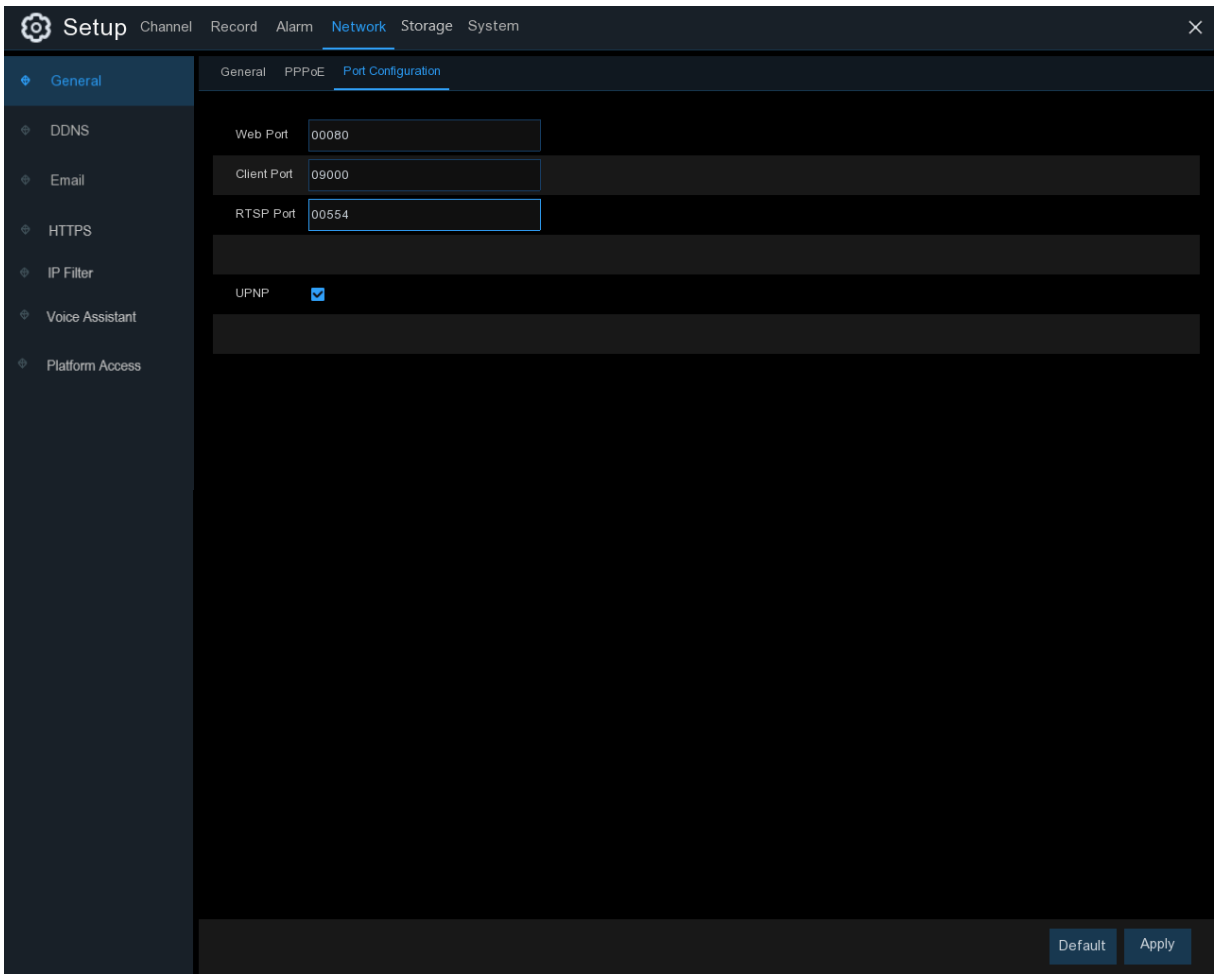
SNMP (Simple Network Management Protocol) is an Internet Standard protocol for collecting and organizing information about managed devices on IP networks and for modifying that information to change device behavior.

With the SNMP, you are allowed to connected the NVR with 3rd party network management platform and acquire the NVR information, such as firmware version number, device type, resolution, frame rate, etc.



5.5.1.4 Port Configuration

GV-RNVR256G0-N



http/https/rtsp: This port is mostly used to log into your NVR via webpage or 3rd party streaming player by rtsp protocol. If the default port number (80) is used by other devices in the network, you may need to change it.

Client Port: This is the internal port that your NVR will use to send information through. This particular port number (9000) is not used by many devices, however, if you have another NVR-like device, you may need to change it.

Internal Port: It is mostly used to access the NVR from the same LAN.

External Port: It is mostly used to access the NVR from a different LAN or internet. You need to forward the external ports to internet from your router manually If you want to access your NVR via internet, which would be a little more complicated for users without network knowledge. Using **UPNP** would make it easier.

Web Port: This is the port that you will use to log in remotely to the NVR (e.g. using the Web Client). If the default port 80 is already taken by other applications, change it.

RTSP Port: Default is 554, if the default port 554 is already taken by other applications, change it.

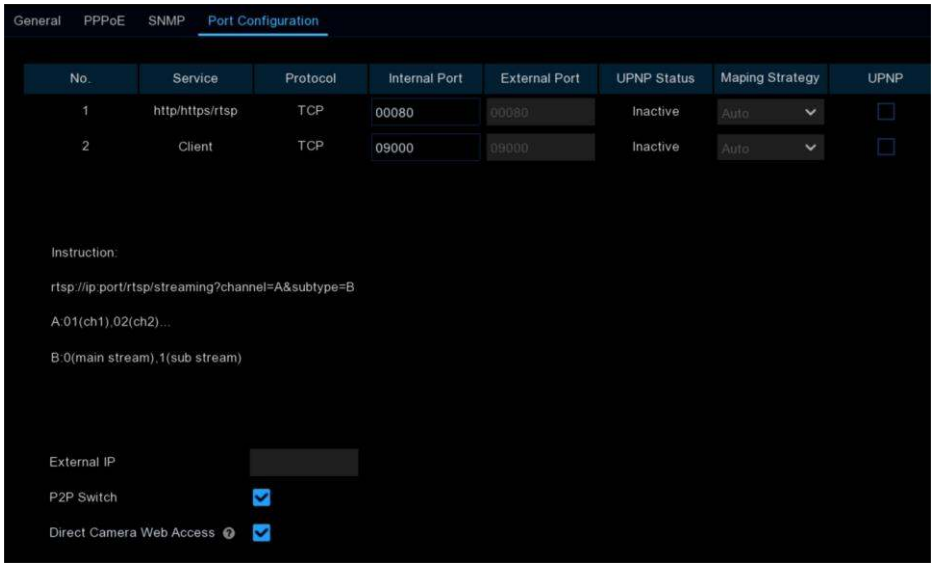
UPNP is a network protocol designed to allow network-connected devices to automatically obtain and forward the ports from the router.

1. Tick the checkbox of "**UPNP**".
2. Choose "**Auto**" on Mapping Strategy, the external port will be automatically obtained and forwarded from your router.
3. If you want to change the external port by manual, choose "**Manual**" on Mapping Strategy and then modify the port accordingly.

P2P Switch: Click to enable P2P function.

IP Camera Hyperlink: This advanced feature allows to visit the webpage of the IP cameras which are connected to the NVR when you're accessing in the NVR's webpage. Tick the checkbox to enable this feature and click "**Apply**" to save, you will find the hyperlink of each capable IP camera on the NVR's webpage. This is not a universal feature for all IP cameras. It varies with models or firmware versions.

GV-RNVRL810-P / GV-RNVR3240-N



http/https/rtsp: This port is mostly used to log into your NVR via webpage or 3rd party streaming player by rtsp protocol.

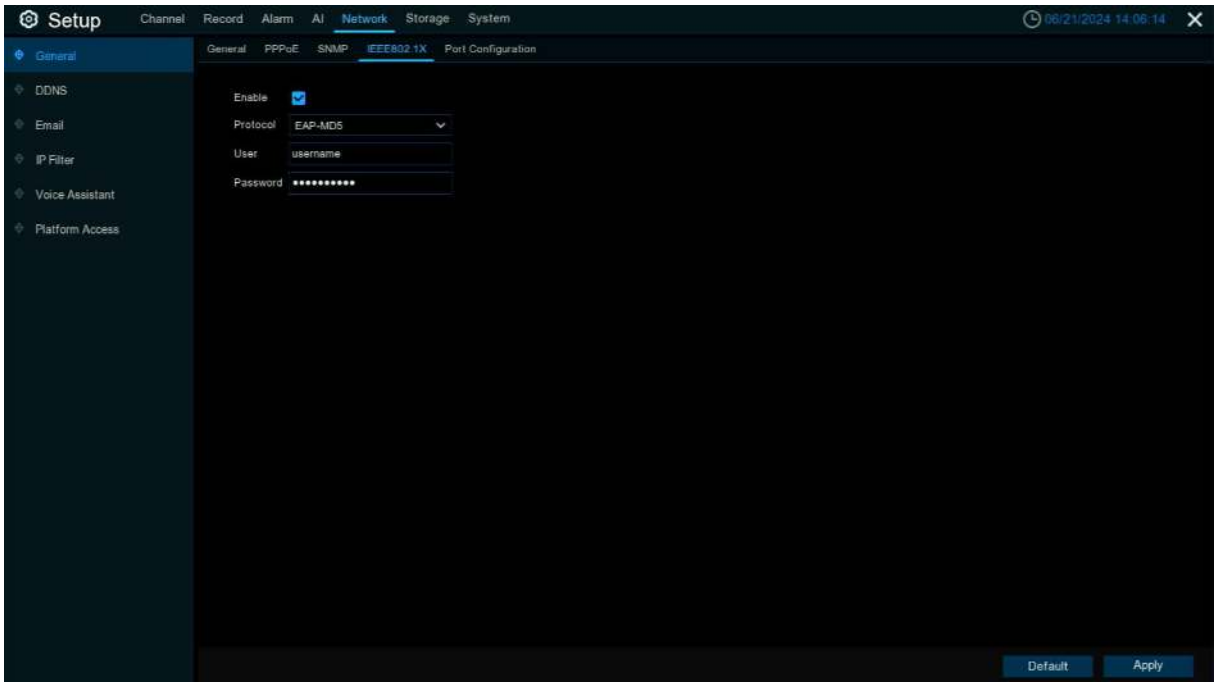
UPNP: If you want to log in remotely to the NVR using Web Client via different router/LAN, you need to complete the port forwarding in your router. Enable this option if your router supports the UPNP. In this case, you do not need to configure manually port forwarding on your router. If your router does not support UPNP, make sure the port forwarding is completed manually in your router.

Mapping Strategy: Select "Manual" for mapping type, users can edit and set the external port (the port on the router); if it is "Auto", a random external port (different from the internal port) will be mapped.

External IP: The device's external IP.

P2P Switch: P2P switch, when off, users will not be able to access the device with P2P ID.
Direct Camera Web Access: Enable to access IPC's WEB page via hyperlink on NVR's Web side.

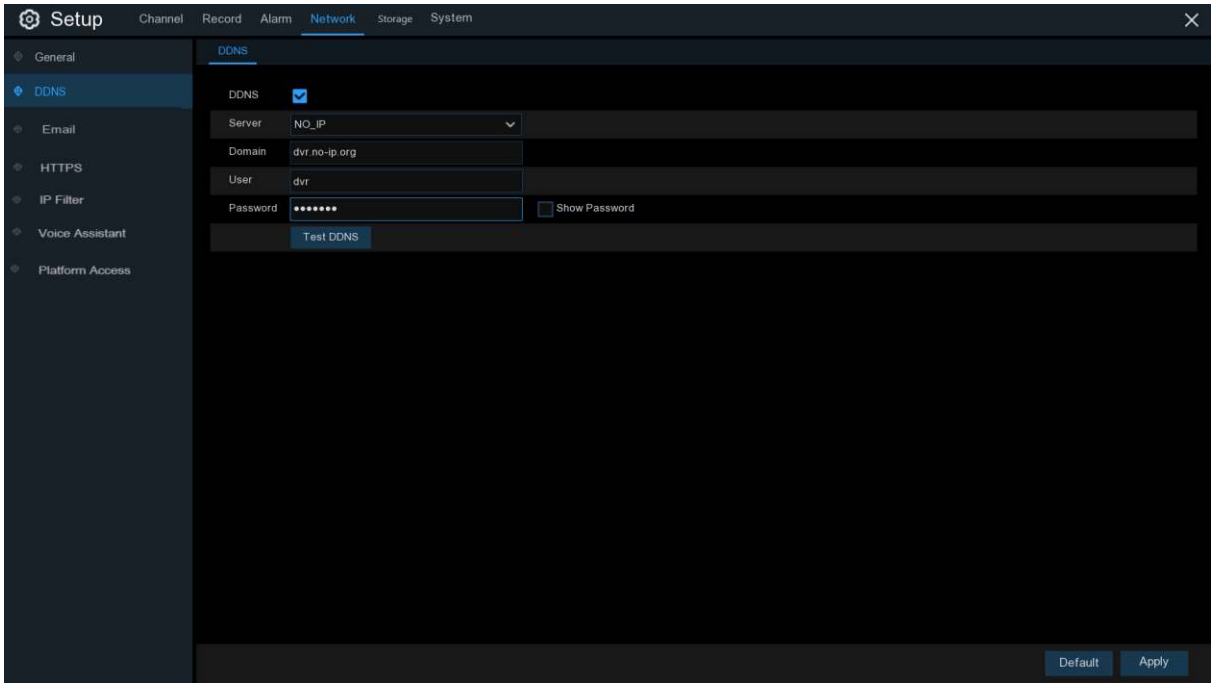
5.5.1.5 IEEE802.1X



Enable: Used to turn on or off IEEE802.1X.
Protocol: Select the desired authentication method.
Username / Password: The username and password must be the same with the username and password applied for and registers in the authentication server.

5.5.2 DDNS

This menu allows you to configure DDNS settings. The DDNS provides a static address to simplify remote connection to your NVR. To use the DDNS, you first need to open an account on the DDNS service provider's web page.

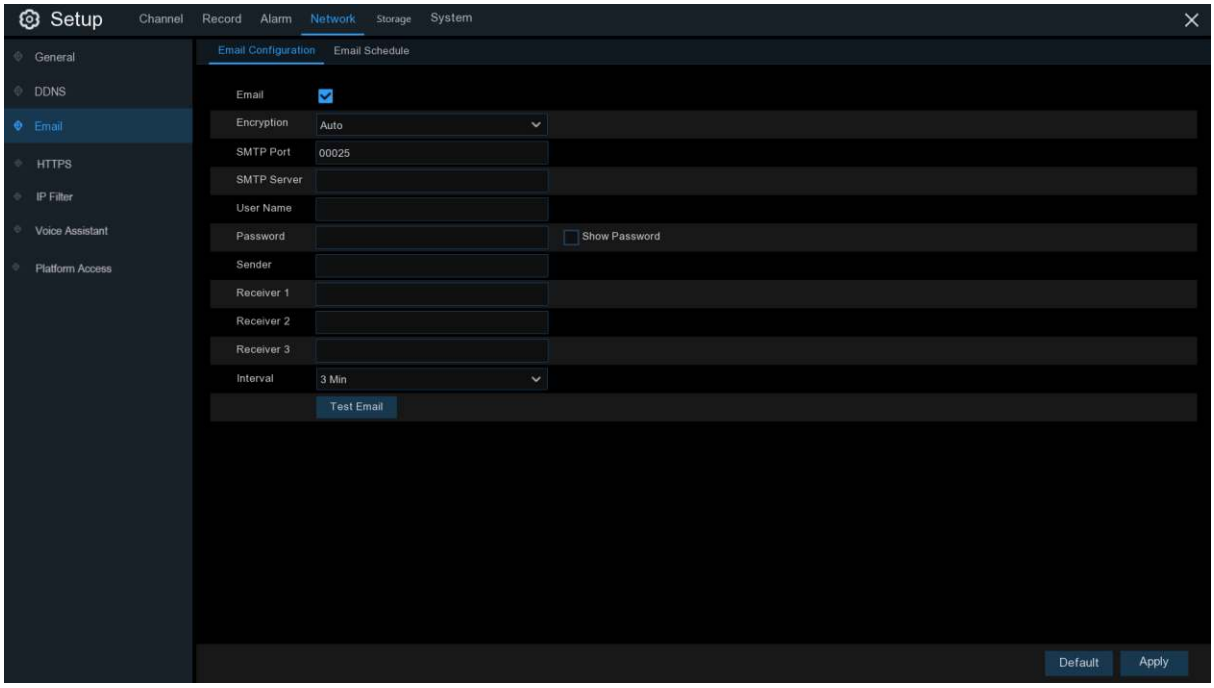


DDNS: Check to enable DDNS.
Server: Select the preferred DDNS server (DDNS_3322, DYNDNS, NO_IP, CHANGEIP, DNSEXIT, GeoDDNS).
Domain: Enter the domain name you created on the DDNS service provider's web page. This will be the address you type in the URL box when you want to connect remotely to the NVR via PC. Fox example: NVR.no-ip.org.
User/Password: Enter the user name and password you obtained when creating an account on the DDNS service provider's web page.

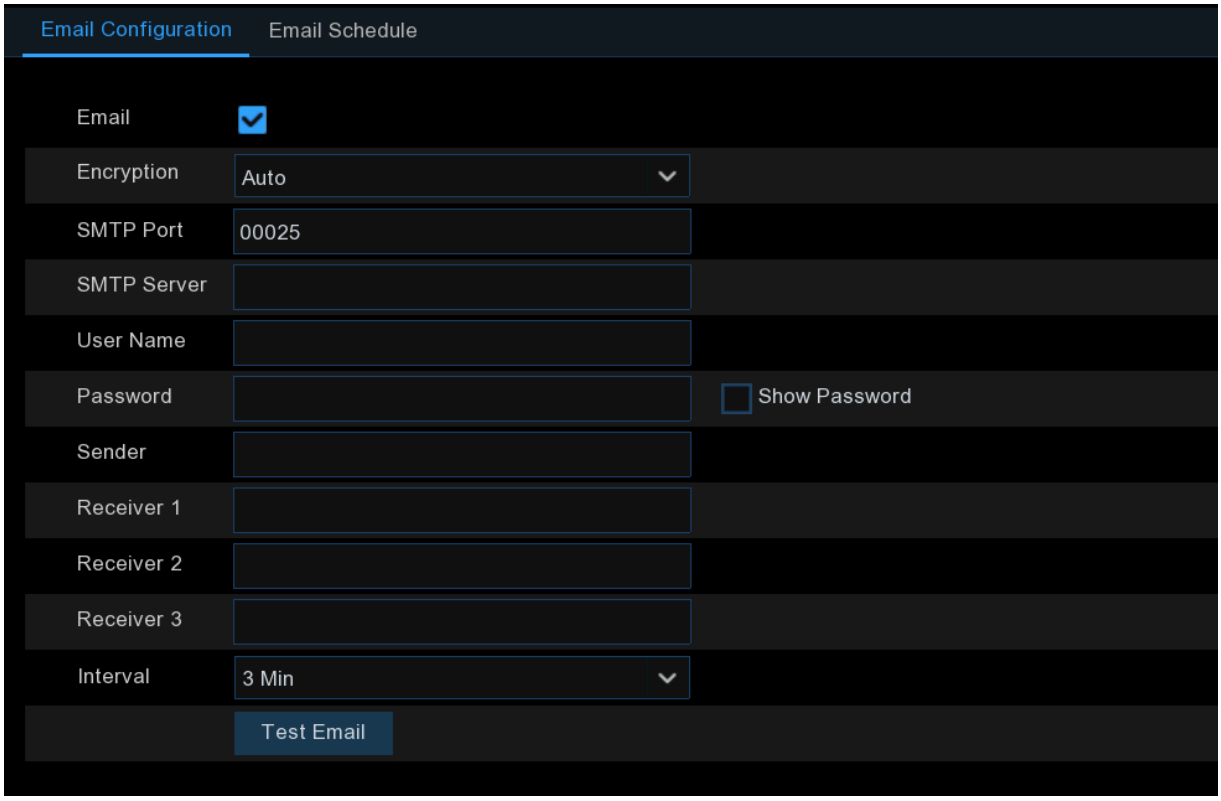
After all parameters are entered, click **Test DDNS** to test the DDNS settings. If the test result is "Network is unreachable or DNS is incorrect", check whether the network works fine, or the DDNS information is correct or not.

5.5.3 Email

This menu allows you to configure email settings. Complete these settings if you want to receive the system notifications on your email when an alarm is triggered, HDD becomes full, HDD is in error state, or Video Loss occurs.



5.5.3.1 Email Configuration



Email: Check to enable.
Encryption: Enable if your email server requires the SSL or TLS verification. If you are not sure, set to be **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 the password of your email.
Receiver 1~3: Enter the email address where you want to receive the event notifications from the NVR.
Interval: Configure the length of the time interval between the notification emails from the NVR.

To make sure all settings are correct, click **Test Email**. The system sends an automated email message to your inbox. If you received the test email, it means the configuration parameters are correct.

5.5.3.2 Email Schedule

If email alerts are enabled on your NVR, alerts would be emailed 24 hours as default. You can change the schedule when your NVR can send those alerts. For example, you may only want to receive alerts during the day but not in the evening. An alternative schedule can be created for each camera.



The color codes on email schedule have the following meanings:
Green: Slot for Motion detection.
Yellow: Slot for I/O Alarm (optional).
Red: Slot for Exception (HDD full, HDD error, or Video Loss).
Blue: Slot for Intelligent Analysis / AI detection.

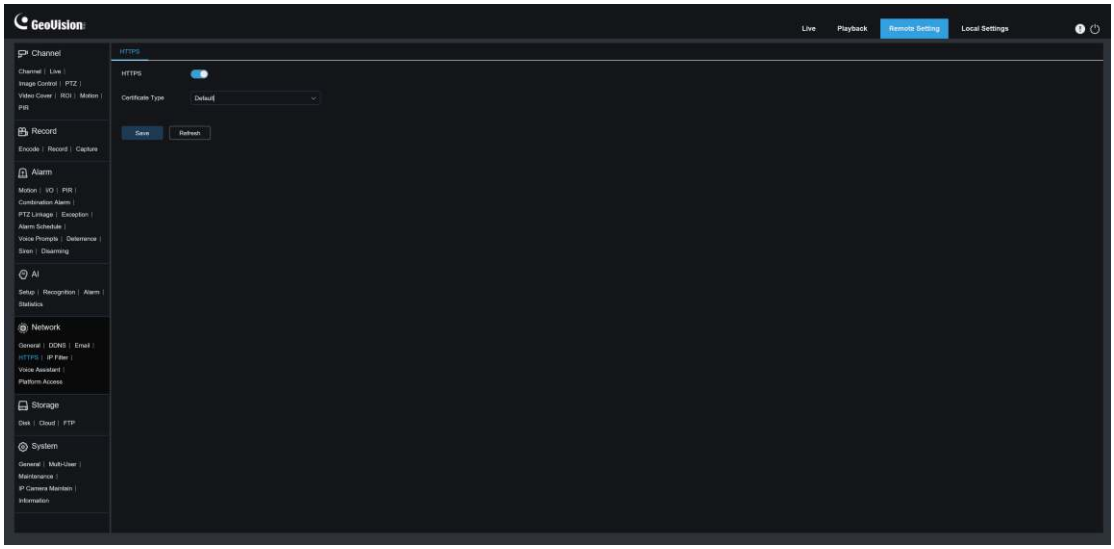
5.5.4 HTTPS

HTTPS is an HTTP channel aimed at security, ensuring the security of the transmission process through encrypted transmission and identity authentication based on HTTP.

You can configure the HTTPS protocol on this menu. Devices can be connected using the HTTPS protocol.

Note:

1. This function is only available on the Web interface.
2. Use the following command to access the Web interface of the NVR: https:<IP address>:<port>.



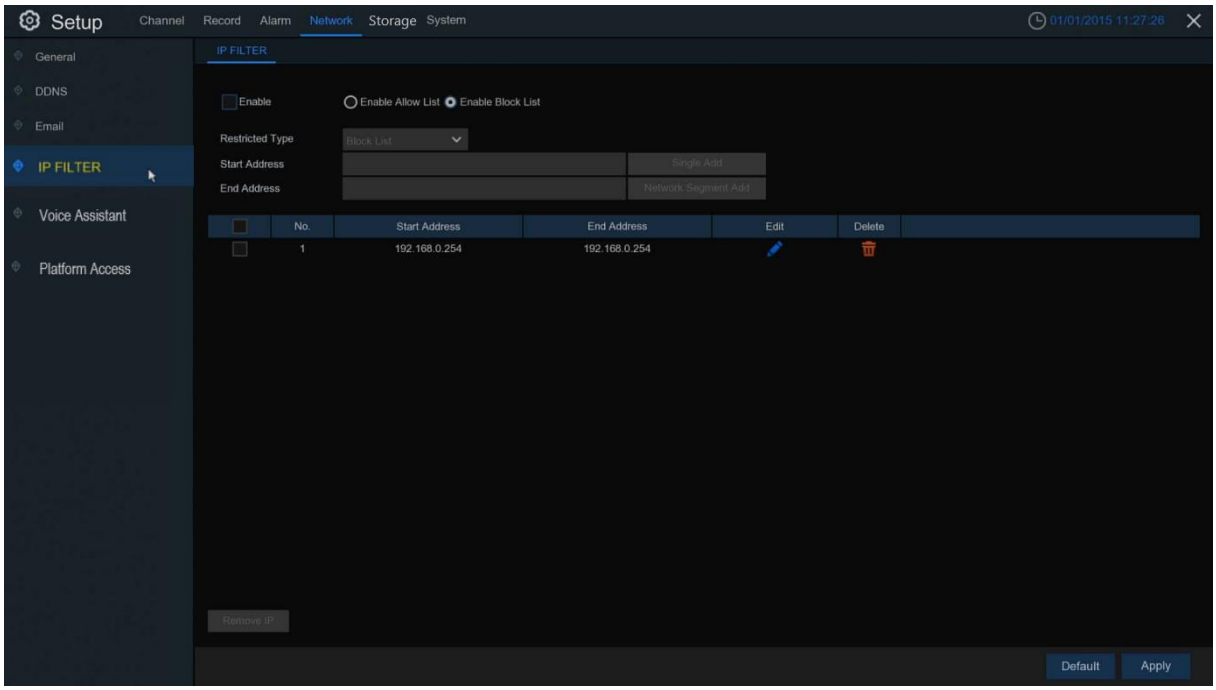
Certificate Type: Authentication types, including Default and Custom. Users can use their own certificates to connect devices with the Custom option.

Certificate: Under the Custom type, select a custom certificate.

Key: Under the Custom type, select a custom Key file.

5.5.5 IP Filter

This function allows you to set a allow list and black list so that only the IP addresses on the allow list can connect to the device.



Enable: Enable or disable the IP filter function. Once enabled, you can select to filter the IP addresses by allow list or black list.

Restricted Type: Select the list (**Black List** or **Allow List**) to finish relevant configurations.

Single Add: Enter the IP address to add to the list.

Network Segment Add:

- **Start Address:** Input the **Start Address.**
- **End Address:** Input the **End Address.**

Allow List: It includes a range of IP addresses you define that indicates what IP addresses are allowed to access your NVR to prevent unauthorized IP addresses from logging into your NVR.

1. Tick the checkbox of Enable to activate the IP filter function.
2. Click on the ratio button of "**Enable Allow List**".
3. Choose "**Allow List**" from "**Restricted Type**".
4. If you want to add individual IP address into the allow list, click "**Single IP Address**" to input the IP address. If you want to add a block of IP addresses, click "**IP Address Range**" to input the start IP address and end IP address.
5. Click **Save**. Only IP address(es) from the Allow List can access your NVR now.

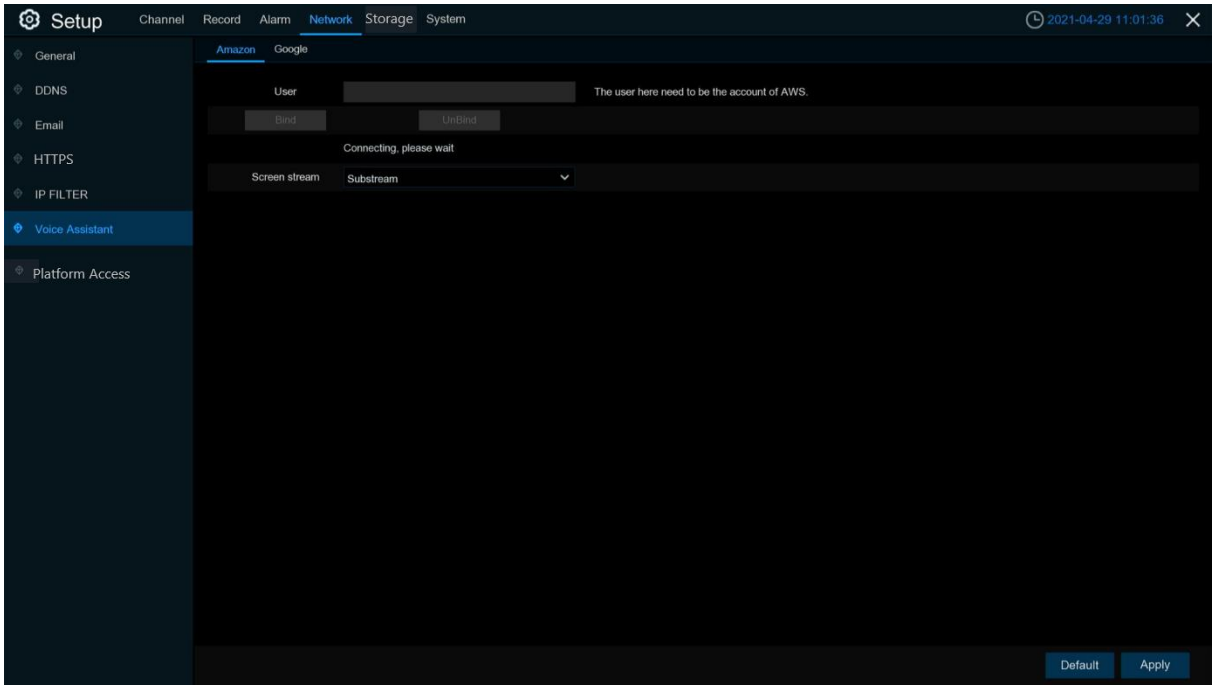
Block List: It includes a range of IP addresses you define that indicates what IP addresses are forbidden to access your NVR to prevent unauthorized IP addresses from logging into your NVR.

1. Tick the checkbox of Enable to activate the IP filter function.
2. Click on the ratio button of "**Enable Block List**".
3. Choose "**Block List**" from "**Restricted Type**".
4. If you want to add individual IP address into the allow list, click "**Single IP Address**" to input the IP address. If you want to add a block of IP addresses, click "**IP Address Range**" to input the start IP address and end IP address.
5. Click **Save**. IP address(es) from the Block List is forbidden to access your NVR now.

5.5.6 Voice Assistant

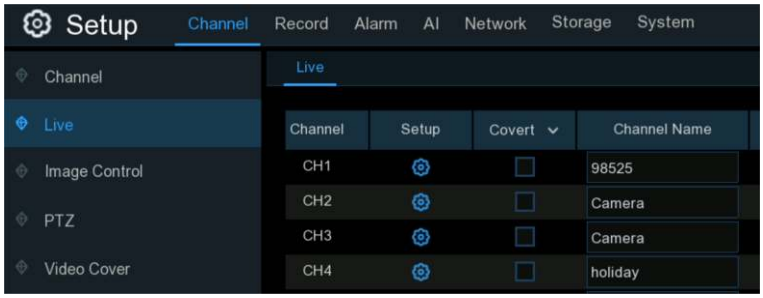
The voice assistant function allows to connect your NVR to your GoogleCast or Amazon Fire TV Stick, and cast the real-time surveillance images on your TV monitor by voice control.

Note: This function only supports a maximum of one channel live view.

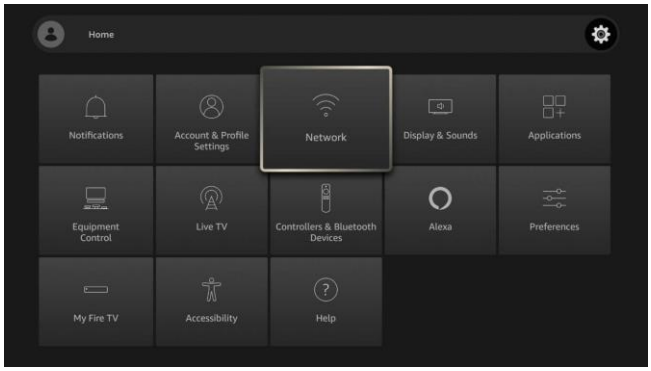


5.5.6.1 Voice Assistant with Amazon Fire TV Stick

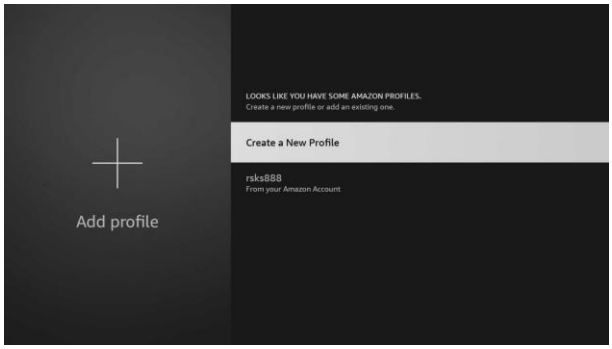
1. Input your Amazon account, and the click "**Bind**" button to bind your Amazon account. Then choose the video stream you want to cast on your TV monitor.
2. Go to Channel –> Live menu, and give a Channel Name which is easy to call to the channel(s) you want to cast on your TV monitor.

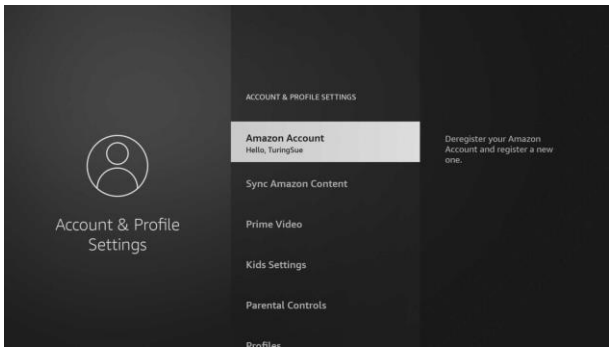


3. Connect the Fire TV Stick to your TV monitor, and power on it. Connect the Fire TV Stick to the Wi-Fi which is in the same LAN with your NVR.



4. To use your existing profile or add a new profile and login your Amazon account which is same as the one you bind to the NVR.

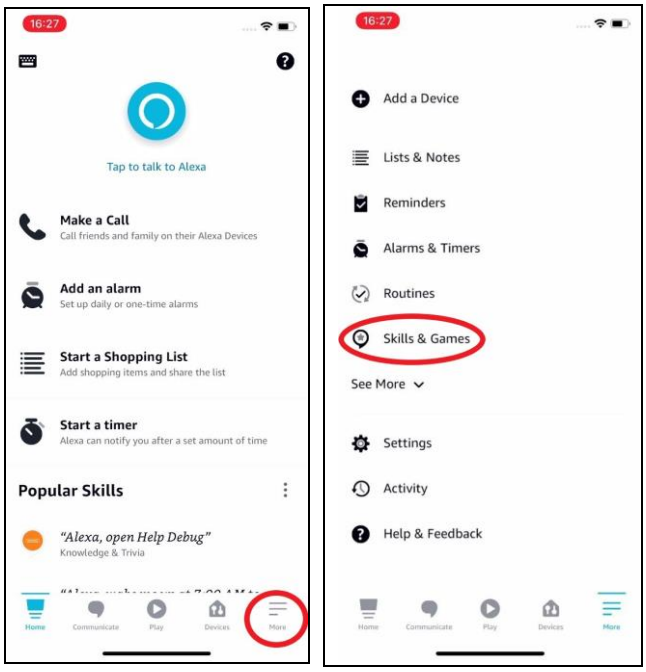




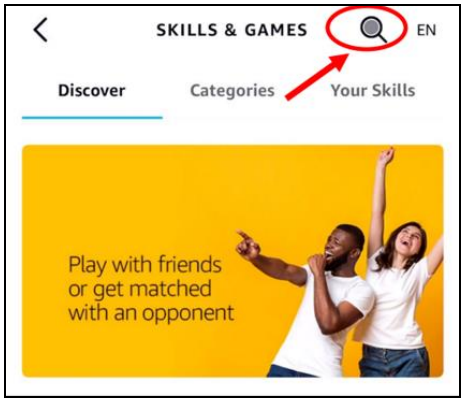
5. Search and install Amazon Alexa to your mobile phone from app store, and then login with the Amazon account which is same as the one you bind to the NVR.



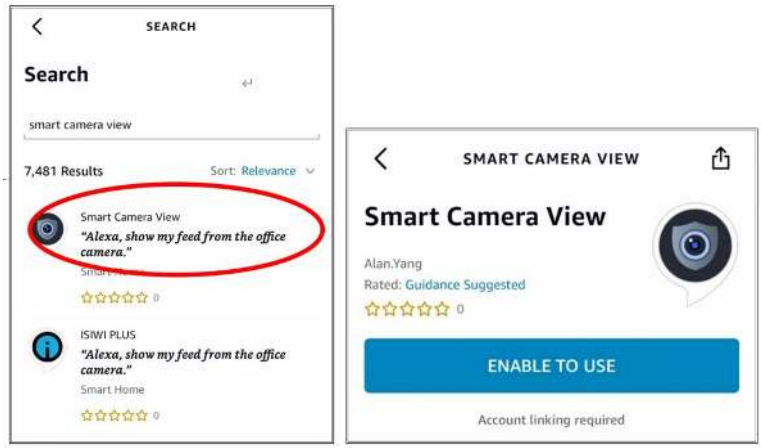
6. Touch "**More**", and then touch "**Skills & Games**".



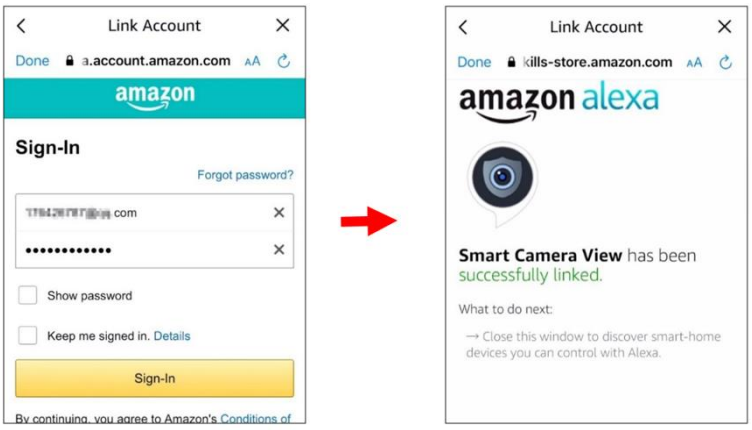
7. Touch the search icon on the top right corner.



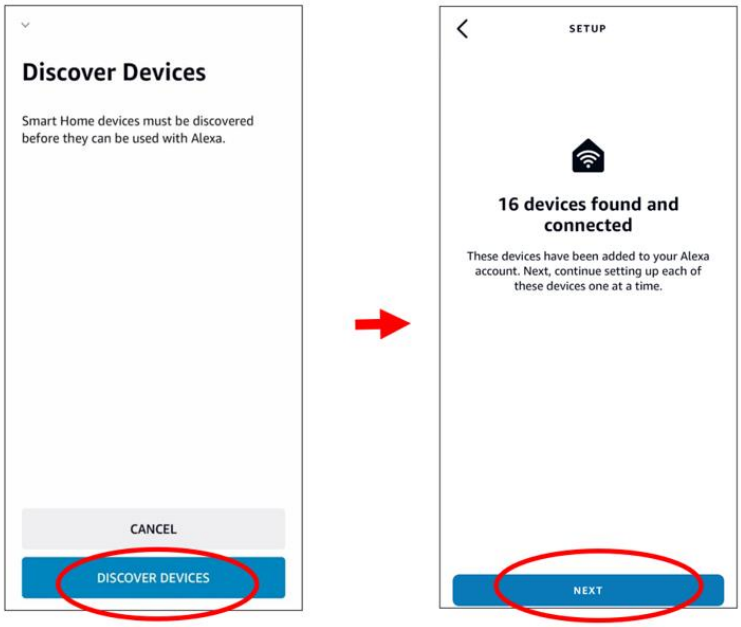
8. Input the keyword: smart camera view, and search.
9. Touch the "**Smart Camera View**" app in the search result list. And then Touch "**ENABLE TO USE**".



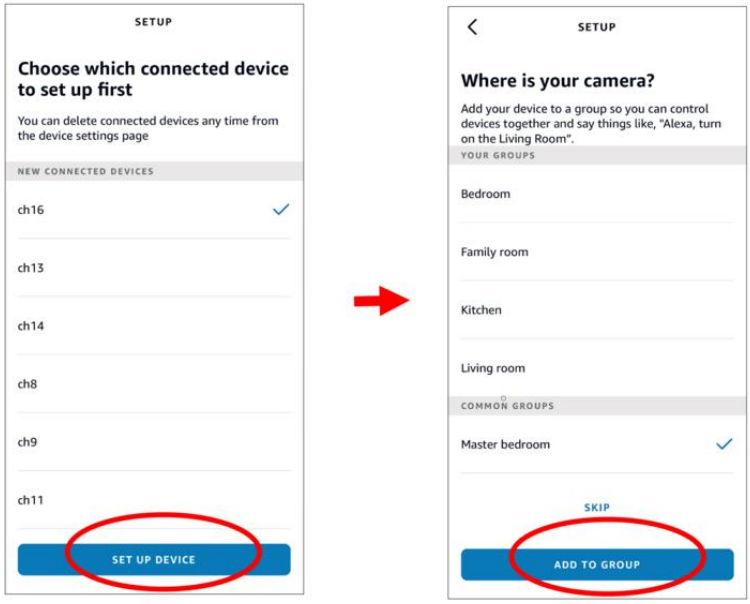
10. You would need to link your Amazon account. Sign in the Amazon account which is same as the one you bind to the NVR. Touch "**Done**" after the skill is successfully linked.



11. Touch "**DISCOVER DEVICES**" and wait a moment for the app to search the cameras. Touch "**Next**" when the devices were found and connected.



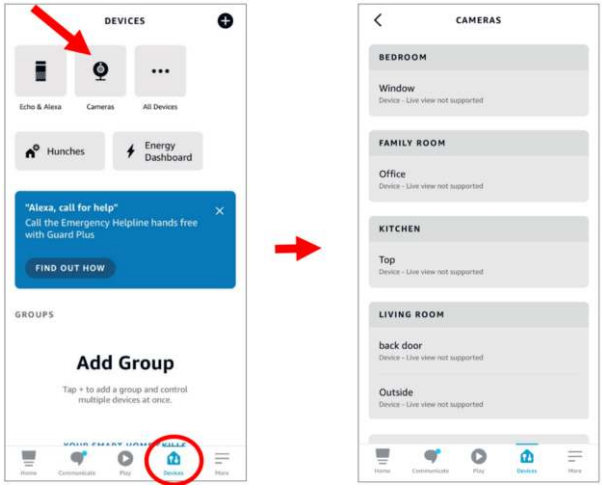
12. Choose one of the devices and then touch "**SET UP DVICE**". You can add the camera to a group or skip.



13. Repeat setup 12 to add all cameras and then touch "**Done**" to finish.



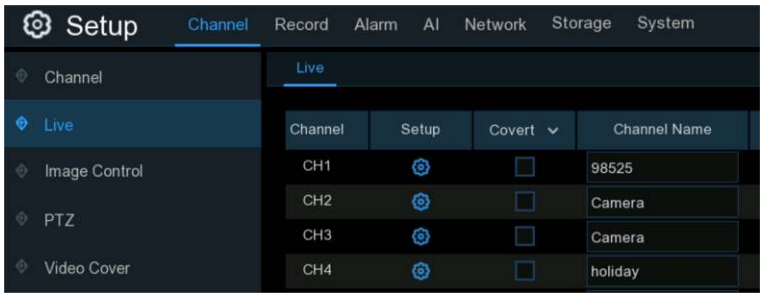
14. All added cameras will be listed in the Devices. Touch the “**Cameras**” icon to check all added cameras.



15. Press and hold on the voice button on the remote controller of the fire TV stick, and speak the command clearly. The command could be like: Show the XXX camera / Show XXX. XXX is the camera channel name. For example, if the channel name is "Office", you could speak "Show my office camera".
16. Wait for a while, you will see the real time images from the Office camera on your TV monitor.
17. If you want to quit the camera live view, speak "Stop".
18. If you have changed the channel name, you would need to discover and add the camera again.

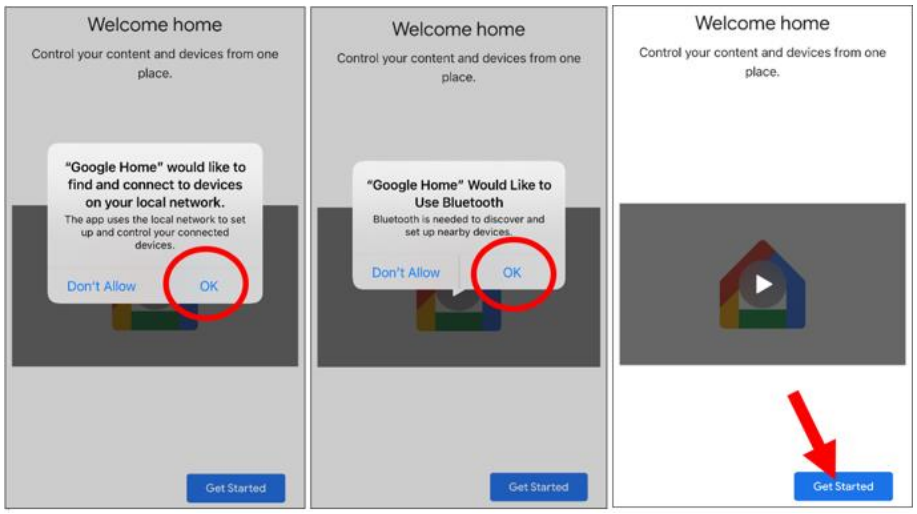
5.5.6.2 Voice Assistant with Google Chromecast

1. Input your Google account, and the click "**Bind**" button to connect to bind your Google account. To choose the video stream you want to cast on your TV monitor.
2. Go to Channel – Live menu, and give a Channel Name which is easy to call to the channel(s) you want to cast on your TV monitor.

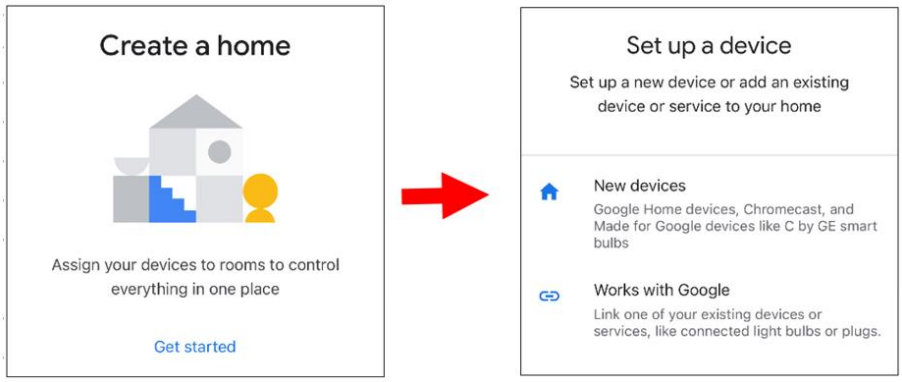


3. Connect the Chromecast to your TV monitor, and power on it.

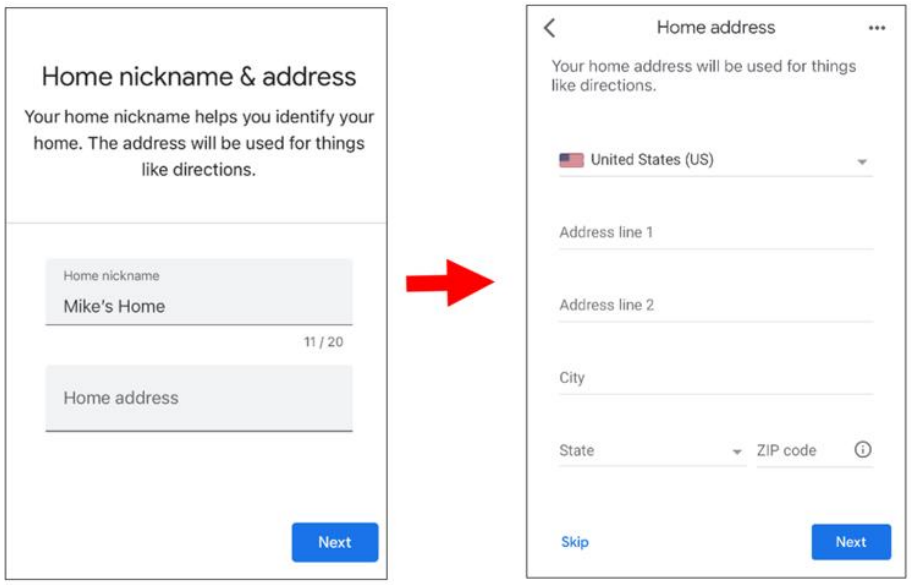
4. Search and install Google Home app to your mobile phone from app store. Run the installed Google Home app, touch "**OK**" to allow the app to use your local network and Bluetooth and then touch "**Get Started**".



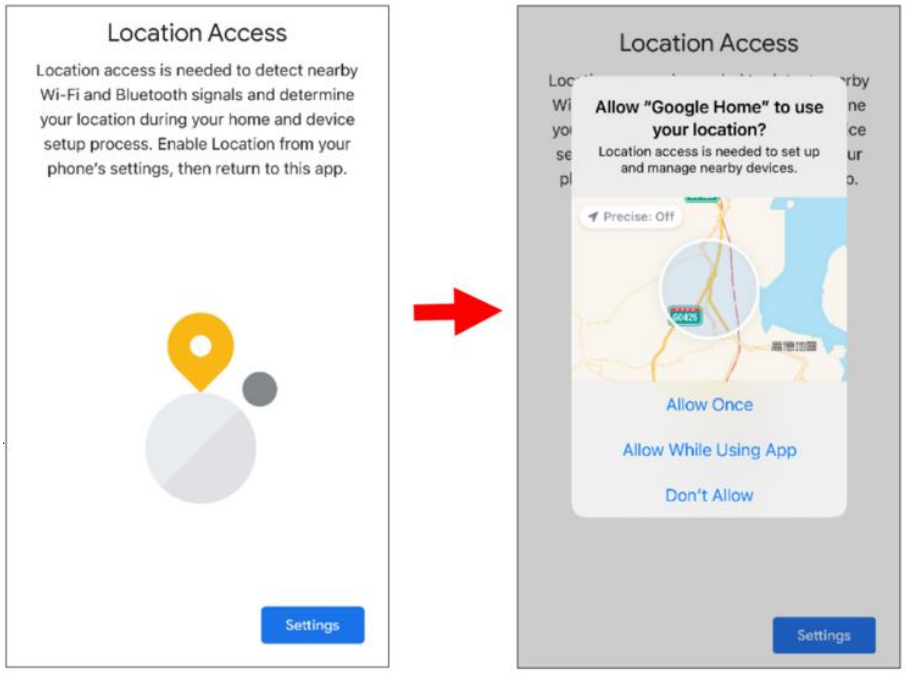
5. To log in your Google account which is the same as the one you bind to the NVR.
6. Touch "**Get Started**" to create a home, and then touch "**New devices**."



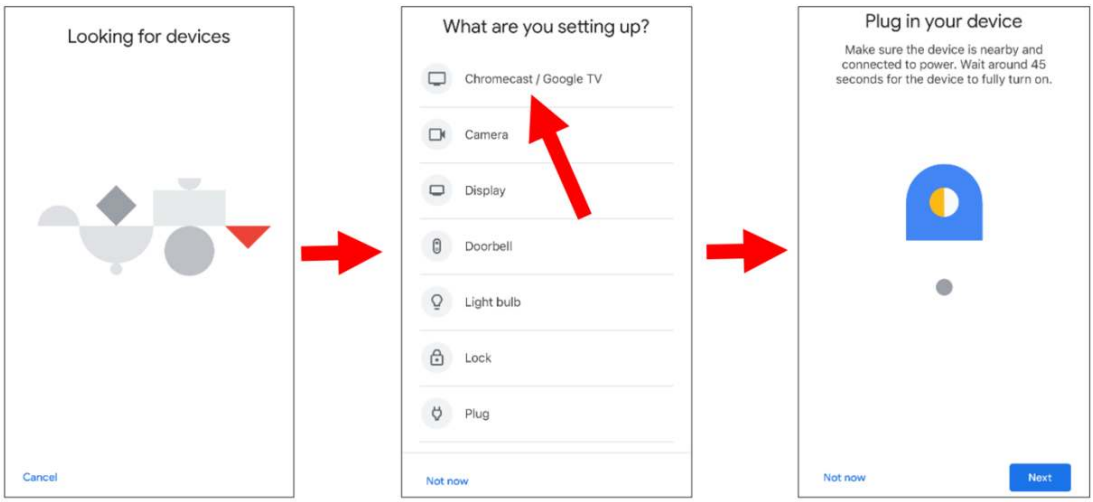
7. Input the Home nickname and address and then touch “Next”.



8. To allow location access for the app.



9. The app will automatically try to search devices from your local network. Choose Chromecast / Google TV. Make sure your Chromecast is turned on already, then touch "**Next**".



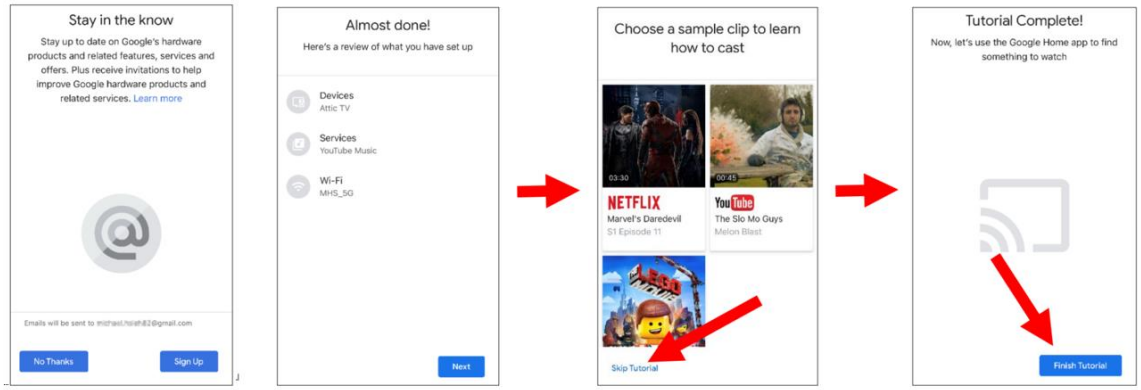
10. Your Chromecast will be found. Touch "**Next**" to connect. Confirm the code by touching "**Yes**".



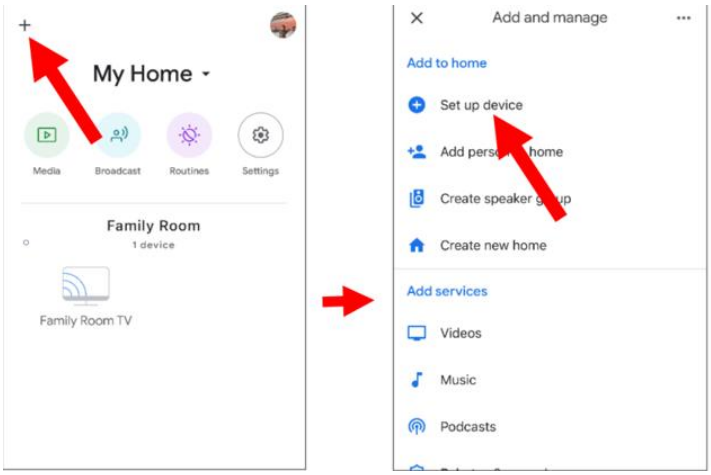
11. Choose a location for your Chromecast, then touch "**Next**".
12. Choose the Wi-Fi network for your Chromecast and input the Wi-Fi password to connect. Make sure the Wi-Fi you choose is the same one with your mobile phone and is in the same local network with your NVR. Touch "**Continue**" to next step.



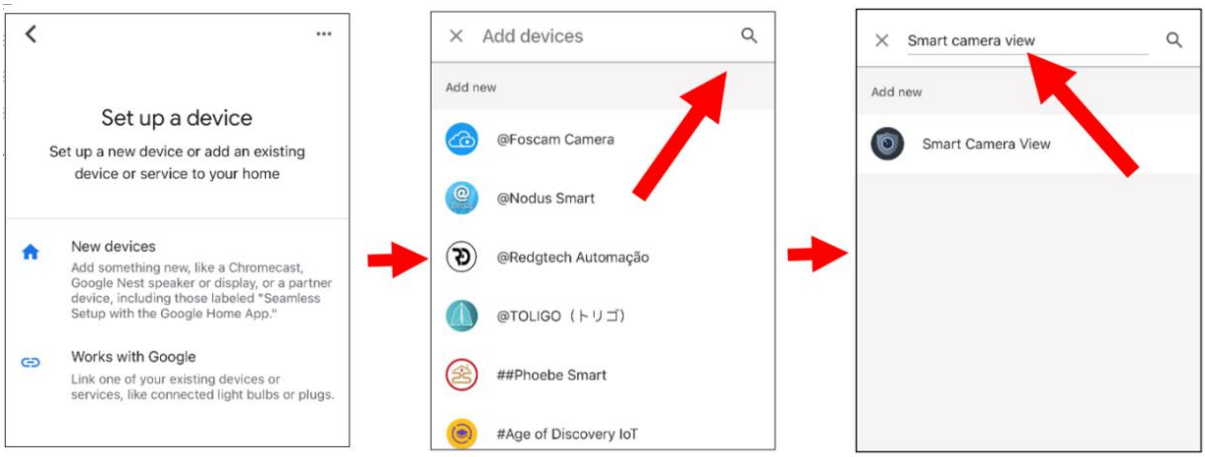
13. Touch "**No Thanks**", or "**Sign Up**" to login your google account. Touch "**Next**" and "**Skip Tutorial**", and then touch "**Finish Tutorial**".



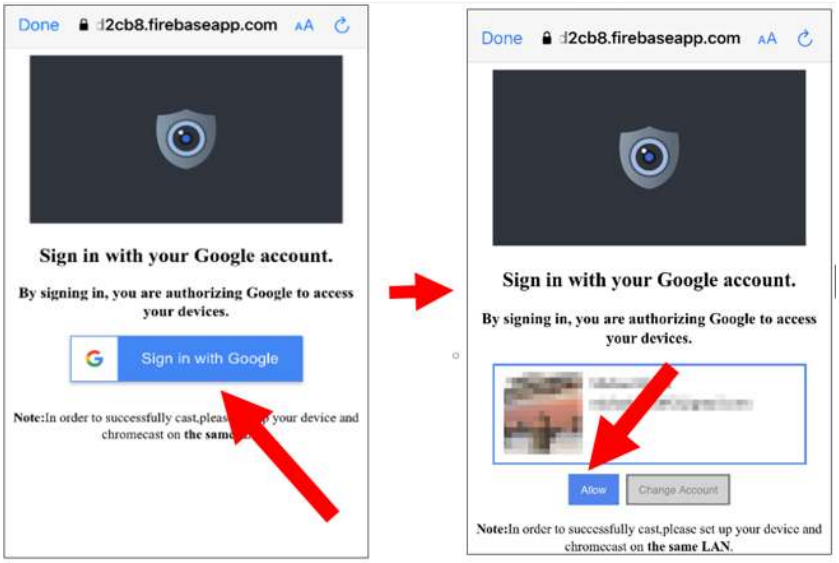
14. Now the Chromecast has been added to your Google Home. Touch the + icon on the left top corner. Indoor, then choose "**Set up device**".



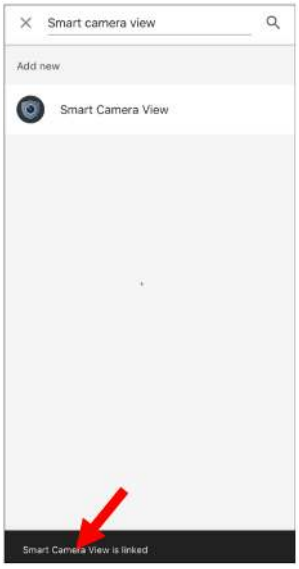
15. Choose "**Work with Google**", touch the search icon on the right top corner and then input "smart camera view".



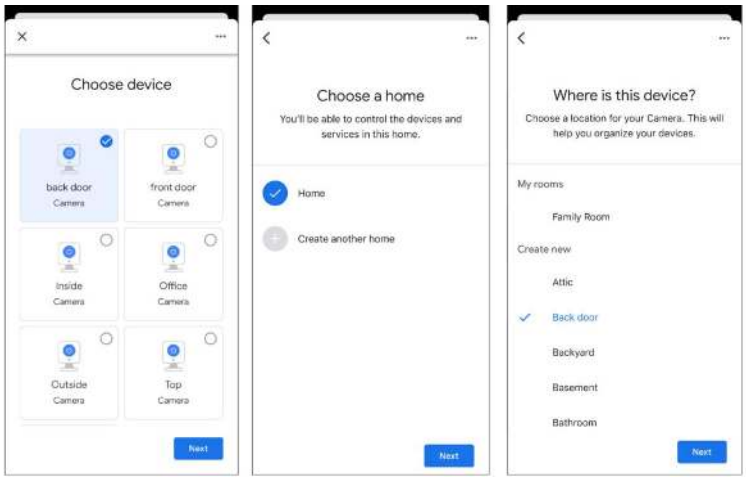
16. Touch on "**Smart Camera View**" in the search result. You would need to sign in your Google account and allow Google to access your device.



17. Wait for a while, the Smart Camera View application will be linked to Google Home.



18. Now the available cameras in your NVR will be displayed. Choose one of the cameras and then touch "**Next**" button. Choose a home & location for the cameras step by step. Repeat this step to add all cameras.

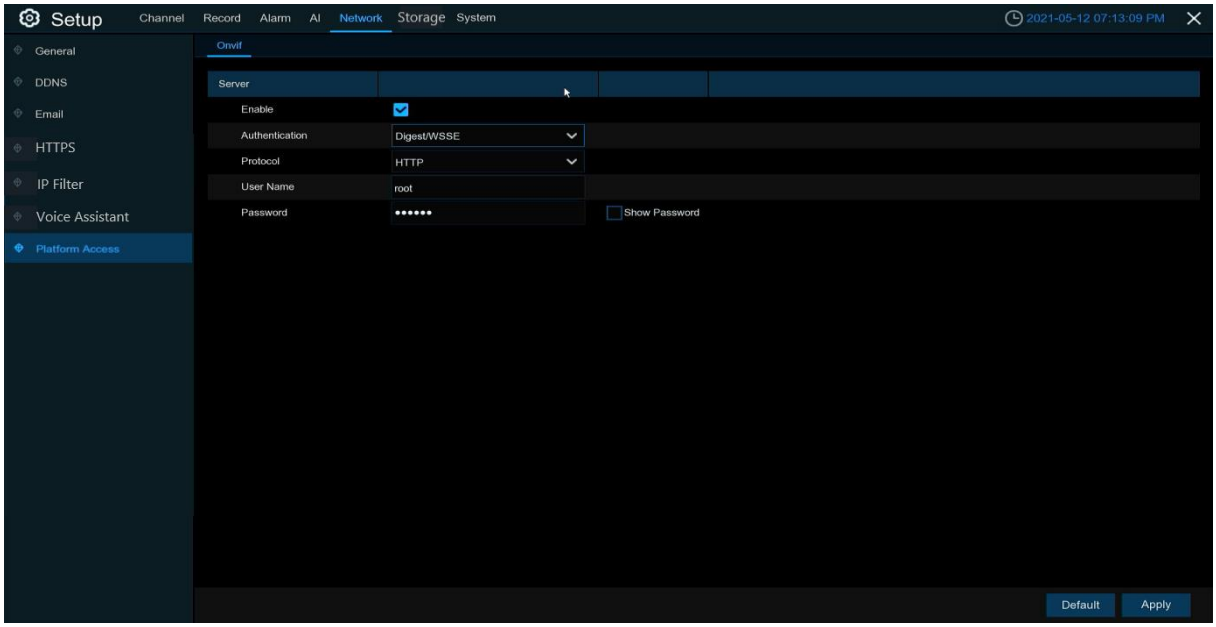


19. Search and install Google Assistant app to your mobile phone from app store.
20. Run the Google Assistant, login your google account which is same as the one you bind to the NVR.
21. Now, you're able to stream your camera to your TV monitor by using text or voice command, like "Show/play the *** Camera on XXX TV", in which *** is the channel name of the camera, XXX is your TV's name.

5.5.7 Platform Access

5.5.7.1 Onvif

Enable this function to allow devices to be searched and added by other third-party platforms through the ONVIF protocol.

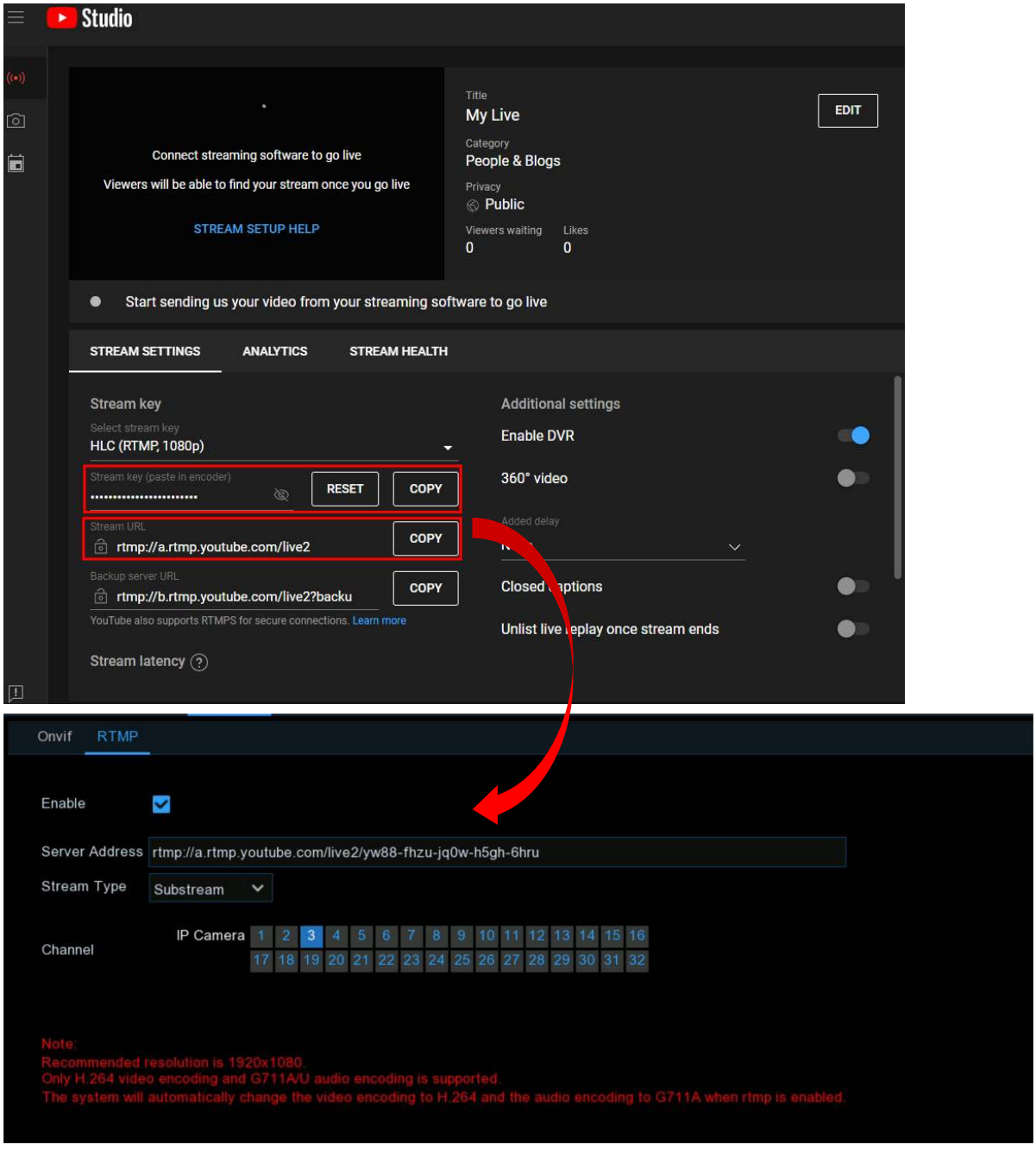


Enable: Enable switch. If turn off this menu, the service will be failed.
Authentication: Login authentication mode, authentication methods including Digest_sha256, Digest, Digest/WSSE, and WSSE.
Protocol: Connection protocol
Username: Login user name
Password: Login user password

Note: The stream connected by the back end through the ONVIF protocol are all the pictures of the first channel.

5.5.7.2 RTMP

The audio and video streams of the NVR channels can be pushed to the YouTube website by RTMP for live broadcasting. To use this function, you need to do the following: Register a YouTube account, create a live streaming studio, set the URL and live code of the live streaming studio, set the live server address bar for the device, and enable and configure the code stream type and live broadcasting channels. After saving the configuration, you can go to the YouTube live room to refresh the page to watch live broadcasting.



Enable: Used to set whether to enable the RTMP live broadcasting function.

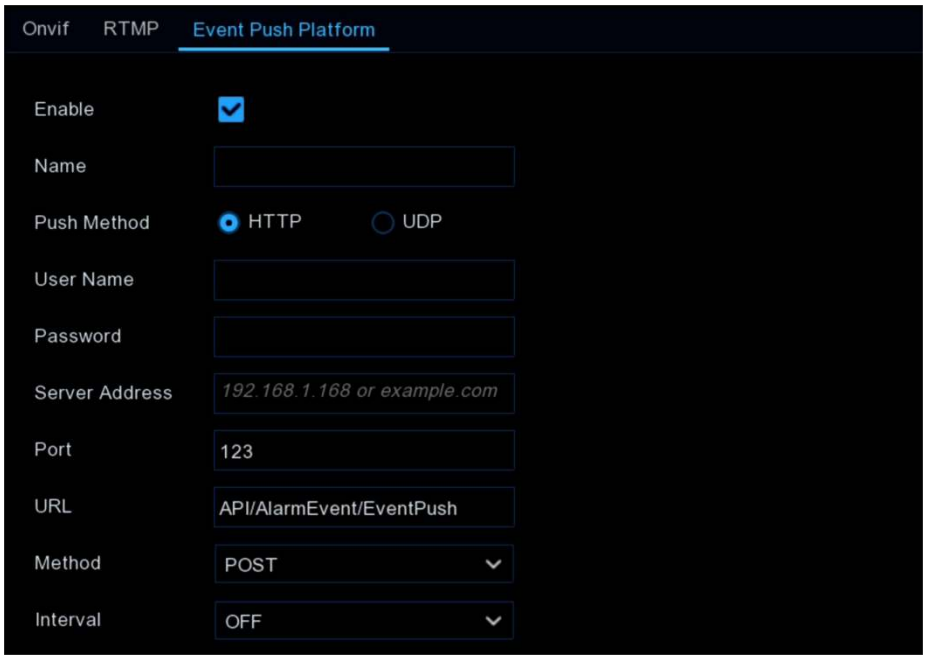
Server Address: Enter the live broadcasting address and live code of the YouTube server. (Note: "/" is used between the live broadcasting address and live code of the YouTube server.)
Stream Type: Select the stream type of the live broadcasting channel. Both main stream and substream are supported.
Channel: Select the channel for live broadcasting. Only one channel can be selected.

Note:

1. To ensure the live broadcasting effect, it is recommended that the resolution of the stream not exceed 1920 × 1080.
2. Live broadcasting can be conducted for only the data streams of H.264 video encoding format and G711A/U audio encoding format.
3. A YouTube live code can be set for only one device and cannot be reused.

5.5.7.3 Event Push Platform

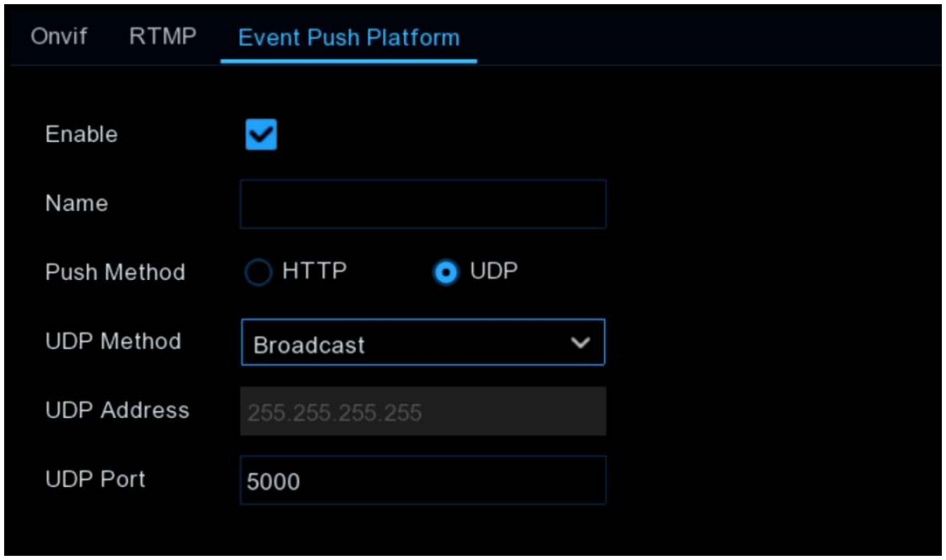
It is used to push the alarm information from the device to the specified third-party platform (the use of this function is required to ensure that the third-party platform has completed the docking debugging with the device).
Event push is divided into HTTP push and UDP push: HTTP has POST and GET methods; UDP has unicast, multicast and broadcast methods.
HTTP push



Enable: Enable or disable the event push function.
Name: Set the name of the device to be used for sending alert messages to the third-party platform.

Push Method: Support HTTP push method and UDP push method, check HTTP for HTTP push method, check UDP for UDP push method.
User Name: User name of the third-party platform
Password: Password of the third-party platform
Server Address: Address of the third-party platform
Port: Third-party platform server port (port range 1-65535).
URL: Third-party platform server API interface.
Method: HTTP push type. Support POST method and GET method: only HTTTP-POST method supports push map, others are just push message without accompanying push map; the alarm type of push map is consistent with the preview alarm bar on web side.
Interval: Interval of keepalive, according to the set time, the device will send messages to the server regularly, UDP has no keepalive mechanism.

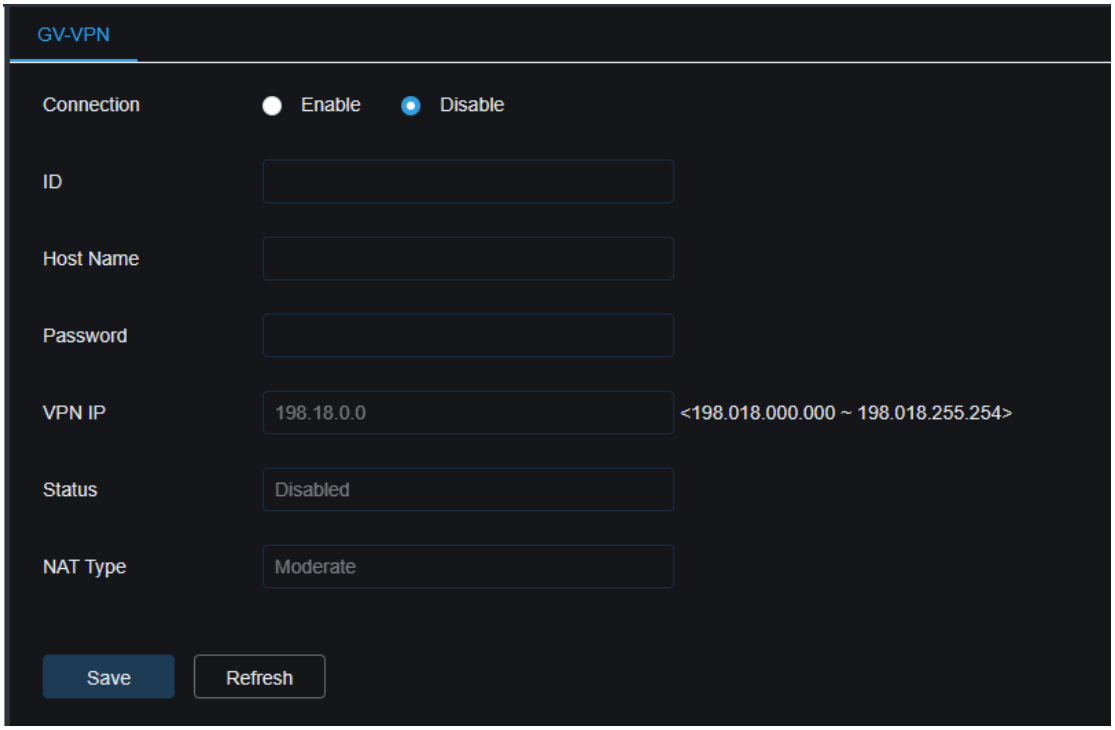
UDP push



Enable: Enable or disable the event push function.
Name: Set the name of the device used to send alert messages to the third-party platform.
Push Method: Support HTTP push method and UDP push method. If HTTP is checked, it is HTTP push method, if UDP is checked, it is UDP push method.
UDP Method: Support Unicast, Multicast and Broadcast:
Unicast: Enter the IP address and port of the client's UDP server to receive push messages, and only this address can receive messages.
Multicast: Multiple client UDP servers on the same network segment with the same UDP address and port can receive the message, and other non-UDP addresses will not receive the message.
Broadcast: All UDP servers on the same network segment can receive the message.
UDP Address: UDP server address.
UDP Port: UDP server port (port range 1-65535).

5.5.8 GV-VPN

GV-VPN is an application empowered by P2P VPN technology and the cloud-based platform, GV-Cloud. By applying GV-VPN, users are allowed to create a virtual private network environment enclosed for multiple NVRs. It saves the trouble of separate router configurations and links the NVRs to the same virtual private network. Note that this is only applicable to GV-RNVRL810-P / GV-RNVR3240-N.



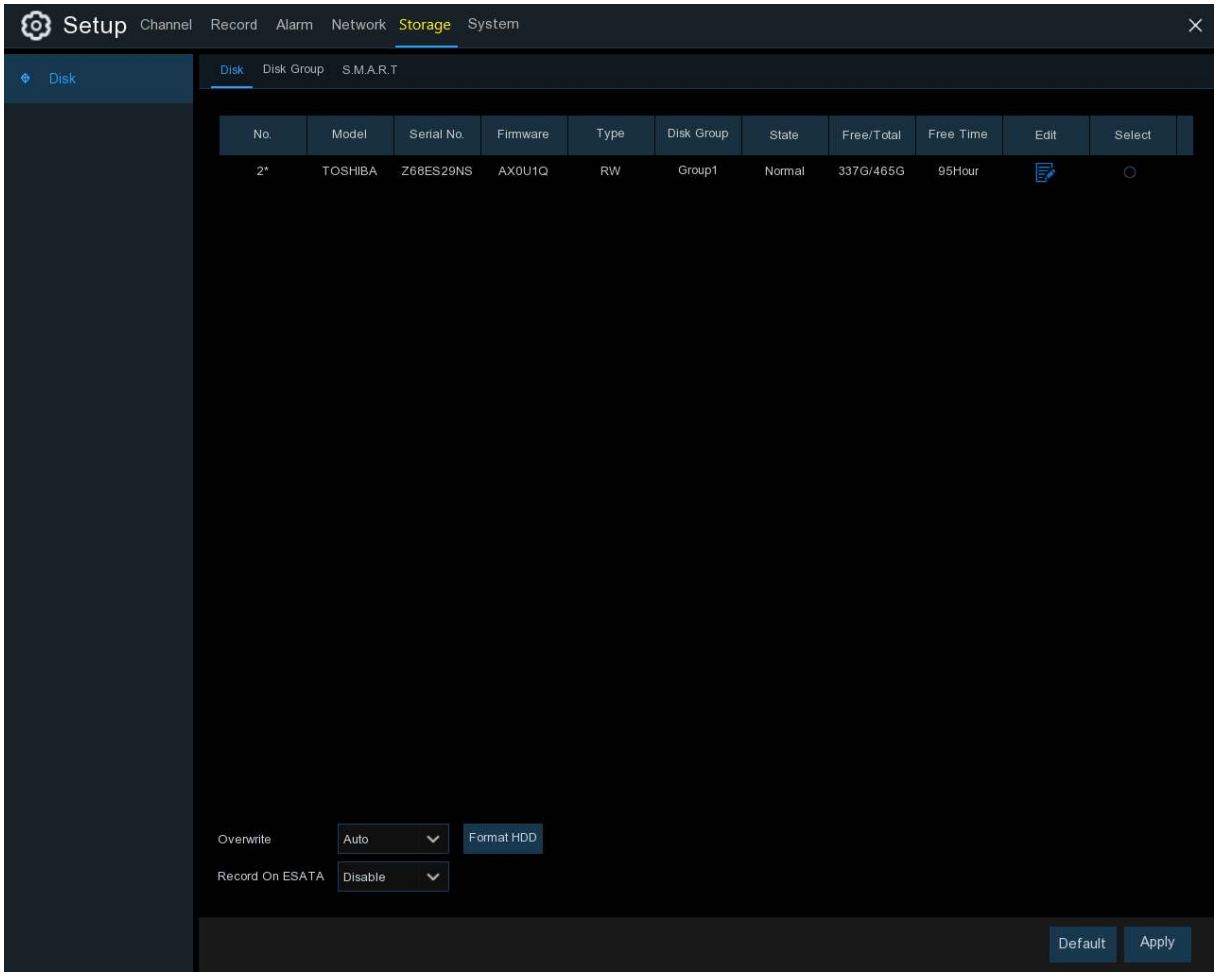
For details, see *GV-VPN Guide*.

5.6 Storage

In this section, you can configure the internal HDD function.

5.6.1 Disk

This menu allows you to check & configure the internal HDD(s). You need to format the HDD only at the first startup and if you replace a new HDD.

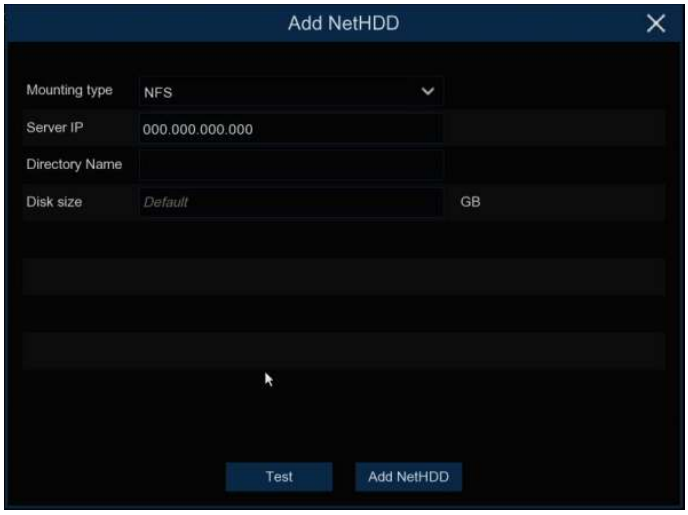


Format HDD: Select the HDD you want to format and then click **Format HDD**. To start formatting, you need to enter your user name and password and then click **OK** to confirm to continue formatting.

Overwrite: Use this option to overwrite the old recordings on the HDD when the HDD is full. For example, if you choose the option 7 days then only the last 7 days recordings are kept on the HDD. To prevent overwriting any old recordings, select **OFF**. If you have disabled this function, check the HDD status regularly, to make sure the HDD is not full. Recording will be stopped if HDD is full.

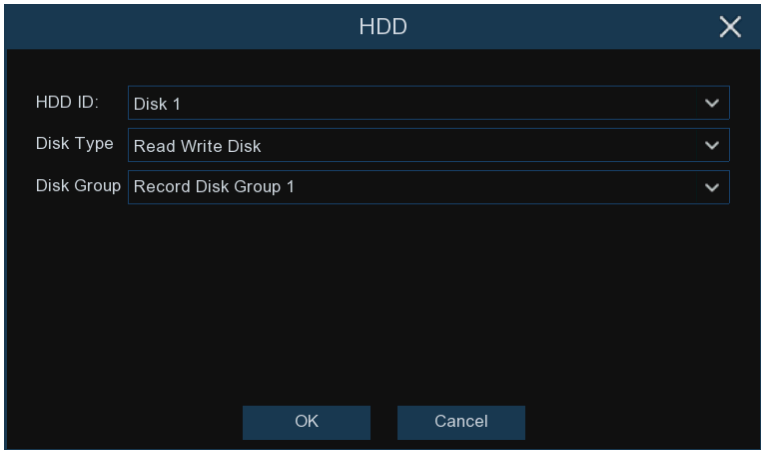
Record on ESATA: This menu only displayed when your NVR is coming with an e-SATA port on the rear panel. It will allow to record the video to external e-SATA HDD to enhance your HDD capacity. If the e-SATA recording function is enabled, e-SATA backup function will be disabled.

Add NetHDD: To add your NAS disk.



Mounting Type: To choose the mounting type from NFS and SMB/CIFS. You would need to input the account name and password of NAS if you choose SMB/CIFS.
Server IP: IP the IP address of NAS storage.
Directory Name: Input the directory name on which you want to save your recording data.
Disk Size: To set the capacity size of the NAS storage.
Test: Click to test the connection of NAS storage.
Add NAS HDD: Click to add NAS storage.

If your NVR supports to install multiple HDDs, the edit icon appears in your system, you can click it to edit the HDD as below:



Disk Type: Read-write, read-only, and redundant.
Read-write mode is the normal status for a HDD to save recording or search recording to play.
To prevent important video data from being overwritten during cyclic recording, the HDD can be set as **Read-only** mode. New recording will be not able to save into this read-only HDD. You can still search recording from this read-only HDD to play.
A **Redundant** HDD can be used to automatically backup video footage on the recording (read-write) hard drive. When a redundant HDD is set, the system can be set to record cameras in parallel to both the recording hard drive and the redundant hard drive in case of hard drive failure.

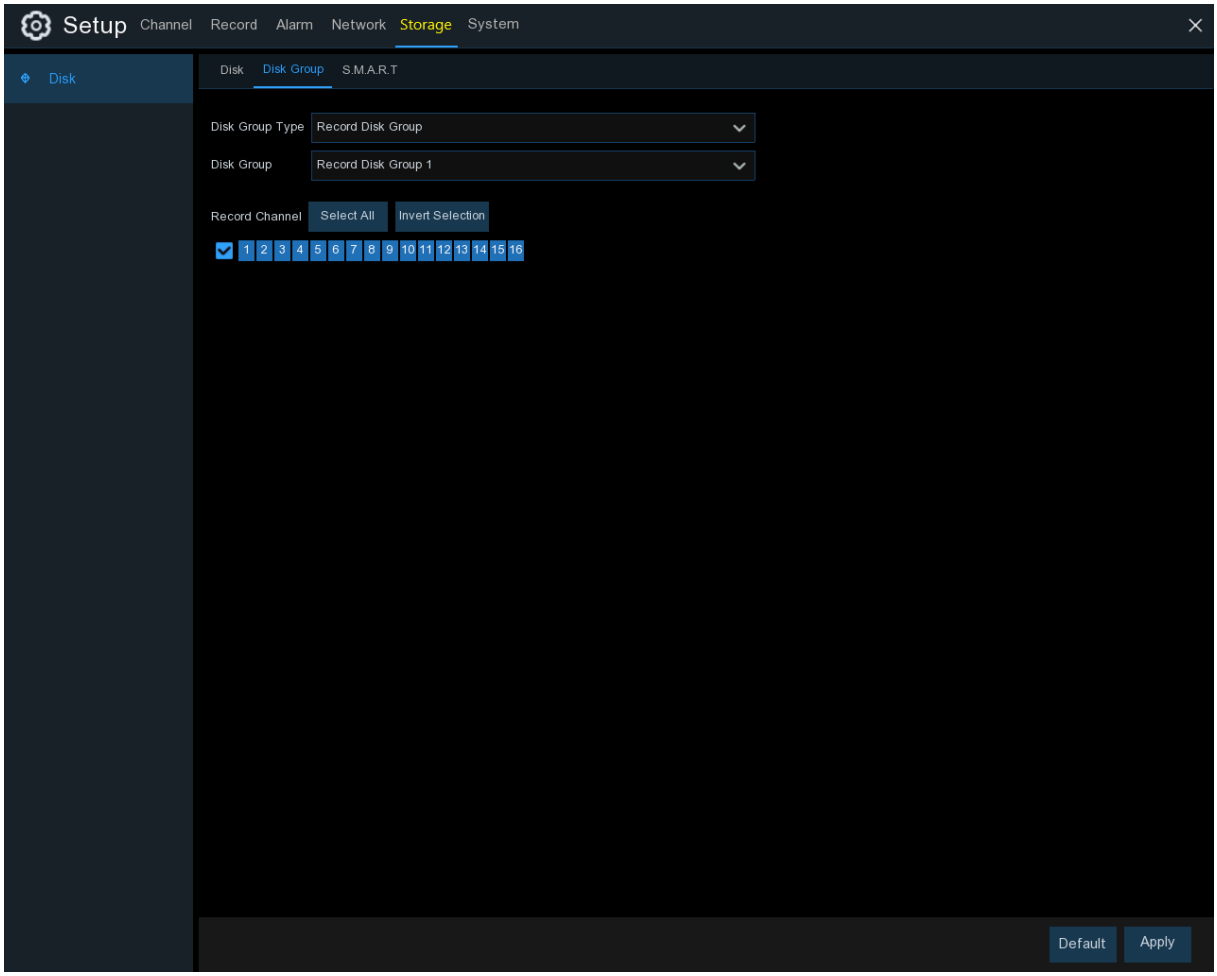
Disk Group: You can set the disks into different disk group for recording. See more on 5.6.1.1 Disk Group.

Note:

1. Redundant disk supports to save mainstream recording only.
2. If the disk type has been changed, the hard disks might be unmounted and offline. Please wait a while till the hard disks mounted again.

5.6.1.1 Disk Group

If your NVR supports to install multiple HDDs, you can configure the HDD to be different groups. HDD groups allow you to balance recordings across multiple hard drives. For example, you can record channels 1~4 to one hard drive and 5~8 to a second hard drive. This can reduce the amount of wear on the hard drives and may extend the life of the hard drives.

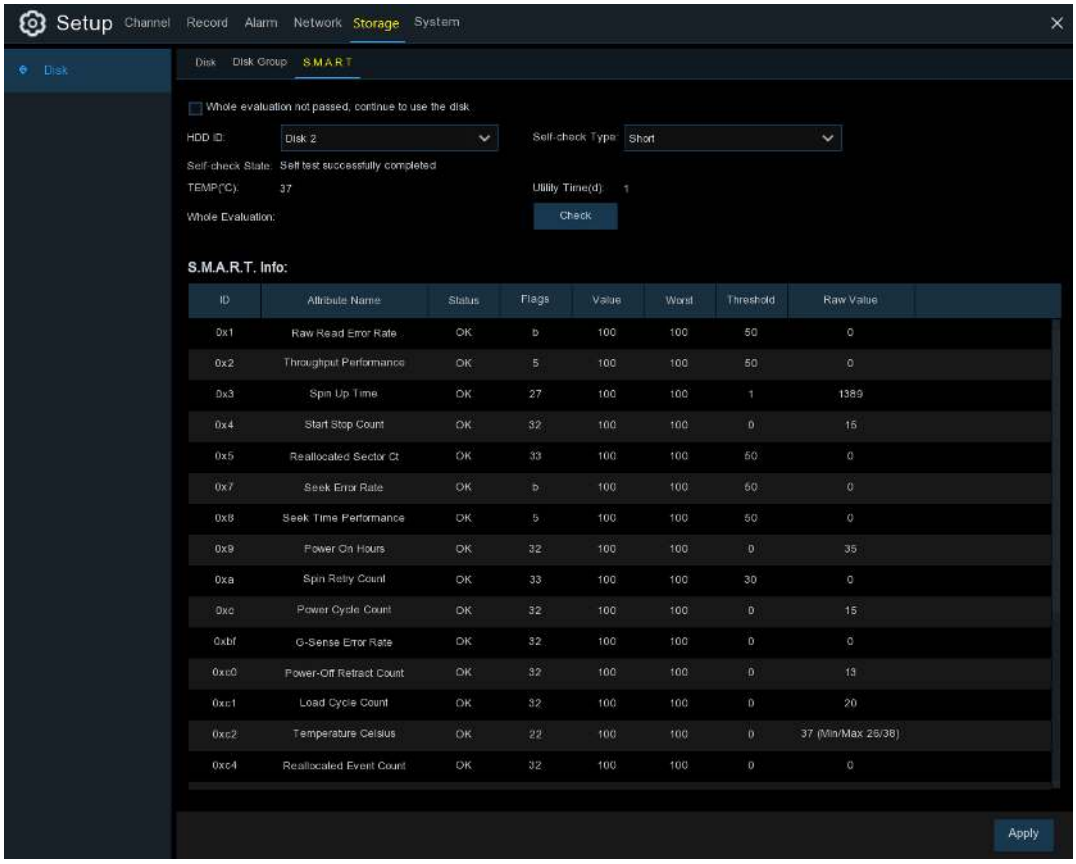


1. Use the dropdown next to **Disk Group Type** to select the type of group to configure.
2. Use the dropdown next to **Disk Group** to select the specific group within the selected group type.
3. Click the numbered boxes representing channels to record channels to HDDs in the selected group.
4. Click **Apply** to save.

Note: There will be a prompt for models with more than 32 channels. It is recommended that the video channel configuration of a single disk group should not exceed 32 channels.

5.6.1.2 S.M.A.R.T

This function can be used to display technical information on the hard drive installed inside your NVR. You can also perform a test (there are three types available) to evaluate and detect potential drive errors.



Whole Evaluation not passed, continue to use the disk: If for some reason the hard drive has developed a fault (such as one or more bad sectors), you can instruct your NVR to continue saving to the drive.

Self-check Type: There are three types available:

Short: This test verifies major components of the hard drive such as read/write heads, electronics and internal memory.
Long: This is a longer test that verifies the above as well as performing a surface scan to reveal problematic areas (if any) and forces bad sector relocation
Conveyance: This is a very quick test that verifies the mechanical parts of the hard drive are working.

Note: When performing a test, your NVR will continue to work as normal. If an HDD S.M.A.R.T error found, the HDD can be continued to use, but there will be a risk to lose recording data. It is recommended to replace a new HDD.

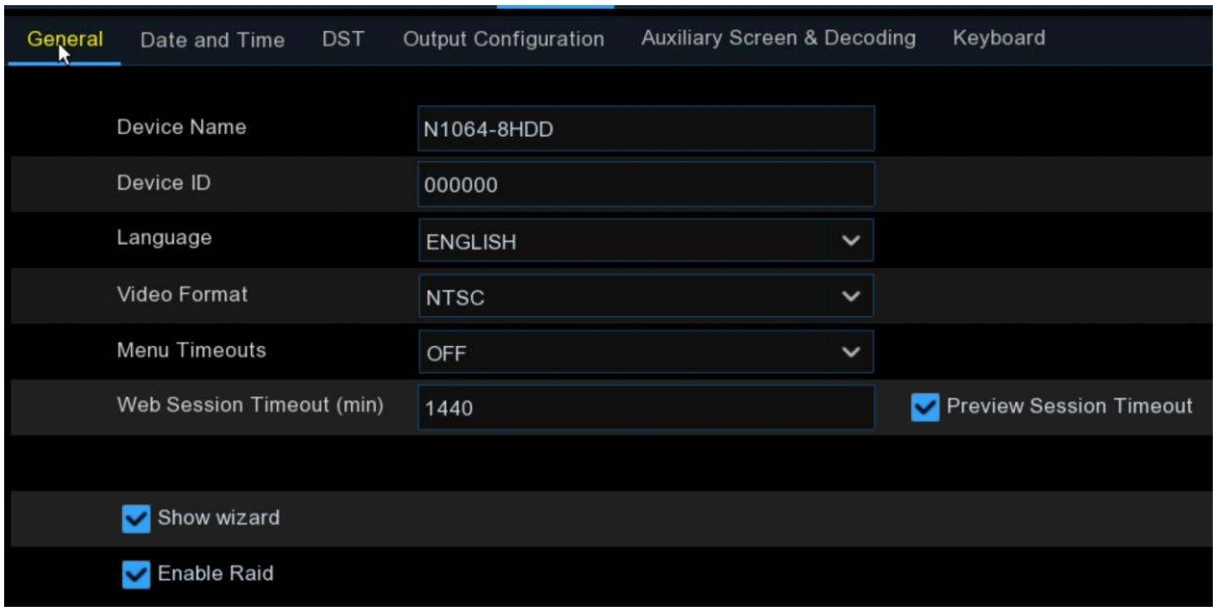
5.6.1.3 RAID

The RAID function has a high requirement on hard disk performance. To ensure long-term stable operation and reliability of RAID, it is recommended that you use enterprise-class hard disks (including brand, model, and capacity) for RAID creation and other configurations. If surveillance-class or desktop-class hard disks are used, data security may be affected. The company shall not be liable for the data loss or data damage caused thereby.

Note: The RAID function is only applicable to GV-RNVR256G0-N.

5.6.1.3.1 Enabling RAID

Choose **Main Menu > System > General** to open the general setting page. Select **Enable Raid** to enable the RAID function, and then save the configuration. The configuration will take effect after the system is restarted.



Note: After the RAID function is enabled, the NVR does not support E-SATA and NAS.

5.6.1.3.2 Creating RAID

You can create RAID either in one click or manually. For one-click creation, RAID5 is created by default. For manual creation, RAID0, RAID1, RAID5, RAID6, and RAID10 are supported. You can create different types of RAID in accordance with the actual number of hard disks to be accessed.

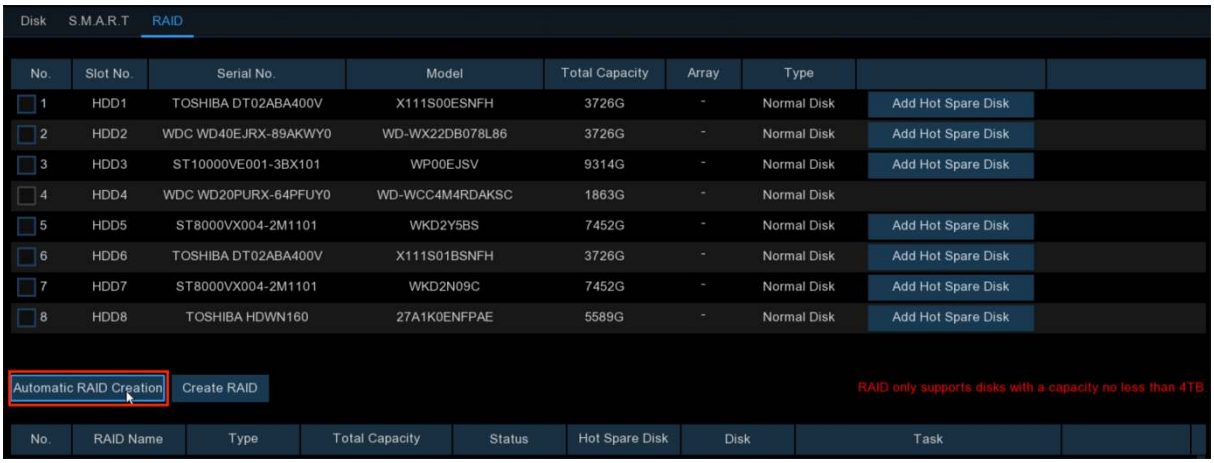
Hard Disk Quantity for RAID Creation

RAID Type	Hard Disk Quantity
RAID0	≥ 2
RAID1	2
RAID5	≥ 3
RAID6	≥ 4
RAID10	4 or 8

Note: The capacity of a single hard disk used for RAID creation is not less than 4 TB. For an installed hard disk with a capacity less than 4 TB, it cannot be selected for RAID creation.

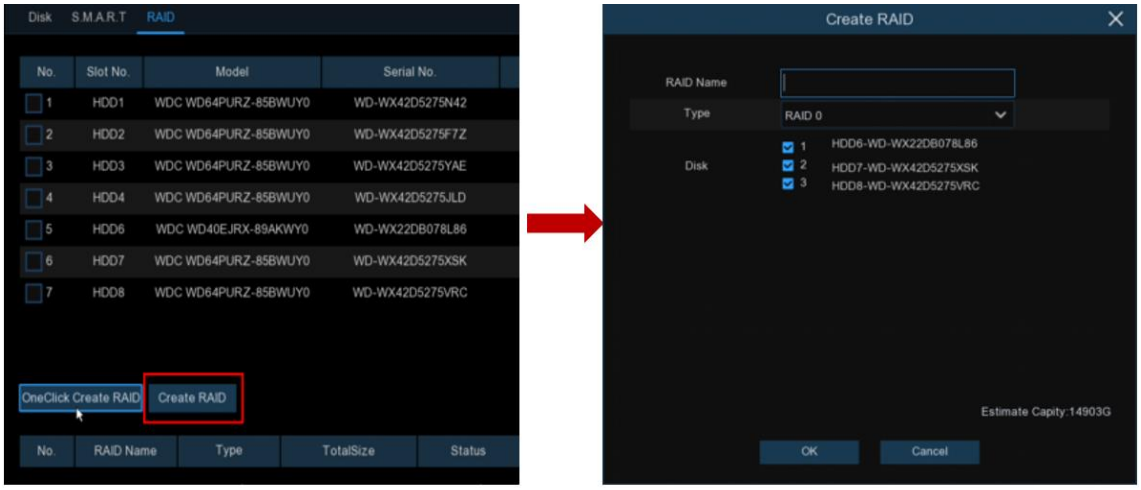
(1) Automatic RAID Creation

Through one-click configuration, the device can quickly create RAID and virtual disks. RAID5 is created by default in one-click configuration, and at least four hard disks should be installed.

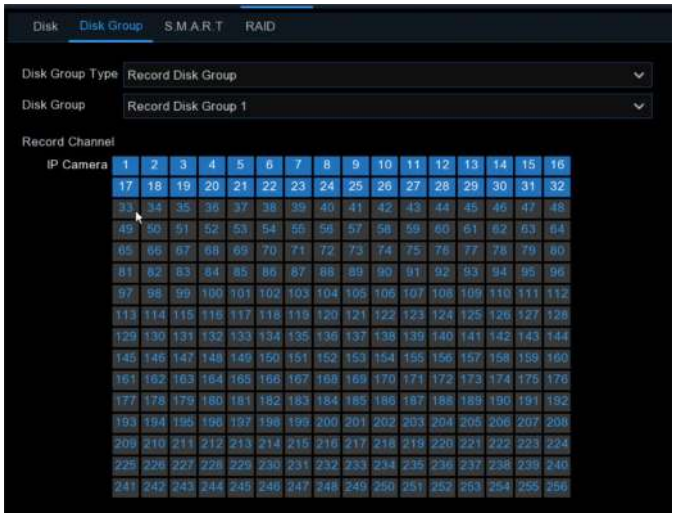


(2) Creating RAID Manually

To create RAID manually, click **Create RAID** to open the **Create RAID** page. Set the RAID name, select the RAID type, select the hard disks, and click **OK** to create the RAID. After the RAID is created, format the RAID.



To enable the RAID for normal use, you need to format the RAID first. After RAID formatting is completed, open the disk group configuration page, select the disk group and recording channels, and ensure that camera recording is normal.



5.6.1.3.3 Setting Hot Spare Disks

To ensure RAID security, when RAID is in degraded status, the system can automatically carry out RAID rebuilding. Therefore, it is recommended that hot spare disks be configured.
On the RAID configuration page, select an idle hard disk, click the **Add HotDisk** button, and confirm the hot spare disk setting. (Hot spare disks are public disks and can be used by all created RAIDs.)



5.6.1.3.4 Rebuilding RAID

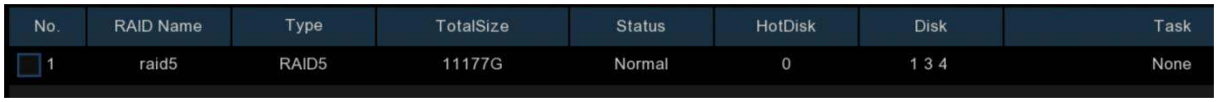
The operational status of a RAID includes normal, degraded, and offline. To give full play to RAID advantages and ensure the security and reliability of data storage, you can maintain the disks in a timely manner by viewing RAID status. For a RAID, when there is no physical disk loss, the RAID is in normal status; when the number of physical disks lost exceeds the threshold for the RAID type, the RAID is in offline status; when the actual situation is between the two cases, the RAID is in degraded status. When a RAID is in degraded status, it can be restored to normal status through RAID rebuilding.

(1) Rebuilding RAID Automatically
Automatic RAID rebuilding requires that the device should be configured with hot spare disks in advance and the hot spare disk capacity should be not less than the capacity of the smallest disk of the RAID. If the above conditions are met, when a hard disk in a RAID is lost or damaged, the hot spare disk is activated and considered as a candidate disk for the RAID, and then the automatic rebuilding task is started.
For example, RAID5 consists of hard disks 1, 2, and 3, and hard disk 4 has been configured as a hot spare disk. Hard disk 2 fails in operation, and the system does not detect it. Therefore, RAID5 is in degraded status, and hard disk 4 is immediately activated and considered as a candidate disk. Then, the rebuilding process is started.



Note:

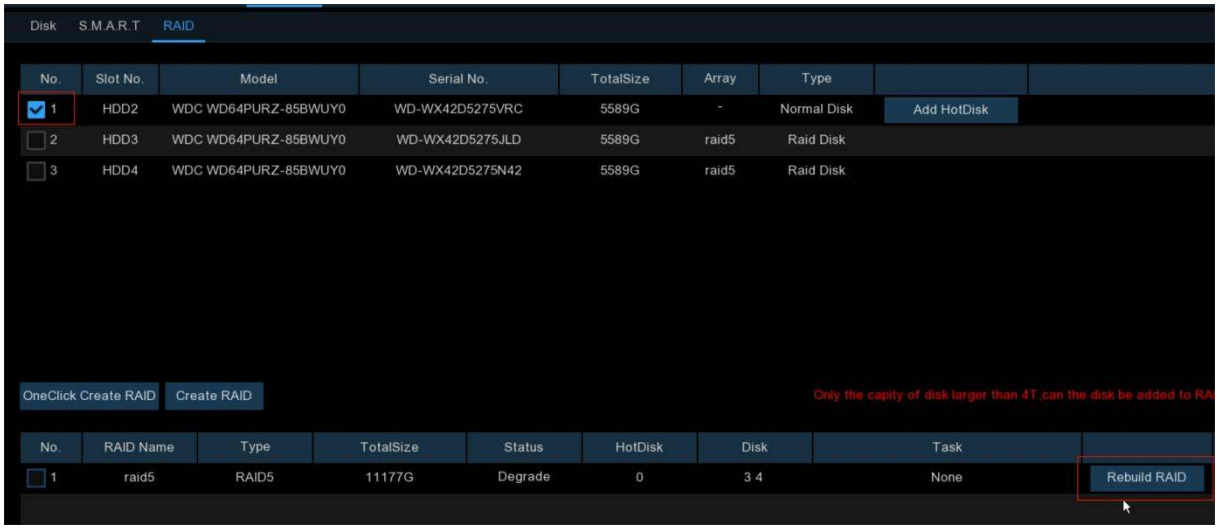
1. After rebuilding is completed, the RAID is restored to normal status.
2. After automatic rebuilding is completed, insert a normal hard disk and set it as a hot spare disk to ensure that the automatic rebuilding process can be started normally the next time an exception occurs.



(2) Rebuilding RAID Manually

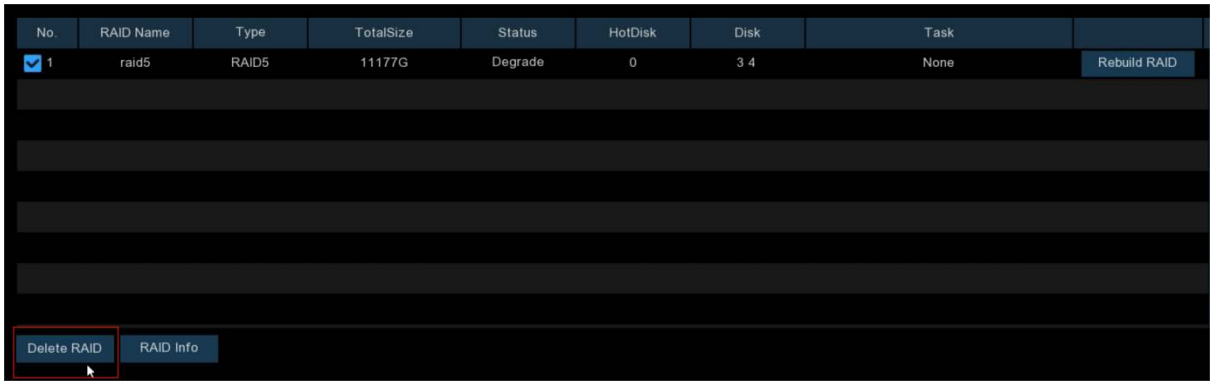
When a RAID is in degraded status, if it has no hot spare disk, automatically rebuilding cannot be implemented. You need to manually rebuild the RAID to restore it to normal status.

On the RAID configuration page, select an idle disk, and click the **Rebuild RAID** button, verify the password, and then start RAID rebuilding. After the rebuilding is completed, the RAID is restored to normal status.



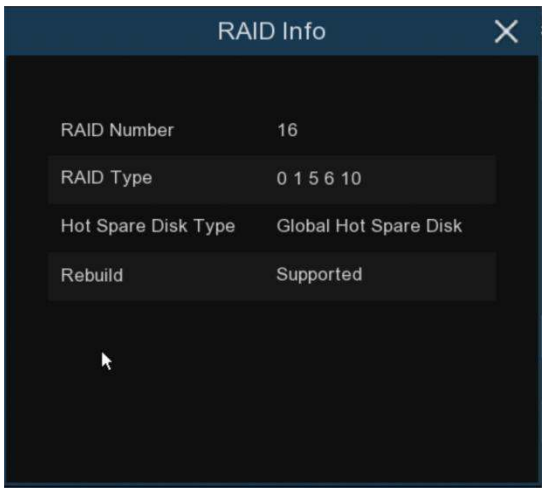
5.6.1.3.5 Deleting RAID

Select the RAID to be deleted, click the **Delete RAID** button, enter the administrator password, and click **OK** to delete the RAID.



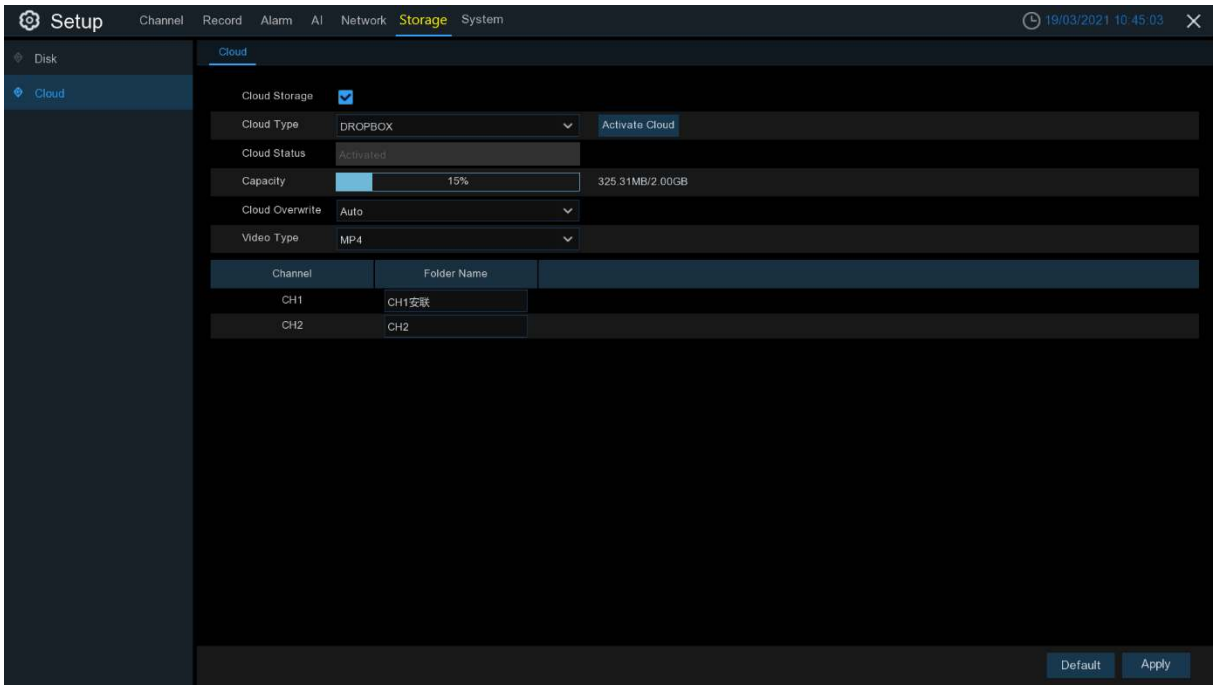
5.6.1.3.6 Viewing RAID Information

Click the **RAID Info** button to open the **RAID Info** page to view the RAID function information.



5.6.2 Cloud

Cloud function allows to upload pictures and videos to your cloud storage. It supports Dropbox and Google Drive storage now.

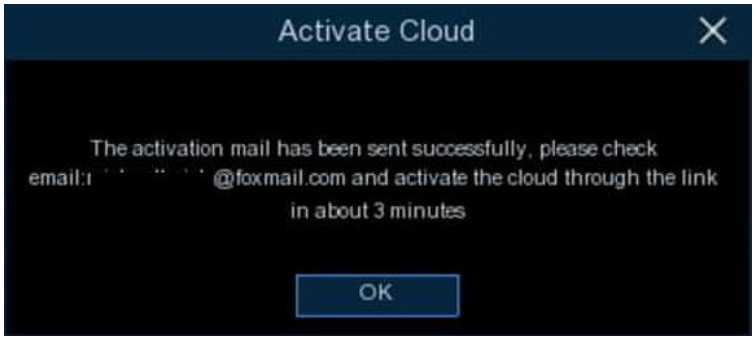


Cloud Type: To choose Dropbox or Google Drive.
Cloud Status: This will change to Activated when active.
Capacity: When activated, this will display how much free space you have on your cloud storage.
Cloud Overwrite: Use this option to overwrite the old recordings on the storage when it is full. For example, if you choose the option 7 days then only the last 7 days recordings are kept on the storage. To prevent overwriting any old recordings, select **OFF**. If you have disabled this function, please check the cloud storage status regularly, to make sure the capacity is not full. Recording will be stopped if the space is full.
Video Type: To choose the video format you want to upload.
Folder / Driver Name: To create a folder for each camera for saving its uploading files.

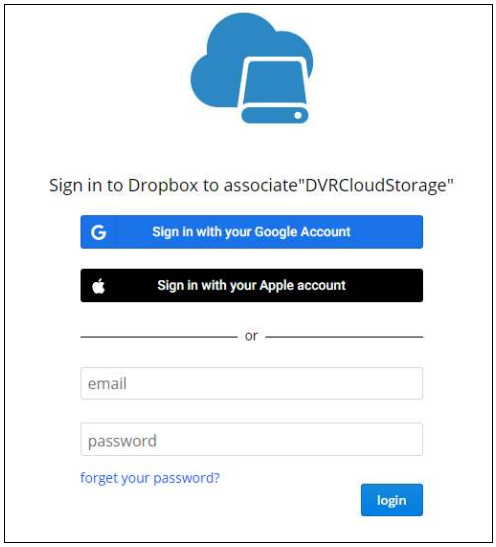
5.6.2.1 Dropbox Settings

1. Before activation, we recommend that you create a Dropbox account first. Go to www.dropbox.com, input your name, email address, and password, agree to the terms & conditions, then click or tap the sign up button. If you already have a Dropbox account, you can skip this step.

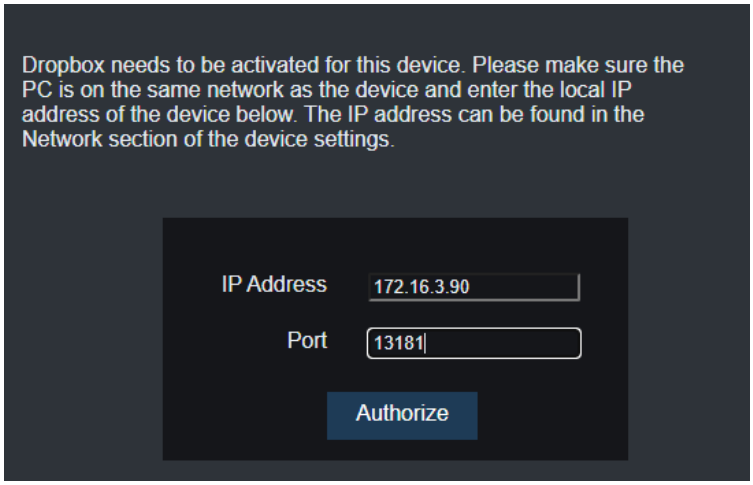
2. Click the **Activate Cloud** button, the system will send an activation letter to your receiver email box which you have set in the Email Setup page.



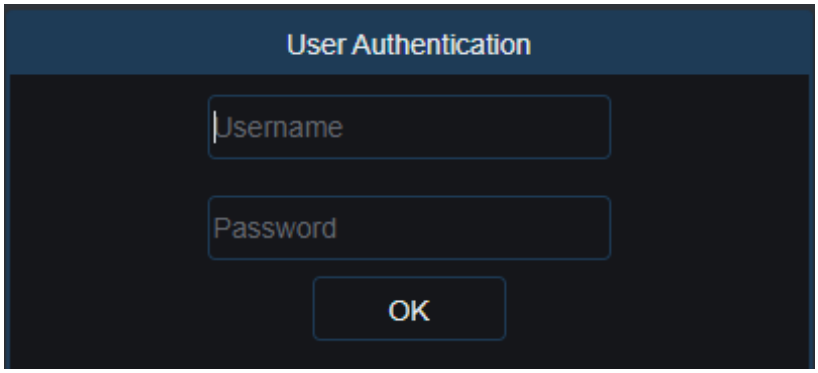
3. Login your email box and click the link in the email content. It will turn to the cloud server authorization login page. Input your Dropbox account name and password to login.



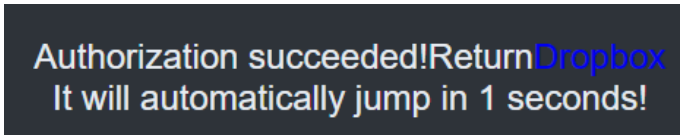
4. Input the NVR's local IP address and web port, and then click **Authorize**.



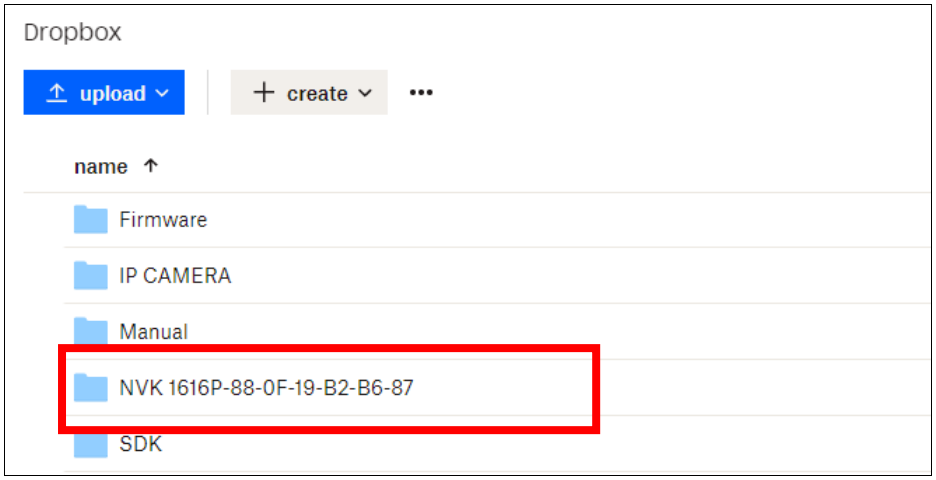
5. Input the NVR's user name and password and then click OK.



6. Authorization finished; the webpage will turn to your Dropbox.

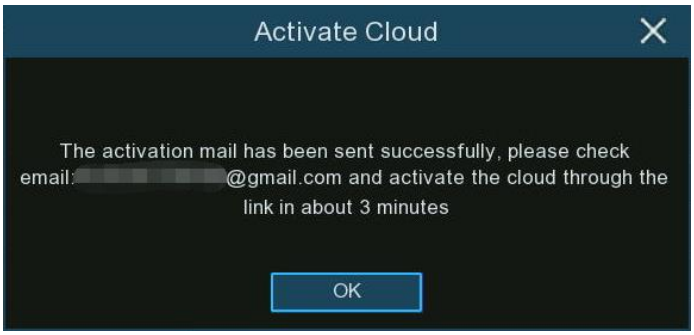


7. The Cloud has completed the setup if you find a new folder named by your NVR device name and MAC address in the Dropbox storage. Your alarm pictures and videos will be uploaded to this folder.

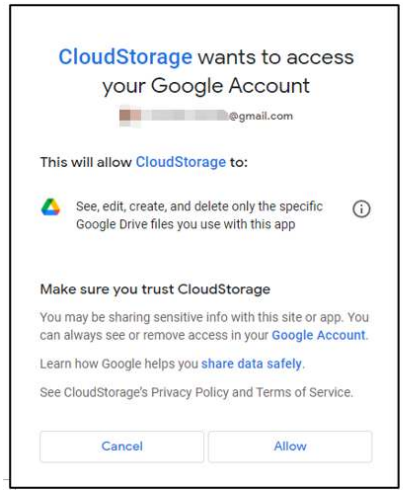


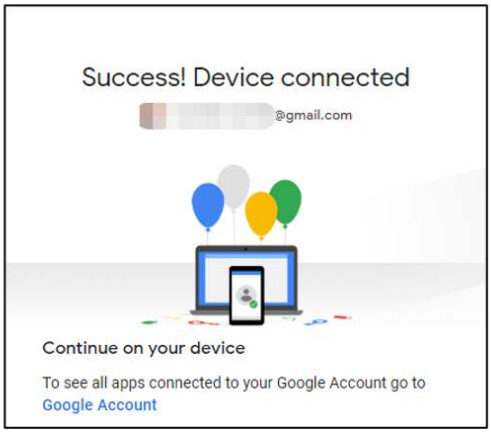
5.6.2.2 Google Drive Settings

1. Before activation, we recommend that you create a Google Drive account first. Go to https://www.google.com/drive, input your name, email address, and password, agree to the terms & conditions, then click or tap the sign up button. If you already have a Google Drive account, you can skip this step.
2. Click the **Activate Cloud** button, the system will send an activation letter to your receiver email box which you have set in the Email Setup page.



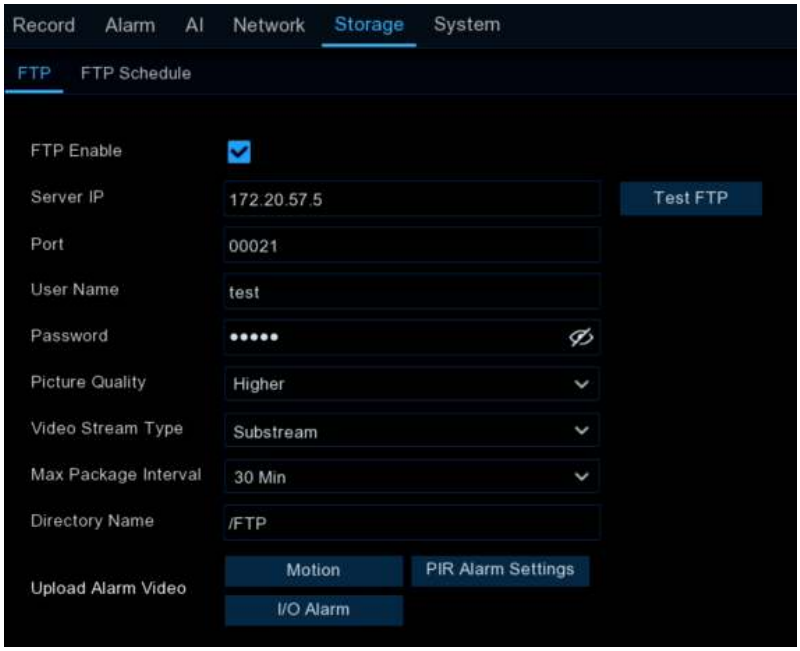
3. On the email, you will find an activation code and a link illustrated as below. Click the link and then enter the activation code you received on the webpage, and then click Next.
4. Enter your Google account and password to login your Google Drive.
5. Click Allow, the settings of your Google Drive cloud have completed now.





5.6.3 FTP

This menu allows you to enable FTP function to view and load captured snapshots from NVR to your storage device over FTP.

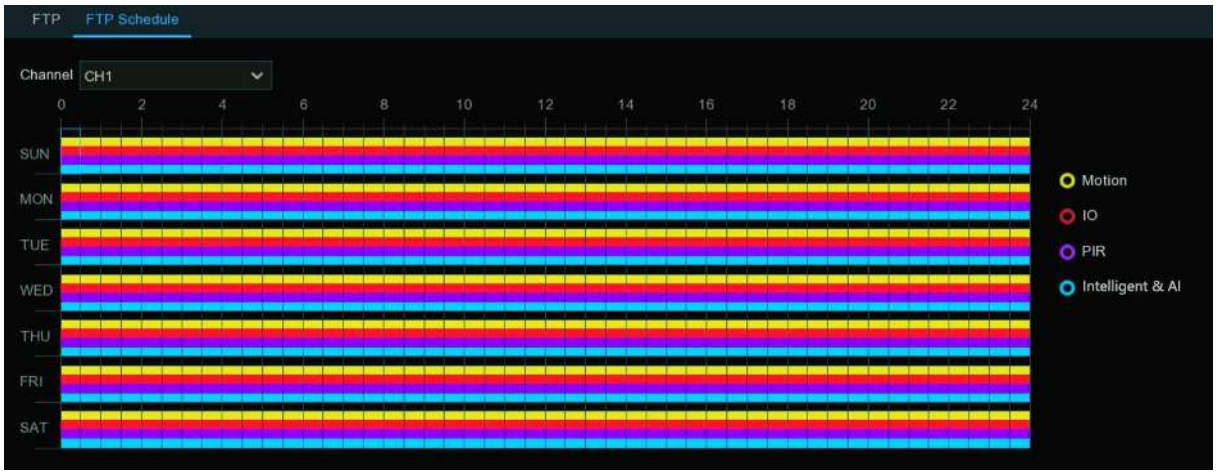


FTP Enable: Click to enable FTP function.
Server IP: Enter your FTP server IP address or domain name.
Port: Enter the FTP port for file exchanges.
Name/ Password: Enter your FTP server user name and password.
Picture Resolution: To choose the resolution of snapshots that you want to upload. Maximum resolution is 1920 x 1080.
Picture Quality: Choose the image quality of snapshots that you want to upload.
Video Stream Type: Choose mainstream or substream video you want to upload.
Max Package Interval: Set the maximum package interval, that is, what is the maximum recording time of an event, if it exceeds this time, it will create another video file to continue recording.
Directory Name: Enter the default directory name for the FTP file exchanges.
Test FTP: Click to test the FTP settings.
Upload Alarm Video: Set the warning type for uploading video to FTP, click the option to enter the warning menu in the corresponding alarm type.

Note: To play videos uploaded to FTP server, make sure you use GV-R Series Video Player.

5.6.3.1 FTP Schedule

If FTP upload is enabled on your NVR, alarm images or videos would be uploaded 24 hours as default. You can change the schedule when your NVR to upload the alarm images or videos. For example, you may only want to receive alarm images or videos during the day but not in the evening. An alternative schedule can be created for each camera.



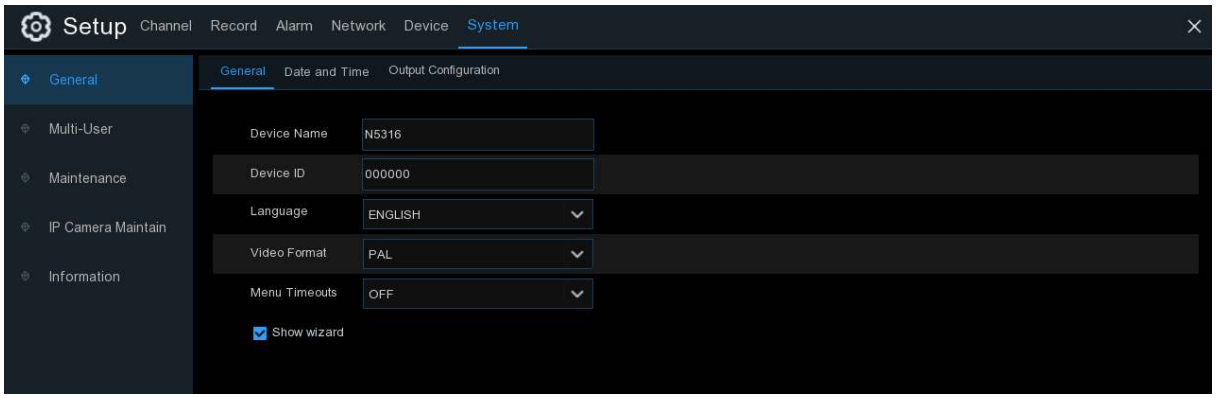
1. Select a channel you want to set the schedule.
2. Click on ratio button of the alarm type that you want to upload for:
   - ➔ **Motion:** Upload for motion detection alarm images or videos
   - ➔ **IO:** Upload for I/O triggered alarm images or videos
   - ➔ **Intelligent & AI:** Upload for Intelligent or AI detection alarm images or videos
3. Using the mouse, click on a square to change or click and drag the mouse over the squares corresponding to your desired period
4. Repeat step 2 & 3 to set the schedule for other alarm type.
5. The set schedule is valid only for one channel. If you want to use the same recording schedule for other channels, use **Copy** function.
6. Click **Apply** to save your settings.

5.7 System

Change general system information such as date, time and region, edit passwords and permissions, and more.

5.7.1 General

5.7.1.1 General



Device Name: Enter the desired name for your NVR. The name can include both letters and numbers.

Device ID: Enter the desired ID for your NVR. The device ID is used to identify the NVR, and can only be composed of numbers. For example, 2pcs NVRs are installed in the same place, the Device ID is 000000 for one of the NVRs, and 111111 for another NVR. When you want to operate the NVR with a remote controller, both NVRs may receive the signal from controller & act at the same time. If you want to control only the NVR with ID 111111, you can input the Device ID 111111 in login page with remote controller for further operations.

Language: Select a language you would like the system menus to be displayed in. Multiple languages are available.

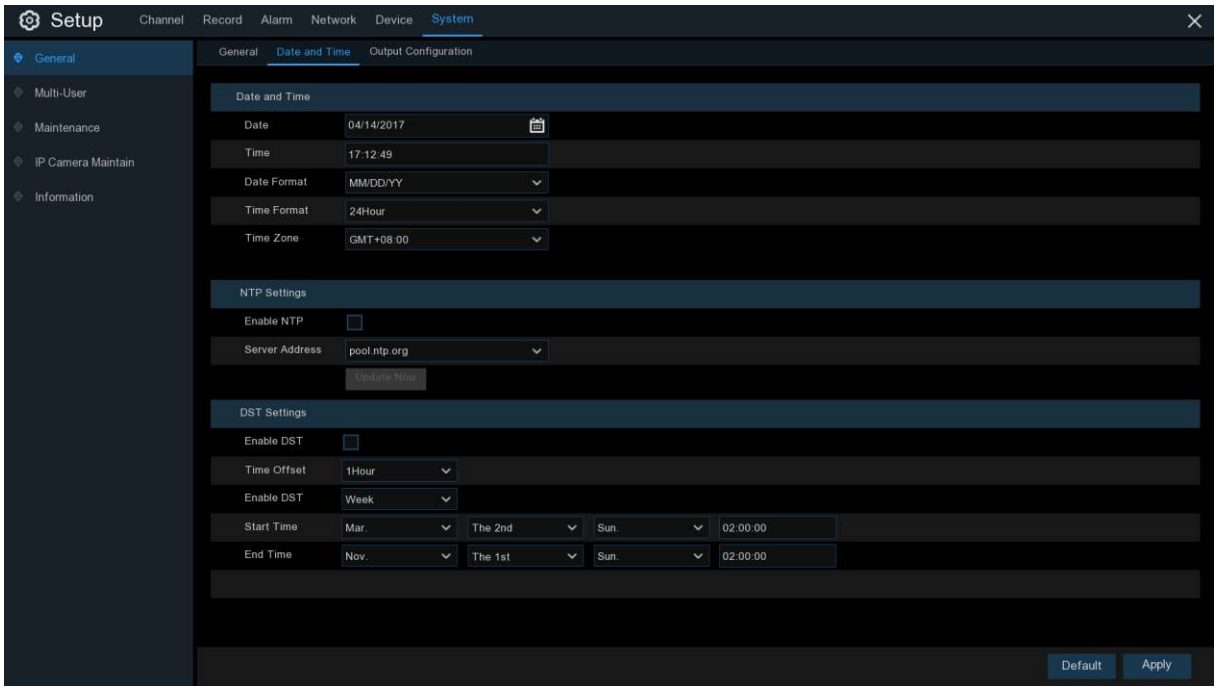
Video Format: Select the correct video standard for your region.

Menu Timeouts / Idle Lock Time: Click the drop-down menu to select the time your NVR will exit the Main Menu when idle. This function is set to “OFF” by default (password protection will be temporarily disabled).

Web Session Timeouts: Enter the time (in minutes) your NVR will exit web access when idle in the setting page. Adjustable time can be set from 5 minutes to 1,440 minutes. If you tick on the checkbox of "**Preview Session Timeouts**", the web access will be exited also when idle in the live view page.

Show Wizard: Click the checkbox if you would like to display the Startup Wizard each time you turn on or reboot your NVR.

5.7.1.2 Date and Time



Date & Time

Date: Click the calendar icon to change the date.

Time: Click the dialogue box to change the time.

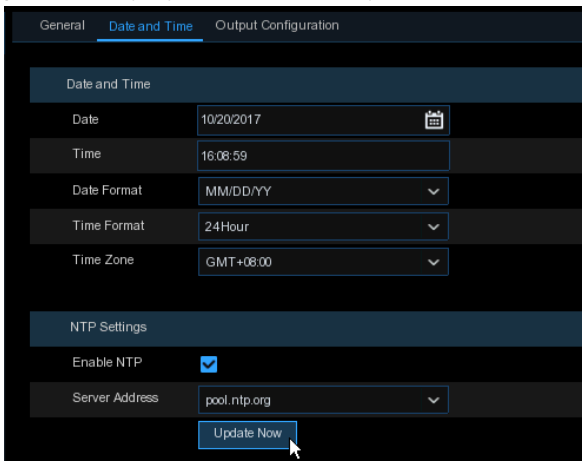
Date Format: Select the preferred date format.

Time Format: Select the preferred time format.

Time Zone: Select a time zone relevant to your region or city.

NTP Settings

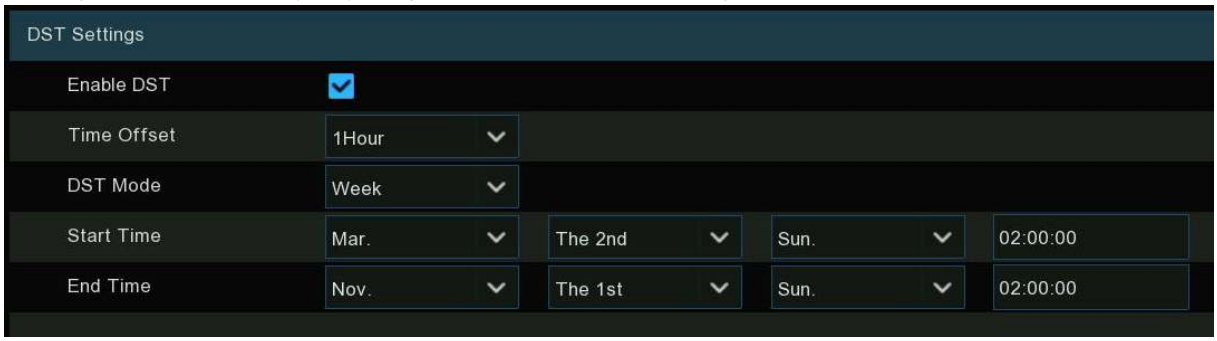
The NTP (Network Time Protocol) function allows your NVR to automatically sync its clock with a time server. This gives it the ability to constantly have an accurate time setting (your NVR will periodically sync automatically).



Tick the checkbox of "**Enable NTP**", and select a "**Server Address**", click "**Update Now**" to manually sync the date & time. When NTP function is enabled, system will update the system time at 00:07:50 per day or every time when the system is starting up. Click "**Apply**" to save your settings.

5.7.1.3 DST Settings

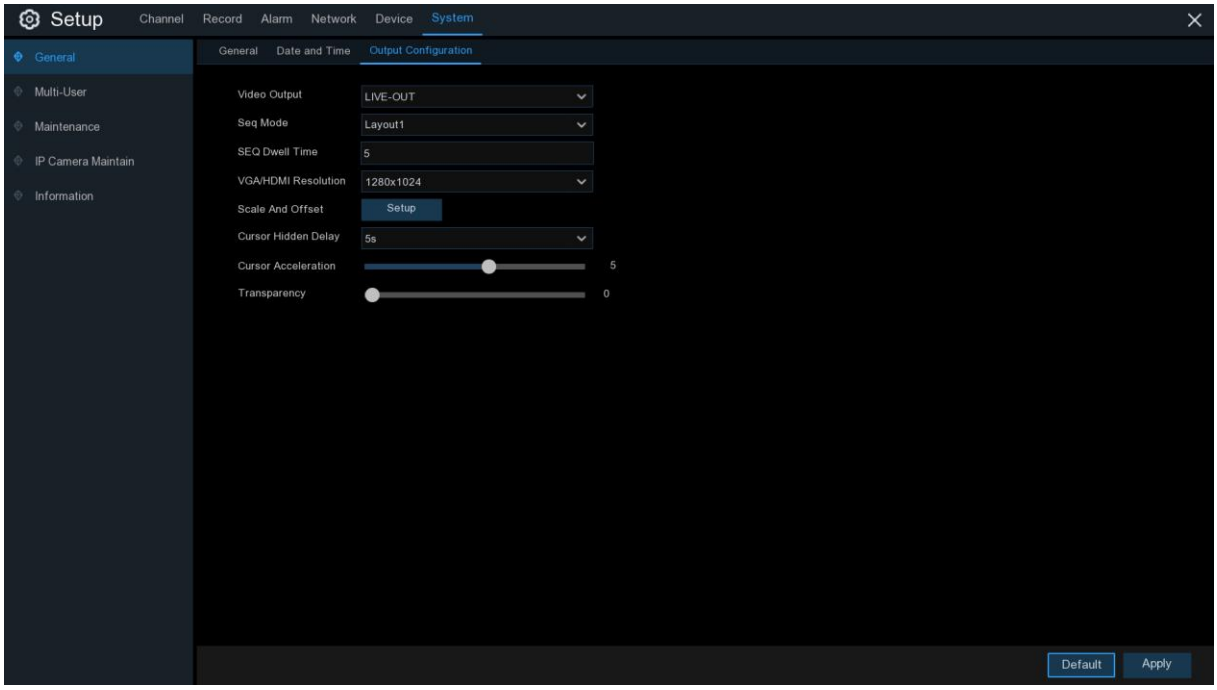
The DST (Daylight Saving Time) function allows you to select the amount of time that Daylight Saving has increased by in your particular time zone or region.



Enable DST: If Daylight Saving applies to your time zone or region, check this option to enable.
Time Offset: Select the amount of time that Daylight Saving has increased by in your time zone. This refers to the difference in minutes, between Coordinated Universal Time (UTC) and the local time.
Enable DST: You can select how Daylight Saving starts and ends:
Week: Select the month, a particular day and time when Daylight Saving starts and ends. For example, 2 a.m. on the first Sunday of a particular month.
Date: Select the start date (click the calendar icon), end date and time when Daylight Saving starts and ends.
Start Time / End Time: Set the start time and end time for Daylight Saving.

5.7.1.4 Output Configuration

This menu allows you to configure video output parameters.



Video Output: To choose the output options:
LIVE-OUT is used to configure the main output parameters.
Choose **LIVE-OUT** from the Video Output drop-down menu.
SEQ Mode: Select how many video channels you would like to display when your NVR is in sequence mode.
SEQ Dwell Time: Enter in seconds the maximum length of time you would like to display a video channel in sequence mode before displaying the next video channel (300 seconds is the maximum).
Output Resolution: Select a display resolution that is suitable for your TV. 1920 x 1080 will suit most TVs. If your NVR supports 4K output resolution, you can select either 2K (2560 x 1440) or 4K (3840 x 2160) to take advantage of the higher resolution that your 4K TV provides.
Scale and Offset: The NVR supports to adjust the size & position of the display screen to match your monitor or TV. Click **Setup** button to adjust.



Scale: To adjust the size of the displayed screen by scale.
X Offset: To move the displayed screen to left or right.
Y Offset: To move the displayed screen to up or down.

Click once or long press the left button of your mouse on the arrow to adjust the size and position, or you can scroll the wheel of the mouse to adjust. Click the right button of your mouse to exit, and click **Apply** to save your modifications.

Cursor Hidden Delay: Click the drop-down menu to select the time your NVR will hide the mouse cursor when idle. You can also disable this by selecting “OFF” (password protection will be temporarily disabled).

Cursor Acceleration: To adjust the speed to move the mouse cursor.

Transparency: Click and hold the slider left or right to change how transparent the Menu Bar and Main Menu will appear on-screen. Adjust accordingly.

5.7.1.5 Auxiliary Screen & Decoding

The following three output parameters for secondary screen display should be configured: HDMI-2, HDMI-3, and HDMI-4.

Note: The function is only applicable to GV-RNVR256G0-N.



Switch: Used to set whether to enable the secondary screen display.

Output Resolution: Select the display resolution suitable for the secondary screen.

Decoding Ability(1080P@30): Used to set the decoding capability of the secondary screen. For example, you can set the decoding capability of HDMI-2 to 8, meaning that HDMI-2 can provide a preview of eight 1080P 30-frame channels.

Audio: Used to set whether to enable the secondary screen audio.

Auto SEQ: Used to set whether to enable SEQ mode on the secondary screen.

View Mode: Select the number of video channels to be displayed statically on the secondary screen.

Define SEQ Setting: Select the number of channels to be displayed statically on the secondary screen.

Seq Mode: Select the number of video channels to be displayed in SEQ mode on the secondary screen.

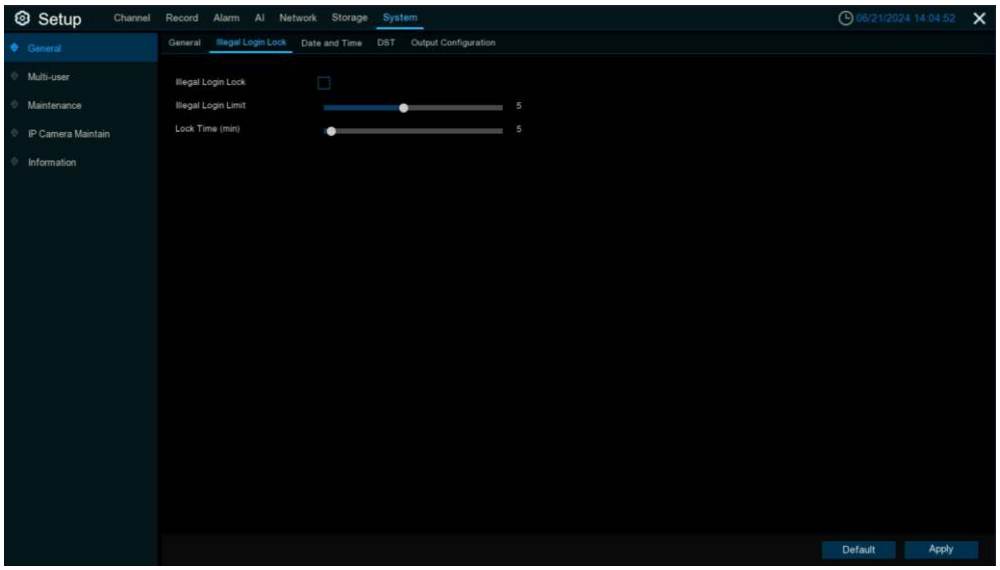
SEQ Dwell Time: Used to set the SEQ dwell time on the secondary screen in seconds.

Spot Poll Setting: Select the channels for sequential display on the secondary screen in dynamic mode.

Note:

1. You can set the output resolution of HDMI-1 on the output configuration page. For more information, see 5.7.1.4 Output Configuration. When the output resolution of HDMI-1 is 8K, HDMI-2 output will not be available.
2. A maximum of simultaneous 152 channels of live view is applicable when the following conditions are fulfilled:
   i. With 4 screen display
   ii. When HDMI-1 resolution is set to 4K or below
   iii. HDMI-1 view mode will be set to 64 channels automatically

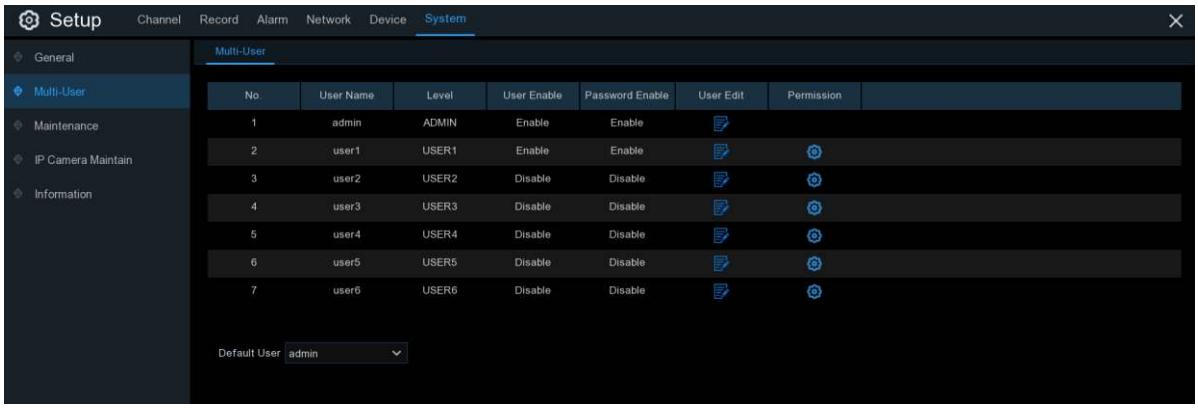
5.7.1.6 Illegal Login Lock



Illegal Login Lock: Check to enable the function.
Illegal Login Limit / Lock Time (min): Specify to activate the lockout when reaching the number of failed login attempts and for the lockout duration.

5.7.2 Multi-user

This menu allows you to configure the user name, password and user permission.



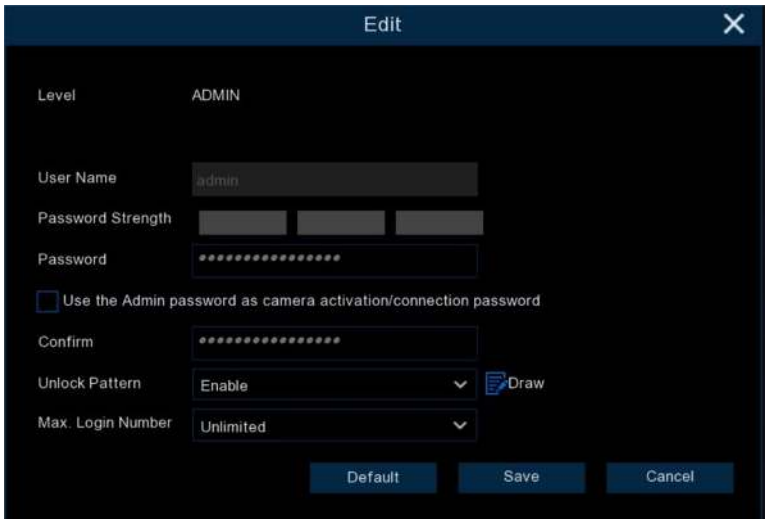
The system supports the following account types:

- **ADMIN — System Administrator**: The administrator has full control of the system, and can change both administrator and user passwords and enable/disable password protection.
- **USER — Normal User**: 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:** Select the default user to login the system when the system starts. admin is the default user account. If multiple user accounts have been created, click the drop-down menu to turn this off.

Note: For normal user to be able to change its password, the system administrator must grant the permission of **Subuser Password Change** first.

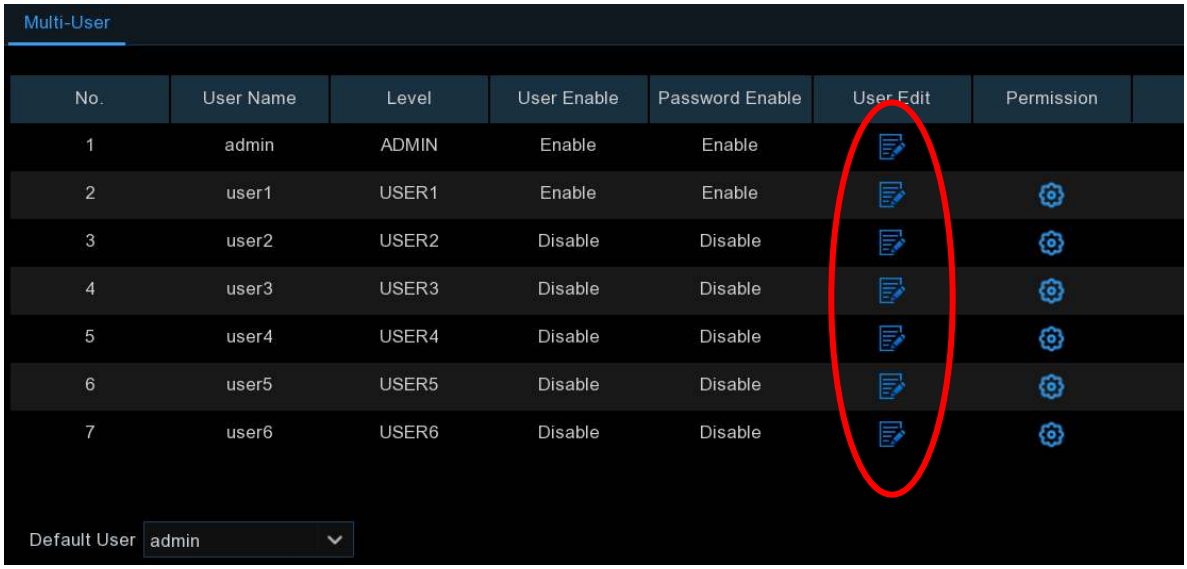
5.7.2.1 Changing Password

To change the password for the administrator or user accounts, click the User Edit icon . The password has to be a minimum of 8 characters and can contain a mixture of numbers and letters. Enter your new password again to confirm, and then click **Save** to save your new password. You will be required to input your old password to authenticate.

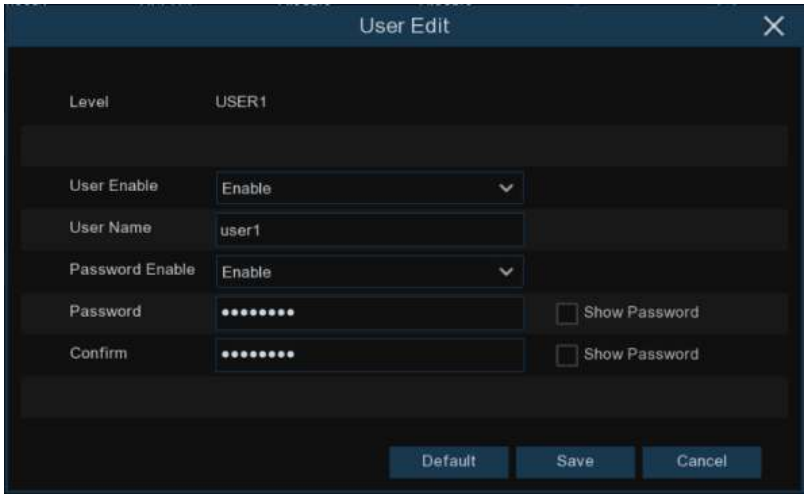


Password Enable: It's strongly recommended to enable the password to protect your privacy. If you want to disable the password protection, ensure your NVR is placed in a secure place.

5.7.2.2 Adding New Users



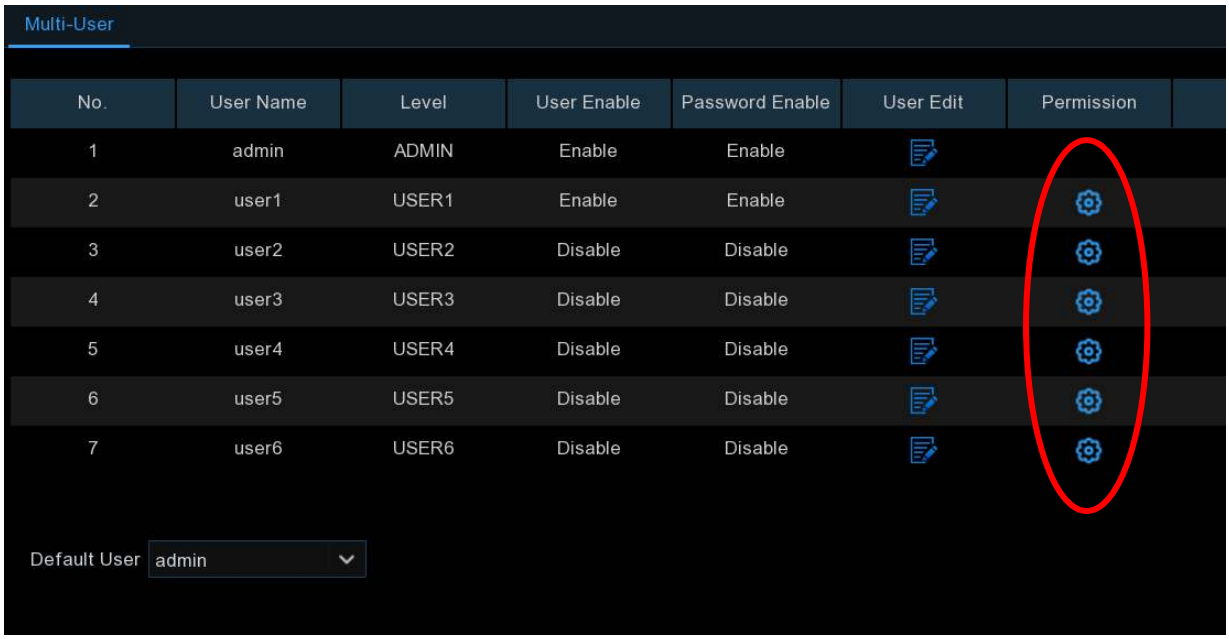
1. Select one of the user accounts that is currently disabled, click the User Edit icon .



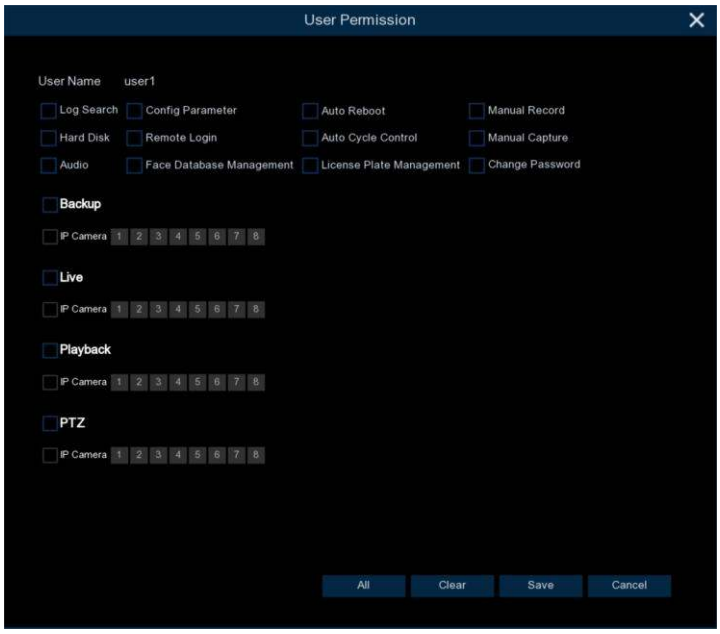
2. Select **Enable** from the drop-down next to **User Enable**.
3. Click the field next to **User Name** to change the user name for the account.
4. Select **Enable** from the drop-down next to **Password Enable**.
5. Click the field next to **Password** to enter the desired password.
6. Click the field next to **Confirm** to reenter the password.
7. Click **Save**. You will be required to input your Admin password to authenticate.

5.7.2.3 Setting User Permissions

The administrator account is the only account that has full control of all system functions. You can enable or disable access to certain menus and functions of each user account.



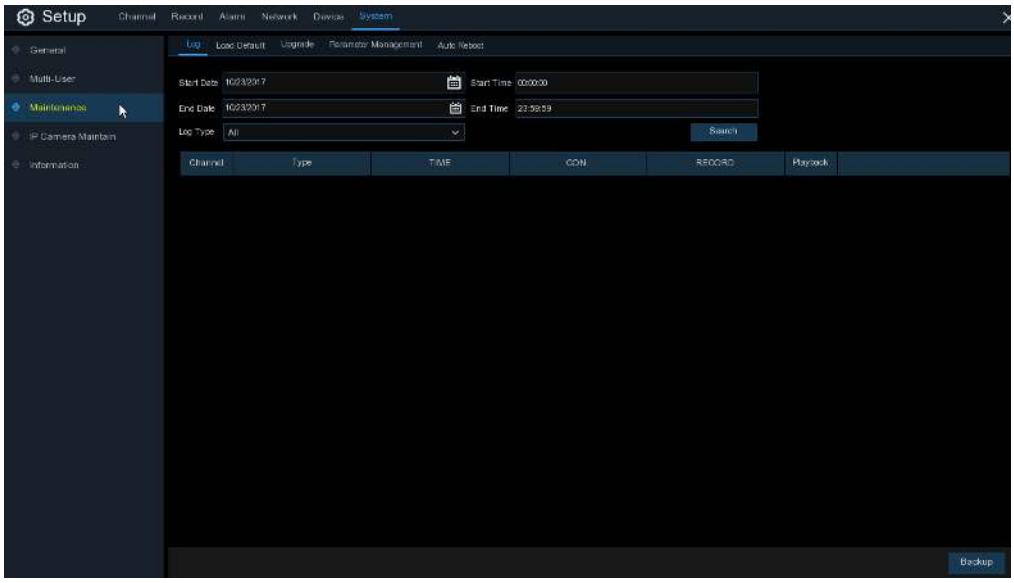
1. Click the edit icon under Permission tab.



2. Check the boxes next to any system menus or capabilities you would like the user to access. Click **All** to check all boxes. Click **Clear** to check none of the boxes.
3. Click **Save** to save your modifications.

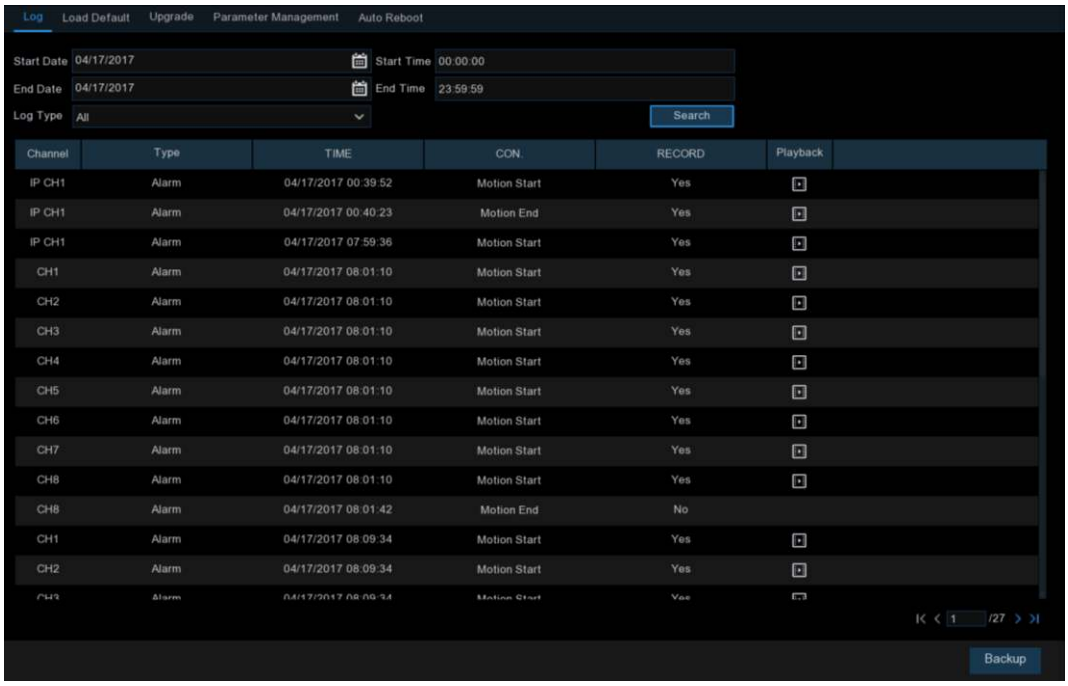
5.7.3 Maintenance

In this section, you will be able to search & view the system log, load default settings, upgrade the system, export & import system parameters and manager system auto reboot.



5.7.3.1 Log

The system log shows you important system events, such as motion alarms and system warnings. You can easily create a backup file of the system log for a set time period to a USB flash drive.

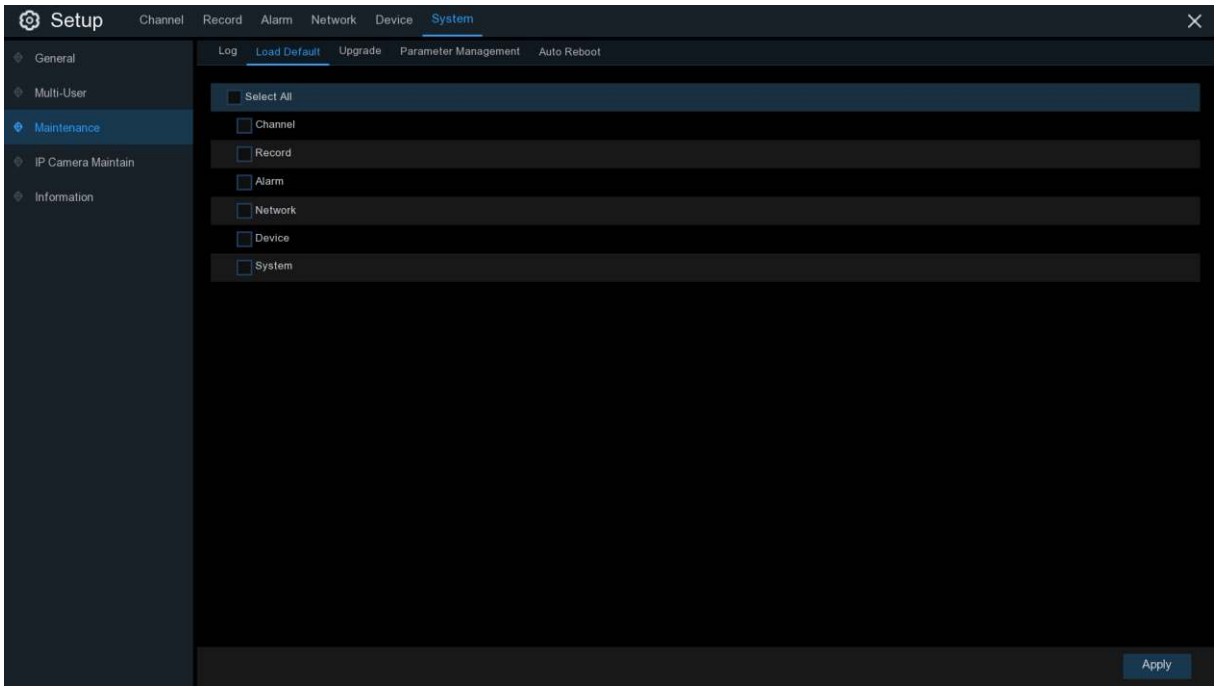


Log Searching and Backing Up:

1. Click the field next to **Start Date** & **Start Time** to choose the starting date & time for your search from the on-screen calendar.
2. Click the field next to **End Date** & **End Time** to choose the end date & time for your search from the on-screen calendar.
3. Select the type of events you would like to search for from the dropdown next to **Log Type**, or select **All** to see the entire system log for the selected time period.
4. Click **Search**.
5. Browse system log events from your search period:
   - Video events can be played back instantly by clicking in the **Playback** column. Right-click to return to your search results.
   - Use the |< < / > >| buttons in the bottom-right corner of the menu to move between pages of system log events.
6. Click **Backup** to create a backup of the system log for your search period. Make sure your flash derive has been connected to the NVR's USB port.
7. The backup drive menu appears. Navigate to the folder you want the backup file to be saved in, then click **OK** to begin.

5.7.3.2 Load Default

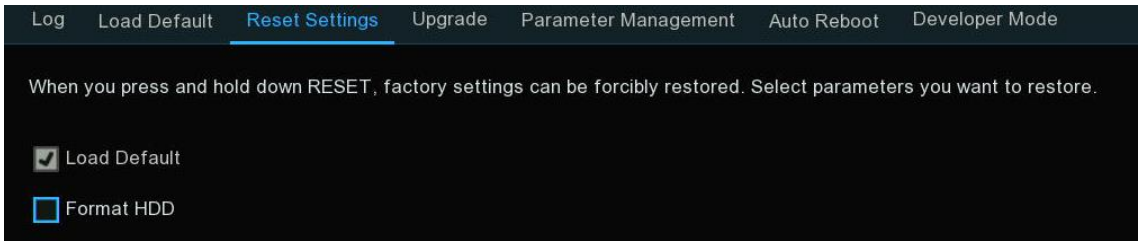
Reset the NVR settings to its out-of-box state. You can choose to reset all settings at once, or just settings on specific menus. Restoring default settings will not delete recordings and snapshots saved to the hard
drive.



Check the items you want restore, or check **Select All** to choose all items. Click **Apply** to load default settings of your chosen items.

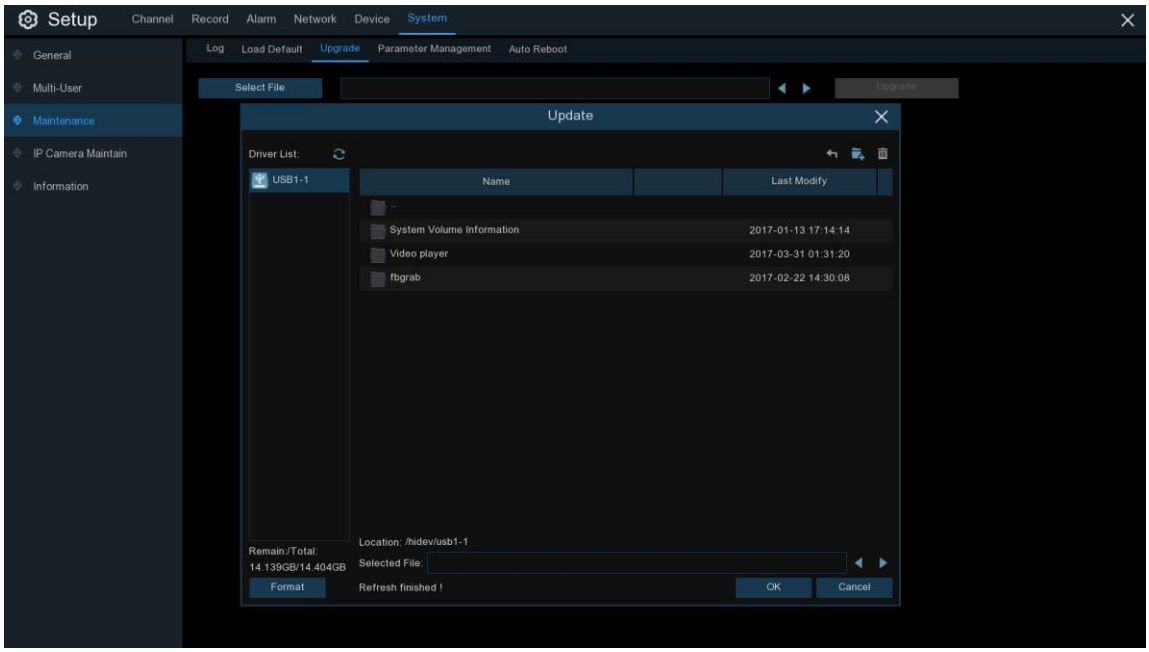
5.7.3.3 Reset Settings

If your NVR comes with a reset button on the rear panel, you will see this menu.



By default, when you press and hold 10 seconds on the reset button with a small pin till the NVR beeps, the NVR will restore default settings. You can tick the checkbox to format HDD if needed.

5.7.3.4 Upgrade

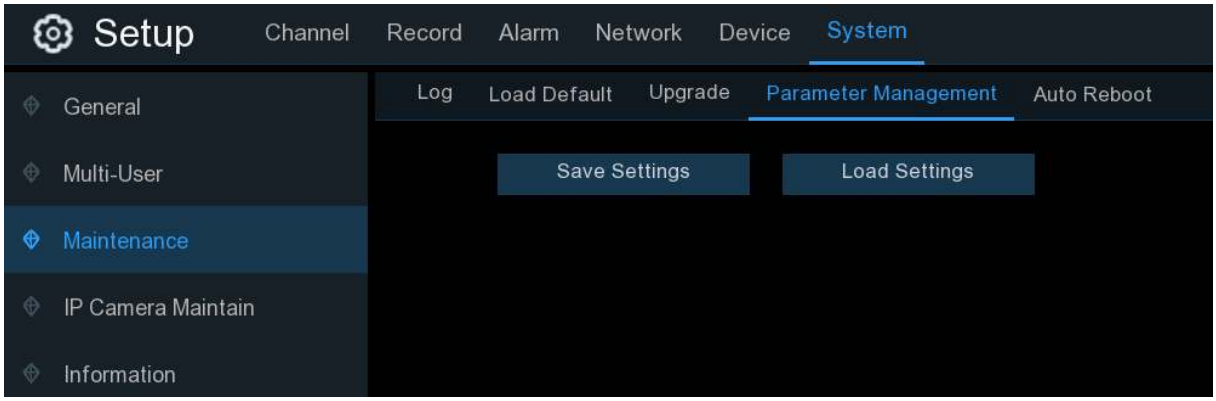


1. Copy the firmware file (.sw file) to your USB drive, and insert the USB flash drive into the NVR's USB port.
2. Click Select File button to choose the firmware file in your USB flash drive, then Click **OK**.
3. Click **Upgrade** button to start system upgrade. The system upgrade will last around 5-10 minutes, do NOT power off the NVR or remove the USB from NVR during firmware upgrade.

Note: You can optionally upgrade the firmware using **GV-IP Device Utility** (V9.0.1 or later). See *Chapter 5.2 Upgrading Firmware Using GV-IP Device Utility* in *GV-RNVR256G0-N Quick Start Guide*.

5.7.3.4 Parameter Management

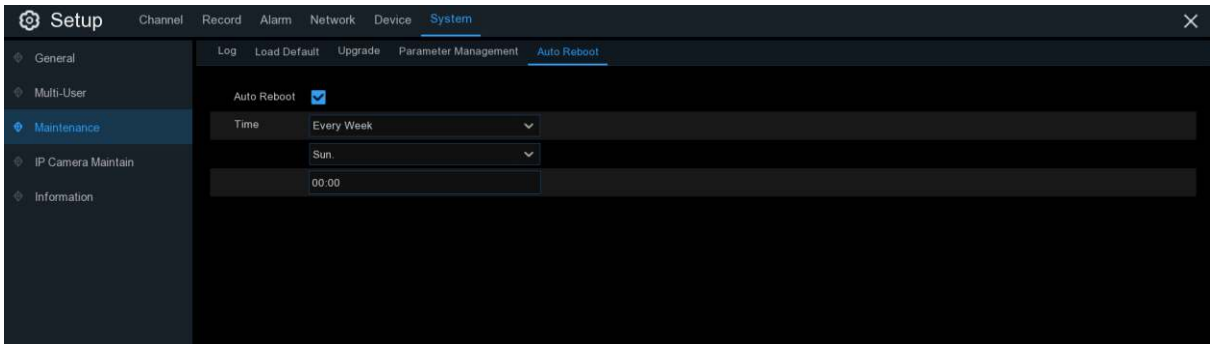
You can export the main menu settings you have configured to a USB flash drive, or import an exported setting file from USB flash drive to the NVR.



Save Settings: Click to save the NVR current system settings to the USB device. You will be required to input the Admin password to authenticate.
Load Settings: Once you have created a system settings export, you can import the settings on another NVR. Click **Load Settings** button to navigate to the system settings file you want to import from your USB flash driver. You will be required to input the Admin password to authenticate.

5.7.3.5 Auto Reboot

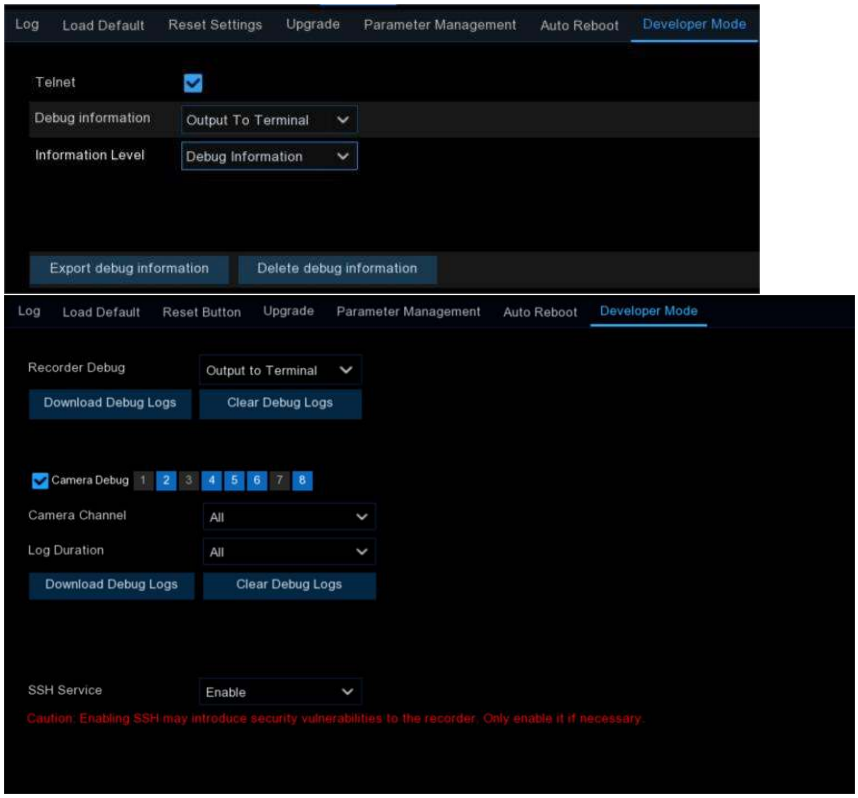
This menu allows the system to auto reboot the NVR regularly. It is recommended to leave this function enabled, as it maintains the operational integrity of your NVR.



Auto Reboot: Check to enable.
Time: You can set the NVR to reboot by day, week or month.

5.7.3.6 Developer Mode

This is an advantage feature on some certain models, which is used to acquire debug log for authorized professionals when you report a defective complaint.



Telnet: This is used for an authorized technician to connect to your NVR remotely. Please keep it disabled unless you're required by an authorized technician.

Debug Log / Recorder Debug: It is used for authorized professionals to learn the system running status.

- ➔ **Disabled:** Debug log won't be saved.
- ➔ **Output to Terminal:** Debug log will be outputted to terminal port.
- ➔ **Output to Disk:** Debug log will be saved to hard disk drive.

Information Level: Used to set the printing level of serial port log information. To enable technical personnel to quickly locate problems, you can set the log output levels in accordance with the device maintenance requirements.

System Information: Only system-level logs (such as low-level drivers) and necessary information during program operation are outputted.

Error Information: In addition to system information, the errors or exception information during program operation are also included in the error log.

Running Information: In addition to the error log, some important information during program operation is also outputted for the developer to analyze the program running status.

Debug Information: In addition to running information, the relevant information added by the developer in advance to assist debugging and positioning is also outputted. There is much print information at this level, which may affect device operation. In general, it is recommended that this option be disabled.

Debug Trace Information: At this level, more detailed debug information is output, further assisting technical personnel to analyze and position the bugs of functional modules. This option is enabled only when the technical personnel clearly require more detailed information.

Export Debug Log: Export the debug log file from hard disk drive to your USB flash drive.

Delete Debug Log: Delete the debug file from the hard disk drive.

Camera Channel: Set whether to record the camera's serial logs to the VCR, select the channel and save, the corresponding channel of the camera debug logs will be transmitted to the VCR side for saving.

Log Duration: Set the debug log duration.

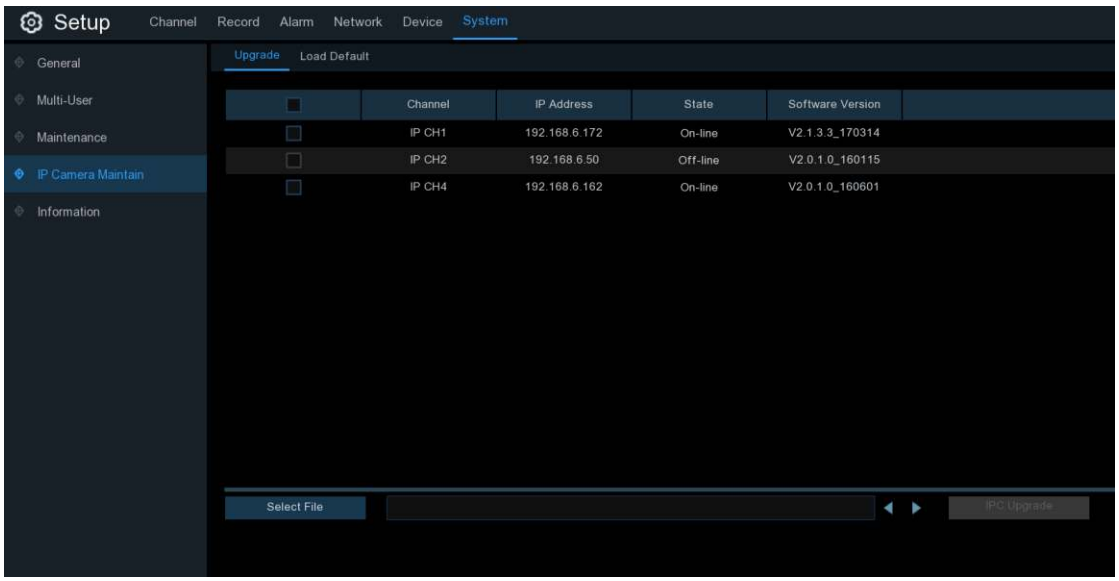
Download Debug Logs: Export the camera debug logs to a USB flash drive, supporting saving by channel and recording time.

Clear Debug Logs: Deletes the camera debug logs stored on the hard disk.

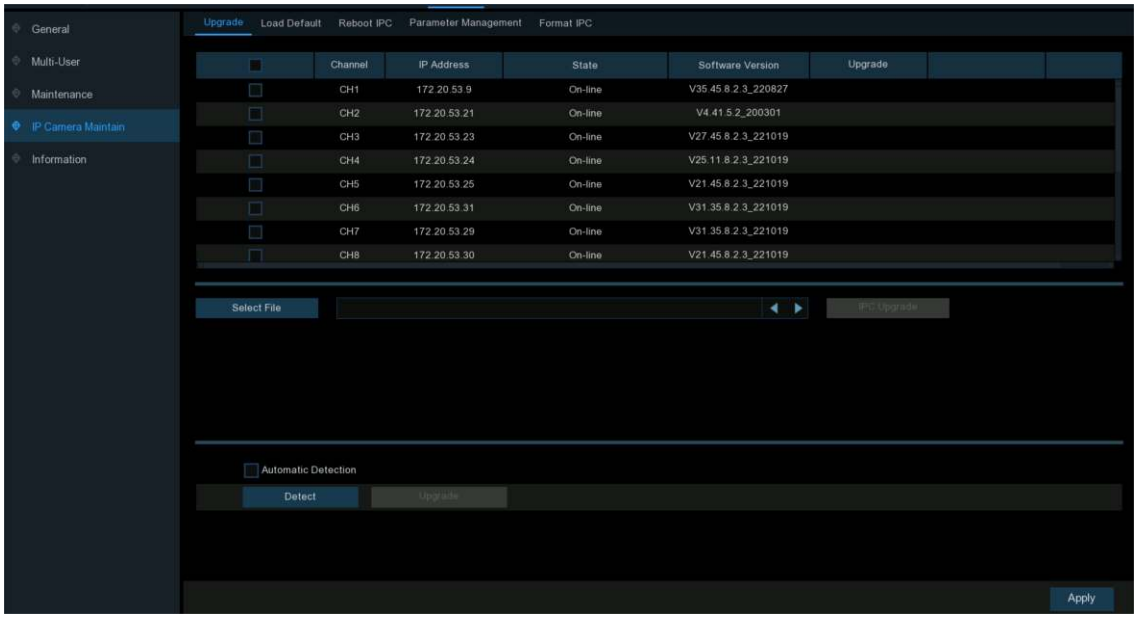
SSH Service: When enabled, you can use SSH to access the device.

5.7.4 IP Camera Maintain

This menu allows you to upgrade the IP camera's firmware and restore default settings of IP camera.



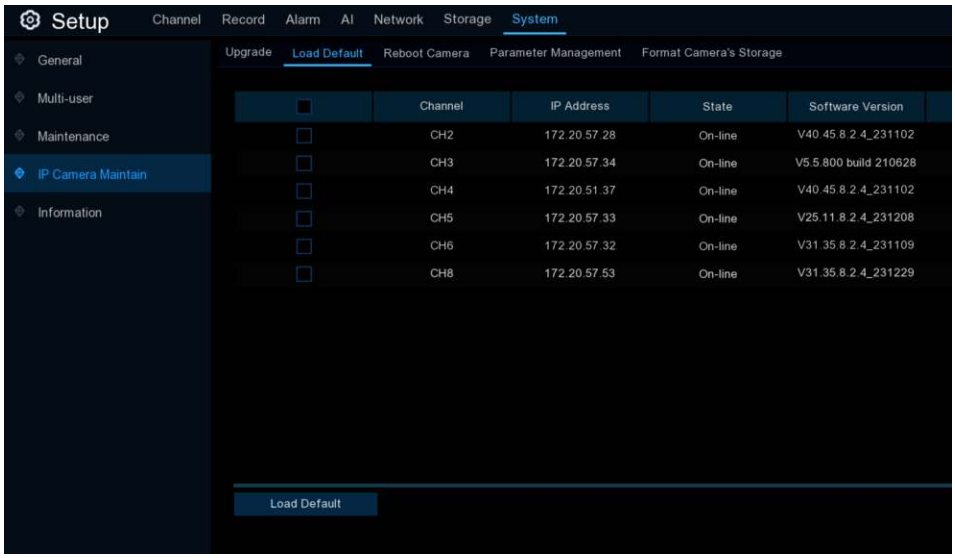
5.7.4.1 Upgrade IP Camera



1. Choose one of the IP cameras you want to upgrade firmware.
2. Click **Select File** select the update file from your USB flash drive, then click **OK**.
3. Click **IPC Upgrade** button to start upgrading. You will be required to input the Admin password to authenticate. Do NOT power off the NVR and IP camera or remove the USB during the upgrading.

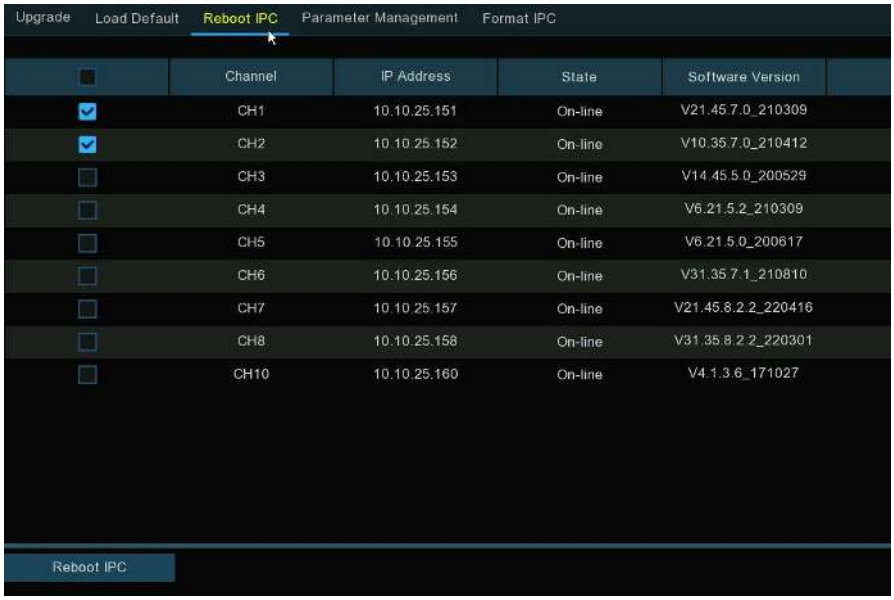
For some certain IP cameras which support online upgrade, you can tick "**Automatic Detection**" if you want to automatically check the upgrade file from server at regular intervals.
Click **Detect** button to check if new firmware is available instantly. If new firmware is available, follow the on-screen instructions.

5.7.4.2 Load Default Settings for IP Camera



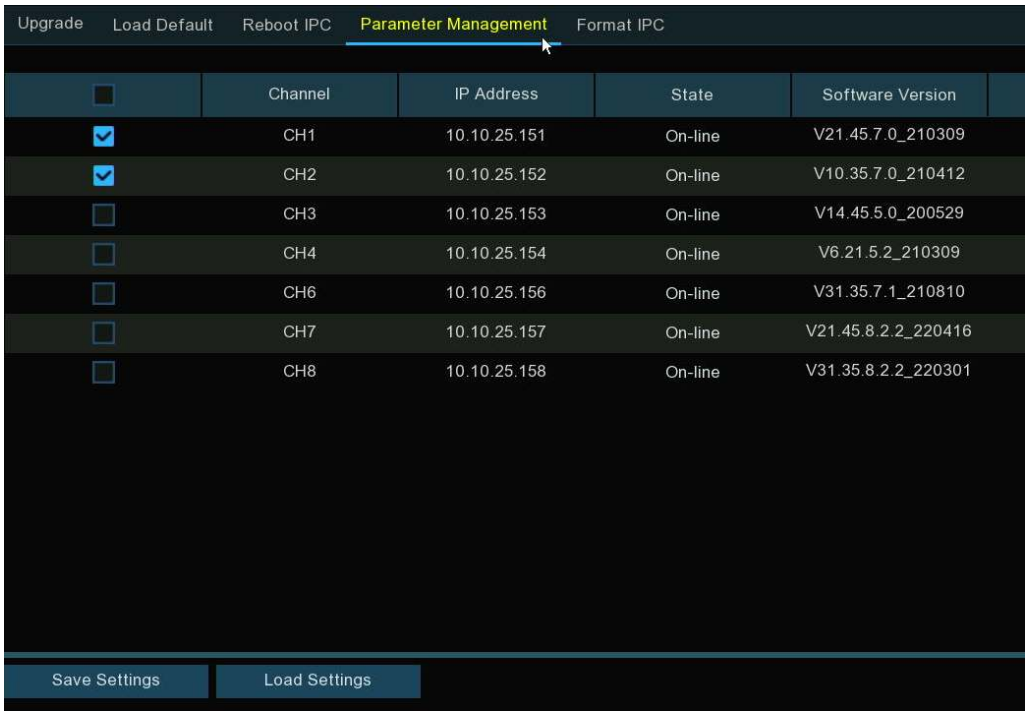
1. Choose the IP cameras you want to restore.
2. Click **Load Default** to restore settings. You will be required to input the Admin password to authenticate.

5.7.4.3 Reboot IP Camera



In case of any issues, choose the camera(s) and then click "**Reboot IPC / Camera**" button to reboot selected camera(s).

5.7.4.4 Parameter Management

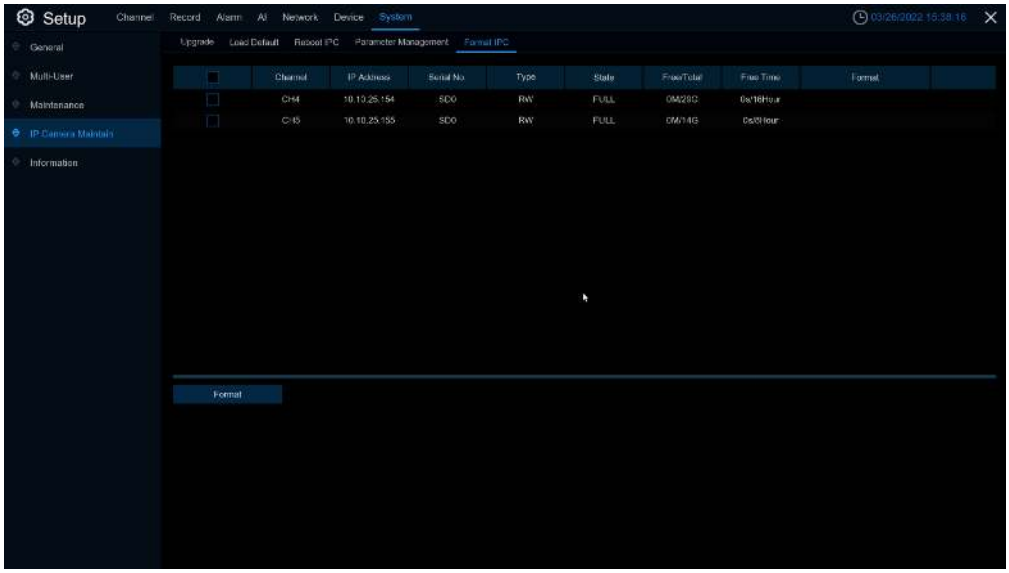


Select the camera(s), and then click "**Save Settings**" to export the configuration file containing all the settings that you have customized to your USB flash drive.

Load Settings: Click this button to import a configuration file containing all the settings that you have customized and apply to the selected camera(s).

5.7.4.5 Format IP Camera

To format the SD card installed on the supported IP camera.



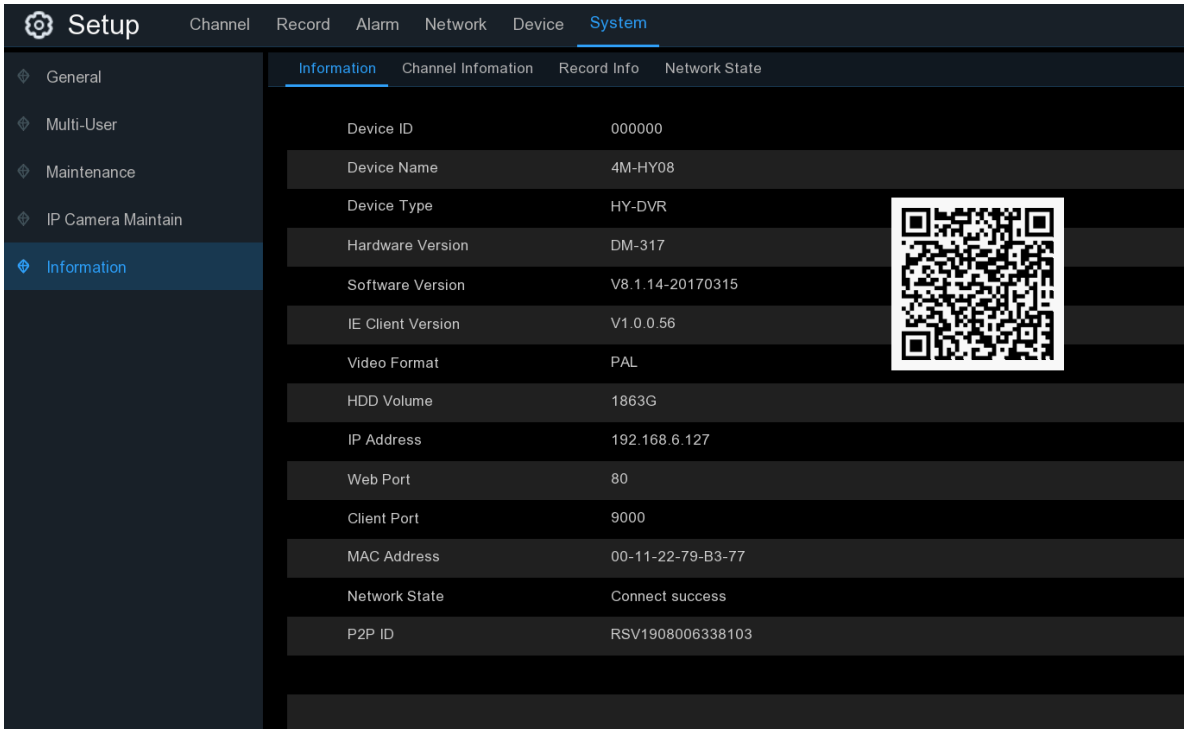
Select the camera, and then click "**Format**" to format its SD card.

5.7.5 System Information

This menu allows you to view the system information, channel information, record information & network status.

5.7.5.1 Information

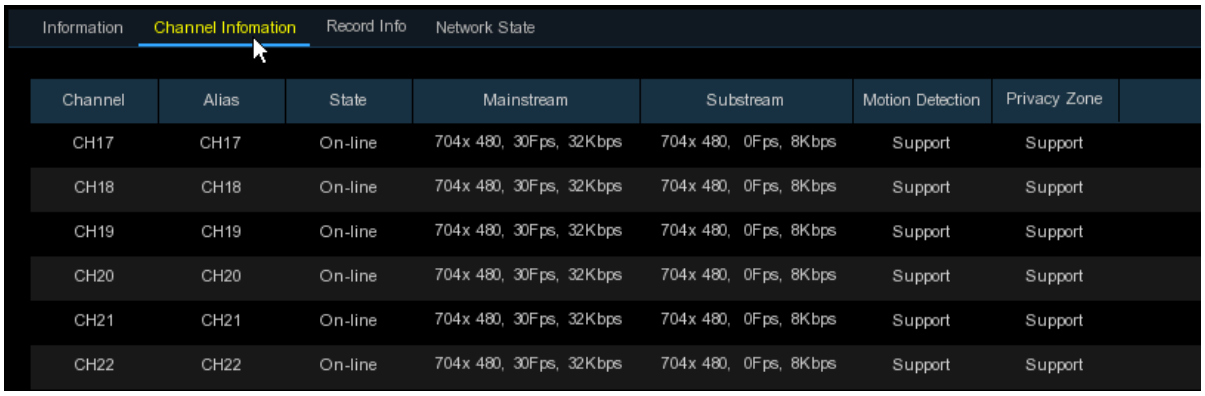
View system information such as device ID, device model name, IP address, MAC address, firmware version and more.



If your NVR supports P2P function, you will find the P2P ID & P2P QR code in the information page. You can scan this QR cord with the mobile app to remote view the NVR.

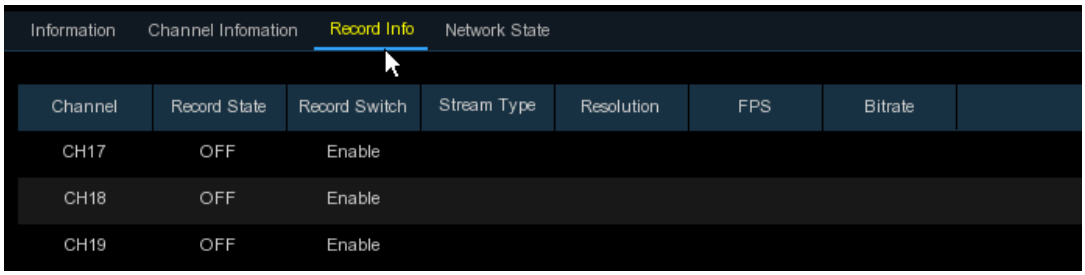
Note: The P2P function is only available in GV-Eye mobile app V3.2.0 or later.

5.7.5.2 Channel Information



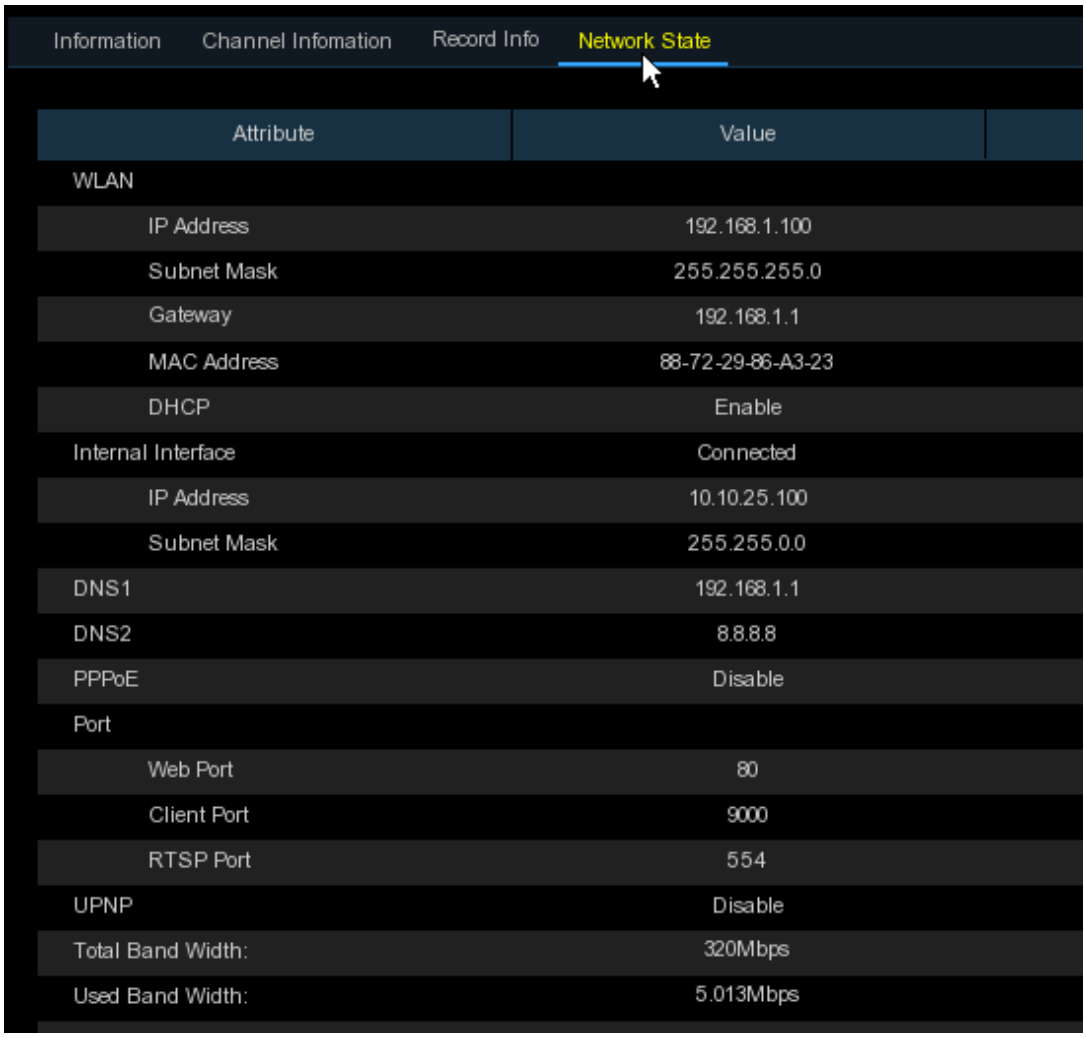
View channel information for each connected camera such as alias, mainstream and substream recording specifications, motion detection status & privacy zone.

5.7.5.3 Record Information



View recording information for each connected camera such as bitrate, stream type, recording resolution and frame rate (FPS).

5.7.5.4 Network State



View network information.

Total Band Width: It shows the NVR's total input band width for IP cameras.

Used Band Width: It shows the used band width of IP cameras.

Chapter 6 AI Scenario

AI Scenario function provides AI applications for different specific scenarios. Click the submenu title in the main setup page to get into the individual function setup page.

Note:

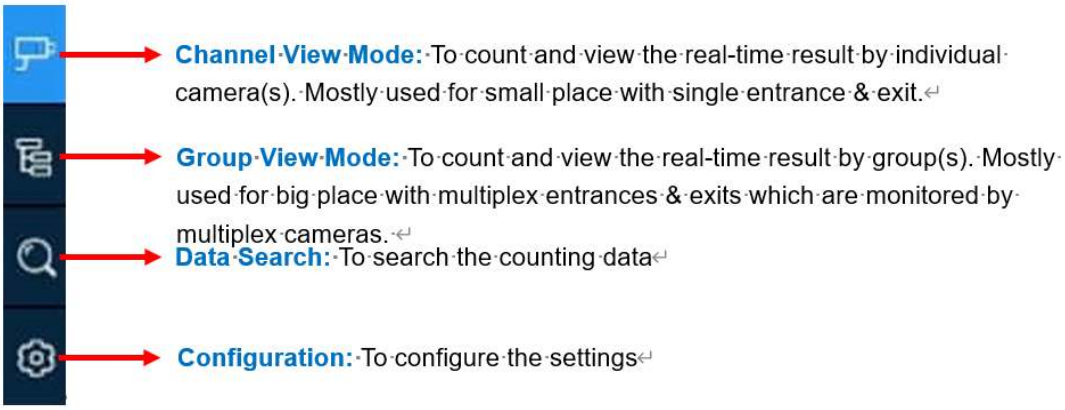
1. The AI Scenario functions are only applicable when connected to the following R Series AI-capable GV-IP cameras. Make sure the corresponding AI functions are enabled on the cameras.
   - GV-RBL5800
   - GV-RBL5811
   - GV-REB5800
   - GV-RMS32810
2. These settings are not available on the NVR's Web interfaces.

6.1 Cross Counting

This is an AI application based on cross counting function, which helps to control the attendance number of customers/visitors/vehicles in public places, like restaurants, parks, zoos, theaters, museums, car parks, etc.



1. Navigation bar on the left side:



2. Real-time data display:



Available: Remaining allowed attendance number
Inside: Current attendance number inside the control area
Enter: Recorded number of total entrants
Exit: Recorded number of total leaving attendance.

3. Real-time counting data display:



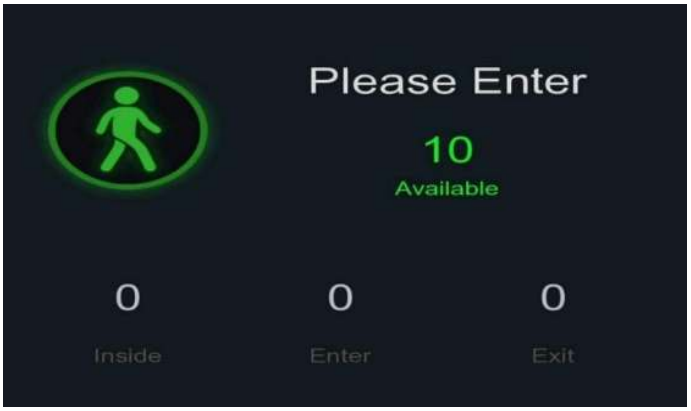
 Screen display layout of 4/6/9 channels.

 To show or hide the real-time data display.

 Clear counting data for the selected channel

 Clear counting data for all channels

4. Real-time counting data information bar



This bar will display the real-time counting data for the selected channel.

Available: Remaining allowed attendance number

Inside: Current attendance number inside the control area

Enter: Recorded number of the total entrants

Exit: Recorded number of the total leaving attendance.



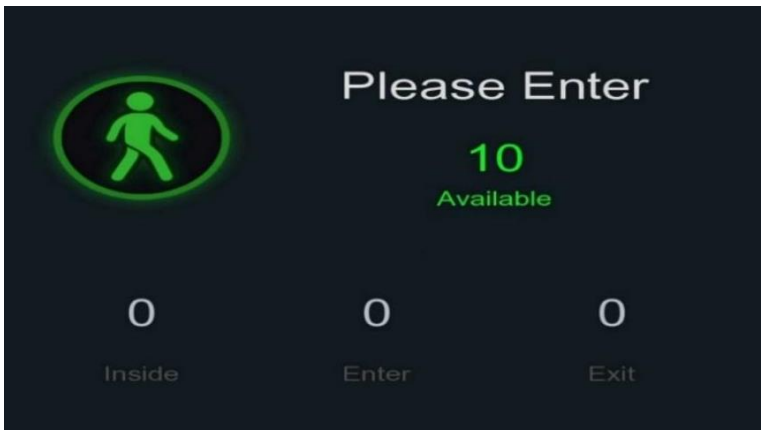
If the available number is more than 0, the figure will be in green color.



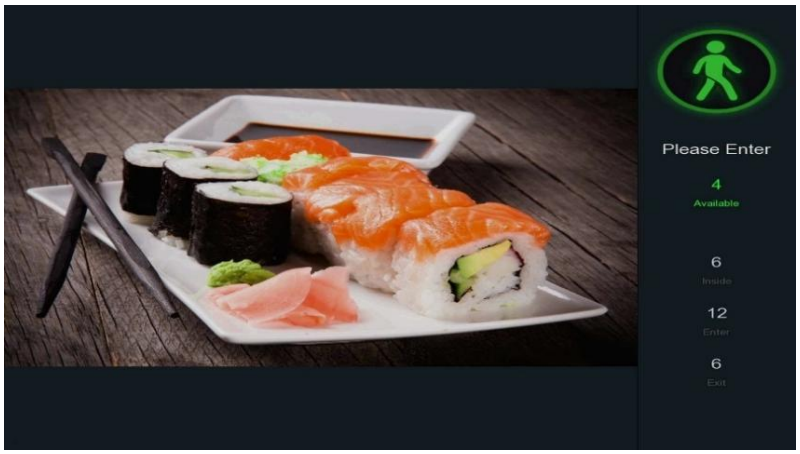
If the available number is 0, the figure will be in red color.

5. Full Screen Button:

Click the full screen icon ⛶ to display the real-time counting data for the selected channel(s) or group(s).



If you have enabled the **Advertise Mode**, your advertising pictures will be displayed with the real-time counting data together in the full screen mode. Learn more for **Advertise Mode** on 6.1.3 Advertise Mode.



Right click your mouse to exit the full screen mode.

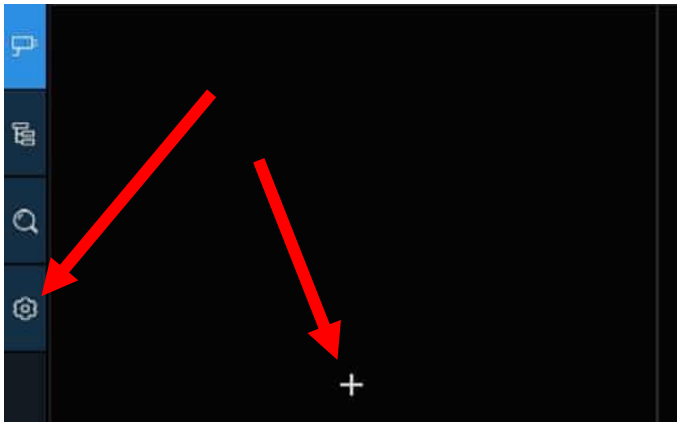
6. Statistic data chart:

Channel	Type	12:00	13:00	14:00	15:00	16:00	17:00
CH2	Enter	6	11	12	1	0	0
	Exit	9	11	12	1	0	0
	Inside	0	0	0	0	0	0
CH3	Enter	-	-	-	-	-	-
	Exit	-	-	-	-	-	-
	Inside	-	-	-	-	-	-
CH5	Enter	47	27	36	8	0	13
	Exit	26	13	16	3	0	9
	Inside	100	114	134	139	139	143
CH6	Enter	0	0	0	0	0	0
	Exit	0	0	0	0	0	0
	Inside	0	0	0	0	0	0

The all-day counting statistical data of all activated channels will be displayed below the real-time counting data information. Use the mouse wheel to move the timeline toward left or right.

6.1.1 Channel View Setup

1. Click the add icon ＋ or setup icon ⚙ to get to the configuration page.



2. Enable the channel(s) you want to realize the counting function in the **Channel** list. The Setup & Alarm icon ⚙ will be in blue color if the camera in that channel supports AI function; on the contrary, if the camera doesn't support AI function, the icon ⚙ will be in grey color.
3. Set the **Capacity** number for each channel, which is the maximum limitation of the attendance.

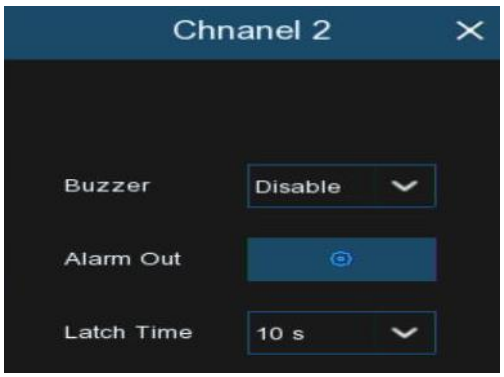
4. Click one of the **Setup** icons to configure the detection conditions.



Switch: Activate or inactivate the detection.
Type: Choose the detection target objects. **Motion** will detect all moving objects, **Person** will detect human beings only, and **Vehicle** will detect vehicles only.
Sensitivity: Set the sensitivity level. Level 1 the lowest sensitivity level while level 4 is the highest sensitivity level.
Rule Type:
A→B: If a target object is detected moving from side A to side B, the system will count 1 to enter number; if a target object is detected moving from side B to side A, the system will count 1 to exit number.
B→A: If a target object is detected moving from side B to side A, the system will count 1 to enter number; if a target object is detected moving from side A to side B, the system will count 1 to exit number.
Start Time: Set the detection start time.
End Time: Set the detection end time.
Dynamic Marking / Bounding Box: If you enable this option, the border of the detection zone will be displayed in both live view images and recording files.

Configuration Steps:
1. Activate the **Switch**.
2. Choose the detection target type.
3. To set the **Sensitivity**.
4. Choose a **Rule Type**.
5. Set the **Start Time** and **End Time**.
6. Use your mouse to click 2 points on the camera picture to draw a virtual line.
7. Click **Save** to save your settings.

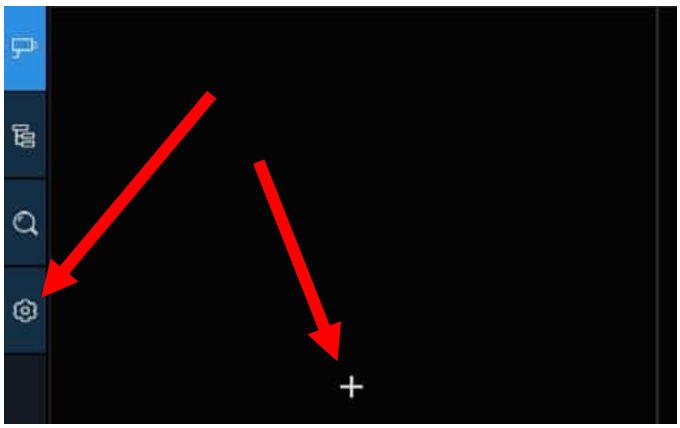
8. If you want to modify the position or length of the line, click the red box in the line, the color of the line will be changed to red color. Click and hold the left button of your mouse to move the line, or drag the terminals to modify the length or position of the line.
9. If you want to remove one of the lines from the camera picture, click the red box in the line and then click **Remove** button.
10. Right click your mouse to exit the setup page.
11. Repeat step 3 to finish the configuration for all channels you want to activate the function.
12. Click one of the **Alarm** icons to configure the alarm actions when the Available number is 0.



Buzzer: Set the buzzer duration in seconds when the Available number is 0.
Alarm Out: If your NVR supports to connect to external alarm device, you can set to emit an alarm tone.
Latch Time: To configure the external alarm time when the Available number is 0.
Right click your mouse to exit the alarm setup page, and then click **Save** button to save the settings.
13. Click the **Channel View** icon to view the live images & counting data of all activated channels.

6.1.2 Group View Setup

1. Click the add icon + or setup icon ⚙ to get to the configuration page.



2. Click the **Add IP Camera** icon to add channel(s) to the group. Max. 8 groups can be set, but each one channel can be added to 1 group only. If a channel is enabled in the Channel View mode, it will be not allowed to add to any group.



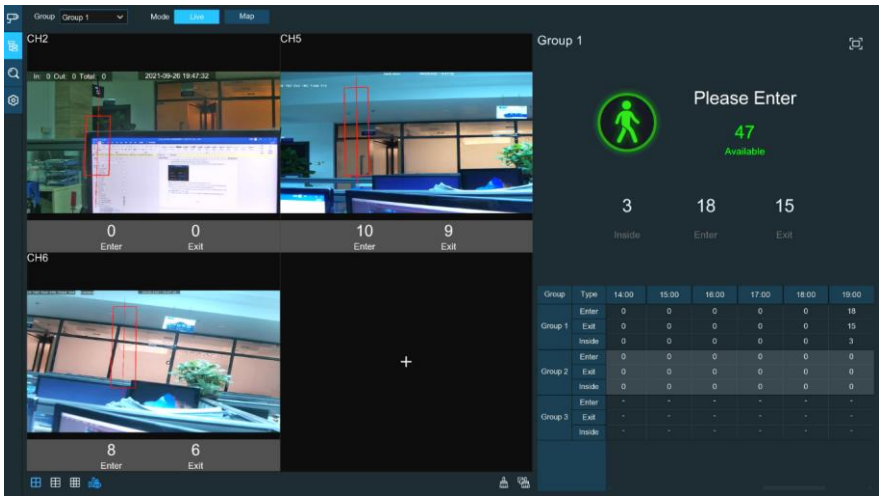
3. Check the Enable box to activate the group.
4. Set the **Capacity** number, **Start Time**, **End Time** of each group.
5. Choose the detection target **Type** from **Person**, **Vehicle** and **Motion**.
6. Click one of the **Alarm** icons ⚙ to configure the alarm actions when the Available number is 0.



Buzzer: Set the buzzer duration in seconds when the Available number is 0.

Alarm Out: If your NVR support to connect to external alarm device, you can set to emit an alarm tone.
Latch Time: To configure the external alarm time when the Available number is 0.

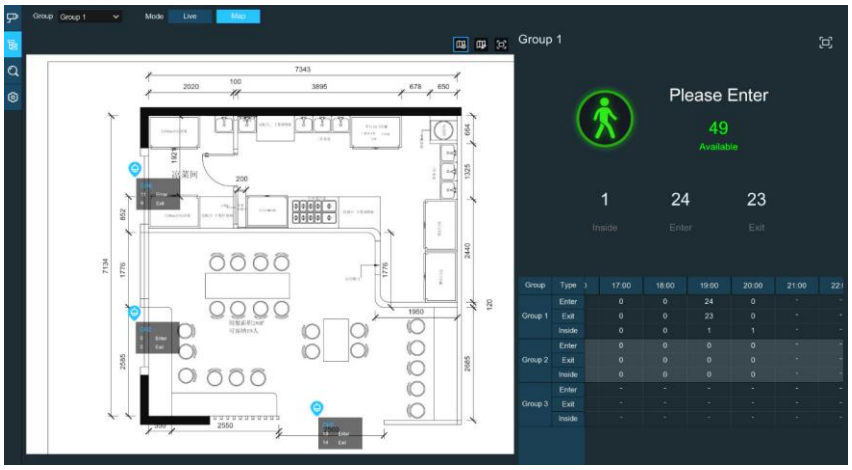
7. Click the close icon ✕ or right click your mouse to go back to previous configuration page, and then click **Apply** button to save the settings.
8. Click the **Group View** icon to view the live images & counting data of all activated groups.



9. You can choose which group you want to view the real-time live images and counting data.



10. Furthermore, it supports to display the counting data in Map mode. Click the **Map** button to configure the settings.



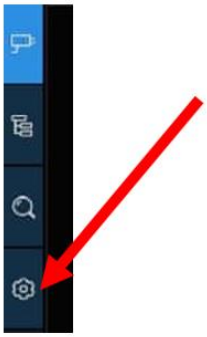
11. Click the icon to add a map image from your USB memory.

12. Click icon to adjust the site of the IP cameras. Click and hold the channel icon and move one by one to adjust the position of your IP cameras on the map. You can click icon to display the map in full screen.

6.1.3 Advertise Mode

The system supports to demonstrate your advertising pictures with the Cross Counting functions.

1. Click the **Configuration** icon to in the **Navigation bar** to get to the configuration page.



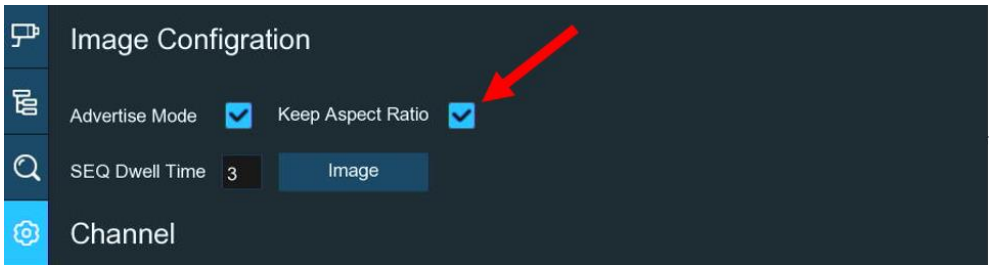
2. Check the Advertise mode in the



3. Click **Image** button to load advising pictures from your USB memory. It supports to add maximum 16 pictures with jpg, png and bmp format, and the maximum resolution should be no more than 2560 x 1600. Click the add icon to add new picture(s) and click delete icon to delete the added picture one by one. Click the close icon or right click your mouse to go back to previous configuration page.



4. Check the **Keep Aspect Ratio** box if you want to display the images with their original aspect ratio. Uncheck the box if you want the pictures to be stretched and displayed full screen.



5. Set the **SEQ Dwell Time** in seconds which will decide how long each picture will stay in the screen.
6. Click **Apply** button to save your settings.
7. Go back to Channel View mode or Group View mode, click the full screen button on the right upper corner to display your advertising pictures and the real-time counting data for the selected channel(s) or group(s).



6.1.4 Search Counting Data

1. Click the **Search** icon to search the counting data.
2. It allows you to search separately for Channels and Groups. Choose the channel(s) or group(s) you want to search, set the search duration by day, by week, by month or by year and choose the target type you want to search. Click the search icon , the result will be displayed on the right side of the window.



Click to display the result in column chart

Click to display the result in tendency chart

Click to display the result in detail chart

Click to export the result into your USB flash drive

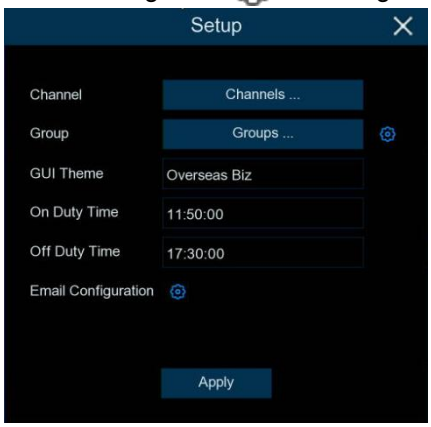
6.2 Face Attendance

Face Attendance is an AI application based on Face Recognition results. You're able to view and check the real-time statistical data of attendance management visually.

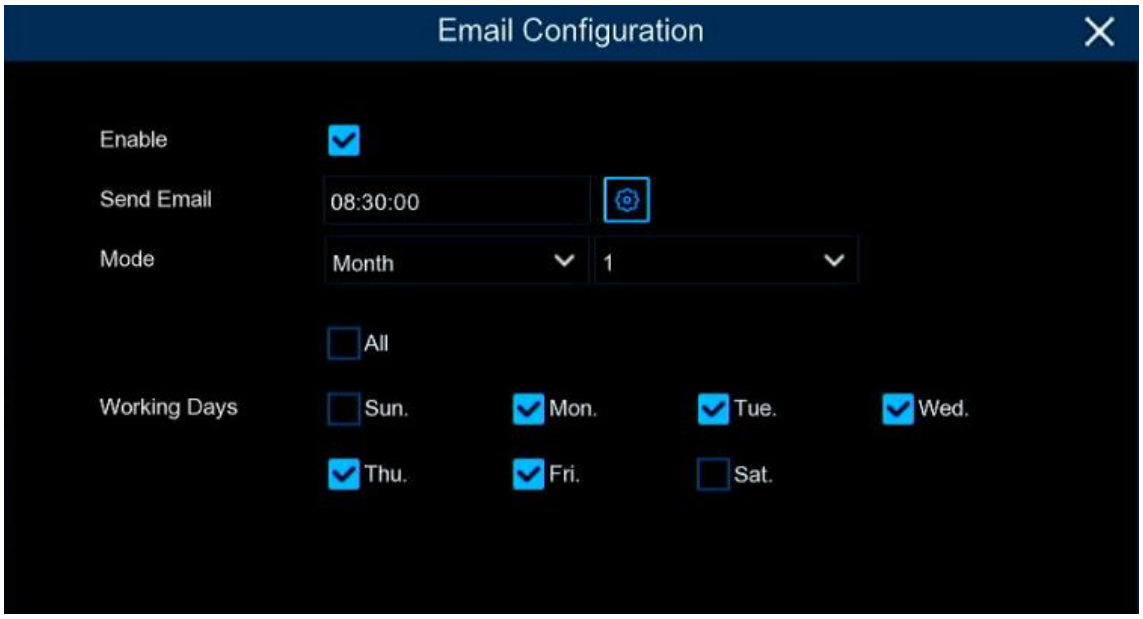


1. Custom title.
2. Overall attendance statistical data of all selected groups.
3. Individual attendance statistical data of each selected group.
   The total number of people who need to check attendance
   The number of people who have checked attendance already
   The number of people who haven't checked attendance.
4. Live view screen: To display the live camera images. Click the screen split icons ☐, ◫, ⊞ to change the display layout.
5. Push notifications of latest persons who have checked the attendance, including the Name/ID of the person, captured face image, group, clock in time, and clock out time. Normal clock in & clock out time will be displayed in green color. Abnormal clock in & clock out time will be displayed in red color. Click the screen split icons ☐, 12, ⊞ to change the display layout.
6. Click search icon to search the face attendance data. Check more on 7.1.9.1 Face Attendance.

Click Setting icon to configure the face attendance settings.



Channels: To choose the channels for face detection
Group: To choose the attendance people group. If you want to edit the group database, click the icon to edit. Check more on 5.4.2.2 Database Management.
GUI Theme: To give a custom title to the face attendance.
On Duty Time: To set the on-duty time.
Off Duty Time: To set the off-duty time.
Email Configuration: To send the attendance statistical data by email. click the icon to edit the email configuration.

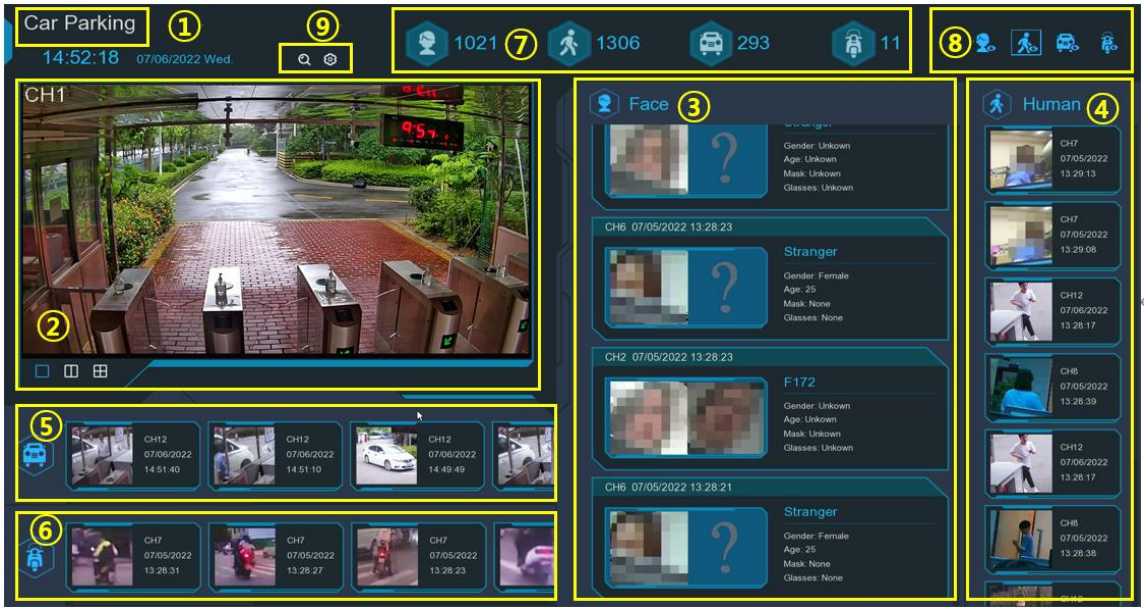


Enable: Check the box if you want to send the attendance statistical data by email.
Send Email: Set the preset time for sending the email.
Mode: Choose to send the email once in every **Day**, every **Week**, or every **Month**.
Day: Send the attendance statistical data of previous day once a day.
Week: Send the attendance statistical data of last 7 days once a week.
Month: Send the attendance statistical data of last month once a month.
Working Days: To select the working days. It will affect the attendance statistical data.

Click the setting icon to configure your email configuration. Check more on 5.5.3.1 Email Configuration.

6.3. Object Classification

Object Classification is an AI application based on face detection, human and vehicle function, which is used to classify and count the number of detected faces, human beings, motor vehicles and non-motor vehicles in a certain period.



1. Customized title of the object classification.
2. Live view screen: to display the live camera images. Click the screen split buttons ☐ ◫ ⊞ to change the display layout. Continuously click a button to display next page.
3. Notifications of detected face images. Use the mouse wheel to move up and down.
4. Notifications of detected human images. Use the mouse wheel to move up and down.
5. Notifications of detected motor vehicles. Use the mouse wheel to move left and right.
6. Notifications of detected non-motor vehicles. Use the mouse wheel to move left and right.
7. Statistical data of detected objects in a selected period.
8. Click the icons to display or hide relative object:

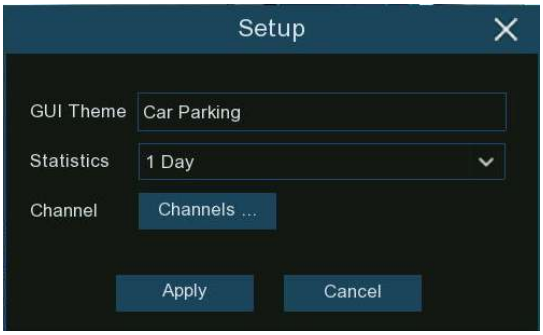
To display or hide face images.

To display or hide human images.

To display or hide motor vehicle images.

To display or hide non-motor vehicle images.

9. Click search icon to search the recording of human & vehicle detection events. Click Setting icon to configure the object classification settings:



GUI Theme: To give a customized title to the object classification.

Statistics: To select the time period you want to show the data.

Channels: Click to choose channel(s) of which you want to show the data.

Chapter 7 Search, Playback & Backup

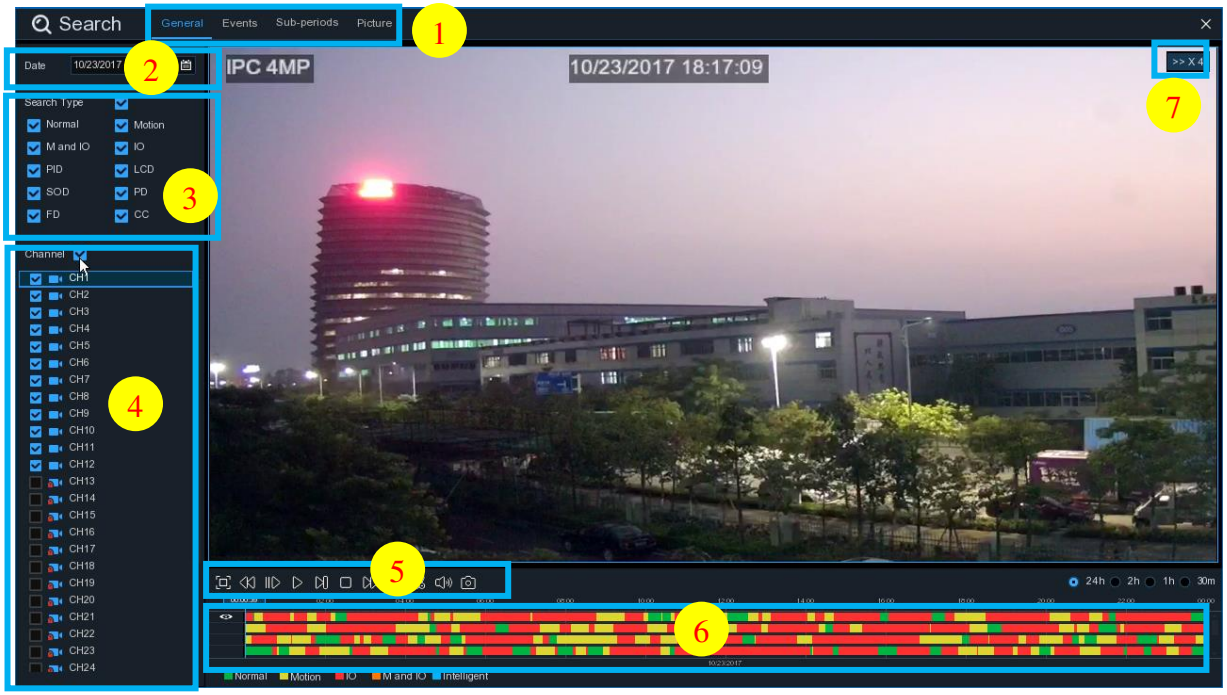
The Search function gives you the ability to search for and play previously recorded videos as well as snapshots that are stored on your NVR's hard drive. You have the choice of playing video that matches your recording schedule, manual recordings or motion events only. The Backup function gives you the ability to save important events (both video and snapshots) to a USB flash drive. A maximum of 16 channels of playback is supported.

Note: To play the video clips saved locally on your PC, install and launch one of the following players **before** locating the recordings. Wait for 3 ~ 30 seconds before the video starts to play.

1. GV-R Series Video Player
2. VLC Media Player
3. KM Player

7.1 Using Search Function

Click **Search** button in the Start Menu to enter search section.



1. **Search Options:** the system provides various search & playback methods: General, Events, Sub-periods, Smart & Pictures
2. **Search Date:** search by a date to play back.
3. **Search Type:** the system provides different search types to narrow your search.
4. **Channel Selection:** to choose the channels you want to search & play.
5. **Video Playback Controls:** to control the video playback.



Enlarge the video playback to full screen

Rewind, x2, x4, x8 and x16

Slow Play, 1/2, 1/4 and 1/8, 1/16 speed

Play

Pause

Play frame by frame. Click once to play a frame of the video

Stop

Fast Forward, x2, x4, x8 and x16

Digital Zoom: Click to zoom in then click-and-drag on a camera image during playback to zoom in on the selected area. Right-click to return to regular playback.

Video Clip. Quickly save a section of video to a USB flash drive. View more on 7.1.1.1 Video Clip Backup

Save Video Clip.

Volume Control: scroll the slider bar to increase or decrease volume.

Snapshots: to capture a snapshot image to your USB flash drive. If the video playback is in split-screen view, move the mouse cursor to the channel you want to capture, and then click the icon to save the snapshot.

6. **Timeline:** Continuous recordings are shown with colored bars to represent different types of recording (legend shown in the bottom-right corner of the display). Use the timeframe options (

) to view a smaller or larger time period.

Different types of recording shown in different colors:



Continuous Recording in **Green** color;

Motion Recording in **Yellow** color;

I/O Recording in **Red** color;

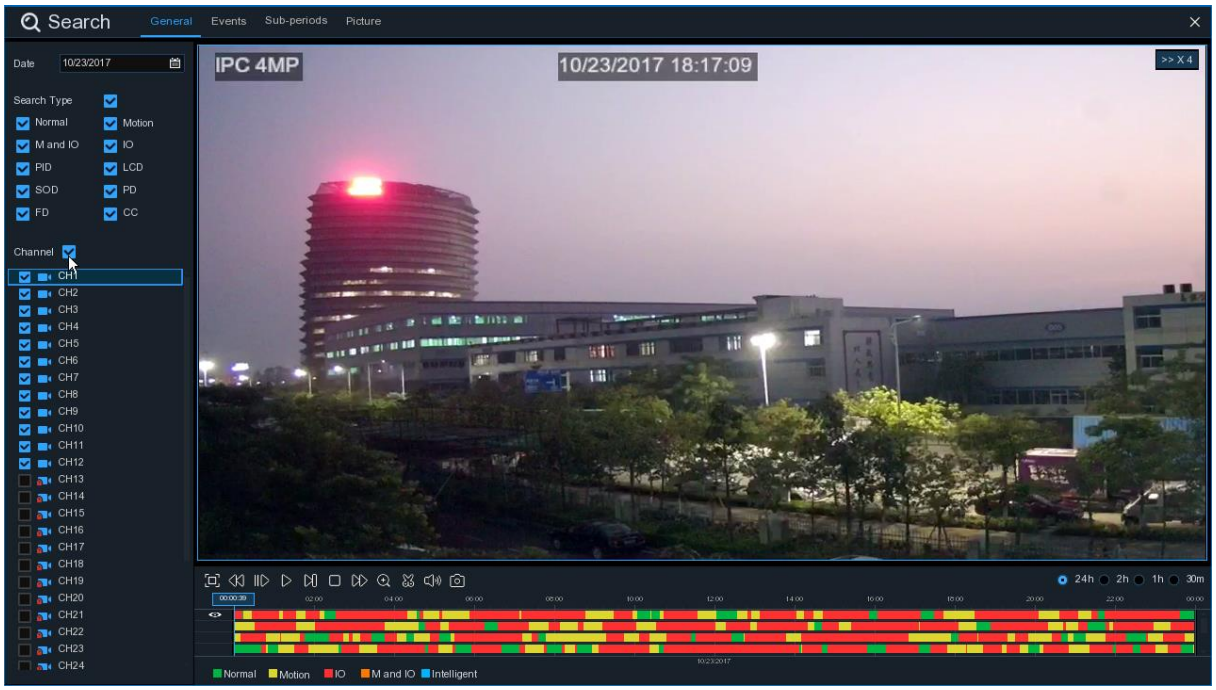
Motion & I/O Recording in **Orange** color;

AI / Intelligent Recording in **Blue** color;

7. **Playback Status:** display the video play status.

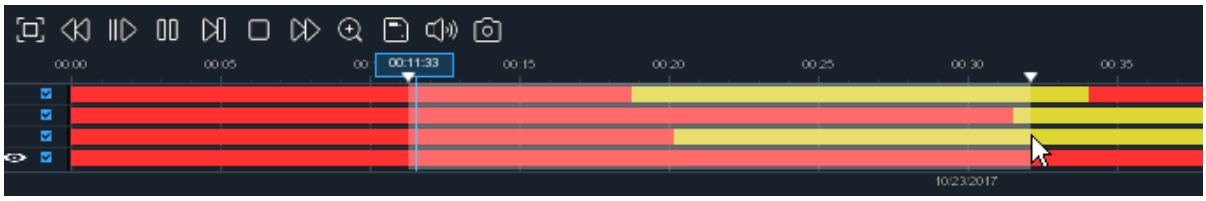
7.1.1 Search & Play Video in General

This menu gives an option to search & play recording for a selected date.

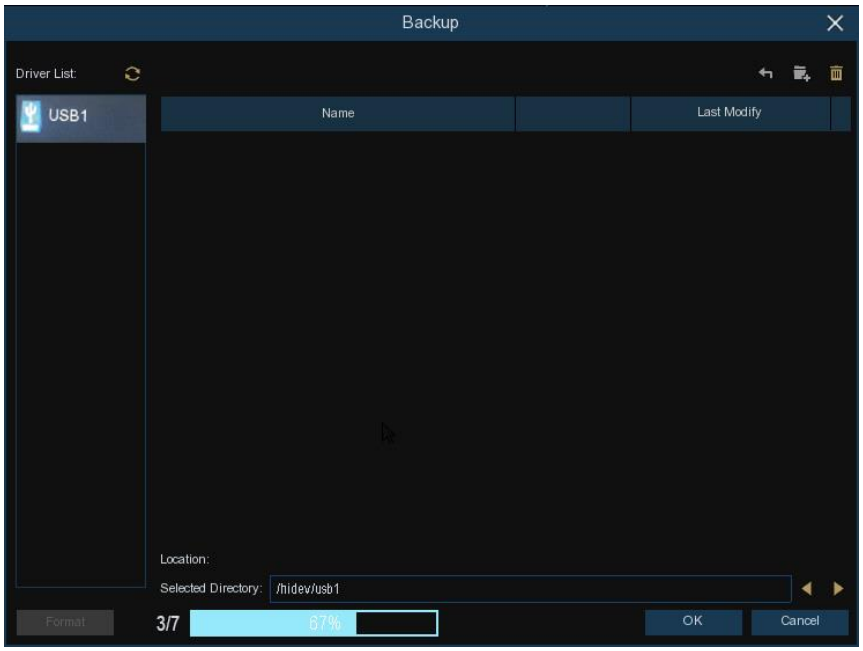


1. Select a date to search for video recording from the calendar.
2. Choose a search type.
3. Check channels you would like to search, or check **Channel** to search all connected channels.
4. The search result will display on the timeline from 00:00 to 24:00.
5. Click ▷ button to start playback.
6. Control the playback with buttons on **Video Playback Controls.**
7. Use the timeframe options (24h 2h 1h 30m) to view a smaller or larger time period.
8. If you want to quickly save a section of video during playing back to a USB flash drive, use the **Video Clip** backup function.

7.1.1.1 Video Clip Backup

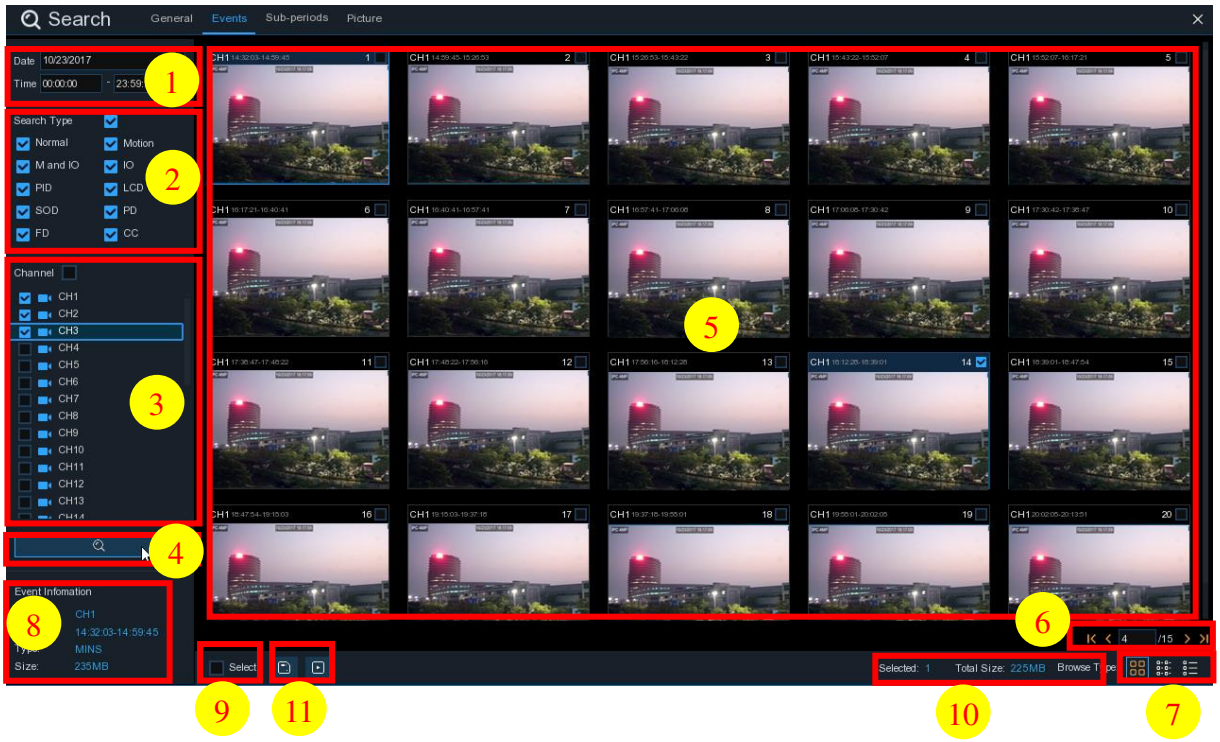


1. Insert your USB flash drive to the NVR.
2. Start a video recording playback.
3. Click icon.
4. Check the channel(s) you want to make a video clip backup.
5. Move the mouse cursor to the timeline where you want to start the video clip.
6. Press and hold the left button of your mouse, and drag the drag the cursor to the timeline where you want to end the video clip.
7. The icon has been changed to icon, click to save the video clip.
8. Select a file type for your backup files, click **Save** button to save the video clips. Make sure your USB driver has enough space to save the video clips.
   The backup drive menu appears. Navigate to the folder you want the backup files to save in.
9. Click **OK** to begin. The progress bar at the bottom of the window shows you the progress of the backup.



7.1.2 Event Search, Playback & Backup

Event search lets you view a list of video recordings with the channel, start and end time, and recording type conveniently summarized. You can also quickly back up events to a USB flash drive.

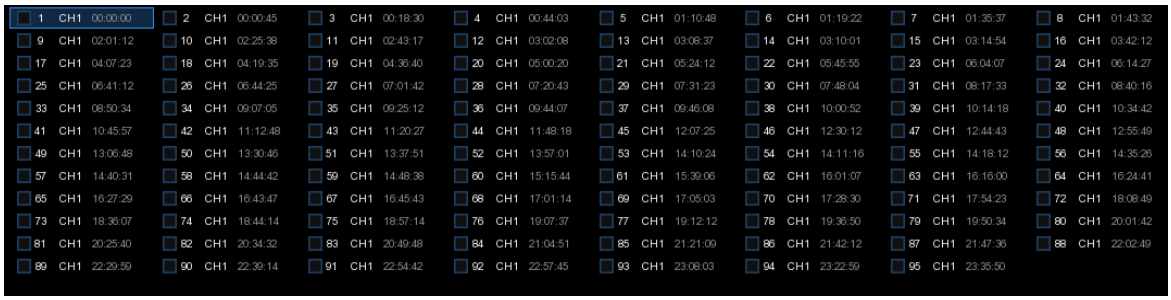


To search, play & back up for events:

1. Choose the date & time you want to search.
2. Check the recording types you want to search, or check **Search Type** to choose all.
3. Choose the channels you want to search, or check **Channel** to choose all channels.
4. Click icon to start search.
5. Events fitting your search criteria are displayed in list form. You can double click the left button of your mouse upon one of the events to play the video immediately.
6. Click  icons in the bottom-right corner of the menu to browse between pages of events, or input the page you want to browse.
7. You can switch the view of list form in by clicking below icons which is show at the right bottom corner of the screen:

   Thumbnails view. You can view the snapshots of the events.

   List view. The events will be displayed in list.



Detailed view. You can view the details of the events.

8. When you click the left mouse button on one of the video clips, the system displays the event video clip information in the lower left corner of the screen.
9. Check the checkbox to sort the files in a descending order.
10. Check the checkbox after the event number to select a file, or check the checkbox after the event number to select all video clips on the page.
11. The number of files selected and the total size information will be displayed in the lower right corner of the screen.
12. After selecting "File", click the icon to save the picture to a USB flash drive, or click the icon to play the video clips.

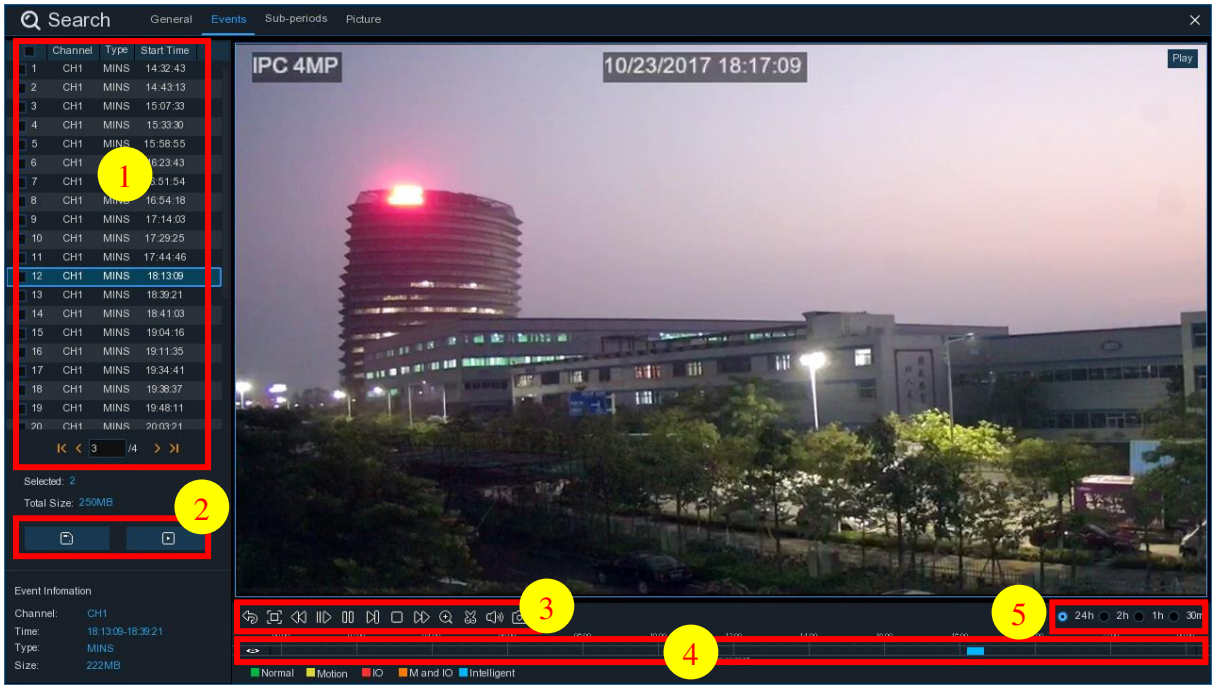


	Channel	Type	Date	Start Time	End Time	Size	Playback	Lock
1	CH1	MINS	10/23/2017	00:00:00	00:00:45	6MB		
2	CH1	MINS	10/23/2017	00:00:45	00:18:30	150MB		
3	CH1	MINS	10/23/2017	00:18:30	00:44:03	217MB		
4	CH1	MINS	10/23/2017	00:44:03	01:10:48	227MB		
5	CH1	MINS	10/23/2017	01:10:48	01:19:22	72MB		
6	CH1	MINS	10/23/2017	01:19:22	01:35:37	138MB		
7	CH1	MINS	10/23/2017	01:35:37	01:43:32	67MB		
8	CH1	MINS	10/23/2017	01:43:32	02:01:12	150MB		
9	CH1	MINS	10/23/2017	02:01:12	02:25:38	207MB		
10	CH1	MINS	10/23/2017	02:25:38	02:43:17	150MB		
11	CH1	MINS	10/23/2017	02:43:17	03:02:08	160MB		
12	CH1	MINS	10/23/2017	03:02:08	03:08:37	55MB		

In the detailed view mode, you can lock the video events to keep events from being overwritten in the hard drive. Click the icon to lock or click to unlock the events.

1. When you click the left button of your mouse upon one of the event, system will show the event information on the left bottom corner of the screen.
2. Check the box next the number of the event to select files, or check the box next **Select** to select all events in the page.
3. The number of selected files, total size information will be displayed at the right bottom of the screen.
4. After selecting file, you can click icon to save the video to USB flash drive. Or click icon into event playback control window to play the video.

7.1.2.1 Event Playback Control



1. Event List, you can select the events here.
2. Click icon to save your selected event videos to USB flash drive. Click icon to play video.
3. Control the playback with buttons on **Video Playback Controls.** You can click icon or click right button of your mouse to exit the playback and return to event search window.
4. The event you are playing now will be displayed on the timeline.
5. Use the timeframe options (24h 2h 1h 30m) to view a smaller or larger time period.

7.1.3 Sub-periods Playback

Sub-periods playback allows you to play multiple normal recordings and motion events simultaneously from a single channel. With normal and event recordings, the video is divided evenly depending on the split-screen mode that has been selected. For example, if the video is an hour long and you have selected Split-screens x 4, each split-screen will play for 15 minutes.



To search & play video in sub-periods:

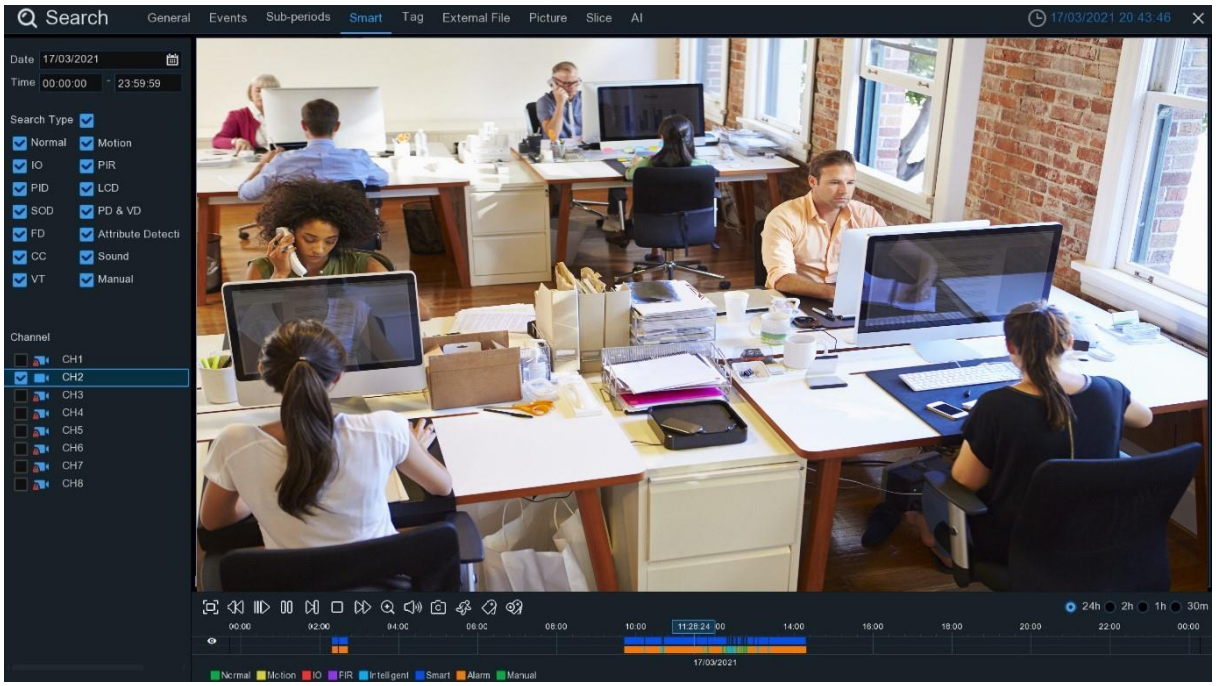
1. Choose the date & time you want to search.
2. Choose the split-screens you want the videos to be played in.
3. Check the recording types you want to search, or check **Search Type** to choose all.
4. Choose the channels you want to search. Note that this function only supports to search & play one channel at a time.
5. Click the play button ▷ to start playing. Control the playback with buttons on **Video Playback Controls.**
6. Videos are being played in split-screens.
7. Click the left button of your mouse upon a particular split-screen, the time period of the video split-screen will be displayed on the timeline. The color bar on the top of the timeline indicates the time span of the video split-screen you have clicked. The color bar on the bottom of the timeline indicates the time span for the whole videos you have searched.



8. Use the timeframe options (24h 2h 1h 30m) to view a smaller or larger time period.

7.1.4 Smart Search

With Smart search function, you will be able to quickly search and play the motion recording videos which were triggered by human beings.



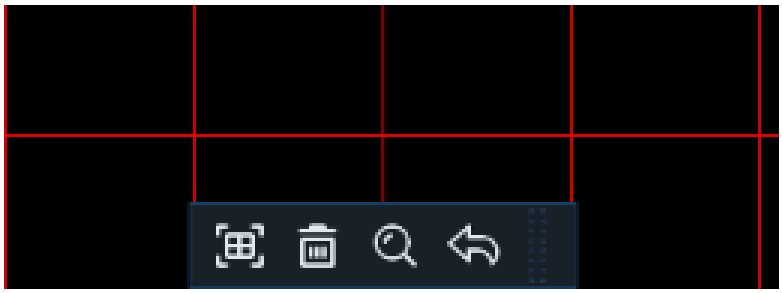
To search & play video in Smart Search:

1. Choose the date & time you want to search.
2. Check the recording types you want to search, or check **Search Type** to choose all.
3. Choose the channel you want to search. Smart Search supports to search & play one channel only at a time.
4. The Smart Search result will be displayed in the time slot in blue color.



5. Click the play button ▷ to start playing. Control the playback with buttons on **Playback Controls.**

6. It supports to narrow the search by selecting a certain area in the images. Click the icon on the **Playback Controls** bar, the aera selection page will be displayed.



The selected aera will be marked with red grids.

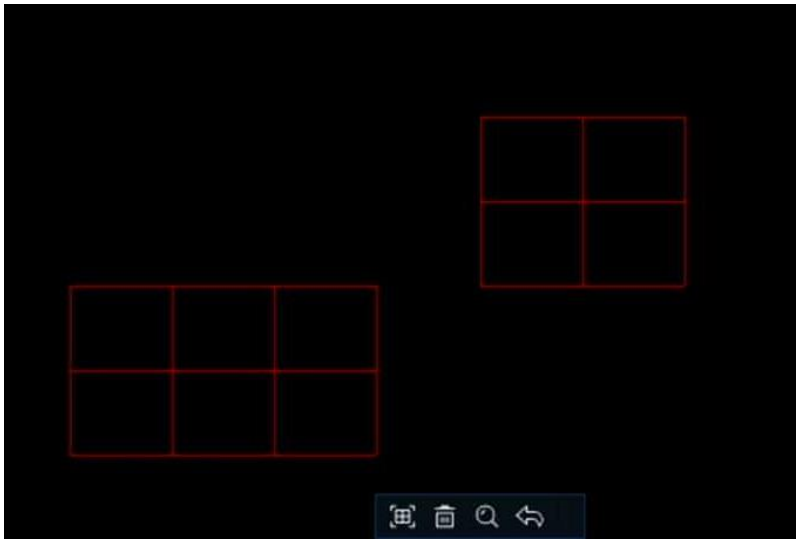
: select whole image.

: clear your selection.

: go back to playback interface.

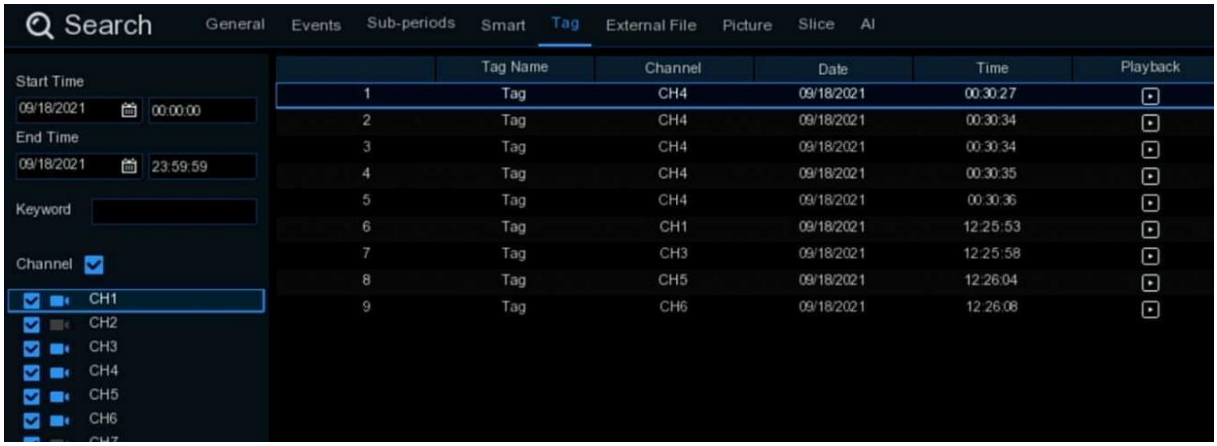
: search.

Click button to clear all selection, and then use your mouse to select the certain areas you want to search in the image. Click button, the system will search the display the smart search result for the selected areas.



7.1.5 Tag Search

You can search, play and manage the contents with tags you added in live view and/or playback.



1. Select the start time and end time you want to search.
2. Select the channel(s) you want to search.
3. If you gave customized tag names to the tags, you can input the keyword to narrow your search.
4. Click button to search. The tags will be displayed on the right window. Click the play button to start playing.
5. If you want to modify the tag name, click button. Click button to delete the tag.

7.1.6 Play External File

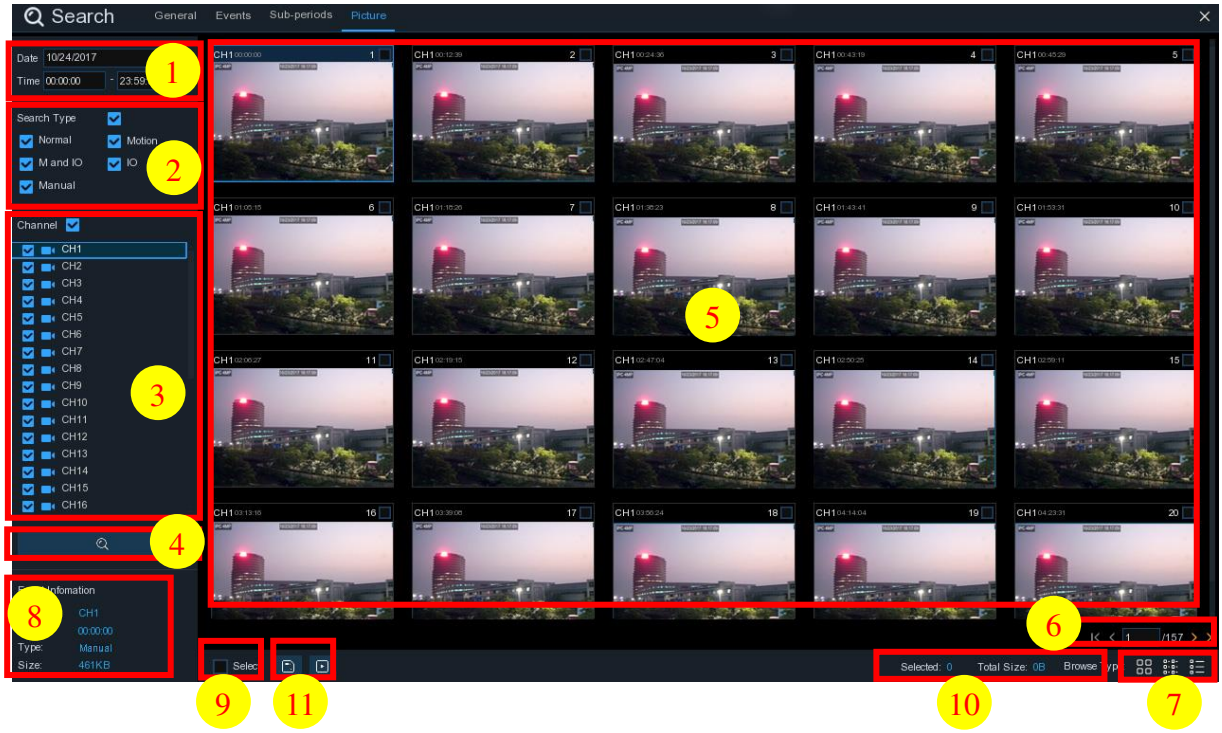
The NVR supports to play the videos saved in the external USB memories.



Insert your USB memory into the USB port, find out the folder where the video files are saved, and then click the play icon to play the video.

7.1.7 Picture Search & View

This function can be used to search, play and copy snapshots to a USB flash drive.



To search, play & back up pictures:

1. Choose the date & time you want to search.
2. Check the picture capture types you want to search, or check **Search Type** to choose all.
3. Choose the channels you want to search, or check **Channel** to choose all channels.
4. Click button to start search.
5. Pictures fitting your search criteria are displayed in list form. You can double click one of the pictures to get a larger view.
6. Click  icons in the bottom-right corner of the menu to browse between pages of pictures, or input the page you want to browse.
7. You can switch the view of list form in by clicking below icons which is show at the right bottom corner of the screen:

   Thumbnails view. You can view the snapshots of the events.

   List view. The events will be displayed in list.

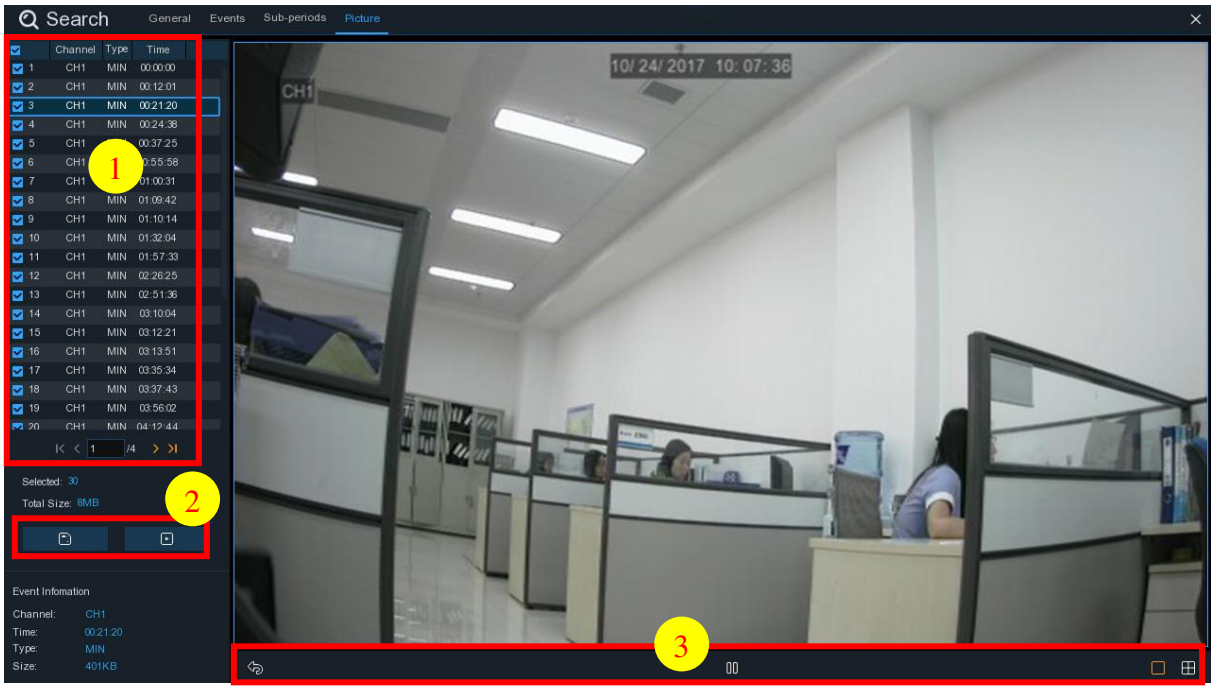
   Detailed view. You can view the details of the events.



	Channel	Type	Date	Time	Size	Playback
1	CH1	MIN	10/24/2017	00:00:00	160KB	
2	CH1	MIN	10/24/2017	00:12:01	201KB	
3	CH1	MIN	10/24/2017	00:21:20	401KB	
4	CH1	MIN	10/24/2017	00:24:38	111KB	
5	CH1	MIN	10/24/2017	00:37:25	167KB	
6	CH1	MIN	10/24/2017	00:55:58	210KB	

8. When you click the left button of your mouse upon one of the pictures, system will show the picture information on the left bottom corner of the screen.
9. Check the box next the number of the event to select files, or check the box next **Select** to select all pictures in the page.
10. The number of selected files, total size information will be displayed at the right bottom of the screen.
11. After selecting file, you can click button to save the pictures to USB flash drive. Or click button to go into picture preview control window.

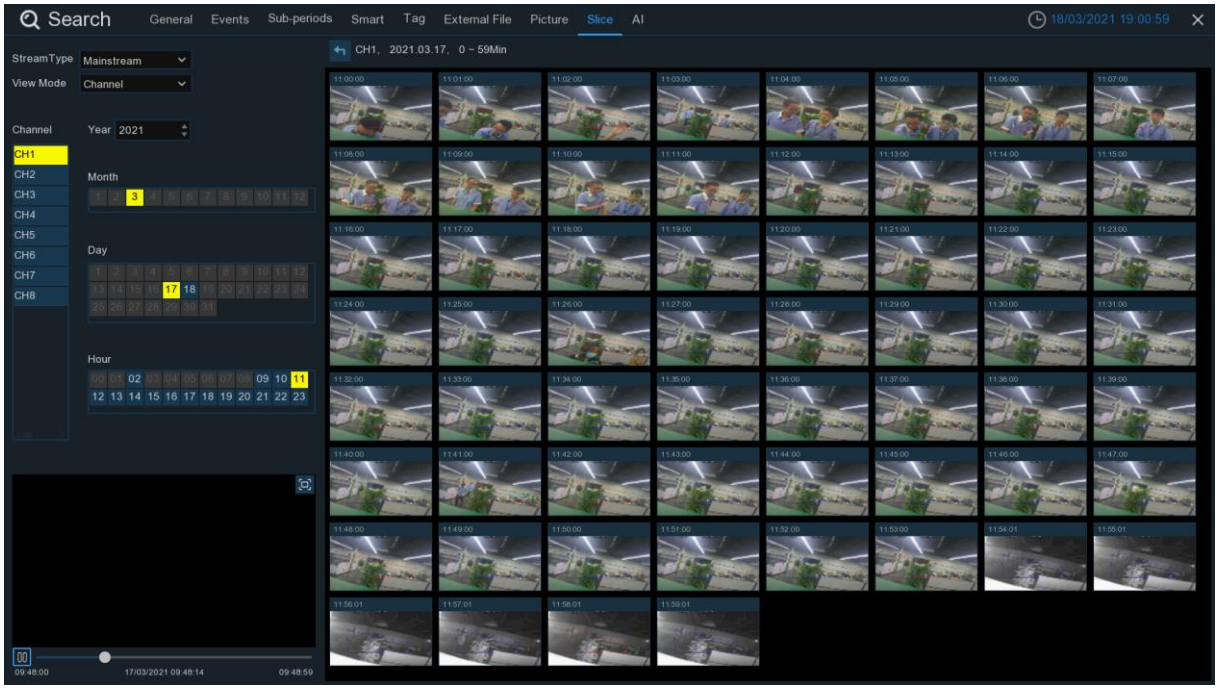
7.1.7.1 Picture Preview Control



1. Picture List, you can select the pictures here.
2. Click button to save your selected pictures to a USB flash drive. Click button to view the pictures in slideshow.
3. Press button to exit preview control window and go back to picture search window.
   Press button to pause, press to resume slideshow.
   Press button to display previous snapshot or group of snapshots, press to display the next snapshot or group of snapshots.
   Click button to view a single snapshot at a time, click button to view four snapshots at a time, press buttons to view nine snapshots at a time.

7.1.8 Slice Search

This is a function to slice each hour's video into 60 fragments.



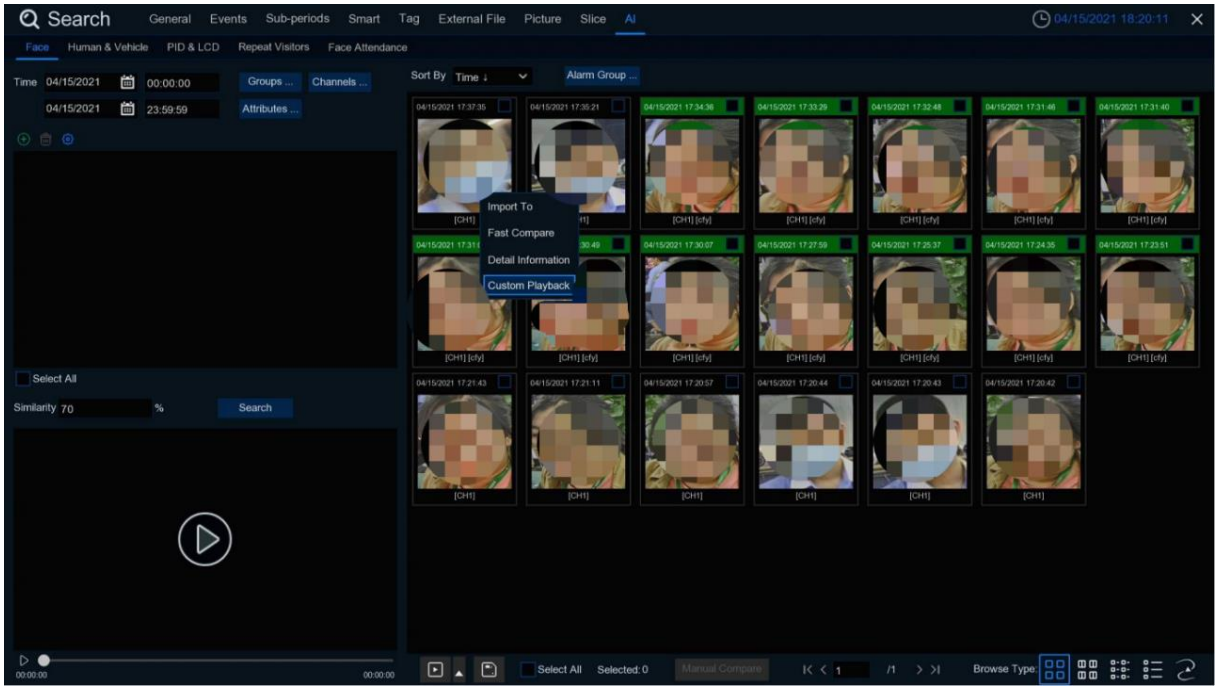
Choose the video stream type, channel, date, and hour. The system will display 60 thumbnail images of each minute on the screen. Click on any one of the thumbnail images, the video will be played on the left bottom corner.

7.1.9 AI Search

7.1.9.1 Face Search

Choose date, time, channel, groups to search all captured faces.

Note: The Face Search and Tracking functions are based on Face Detection and/or Face Recognition results. See *5.4.1.1 FD (Face Detection)* and *5.4.2 Face Recognition*. Make sure **Face Attribute** is enabled in **Face Detection** before you can use facial features to find search results.



1. Click ⊕ icon to add customized faces.
2. Choose the **Channels** you want to search.
3. You can also set search conditions of the facial features in **Attributes**.
4. Choose the Face Recognition group in **Alarm Groups**.
5. Click ⚙ icon to configure the AI settings.
6. Click **Search**.

7.1.9.1.1. Playing Events



1. Event List. Use the arrow buttons to turn page or use the keypad to navigate to a specific page. Double-click on an event to play it directly.
2. You can add time duration before and after the event and then click ▶ button to play.
3. **Video Playback Controls:** to control the video playback.



Button	Function
	Return to event search page
	Enlarge the video playback to full screen
	Rewind button, subsequent presses of the button will change the rewind speed.
	Slow Play, subsequent presses of the button will change the play speed
	Play in normal speed
	Pause

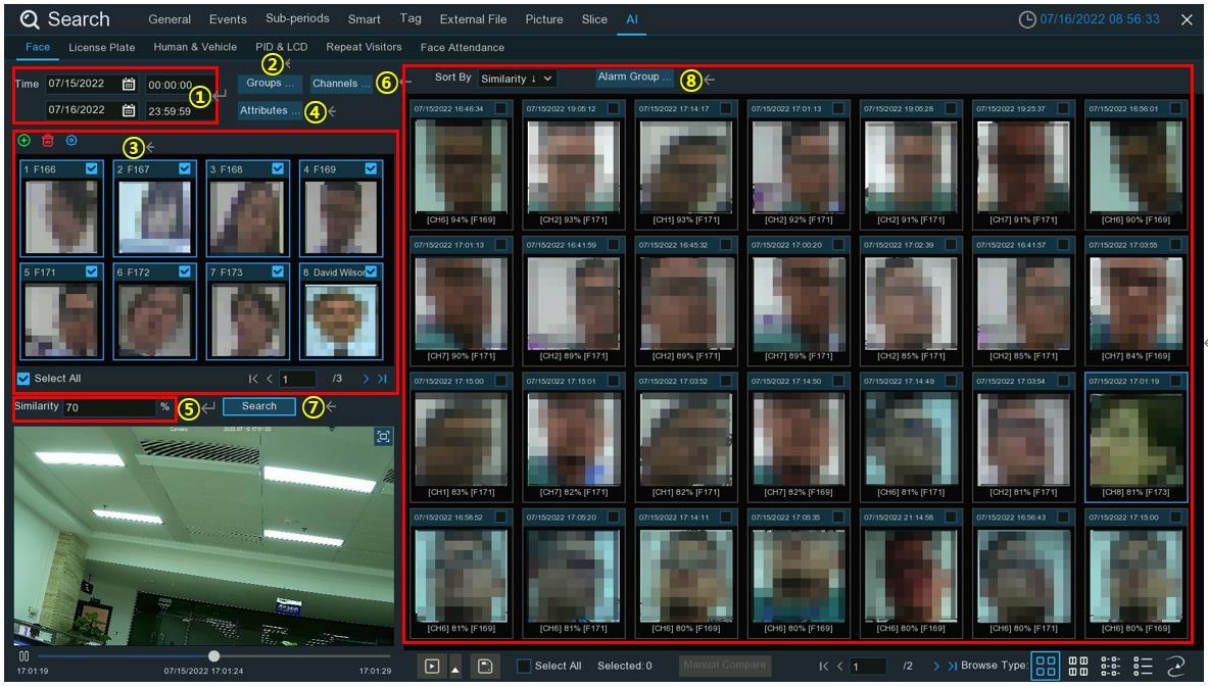
	Play frame by frame. Click once to play a frame of the video
	Stop playing
	Fast forward button, subsequent presses of the button will change the speed.
	Select a camera, click this button then use the scroll button on the mouse to zoom. Use the picture-in-picture screen to select a different area to view. Right-click to exit.
	This button allows you to edit the video by setting mark in and mark out points which you can then copy to a USB flash drive.
	Click to adjust audio output volume
	Click to take a snapshot and save to your USB flash drive
	Tagging allows you to record information such as a person or object within the video. Click on a camera to select, pause the video when you see a person or object to be tagged, then press this button (multiple tags can be created).
	Same as above, but you can name the tag.
	Click to switch the image scale for all playing cameras between original and stretch.

4. **Timeline:** Quick locate the playback position by clicking on the time line. You can zoom in or zoom out the timeline by using the timeframe options 

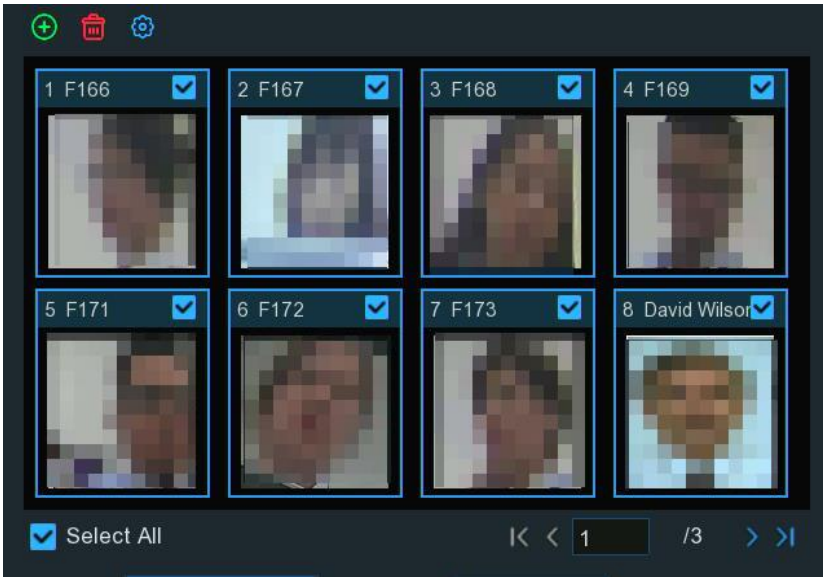
for precise location.

7.1.9.1.2. Search & Compare Face Images (Recognition)

You can appoint one or more face profiles selected from face recognition data base and then search, the system will compare and display the face images that match your search criteria.



1. Click the calendar icon to select a date to search on. A red underline on a date indicates snapshots were taken on those particular dates. For time, you can search over 24 hours or you can use the keypad to enter a specific start and end time
2. Click Groups button, and then select the groups where your targeted face profiles are saved in.
3. All face profiles exist in your selected group(s) will be displayed in the display window:



All face profiles are selected by default. You can untick the checkbox of "Select All" to deselect all.

Tick or untick the checkbox above each image to select or deselect it.

If you want to delete a face profile, click on the image, and then click the button .

If you want to add more

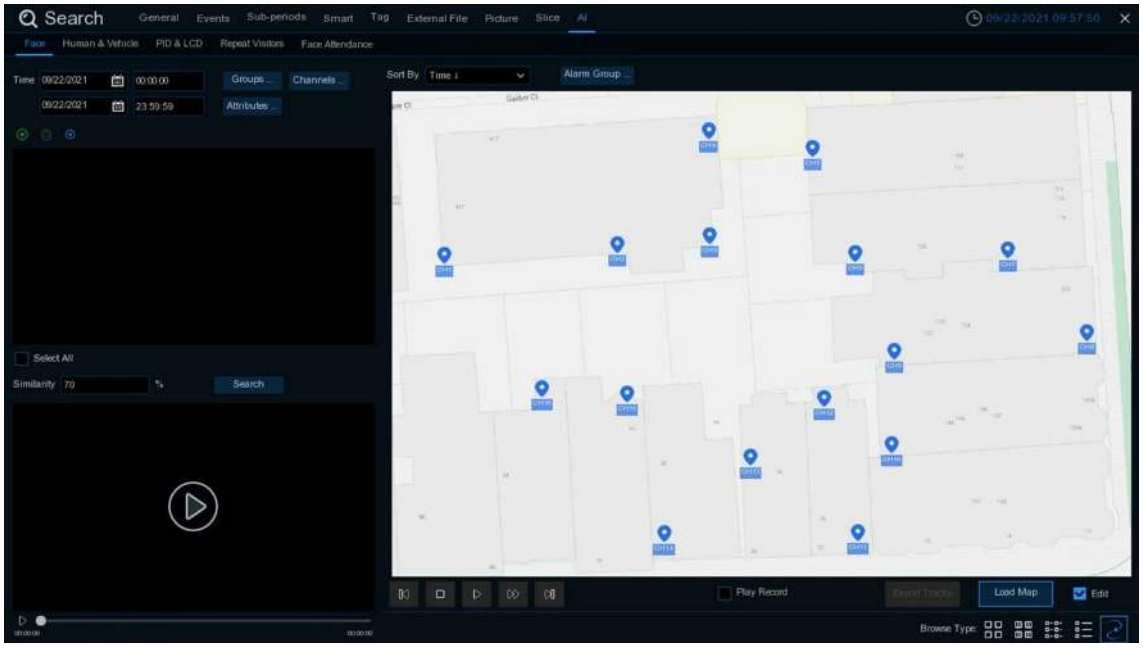
targeted face images, click add button , and then select face images from internal or external storage device.

4. If you have enabled the Face Attributes detection (5.4.1.1 FD (Face Detection)), you can click here to appoint the attribute(s) you want to search.
5. Set the 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.
6. The system searches all channels by default. You can click the "**Channels**" button to select specific channel(s) that you want to search for.
7. Click **Search** button to commence a search.
8. The face images that match your search criteria will be displayed. You can narrow your search by selecting specific alarm group(s).

7.1.9.1.3 Face Tracking on E-Map

E-Map function helps track a person's faces.

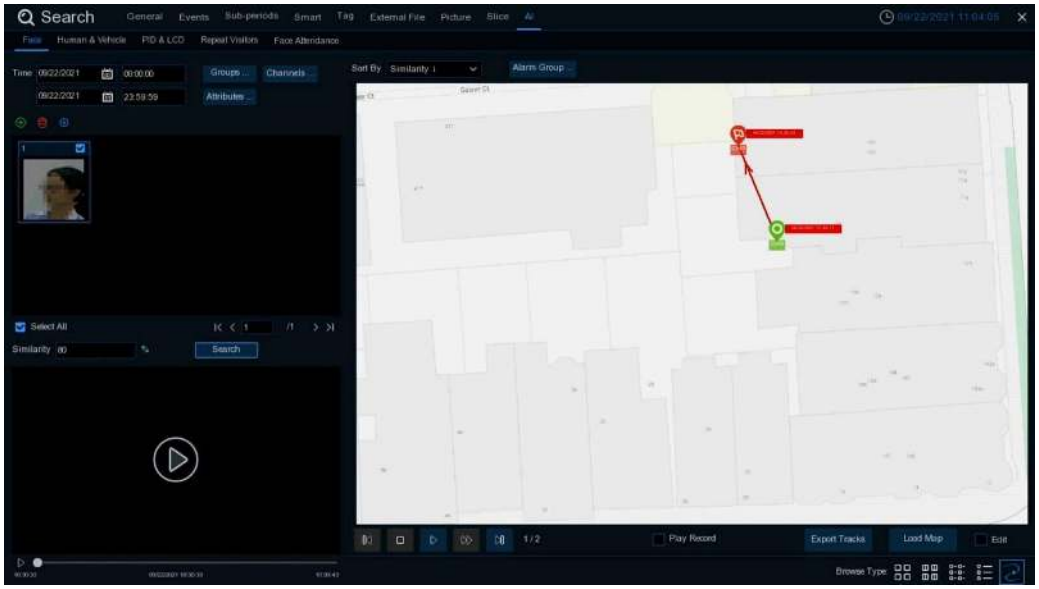
Click the icon to set the E-Map function.



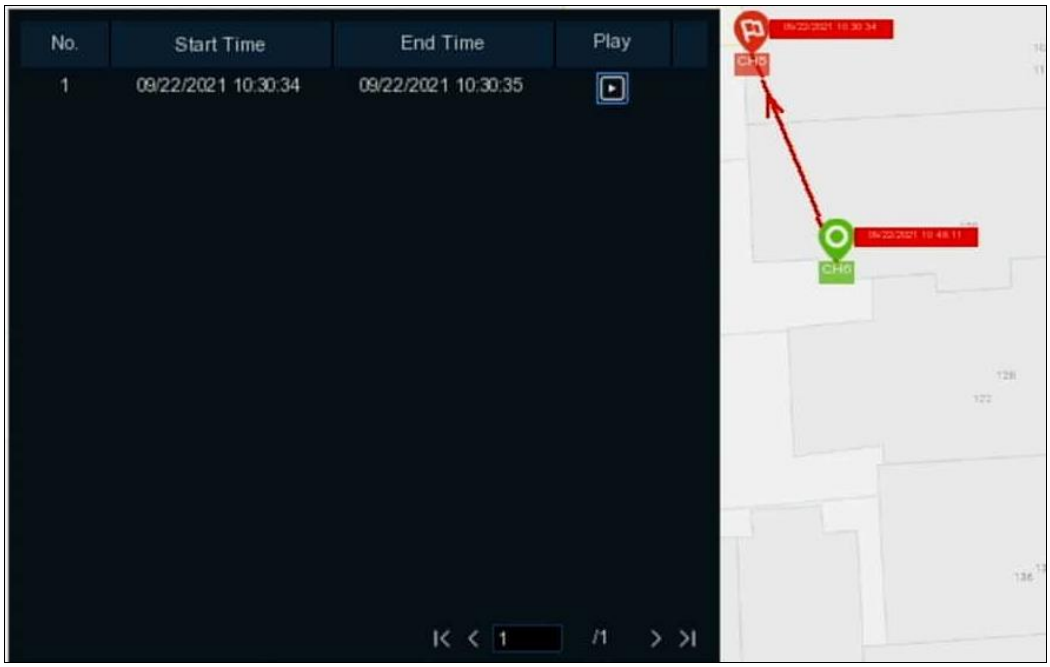
1. Click **Load Map** button to load a map image from your USB memory.
2. Check the **Edit** box. Click and hold the channel icon and move one by one to adjust the site of your IP cameras on the map. Uncheck the **Edit** box to quit the edition.



3. Click ⊕ icon to select one face image from local storage or external USB storage. Select date & time, group(s), channel(s), set the similarity rate, and then click **Search** button. The system will display the result on the e-map. If the person was captured by multiple cameras, the system will display his/her moving track on the map.



4. Click one of the sites on the map, it will display the captured date & time. Click the **Play** button, the recorded video will be played in the left bottom corner.



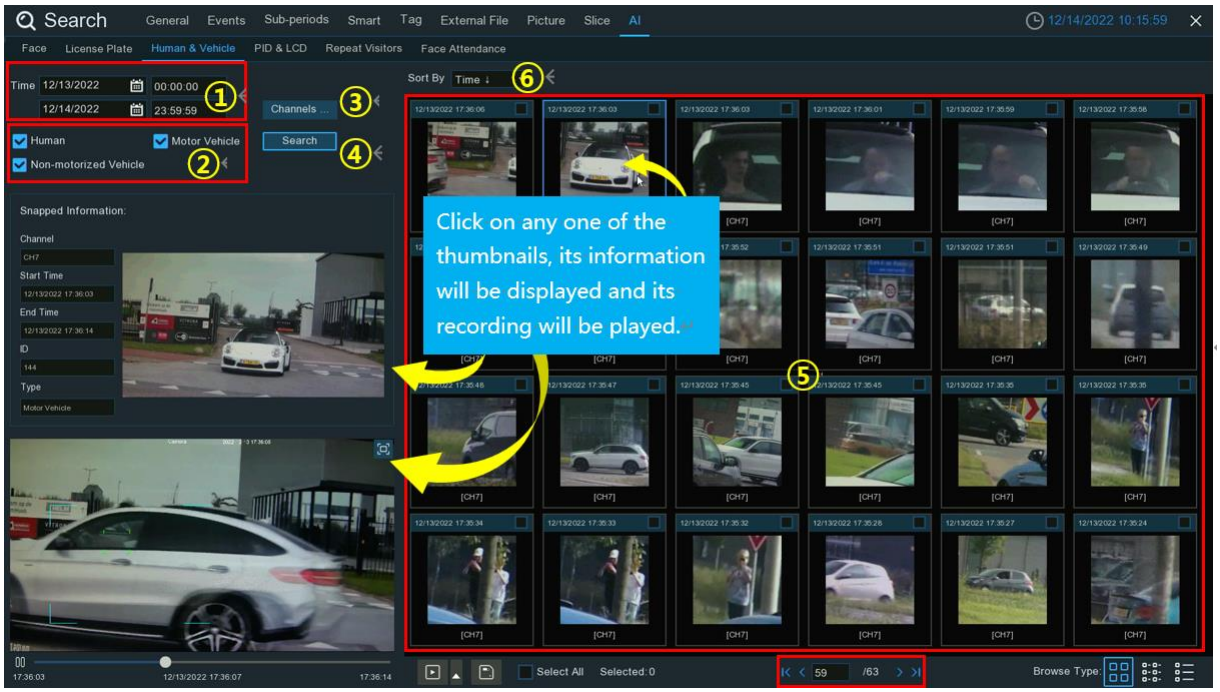
5. Click the play button ▷ on the play control, the system will automatically demonstrate the moving track. Check the **Play Record** box, recorded videos will be played meanwhile.



Note: The tracking function is only applicable to one person at a time.

7.1.9.2 Human & Vehicle

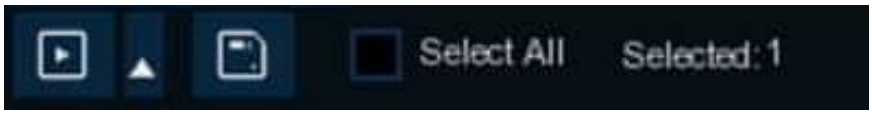
The system provides a quick search for pedestrians and vehicles.



1. Select the date & time, channel(s).
2. Choose the detection type: **Human** and/or **Vehicle**.
3. Click **Search**, the result will be displayed on the right side of the window.
4. Click one of the images, the system will show its basic information on the left side of the window, and the video will be played on the left bottom side.
5. Right click your mouse upon one of the images, you will have 2 options:
   A. To view the file information.
   B. To start playback of the file.

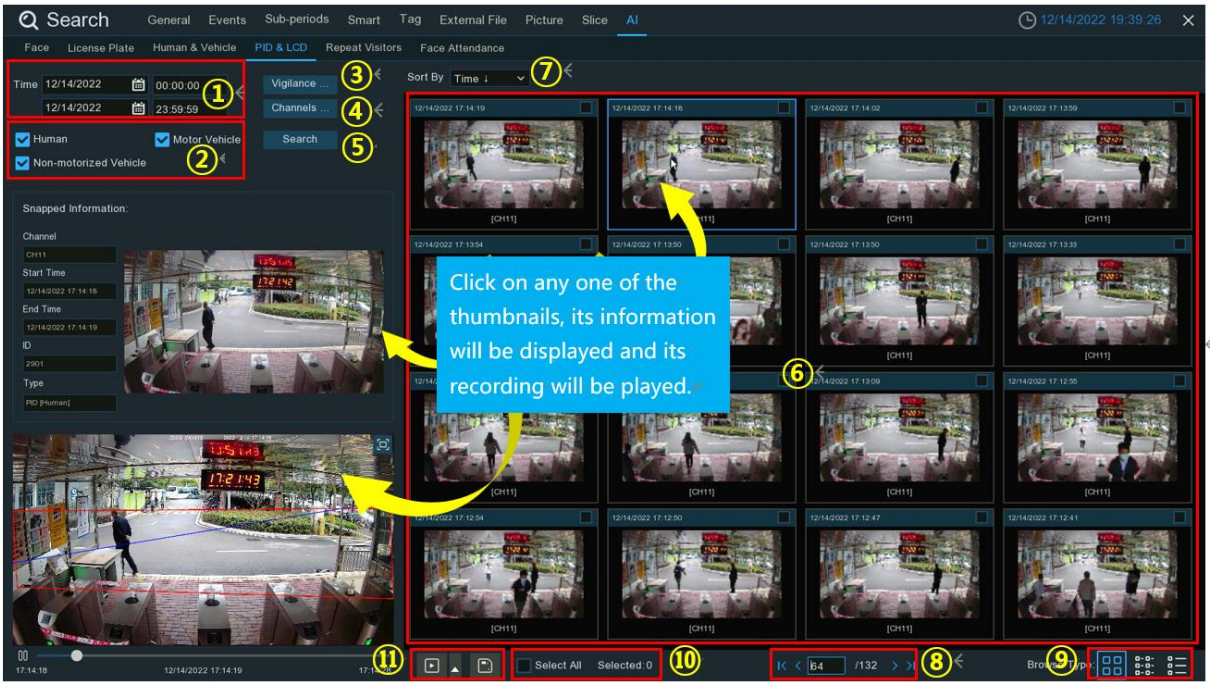


6. Choose one or more files, click the play button , the system will turn to the playback interface to play the selected file(s). Click the ▲ icon to select the time duration you would like to play. Click to save the selected file(s) to your USB memory.



7.1.9.3 PID & LCD

The system provides a quick search for PID & LCD.



1. Click the calendar icon to select a date to search on. A red underline on a date indicates human and/or vehicles were taken on those particular dates. For time, you can use the keypad to enter a specific start and end time.
2. Select the target type(s) you want to search for.
3. Select PID and/or LCD in Vigilance.
4. The system searches all channels by default. You can click the "**Channels**" button to select specific channel(s) that you want to search for.
5. Click **Search** button to commence a search.
6. The search result will be displayed on the right side of the screen.
7. You can change to display the images in ascending or descending order by time.
8. Use the arrow buttons to turn page or use the keypad to navigate to a specific page.
9. Click these buttons to change how the events are displayed. The default view is Thumbnail, but you can change it to List or Detail.
10. Tick the checkbox above each event to select it, or tick the checkbox of "**Select All**" to select all events in current page.

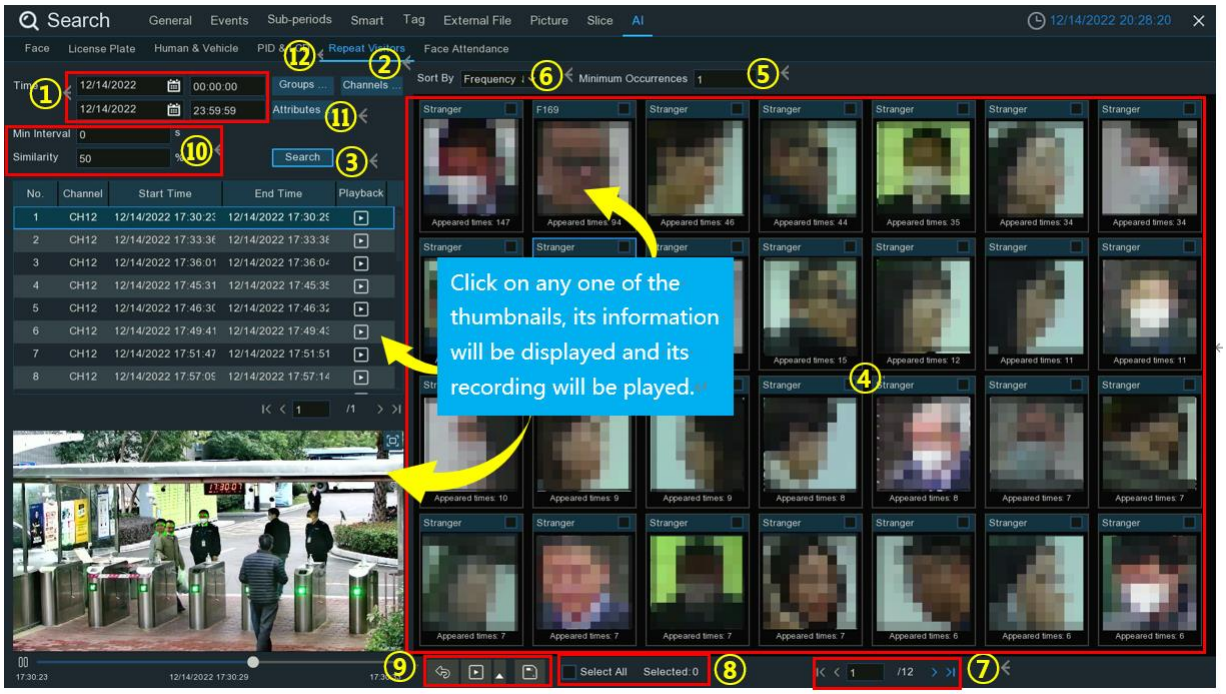
11. Click backup button  to copy all selected face images to your USB flash drive. If you want to save video files also, tick the checkbox of "**Record**", and then select the video format, adjust the length of time before and after the events.

    You can click play button  to play the selected events, or click ▲ to add time duration before and after the event and then play. See more on 7.1.9.1.1 Playing Events.

7.1.9.4 Repeat Visitors

This is a function to conduct a quick search of the occurrence frequency of persons in a certain time period.

> **Note:** The Repeat Visitors function is based Face Detection and/or Face Recognition results. See *5.4.1.1 FD (Face Detection)* and *5.4.2 Face Recognition*. Make sure **Face Attribute** is enabled in **Face Detection** before you can use facial features to find search results.



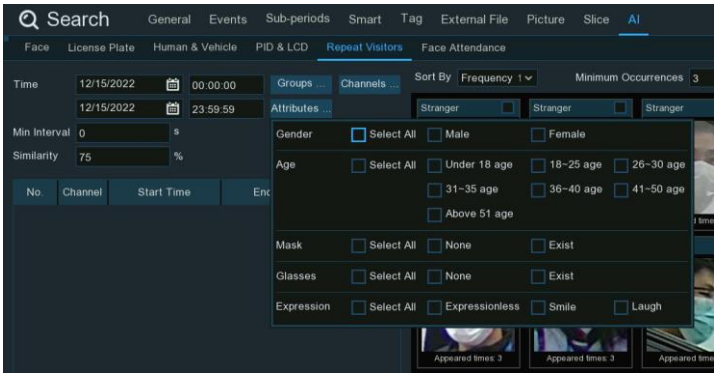
1. Click the calendar icon to select a date to search on. A red underline on a date indicates human and/or vehicles were taken on those particular dates. For time, you can use the keypad to enter a specific start and end time.
2. The system searches all channels by default. You can click the "**Channels**" button to select specific channel(s) that you want to search for.
3. Click **Search** button to commence a search.
4. The search result will be displayed on the right side of the screen. "**Appeared Times**" under each thumbnail image indicates how many times the person was captured during your search period.
5. You can input a number of "**Minimum Occurrences**" to hide the search result whose appeared time is less than the number of minimum occurrences.
6. You can change to display the images in ascending or descending order by time or frequency.
7. Use the arrow buttons to turn page or use the keypad to navigate to a specific page.

8. Tick the checkbox above each event to select it, or tick the checkbox of "**Select**" to select all events in current page.
9. Click backup button to copy all selected face images to your USB flash drive. If you want to save video files also, tick the checkbox of "**Record**", and then select the video format, adjust the length of time before and after the events.

   You can click play button to play the selected events, or click ▲ to add time duration before and after the event and then play. See more on 7.1.9.1.1 Playing Events.
10. You can narrow your search by adjusting the "**Min. Interval**" time and the percentage of "**Similarity**".

    Min. Interval is used to reduce the quantity of searched face images that repeatedly captured within a short period time. For example, if the Min. Interval is set to 20 seconds, then starting from the time of the first face image searched on the selected date, all the similar face images that appear within 20 seconds will only display the first image. The system will display the first image captured in every 20 seconds.

    Similarity is used to set how closely, in percentage terms, the searched faces must match each other to be considered a recognized same person. A higher percentage of similarity will result in fewer false recognition results.
11. Furthermore, you can select the face features to execute refined search. Click "**Attributes**" button, and then select the features you want to search for, and then click **Search** button again.

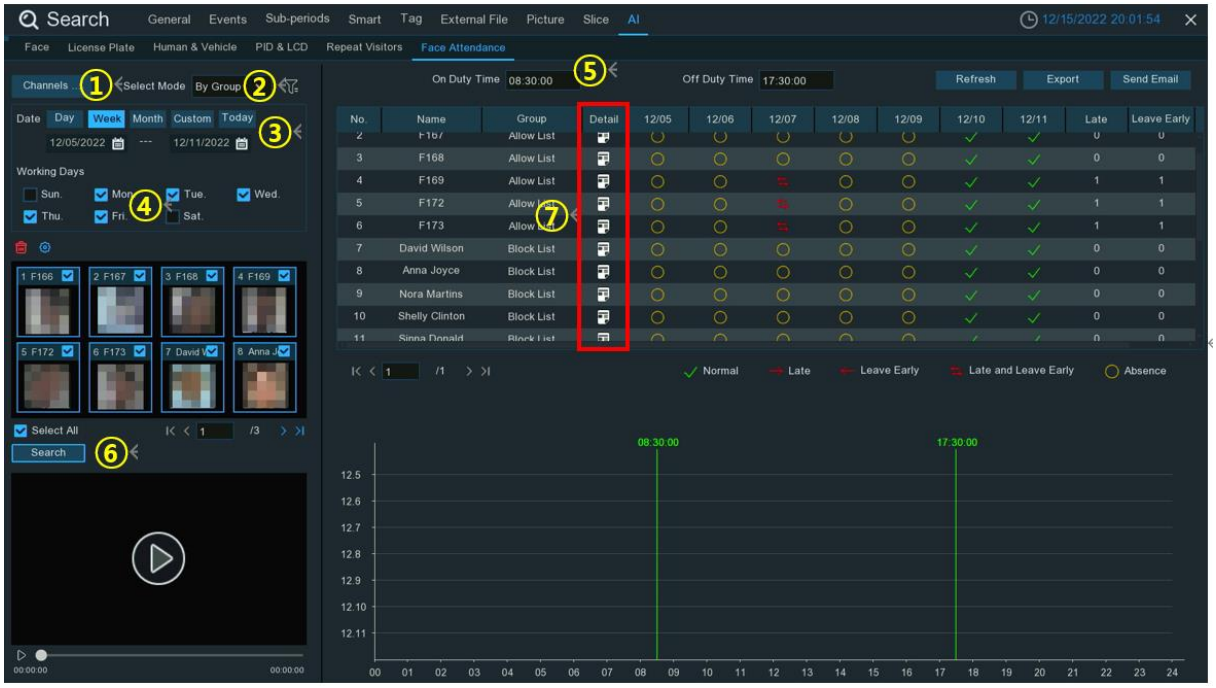


12. By default, the system will search and display all captured face images during your searching time period. If you want to search for the persons whose face profiles had been stored in the groups, click the Group button and choose the face group(s) accordingly.

7.1.9.5 Face Attendance

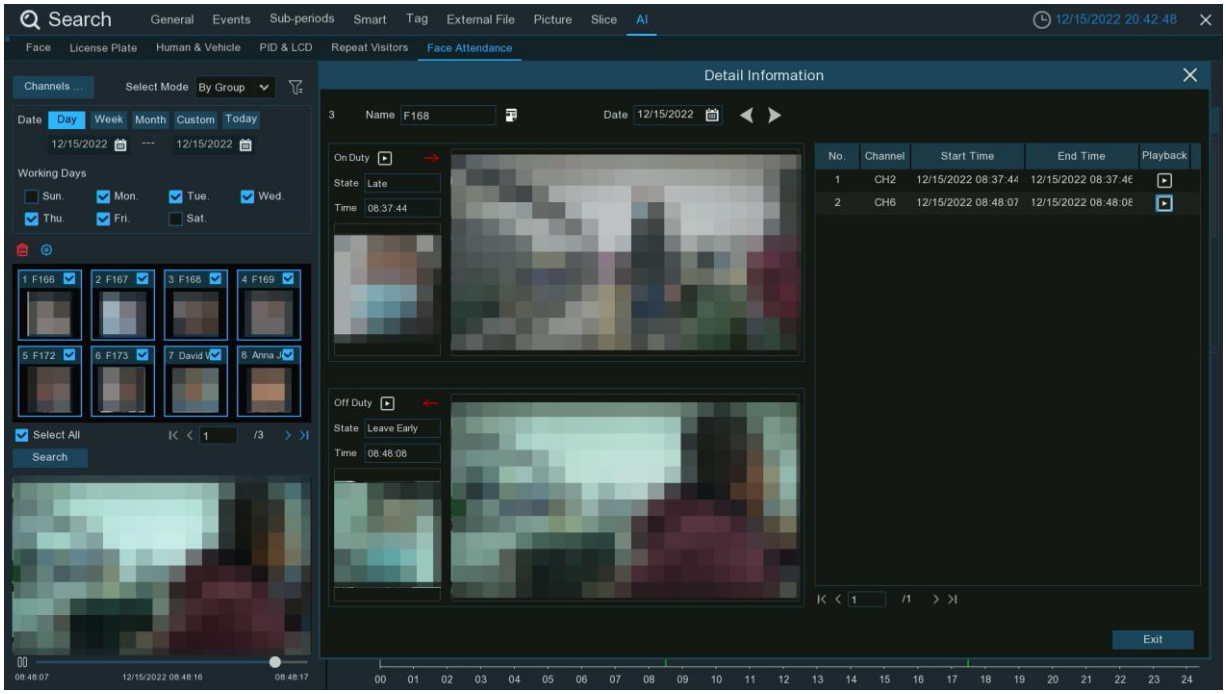
Face Attendance is used to assist in attendance checking by faces. It will help analyze the absenteeism, coming late and leaving early.

Note: The Face Attendance function is based on Face Detection and/or Face Recognition results. See *5.4.1.1 FD (Face Detection)* and *5.4.2 Face Recognition*.



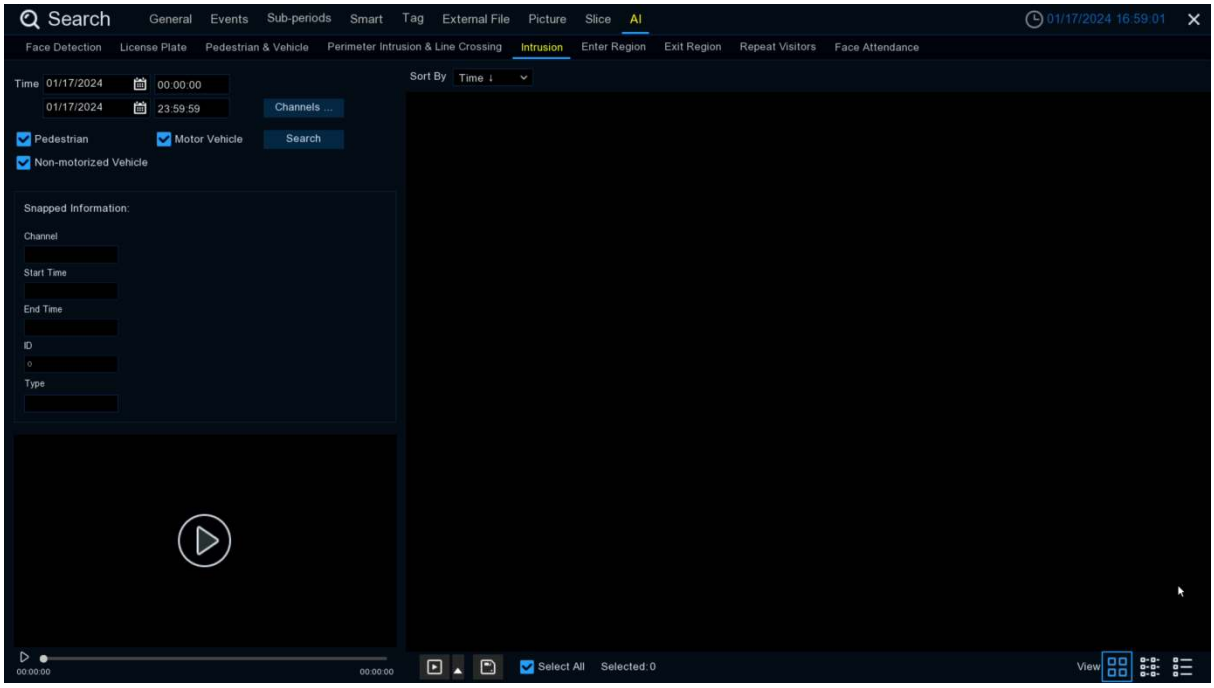
1. Select the channel(s).
2. Select search by Group or by Person. If you choose **By Group**, all the persons in the selected group(s) will be searched. If you choose **By Person**, only your selected person(s) will be searched. Click the filter icon to choose group(s) or person(s). Your selected person(s) will be displayed on the left middle side of the window.
3. Select the search date by an individual day, week, month, current day or customized date.
4. Set the Working Days.
5. Set the On Duty Time and Off Duty Time.
6. Click **Search** button, the result will be displayed on the right side of the window.
   You can export the data to your USB flash drive or send by email.

7. Click on the detail icon , you will see the captured images and videos of the first occurrence and the last occurrence of the person in the day. Click on the play button to have a quick playback.



7.1.9.6 Intrusion / Region Entrance / Exiting

Select the date, time, channel and detection target type and click Search to search the alarm events captured during the selected time period.



Chapter 8 Remote Access via Web Client

Use the Web Client to remotely access your NVR at any time via a PC. Before you access the Web Client, you need to ensure that the internet settings of the NVR are configured properly.

8.1 Basic System Environment Requirements

The minimum requirements for hardware and OS required to run Web Client are given as below.

Item	Minimum	Recommended
CPU	Intel® Core™ i5 CPU	Intel® Core™ i5 CPU or higher
RAM	4G or more	8G or more
Hard Drive	500G or more	1000G or more
Display RAM	2G or more	4G or more
Display Resolution	1280*1024	1920*1080
OS	Windows 7 or above Mac OS X® 10.9 or above	
DirectX	DirectX 11	
Direct3D	Acceleration Function	
Ethernet Adapter	10/100/1000M Ethernet Adapter	
Browser	IE 10 / 11 Safari V12.1 or above Firefox V52 or above Google Chrome V57 or above Edge V79 or above	

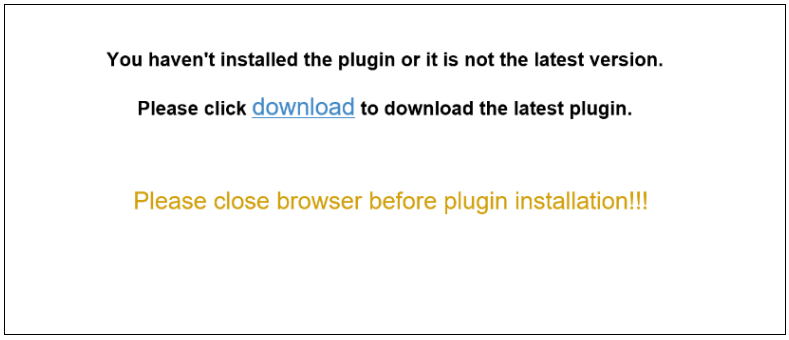
8.2 Web Plugin Download and Installation

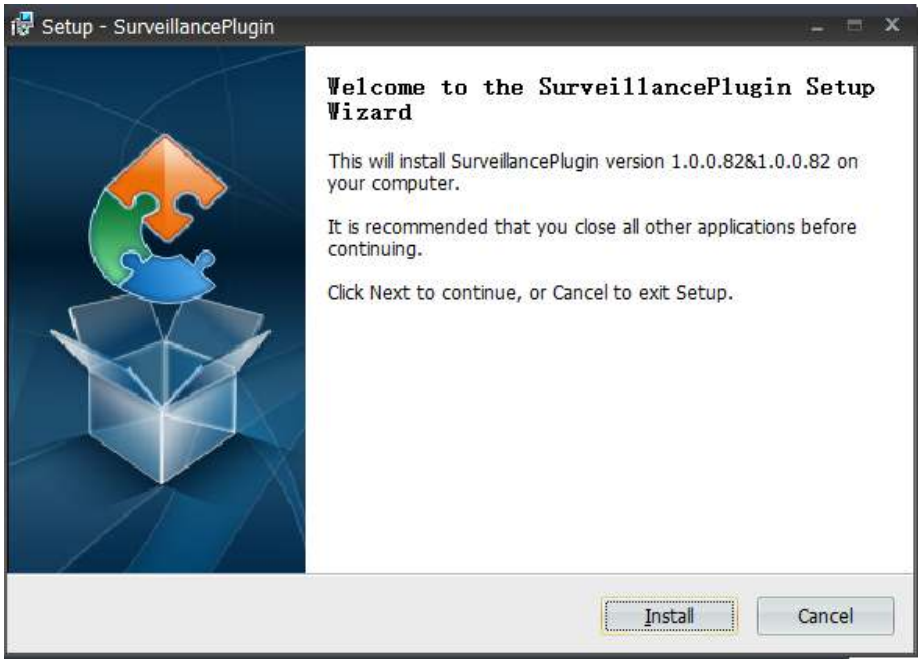
To access the Web Client, do the following:

For IE/Chrome/Firefox:

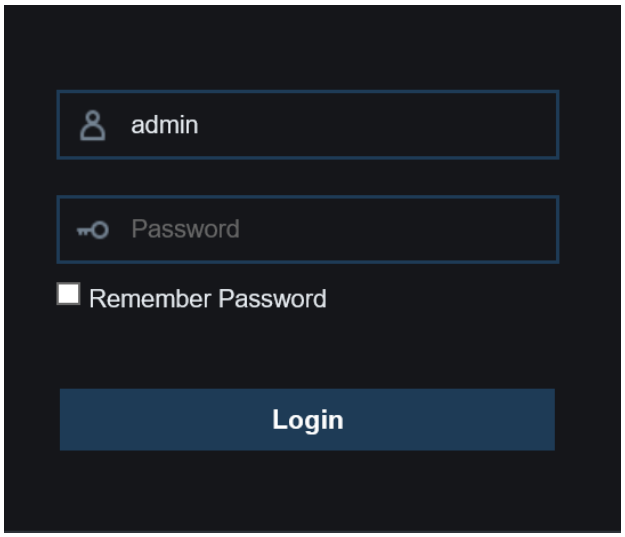
1. Launch the explorer on your PC and enter the NVR IP address or DDNS domain name (Host Name) you have set on NVR in the URL box.

2. For the first time you run the web client, system will require to install the web client plugin. Click **download** to download the plugin and install to your computer.



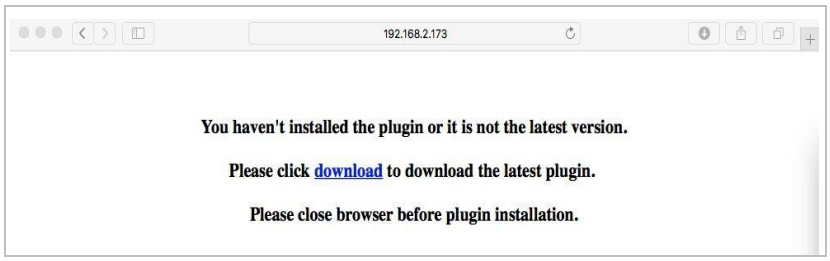


3. After installing the plug-in, close & launch again your browser and repeat step 1 to open the login page. Input your user name and password to login the web client.



For Mac Safari:

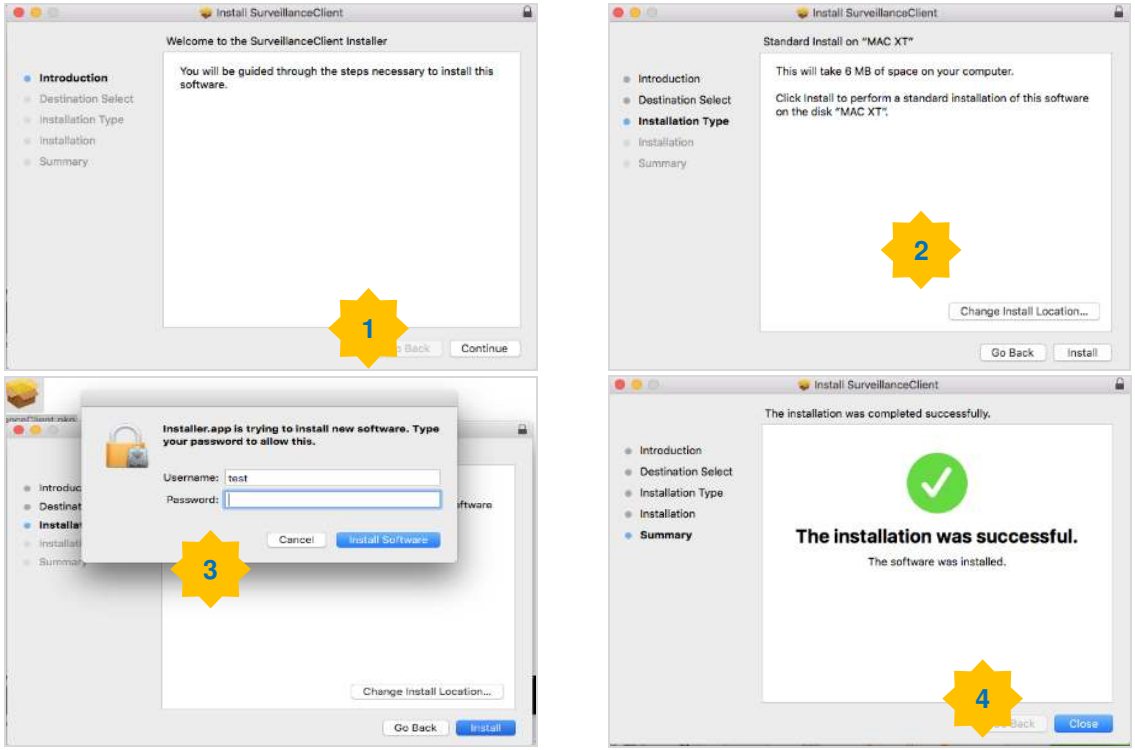
1. Launch the Safari in your Mac, and enter the NVR IP address or DDNS domain name (Host Name) you have set on NVR in the URL box.



2. Download the plug-in "SurveillanceClient.dmg", locate the downloaded file and double click it.



3. Click on "Continue" --> "Install". Enter user name and password for Mac computer, Click on "Install Software" --> "Close" to finish installation.



4. Close Safari and open again to repeat step 1 to open the Web Client login page.

8.3 Web Client Manager

The web client supports to fully control the NVR with administrator account. Make sure to protect your user name & password for preventing illegal login.

8.3.1 Live Interface

This is the first screen that opens after you have logged in to the Web Client. Here you can open or close live preview, record video to local computer manually, take snapshots of the screens, PTZ control, color adjustment, etc.



1- Channel List: Open the channel list for quick camera function

Click button to display the Channel List.

Click button to hide the Channel List.

Turn the Live video stream on/off. The button is in blue color if the live video stream is on.

Manual Recording buttons. Click to start manually recording live stream video. Click again to stop recording. Manual recordings are saved to your computer. While in recording, the button is in blue color.

Manual snapshot button. Click to save a snapshot of the current live display to your computer.

Bitrate button. Set camera to use mainstream, substream or mobile stream video settings. Mobile stream is available for IP channels only.

2- **Live Video Stream Options:**

Mainstream: View all live videos using high-quality mainstream video settings.

Substream: View all live videos using middle-quality substream video settings.

Mobile Stream: View all live video using lower-quality mobile stream video settings to conserve bandwidth. Available for IP channels only.

3- **Main Menus:**

Live: View live video from cameras.

Playback: View recorded video which is saved in NVR's HDD.

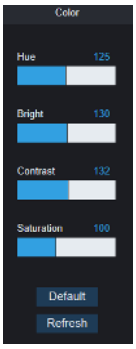
Remote Setting: Access functions of the NVR setting menus.

Local Settings: Set download locations for recordings and snapshots taken using Web Client, and choose file type for video files.

4- **Information:** Hover over to see system details.

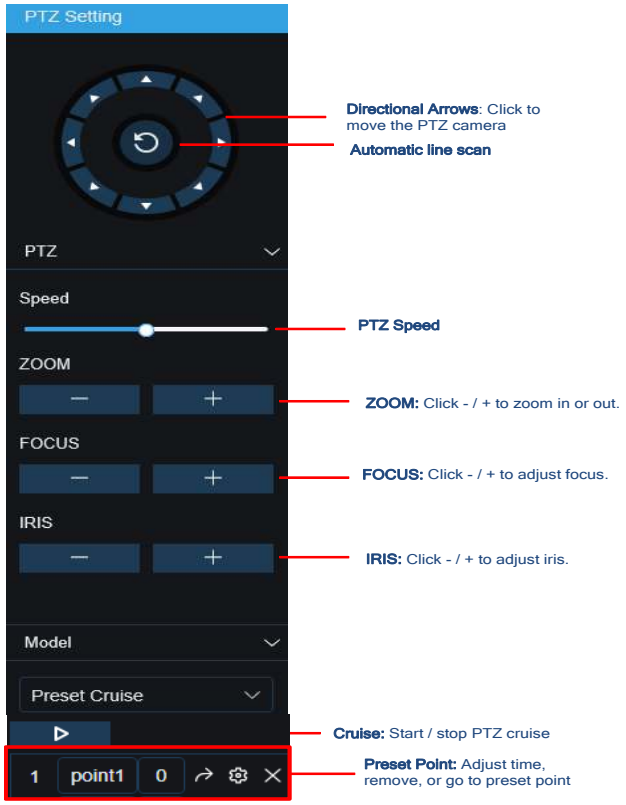
5- **Exit.**

6- **Color Controls.** Click to display or hide the color controls.



7- **PTZ Controls:** Click to display or hide the PTZ controls for using PTZ cameras.

8- PTZ Controls



9- Live View Control Buttons:



Open the images on Live window.

Close all the Live channels

Original Proportions: Shows live video at the original proportions

Stretch: Stretch live video to fit the full area for each channel on screen.

To enlarge the web client to full screen.

Manual Recording: Click to start manually recording for all displayed channels. Click again to stop recording. Manual recordings are saved to your computer.

Snapshot: Click to save snapshots of all current displayed channels to your computer.

Digital Zoom: Click upon on a live image, then click-and-drag over an area of the live image to enlarge. Right-click to return to the normal display.

Volume Control. Volume is mute.

10- Navigation: Shows current page number for the channels shown on screen. Use the arrow keys to switch between pages.

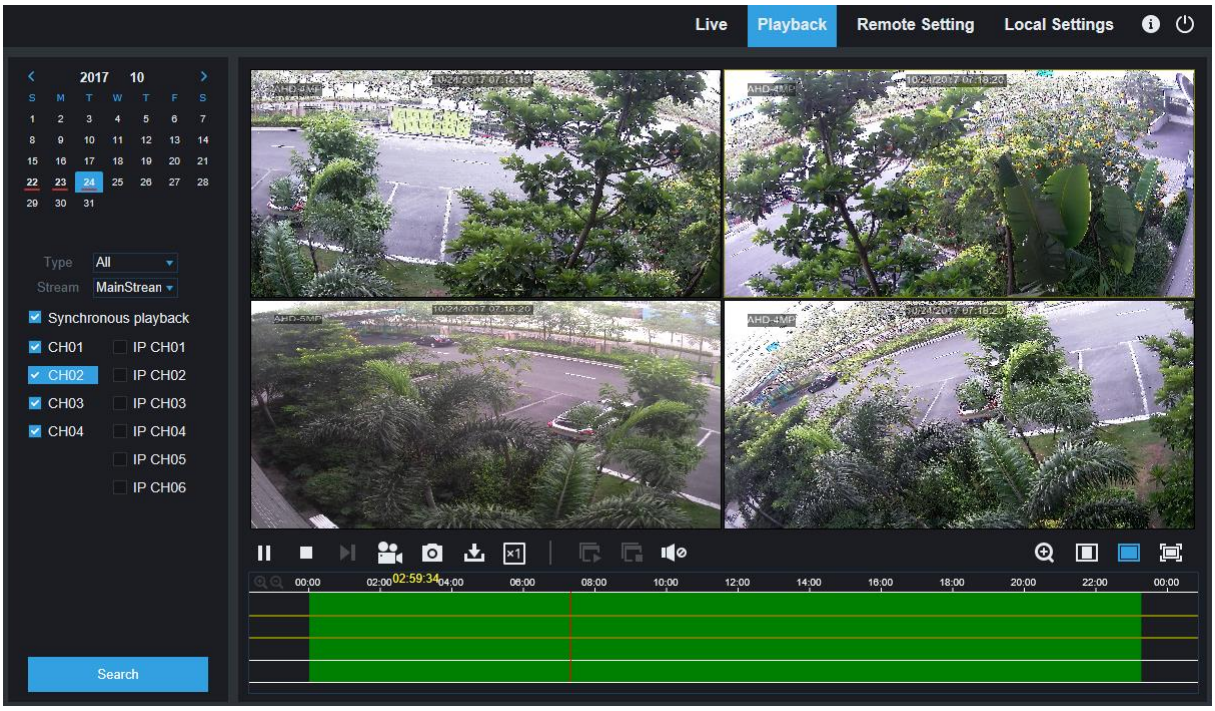
11- Page View: Click to select how many channels appear on screen at a time.

8.3.2 Playback

You can search & play recording videos stored in the HDD inside the NVR, and download the videos to your computer.

Note: To play the video clips downloaded from the Web Client Manager, install and launch one of the following players **before** locating the recordings. Wait for 3 ~ 30 seconds before the video starts to play.

1. GV-R Series Video Player
2. VLC Media Player
3. KM Player

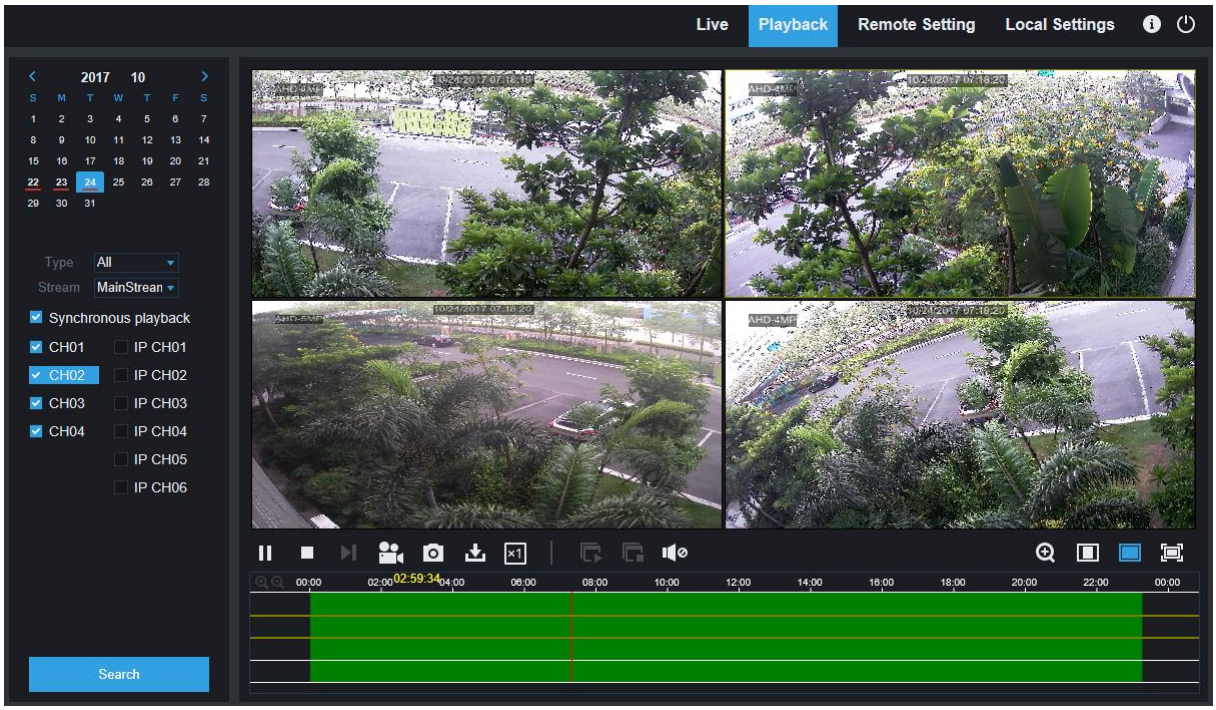


To search recordings:

1. Click **Playback** in the top-right corner of the window.
2. Select a day on the calendar to search for recordings from. Days with recordings appear with a red underline.
3. Select the recording type to search for from the dropdown next to **Type**, or select **All** to search for all recordings.
4. To choose the video stream you want to search & play. If you want to play Substream recordings, make sure you had set the NVR to record with Dualstream at 5.2 Record**.**
5. Check the channels you would like to search for recordings from. Check **Synchronous playback** to play all channels at once.

6. Click **Search**.
7. Recordings that fit your search will be displayed in the timeline. Click a section of video where you would like to begin playback and click the play button.

8.3.2.1 Playback Control Buttons



Play the recordings

Pause

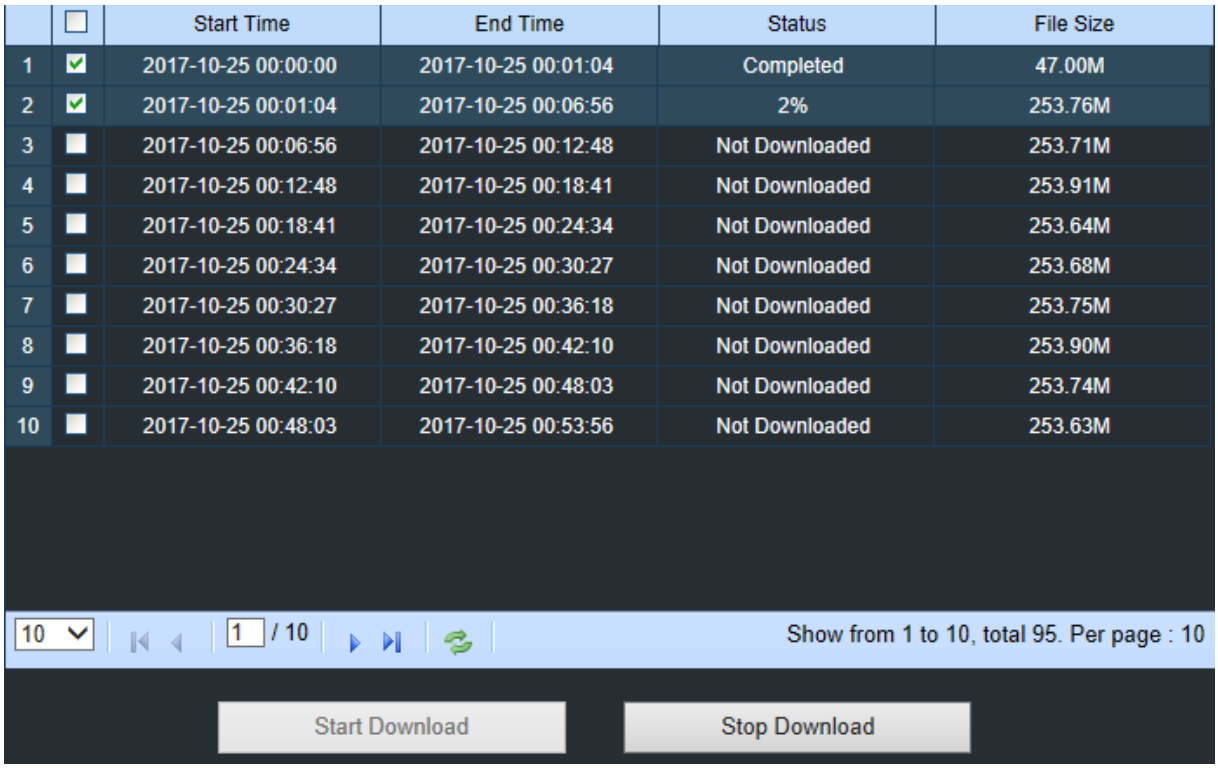
Stop

Go Forward One Frame: Move frame-by-frame through playback. Only available when the **Synchronous playback** option is not checked.

Click upon one of the channels which is being played and then click record button to record current video to your computer. Click again to stop recording.

Click upon one of the channels which is being played and then click capture button to take a snapshot and save to your computer.

Opens the Download menu, which allows you to download several video recordings at once.



Choose the files you want to download, press **Start Download** button to begin, you will see the download status. Press **Stop Download** button to stop.

Playback Speed. Click to choose the playing speed.

Play All Channels: Click to play all channels you have chosen to searched. Only available when the **Synchronous playback** option is not checked.

Stop All Channels: Click to stop playing all channels. Only available when the **Synchronous playback** option is not checked.

Digital Zoom: Click upon on a playing video, then click-and-drag over an area of the video to enlarge. Right-click to return to the normal display.

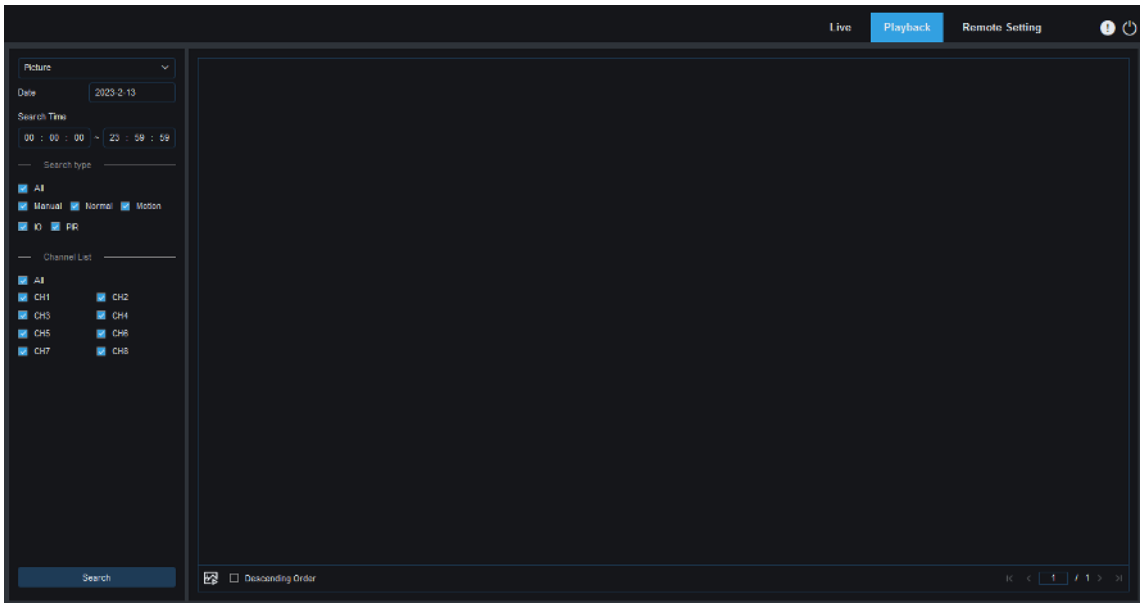
Original Proportions: Shows the playing video at the original proportions

Stretch: Stretch the playing video to fit the full area for each channel on screen.

To enlarge the web client to full screen.

8.3.2.2 Image Playback

After the capture function is enabled for the device, you can search the captured images on this page. A maximum of 5000 images can be searched at a time, and the time interval can be modified as needed.



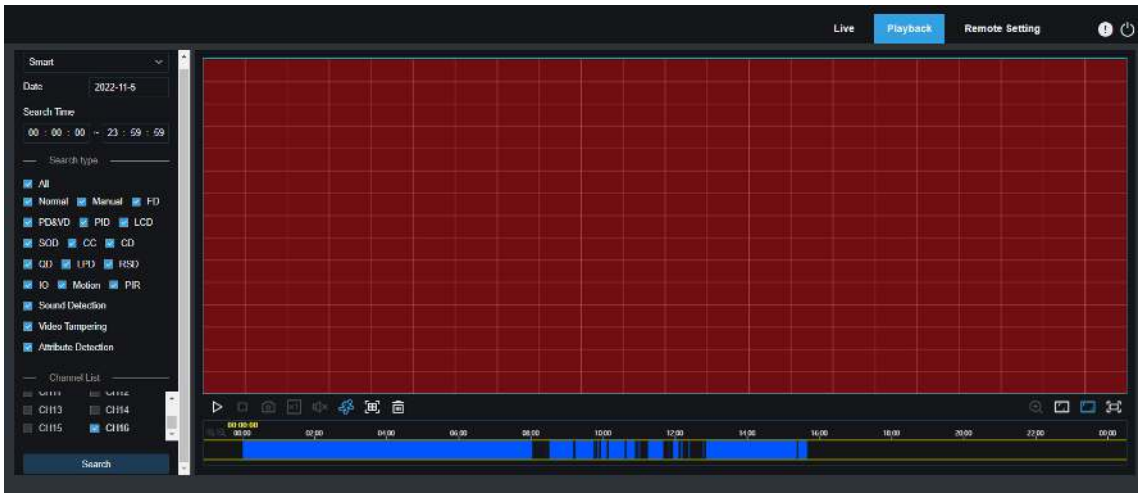
Searching images:

1. Click **Playback** in the top right corner of the page.
2. Select **Picture** from the drop-down list in the top left corner of the page.
3. Select the day to be searched on the calendar. The dates with snapshots are underlined in red.
4. Select the image types to be searched from the **Search Type** menu, or select **All** to search all image types.
5. Select the channels of which videos are to be searched.
6. Click **Search**.
7. The images meeting the search conditions are displayed in the right pane. If you double-click an image, the videos with the time periods before and after the image will be played back.

   Click  to return to the previous page.

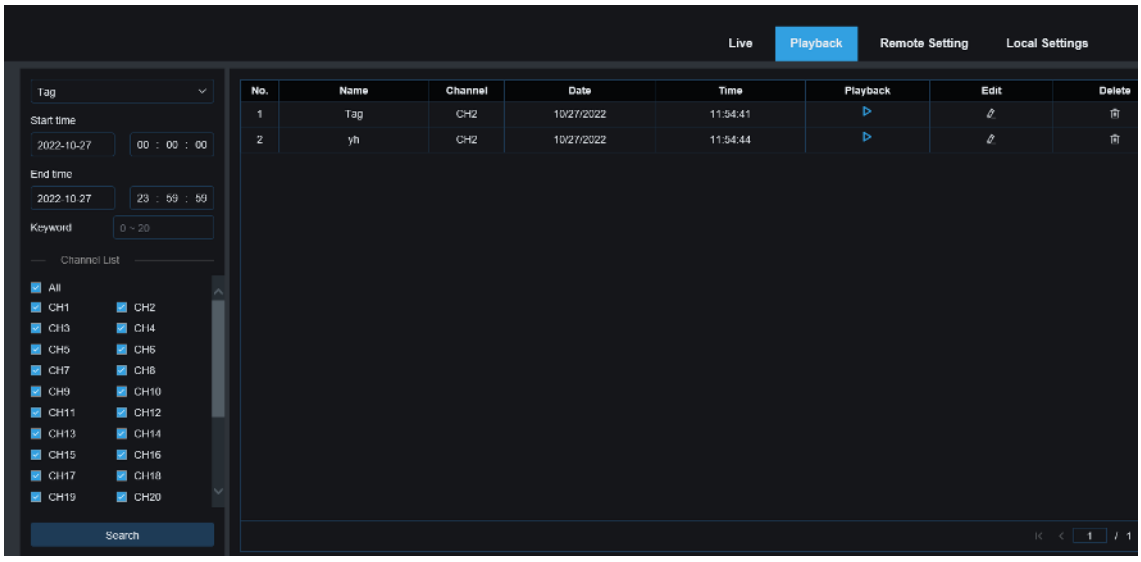
8.3.2.3 Smart Playback

After the motion detection function is enabled for the device, if there are motion detection alarms triggered, you can search the smart playback videos.



Click  to display the smart setting area. Click  to select all areas. Click  to clear all selected areas.

8.3.2.4 Playback by Tag



On this page you can search all added tags, and edit, play back, or delete them as needed. Select time and channels, and click  to complete the search. Click  to jump to the position marked by the tag to play back the video.

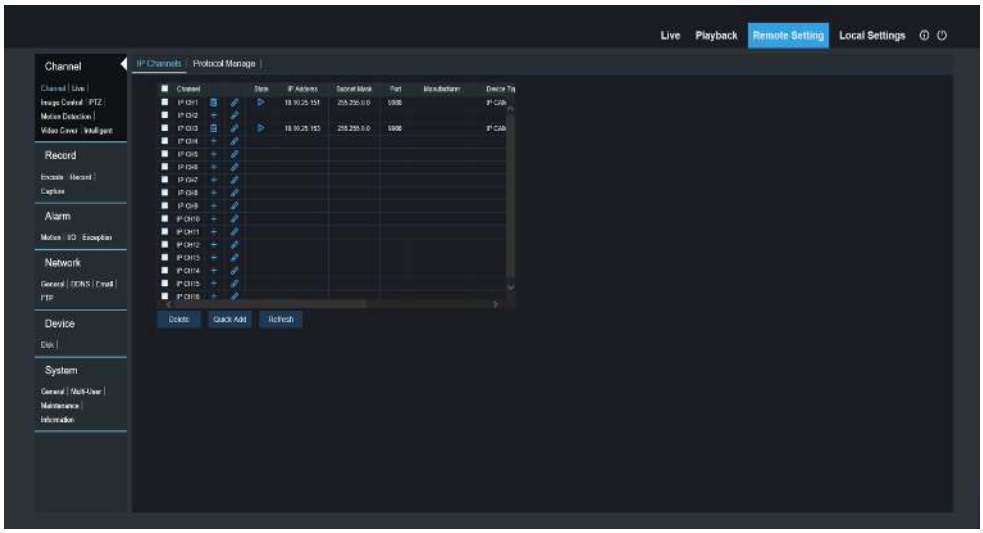
8.3.2.5 AI Playback

After the AI alarm function is enabled for the device, you can search AI alarm events on this page, including Face Detection, Pedestrian and Vehicle Detection, PID&LCD, Repeat Visitors, and Face Attendance, Intrusion, Region Entrance / Exiting events.



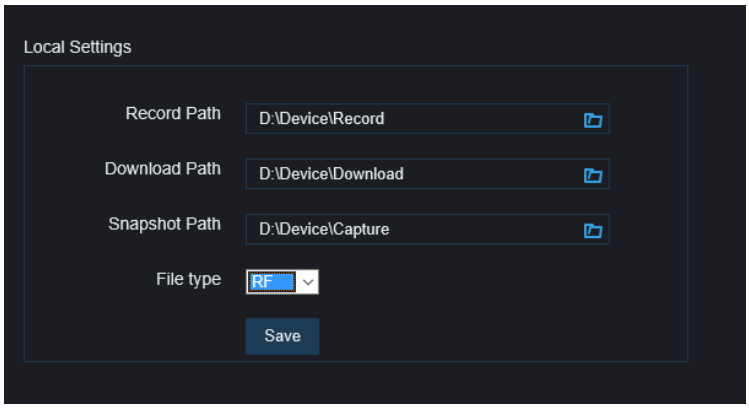
8.3.3 Remote Setting

Here you can remotely configure the settings of the NVR. See "*Chapter 5 NVR System Setup*" for details on the NVR settings.



8.3.4 Local Setting

Set download locations for recordings and snapshots taken using Web Client, and choose file type for video files.



Record Path: Click to browse for and select the folder where you would like the manual video recordings to be saved on your computer.

Download Path: Click to browse for and select the folder where you would like to save the download video recordings to your computer.

Snapshot Path: Click to browse for and select the folder where you would like the manual capture snapshots to be saved on your computer.

File Type: Choose your preferred file type for manual recordings.

Save: Click to save the modifications.

Appendix

A. Supported Hard Disk Drives

To see the supported hard disk drives for GV-SNVR models, see the GV-SNVR HDD Compatibility Table here.

B. Troubleshooting

1. **Q: What can I do if the system does not detect the HDD?**
   A: Check if the power supply system is properly connected and data cord and power cables are securely connected, and if something wrong with the HDD interface. Or you may check if your HDD is supported by referring to the specifications or descriptions.

2. **Q: I have changed the password but forget the new password, how can I access the system?**
   A: You can restore the device to its factory default settings using the Reset button on the device panel (see *Chapter 1 Product Overview*), and follow the onscreen instructions to set a new password. We strongly suggest that users set a password that is easy to remember and yet secure. If security is a concern, avoid setting overly simple passwords, such as 000000.

3. **Q: We see abnormal video signal or even no video signal by connecting the NVR and camera together. Power supply for both devices is OK. What is wrong?**
   A: Check network cable at NVR side to see if the cable is firmly connected and if it is worn out and needs to be replaced, or to check if NTSC or PAL is selected consistently.

4. **Q: How to prevent NVR from being influenced by heat?**
   A: The NVR needs to dissipate heat while it is running. Place the NVR in a place with good air circulation and away from heat sources to ensure stability and life of the NVR.

5. **Q: The remote controller of NVR doesn't work while the monitor screen is OK and panel keys are functional. Why?**
   A: Operate again by aiming the remote controller at the IR receiver on front panel. If it still doesn't work, check if the batteries in the remote controller are dying. If not, check if the remote controller is broken.

6. **Q: I want to take out HDD from my PC and install it in NVR. Can it work?**
   A: All HDDs supported by the system can be used. But remember, once NVR runs, the data on your HDD will be lost.

7. **Q: Can I play back while recording?**
   A: Yes. The system supports the function of playing while recording.

8. **Q: Can I clear some records on HDD of NVR?**
   A: In consideration of the file security, you may not clear part of records. If you want to remove all the records, you can format HDD.

9. **Q: Why can't I log in NVR client?**
   A: Check if the network connection settings are correct and RJ-45 port is with good contact. And check if your account and password are correctly input.

10. Q: Why can't I find any records during playback?

A: Check if the data line connection for HDD is OK and system time is properly adjusted. Try a few times and restart. If it still doesn't work, check if the HDD is broken.

11. Q: Why NVR cannot control PTZ?

A: Check if:

a) PTZ in the front side is malfunctioned.
b) Setting, connection and installation of PTZ decoder are not correct.
c) PTZ setting of NVR is not correct.
d) Protocol of PTZ decoder does not match that of NVR.
e) Address of PTZ decoder does not match that of NVR.
f) If many decoders are connected, the farthest side of AB line of PTZ decoder should be added 120Ω resistance to realize reflection suppression and impedance matching. Otherwise, PTZ control will be unstable.

12. Q: Why doesn't dynamic detection work?

A: Check if the motion detection time and motion detection regional setting are correct and if the sensitivity is set too low.

13. Q: Why doesn't alarm work?

A: Check if the alarm setting, alarm connection and alarm input signals are correct.

14. Q: Why does buzzer keep alarming?

A: Check the alarm setting, check if motion detection function is enabled and object motion is detected all the time and if I/O alarm is set as Always Off. Besides, refer to corresponding HDD alarm setting.

15. Q: Why can't I stop recording by pressing "STOP" button or click "Stop Recording" in context menu?

A: Pressing Stop or Stop Recording can only stop manual record. If you want to stop Scheduled recording in certain time quantum, change the setting to No Record. To stop Startup recording, change record mode to scheduled recording or manual recording. Then you may stop recording by the prescribed methods. And another way of stopping recording is to set channel as off status in record setting.

C. Usage Maintenance

1. To shut down NVR, firstly shut down the system and then turn off the power. Do not turn off the power directly or HDD data will be lost or damaged.
2. Keep NVR away from heat sources or places.
3. Clean the internal dust regularly. Make sure the good ventilation of NVR so as to ensure the good heat dissipation.
4. Do not hot plugging audio and video cables, or cables connected to ports like RS-232 or RS-485. Otherwise, the ports will be damaged.
5. Check the HDD cable and data cable regularly to see if they are ageing.
6. Prevent the audio and video signals of NVR from being intervened by other electronic devices, and prevent the HDD from being damaged by static electricity and induced voltage. If the network cable is frequently plugged, it is suggested to replace connecting line regularly, or the input signal may be unstable.