



Network Video Recorder

User's Manual

V4.4.3

ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD.

Cybersecurity Recommendations

Mandatory actions to be taken towards cybersecurity

1. Change Passwords and Use Strong Passwords:

The number one reason systems get “hacked” is due to having weak or default passwords. It is recommended to change default passwords immediately and choose a strong password whenever possible. A strong password should be made up of at least 8 characters and a combination of special characters, numbers, and upper and lower case letters.

2. Update Firmware

As is standard procedure in the tech-industry, we recommend keeping NVR, DVR, and IP camera firmware up-to-date to ensure the system is current with the latest security patches and fixes.

“Nice to have” recommendations to improve your network security

1. Change Passwords Regularly

Regularly change the credentials to your devices to help ensure that only authorized users are able to access the system.

2. Change Default HTTP and TCP Ports:

- Change default HTTP and TCP ports for systems. These are the two ports used to communicate and to view video feeds remotely.
- These ports can be changed to any set of numbers between 1025-65535. Avoiding the default ports reduces the risk of outsiders being able to guess which ports you are using.

3. Enable HTTPS/SSL:

Set up an SSL Certificate to enable HTTPS. This will encrypt all communication between your devices and recorder.

4. Enable IP Filter:

Enabling your IP filter will prevent everyone, except those with specified IP addresses, from accessing the system.

5. Change ONVIF Password:

On older IP Camera firmware, the ONVIF password does not change when you change the system’s credentials. You will need to either update the camera’s firmware to the latest revision or manually change the ONVIF password.

6. Forward Only Ports You Need:

- Only forward the HTTP and TCP ports that you need to use. Do not forward a huge range of numbers to the device. Do not DMZ the device’s IP address.
- You do not need to forward any ports for individual cameras if they are all connected to a recorder on site; just the NVR is needed.

7. Disable Auto-Login on SmartPSS:

Those using SmartPSS to view their system and on a computer that is used by multiple people should disable auto-login. This adds a layer of security to prevent users without the appropriate credentials from accessing the system.

8. Use a Different Username and Password for SmartPSS:

In the event that your social media, bank, email, etc. account is compromised, you would not want someone collecting those passwords and trying them out on your video surveillance system. Using a different username and password for your security system will make it more difficult for someone to guess their way into your system.

9. Limit Features of Guest Accounts:

If your system is set up for multiple users, ensure that each user only has rights to features and functions they need to use to perform their job.

10. UPnP:

- UPnP will automatically try to forward ports in your router or modem. Normally this would be a good thing. However, if your system automatically forwards the ports and you leave the credentials defaulted, you may end up with unwanted visitors.
- If you manually forwarded the HTTP and TCP ports in your router/modem, this feature should be turned off regardless. Disabling UPnP is recommended when the function is not used in real applications.

11. SNMP:

Disable SNMP if you are not using it. If you are using SNMP, you should do so only temporarily, for tracing and testing purposes only.

12. Multicast:

Multicast is used to share video streams between two recorders. Currently there are no known issues involving Multicast, but if you are not using this feature, deactivation can enhance your network security.

13. Check the Log:

If you suspect that someone has gained unauthorized access to your system, you can check the system log. The system log will show you which IP addresses were used to login to your system and what was accessed.

14. Physically Lock Down the Device:

Ideally, you want to prevent any unauthorized physical access to your system. The best way to achieve this is to install the recorder in a lockbox, locking server rack, or in a room that is behind a lock and key.

15. Connect IP Cameras to the PoE Ports on the Back of an NVR:

Cameras connected to the PoE ports on the back of an NVR are isolated from the outside world and cannot be accessed directly.

16. Isolate NVR and IP Camera Network

The network your NVR and IP camera resides on should not be the same network as your public computer network. This will prevent any visitors or unwanted guests from getting access to the same network the security system needs in order to function properly.

Regulatory Information

FCC Information



Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC conditions:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

FCC compliance:

This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the guide, may cause harmful interference to radio communication.

- For class A device, these limits are designed to provide reasonable protection against harmful interference in a commercial environment. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- For class B device, these limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.

SDOC Statement is shown as below :


FCC Supplier' s Declaration of Conformity

Importer Name: Dahua Technology USA Inc.
Importer Address: 23 Hubble Irvine, CA 92618

Equipment

Product Name: NETWORK VIDEO RECORDER

Model No.:
DHI-NVR2108HS-W-4KS2
DHI-NVR2104HS-W-4KS2
N41B1W
DHI-NVR21XYHS-W-4KSZ,
DH-NVR21XYHS-W-4KSZ,
NVR21XYHS-W-4KSZ,
N41BZW
(XY=04,08,16,32,64,Z=0~9)

Trade Name: 

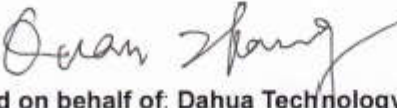
Telephone. : (949) 679-7777

We, **Dahua Technology USA Inc.**, declare under our sole responsibility that the above referenced product has been tested on samples according to FCC requirements, for which UL issued **FCC:4788560194.1-4** and found compliant with the following standards: **FCC Part 15 Subpart B.**

Please be advised,

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

*(1) This device may not cause harmful interference,
And (2) this device must accept any interference received, including Interference that may cause undesirable operation.*

Signature: 

Signed for and on behalf of: Dahua Technology USA Inc.
Name: Paul Zhang

Position: Technical Director


FCC Supplier' s Declaration of Conformity

Importer Name: Dahua Technology USA Inc.
Importer Address: 23 Hubble Irvine, CA 92618

Equipment

Product Name: **NETWORK VIDEO RECORDER**

Model No.:
DHI-NVR2104-W-4KS2
DHI-NVR2108-W-4KS2
NVR2104-W-4KS2
NVR2108-W-4KS2
NVR2104-W-4KS2-Lechange
NVR2108-W-4KS2-Lechange
DHI-NVR21XY-W-4KSZ,
DH-NVR21XY-W-4KSZ,
NVR21XY-W-4KSZ,
NVR21XY-W-4KSZ-Lechange
(XY=04,08,16,32,64,Z=0~9)

Trade Name: 


Telephone. : (949) 679-7777

We, **Dahua Technology USA Inc.**, declare under our sole responsibility that the above referenced product has been tested on samples according to FCC requirements, for which UL issued **FCC:4788560210.1-4** and found compliant with the following standards: **FCC Part 15 Subpart B**.

Please be advised,

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

*(1) This device may not cause harmful interference,
And (2) this device must accept any interference received, including Interference that may cause undesirable operation.*

Signature: 

Signed for and on behalf of: **Dahua Technology USA Inc.**
Name: **Paul Zhang**

Position: **Technical Director**

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General

This user's manual (hereinafter referred to be "the Manual") introduces the installation, functions and operations of the Network Video Recorder (NVR) devices (hereinafter referred to be "the Device").

Safety Instructions

The following categorized signal words with defined meaning might appear in the Manual.

Signal Words	Meaning
 DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
 CAUTION	Indicates a potential risk which, if not avoided, may result in property damage, data loss, lower performance, or unpredictable result.
 ELECTRICITY	Indicates dangerous high voltage. Take care to avoid coming into contact with electricity.
 LASER BEAM	Indicates a laser radiation hazard. Take care to avoid exposure to a laser beam.
 ESD	Electrostatic Sensitive Devices. Indicates a device that is sensitive to electrostatic discharge.
 TIPS	Provides methods to help you solve a problem or save you time.
 NOTE	Provides additional information as the emphasis and supplement to the text.

Revision History

No.	Version	Revision Content	Release Time
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No.	Version	Revision Content	Release Time
1	V1.0.0	First Release.	-
2	V3.0.0	<ul style="list-style-type: none"> • Add new modules. • Baseline switch and update screen interfaces. • Add new models. 	May 10, 2016
3	V4.0.0	<ul style="list-style-type: none"> • Add cloud update module. • Baseline switch and update screen interfaces. 	August 15, 2017
4	V4.1.0	<ul style="list-style-type: none"> • Update POS. • Modify pictures with QR code and SN. 	September 6, 2017
5	V4.2.0	Add models.	September 21, 2017
6	V4.3.0	Delete old models and add new models. Update relevant information.	October 12, 2017
8	V4.3.1	Add new models and update relevant information.	April 28, 2018
9	V4.3.2	Add Privacy Protection Notice and update About the Manual.	May, 2018
10	V4.4.2	<ul style="list-style-type: none"> • Add GDPR information. • Add FCC information. • Update HDD installation. 	June, 2018
11	V4.4.3	<ul style="list-style-type: none"> • Add NVR21-W-4KS2,NVR21HS-W-4KS2 and relevant information. • NVR5424-24P-4KS2: Add altitude 5,000 meters. 	July, 2018

Privacy Protection Notice

As the device user or data controller, you might collect personal data of others such as face, fingerprints, car plate number, Email address, phone number, GPS and so on. You need to be in compliance with the local privacy protection laws and regulations to protect the legitimate rights and interests of other people by implementing measures including but not limited to: providing clear and visible identification to inform data subject the existence of surveillance area and providing related contact.

About the Manual

- The Manual is for reference only. If there is inconsistency between the Manual and the actual product, the actual product shall govern.
- We are not liable for any loss caused by the operations that do not comply with the Manual.

- The Manual would be updated according to the latest laws and regulations of related regions. For detailed information, see the paper User's Manual, CD-ROM, QR code or our official website. If there is inconsistency between paper User's Manual and the electronic version, the electronic version shall prevail.
- All the designs and software are subject to change without prior written notice. The product updates might cause some differences between the actual product and the Manual. Please contact the customer service for the latest program and supplementary documentation.
- There still might be deviation in technical data, functions and operations description, or errors in print. If there is any doubt or dispute, please refer to our final explanation.
- Upgrade the reader software or try other mainstream reader software if the Guide (in PDF format) cannot be opened.
- All trademarks, registered trademarks and the company names in the Manual are the properties of their respective owners.
- Please visit our website, contact the supplier or customer service if there is any problem occurred when using the device.
- If there is any uncertainty or controversy, please refer to our final explanation.

Important Safeguards and Warnings

The following description is the correct application method of the device. Read the manual carefully before use to prevent danger and property loss. Strictly conform to the manual during application and keep it properly after reading.

Operating Requirement

- Install the PoE front-end device indoors.
- The device does not support wall mount.
- Don't place and install the device in an area exposed to direct sunlight or near heat generating device.
- Don't install the device in a humid, dusty or fuliginous area.
- Keep its horizontal installation, or install it at stable places, and prevent it from falling.
- Don't drip or splash liquids onto the device; don't put on the device anything filled with liquids, in order to prevent liquids from flowing into the device.
- Install the device at well-ventilated places; don't block its ventilation opening.
- Use the device only within rated input and output range.
- Don't dismantle the device arbitrarily.
- Transport, use and store the device within allowed humidity and temperature range.

Power Requirement

- Make sure to use the designated battery type. Otherwise there may be explosion risk.
- Make sure to use batteries according to requirements. Otherwise, it may result in fire, explosion or burning risks of batteries!
- To replace batteries, only the same type of batteries can be used.
- Make sure to dispose the exhausted batteries according to the instructions.
- The product shall use electric wires (power wires) recommended by this area, which shall be used within its rated specification.
- Make sure to use standard power adapter matched with this device. Otherwise, the user shall undertake resulting personnel injuries or device damages.
- Use power supply that meets SELV (safety extra low voltage) requirements, and supply power with rated voltage that conforms to Limited Power Source in IEC60950-1. For specific power supply requirements, please refer to device labels.
- Products with category I structure shall be connected to grid power output socket, which is equipped with protective grounding.
- Appliance coupler is a disconnecting device. During normal use, please keep an angle that facilitates operation.

1 Features and Specifications

1.1 Overview

This series NVR is a high performance network video recorder. This series product support local preview, multiple-window display, recorded file local storage, remote control and mouse shortcut menu operation, and remote management and control function.

This series product supports center storage, front-end storage and client-end storage. The monitor zone in the front-end can be set in anywhere. Working with other front-end devices such as IPC, NVS, this series product can establish a strong surveillance network via the CMS. In the network system, there is only one network cable from the monitor center to the monitor zone in the whole network. There is no audio/video cable from the monitor center to the monitor zone. The whole project is featuring of simple connection, low-cost, low maintenance work.

This series NVR can be widely used in many areas such as public security, water conservancy, transportation and education.

1.2 Features

Cloud Upgrade	<ul style="list-style-type: none">• For the NVR connected with the Internet, it supports online upgrade to update applications.
Real-time Surveillance	<ul style="list-style-type: none">• VGA, HDMI port. Connect to monitor to realize real-time surveillance. Some series support TV/VGA/HDMI output at the same time.• Short-cut menu when preview.• Support popular PTZ decoder control protocols. Support preset, tour and pattern.
Playback	<ul style="list-style-type: none">• Support each channel real-time record independently, and at the same time it can support search, forward play, network monitor, record search, download and etc.• Support various playback modes: slow play, fast play, backward play and frame by frame play.• Support time title overlay so that you can view event accurate occurred time• Support specified zone enlargement.
User Management	<ul style="list-style-type: none">• Each group has different management powers that can be edited freely. Every user belongs to an exclusive group.
Storage	<ul style="list-style-type: none">• Via corresponding setup (such as alarm setup and schedule setup), you can backup related audio/video data in the network video recorder.• Support Web record and record local video and storage the file in the client end.
Alarm	<ul style="list-style-type: none">• Respond to external alarm simultaneously (within 200MS), based on user's pre-defined relay setup, system can process the alarm input correctly and prompt user by screen and voice (support pre-recorded audio).• Support central alarm server setup, so that alarm information can remotely notify user automatically. Alarm input can be derived from

	<p>various connected peripheral devices.</p> <ul style="list-style-type: none"> Alert you via email/sms.
Network Monitor	<ul style="list-style-type: none"> Through network, sending audio/video data compressed by IPC or NVS to client-ends, then the data will be decompressed and display. Support max 128 connections at the same time. Transmit audio/video data by HTTP, TCP, UDP, MULTICAST, RTP/RTCP and etc. Transmit some alarm data or alarm info by SNMP. Support WEB access in WAN/LAN.
Window Split	<ul style="list-style-type: none"> Adopt the video compression and digital process to show several windows in one monitor. Support 1/4/8/9/16/ 25/36-window display when preview and 1/4/9/16-window display when playback.
Record	<ul style="list-style-type: none"> Support normal/motion detect/alarm record function. Save the recorded files in the HDD, USB device, client-end PC, or network storage server. You can search or playback the saved files at the local-end or via the Web/USB device.
Backup	<ul style="list-style-type: none"> Support network backup, USB2.0 record backup function, the recorded files can be saved in network storage server, peripheral USB2.0 device, burner and etc.
Network Management	<ul style="list-style-type: none"> Supervise NVR configuration and control power via Ethernet. Support management via WEB.
Peripheral Equipment Management	<ul style="list-style-type: none"> Support peripheral equipment management such as protocol setup and port connection. Support transparent data transmission such as RS232 (RS-422), RS485 (RS-485).
Auxiliary	<ul style="list-style-type: none"> Support switch between NTSC and PAL. Support real-time system resources information and running statistics display. Support log file. Local GUI output. Shortcut menu operation via mouse. IR control function (For some series product only.). Shortcut menu operation via remote control. Play the video/audio from the network camera or NVS remotely.

1.3 Specifications

1.3.1 NVR21-W-4KS2 Series

Model		NVR21-W-4KS2
System	Host Processor	Industrial grade embedded microcontroller
	OS	Embedded Linux operation system
	System Resources	4/8-ch series product supports 4/8 HD connection respectively. Total wired network bandwidth supports 80Mbps or wireless network supports 24Mbps.

Model		NVR21-W-4KS2
	Operation Interface	WEB/Local GUI
Decode	Video Decode Type	H.264;H265;MPEG4; smart264; smart265
	Decode Capability	Max 1-ch 4K, 1-ch 6M,1-ch 5M, 2-ch 4M, 4-ch 1080P or 8-ch 720P
Video	Video Input	4/8-ch network compression video input
	Video Output	1-channel VGA analog video output 1-channel HDMI video output, HDMI version is 1.4. VGA and HDMI output the video from the same video source.
	Video Compression Standard	N/A
	Window Split	1/4/8/9-window
Audio	Audio Input	N/A
	Audio Output	N/A
	Audio Compression Standard	PCM,G.711a,G711u
Alarm	Alarm Input	N/A
	Alarm Output	N/A
Function	Record Mode	Manual record, motion detect record, schedule record, alarm record. The record priority: Manual record>Alarm record>Motion detect record>Schedule record

Model		NVR21-W-4KS2
	Multiple-Channel Playback	Max 4-channel 1080P playback
	Motion Detect	Each video supports PAL 396(22*18)/ NTSC 330(22*15) detection zones. Support multiple sensitivity levels from level 1-level 6.
	Privacy Mask	Each channel supports 4 privacy mask zones
	Record File Storage	NVR local/network and etc.
	Backup Mode	Peripheral USB device
Port and Indicator	Network Protocol	IPv4, IPv6, HTTP, NTP, DNS, ONVIF
	SATA Port	1
	eSATA Port	N/A
	RS232 Port	N/A
	RS485 Port	N/A
	USB Port	2 peripheral USB2.0 ports.
	HDMI Port	1
	VGA Port	1
	Network Connection	1 RJ45 10/100Mbps self-adaptive Ethernet port or 802.11b/g/n Wi-Fi.
	Power Button	N/A
Power On-off Button	N/A	

Model		NVR21-W-4KS2
	IR Receiver Window	N/A
	Clock	One built-in real-time clock.
	Indicator Light	One power status indicator light. One network status indicator light. One HDD status indicator light.
General	Power Supplying	DC12V 2A
	Power Consumption	6.6W (No HDD connection)
	Working Temperature	-10°C to + 40°C
	Working Humidity	10%-90%
	Air pressure	86kPa~106kPa
	Dimension	Antenna open: 226mm*227mm*191mm; Antenna closed: 226mm*227mm*40mm.
	Installation Mode	Desk installation

1.3.2 NVR21HS-W-4KS2 Series

Model		NVR21HS-W-4KS2
System	Host Processor	Industrial grade embedded microcontroller
	OS	Embedded Linux operation system
	System Resources	4/8-ch series product supports 4/8 HD connection respectively. Total wired network bandwidth supports 80Mbps or wireless network supports 24Mbps.
	Operation Interface	WEB/Local GUI

Model		NVR21HS-W-4KS2
Decode	Video Decode Type	H.264;H265;MPEG4; smart264; smart265
	Decode Capability	Max 1-ch 4K, 1-ch 6M,1-ch 5M, 2-ch 4M, 4-ch 1080P or 8-ch 720P
Video	Video Input	4/8-ch network compression video input
	Video Output	1-channel VGA analog video output 1-channel HDMI video output, HDMI version is 1.4. VGA and HDMI output the video from the same video source.
	Video Compression Standard	N/A
	Window Split	1/4/8/9-window
Audio	Audio Input	N/A
	Audio Output	N/A
	Audio Compression Standard	PCM,G.711a,G711u
Alarm	Alarm Input	N/A
	Alarm Output	N/A
Function	Record Mode	Manual record, motion detect record, schedule record, alarm record. The record priority: Manual record>Alarm record>Motion detect record>Schedule record
	Multiple-Channel Playback	Max 4-channel 1080P playback

Model		NVR21HS-W-4KS2
	Motion Detect	Each video supports PAL 396(22*18)/ NTSC 330(22*15) detection zones. Support multiple sensitivity levels from level 1-level 6.
	Privacy Mask	Each channel supports 4 privacy mask zones
	Record File Storage	NVR local/network and etc.
	Backup Mode	Peripheral USB device
Port and Indicator	Network Protocol	IPv4, IPv6, HTTP, NTP, DNS, ONVIF
	SATA Port	1
	eSATA Port	N/A
	RS232 Port	N/A
	RS485 Port	N/A
	USB Port	2 peripheral USB2.0 ports.
	HDMI Port	1
	VGA Port	1
	Network Connection	1 RJ45 10/100Mbps self-adaptive Ethernet port or 802.11b/g/n Wi-Fi.
	Power Button	N/A
	Power On-off Button	N/A
	IR Receiver Window	N/A

Model		NVR21HS-W-4KS2
	Clock	One built-in real-time clock.
	Indicator Light	One power status indicator light. One network status indicator light. One HDD status indicator light.
General	Power Supplying	DC12V 2A
	Power Consumption	6.6W (No HDD connection)
	Working Temperature	-10℃ to + 40℃
	Working Humidity	10%-90%
	Air pressure	86kPa~106kPa
	Dimension	Antenna open: 260mm*247mm*198mm; Antenna closed: 260mm*247mm*48mm.
	Installation Mode	Desk installation

2 Front Panel and Rear Panel

NOTE

The following front panel and rear panel figures are for reference only. The actual product shall prevail.

2.1 Front Panel

2.1.1 NVR21-W-4KS2 Series

The front panel is shown as below. See Figure 2-1.

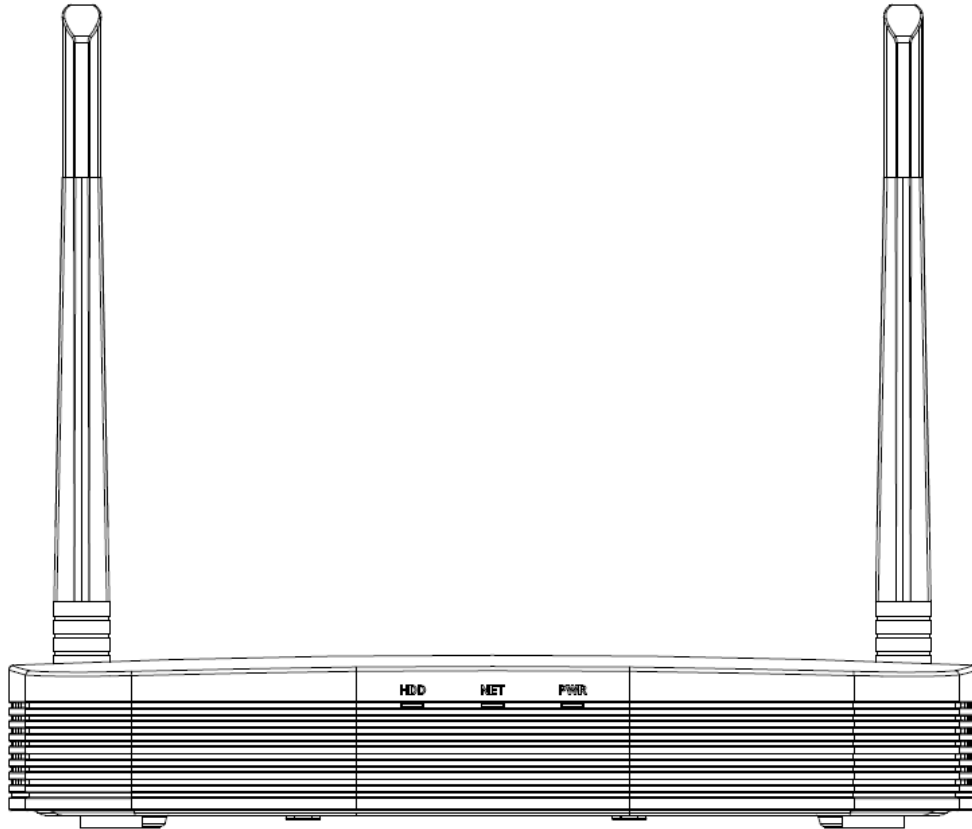


Figure 2-1

Please refer to the following sheet for front panel button information.

Icon	Name	Function
HDD	HDD status indicator light	The blue light is on when the HDD is malfunction.
NET	Network status indicator light	The blue light is on when the network connection is abnormal.
PWR	Power status indicator light	The blue light is on when the power connection is OK.

2.1.2 NVR21HS-W-4KS2 Series

The front panel is shown as below. See Figure 2-2.

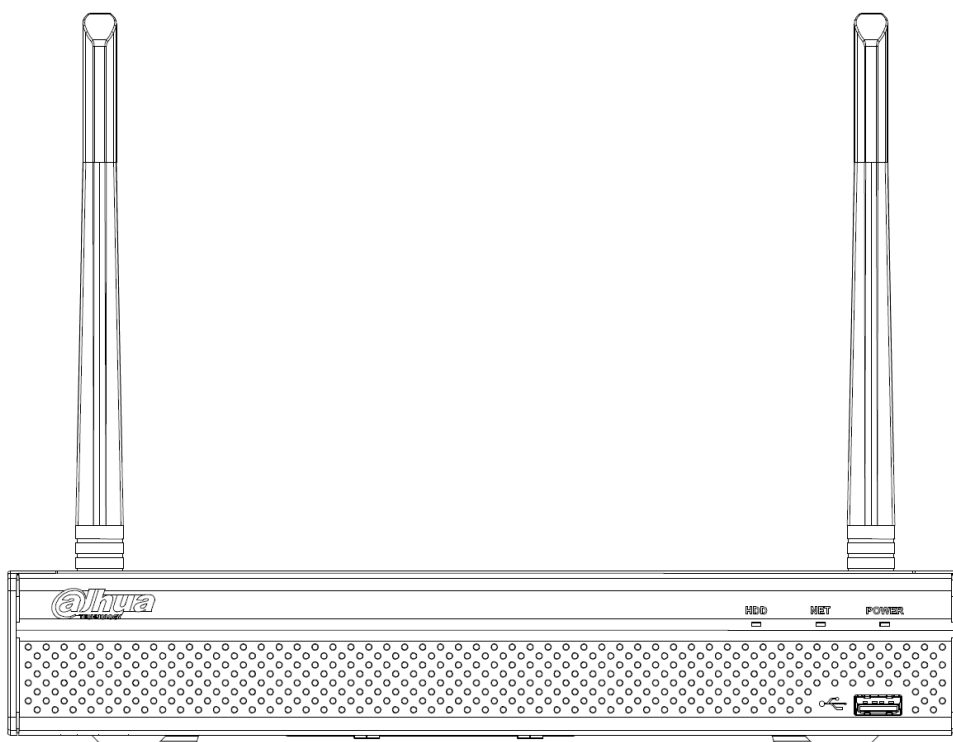



Figure 2-2

Please refer to the following sheet for front panel button information.

Icon	Name	Function
HDD	HDD status indicator light	The blue light is on when the HDD is malfunction.
NET	Network status indicator light	The blue light is on when the network connection is abnormal.
POWER	Power status indicator light	The blue light is on when the power connection is OK.
	USB2.0 port	Connect to peripheral USB 2.0 storage device, mouse and etc.

2.2 Rear Panel

2.2.1 NVR21-W-4KS2 Series

The rear panel is shown as below. See Figure 2-3.

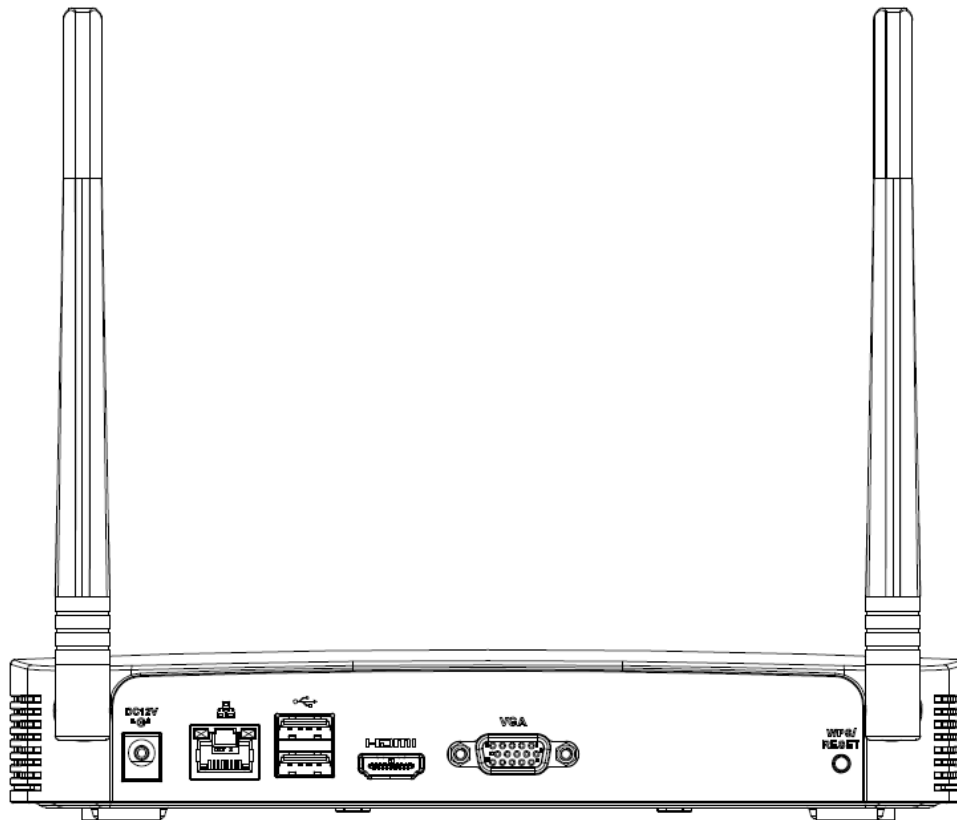





Figure 2-3

Please refer to the following sheet for detailed information.

Port Name	Connection	Function
	USB2.0 port	USB2.0 port. Connect to mouse, USB storage device, USB burner and etc.
	Network port	10M/100Mbps self-adaptive Ethernet port. Connect to the network cable.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
	Power input port	Input DC 12V/2A.
WPS/RESET	Reset/WPS function	Device Wi-Fi reset and WPS function button: <ul style="list-style-type: none"> ● Hold down this button for 5 seconds and above to restore Wi-Fi AP to defaults. ● Press this button for less than 2 seconds, and then press the WPS button of Wi-Fi IPC, the device and Wi-Fi IPC can be connected.

2.2.2 NVR21HS-W-4KS2 Series

The rear panel is shown as below. See Figure 2-4.

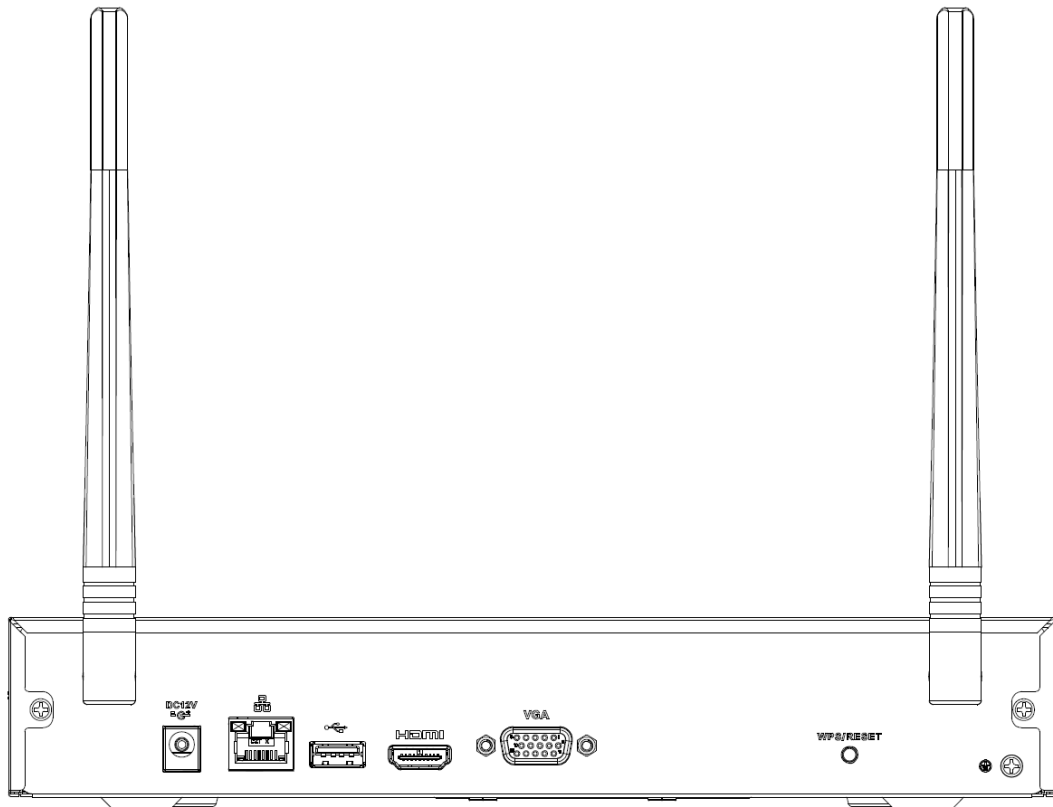






Figure 2-4

Please refer to the following sheet for detailed information.

Icon	Name	Function
	Power input socket.	Power socket. Input DC12V/2A.
	Network port	10M/100Mbps self-adaptive Ethernet port. Connect to the network cable.
	USB2.0 port	USB2.0 port. Connect to mouse, USB storage device, and etc.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
	GND	Ground end
WPS/RESET	Reset/WPS function	Device Wi-Fi reset and WPS function button: <ul style="list-style-type: none"> ● Hold down this button for 5 seconds and above to restore Wi-Fi AP to defaults. ● Press this button for less than 2 seconds, and then press the WPS button of Wi-Fi IPC, the device and Wi-Fi IPC can be connected.

2.3 Bidirectional talk

2.3.1 Device-end to PC-end

Device Connection

Please connect the speaker or the pickup to the first audio input port in the device rear panel. Then connect the earphone or the sound box to the audio output port in the PC.

Login the Web and then enable the corresponding channel real-time monitor.

Please refer to the following interface to enable bidirectional talk. See Figure 2-5.

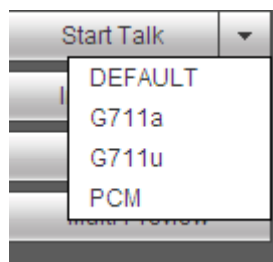


Figure 2-5

Listening Operation

At the device end, speak via the speaker or the pickup, and then you can get the audio from the earphone or sound box at the pc-end. See Figure 2-6.

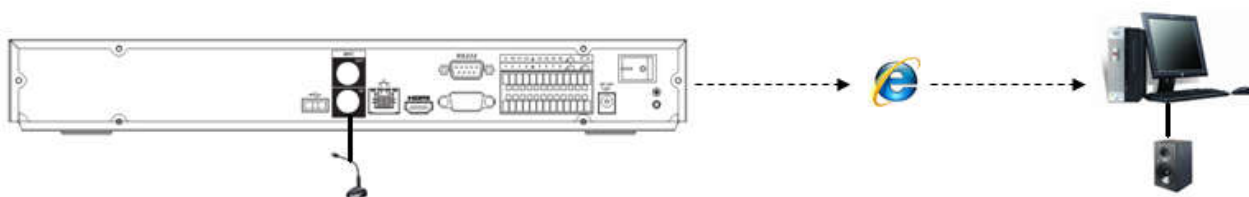


Figure 2-6

2.3.2 PC-end to the device-end

Device Connection

Connect the speaker or the pickup to the audio output port in the PC and then connect the earphone or the sound box to the first audio input port in the device rear panel.

Login the Web and then enable the corresponding channel real-time monitor.

Please refer to the above interface (Figure 2-5) to enable bidirectional talk.

Listening Operation

At the PC-end, speak via the speaker or the pickup, and then you can get the audio from the earphone or sound box at the device-end. See Figure 2-7.

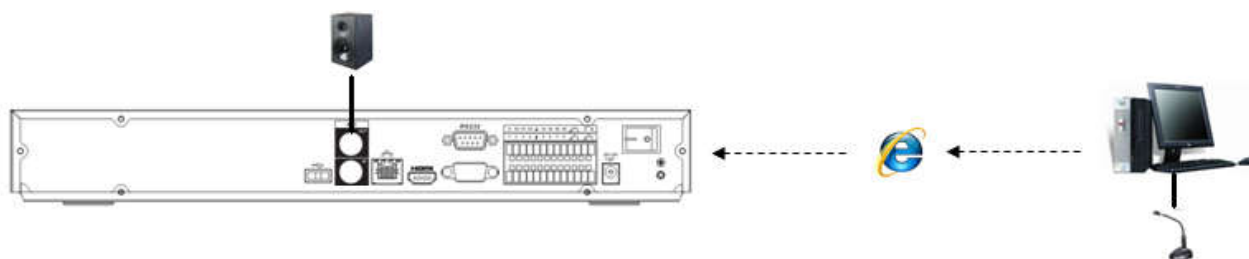
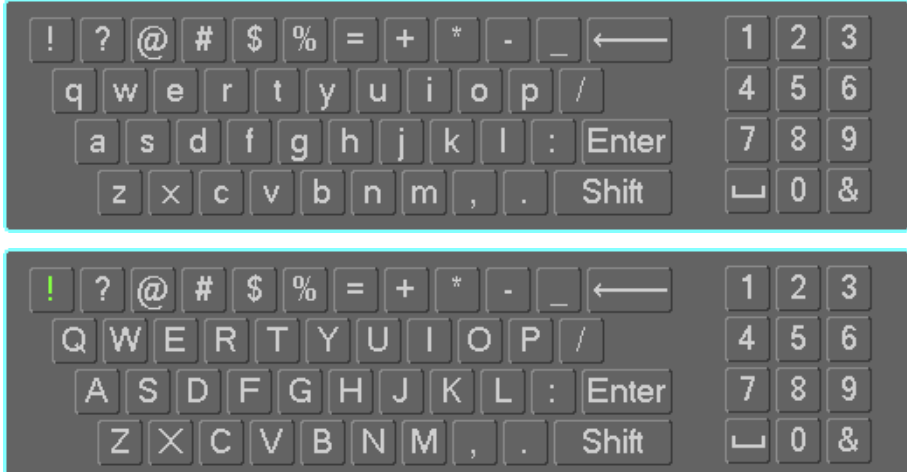


Figure 2-7

2.4 Mouse Operation

Please refer to the following sheet for mouse operation instruction.

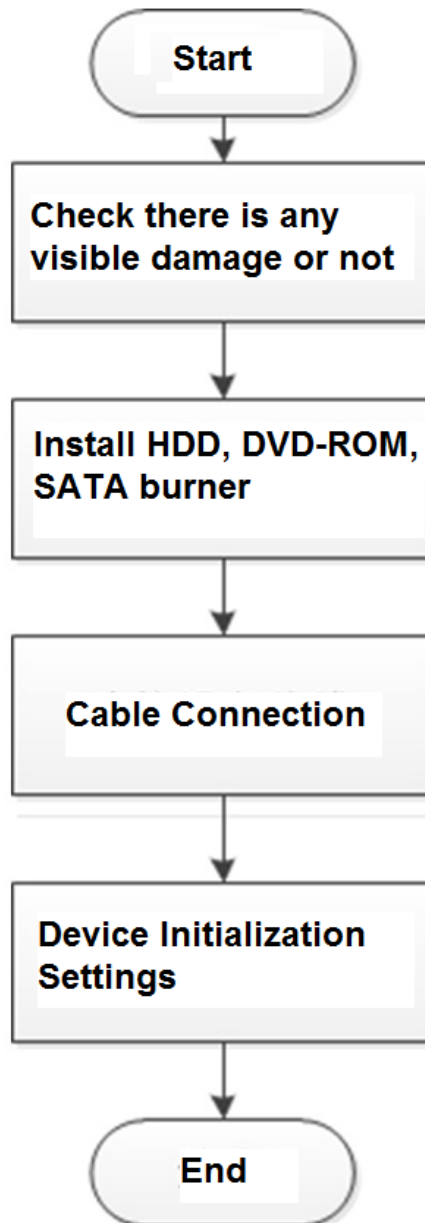
Left click mouse	When you have selected one menu item, left click mouse to view menu content.
	Modify checkbox or motion detection status.
	Click combo box to pop up dropdown list
	In input box, you can select input methods. Left click the corresponding button on the panel you can input numeral/English character (small/capitalized). Here ← stands for backspace button. _ stands for space button. In English input mode: _stands for input a backspace icon and ← stands for deleting the previous character.
	
	In numeral input mode: _ stands for clear and ← stands for deleting the previous numeral.
Double left click mouse	Implement special control operation such as double click one item in the file list to playback the video.
	In multiple-window mode, double left click one channel to view in full-window. Double left click current video again to go back to previous multiple-window mode.
Right click mouse	In real-time monitor mode, pops up shortcut menu.
	Exit current menu without saving the modification.
Press middle button	In numeral input box: Increase or decrease numeral value.
	Switch the items in the check box.
	Page up or page down
Move mouse	Select current control or move control
Drag mouse	Select motion detection zone
	Select privacy mask zone.

3 Device Installation

Note: All the installation and operations here should conform to your local electric safety rules.

3.1 Device Installation Diagrams

Please refer to the following diagrams to install the NVR.



3.2 Check Unpacked NVR

When you receive the NVR from the forwarding agent, please check whether there is any visible damage. The protective materials used for the package of the NVR can protect most accidental clashes during transportation. Then you can open the box to check the accessories.

Please check the items in accordance with the list. Finally you can remove the protective film of the NVR.

3.3 About Front Panel and Rear Panel

The model number in the stick on the bottom of NVR is very important; please check according to your purchase order.

The label in the rear panel is very important too. Usually we need you to represent the serial number when we provide the service after sales.

3.4 HDD Installation

For the first time installation, make sure whether the HDD has been installed or not. We recommend to use HDD of enterprise level or surveillance level. It is not recommended to use PC HDD.



CAUTION

- Shut off the power before you replace the HDD.
- Use the dedicated SATA HDD for monitoring recommended by the HDD manufacturer.
- You can refer to the Appendix for HDD space information and recommended HDD brand.

3.4.1 NVR41/41-P/41-8P/41-W/21-S2/21-P-S2/21-8P-S2/41-4KS2/41-P-4KS2/41-8P-4KS2/21-4KS2/21-P-4KS2/21-8P-4KS2/21-W-4KS2 Series



① Loosen the screws of the bottom of the chassis.



② Place the HDD in accordance with the four holes in the bottom.



③ Turn the device upside down and then secure the screws firmly.



④ Connect the HDD cable and power cable to the HDD and the mainboard respectively.

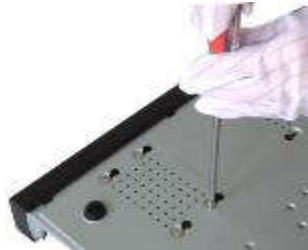


⑤ Put the cover back and then fix the screws of the rear panel. The installation is complete.

3.4.2 NVR41H/41H-P/41H-8P/21HS-S2/21HS-P-S2/21HS-8P-S2/41HS-W-S2/41HS-4KS2/41HS-P-4KS2/41HS-8P-4KS2/21HS-4KS2/21HS-P-4KS2/21HS-8P-4KS2/21HS-W-4KS2 Series



- ① Loosen the screws of the upper cover and side panel.
- ② Connect the one end of the HDD data cable and the power cable to the mainboard.
- ③ Connect the other end of the HDD data cable and the power cable to the HDD.



- ④ Place the HDD in accordance with the four holes on the bottom of the chassis.
- ⑤ Turn the device upside down; fix the screws to secure the HDD on the bottom of the chassis.
- ⑥ Put the cover in accordance with the clip and then fix the screws on the rear panel and side panel.

3.5 Connection Sample

3.5.1 NVR41HS-W-S2/21-W-4KS2/21HS-W-4KS2 Series

Please refer to Figure 3-1 for connection sample.

The following figure for reference only.

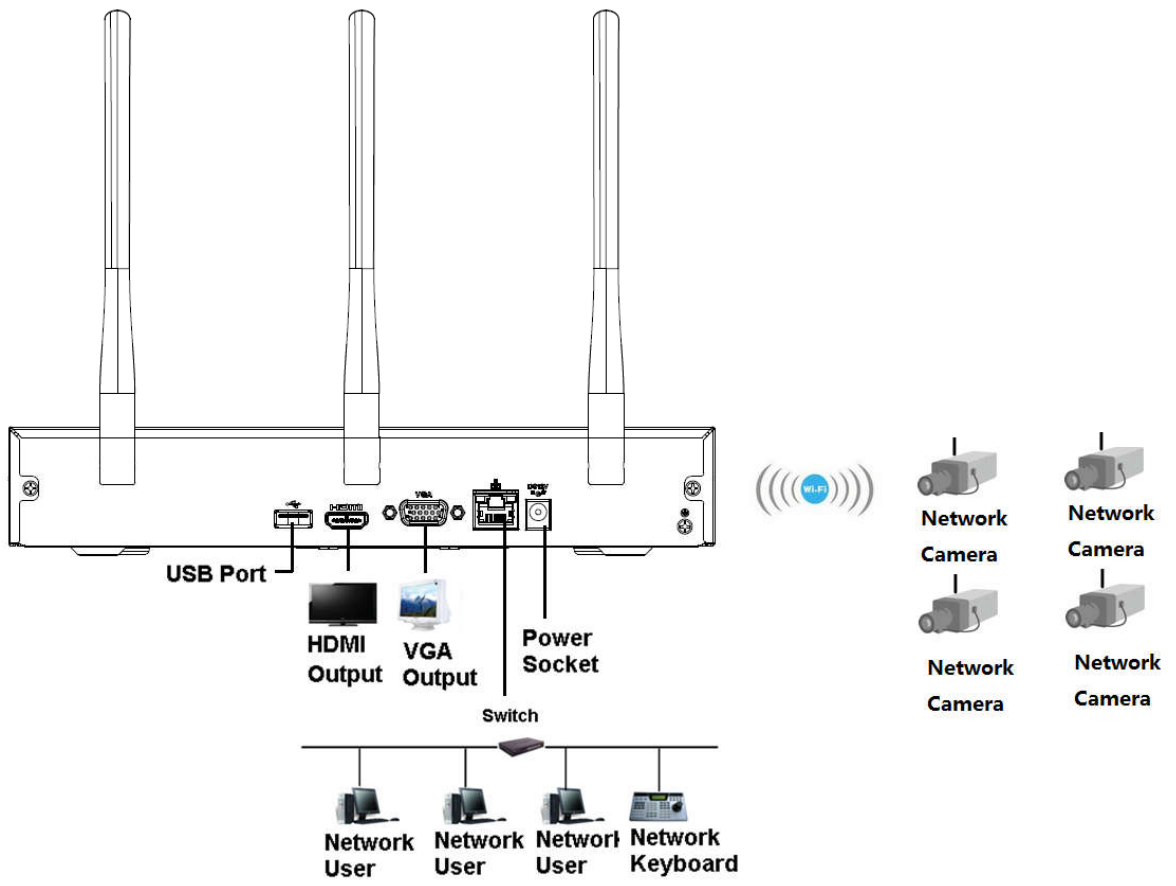


Figure 3-1

4 Local Basic Operation

Note

Slight difference may be found on the user interface. The following figures for reference only.

4.1 Getting Started

4.1.1 Boot up and Shut down

4.1.1.1 Boot up



Warning

Before the boot up, please make sure:

- For device security, please connect the NVR to the power adapter first and then connect the device to the power socket.
- The rated input voltage matches the device power on-off button. Please make sure the power wire connection is OK. Then click the power on-off button.
- Always use the stable current, if necessary UPS is a best alternative measure.

Please follow the steps listed below to boot up the device.

Step 1 Connect the device to the monitor and then connect a mouse.

Step 2 Connect power cable.

Step 3 Click the power button at the front or rear panel and then boot up the device. After device booted up, the system is in multiple-channel display mode by default.

4.1.1.2 Shutdown

Note

- When you see corresponding dialogue box “System is shutting down...” Do not click power on-off button directly.
- Do not unplug the power cable or click power on-off button to shutdown device directly when device is running (especially when it is recording.)

There are three ways for you to log out.

- a) Main menu (**RECOMMENDED**)

From Main Menu->Shutdown, select shutdown from dropdown list.

Click OK button, you can see device shuts down.

- b) From power on-off button on the front panel or remote control.

Press the power on-off button on the NVR front panel or remote control for more than 3 seconds to shut down the device.

- c) From power on-off button on the rear panel.

4.1.2 Device Initialization

If it is your first time to use the device, please set a login password of **admin** (system default user). You can select to use unlock pattern to login or not at your own choosing.

Note

For your device safety, please keep your login password of **admin** well after the initialization steps, and change the password regularly.

Please follow the steps listed below.


Step 1 Boot up NVR.

Device displays device initialization interface. See Figure 4-1.

The screenshot shows a web-based interface for device initialization. At the top, there's a title bar 'Device Initialization' and three numbered steps: '1 Enter Password' (highlighted in orange), '2 Unlock Pattern', and '3 Password Protection'. Below the steps, there's a form with the following fields: 'Username' with the value 'admin', 'Password' (with a masked input field), 'Confirm Password' (with a masked input field), and 'Prompt Question' (with a masked input field). A mouse cursor is pointing at the Password field. Below the Password field, there's a text instruction: 'It is 8 to 32-digit containing letter(s), number(s),symbol(s). It contains at least two types.' At the bottom right, there is a 'Next' button.

Figure 4-1

Step 4 Set login password of **admin**.

- User name: The default user name is **admin**.
- Password/confirm password: The password ranges from 8 to 32 digits. It can contain letters, numbers and special characters (excluding “”, “'”, “;”, “:”, “&”). The password shall contain at least two categories. Usually we recommend the strong password.
- Prompt question: If you set the prompt question here. On the login interface, move your mouse on , device can display the corresponding prompt question for you to remind the password.



WARNING

STRONG PASSWORD RECOMMENDED-For your device own safety, please create a strong password of your own choosing. We also recommend you change your password periodically especially in the high security system.

Step 5 Click Next, device goes to the following interface. See Figure 4-2.

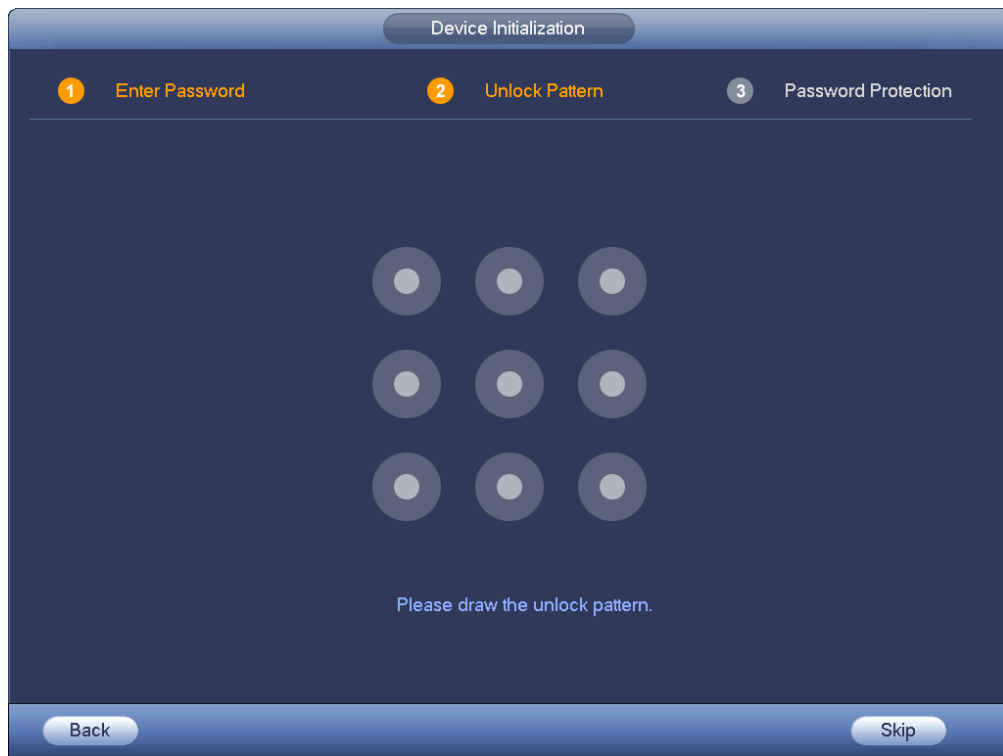


Figure 4-2

Step 6 Set unlock pattern.

After set unlock pattern, device goes to password protection interface. See Figure 4-3.

 **Note**

- Device adopts unlock pattern to login by default if you have set pattern here. If there is no unlock pattern, please input the password to login.
- Click Skip if there is no need to set unlock pattern.

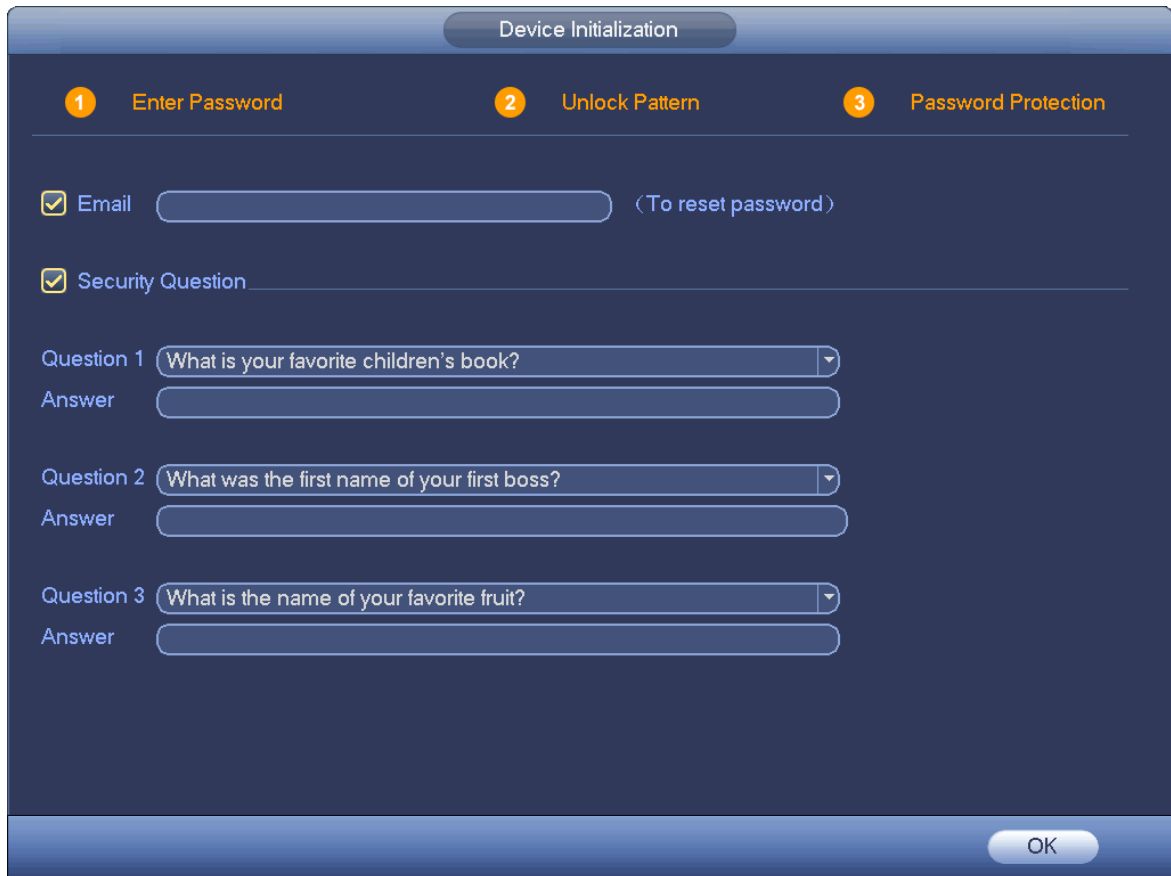


Figure 4-3

Step 7 Set security questions.

 **Note**

- After setting the security questions here, you can use the email you input here or answer the security questions to reset **admin** password. Refer to chapter 4.1.3 Reset password for detailed information.
- Cancel the email or security questions box and then click Next button to skip this step.
- Email: Input an email address for reset password purpose. In case you forgot password in the future, input the security code you got on the assigned email to reset the password of admin. If you have not input email here or you need to update the email information, please go to the main menu->Setting->System->Account to set. Refer to chapter 4.10.1 Account for detailed information.
- Security question: Set security questions and corresponding answers. Properly answer the questions to reset admin password. In case you have not input security question here or you need to update the security question information, please go to the main menu->Setting->System->Account->Security question to set. Refer to chapter 4.10.1.3 Security question for detailed information.

 **Note**

If you want to reset password by answering security questions, please go to the local menu interface.

Step 8 Click OK to complete the device initialization setup.

Device goes to startup wizard interface. Refer to chapter 4.1.4 Quick Settings for detailed information.

4.1.3 Reset Password

If you forgot the admin password, you can reset the password by the following ways:

- When the password reset function is enabled, you can scan the QR code on the local interface to reset the password.
- When the password reset function is disabled, you can reset password via the security questions configured before. If the security questions are not configured, system displays that Password reset is closed! You need to contact the customer service for help.

Step 1 Go to the device login interface. See Figure 4-4 or Figure 4-5. .

- If you have set unlock pattern, device displays unlock pattern login interface. See Figure 4-4. Click “Forgot Unlock Pattern” and device goes to Figure 4-5.
- If you have not set unlock pattern, device displays password interface. See Figure 4-5.

Note

Click Switch User button and NVR goes to general user login interface. The default user name is admin. Click the user name drop-down arrow, select a user from the drop-down list, and then you can log in via some other account.

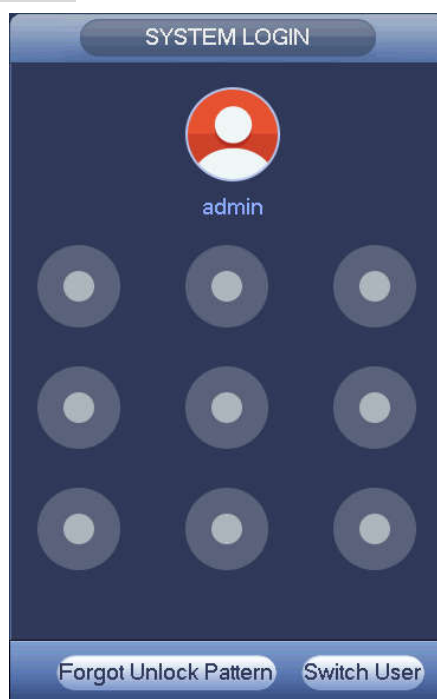


Figure 4-4



Figure 4-5

Step 2 Click .

- If you have not input email address information when you are initializing the device, the interface is shown as in Figure 4-6. Please input an email address, click Next button, and then device goes to Figure 4-7.
- If you have input email when you are initializing the device, device goes to Figure 4-7.

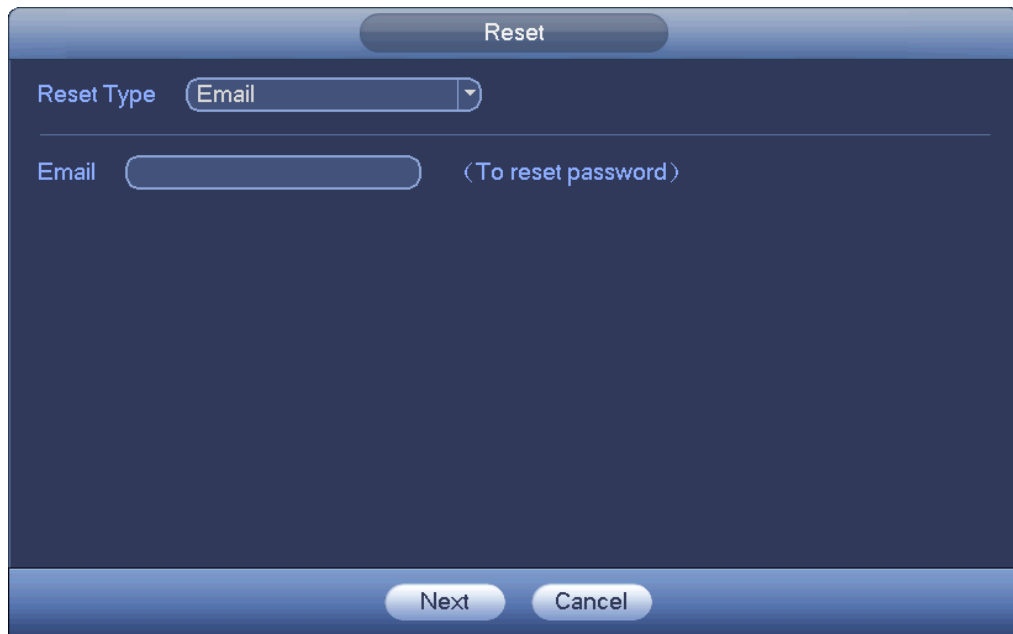


Figure 4-6

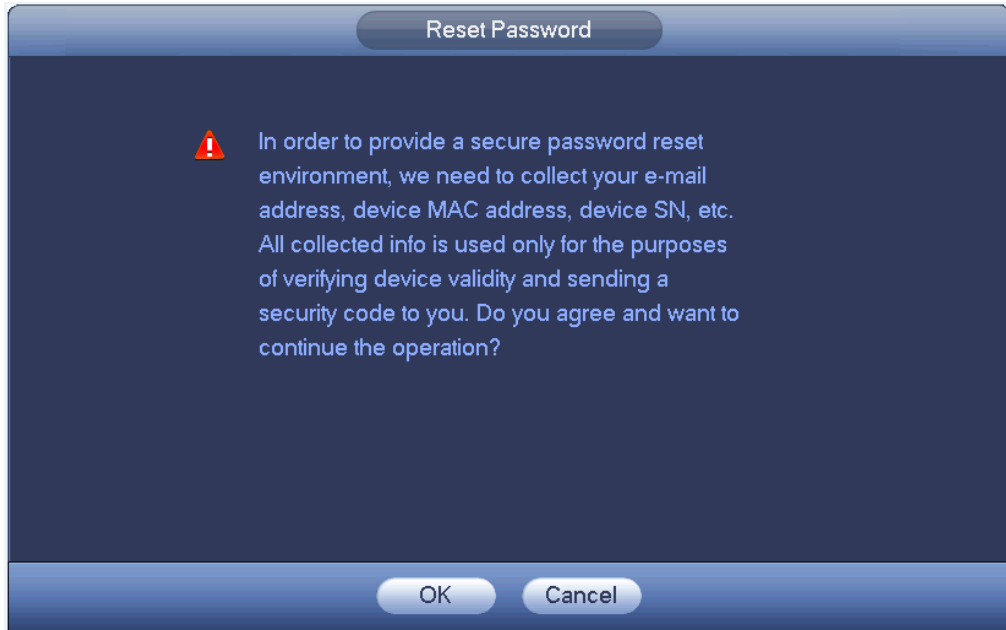


Figure 4-7

Step 3 Click OK button and device goes to Figure 4-8

 NOTE

After clicking OK, we will collect your personal information such as cell phone number, MAC address and device serial number. The collected information is used for verifying device legality and sending security code. Please read the notice carefully and confirm if you agree with the collection or not.



Figure 4-8

Step 4 Reset login password.

There are two ways to reset the password: Scanning QR code and resetting by email and answering security questions (local menu only)

- Email
In Figure 4-8, follow the prompts on the interface to scan the QR code, and then input the security code you get via the assigned email.



CAUTION

- ✧ For the same QR code, max scan twice to get two security codes. Refresh the QR code if you want to get security code again.
- ✧ The security code on your email is only valid for 24 hours.

- Security questions
In Figure 4-6, select security question from the drop down list. Device displays security question interface. See Figure 4-9. Please input the correct answers here.



NOTE

You shall configure the security questions before resetting password by answering the questions. If you have not configured the questions, this method will not be available in the drop-down list.

The screenshot shows a 'Reset' interface with a dark blue background. At the top, there is a 'Reset' button. Below it, the 'Reset Type' is set to 'Security Question'. There are three security questions, each with a dropdown menu and an 'Answer' input field below it. The questions are: 'Question 1: What is your favorite children's book?', 'Question 2: What was the first name of your first boss?', and 'Question 3: When did you last enroll?'. At the bottom, there are 'Next' and 'Cancel' buttons.

Figure 4-9

- Step 5 Click Next button.
Device displays reset password interface. See Figure 4-10.

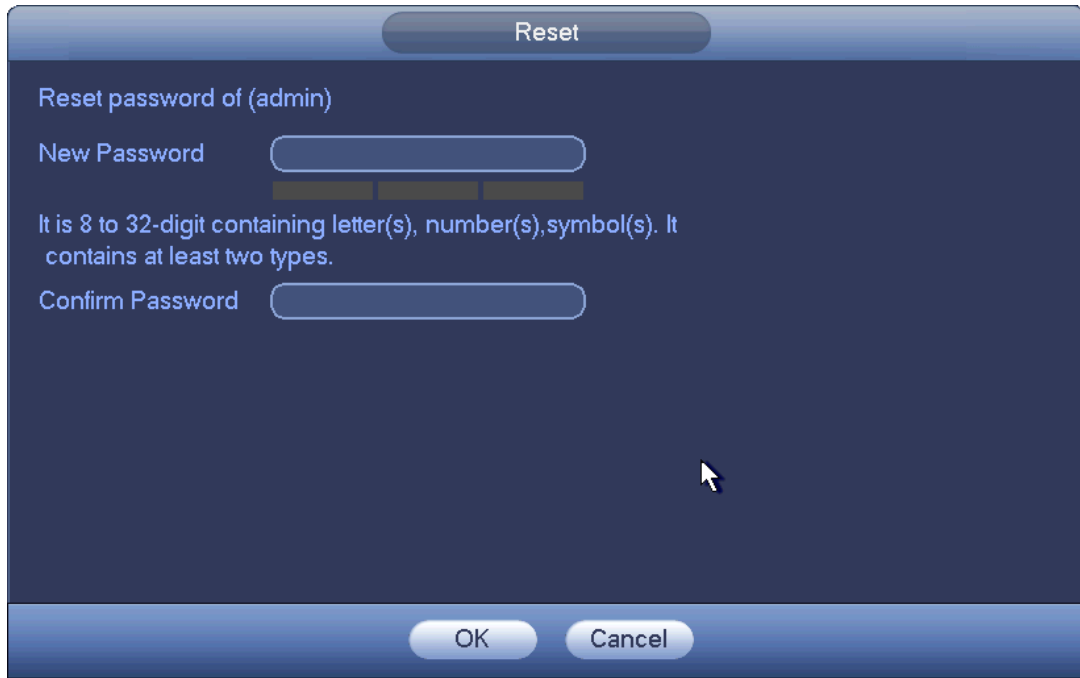


Figure 4-10

Step 6 Input new password and then confirm.

The password can be set from 8 characters through 32 characters and contain at least two types from number, letter and special character (excluding "", "", ";", ":" and "&"). It is recommended to set password of high security according to the prompts.

Step 7 Click OK button to complete the setup.

4.1.4 Quick Settings

After you successfully initialize the device, it goes to startup wizard. Here you can quickly configure your device. It includes general setup, basic network setup, camera registration, P2P, and schedule interface.

Note

- Once the power is off during the quick settings process, you need to go through startup wizard again when the device boot up the next time.
- After completing all items on the startup wizard, the startup wizard automatically hides when the device boot up the next time.

Please follow the steps listed below.

Boot up the device and complete the device initialization. Device goes to startup wizard. See Figure 4-11.

- Select Auto-check for updates, device automatically checks if there is new applications or not every day.

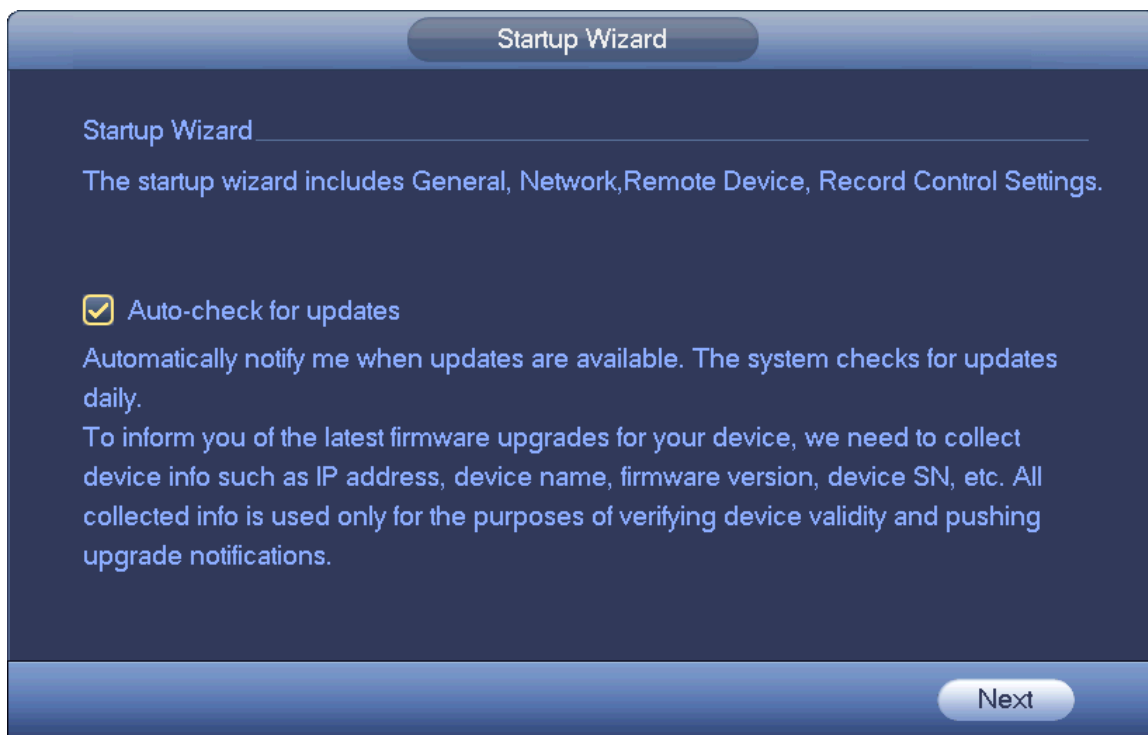


Figure 4-11

 **Note**

- After auto-check is enabled, in order to inform you of the latest firmware upgrades, we will collect your personal information such as IP address, device name, firmware version and device SN. The collected information is used for verifying device legality and pushing upgrade notice.

4.1.4.1 General

It is to set NVR basic information such as system date, holiday and etc.

4.1.4.1.1 General

It is to set device basic information such as device name, serial number and etc.

Please follow the steps listed below.

Step 1 Click Next button,

Enter General interface.

Step 2 Click General button.

The interface is shown as below. See Figure 4-12.

 **Note**

From Main menu->Setting->System->General->General, you can go to the general interface.

Step 3 Set parameters.

- Device ID: Please input a corresponding device name here.
- Device No: When you are using one remote control (not included in the accessory bag) to control several NVRs, you can give a name to each NVR for your management.
- Language: System supports various languages: Chinese (simplified), Chinese (Traditional), English, Italian, Japanese, French, Spanish (All languages listed here are optional. Slight difference maybe found in various series.)
- Video standard: There are two formats: NTSC and PAL.


- HDD full: Here is for you to select working mode when hard disk is full. There are two options: stop recording or rewrite old files.
- Pack duration: Here is for you to specify record duration. The value ranges from 1 to 120 minutes. Default value is 60 minutes.
- Realtime play: It is to set playback time you can view in the preview interface. The value ranges from 5 to 60 minutes.
- Auto logout: Here is for you to set auto logout interval once login user remains inactive for a specified time. Value ranges from 0 to 60 minutes.
- Monitor channels when logout: Here you can set channels you want to view when your account has logged out. Click the button and then cancel the channel name box, you need to login to view the corresponding video. The channel window displays  in preview interface.
- Navigation bar: Check the box here, system displays the navigation bar on the interface.
- IPC Time Sync: You can input an interval here to synchronize the NVR time and IPC time.
- Startup wizard: Once you check the box here, system will go to the startup wizard directly when the system restarts the next time. Otherwise, it will go to the login interface.
- Mouse sensitivity: You can set double click speed via dragging the slide bard. You can Click Default button to restore default setup.



Figure 4-12

Step 4 Click Apply button to save settings.

4.1.4.1.2 Date and Time

Here you can set device time. You can enable NTP (Network Time Protocol) function so that the device can sync time with the NTP server.

Step 1 Click Date and time button. See Figure 4-13.

 **Note**

From Main menu->Setting->System->General->Date and time, you can go to the date and time interface.

- System time: Here is for you to set system time
- Date format: There are three types: YYYY-MM-DD: MM-DD-YYYYY or DD-MM-YYYY.
- Date separator: There are three denotations to separate date: dot, beeline and solidus.
- DST: Here you can set DST time and date by week or by date. Please enable DST function and then select setup mode. Please input start time and end time and click Save button.
- Time format: There are two types: 24-hour mode or 12-hour mode.
- NTP: It is to set NTP server, port and interval.



Warning

- ✧ System time is very important; do not modify time casually unless there is a must!
- ✧ Before your time modification, please stop record operation first!

Figure 4-13

Step 5 Click Apply button to save settings.

4.1.4.1.3 Holiday

Here you can add, edit, delete holiday. After you successfully set holiday information, you can view holiday item on the record and snapshot period.

Step 1 Click Holiday button. See Figure 4-14.

 **Note**

From Main menu->Setting->System->General->Holiday, you can go to the holiday interface.

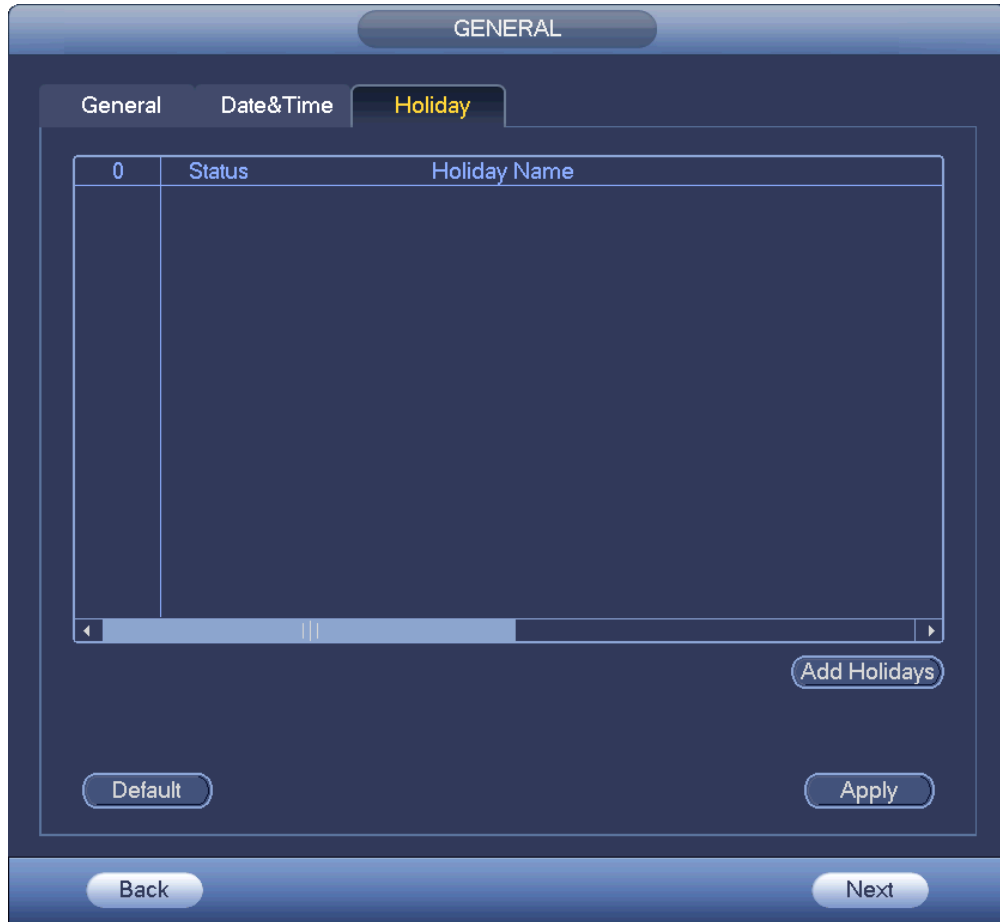


Figure 4-14

Step 2 Click Add new holiday button, device displays the following interface. See Figure 4-15.

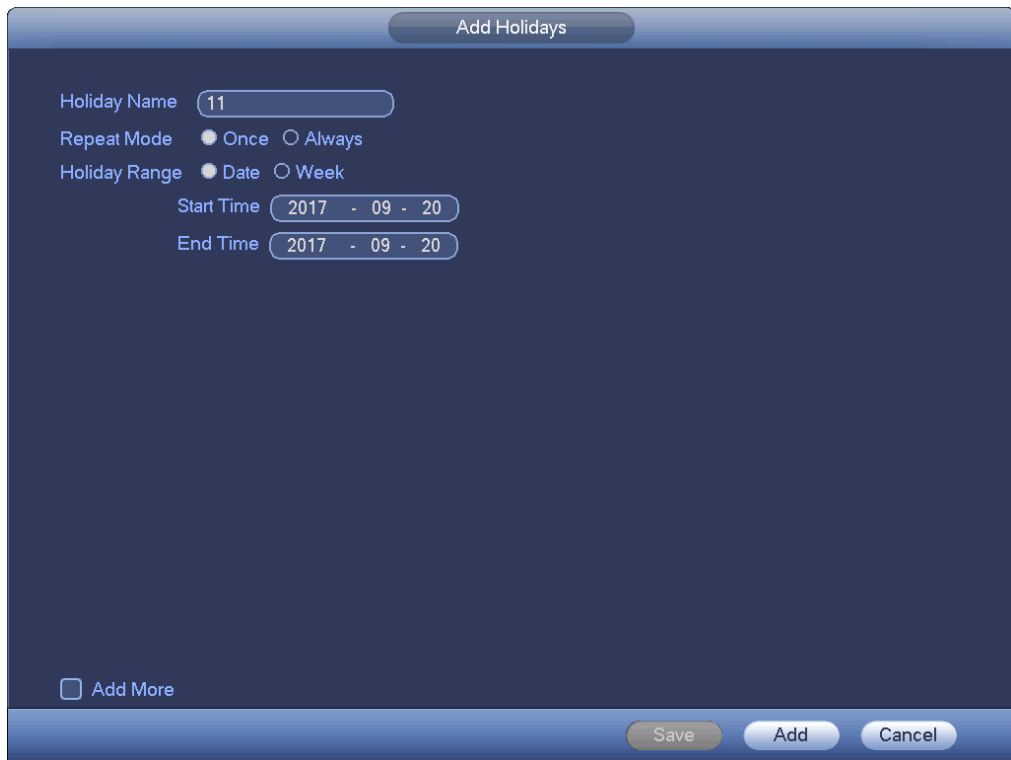


Figure 4-15

Step 3 Set holiday name, repeat mode and holiday mode.



 **Note**

Click Add more to add new holiday information.

Step 4 Click Add button, you can add current holiday to the list.

 **Note**

✧ Click the dropdown list of the state; you can enable/disable holiday date.

✧ Click  to change the holiday information. Click  to delete current date.

Step 5 Click Apply button to save settings.

4.1.4.2 Basic Network Settings

Set device IP address, DNS (Domain Name System) information.

Preparation

Make sure the device has properly connected to the network.

Step 1 Click Next button, device goes to TCP/IP interface. See Figure 4-16.


 **Note**

✧ From Main menu->Setting->Network->TCP/IP, you can go to the TCP/IP interface.

✧ Different series products have different Ethernet adapter amount and type. Please refer to the actual product.



Figure 4-16

Step 2 Click , device display edit interface. See Figure 4-17.

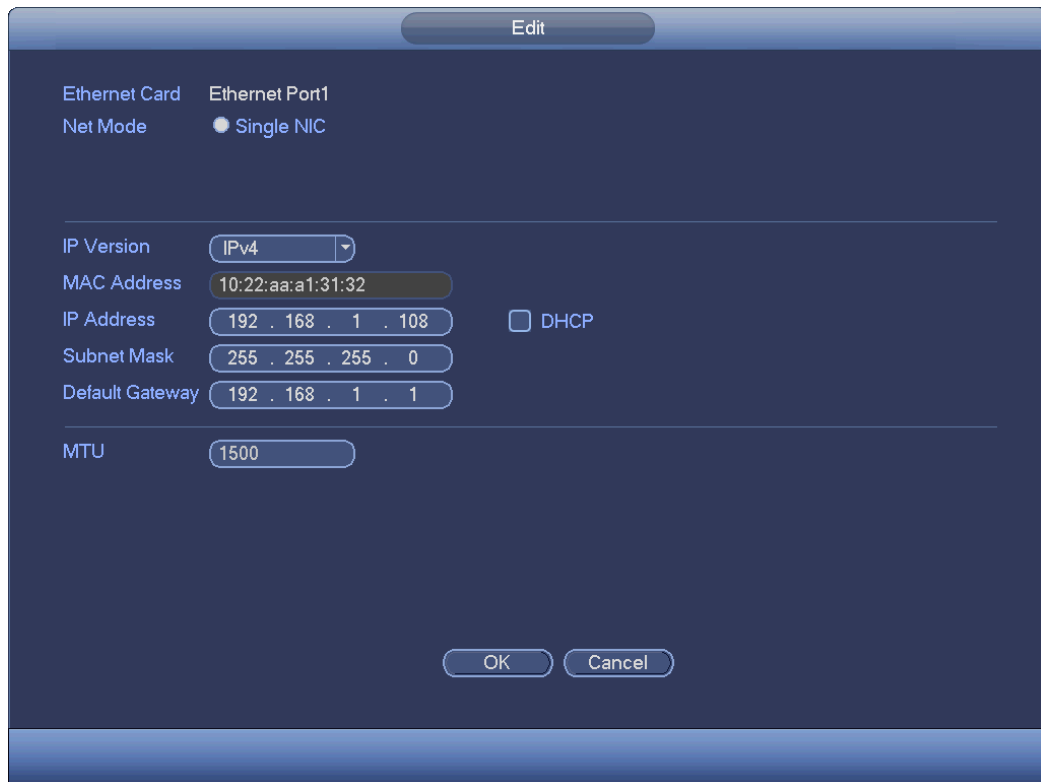


Figure 4-17

Step 3 Set parameters.

- Network Mode : Includes multiple access, fault tolerance, and load balancing
- ✧ Multiple-address mode: eth0 and eth1 operate separately. You can use the services such as HTTP, RTP service via etho0 or the eth1. Usually you need to set one default card (default setup is etho) to request the auto network service form the device-end such as DHCP, email, FTP and etc. In multiple-address mode, system network status is shown as offline once one card is offline.
- ✧ Network fault-tolerance: In this mode, device uses bond0 to communicate with the external devices. You can focus on one host IP address. At the same time, you need to set one master card. Usually there is only one running card (master card).System can enable alternate card when the master card is malfunction. The system is shown as offline once these two cards are both offline. Please note these two cards shall be in the same LAN.
- ✧ Load balance: In this mode, device uses bond0 to communicate with the external device. The eth0 and eth1 are both working now and bearing the network load. Their network load are general the same. The system is shown as offline once these two cards are both offline. Please note these two cards shall be in the same LAN.
- Main Network Card: Please select eth0/eth1 (optional).after enable multiple access function.



Note


The dual-Ethernet port series support the above three configurations and supports functions as multiple-access, fault-tolerance and load balancing.

- MAC address: The host in the LAN can get a unique MAC address. It is for you to access in the LAN. It is read-only.
- IP address: Here you can use up/down button (▲▼) or input the corresponding number to input IP address. Then you can set the corresponding subnet mask the default gateway.

- Default gateway: Here you can input the default gateway. Please note system needs to check the validity of all IPv6 addresses. The IP address and the default gateway shall be in the same IP section. That is to say, the specified length of the subnet prefix shall have the same string.
- DHCP: It is to auto search IP. When enable DHCP function, you cannot modify IP/Subnet mask /Gateway. These values are from DHCP function. If you have not enabled DHCP function, IP/Subnet mask/Gateway display as zero. You need to disable DHCP function to view current IP information. Besides, when PPPoE is operating, you cannot modify IP/Subnet mask /Gateway.
- MTU: It is to set MTU value of the network adapter. The value ranges from 1280-7200 bytes. The default setup is 1500 bytes.
- Transfer mode: Here you can select the priority between fluency/video qualities.

Step 4 Click OK to NIC settings.
Device goes back to TCP/IP interface.

 **Note**

Click  to cancel NIC bonding. Please note device needs to reboot to activate new setup.

Step 5 Set network parameters.

- IP Version: There are two options: IPv4 and IPv6. Right now, system supports these two IP address format and you can access via them.
- Preferred DNS server: DNS server IP address.
- Alternate DNS server: DNS server alternate address.
- Default Network Card: Please select eth0/eth1/bond0(optional) after enable multiple-access function.
- LAN download: System can process the downloaded data first if you enable this function. The download speed is 1.5X or 2.0X of the normal speed.

 **Note**

- For IPv6 version, the IP address, default gateway, preferred DNS; alternate DNS is 128-digit. Please fill in all items here.
- This function is for some series product only.

Step 6 Click Next to complete the settings.

4.1.4.3 P2P

P2P is a kind of convenient private network penetration technology. You do not need to apply for dynamic domain name, doing port mapping or deploying transit server. You can add NVR devices through the below way to achieve the purpose of managing multiple NVR devices at the same time.

- Scan the QR code, download mobile app, and then register an account. For details, see Mobile App Operation.
- Log in www.gotop2p.com, register an account, and then add device via the serial number. For details, see Introduction of P2P Operations which is available in the disk delivered with the device.



Connect the NVR device to the Internet, otherwise P2P can not run properly.

Step 1 Enter from main menu -> Setting -> Network -> P2P.

The P2P interface is displayed. See Figure 4-18.



Figure 4-18



NOTE

- P2P is enabled by default.
- When P2P is enabled and the device is connected to the Internet, it displays Online in the Status box. We need to collect information like IP address, MAC address, device name and device SN. All collected information is used only for the purpose of remote access.

Step 2 Click Next to complete the setting.

If system displays Online in the Status box, P2P registration is successful.

Mobile APP Operation

The following contents are introduced in the example of mobile App.

Step 1 Scan the QR code to download and install the mobile App.

Step 2 Select Camera and enter the main interface.

Step 3 Register device in the mobile App:

- 1) Click  and select Device Manager. See Figure 4-19.

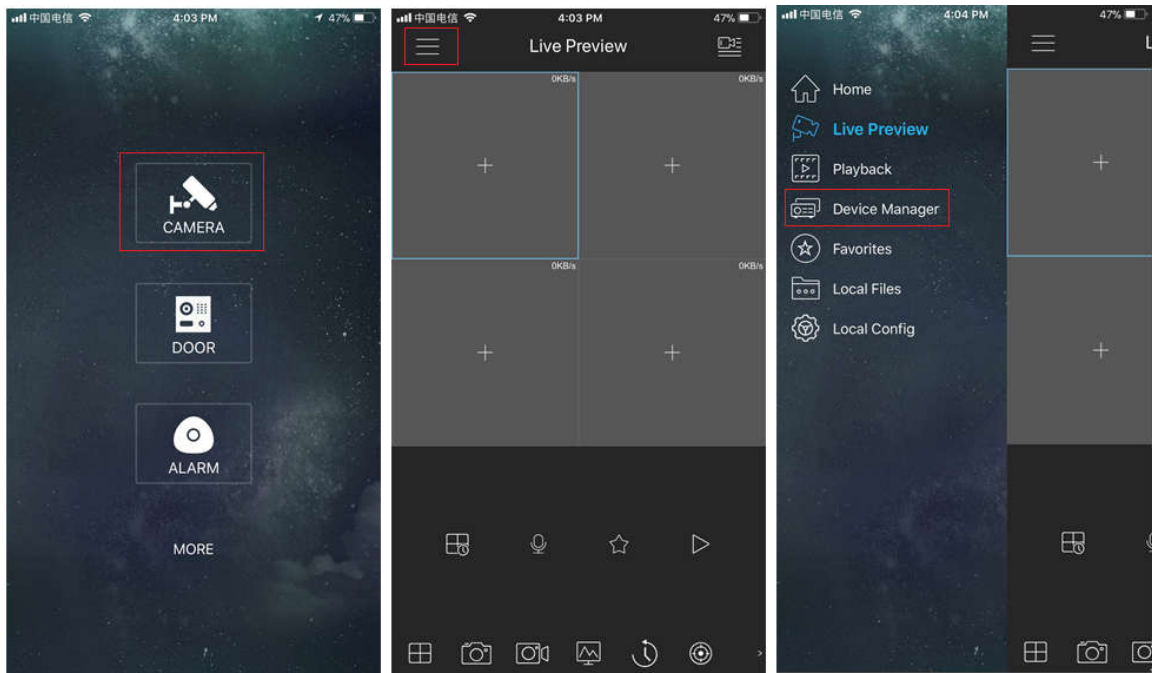



Figure 4-19

- 2) Click  and enter the Add Device interface.



NOTE

Mobile App supports device initialization.

- 3) Select Wired Device -> P2P to enter the P2P interface.
- 4) Click the QR code icon behind the SN to enter the QR code scan interface.
- 5) Scan the device label or scan the SN QR code got by entering from main menu -> Setup -> Network -> P2P. When the scan is successful, the device SN will be displayed in the SN item.
- 6) Enter name and password.

Step 4 After device registration on mobile App, click Start Preview and you can see the monitor screen.

4.1.4.4 Wi-Fi AP

4.1.4.4.1 General Settings

Configure the Wi-Fi parameters of the NVR device to make the Wi-Fi IPC automatically connect to it via this Wi-Fi.



NOTE

- This function is available only for NVR devices with built-in Wi-Fi module. See the actual situation.
- When the Wi-Fi IPC and NVR are corollary devices, they can be paired automatically after device startup.

Step 1 From main menu > Setting > Network > Wi-Fi AP > General.

The General interface is displayed. See Figure 4-20.



Figure 4-20

Step 2 Select the 2.4GHz check box and configure the parameters. For details, see following table.

Parameter	Function
2.4GHz	Select the check box to enable Wi-Fi.
SSID	Enter the SSID name. You can use this name to search the device.
Encryption Type	Select the encryption type from the dropdown list, including WPA2 PSK, WPA PSK and OPEN.
Password	Enter the SSID password. You can use this password to connect to the network.
Channel	Select the channel to connect the Wi-Fi IPC.
Gain	Adjust the Wi-Fi signal intensity.

4.1.4.4.2 Advanced Settings

 NOTE

This function is available only for NVR devices with built-in Wi-Fi module. See the actual situation.

You can configure the Wi-Fi IP address, subnet mask, default gateway and DHCP server here.

Step 1 From main menu > Setting > Network > Wi-Fi AP > Advanced.

The Advanced interface is displayed. See Figure 4-21.

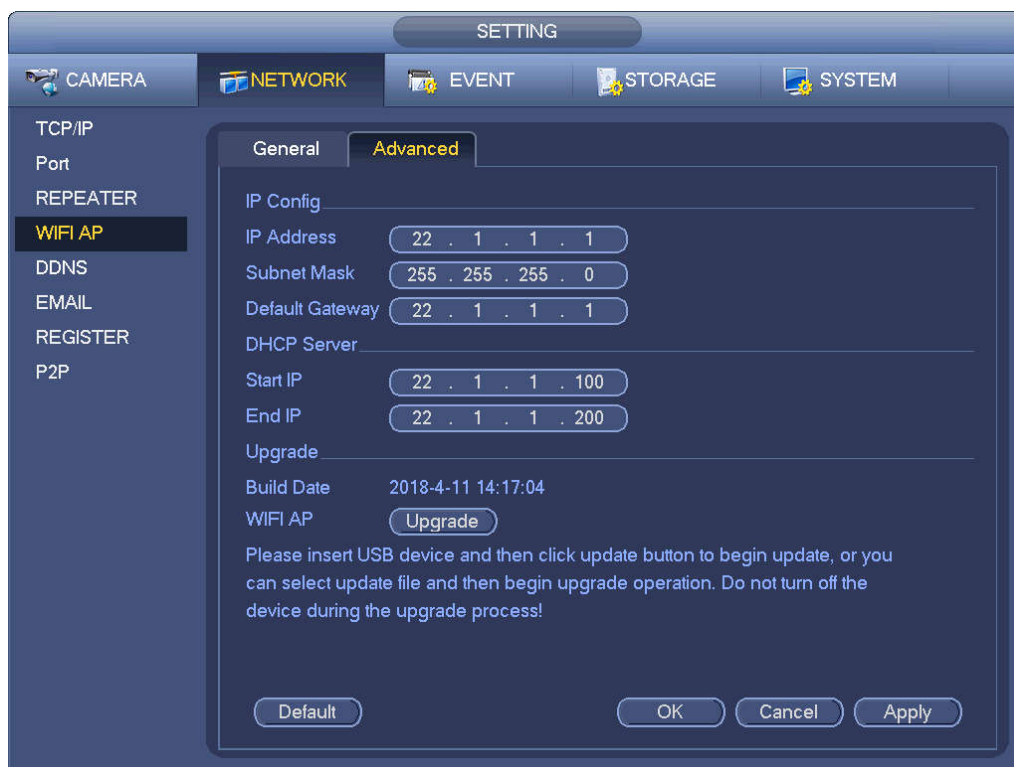



Figure 4-21

Step 2 Configure the parameters. For details, see following table.

Parameter	Function
IP Address	Input the IP address, subnet mask and default gateway of the NVR Wi-Fi AP.
Subnet Mask	 NOTE The IP address and default gateway shall be in the same network segment.
Default Gateway	
Start IP/End IP	Input start IP and end IP of DHCP server. The NVR device can allocate the IP address in the range you specified here.
Upgrade	Click it to upgrade Wi-Fi AP module.

4.1.4.5 Registration

After add remote device, the device can receive, storage, and manage the video streams of the remote device. You can view, browse, playback, manage several remote devices at the same time.

Step 1 On the P2P interface, click Next button.

Enter remote device interface. See Figure 4-22.

Note








There are two ways to go to Registration interface.

- From main menu->Setting->Camera->Registration, you can go to the registration interface.
- On the preview interface, right click mouse and then select Camera Registration.



Figure 4-22

Step 2 Set parameters

- Channel: It is the device channel number. If you have not added the network camera, the channel number is shown as .
- Status: Red circle () means current channel has no video, green circle () means current channel has video.
- IP address: It is to display network camera IP address.
- Type: There are two connection types. You can use the network to connect to the camera or use the Wi-Fi. The  means current network camera connection mode is general; the  means current network camera mode is hotspot.
- Add/Delete: Click  to delete the device, click  to add the device to the NVR.

Step 3 Add network camera.

- Device search: Click the button; you can search all network cameras in the same network segment. See Figure 4-23. Double click a camera or check the camera box and then click Add button, you can add a device to the list.

 **Note**

The device in the added device list is not shown in the search result column.



Figure 4-23

- Manual Add: Click Manual Add button, you can set the corresponding network camera information and then select the channel you want to add. See Figure 4-24.
 - ◇ Manufacturer: Please select from the dropdown list.



Note

Different series products may support different manufactures, please refer to the actual product.

- ◇ IP address: Input remote device IP address.
- ◇ RTSP port: Input RTSP port of the remote device. The default setup is 554.



Note

Skip this item if the manufacture is private or customize.

- ◇ HTTP port: Input HTTP port of the remote device. The default setup is 80.



Note

Skip this item if the manufacture is private or customize.

- ◇ TCP port: Input TCP port of the remote device. The default setup is 37777.
- ◇ User name/password: The user name and password to login the remote device.

- ✧ Channel No.: Input channel amount or click the Connect button to get the channel amount of the remote device.

 **Note**

We recommend click Connect button to get remote device channel amount, the manual add operation may result in failure if the input channel amount is not right.

- ✧ Remote channel No.: After getting the remote device channel amount, click Setup to select a channel.

 **Note**

Click to select one or more remote channel numbers here.

- ✧ Channel: The local channel number you want to add. One channel name has corresponding one channel number.
- ✧ Decode buffer: There are three items: realtime,local,fluent.
- ✧ Service type: There are four types: auto/TCP/UDP/MULTICAST(ONVIF device only)

 **Note**

The default connection mode is TCP if the connection protocol is private.

There are four types including Auto, TCP, UDP and MULTICAST if the connection protocol is ONVIF.

There are two types including TCP and UDP if the connection protocol is from the third-party.

- ✧ Encrypt: When the connection protocol is ONVIF, enable the encryption function and system transmits data in the encrypted mode.

 **Note**

HTTPS shall be enabled in IPC to support encryption.

Figure 4-24

Step 4 Click OK to add the camera to the device.

 **Note**

Click  to change the remote device information. Click  to delete remote device.

4.1.4.6 Schedule

After set record schedule and snapshot schedule, the device can automatically record video and snapshot image at the specified time.

4.1.4.6.1 Schedule Record

After set schedule record, device can record video file according to the period you set here. For example, the alarm record period is from 6:00~18:00 Monday, device can record alarm video files during the 6:00~18:00.

All channels are record continuously by default. You can set customized record period and record type.

Step 1 Click Next button.

Enter schedule interface. See Figure 4-25.





 **Note**

From main menu->Setting->Storage->Schedule->Record, you can go to the record interface.



Figure 4-25

Step 2 Set parameters.

- Channel: Please select the channel number first. You can select “all” if you want to set for the whole channels.
- ✧ : Sync connection icon. Select icon  of several dates, all checked items can be edited or together. Now the icon is shown as .
- ✧ : Click it to delete a record type from one period.
 - Record Type: Please check the box to select corresponding record type. There are six types: Regular/MD (motion detect)/Alarm/MD&Alarm/IVS/POS.
 - Week day: There are eight options: ranges from Saturday to Sunday and all.
 - Holiday: It is to set holiday setup. Please note you need to go to the General interface (Main Menu->Setting->System->General) to add holiday first. Otherwise you cannot see this item.
 - Pre-record: System can pre-record the video before the event occurs into the file. The value ranges from 1 to 30 seconds depending on the bit stream.
 - Redundancy: System supports redundancy backup function. It allows you backup recorded file in two disks. You can highlight Redundancy button to activate this function. Please note, before enable this function, please set at least one HDD as redundant. (Main menu->Setting->Storage->HDD Manager). Please note this function is null if there is only one HDD.
 - ANR: It is to save video to the SD card of the network camera in case the network

connection fails. The value ranges from 0s~43200s. After the network connection resumed, the system can get the video from the SD card and there is no risk of record loss.


- Period setup: Click button  after one date or a holiday, you can see an interface shown as in Figure 4-26. There are five record types: regular, motion detection (MD), Alarm, MD & alarm and IVS.



Figure 4-26

Please following the steps listed below to draw the period manually.

- Step 1 Select a channel you want to set. See Figure 4-27.



Figure 4-27

- Step 2 Set record type. See Figure 4-28.



Figure 4-28

 **Note**

- When the record type is MD (motion detect), alarm, MD&Alarm, IVS and POS, please enable the channel record function when corresponding alarm occurs. For example, when the alarm type is MD, from main menu->Setting->Event->Video Detect->Motion Detect, please select the record channel and enable record function. See Figure 4-29.
- When the record type is MD (motion detect), alarm, MD&Alarm, IVS and POS, refer to chapter 4.7.1 Video detect, chapter 4.7.9 Alarm Settings, chapter 4.7.3 IVS and chapter 4.7.12 POS.

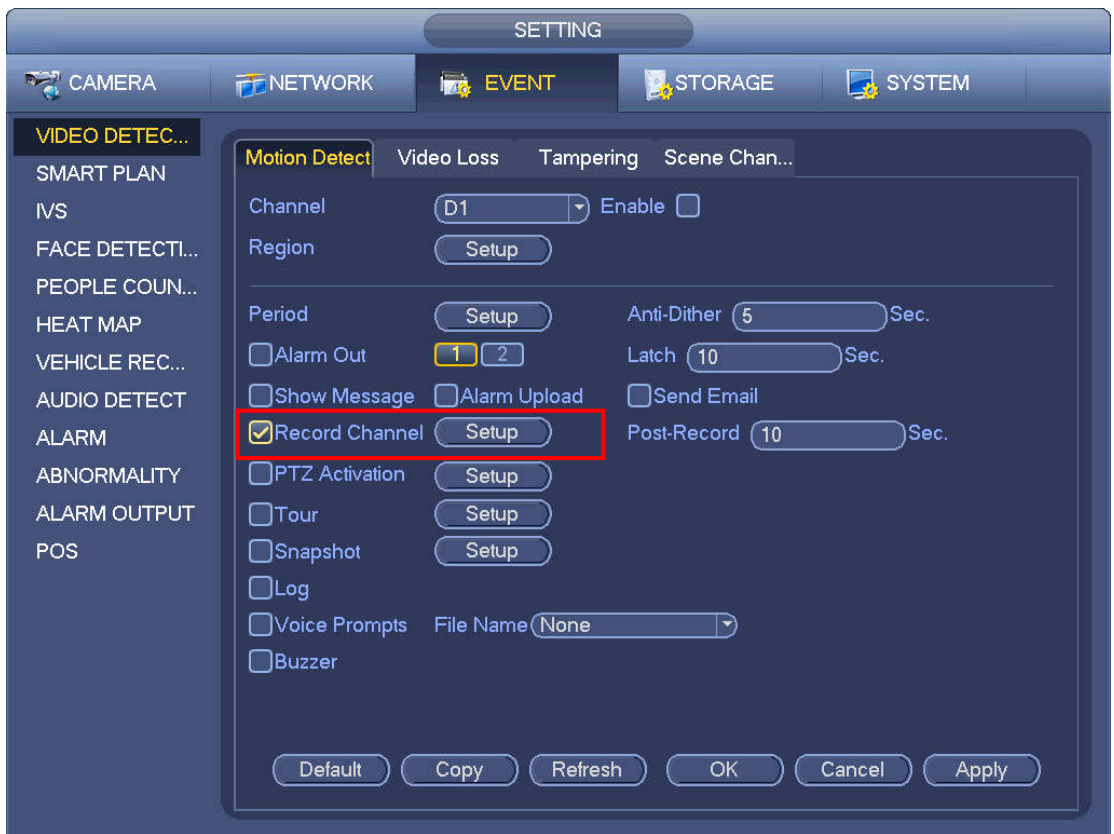


Figure 4-29

Step 3 Please draw manually to set record period. There are six periods in one day. See Figure 4-30.

Note

If you have added a holiday, you can set the record period for the holiday.

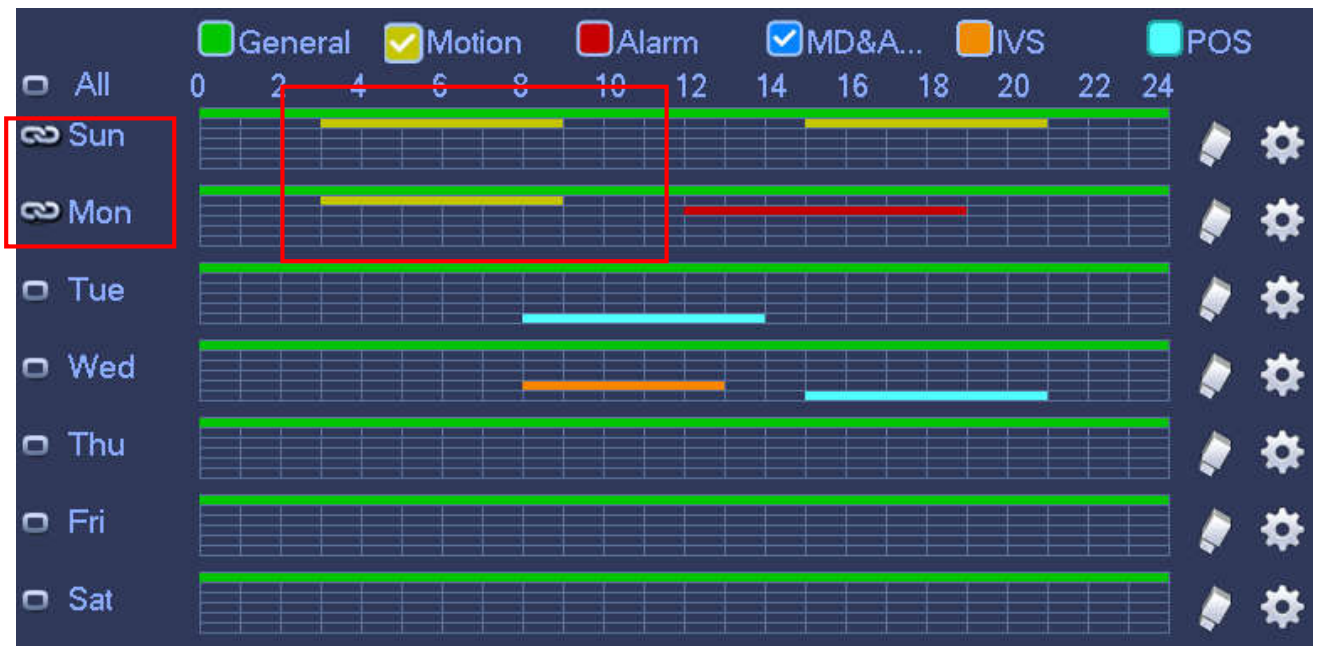


Figure 4-30

Step 4 Click Apply button to save schedule record settings.

 **Note**

Please enable auto record function so that the record plan can become activated. Refer to chapter 4.1.4.6.3 Record control for detailed information.

4.1.4.6.2 Schedule Snapshot

It is to set schedule snapshot period.

After set schedule snapshot, device can snapshot image according to the period you set here. For example, the alarm snapshot period is from 6:00~18:00 Monday, device can snapshot during the 6:00~18:00 when an alarm occurs.

Step 1 Click Snapshot button, device goes to following interface. See Figure 4-31.

 **Note**

From main menu->Setting->Storage->Schedule->Snapshot, you can go to the snapshot interface.



Figure 4-31

Step 2 Select a channel to set schedule snapshot.

Step 3 Set snapshot type as schedule. Refer to chapter 4.2.5.3 Snapshot for detailed information.

Step 4 Check the box to set alarm type. See Figure 4-32.



Figure 4-32

 **Note**

- When the record type is MD (motion detect), alarm, MD&Alarm, IVS and POS, please enable the channel snapshot function when corresponding alarm occurs. For example, when the alarm type is MD, from main menu->Setting->Event->Video Detect->Motion Detect, please select the snapshot channel and enable snapshot function. See Figure 4-33.
- When the snapshot type is MD (motion detect), alarm, MD&Alarm, IVS, refer to chapter 4.7.1 Video detect, chapter 4.7.9 Alarm Settings, chapter 4.7.3 IVS and chapter 4.7.12 POS.

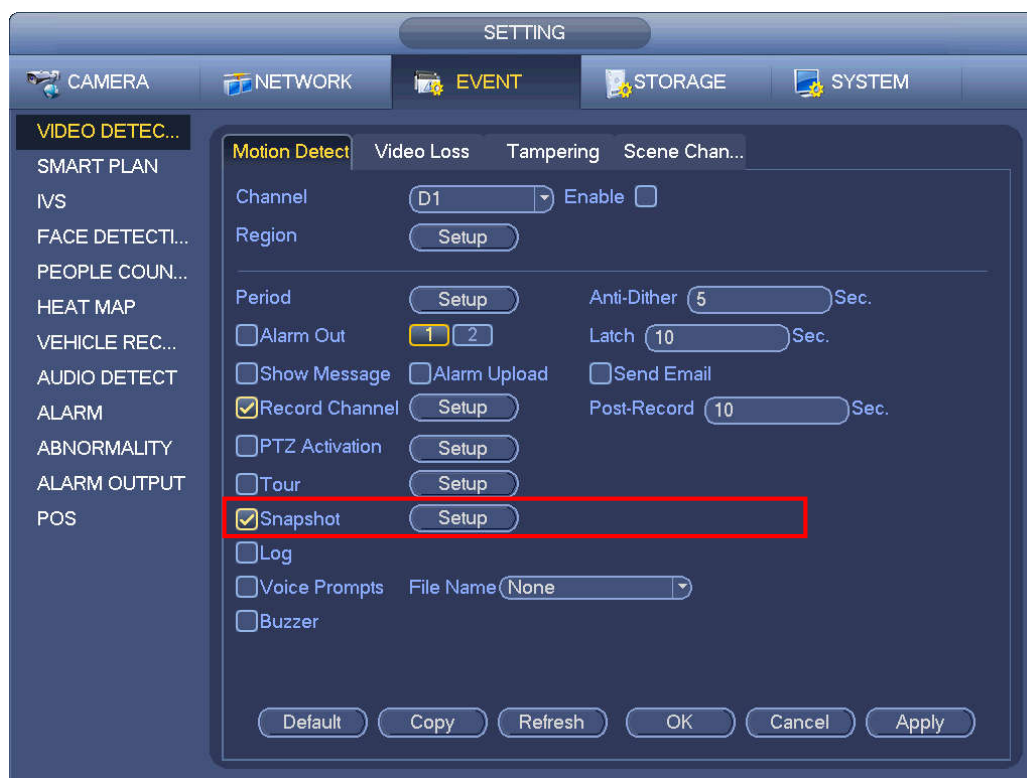


Figure 4-33

Step 5 Refer to chapter 4.1.4.6.1 to set snapshot period.

Step 6 Click Apply button to save snapshot plan.

 **Note**

Please enable auto snapshot function so that the snapshot plan can become activated. Refer to chapter 4.1.4.6.3 Record control for detailed information.

Step 7 Click Finish button, system pops up a dialogue box. Click the OK button, the startup wizard is complete. See Figure 4-34.



Figure 4-34

4.1.4.6.3 Record Control

 **Note**

You need to have proper rights to implement the following operations. Please make sure the HDD has been properly installed.

There are three ways for you to go to record menu.

- Right click mouse and then select Manual->Record.
 - In the main menu, from Setting->Storage->Record.
 - In live viewing mode, click record button in the front panel or record button in the remote control.
- After set schedule record and schedule snapshot function, please enable auto record and auto snapshot function so that the device can automatically record and snapshot. System supports main stream and sub stream. There are three statuses: schedule/manual/stop. See Figure 4-35. Please highlight icon“○” to select corresponding channel.
- Manual: The highest priority. After manual setup, all selected channels will begin general recording.
 - Schedule: Channel records as you have set in recording setup (Main Menu->Setting->Storage->>Schedule)
 - Stop: Current channel stops recording.
 - All: Check All button after the corresponding status to enable/disable all-channel schedule/manual record or enable/disable all channels to stop record.
 - Snapshot: Select one or more channel(s) first and then enable/disable schedule snapshot function.



Figure 4-35

4.1.4.6.4 Record Info

After system recorded video files, go to the record info interface to view device name, start time, end time and etc.

From main menu->Info-System->Record, the interface is shown as below. See Figure 4-36.

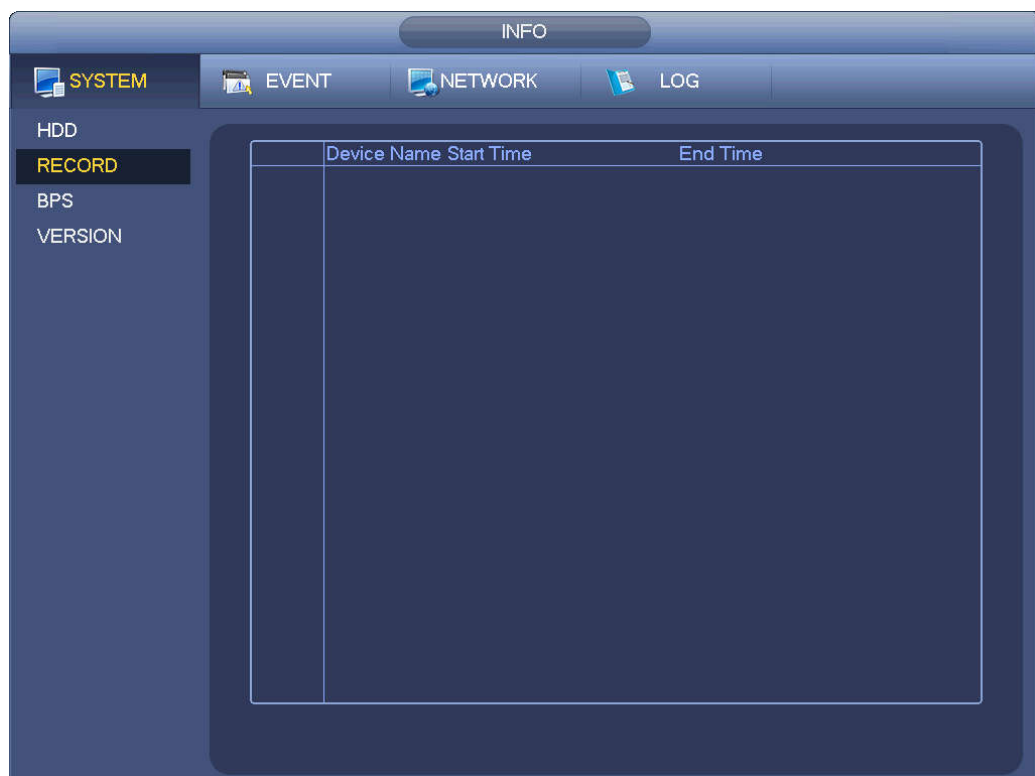


Figure 4-36

4.2 Camera

4.2.1 Connection

After register a remote device to the NVR, you can view the video on the NVR, and manage and storage the video file. Different series products support different remote device amount.

4.2.1.1 Change IP address

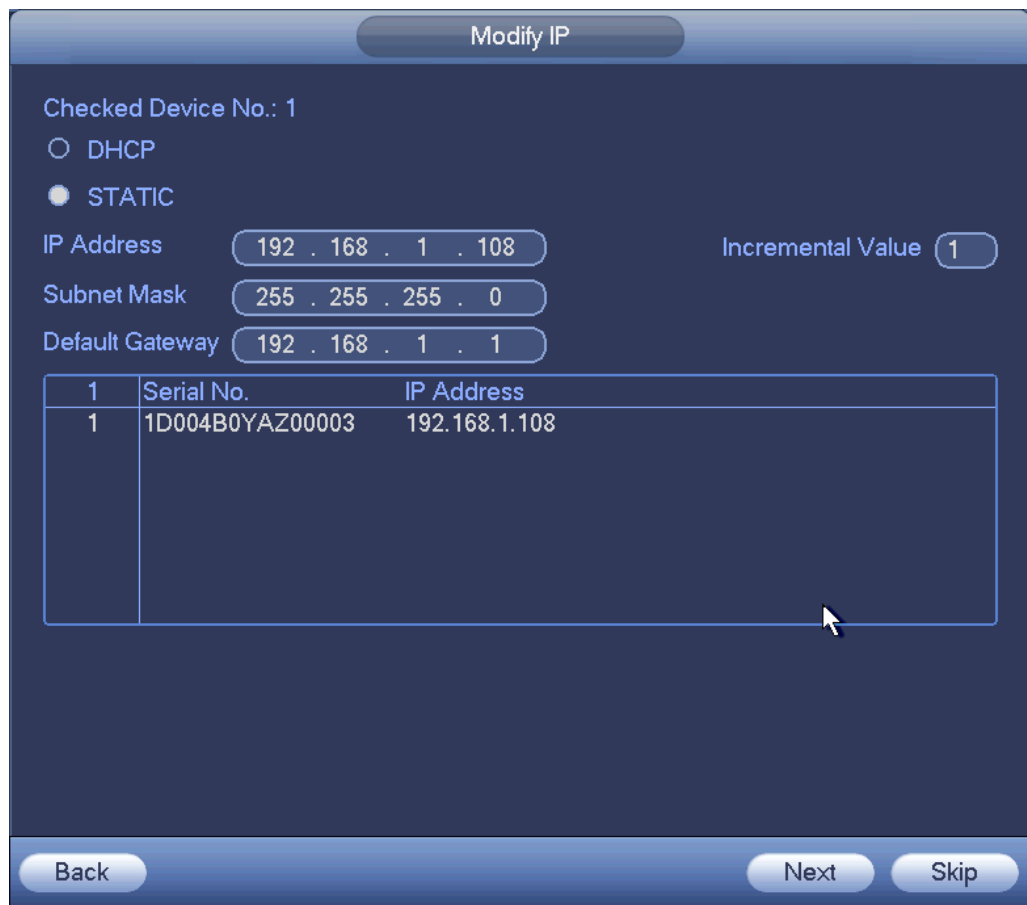
Step 1 From Main menu->Setting->Camera->Registration, check the box before the camera name and

then click Change IP or click the  before the camera name.

Enter change IP interface. See Figure 4-37.

Note

Check the box before several cameras, change the IP addresses of several cameras at the same time.



Modify IP

Checked Device No.: 1

DHCP

STATIC

IP Address Incremental Value

Subnet Mask

Default Gateway

	Serial No.	IP Address
1	1D004B0YAZ00003	192.168.1.108

Back Next Skip

Figure 4-37

Step 2 Select IP mode.

Check DHCP, there is no need to input IP address, subnet mask, and default gateway. Device automatically allocates the IP address to the camera.

Check Static, and then input IP address, subnet mask, default gateway and incremental value.

 **Note**

If it is to change several devices IP addresses at the same time, please input incremental value. Device can add the fourth address of the IP address one by one to automatically allocate the IP addresses.

If there is IP conflict when changing static IP address, device pops up IP conflict dialogue box. If batch change IP address, device automatically skips the conflicted IP and begin the allocation according to the incremental value

Step 3 Input remote device user name and password.

Step 4 Click OK button to save settings.

After the changing operation, search again, device displays new IP address.

 **Note**

When change IP addresses of several devices at the same time, make sure the cameras user name and passwords are the same.

4.2.1.2 IP Export

Device can export the Added device list to your local USB device.

Step 1 Insert the USB device and then click the Export button.

Enter the following interface. See Figure 4-38.



Figure 4-38

Step 2 Select the directory address and then click the OK button.

Step 3 Device pops up a dialogue box to show the export is successful. Click OK button to exit.

 **Note**

Backup encryption is enabled by default when exporting files. The file information includes IP address, port, remote channel number, manufacturer, user name and password.

- When you enable backup encryption, the extension name of the exported file is .backup. All the other softwares cannot open the file to edit except the NVR device.

- When you disable backup encryption, the extension name of the exported file is .csv. It might lead to data leakage.

4.2.1.3 IP Import

Step 1 Click Import button.

Enter the following interface. See Figure 4-39.

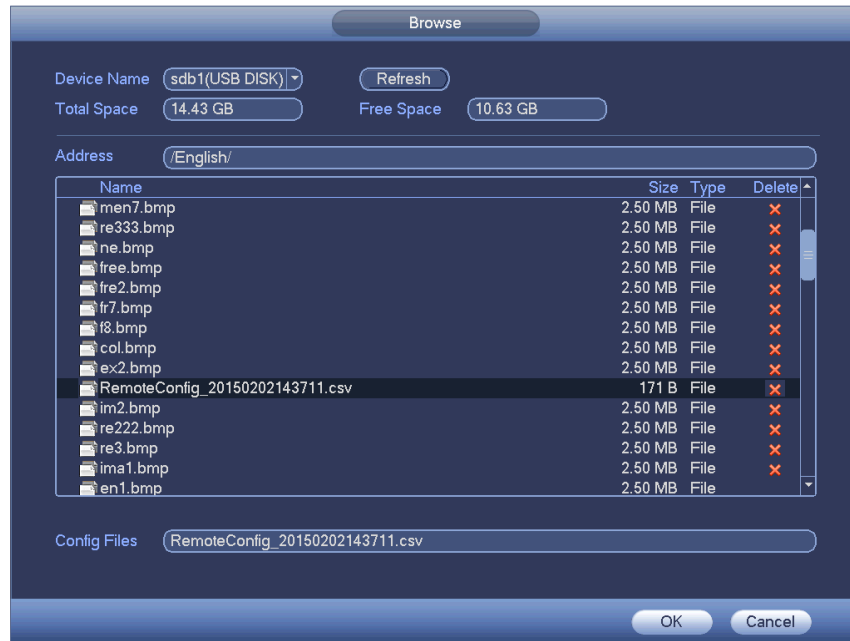


Figure 4-39

Step 2 Select the import file and then click the OK button. System pops up a dialogue box to remind you successfully imported.

Step 3 Click OK button to exit.

Note

If the imported IP has conflicted with current added device, system pops up a dialogue box to remind you. You have two options:

Step 4 Click OK button, system uses the imported setup to overlay current one.



Important

- You can edit the exported .CVS file. **Do not change the file format; otherwise it may result in import failure.**
- Does not support customized protocol import and export.
- The import and export device shall have the same language format.

4.2.2 Remote Device Initialization

Remote device initialization can change remote device login password and IP address.

Note

- When connect a camera to the NVR via PoE port, NVR automatically initialize the camera. The

camera adopts NVR current password and email information by default.

- When connect a camera to the NVR via PoE port after NVR upgraded to the new version, the NVR may fail to initialize the camera. Please go to the Registration interface to initialize the camera.

- Step 1 From main menu->Setting->Camera->Registration.
Enter Registration interface.
- Step 2 Click Device Search and then click Uninitialized.
Device displays camera(s) to be initialized.
- Step 3 Select a camera to be initialized and then click Initialize.
Device displays password setup interface. See Figure 4-40.

 **Note**

- If you want to use current device password and email information, the remote device automatically uses NVR admin account information (login password and email). There is no need to set password and email. Please go to step 4.



Figure 4-40

1. Cancel using current device password and email information, Enter password setting interface. See Figure 4-41.

Enter Password

Using current device password and email info.

Username admin

Password

It is 8 to 32-digit containing letter(s), number(s), symbol(s). It contains at least two types.

Confirm Password

Next

Figure 4-41

2. Set camera password.

- The user name is **admin**. The password ranges from 8 to 32 digitals. It can contain letters, numbers and special characters (excluding “”, “'”, “;”, “:”, “&”). The password shall contain at least two categories. Usually we recommend the strong password.



CAUTION

STRONG PASSWORD RECOMMENDED-For your device own safety, please create a strong password of your own choosing. We also recommend you change your password periodically especially in the high security system.

3. Click Next button.

Enter input email interface. See Figure 4-42.

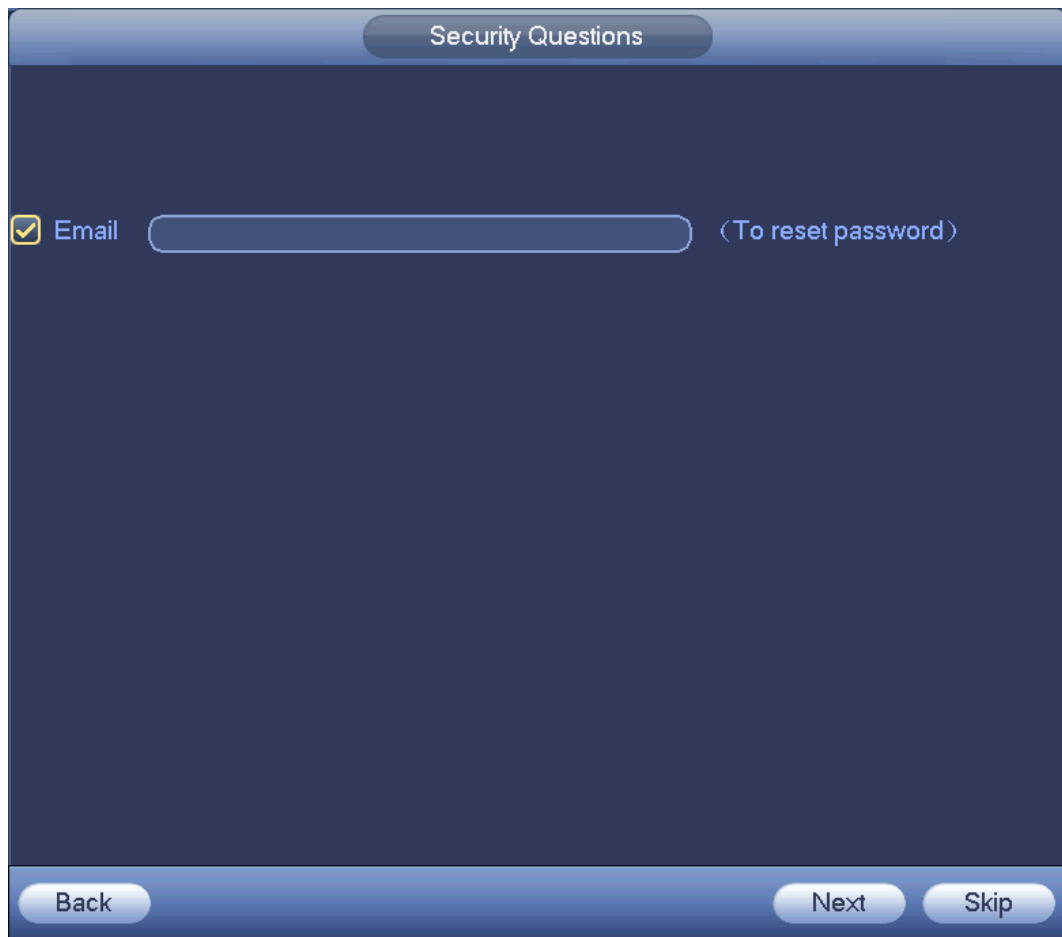


Figure 4-42

4. Set email information.

Email: Input an email address for reset password purpose.

 **Note**

Cancel the box and then click Next or Skip if you do not want to input email information here.

Step 4 Click Next button.

Enter Change IP address interface. See Figure 4-43.

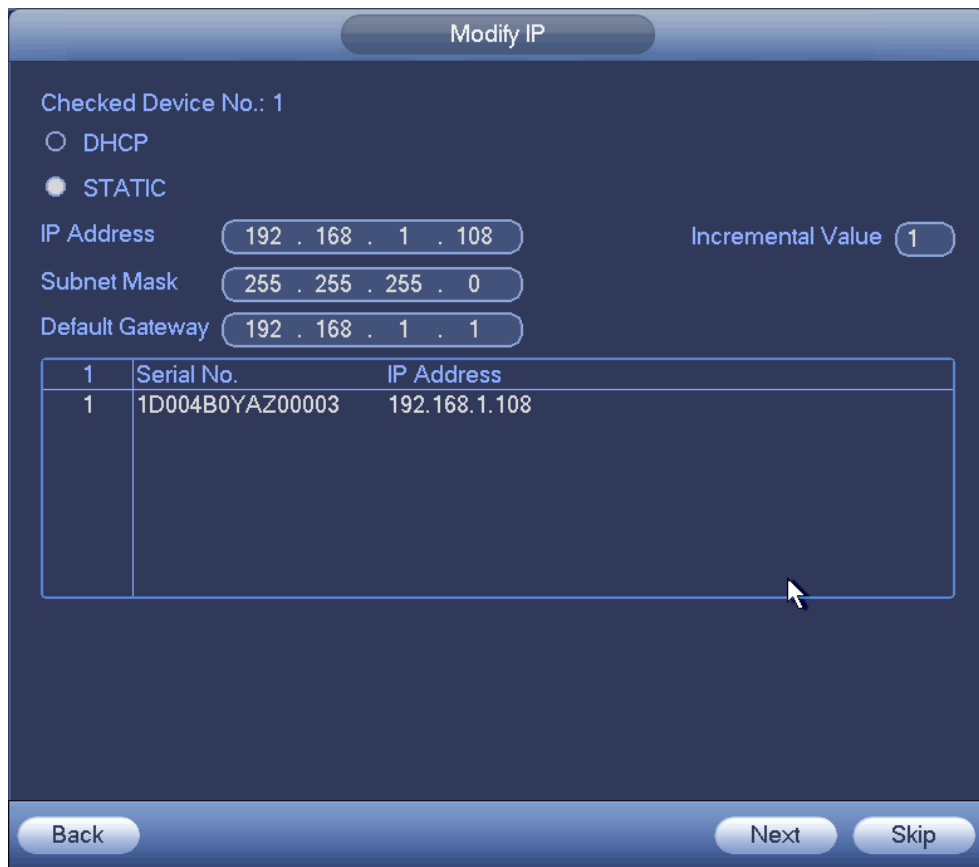


Figure 4-43

Step 5 Set camera IP address

Check DHCP, there is no need to input IP address, subnet mask, and default gateway. Device automatically allocates the IP address to the camera.

Check Static, and then input IP address, subnet mask, default gateway and incremental value.

 **Note**

- If it is to change several devices IP addresses at the same time, please input incremental value. Device can add the fourth address of the IP address one by one to automatically allocate the IP addresses.
- If there is IP conflict when changing static IP address, device pops up IP conflict dialogue box. If batch change IP address, device automatically skips the conflicted IP and begin the allocation according to the incremental value

Step 6 Click Next button.

Device begins initializing camera. See Figure 4-44.

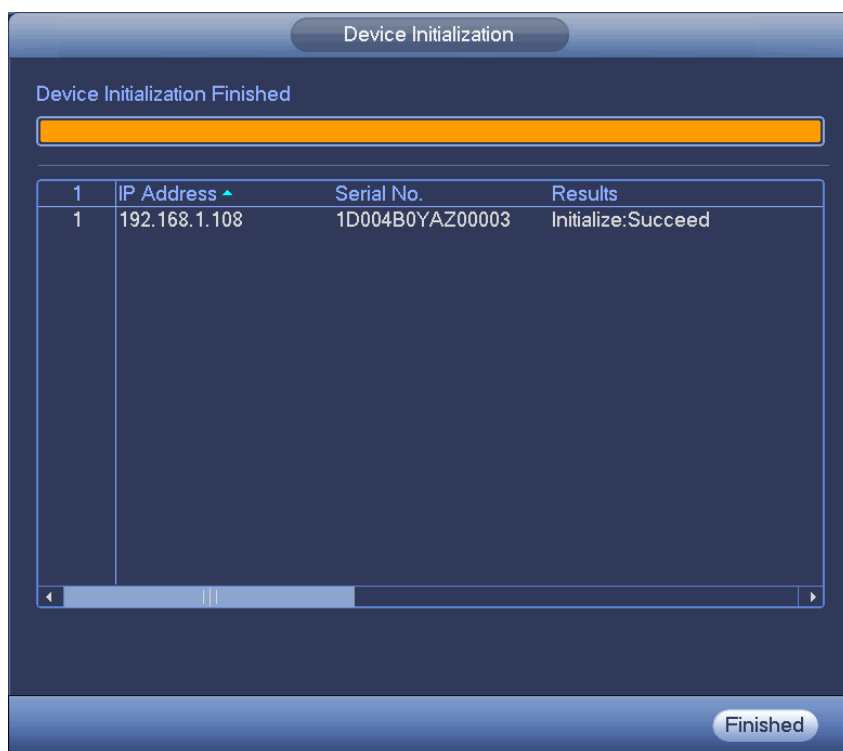


Figure 4-44

Step 7 Click Finish to complete the setup.

4.2.3 Short-Cut Menu to Register Camera

If you have not register a remote device to a channel, please go to the preview interface to add.

Step 1 On the preview interface,

Move your mouse to the center, there is an icon "+". See Figure 4-45.

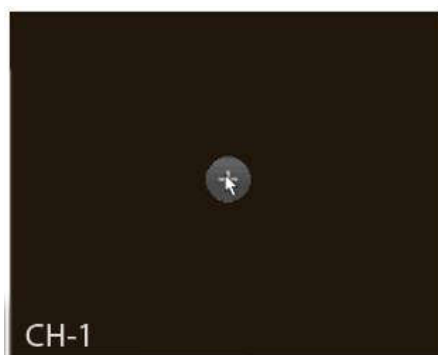


Figure 4-45

Step 2 Click "+", device pops up interface to add network camera. Refer to chapter 4.1.4.4 Registration for detailed information.

4.2.4 Image

It is to set network camera parameters according to different environments. It is to get the best video effect.

From main menu->setting->camera->image, you can see the image interface is shown as below. See Figure 4-46.

- Channel: Select a channel from the dropdown list.
- Saturation: It is to adjust monitor window saturation. The value ranges from 0 to 100. The default value is 50. The larger the number, the stronger the color is. This value has no effect on the general brightness of the whole video. The video color may become too strong if the value is too high. For the grey part of the video, the distortion may occur if the white balance is not accurate. Please note the video may not be attractive if the value is too low. The recommended value ranges from 40 to 60.
- Brightness: It is to adjust monitor window bright. The value ranges from 0 to 100. The default value is 50. The larger the number is, the brighter the video is. When you input the value here, the bright section and the dark section of the video will be adjusted accordingly. You can use this function when the whole video is too dark or too bright. Please note the video may become hazy if the value is too high. The recommended value ranges from 40 to 60.
- Contrast: It is to adjust monitor window contrast. The value ranges from 0 to 100. The default value is 50. The larger the number is, the higher the contrast is. You can use this function when the whole video bright is OK but the contrast is not proper. Please note the video may become hazy if the value is too low. If this value is too high, the dark section may lack brightness while the bright section may over exposure. The recommended value ranges from 40 to 60.
- Auto Iris: It is for the device of the auto lens. You can check the box before ON to enable this function. The auto iris may change if the light becomes different. When you disable this function, the iris is at the max. System does not add the auto iris function in the exposure control. This function is on by default.
- Mirror: It is to switch video up and bottom limit. This function is disabled by default.
- Flip: It is to switch video left and right limit. This function is disabled by default.
- BLC: It includes several options: BLC/WDR/HLC/OFF.
- ✧ BLC: The device auto exposures according to the environments situation so that the darkest area of the video is cleared
- ✧ WDR: For the WDR scene, this function can lower the high bright section and enhance the brightness of the low bright section. So that you can view these two sections clearly at the same time. The value ranges from 1 to 100. When you switch the camera from no-WDR mode to the WDR mode, system may lose several seconds record video.
- ✧ HLC: After you enabled HLC function, the device can lower the brightness of the brightest section according to the HLC control level. It can reduce the area of the halo and lower the brightness of the whole video.
- ✧ OFF: It is to disable the BLC function. Please note this function is disabled by default.
- Profile: It is to set the white balance mode. It has effect on the general hue of the video. This function is on by default. You can select the different scene mode such as auto, sunny, cloudy, home, office, night, disable and etc to adjust the video to the best quality.
- ✧ Auto: The auto white balance is on. System can auto compensate the color temperature to make sure the video color is proper.
- ✧ Sunny: The threshold of the white balance is in the sunny mode.
- ✧ Night: The threshold of the white balance is in the night mode.
- ✧ Customized: You can set the gain of the red/blue channel. The value ranges from 0 to 100.
- Day/night. It is to set device color and the B/W mode switch. The default setup is auto.
- ✧ Color: Device outputs the color video.
- ✧ Auto: Device auto select to output the color or the B/W video according to the device feature (The general bright of the video or there is IR light or not.)
- ✧ B/W: The device outputs the black and white video.

- ✧ Sensor: It is to set when there is peripheral connected IR light.
Please note some non-IR series product support sensor input function.



Figure 4-46

4.2.5 Encode

It is to set video encode parameters such as video bit rates, video overlay, snapshot settings.

4.2.5.1 Encode

It is to set IPC encode mode, resolution, bit stream type and etc.

Note

Some series products support three streams: main stream, sub stream 1, sub stream 2. The sub stream maximally supports 1080P.

From Main menu->Setting->System->Encode, you can see the following interface. See Figure 4-47.

- Channel: Select the channel you want.
- Type: It is to set device bit stream type.
- ✧ For main stream, there are three options: regular/motion detect/alarm. The sub stream supports regular bit streams only.
- ✧ The active control frame function (ACF) can record in different frame rates. For example, you can use high frame rate to record important events, record scheduled event in lower frame rate.
- ✧ Set different frame rates for different record events.

Note

Some series products do not support motion detect bit streams and alarm streams.

- Compression: Video encode mode.
- ✧ H.264: Main Profile encode mode.

- ◇ H.264H: High Profile encode mode.
- ◇ H.264B: Baseline Profile encode mode.
- ◇ H.265: Main Profile encode mode.
- ◇ MJPEG: System needs high bit streams to guarantee video definition. Use the recommended max bit stream value to get the better video effect.
- Smart Codec: This function is to reduce bit streams.

 **Note**

- ◇ Some series products support smart codec function.
- ◇ After changing smart code, please reboot network camera and some network camera functions (such as IVS, ROI, SVC, lobby mode and etc.) becomes null. Please think twice before the operation.
- Resolution: The resolution here refers to the capability of the network camera.

 **Note**

Different series products support different resolutions. Please refer to the actual interface for detailed information.

- Frame rate (FPS): The video frame amount displayed in each second. The higher the frame rate is, the clearer and more fluent the video is. The frame rate may vary depending on the resolution.
- Bit rate type: System supports two types: CBR and VBR.
 - ◇ Main stream: It is to set frame rate to change video quality. The higher the frame rate is, the better the video quality is. The referenced bit rate is the recommended value.
 - ◇ Sub stream: In CBR mode, the bit stream is near the specified value. In VBR mode, the video quality changes according to the bit stream value. But its max value is near the specified value.
- Reference bit rate: The reference bit rate depends on the resolution and frame rate you set.
- Video/audio: You can enable or disable the video/audio. The main stream is enabled by default. After enable the audio function, the record file is composite file consisting of the video and audio. For the sub stream 1, please enable video first and then enable audio function.
- Audio format: Set audio encode format.

 **Note**

Different series products support different audio encode mode. Please refer to the actual interface for detailed information.

- Sampling rate: Audio sampling rate refers to the sampling amount within 1 second. The higher the value is, the better the audio is. The default setup is 8K.
- Copy: After you complete the setup, you can click Copy button to copy current setup to other channel(s). You can see an interface is shown as in Figure 4-50. You can see current channel number is grey. Please check the number to select the channel or you can check the box ALL. Please click the OK button in Figure 4-50 and Figure 4-48 respectively to complete the setup. Please note, once you check the All box, you set same encode setup for all channels. Audio/video enable box, overlay button and the copy button is shield.

Please highlight icon  to select the corresponding function.



Figure 4-47

4.2.5.2 Overlay

Click overlay button, you can see an interface is shown in Figure 4-48.

- Cover area: Here is for you to cover area section. You can drag you mouse to set proper section size. In one channel video, system max supports 4 zones in one channel. You can set with Fn button or direction buttons.
- Preview/monitor: The cover area has two types. Preview and Monitor. Preview means the privacy mask zone cannot be viewed by user when system is in preview status. Monitor means the privacy mask zone cannot be view by the user when system is in monitor status.
- Time display: You can select system displays time or not when you playback. Please click set button and then drag the title to the corresponding position in the screen.
- Channel display: You can select system displays channel number or not when you playback. Please click set button and then drag the title to the corresponding position in the screen.



Figure 4-48

4.2.5.3 Snapshot

Here you can set snapshot mode, picture size, quality and frequency. See Figure 4-49.

- Snapshot mode: There are two modes: regular and trigger. If you set regular mode, you need to set snapshot frequency. If you set trigger snapshot, you need to set snapshot activation operation.
- Image size: Here you can set snapshot picture size.
- Image quality: Here you can set snapshot quality. The value ranges from 1 to 6.
- Interval: It is for you to set timing (schedule) snapshot interval.



Figure 4-49

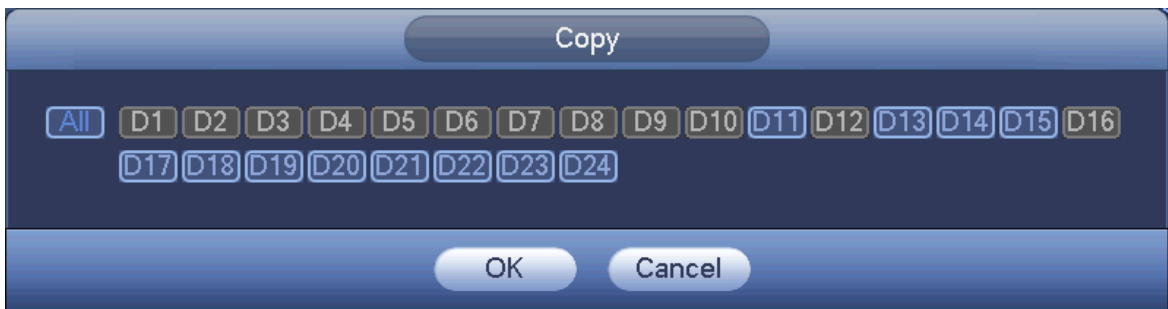


Figure 4-50

4.2.6 Channel Name

From main menu->Setting->Camera-Channel name, you can see an interface shown as in Figure 4-51. It is to modify channel name. It max supports 63-character. Please note you can only modify the channel name of the connected network camera.



Figure 4-51

4.2.7 Remote Upgrade

It is to upgrade the connected network camera firmware. It includes online upgrade and file upgrade. From main menu->setting->camera->remote, the interface is shown as below. See Figure 4-52.

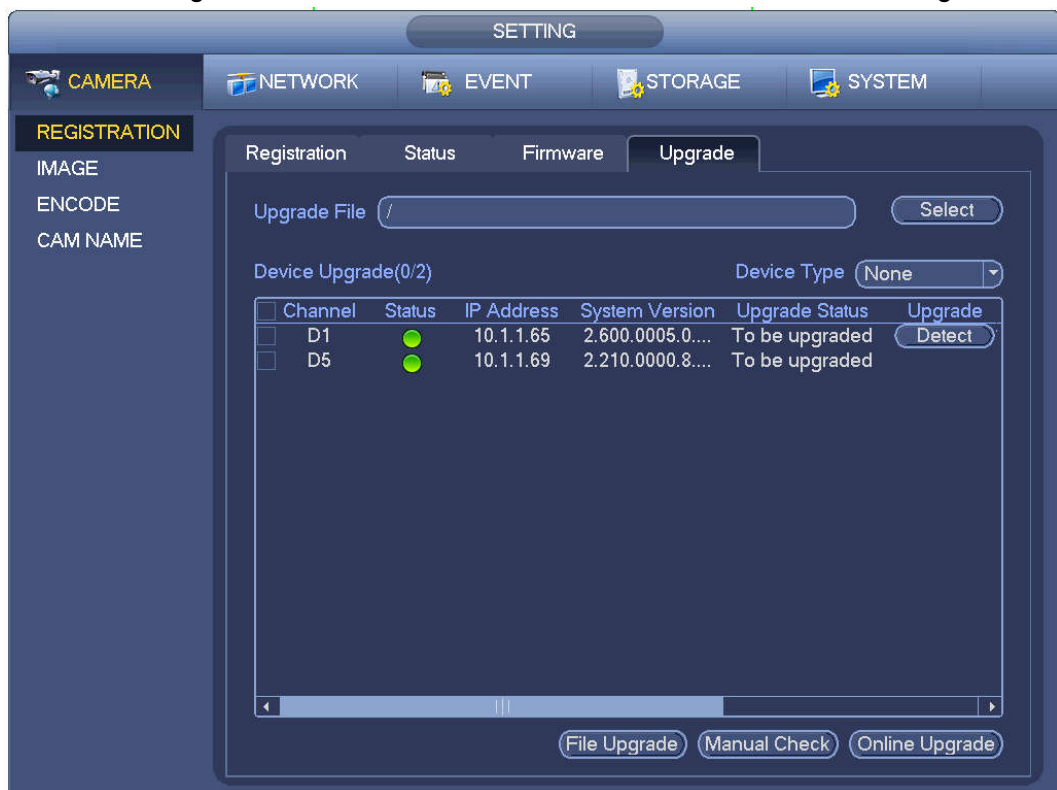


Figure 4-52

Online Upgrade

- Step 1 Select a remote device and then click the Detect button on the right side, or check a box to select a remote device and then click Manual Check.
System detects the new version on the cloud.
- Step 2 Select a remote device that has new version and then click online upgrade.
After successful operation, system pops up upgrade successful dialogue box.

File upgrade

- Step 1 Select a channel and then click File upgrade.
- Step 2 Select upgrade file on the pop-up interface.
- Step 3 Select the upgrade file and then click OK button.
After successful operation, system pops up upgrade successful dialogue box.

Note

If there are too much remote devices, select device type from the drop-down list to search the remote device you desire.

4.2.8 Remote Device Info

4.2.8.1 Device Status

Here you can view the IPC status of the corresponding channel such as motion detect, video loss, tampering, alarm and etc. See Figure 4-53.






- IPC status: : Front-end does not support. : Front-end supports. : There is alarm event from current front-end.
- Connection status: : Connection succeeded. : Connection failed.
- Refresh: Click it to get latest front-end channel status.



Figure 4-53

4.2.8.2 Firmware

It is to view channel, IP address, manufacturer, type, system version, SN, video input, audio input, external alarm and etc. See Figure 4-54.



Figure 4-54

4.3 Preview

After device booted up, the system is in multiple-channel display mode. See Figure 4-55. Please note the displayed window amount may vary. The following figure is for reference only. Please refer to chapter 1.3 Specifications for the window-amount your product supported.

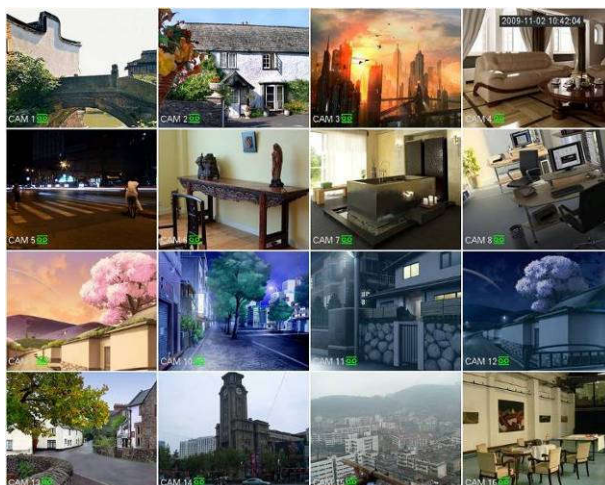


Figure 4-55

4.3.1 Preview

If you want to change system date and time, you can refer to general settings (Main Menu->Setting->System->General). If you want to modify the channel name, please refer to the display settings (Main Menu->Camera->CAM name)

Please refer to the following sheet for detailed information.

SN	Icon	Function
1		When current channel is recording, system displays this icon.
2		When motion detection alarm occurs, system displays this icon.
3		When video loss alarm occurs, system displays this icon.
4		When current channel is in monitor lock status, system displays this icon.
5		When the device remotely connects Wi-Fi IPC, this icon is displayed on the screen of the corresponding channel. NOTE Only some devices support this function.

Tips

- Preview drag: If you want to change position of channel 1 and channel 2 when you are previewing, you can left click mouse in the channel 1 and then drag to channel 2, release mouse you can switch channel 1 and channel 2 positions.
- Use mouse middle button to control window split: You can use mouse middle button to switch window split amount.

4.3.2 Navigation bar

On the preview interface, left click mouse, you can view the navigation bar. See Figure 4-56 or Figure 4-57.



Note

- Different series products may display different navigation bar icons. Refer to the actual product for detailed information.
- Go to the Main menu->Setting->System->General to enable navigation bar function; otherwise you cannot see the following interface.




Figure 4-56



Figure 4-57

4.3.2.1 Main Menu

Click button  to go to the main menu interface.

4.3.2.2 Dual-screen operation

Important

This function is for some series only.


Click  to select screen 2, you can view an interface shown as below. See Figure 4-58. It is a navigation bar for screen 2.



Figure 4-58

Click any screen split mode; HDMI2 screen can display corresponding screens. Now you can control two screens. See Figure 4-59.



Figure 4-59



Note



- Screen 2 function is null if tour is in process. Please disable tour function first,
- Right now, the screen 2 operation can only be realized on the navigation bard. The operations on the

right-click menu are for screen 1 only.


4.3.2.3 Output Screen

Click  to select corresponding window-split mode and output channels.

4.3.2.4 Previous screen/next screen

Click  to go back to the previous screen, click  to go to the next screen.


4.3.2.5 Tour

Click button  to enable tour, the icon becomes , you can see the tour is in process.


Note

Close the tour or the triggered tour operation has cancelled, device restore the previous preview video.

4.3.2.6 PTZ


Click , system goes to the PTZ control interface. Please refer to chapter 4.4.2 PTZ for detailed information.

4.3.2.7 Color

Click button , system goes to the color interface. Please refer to chapter 4.3.6.1 Color for detailed information.


Please make sure system is in one-channel mode.

4.3.2.8 Image



Click , to go to the image interface. Please refer to chapter 4.2.4 Image for detailed information.

Please make sure system is in one-channel mode.


4.3.2.9 Search

Click button , system goes to search interface. Please refer to chapter 4.6.2 Search for detailed information.


4.3.2.10 Broadcast

Click  to go to broadcast interface. Select a group name and then click  to begin broadcast. Please refer to chapter 4.10.5 Broadcast for detailed information.

4.3.2.11 Alarm Status

Click button , system goes to alarm status interface. It is to view device status and channel status. Please refer to chapter 4.10.2.3.1 Alarm status for detailed information.

4.3.2.12 Channel Info


Click button , system goes to the channel information setup interface. It is to view information of the corresponding channel. See Figure 4-60.

CHANNEL INFO							
Channel	Motion Detect	Video Loss	Tampering	Record Status	Bit Rate(Kb/S)	Status	Record Mode
2	--	--	--	■	3934	●	Continuous
4	--	--	--	■	4245	●	Continuous
6	--	--	--	■	6159	●	Continuous


Refresh

Figure 4-60


4.3.2.13 Registration

Click , system goes to the registration interface. Please refer to chapter 4.1.4.6.3 Registration for detailed information.


4.3.2.14 Network

Click , system goes to the network interface. It is to set network IP address, default gateway and etc. Please refer to chapter 4.8 Network for detailed information.

4.3.2.15 HDD Manager

Click , system goes to the HDD manager interface. It is to view and manage HDD information. Please refer to chapter 4.9.1 HDD manager for detailed information.

4.3.2.16 USB Manager

Click , system goes to the USB Manager interface. It is to view USB information, backup and update. Please refer to chapter 4.10.8.1 File backup, chapter 4.10.8.3 Backup log, chapter 4.10.8.2 Import/export, and chapter 4.10.10 Upgrade for detailed information.

4.3.3 Preview Control Interface

Move your mouse to the top center of the video of current channel, you can see system pops up the preview control interface. See Figure 4-61. If your mouse stays in this area for more than 6 seconds and has no operation, the control bar automatically hides.



Figure 4-61

1) Instant playback



It is to playback the previous 5-60 minutes record of current channel.

Please go to the Main menu->Setting->->System->General to set real-time playback time.

System may pop up a dialogue box if there is no such record in current channel.

2) Digital zoom

It is to zoom in specified zone of current channel. It supports zoom in function of multiple-channel.

Click button , the button is shown as .

There are two ways for you to zoom in.

- Drag the mouse to select a zone, you can view an interface show as Figure 4-62.



Figure 4-62

- Put the middle button at the center of the zone you want to zoom in, and move the mouse, you can view an interface shown as in Figure 4-63.

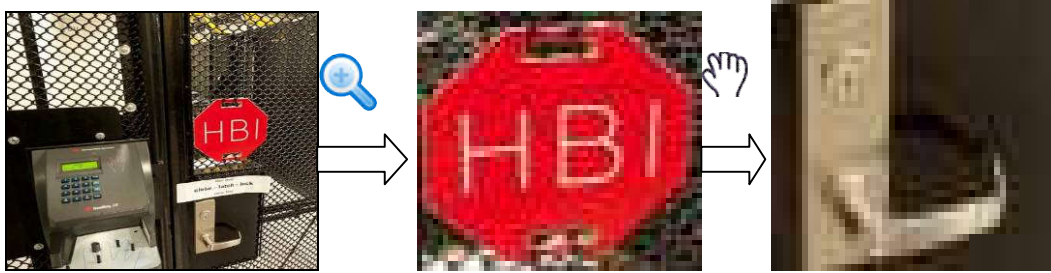



Figure 4-63


Right click mouse to cancel zoom and go back to the original interface.

3) Manual record function



It is to back up the video of current channel to the USB device. System cannot backup the video of multiple-channel at the same time.



Click button , system begins recording. Click it again, system stops recording. You can find the record file on the flash disk.

4) Manual Snapshot

Click  to snapshot 1-5 times. The snapshot file is saved on the USB device or HDD. You can go to the Search interface (chapter 4.5) to view.

5) Bidirectional talk

If the connected front-end device supports bidirectional talk function, you can click this button. Click button  to start bidirectional talk function the icon now is shown as . Now the rest bidirectional talk buttons of digital channel becomes null too.

Click  again, you can cancel bidirectional talk and the bidirectional talk buttons of other digital channels become as .

6) Registration

Shortcut menu. Click it to go to the registration interface to add/delete remote device or view its corresponding information. Please refer to chapter 4.2.2 for detailed information.

7) Switch bit streams

Click  to switch the bit stream type of the main stream and sub stream.

- M: Main stream. Its bit streams are big and definition is high. It occupies large network bandwidth suitable for video wall surveillance, storage and etc.
- S: Sub stream. Its definition is low but occupies small network bandwidth. It is suitable for general surveillance, remote connection and etc. Some series products support two sub streams (S1, S2). Refer to chapter 4.2.5.1 Encode for detailed information.

4.3.4 Right Click Menu

After you logged in the device, right click mouse, you can see the short cut menu. Please see Figure 4-64 or Figure 4-65.

- Window split mode: You can select window amount and then select channels.
- Edit view (Sequence): Change channel display sequence on the preview window.
- Customized screen: Set customized screen split mode.
- PTZ: Click it to go to PTZ interface.
- Fisheye (optional): It is to realize fish eye operation.
- Auto focus: It is to set auto focus function. Please make sure the connected network camera supports this function.
- Color setting: Set video corresponding information.
- Search: Click it to go to Search interface to search and playback a record file.
- Record control: Enable/disable record channel.
- Alarm output: It is to set alarm output mode.
- Camera registration: Search and add a remote device.
- Alarm output: Generate alarm output signal manually.
- Main menu: Go to system main menu interface.

Tips:

Right click mouse to go back to the previous interface.



Figure 4-64

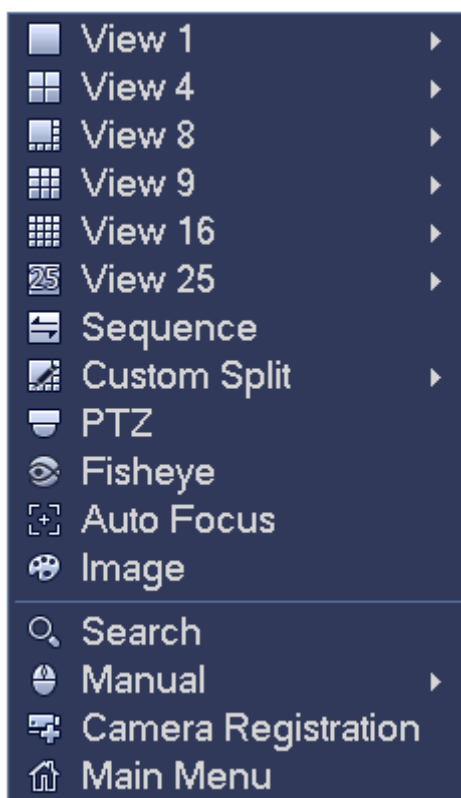


Figure 4-65

4.3.5 Edit View (Sequence)

It is to set customized view layout.







Warning

The preview layout restores default channel layout after Default operation. (Main menu->Setting->General->Default).

Step 1 On the preview interface, right click mouse and then click Edit view. Enter edit view interface. See Figure 4-66.



Note

- Enter edit view interface, device automatically switches to the max split amount mode.
- The channel list on the edit view interface displays the added camera channel number and channel name.  means camera is online.  means camera is offline.
- In case the channel amount has exceeded the device max split amount, the edit view interface can display the max screen number amount and current screen number. In Figure 4-66, click  or , switch the video from other channel.

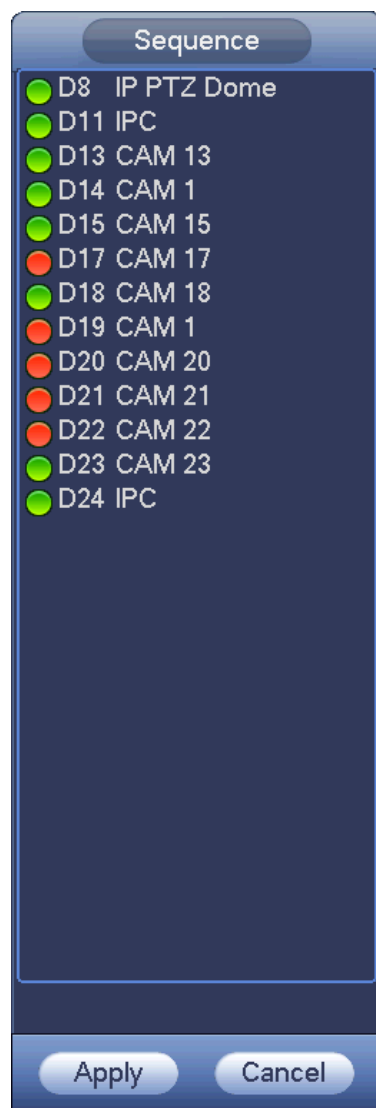


Figure 4-66

- Step 2 On the edit view interface, drag the channel to the desired window, or drag on the preview window to switch the position.
- Check the channel number at the right bottom corner to view the current channel sequence. See Figure 4-67.

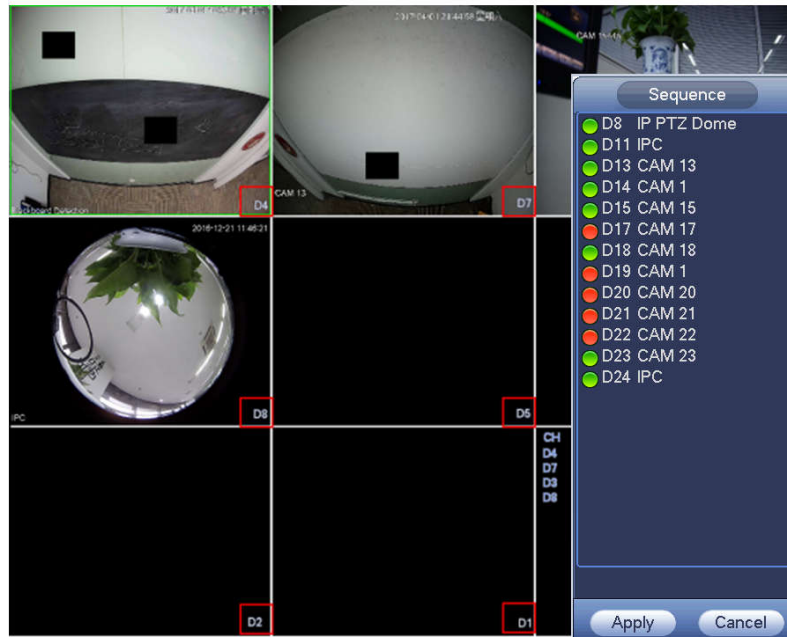


Figure 4-67

Step 3 Click Apply to save current channel sequence.

After you change the channel sequence, click Cancel button or right click mouse, device pops up the dialogue box. See Figure 4-68.

- Click OK to save current settings.
- Click Cancel to exit without saving the settings.

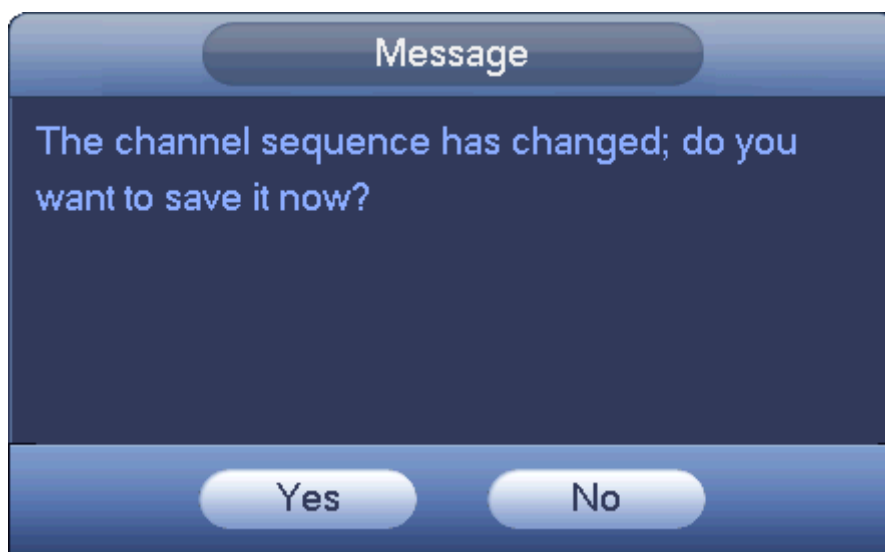


Figure 4-68

4.3.6 Preview Display Effect Setup

4.3.6.1 Video Color

Here you can set hue, brightness, contrast, saturation, gain, white level, color mode and etc. See Figure 4-69.



Figure 4-69

Please refer to the following sheet for detailed information.

Item	Note
Period	There are two periods in one day. You can set different sharpness, brightness, and contrast setup for different periods.
Effective Time	Check the box here to enable this function and then set period time.
Sharpness	The value here is to adjust the edge of the video. The value ranges from 0 to 100. The larger the value is, the clear the edge is and vice versa. Please note there is noise if the value here is too high. The default value is 50 and the recommended value ranges from 40 to 60.
Brightness	It is to adjust monitor window bright. The value ranges from 0 to 100. The default value is 50. The larger the number, the bright the video is. When you input the value here, the bright section and the dark section of the video will be adjusted accordingly. You can use this function when the whole video is too dark or too bright. Please note the video may become hazy if the value is too high. The recommended value ranges from 40 to 60.
Contrast	It is to adjust monitor window contrast. The value ranges from 0 to 100. The default value is 50. The larger the number, the higher the contrast is. You can use this function when the whole video bright is OK but the contrast is not proper. Please note the video may become hazy if the value is too low. If this value is too high, the dark section may lack brightness while the bright section may over exposure. The recommended value ranges from 40 to 60.
Saturation	It is to adjust monitor window saturation. The value ranges from

Item	Note
	0 to 100. The default value is 50. The larger the number, the strong the color is. This value has no effect on the general brightness of the whole video. The video color may become too strong if the value is too high. For the grey part of the video, the distortion may occur if the white balance is not accurate. Please note the video may not be attractive if the value is too low. The recommended value ranges from 40 to 60.
Gain	The gain adjust is to set the gain value. The default value may vary due to different device models. The smaller the value, the low the noise. But the brightness is also too low in the dark environments. It can enhance the video brightness if the value is high. But the video noise may become too clear.
Color mode	It includes several modes such as standard, color, bright, gentle. Select a color mode, the sharpness, brightness, contrast and etc can automatically switch to corresponding setup.

4.3.6.2 Display

From Main Menu->Setting->System->Display->Display, you can go to the following interface. See Figure 4-70.

Here you can set menu and video preview effect. All you operation here does not affect the record file and playback effect.



Figure 4-70

Now you can set corresponding information.

- Display the intelligent rule(s): Check the box to enable IVS function, system can display IVS rule on the preview interface. **Please note this function is for some series only.**
- Resolution: There are five options: 1280×1024 (Default), 1280×720, 1920×1080, 1024×768 and 3840×2160. Please note the system needs to reboot to activate current setup. **Please note 3840×2160 is for some series only.**
- VGA+HDMI2: It is for dual-screen operation. Please select from the dropdown list according to your actual situation. Click Apply button, system needs to restart to activate new setup. For example, 32+4 means for VGA, system max supports 32-window split and for HDMI2, system max supports 4-window split. **Please note this function is for some series only.**
- Transparency: Here is for you to adjust menu transparency. The higher the value is, the better transparent the menu is.
- Time display: You can select to display time or not when system is playback.
- Channel display: You can select to channel name or not when system is playback.
- Image enhance: Check the box; you can optimize the margin of the preview video.
- Original scale: Check the box here to select a corresponding channel; it can restore video original scale.

Click OK button to save current setup.

4.3.6.3 TV adjust



Note

Some series product supports TV adjust function. This function is disabled by default.

From Main Menu->Setting->System->Display->TV adjust; you can go to the following interface. See Figure 4-70. Here you can set margins and brightness.



Figure 4-71

4.3.6.4 Preview Tour Parameters

Set preview display mode, channel display sequence and tour setup.

- Set preview display mode: On the preview interface, right click mouse, you can view right-click menu. Now you can select preview window amount and channel.
- Set channel display mode: On the preview interface, if you want to change channel 1 and channel 16 position, please right click channel 1 video window and then drag to the channel 16 video window, release button, you can change channel 1 and channel 16 position.
- Tour setup: Here you can set preview window channel display mode and interval. Please follow the steps listed below.

From Main menu->Setting->System->Display->Tour, you can see an interface shown as in Figure 4-72.



Here you can set tour parameter.

- Enable tour: Check the box here to enable tour function. The general tour supports all types of window split mode.
- Interval: Input proper interval value here. The value ranges from 1-120 seconds.
- Motion tour type: System support 1/8-window tour. Please note you need to go to the main menu->Setting->Event->Video detect->Motion detect to enable tour function.
- Alarm tour type: System support 1/8-window tour. Please note you need to go to the main menu->Setting->Event->Alarm to enable tour function.
- Window split: It is to set window split mode.



Figure 4-72

Tips

On the navigation bar, click   to enable/disable tour.

Click Save button to save current setup.

4.3.6.5 Customized split

It is to set customized video split mode.

 **Note**

- This function is for some series products. Please refer to the actual product for detailed information.
- Device max supports 5 customized videos.

From Main menu->Setting->System->Display->Custom split, you can see an interface shown as in Figure 4-73.

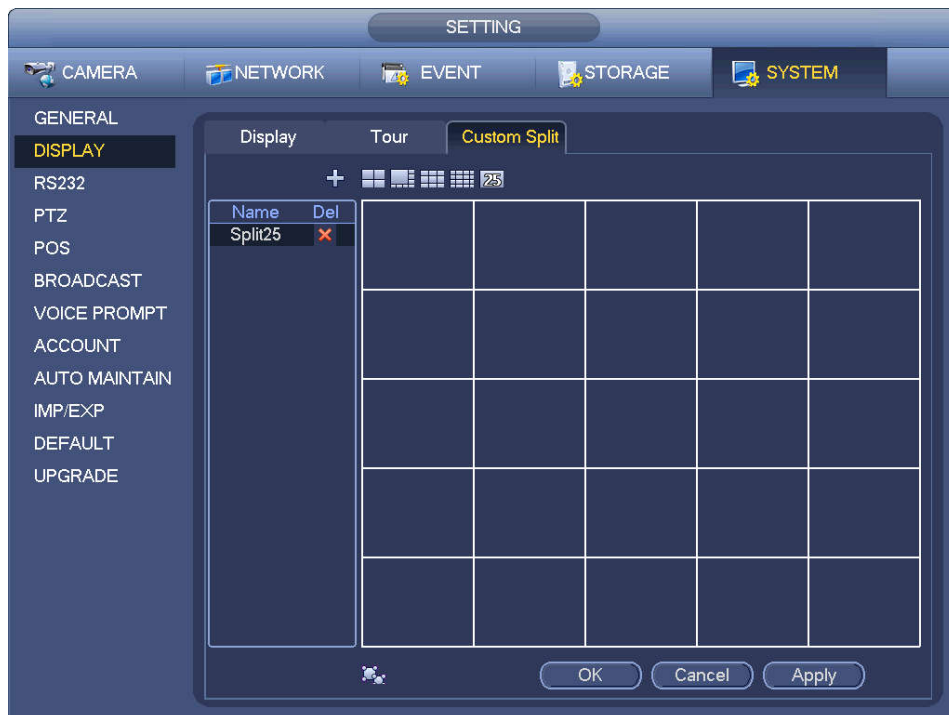


Figure 4-73

Click  and then click  to select basic mode

In regular mode, drag the mouse in the preview frame; you can merge several small windows to one window so that you can get you desired split mode.

After the setup, the selected window has the red frame. See Figure 4-74.

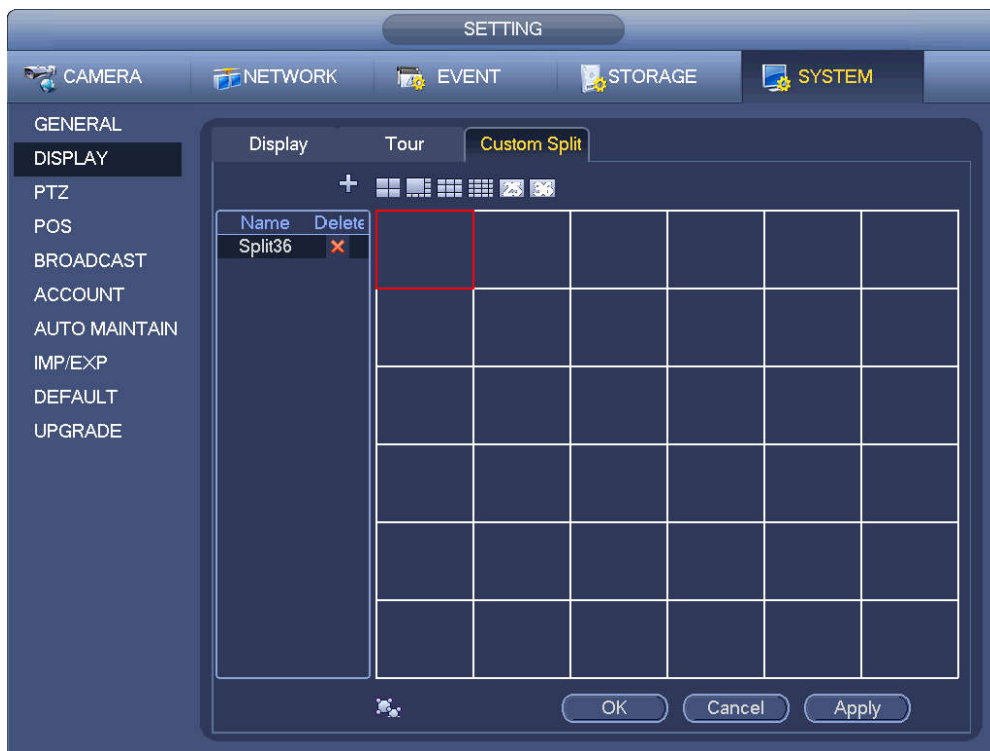



Figure 4-74

Select the merging window, the frame is red; you can click  to cancel the merge to restore regular mode.

Click Save to exit.

After the setup, you can go to the preview window, right click mouse and then select custom split. See Figure 4-75.

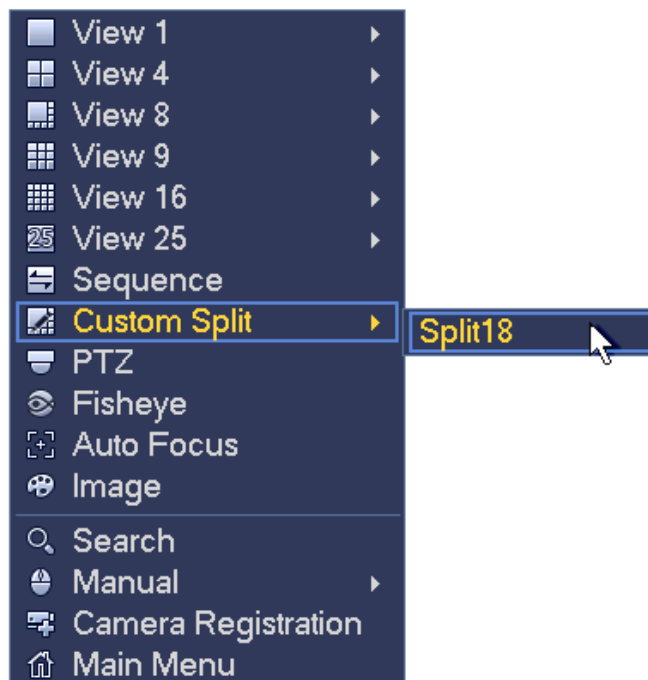


Figure 4-75

4.3.7 Fisheye (Optional)

Please note this function is for some series only.

4.3.7.1 Fisheye de-warp during preview interface

The fisheye camera (panoramic camera) has wide video of angle but its video is serious distorted. The de-warp function can present the proper and vivid video suitable for human eyes.

On the preview interface, select fisheye channel and then right click mouse, you can select fish eye. See Figure 4-76.



Figure 4-76

Now you can see an interface shown as in Figure 4-77. You can set fish eye installation mode and display mode.

Note

- For the non-fish eye channel, system pops up dialogue box to remind you it is not a fish eye channel and does not support de-warp function.
- If system resources are insufficient, system pops up the corresponding dialogue box too.

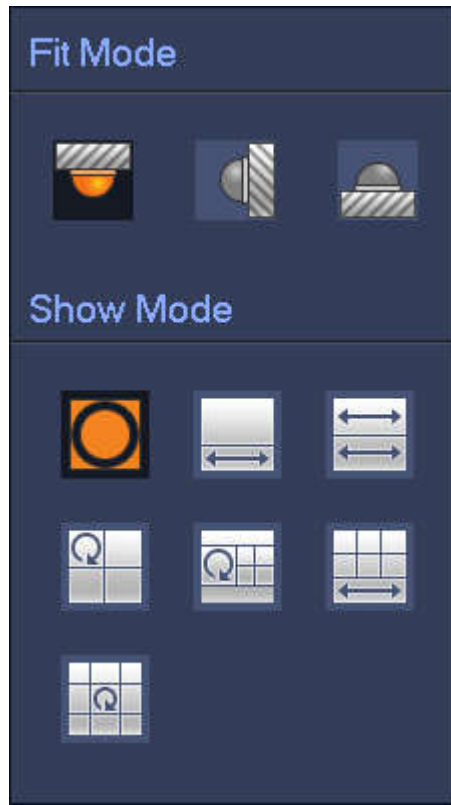














Figure 4-77

There are three installation modes: ceiling mount/wall mount/ground mount. The different installations modes have different de-warp modes.

Please refer to the following sheet for detailed information.

Installation modes	Icon	Note
 (Ceiling mount)  (Ground mount)		360°panorama original view
		1 de-warp window+1 panorama stretching
		2 panorama stretching view
		1 360° panorama view+3 de-warp windows
		1 360°panorama view+4 de-warp windows
		4 de-warp windows+1 panorama stretching
		1 360° panorama view+8 de-warp windows
 (Wall mount)		360°panorama original view
		Panorama stretching