Network Video Decoder

User's Manual

V1.1.0

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.

Foreword

General

This user's manual (hereinafter referred to be "the Manual") introduces the installations, functions and operations of network video decoder (hereinafter referred to be "the Device").

Models

1-channel 4K high definition (H.265) series, 4-channel 4K high definition (H.265, with 2 input ports) series, 9/12/15/18/21-channel 4K high definition (H.265) series and 9/12/15/18/21-channel 4K high definition (H.265, with 4 input ports) series

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, could result in property damage, data loss, lower performance, or unpredictable result.
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
1	V1.1.0	4-channel 4K high-definition decoder	December 2018
2	V1.0.0	First release	June 2018

Privacy Protection Notice

As the device user or data controller, you might collect personal data of other 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 include 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 prevail.
- 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 manual, CD-ROM, QR code or our official website. If there is inconsistency between paper 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 Manual (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. Please read the manual carefully before use, in order to prevent danger and property loss. Strictly conform to the manual during application and keep it properly after reading.

Operating Requirement

- Do not place and install the device in an area exposed to direct sunlight or near heat generating device.
- Do not 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.
- Do not drip or splash liquids onto the device; do not 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; do not block its ventilation opening.
- Use the device only within rated input and output range.
- Do not dismantle the device arbitrarily.
- Transport, use and store the device within allowed humidity and temperature range.

Power Requirement

- 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!
- The product shall use electric wires (power wires) recommended by this area, which shall be used within its rated specification!
- 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, keep an angle that facilitates operation.

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1 Product Overview

1.1 Product Profile

DH series decoders are network audio and video decoding devices designed and developed for online video surveillance system. The device boasts powerful data processing capability and stable network function, and supports diversified encoding formats. It is easy to extend, easy to maintain, and convenient to access. This design facilitates installation, deployment, unified control and system management of the entire online video surveillance system. Meanwhile, it substantially reduces overall system cost.

1.2 Main Functional Features

Decoding

- Decoding capability of the decoder depends on its internal decoding chip. For decoding capability, refer to Table 1-1.

Table 1-1 Decoding capability

Model	Description	Output Port	Split Mode
1-channel 4K high definition (H.265) series	Maximum decoding supports: ● 16-channel 1080P@30 fps image decoding output ● 12-channel 3 MP@25 fps image decoding output ● 10-channel 3 MP@30 fps image decoding output ● 9-channel 4 MP@25 fps image decoding output ● 8-channel 5 MP@25 fps image decoding output ● 6-channel 6 MP@25 fps image decoding output ● 4-channel 8 MP@30 fps image decoding output ● 3-channel 12 MP@25 fps image decoding output	● VGA ● HDMI	64-split, 36-split, 25-split, 16-split, 9-split, 8-split, 6-split, 4-split, and single split
4-channel 4K high definition (H.265, with 2 input ports) series	Maximum decoding supports: ● 128-channel 960H@30 fps image decoding output ● 64-channel 720P@30 fps image decoding output ● 32-channel 1080P@30 fps image decoding output ● 8-channel 8 MP@30 fps image decoding output ● 4-channel 12 MP@30 fps image decoding output ● 2-channel 32 MP@30 fps image decoding output	● HDMI ● BNC	36-split, 25-split, 16-split, 9-split, 8-split, 6-split, 4-split, and single split

Model	Description	Output Port	Split Mode
9-channel 4K high definition (H.265) series and 9-channel 4K high definition (H.265, with 4 input ports) series	Maximum decoding supports: ● 48-channel 1080P@30 fps image decoding output ● 36-channel 3 MP@25 fps image decoding output ● 30-channel 3 MP@30 fps image decoding output ● 27-channel 4 MP@25 fps image decoding output ● 24-channel 5 MP@25 fps image decoding output ● 18-channel 6 MP@25 fps image decoding output ● 12-channel 8 MP@30 fps image decoding output ● 9-channel 12 MP@25 fps image decoding output	HDMI	16-split, 9-split, 4-split, and single split
12-channel 4K high definition (H.265) series and 12-channel 4K high definition (H.265, with 4 input ports) series	Maximum decoding supports: ● 192-channel D1@30 fps image decoding output ● 192-channel 960H@30 fps image decoding output ● 108-channel 720P@30 fps image decoding output (27 channels can be selected for screen 1–3, screen 4–6, screen 7–9 and screen 10–12 respectively) ● 48-channel 1080P@30 fps image decoding output (12 channels can be selected for screen 1–3, screen 4–6, screen 7–9 and screen 10–12 respectively) ● 32-channel 3 MP@30 fps image decoding output (8 channels can be selected for screen 1–3, screen 4–6, screen 7–9 and screen 10–12 respectively) ● 20-channel 5 MP@30 fps image decoding output (5 channels can be selected for screen 1–3, screen 4–6, screen 7–9 and screen 10–12 respectively) ● 12-channel 8 MP@30 fps image decoding output (3 channels can be selected for screen 1–3, screen 4–6, screen 7–9 and screen 10–12 respectively) ● 12-channel 12 MP image decoding output (3 channels can be selected for screen 1–3, screen 4–6, screen 7–9 and screen 10–12 respectively)	HDMI	16-split, 9-split, 4-split, and single split

Model	Description	Output Port	Split Mode
15-channel 4K high definition (H.265) series and 15-channel 4K high definition (H.265, with 4 input ports) series	Maximum decoding supports: ● 180-channel 720P@30 fps image decoding output (36 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12 and screen 13–15 respectively) ● 80-channel 1080P@30 fps image decoding output (16 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12 and screen 13–15 respectively) ● 60-channel 3 MP@25 fps image decoding output (12 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12 and screen 13–15 respectively) ● 40-channel 5 MP@30 fps image decoding output (8 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12 and screen 13–15 respectively) ● 20-channel 8 MP@30fps image decoding output (4 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12 and screen 13–15 respectively) ● 15-channel 12 MP@25 fps image decoding output (3 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12 and screen 13–15 respectively)	HDMI	16-split, 9-split, 4-split, and single split

Model	Description	Output Port	Split Mode
18-channel 4K high definition (H.265) series and 18-channel 4K high definition (H.265, with 4 input ports) series	Maximum decoding supports: ● 216-channel 720P@30 fps image decoding output (36 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15 and screen 16–18 respectively) ● 96-channel 1080P@30 fps image decoding output (16 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15 and screen 16–18 respectively) ● 72-channel 3 MP@25 fps image decoding output (12 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15 and screen 16–18 respectively) ● 48-channel 5 MP@30 fps image decoding output (8 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15 and screen 16–18 respectively) ● 24-channel 8 MP@30 fps image decoding output (4 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15 and screen 16–18 respectively) ● 18-channel 12 MP@25 fps image decoding output (3 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15 and screen 16–18 respectively)	HDMI	16-split, 9-split, 4-split, and single split

Model	Description	Output Port	Split Mode
21-channel 4K high definition (H.265) series and 21-channel 4K high definition (H.265, with 4 input ports) series	Maximum decoding supports: ● 252-channel 720P@30 fps image decoding output (36 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15, screen 16–18 and screen 19–21 respectively) ● 112-channel 1080P@30 fps image decoding output (16 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15, screen 16–18 and screen 19–21 respectively) ● 84-channel 3 MP@25 fps image decoding output (12 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15, screen 16–18 and screen 19–21 respectively) ● 56-channel 5 MP@30 fps image decoding output (8 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15, screen 16–18 and screen 19–21 respectively) ● 28-channel 8 MP@30 fps image decoding output (4 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15, screen 16–18 and screen 19–21 respectively) ● 21-channel 12 MP image decoding output (3 channels can be selected for screen 1–3, screen 4–6, screen 7–9, screen 10–12, screen 13–15, screen 16–18 and screen 19–21 respectively)	HDMI	16-split, 9-split, 4-split, and single split

- Real-time stream decoding
  Get local real-time bit streams of the encoder and then output.
- Previous stream decoding
  Get the local history bit streams of the encoder and then output.
- Information feedback
  All applications can accurately get current decoding status.

Network

- Support remote control with network.
- Synchronize system time with NTP server.
- After you configure the front-end encoding device information, decoder can automatically connect the encoding device, and then begin work independently and reliably.

- In forwarding mode, decoder can get the random data stream from the network server accurately, to realize decoding output.

Output Port

- 1-channel 4K high definition (H.265) series has 1 group output ports, including 1 VGA port and 1 HDMI port.
- 4-channel 4K (H.265, with 2 input ports) high definition series has 2 BNC output ports and 4 HDMI output ports.
- 9-channel 4K high definition (H.265) series and 9-channel 4K high definition (H.265, with 4 input ports) series respectively has 9 HDMI output ports.
- 12-channel 4K high definition (H.265) series and 12-channel 4K high definition (H.265, with 4 input ports) series respectively has 12 HDMI output ports.
- 15-channel 4K high definition (H.265) series and 15-channel 4K high definition (H.265, with 4 input ports) series respectively has 15 HDMI output ports.
- 18-channel 4K high definition (H.265) series and 18-channel 4K high definition (H.265, with 4 input ports) series respectively has 18 HDMI output ports.
- 21-channel 4K high definition (H.265) series and 21-channel 4K high definition (H.265, with 4 input ports) series respectively has 21 HDMI output ports.



These products can realize real-time surveillance by monitor, and support alarm tour output and decoding tour.

Input Port

- 4-channel 4K high definition (H.265, with 2 input ports) series has 2 HDMI input ports.
- 9-channel 4K high definition (H.265, with 4 input ports) series, 12-channel 4K high definition (H.265, with 4 input ports) series, 15-channel 4K high definition (H.265, with 4 input ports) series, 18-channel 4K high definition (H.265, with 4 input ports) series, and 21-channel 4K high definition (H.265, with 4 input ports) series have 2 HDMI input ports and 2 DVI-I input ports respectively.

Alarm

- External Alarm
  Multiple-channel relay alarm output to activate the peripheral alarm device (such as on-site light control), manual control and activation video output.
- Decoder Alarm
  Remind users about present decoding status.

Serial Port

- Support peripheral device control function. The control protocol and connection port can be set freely according to your customized requirements.
- Support transparent data transmission of various ports, such as RS–232.

User Management

Users with the same authorities can belong to one group. Each group has one authority set (support customized setup), as one subset of overall authority set. The user authority cannot exceed the group authority.

AUX Function

- Support user to view version information, display device important hardware port information, software version information and etc.
- Log search function.
- Time Synchronization: System time can be set manually, or synchronized with PC time directly.
- Provide automatic maintenance of the device at fixed time.
- Support update through network and web.



Refer to the following chapters for function information. Refer to the actual product for detailed information.

2 Inspection and Cable Connection

For installation requirement of the decoder, refer to engineering construction specifications and national standards.

HDMI cable quality and length affect the video quality. The video might blur, have noise or black edge. Sometimes the video quality might vary when the same video is output with different cables.

2.1 Check Unpacked Decoder

When you receive the decoder from the shipping agency, check whether there is any visible damage or not. The protective materials used for the package of the device can resist most accidental collisions during transportation.

The label at the bottom of the box is very important, since there is serial number and other information. Usually we need you to present the serial number when we provide after-sales service. Do not tear or discard it.

2.2 Device Installation Diagram and Operation

2.2.1 Front Panel

2.2.1.1 1-channel 4K High Definition (H.265) Series and 4-channel 4K High Definition (H.265, with 2 Input Ports) Series

Figure 2-1 Front panel



Table 2-1 Description for front panel

Name	Icon	Function
Power button		Press it for three seconds to boot up or shut down the device. Press it for three times within one second, it can clear device configuration and restore factory defaults.
Power indicator		The indicator becomes on after system boots up.

Name	Icon	Function
Network indicator		The network indicator is blue when abnormal network event occurs (offline, IP conflict and etc.).
USB port		Connect external devices such as mouse, keyboard and flash drive.
Alarm indicator		The alarm indicator becomes on when there is an alarm.
HDD indicator		N/A
IR receiver		N/A
Output indicator		Indicate working status of output port. ● For 1-channel 4K high definition (H.265) series, only the first indicator is effective. ● For 4-channel 4K high definition (H.265, with 2 input ports), indicators 1–4 are effective.

2.2.1.2 9-channel 4K High Definition (H.265) Series and 9-channel 4K High Definition (H.265, with 4 Input Ports) Series

Figure 2-2 Front panel



Table 2-2 Description for front panel

Name	Icon	Function
Power button		Press it for three seconds to boot up or shut down the device. Press it for three times within one second, it can clear device configuration and restore factory defaults.
Power indicator		The indicator becomes on after system boots up.
Network indicator		● The network indicator is blue when abnormal network event occurs (offline, IP conflict and etc.). ● In case of dual Ethernet cards, in multi-address mode, insert one network cable, and the blue

Name	Icon	Function
		indicator turns on.
USB port		Connect external devices such as mouse, keyboard and flash drive.
Alarm indicator		The alarm indicator becomes on when there is an alarm.
HDD indicator		N/A
IR receiver		N/A
Output indicator		Indicate working status of output port. For 9-channel 4K high definition (H.265) and 9-channel 4K high definition (H.265, with 4 input ports), indicators 1–9 are effective.

2.2.1.3 12/15/18/21-channel 4K High Definition (H.265) Series, 12/15/18/21-channel 4K High Definition (H.265, with 4 Input Ports) Series

Figure 2-3 Front panel

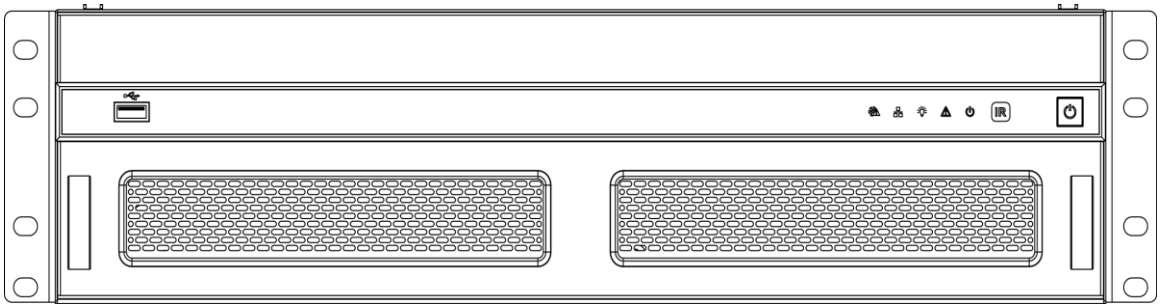


Table 2-3 Description for front panel

Name	Icon	Function
Power button		Press it for three seconds to boot up or shut down the device.
IR receiver		N/A
Power indicator		The indicator becomes on after system boots up.
Alarm indicator		The alarm indicator becomes on when there is an alarm.

Name	Icon	Function
Operation indicator		Operation indicator is on when the device is operating.
Network indicator		N/A
Fan indicator		N/A
USB port		Connect external USB device.

2.2.2 Rear Panel

2.2.2.1 1-channel 4K High Definition (H.265) Series

Figure 2-4 Rear panel

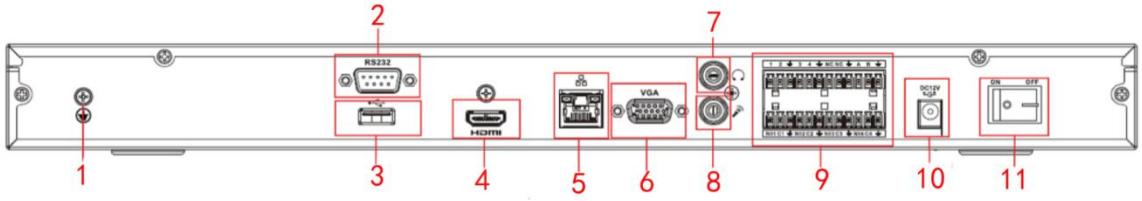


Table 2-4 Description for rear panel

No.	Name	No.	Name	No.	Name
1	Ground screw hole	2	RS–232 port	3	USB port
4	HDMI port	5	Network port (10M/100M/1000M Ethernet port)	6	VGA port
7	Audio talk output port RCA OUT	8	Audio talk input port RCA IN	9	4-channel alarm input, 4-channel alarm output, RS–485 port.
10	Power port	11	Power button	-	-

2.2.2.2 4-channel 4K High Definition (H.265, with 2 Input Ports) Series

Figure 2-5 Rear panel

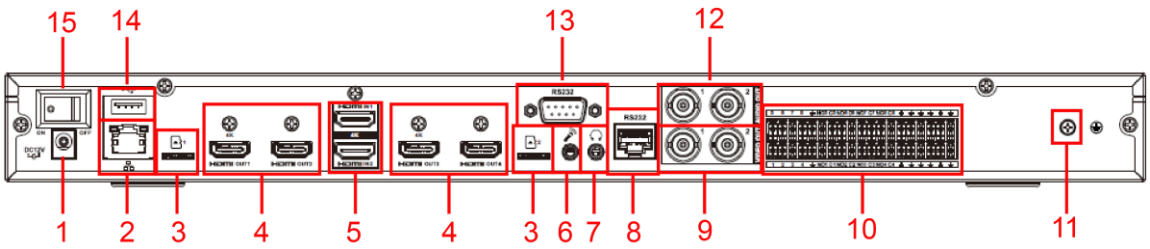


Table 2-5 Description for rear panel

No.	Name	No.	Name	No.	Name
1	Power port	2	Network port (10M/100M/1000M Ethernet port)	3	TF card slot
4	HDMI output port	5	HDMI input port	6	Audio talk input port
7	Audio talk output port	8	RS–232 port of screen control	9	Video output port (BNC)
10	Alarm input, alarm output, standard RS–485 port.	11	Ground screw hole	12	Audio output port (BNC)
13	RS–232 port	14	USB port	15	Power button

2.2.2.3 9-channel 4K High Definition (H.265) Series

Figure 2-6 Rear panel

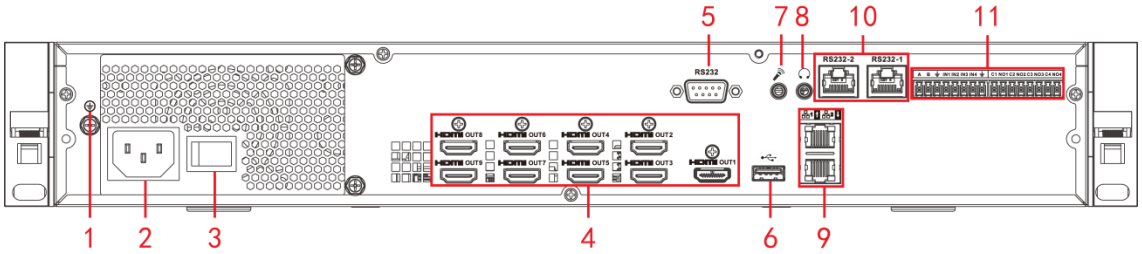


Table 2-6 Description for rear panel

No.	Name	No.	Name	No.	Name
1	Ground screw hole	2	Power port	3	Power button
4	HDMI output port	5	RS–232 port	6	USB port
7	Audio talk input port	8	Audio talk output port	9	Network port (10M/100M/1000M Ethernet port)
10	RS–232 port of screen control	11	Alarm input, alarm output, standard RS–485 port.	–	–

2.2.2.4 9-channel 4K High Definition (H.265, with 4 Input Ports) Series

Figure 2-7 Rear panel

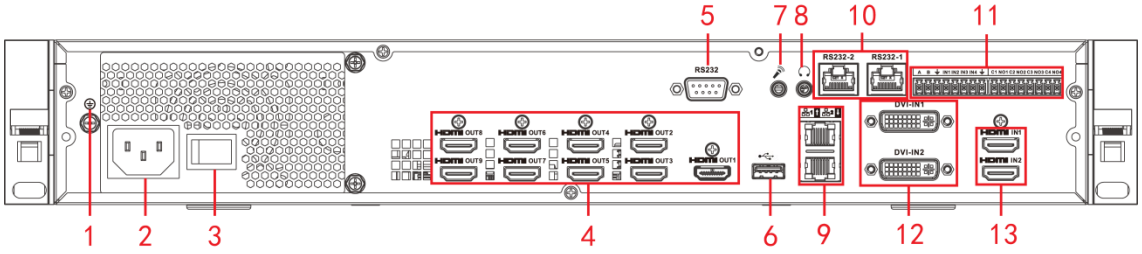


Table 2-7 Description for rear panel

No.	Name	No.	Name	No.	Name
1	Ground screw hole	2	Power port	3	Power button
4	HDMI output port	5	RS–232 port	6	USB 3.0 port
7	Audio talk input port	8	Audio talk output port	9	Network port (10M/100M/1000 M Ethernet port)
10	RS–232 port of screen control	11	Alarm input, alarm output, standard RS–485 port.	12	DVI-I input port
13	HDMI input port	–	–	–	–

2.2.2.5 12/15/18/21-channel 4K High Definition (H.265) Series, 12/15/18/21-channel 4K High Definition (H.265, with 4 Input Ports) Series

Figure 2-8 Rear panel of 21-channel 4K high definition (H.265, with 4 input ports) series

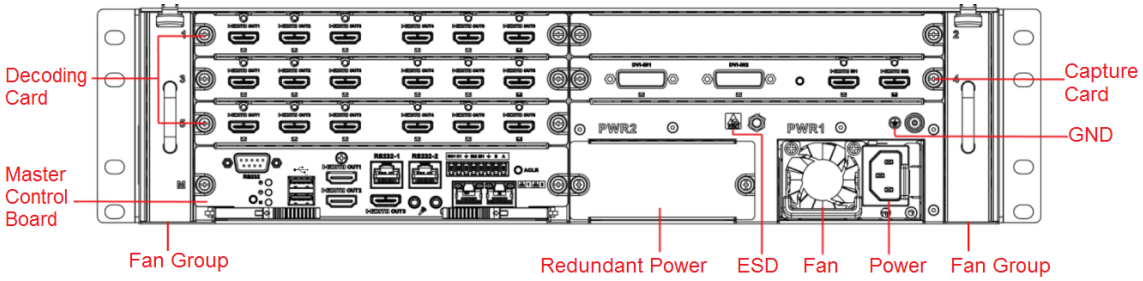


Figure 2-9 Rear panel of 18-channel 4K high definition (H.265, with 4 input ports) series

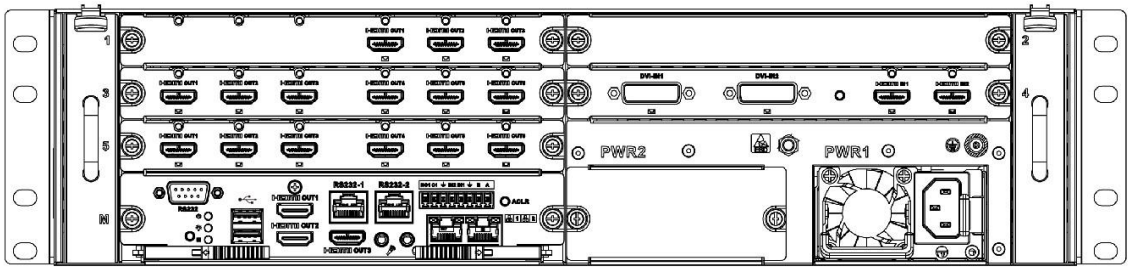


Figure 2-10 Rear panel of 15-channel 4K high definition (H.265, with 4 input ports) series

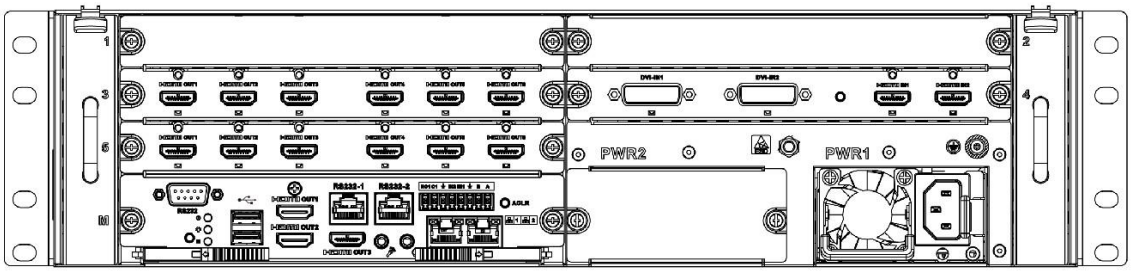
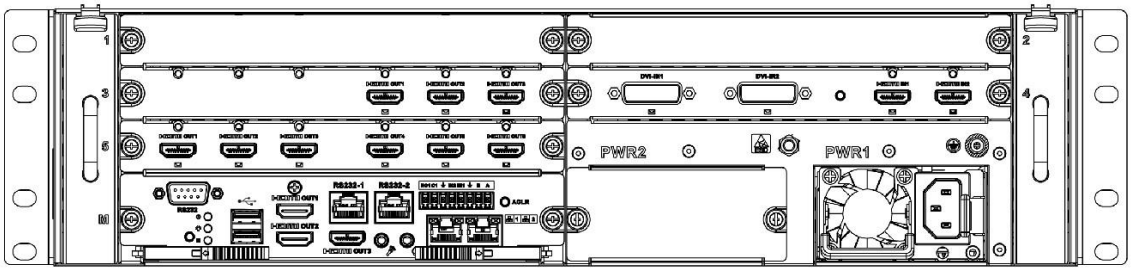


Figure 2-11 Rear panel of 12-channel 4K high definition (H.265, with 4 input ports) series



- For the above four series, they only have different decoding card types. The rest parts are the same.
- For 12/15/18/21-channel 4K high definition series and 12/15/18/21-channel 4K high definition (with 4 input ports) series, the only difference is one series has the capture card and the other does not have capture card. The rest parts are the same.

2.2.2.5.2 Master Control Board

Figure 2-12 Master control board

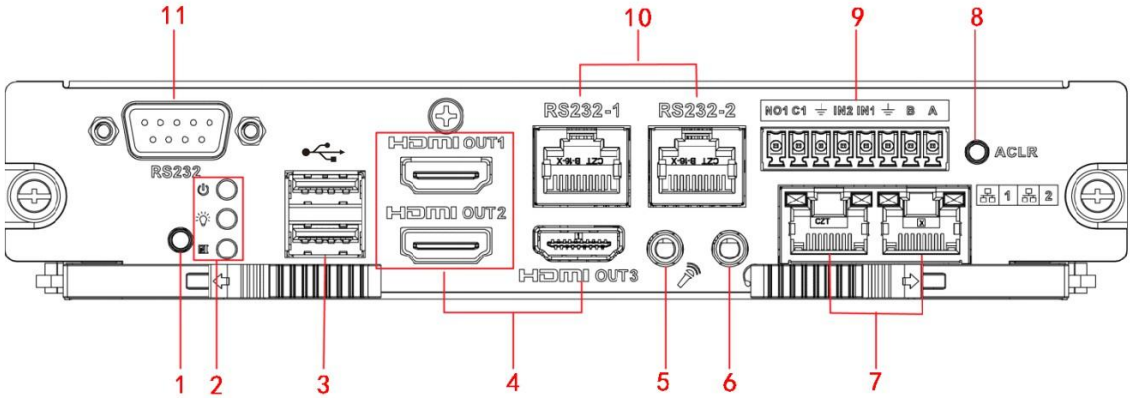


Table 2-8 Description of master control board

No.	Name	No.	Name	No.	Name
1	Default button	2	• Power indicator of master control board • System status indicator • PCI-E status indicator	3	USB port
4	HDMI output port	5	Audio talk input port	6	Audio talk output port
7	Network port	8	Alarm clear button	9	2-channel alarm input, 1-channel alarm output, RS–485 port
10	RS–232 port of screen control	11	RS–232 serial port	–	–

2.2.2.5.3 Decoding Card

Figure 2-13 3-channel decoding card

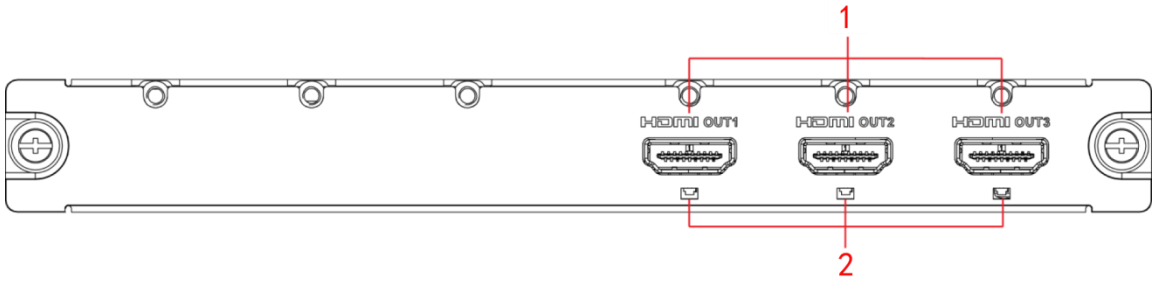


Figure 2-14 6-channel decoding card

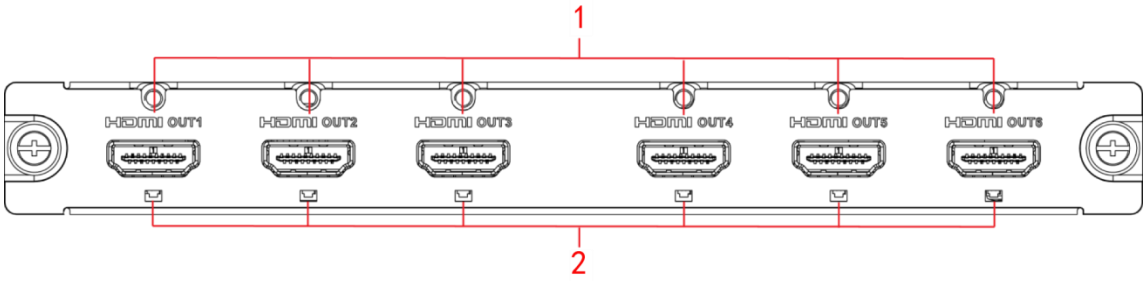


Table 2-9 Description of decoding card

No.	Name	No.	Name
1	HDMI output port	2	Indicator

2.2.2.5.4 Capture Card

Figure 2-15 Capture card

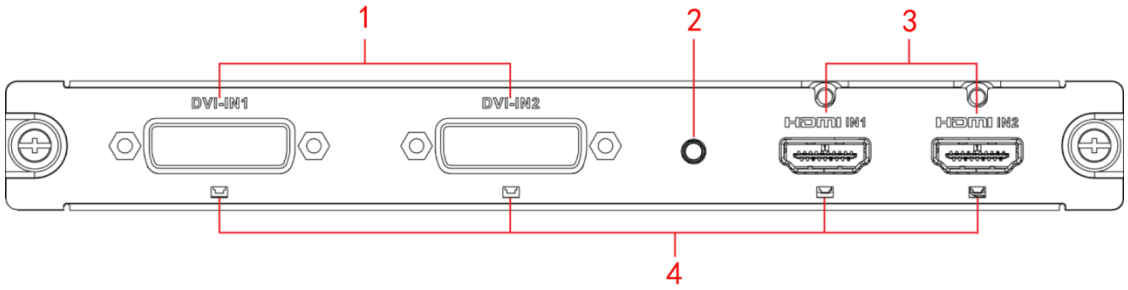


Table 2-10 Description of capture card

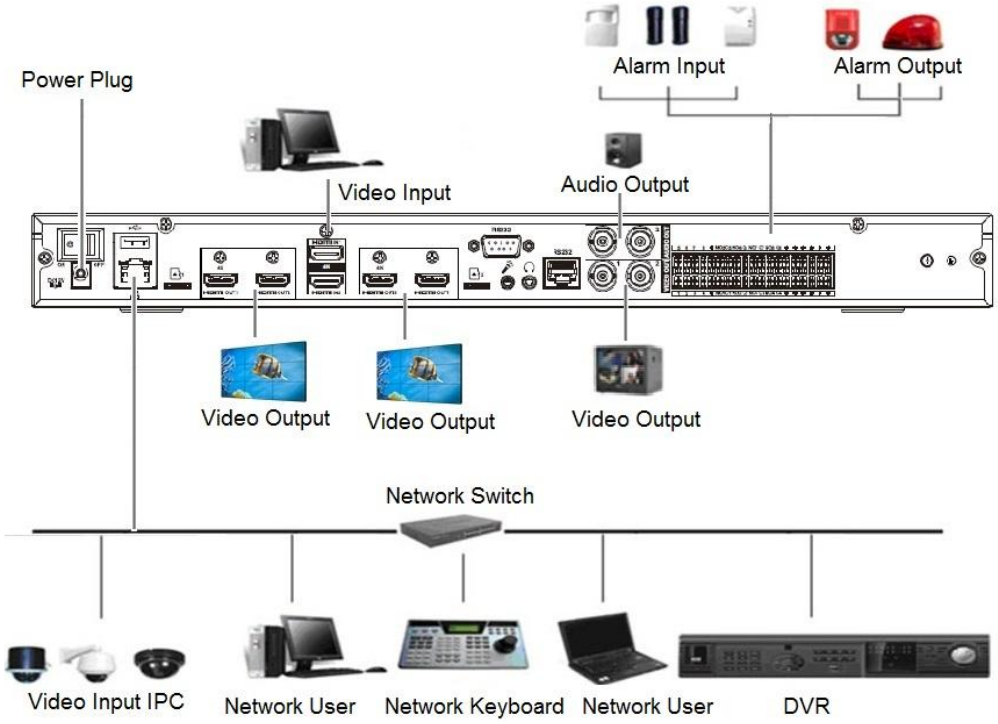
No.	Name	No.	Name	No.	Name
1	DVI input port	2	Start button of backup area	3	HDMI input port
4	Indicator	–	–	–	–

2.2.3 Installation and Connection

2.2.3.1 Installation and Connection

Take 4-channel 4K high definition (H.265, with 2 input ports) series for example. See Figure 2-16.

Figure 2-16 Connection diagram



2.2.3.2 Audio and Video Input Connection

All audio and video data are encoded from the front-end device, and then input to the network with RJ–45 port.

2.2.3.3 Audio Talk Input Connection

- 1-channel 4K high definition (H.265) series adopts RCA port.
- 4-channel 4K high definition (H.265, with 2 input ports) series, 9/12/15/18/21-channel 4K high definition (H.265) series, 9/12/15/18/21-channel 4K high definition (H.265, with 4 input ports) series adopt 3.5mm jack port.

2.2.3.4 Selection and Connection of Video Output Device

- 1-channel 4K high definition (H.265) series has only 1 group of output ports, including 1 VGA port and 1 HDMI port.
- 4-channel 4K high definition (H.265, with 2 input ports) series has 4 HDMI ports and 2 BNC ports.

- 9-channel 4K high definition (H.265) series and 9-channel 4K high definition (H.265, with 4 input ports) series have 9 groups of output ports respectively. Each series has 9 HDMI ports.
- 12-channel 4K high definition (H.265) series and 12-channel 4K high definition (H.265, with 4 input ports) series have 12 groups of output ports respectively. Each series has 12 HDMI ports.
- 15-channel 4K high definition (H.265) series and 15-channel 4K high definition (H.265, with 4 input ports) series have 15 groups of output ports respectively. Each series has 15 HDMI ports.
- 18-channel 4K high definition (H.265) series and 18-channel 4K high definition (H.265, with 4 input ports) series have 18 groups of output ports respectively. Each series has 18 HDMI ports.
- 21-channel 4K high definition (H.265) series and 21-channel 4K high definition (H.265, with 4 input ports) series have 21 groups of output ports respectively. Each series has 21 HDMI ports.

We recommend the industrial monitor to be output device of the decoder. It has the following advantages:

- The industrial monitor is suitable for long-time surveillance. Ordinary civil monitor easily gets aging, damaged or even burnt down after working for a long time.
- The industrial monitor boasts higher definition and color rendition than civil device.
- With strong anti-interference capability, it adapts to complicated application environment, and its stability is far better than ordinary device.

It is unreliable to use TV as video output device. You need to reduce the working hours and control the interference from power supply and other devices. The electric leakage risk resulting from low quality TV might damage other devices.

2.2.3.5 Selection and Connection of Audio Output Device

The audio output signal parameter of decoder is usually over 200mV 1kΩ (BNC). It can directly connect to low-impedance earphone, active speaker, and can drive other sound output devices through amplifier. Output howling easily occurs when external speaker and pickup cannot be separated spatially. You can take measures as follows：

- Adopt pickup with better directing property.
- Adjust volume of the speaker, until it is lower than threshold value of producing howling.
- Using more sound-absorbing materials in decoration, to reduce voice echo and improve acoustics environment.
- Adjust the layout of pickup and speaker, to reduce howling risk.

3 Local Interface Configuration

- Before operating on local interface, connect the display and other control devices (such as mouse and keyboard) to the decoder.
- Local interface operation only applies to 1-channel 4K high definition (H.265) series and 4-channel 4K high definition (H.265, with 2 input ports) series.

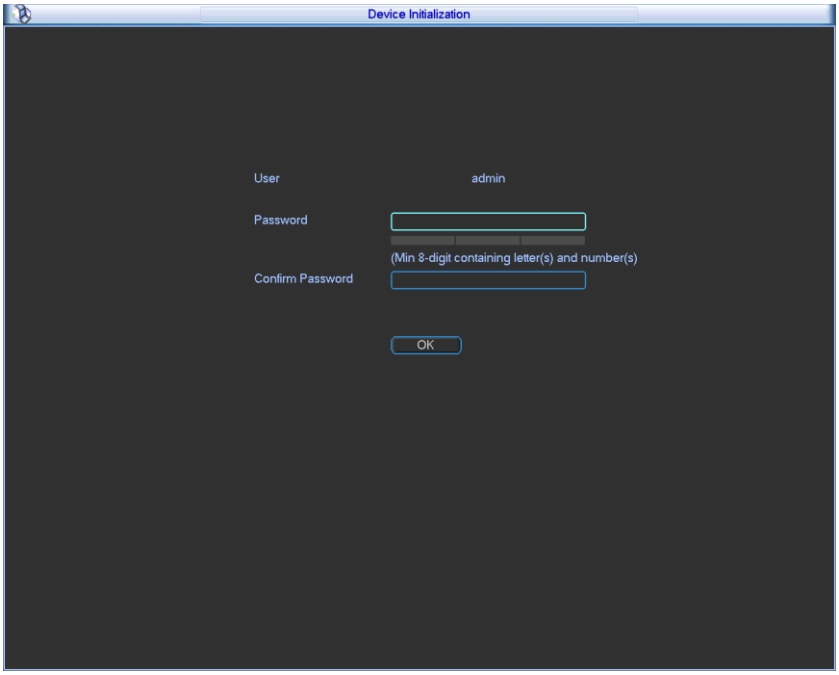
3.1 Software Interface Operation

3.1.1 Entering System Menu

Step 1 Boot up the device.

The **Device Initialization** interface is displayed. See Figure 3-1.

Figure 3-1 Device initialization



Step 2 Set admin user password.

The password can be set from 8 through 32 non-empty characters and contains at least two types from capital letter, lower-case letter, number, and special characters (excluding "'", """, ";", ":" and "&"). **Password** and **Confirm Password** shall be the same. Enter a strong password according to the password strength indication.

Step 3 Click **OK** to complete the settings.

Step 4 Click right mouse button.

The **System Login** interface is displayed. See Figure 3-2.

Figure 3-2 Login



Step 5 Enter password, and then click **OK** to login.

The account will be locked if wrong password is entered for 5 times within every 30 minutes.

3.1.2 Main Interface

After login, the main interface is displayed. See Figure 3-3. Refer to Table 3-1 for details.

Figure 3-3 Main interface

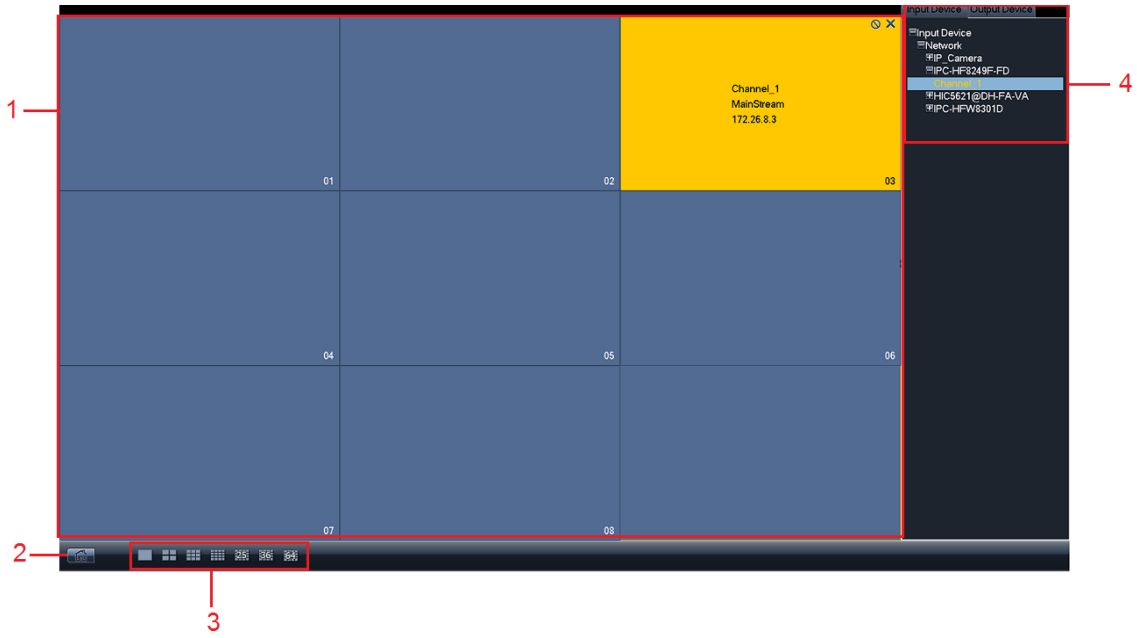


Table 3-1 Icons

No.	Name	Functional description
1	Display window	● Display the splitting diagram of present output screen or fusion screen. ● Click one channel, and the corresponding area turns yellow. It means that the channel has been selected. ● Support to display 1, 4, 9, 16, 25, 36 and 64 screens at the same time.
2	Short-cut menu	Click to enter main menu interface.

No.	Name	Functional description
3	Display control area	There are 7 display modes, including single, 4, 9, 16, 25, 36 and 64 channels. (High-definition decoding card is different from standard definition decoding card.)
4	Input device and output device	Display input/output device of each slot and channel. ● Output Device Click to switch to output device list. ● Input Device Click to switch to input device list.

3.1.3 Menu Introduction

Click right mouse button on the main interface. The system pops up functional menu. See Figure 3-4. Refer to Table 3-2 for details.

Figure 3-4 Functional menu

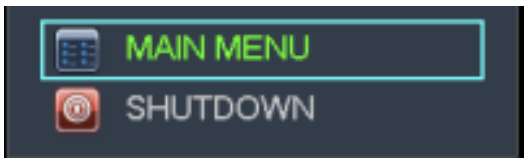


Table 3-2 Functional description

Name	Description
Main menu	Display main menu, including general, network, BPS, remote device, version and shutdown.
Shutdown	Shut down the device.

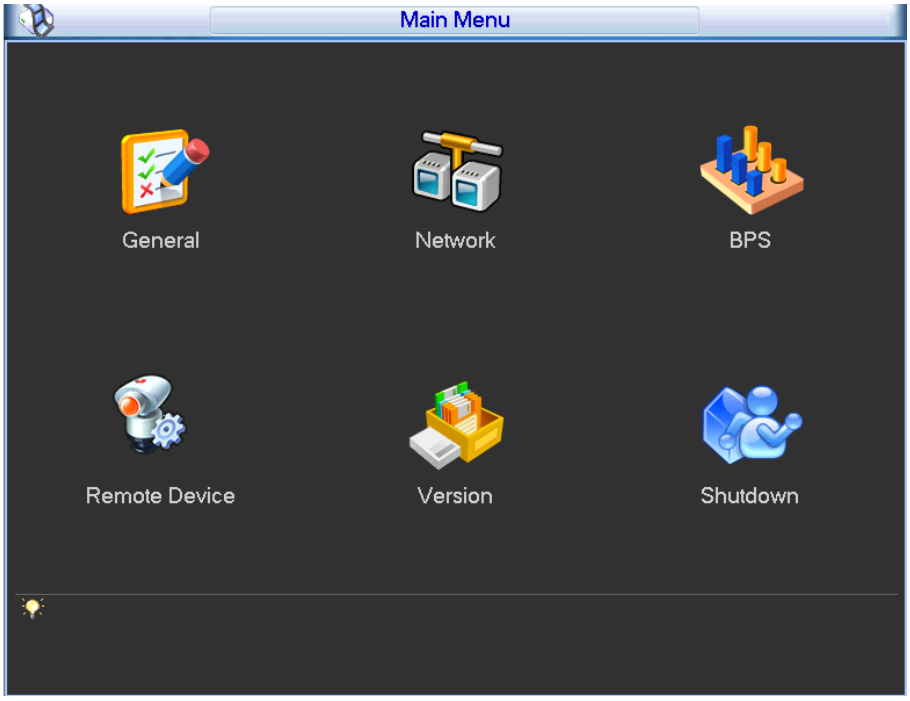
3.2 Advanced Operation of Menu

3.2.1 Main Menu

Main menu includes general, network, BPS, remote device, version and shutdown. See Figure 3-5.

- All the sub-menu settings will take effect after they are saved. Otherwise, the settings are invalid.
- The check box is selected when it is filled with ■ or ticked, and it is not selected when it is not filled. This note applies to the whole document.

Figure 3-5 Main menu



3.2.2 Menu Navigation

Table 3-3 Menu navigation

Main menu	Description
General	Set system time, device no. and other parameters.
Network	Set IP address, video data transmission protocol and other parameters.
BPS	Display real-time channel status, resolution and frame rate information.
Remote device	Add and delete remote device.
Version	You can view the version details such as system hardware feature, software version and release date.
Shutdown	Log out menu user, shut down system, restart system and switch user.

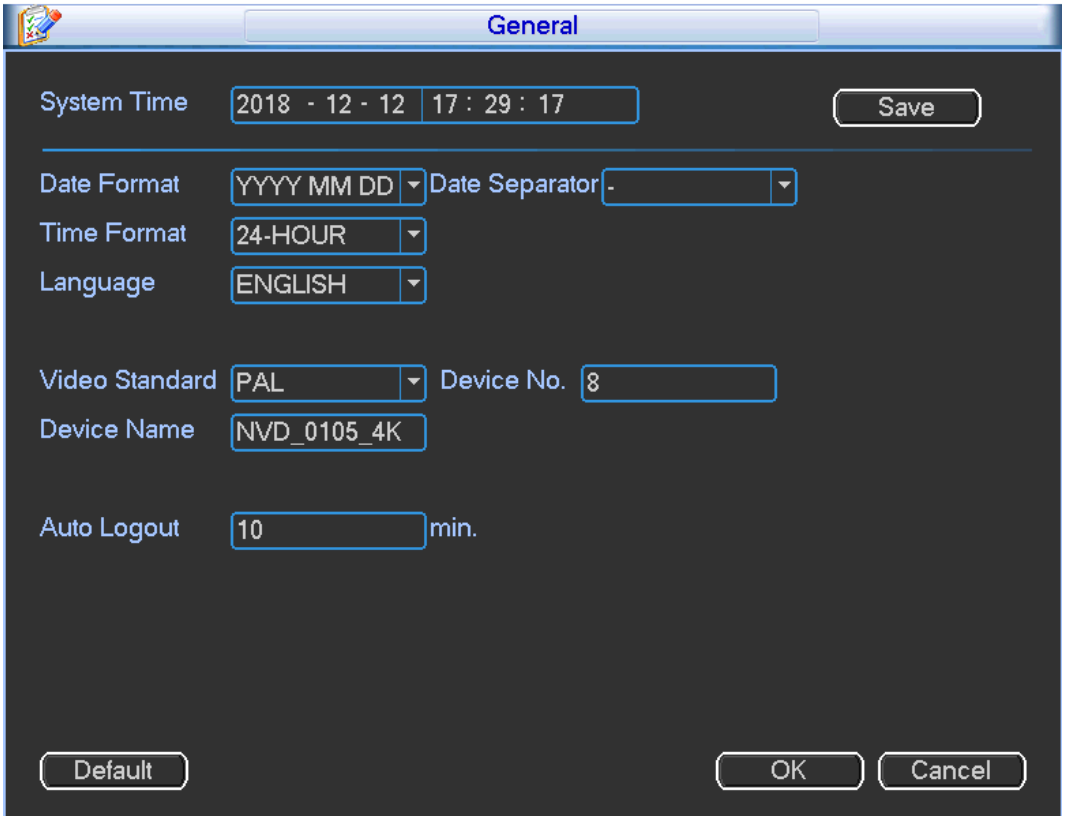
3.2.3 General

You can configure basic information of the device, such as device information, system time, and date format.

Step 1 In the main menu, select **General**.

The **General** interface is displayed. See Figure 3-6.

Figure 3-6 General



Step 2 Configure parameters according to your actual need. Refer to Table 3-4 for details.

Table 3-4 General parameters description

Parameter	Description
System Time	Modify the current system date and time, and then click **Save**.
Date Format	Select date display format, including YYYY MM DD, MM DD YYYY and DD MM YYYY.
Date Separator	Separator of date format.
Time Format	Select 24-hour or 12-hour.
Language	Switch menu language, including Simplified Chinese and English.
Video Standard	Select video standard. It is PAL by default.
Device No.	Enter a number for the device.
Device Name	You can customize device name.
Auto Logout	Set menu standby time to be 0–60 minutes. There is no standby time when it is 0 minute. If the standby time is set, the system will log out current user after the idle period. You need to login again to operate the menu.

Step 3 Click **OK** to complete the settings.

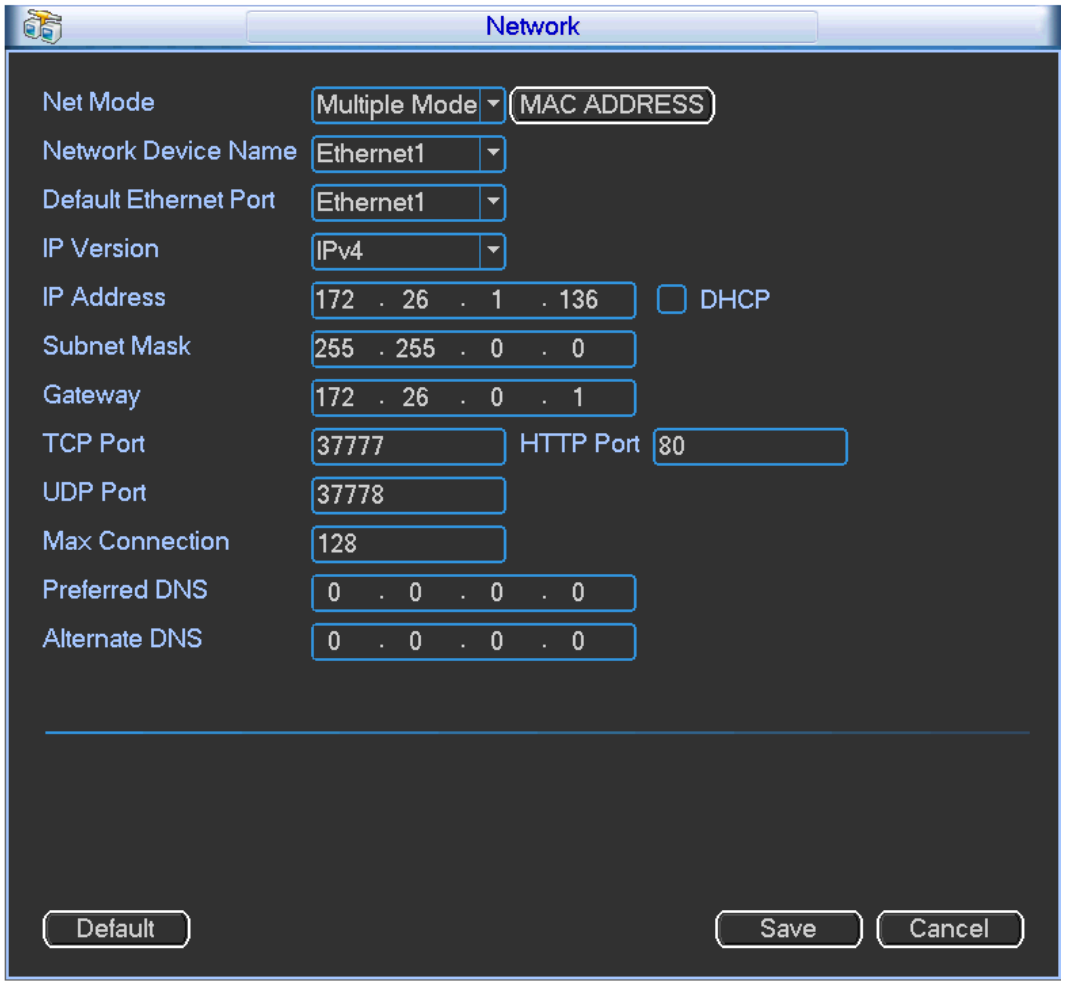
3.2.4 Network

It is to set device network parameters, so that device can communicate with devices in the network.

Step 1 In the main menu, select **Network**.

The **Network** interface is displayed. See Figure 3-7.

Figure 3-7 Network



Step 2 Configure parameters according to your actual need. Refer to Table 3-5 for details.

Table 3-5 Network parameters description

Parameter	Description
Net Mode	The default setting is Multiple Mode.
Network Device Name	Ethernet 1–2 are available.
Default Ethernet Port	Ethernet 1–2 are available.
IP Version	It is IPv4 by default.
IP Address	Enter numbers to change the IP address, and then configure its **Subnet Mask** and **Gateway**.
DHCP	Select the **DHCP** box, the system automatically obtains an IP address. When the **DHCP** function is enabled, the IP address, gateway, and subnet mask cannot be set manually. ● If DHCP is effective, the obtained information will be displayed in the **IP Address** box, **Subnet Mask** box and **Gateway** box. If DHCP is not effective, they all display 0. ● To view manually set IP when DHCP is not effective, you shall disable DHCP first, and then the device will display IP info that is not obtained through DHCP. If DHCP is effective, if DHCP is disabled, static IP information will restore default settings. You need to configure IP again.

Parameter	Description
Subnet Mask	Enter subnet mask and gateway corresponding to the IP address. IP address and gateway must be in the same network segment.
Gateway	
TCP Port	It is 37777 by default. You can configure port according to your actual need.
HTTP Port	It is 80 by default. You can configure port according to your actual need.
UDP Port	It is 37778 by default. You can configure port according to your actual need.
Max Connection	Connection is 0 to 128. If it is 0, no network user connection is allowed. Max connection is 128.
Preferred DNS/Alternate DNS	Configure the address of DNS server.

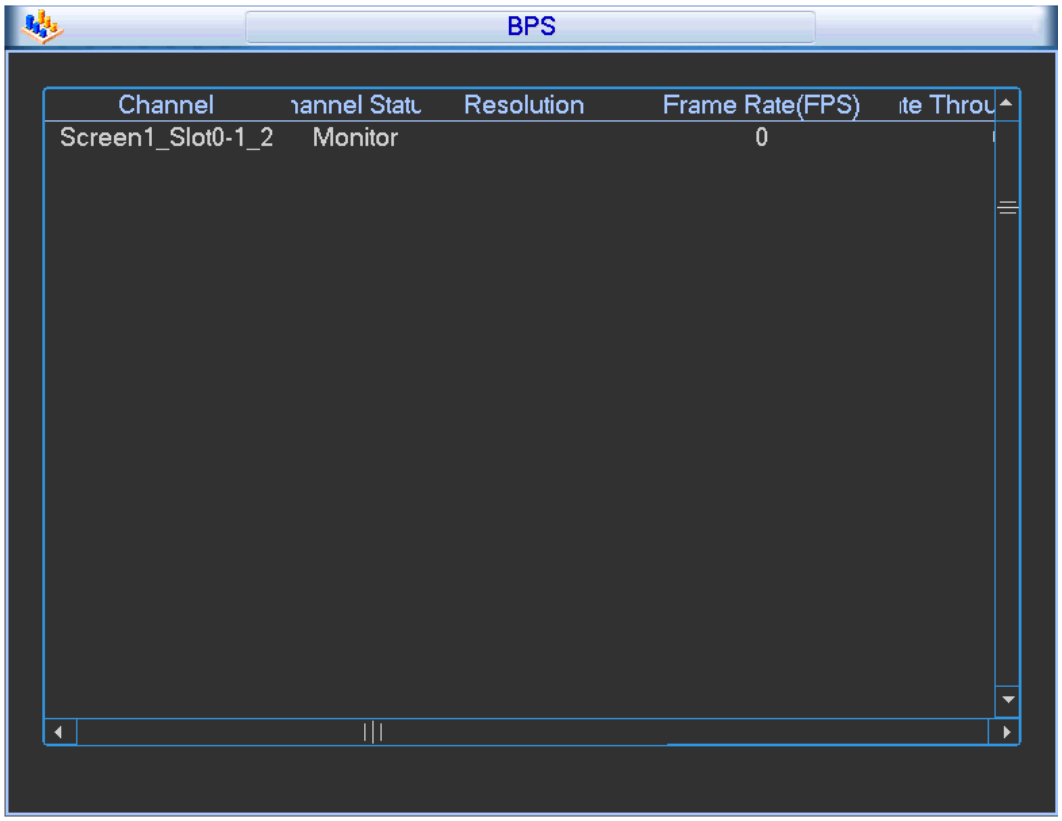
Step 3 Click **Save**.

3.2.5 BPS

Display real-time channel status, resolution and frame rate information.

In the main menu, select **BPS.** The **BPS** interface is displayed. See Figure 3-8.

Figure 3-8 BPS

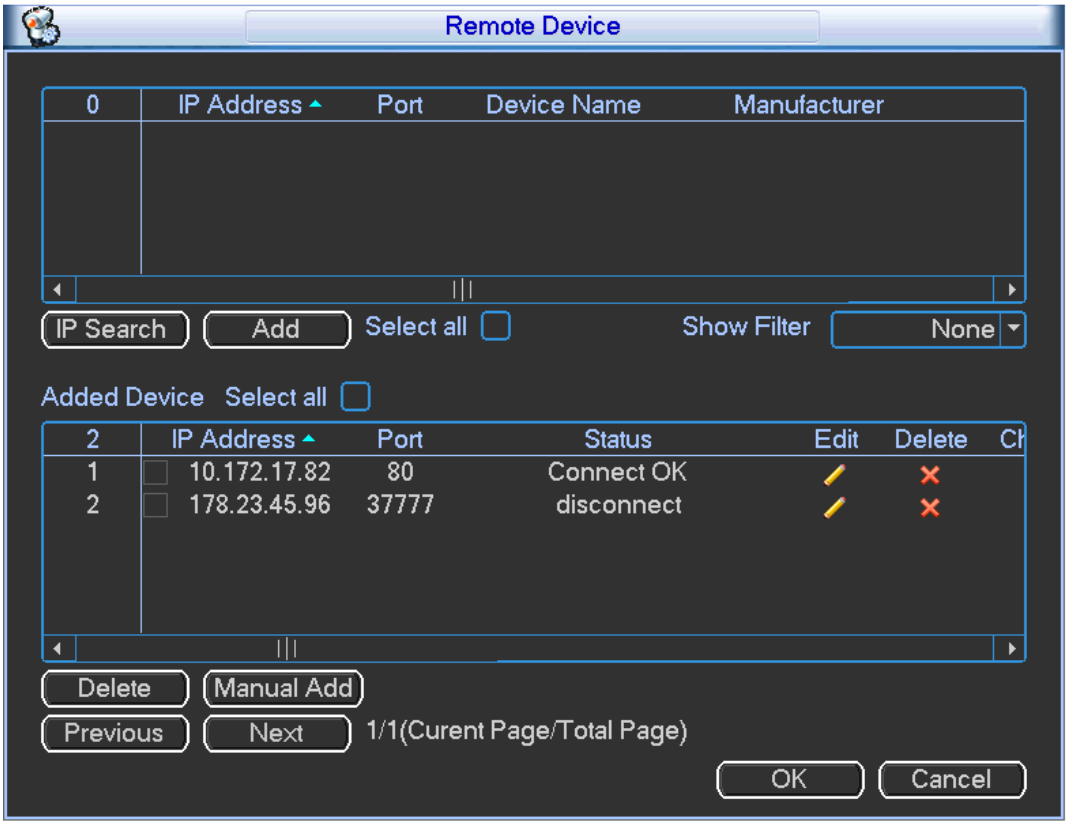


3.2.6 Remote Device

Add remote device manually or automatically, edit, delete and upgrade the remote device.

In the main menu, select **Remote Device**. The **Remote Device** interface is displayed. See Figure 3-9.

Figure 3-9 Remote device



3.2.6.1 Search

Step 1 Click **IP Search**.

The searched devices are displayed.

Step 2 Tick the check box before one device, and then click **Add**.

The device will appear in the **Added Device** area.

Tick the check box of **Select all**, to select all devices.

In the drop-down list on the right of **Show Filter**, select filter criteria, and fill in the filter value, to search the filtered device information.

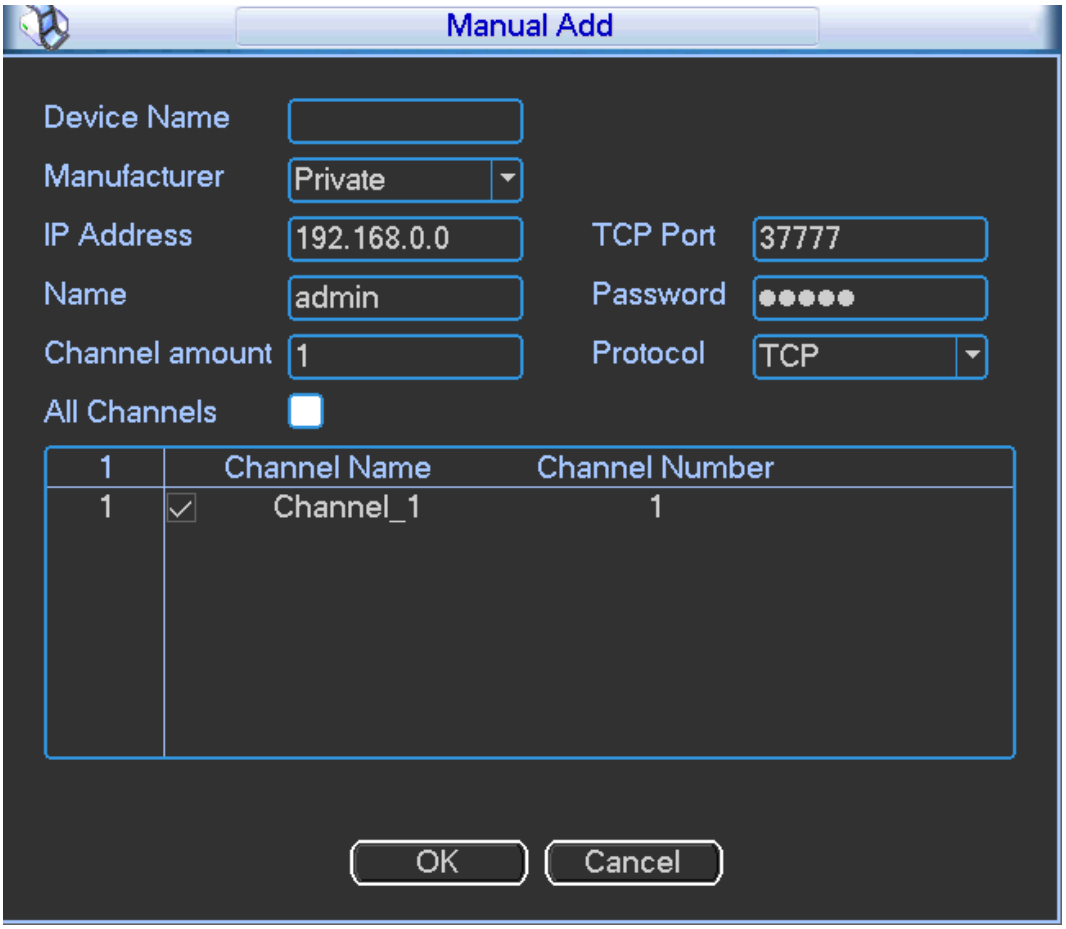
Step 3 Click **OK** to complete the settings.

3.2.6.2 Manual Add

Step 1 Click **Manual Add**.

The **Manual Add** interface is displayed. See Figure 3-10.

Figure 3-10 Manual add



Step 2 Configure parameters according to your actual need. Refer to Table 3-6 for details.

Table 3-6 Manual add parameters description

Parameter	Description
Device Name	Fill in device name you want to add, and tick the check box to fill it with white, so as to enable the device.
Manufacturer	Select a manufacturer according to the actual situation. You can add manufacturers, including Private, Panasonic, Sony, Dynacolor, Samsung, AXIS, Sanyo, Pelco, Arecont, Onvif, Gosuncn, LG, Watchnet, Canon, PSIA, GB28181, AirLive and JVC.
IP Address	Enter the IP address of remote device.
TCP Port	TCP service port. The default setting is 37777. You can configure this parameter according to your actual situation.
Name and Password	Enter the user name and password to login the remote device.
Protocol	Select protocol of remote device.
Channel Amount	Select the channel number that you want to connect. You can select all channels.

Step 3 Click **OK** to complete the settings.

The device will appear in the **Added Device** area.

3.2.6.3 Edit Remote Device

Click . The **Edit** dialog box pops up. Refer to Table 3-6 to edit remote device information, and click **OK**.

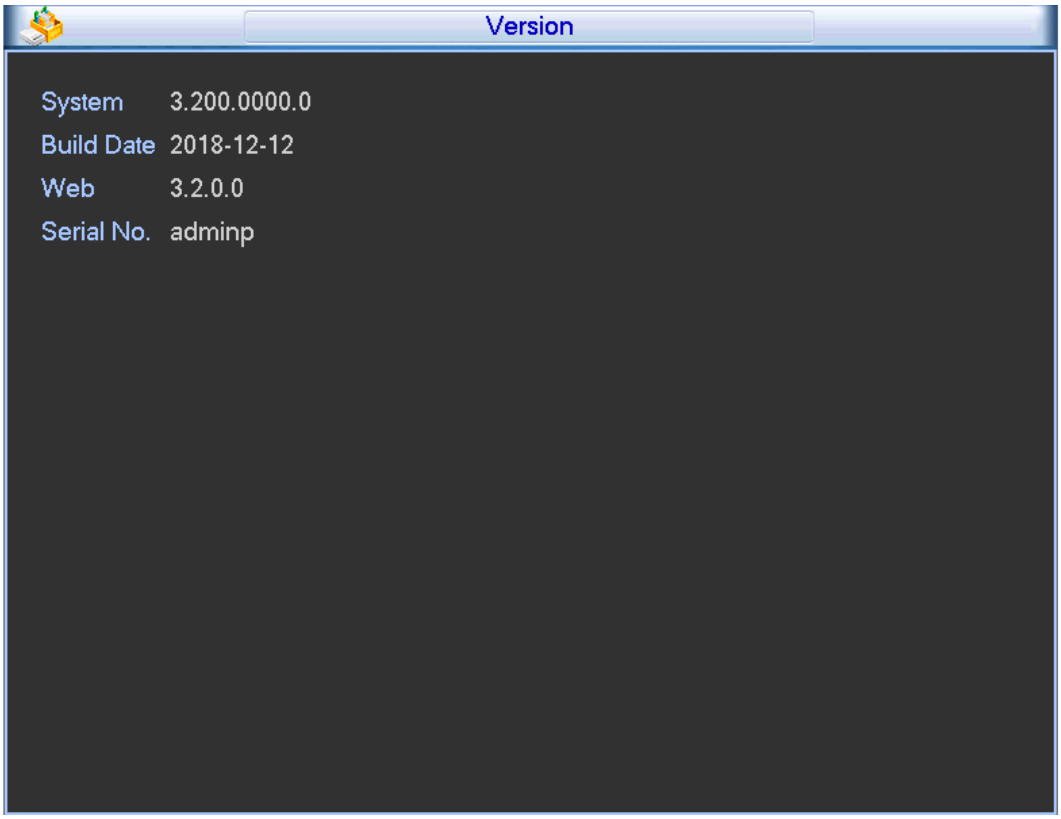
3.2.6.4 Delete Remote Device

Click or select an added remote device, and then click **Delete**.

3.2.7 Version

In the main menu, select **Version**. The **Version** interface is displayed. See Figure 3-11. You can view the version details such as system version, build date, web version and serial number.

Figure 3-11 Version

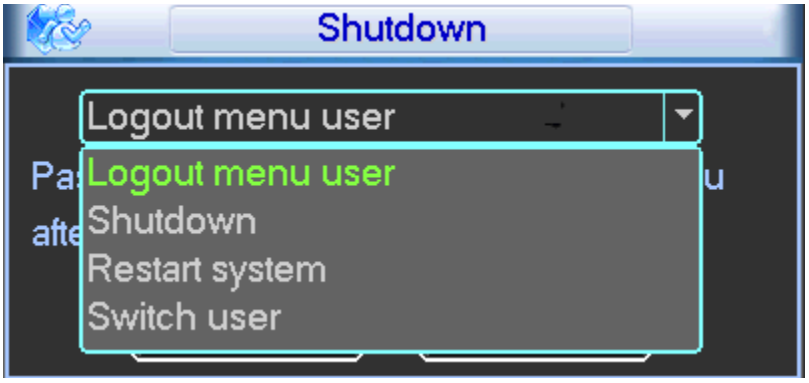


3.2.8 Shutdown

You can log out menu user, shut down, restart system and switch user.

In the main menu, select **Shutdown**. The **Shutdown** interface is displayed. See Figure 3-12.

Figure 3-12 Shutdown



- Log out menu user: Exit the menu, and you need to input password to enter the menu again.
- Shutdown: Exit the system, and turn off power supply.
- Restart system: Exit the system, and restart the system.
- Switch User: Log out current user, and switch to another user.

4 Web Operations

This chapter applies to 1-channel 4K high definition (H.265) series and 4-channel 4K high definition (H.265, with 2 input ports) series. Most interfaces take 4-channel 4K high definition (H.265, with 2 input ports) series for example. It is just for your reference. For other models, please refer to their actual interface.

4.1 Start

Connect the device to the power and then press the power button on the rear panel. You can see the power indicator light turns on and device boots up. The system is in multiple-window output mode by default.

4.2 Shutdown

You can press power button on the front panel for three seconds to shut down the device.

When decoder is working, if the power is cut off or the device is shut down forcibly, the system can automatically connect to the front-end device and restore previous working status, once the power connection becomes normal.

4.3 Network Connection

Step 1 Connect the Ethernet port of the decoder and the PC NIC port with network cable.

Step 2 Set PC and decoder in the same IP segment.

Default IP address is 192.168.1.108.

Step 3 With computer, ping ***.***.***.***(IP address of decoder) to check whether connection is OK or not. Usually the returned TTL value should be less than or equal to 64.

Step 4 Open Internet Explorer, enter IP address of decoder in the address bar, and then press Enter.

WEB controls can be recognized and downloaded automatically. System can download the latest Web controls and remove the old one.

Step 5 After login the WEB interface, change IP address of decoder according to the actual situation. Refer to "4.7.2 Network" for details.

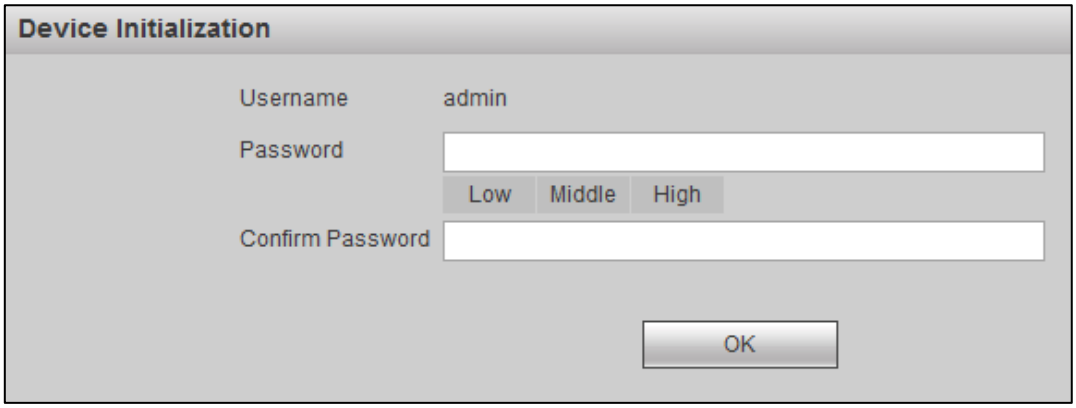
Connect the decoder to network.

4.4 System Login

Step 1 Enter IP address of decoder in the address bar of the browser (take 192.168.1.108 for example). Enter http://192.168.1.108 in the address bar, and then press Enter.

After connection succeeds, the **Device Initialization** interface is displayed. See Figure 4-1.

Figure 4-1 Device initialization



Step 2 Set admin user's password.

The password can be set from 8 through 32 non-empty characters and contains at least two types from capital letter, lower-case letter, number, and special characters (excluding "'", """, ";", ":" and "&"). **Password** and **Confirm Password** shall be the same. Enter a strong password according to the password strength indication.

Step 3 Click **OK**.

The login interface is displayed. See Figure 4-2.

Figure 4-2 Login



Step 4 Enter username and password, and then click **Login**.

See Figure 4-3 or Figure 4-4.

- The interface might be different depending on the model you purchased. The actual interface shall prevail.
- 1-channel 4K high definition (H.265) series displays Figure 4-3, and 4-channel 4K high definition (H.265, with 2 input ports) series displays Figure 4-4.

Figure 4-3 Operation interface (1)

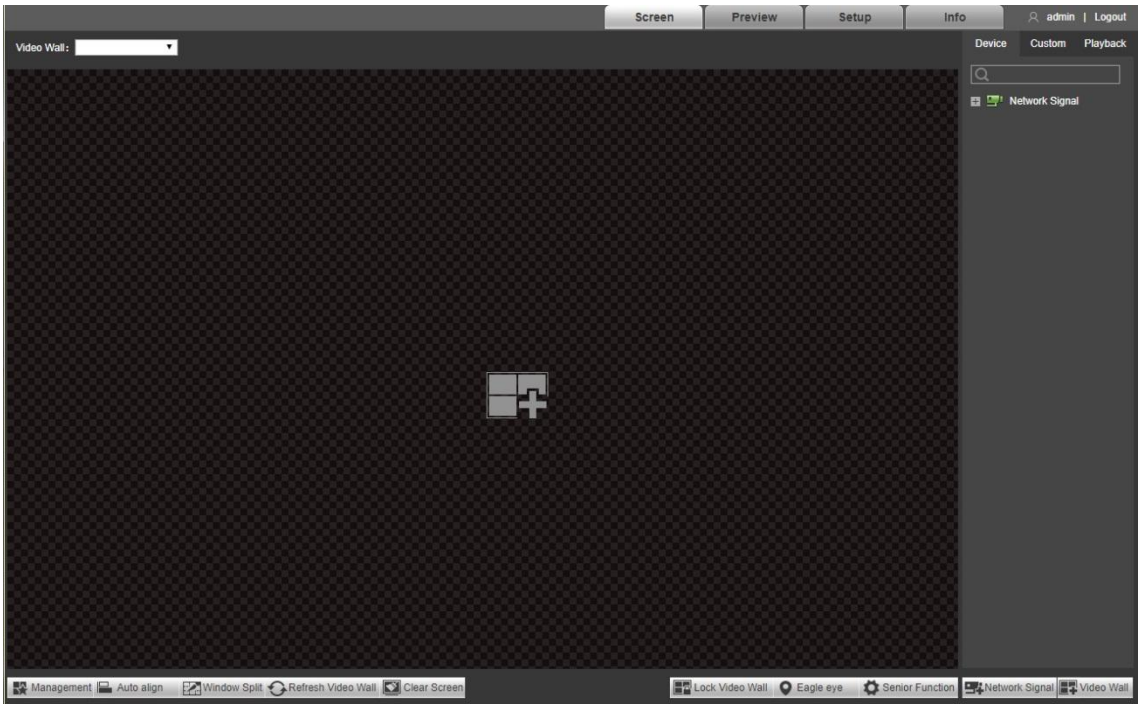
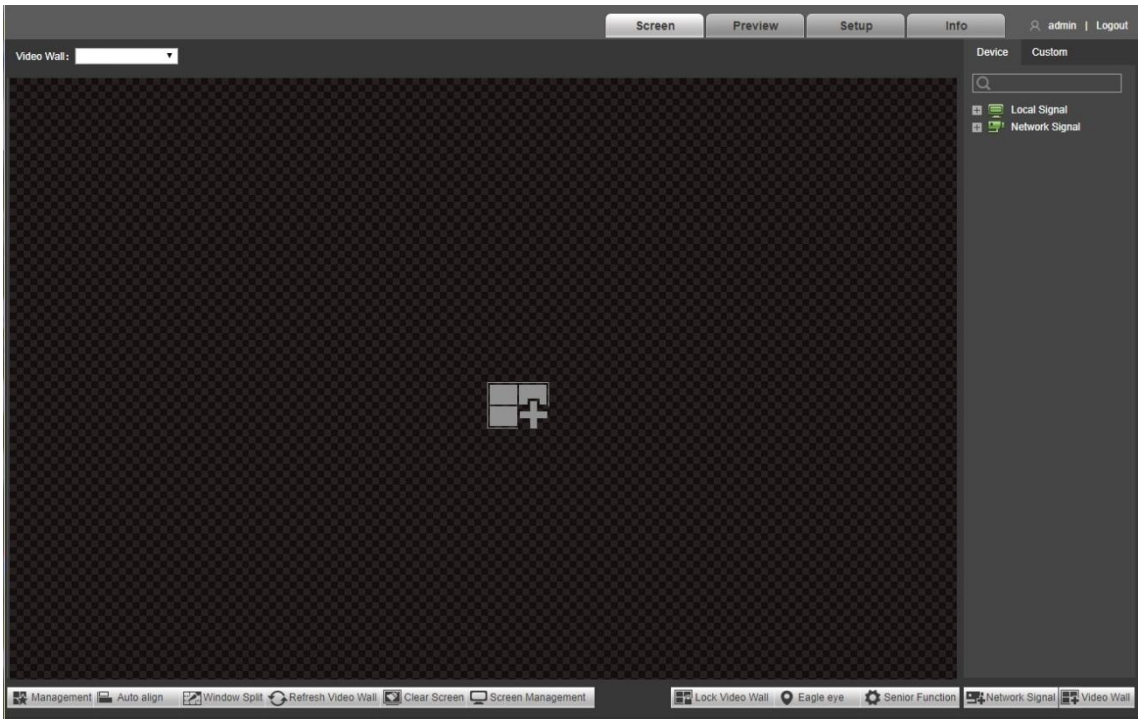


Figure 4-4 Operation interface (2)



Step 5 Install or load controls as prompted by the system.

Click **Logout** to log out the system.

4.5 Screen

Click **Screen** tab. The **Screen** interface is displayed. See Figure 4-5 or Figure 4-6. Refer to Table 4-1 for details.

- The interface might be different depending model you purchased. The actual interface shall prevail.
- 1-channel 4K high definition (H.265) series displays Figure 4-5, and 4-channel 4K high definition (H.265, with 2 input ports) series displays Figure 4-6.

Figure 4-5 Screen (1)

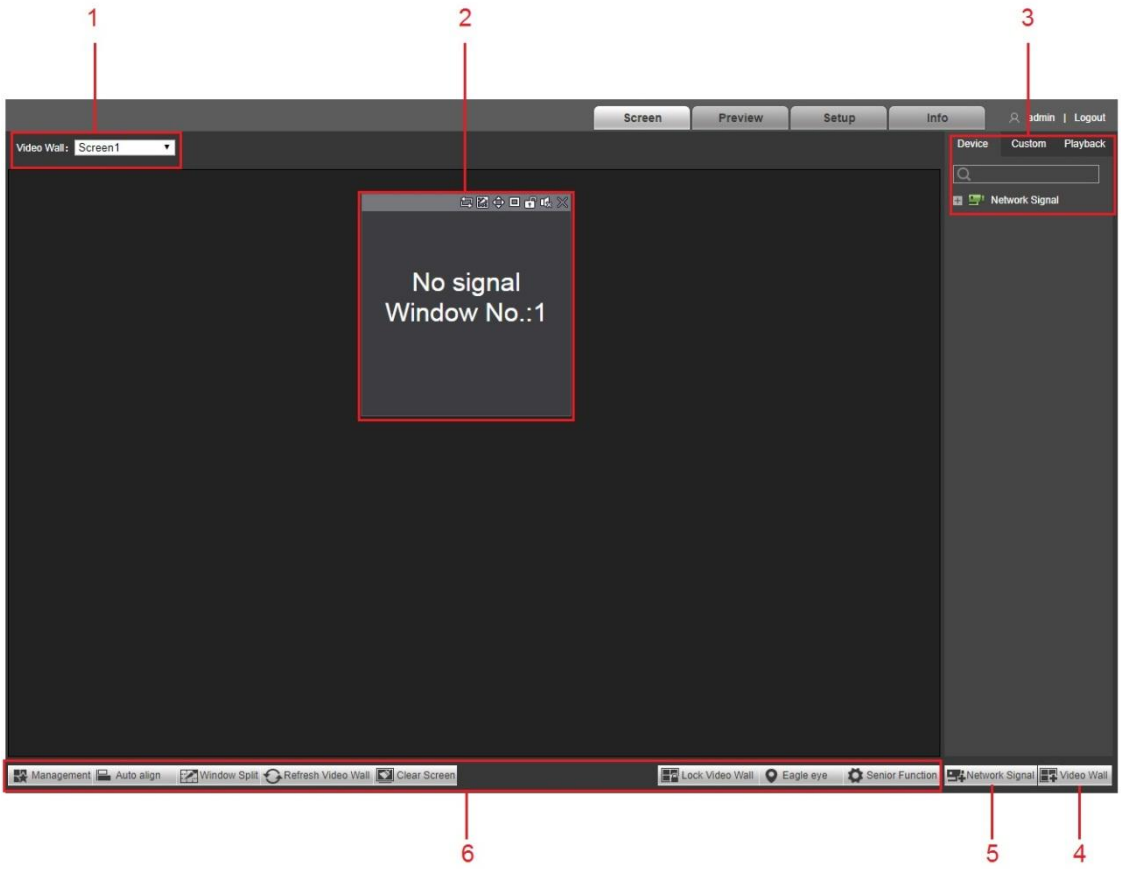


Figure 4-6 Screen (2)

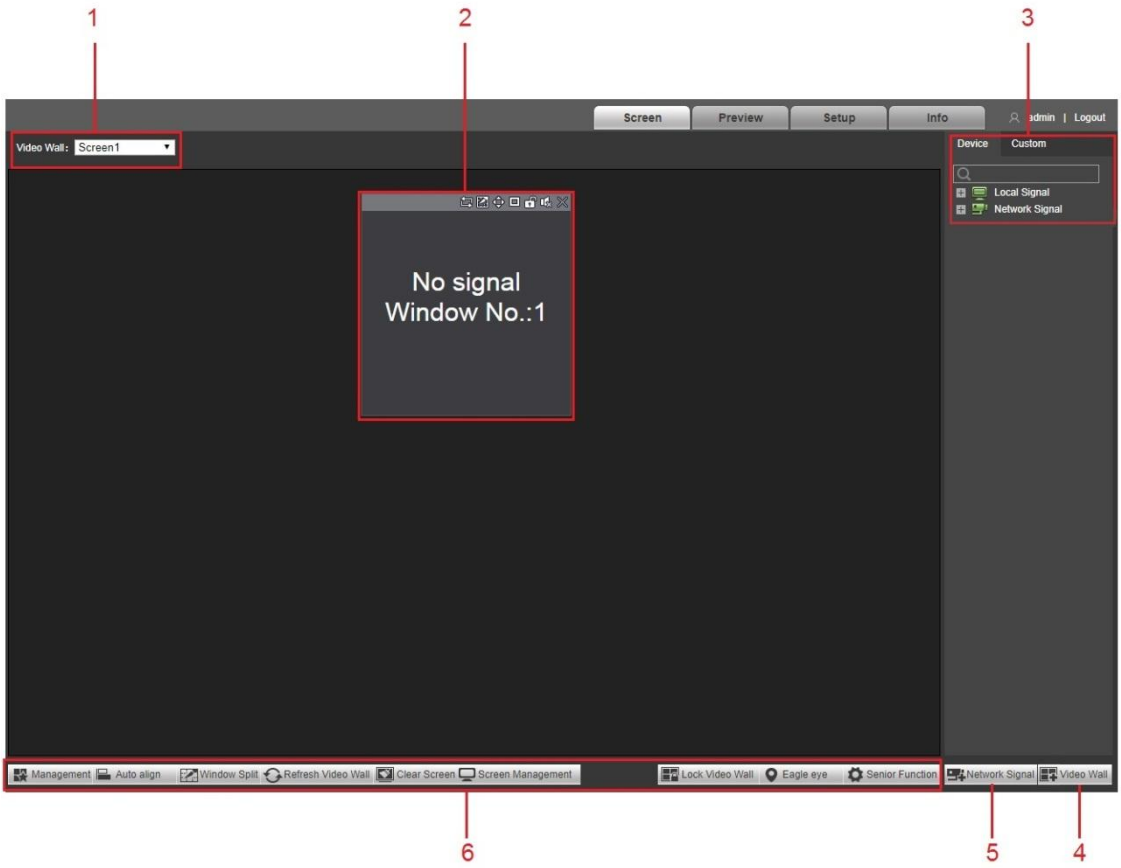


Table 4-1 Screen function description

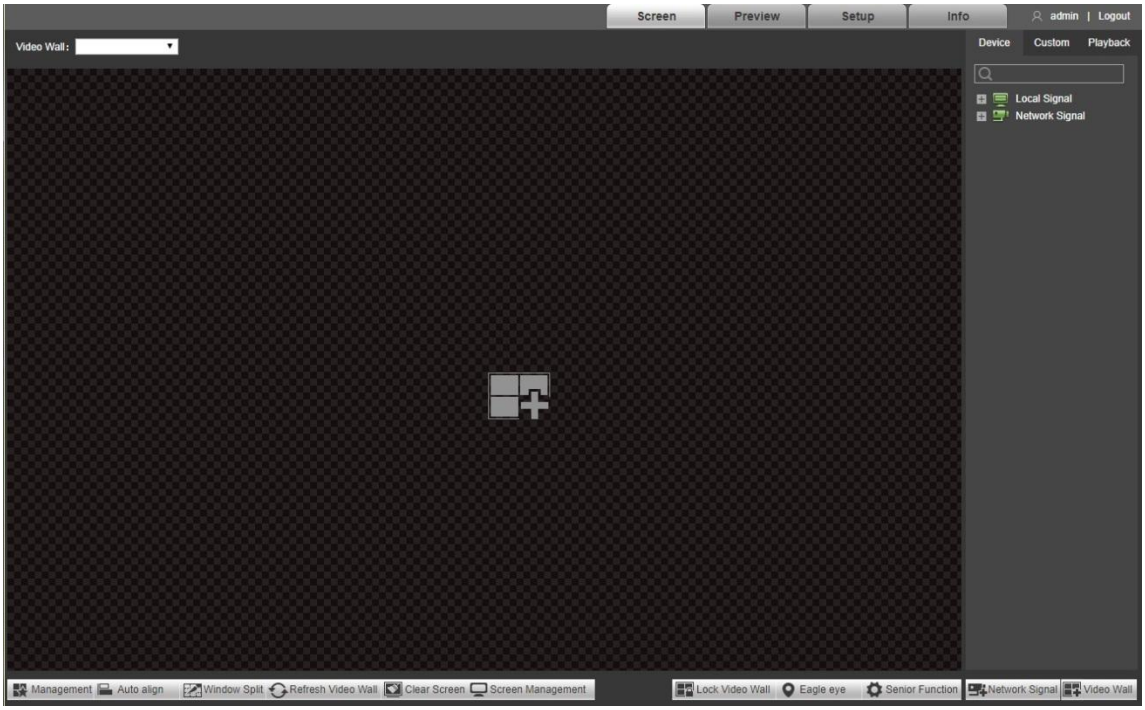
No.	Name	Description
1	Video wall selection area	After you add a video wall, you can select the video wall in the drop-down list of **Video Wall**. Refer to "4.5.1 Adding Video Wall" for details.
2	Window configuration	Add window, adjust window, put the window at the bottom and turn off the signal. Refer to "4.5.2 Window Configuration" for details.
3	Signal management	Select different tabs to operate. ● In **Device** tab, you can view local signal and channel information, preview and display the signal on the video wall. 1-channel 4K high definition (H.265) series does not support local signal. ● In **Custom** tab, you can view signal group information, and configure signal tour on the video wall. ● In **Playback** tab, you can play back the recorded video of storage device. Only 1-channel 4K high definition (H.265) series supports the playback function.

No.	Name	Description
4	Video wall	Click Video Wall to enter **Video Wall Setup** interface. You can add, modify and delete video wall. Refer to "4.7.5.1 Video Wall Setup" for details.
5	Network signal	Click Network Signal to enter **Network Signal** interface. You can add, modify and delete device. Refer to "4.7.4.1 Network Signal" for details.
6	Video wall management	You can carry out management, auto-align, window-split, refresh video wall, clear screen and screen management. Lock or unlock video wall, view eagle eye, zoom in and out the window, carry out PTZ control, set background and show screen ID. Refer to "4.5.4 Video Wall Management " for details. 1-channel 4K high definition (H.265) series does not support screen management.

4.5.1 Adding Video Wall

You need to add video wall when you login for the first time. See Figure 4-7.

Figure 4-7 Adding video wall



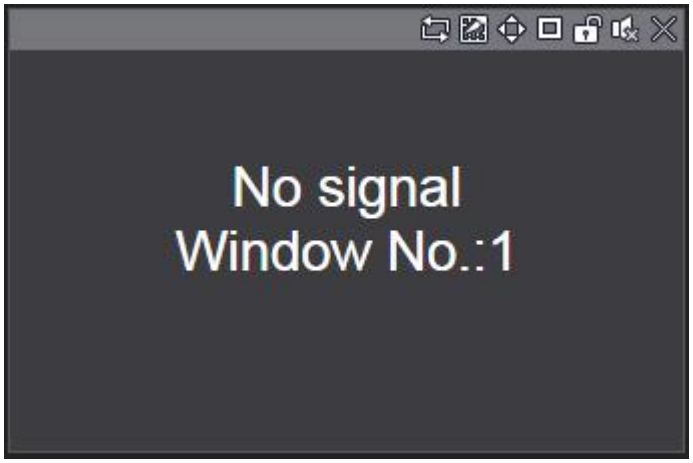
Click  in the center of interface to enter **Video Wall Setup** interface. Refer to "4.7.5.1 Video Wall Setup" for details.

4.5.2 Window Configuration

4.5.2.1 Adding a Window

Press and hold the left mouse button on the video wall, drag and form a window. See Figure 4-8.

Figure 4-8 Adding a Window

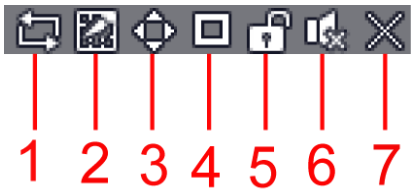


- Select a window, press and move the left mouse button. The selected window will be moved to the required position.
- Select a window, drag any direction control point to change the dimension of the selected window.
- Select a window, right-click and select **Bottom**. The selected window will be at the bottom of other windows.
- Select a window that is displaying signal, right-click and select **Signal Off**. The signal can be turned off.

4.5.2.2 Adjusting Window

The operation icons are displayed at the top right corner of the window. See Figure 4-9.

Figure 4-9 Window adjustment icons



Refer to Table 4-2 for details.

Table 4-2 Window adjustment icon description

No.	Name	Description
1	Start/stop signal tour	Click the icon to start signal tour, and the icon becomes . Click to stop signal tour. Configure the tour setting of signal. Refer to "4.5.3.4 Signal Tour" for details.

No.	Name	Description
2	Split	Split the window, including 2-split (horizontal/vertical), 4-split, 9-split and 16-split. When the window is maximized or pasted to the screen, the icon becomes . Click the icon to drag the window anywhere.
3	Paste screen	Click the icon to paste the window to the screen.
4	Paste window	Click the icon, so the window will be pasted to surrounding windows.
5	Lock	Click the icon to lock the window. Then, window position and size cannot be adjusted. Click to unlock the window.
6	Audio	Click the icon to turn on/off the audio.
7	Close	Click the icon to close this window.

4.5.3 Signal Configuration

You can select signal directly, or enter signal name in search bar to search signal.

4.5.3.1 Device Tree

1-channel 4K high definition (H.265) series does not support local signal.

Device tree displays all local signals and the added network signals.

- Local signal: Display local signal sources. Refer to "4.7.4.2 Local Signal" for details.
- Network signal: Display the added signal sources. Click Network Signal to add. Refer to "4.7.4.1 Network Signal" for details.

4.5.3.2 Custom

You can customize signal group. **Custom** tab displays the added group and signal source. You can drag the signal group to the window for loop play of signals in the group. Refer to "4.7.4.3 Signal Group" for details.

4.5.3.3 Signal on Wall

Output a signal to a window on the video wall, and you can view video of the signal on the screen.

Step 1 Select a window on the video wall, or press and hold left mouse button to select an area on the video wall.

Step 2 Select signal source from **Device** or **Custom** tab. Take **Device** for example. See Figure 4-10.

Figure 4-10 Select signal source



Step 3 Display signal on the video wall.

- Press and hold left mouse button, drag the signal to designated window, and the signal is output to the window.
- Select a window, double-click channel preview or main/sub stream, and the signal is output to the window.

4.5.3.4 Signal Tour

Drag the configured signal group to a window, to tour play the signals on the window. Set the stay time and stream type according to your actual need.

Configure signal group in **Collection** tab. Refer to "4.7.4.3 Signal Group" for details.

Step 1 Select a window to tour signal.

Step 2 In **Custom > Collection** interface, select a signal group, press and hold left mouse button to drag the signal group to designated window.

The window will start signal tour automatically.

Step 3 Click at the bottom of the interface.

All signal information in the window is displayed. See Figure 4-11.

Figure 4-11 Signal information



Step 4 Set **Stay Time** and **Stream Type**.

- Click corresponding to one signal, and the signal will not appear in the tour queue, but the signal group still exists.
- Click or to adjust signal tour sequence.
- The setting takes effect immediately.
- Click at the top right corner of window, so you can stop signal tour.

4.5.3.5 Playback

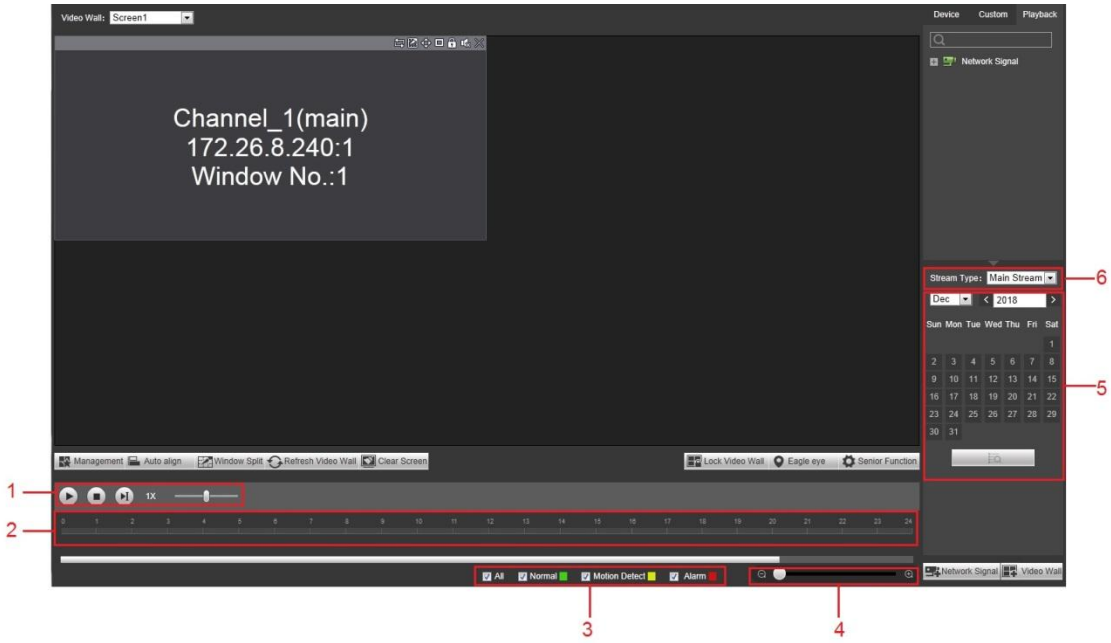
Only 1-channel 4K high definition (H.265) series supports the playback function.

In **Playback** tab, you can play back the recorded video of storage device.

Step 1 Select **Playback** tab.

The **Playback** interface is displayed. See Figure 4-12.

Figure 4-12 Playback



Refer to Table 4-3 for details.

Table 4-3 Playback interface icon description

No.	Name	Description
1	Record control	● : Play the video. ● : Stop playing. ● : Jump to the next frame. ● : Play speed.
2	Time bar	Displays the type and time period of the current recorded video.
3	Record type	Select the record type, including **All**, **Normal**, **Motion Detect**, and **Alarm**.
4	Zoom in/out time bar	Click , or directly drag the mouse to zoom in/out the time bar.
5	Calendar	Click the date that you want to search, the time bar displays the corresponding record. ● The dates with record or snapshot are filled with blue color. ● The dates with no record or snapshot are empty.
6	Stream type	Select record stream type, including main stream and sub stream.

Step 2 Select a window.

Step 3 Select a signal channel with playback record.

Step 4 Select a date with blue background.

Step 5 Click to start playing back recorded video.

4.5.4 Video Wall Management

You can manage the video wall, including scheme management, auto-align, window split, refresh video wall, clear screen, screen management, lock video wall, eagle eye and senior function.

4.5.4.1 Scheme Management

You can manage schemes and configure switch timer.

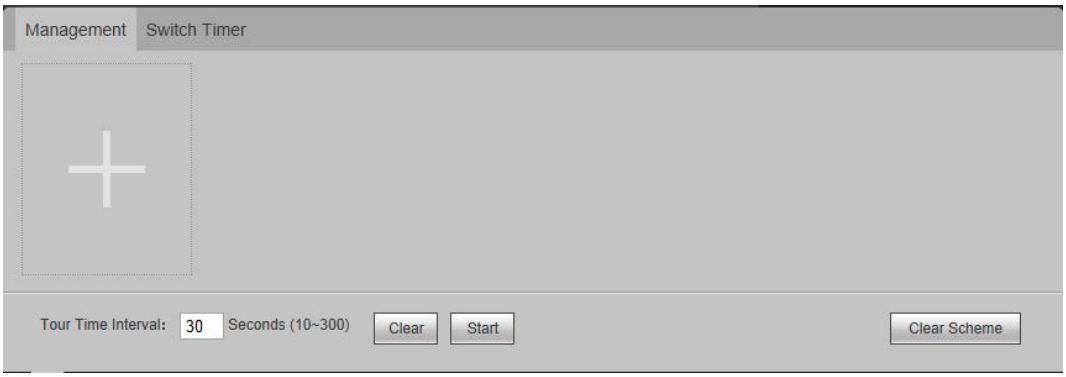
4.5.4.1.1 Scheme Management

Save video wall layout as a scheme, configure multiple schemes to be displayed on the screen in turn, and thus manage them.

Step 1 Click Management.

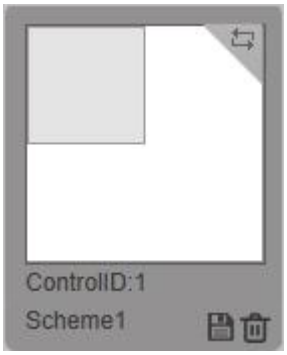
The **Management** interface is displayed. See Figure 4-13.

Figure 4-13 Scheme management



Step 2 Click to save the scheme. See Figure 4-14.

Figure 4-14 Save scheme



Step 3 Configure the current layout again, and repeat Step 2 to add more schemes.

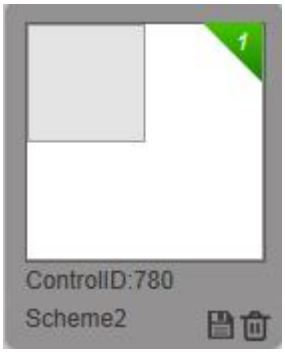
Click **Clear Scheme** to clear all schemes.

Step 4 Set tour time interval.

Step 5 Click at the top right corner of each scheme to add the scheme to tour queue. turns into a number, meaning its sequence in tour queue. See Figure 4-15.

Double-click **Control ID** and scheme name, and you can change them.

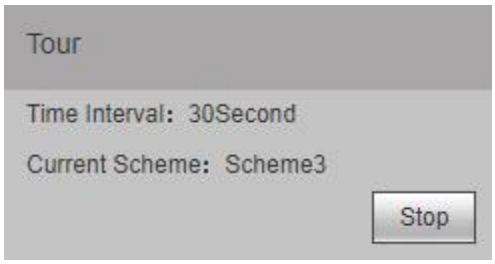
Figure 4-15 Set tour sequence.



Step 6 Click **Start**.

Scheme tour starts, and tour information is displayed at the bottom right corner of the interface. See Figure 4-16.

Figure 4-16 Tour information



- Click **Stop** to stop tour.
- During scheme tour, video wall interface cannot be operated.
- Click **Clear** to clear the whole scheme tour plan.
- Control ID distinguishes different schemes when central control device issues commands.

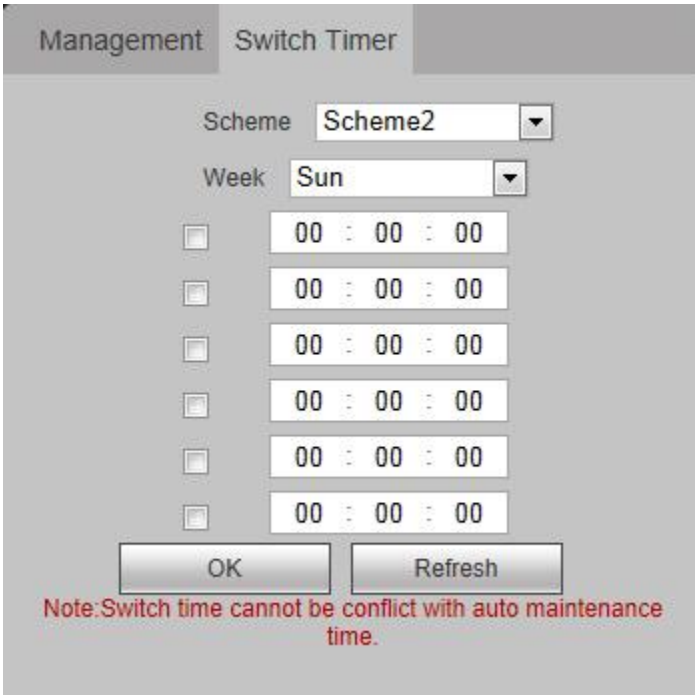
4.5.4.1.2 Switch Timer

After setting switch time for a scheme, the system will switch to this scheme automatically at the switch time.

Step 1 Select **Switch Timer** tab.

The **Switch Timer** interface is displayed. See Figure 4-17.

Figure 4-17 Switch timer



Step 2 Select **Scheme** and **Week**, and then set switch time.

- Tick the check box, and the time point will take effect.
- Two scheme time periods shall not be the same.

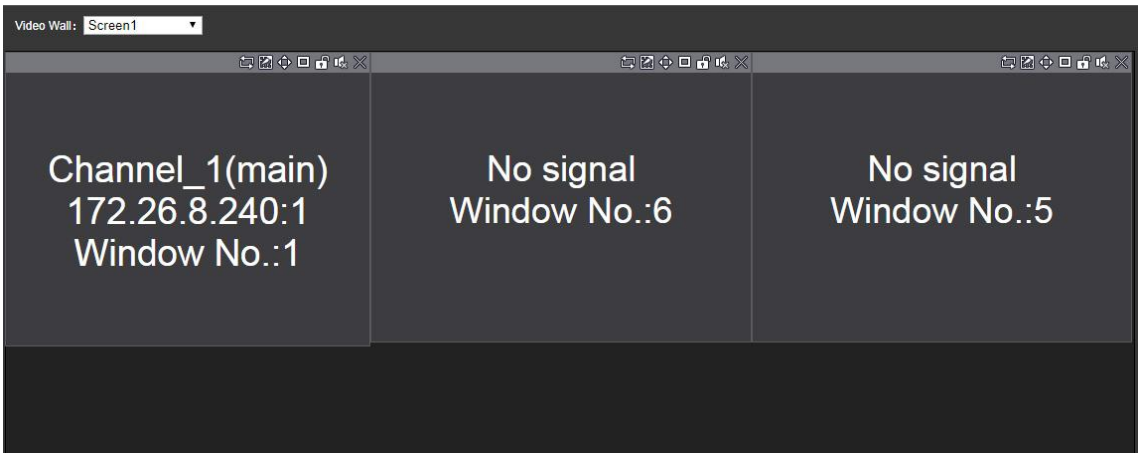
Step 3 Click **OK** to complete the settings.

4.5.4.2 Auto-align

Click Auto align, and all windows will be automatically aligned in the following way. See Figure 4-18.

- Each window size is equal, under the precondition of filling the entire video wall.
- Windows are arranged horizontally from top to bottom.

Figure 4-18 Auto-align



4.5.4.3 Window Split

Select block or window, and split according to split plan of the system or you can enter split number manually.

4.5.4.3.1 Block Division

During block division, the system clears previous block window, and divides the block according to the selected split. After block division, previous windows will be closed, and previous signal will not be kept.

Step 1 Select **Window Split > Block Division**.

The **Block Division** interface is displayed. See Figure 4-19 or Figure 4-20.

1-channel 4K high definition (H.265) series displays Figure 4-19, and 4-channel 4K high definition (H.265, with 2 input ports) series displays Figure 4-20.

Figure 4-19 Block division (1)

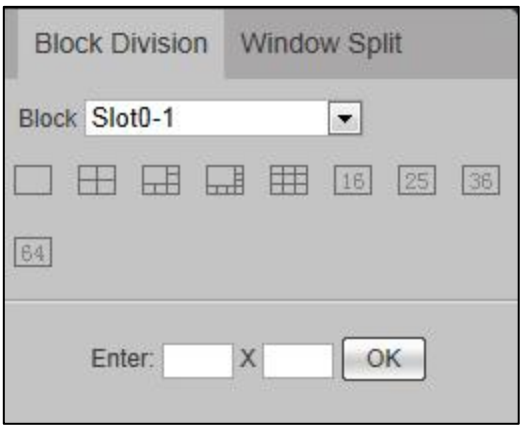
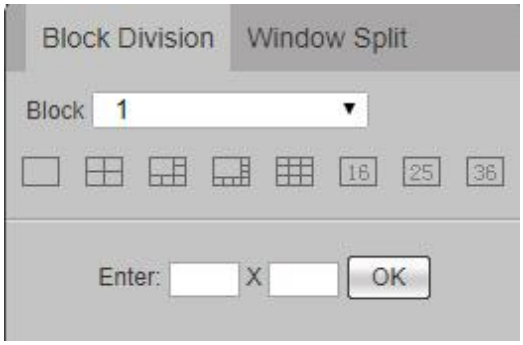


Figure 4-20 Block division (2)

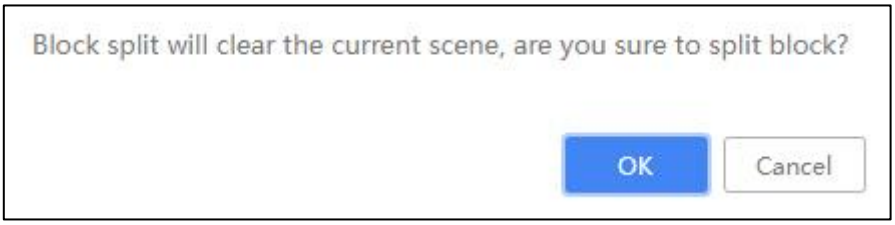


Step 2 Select the fixed split or enter the split number manually (for example, 3×3 represents 9-split).

Step 3 Click **OK**.

System pops up a prompt box. See Figure 4-21.

Figure 4-21 Prompt box



Step 4 Click **OK**.

The split blocks are displayed. See Figure 4-22.

After block division, the window is locked by default. Click to unlock the window, if you need to adjust window position and size.

Figure 4-22 Block division display



4.5.4.3.2 Window Split

Window split is to split the selected windows freely. Previous signal remains in the first window after splitting.

Step 1 Select a signal window.

It is suggested that tour window should not be selected for window split.

Step 2 Select **Window Split > Window Split**.

The **Window Split** interface is displayed. See Figure 4-23 or Figure 4-24.

1-channel 4K high definition (H.265) series displays Figure 4-23, and 4-channel 4K high definition (H.265, with 2 input ports) series displays Figure 4-24.

Figure 4-23 Window split (1)

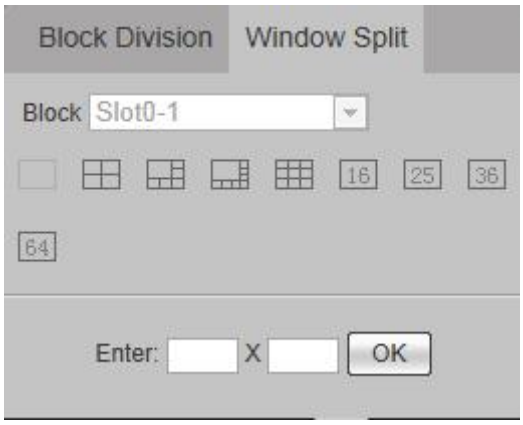
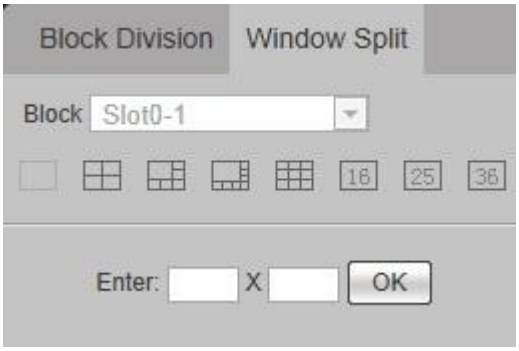


Figure 4-24 Window split (2)



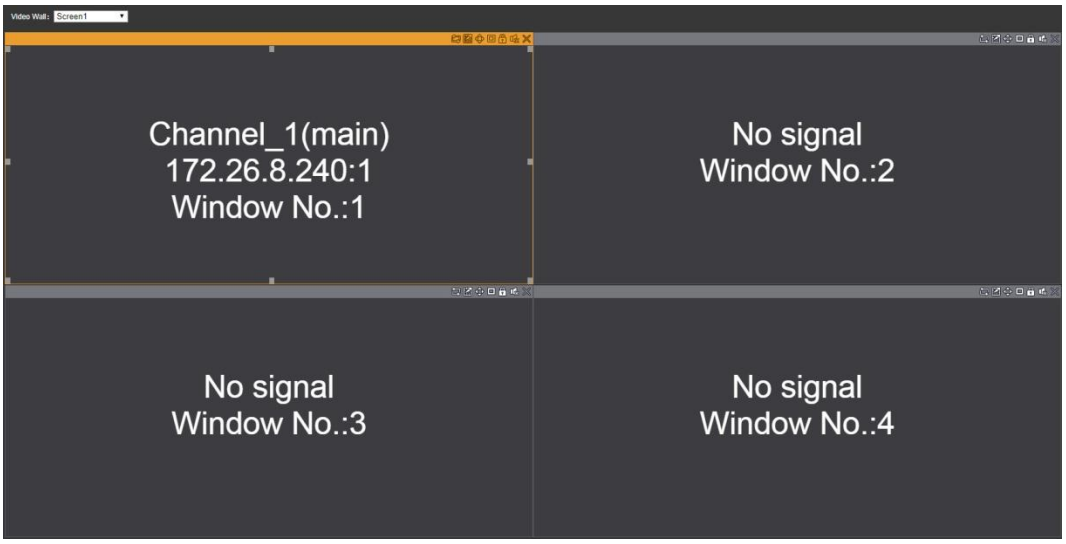
Step 3 Select the fixed split or enter the split number manually (for example, 3×3 represents 9-split).

Step 4 Click **OK**.

The split windows are displayed. See Figure 4-25.

After window split, previous signal remains in the first window, while other windows display **No signal**.

Figure 4-25 Window split display



4.5.4.4 Refresh Video Wall

Click Refresh Video Wall to refresh channel preview and layout information of current video wall.

4.5.4.5 Clear Screen

Click Clear Screen to clear screen.

4.5.4.6 Screen Management

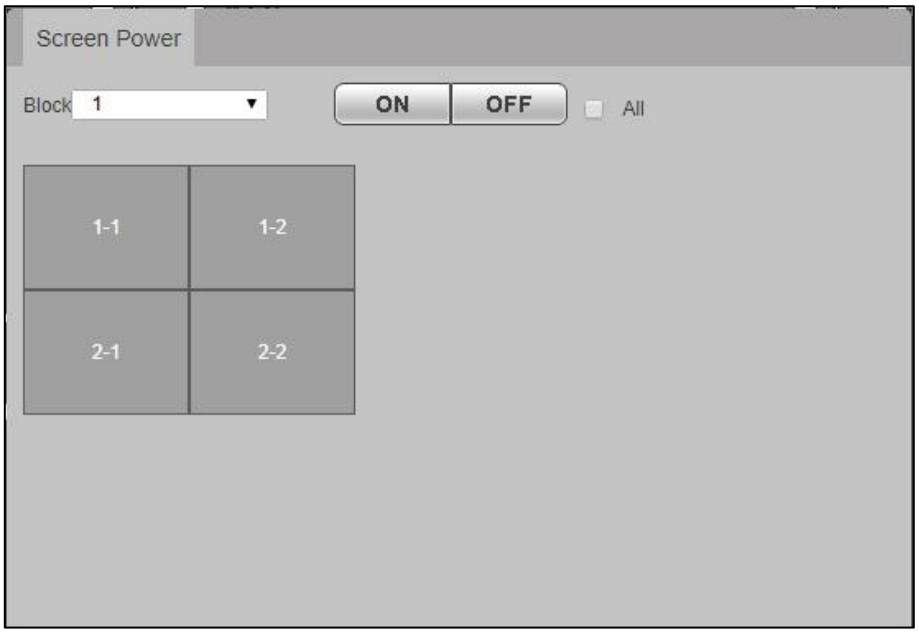
1-channel 4K high definition (H.265) series does not support screen management.

Click Screen Management. The **Screen Power** interface is displayed. See Figure 4-26.

- Select a screen to turn on or turn off the screen.
- Select All Blocks to turn on or turn off the screens of all blocks.

Tick the check box of **All**, to select all screens or blocks.

Figure 4-26 Screen management



4.5.4.7 Lock Video Wall

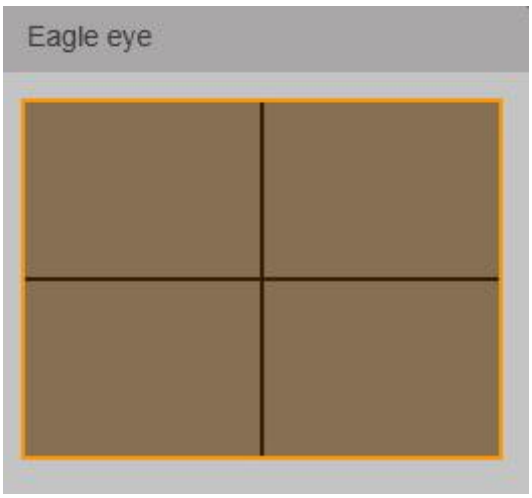
Click Lock Video Wall, and the video wall will be locked. The user cannot adjust relative position of the window. Click it again to unlock the video wall.

4.5.4.8 Eagle Eye

Eagle eye, also known as eagle eye map and thumbnail, is used to adjust display size and area of main window on the web screen.

Click Eagle eye. The **Eagle Eye** interface is displayed. See Figure 4-27.

Figure 4-27 Eagle eye



Adjust area box size in the eagle eye map with mouse or scroll wheel, to change main window display area size. Drag area box position in the eagle eye map, to change main window display area.

4.5.4.9 Senior Function

You can configure senior functions, including PTZ control, background, decoding strategy and show screen ID.

4.5.4.9.1 PTZ Control

PTZ control is to turn the PTZ device (up, down, left, right, top left, bottom left, top right and bottom right), carry out focus, zoom and iris operations.

Select display window unit of the signal, click Senior Function, and then click . The **PTZ Control** interface is displayed. See Figure 4-28. Refer to Table 4-4 for details.

Figure 4-28 PTZ control

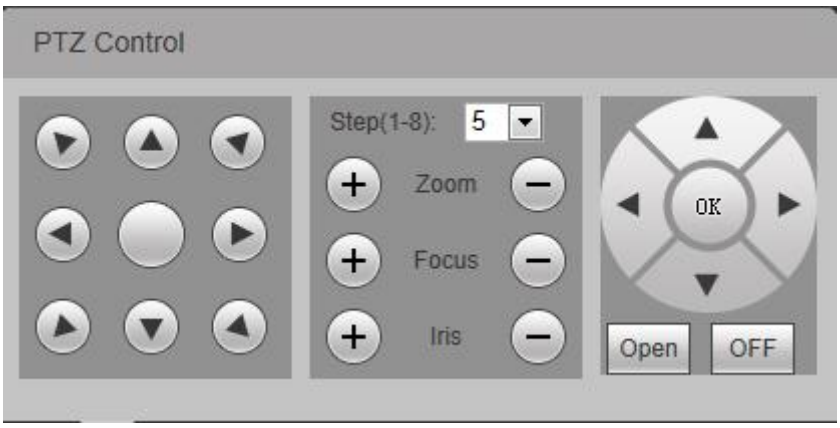


Table 4-4 PTZ control parameter description

Parameter	Description
Direction control	Control PTZ to turn in eight directions, including up, down, left, right, top left, bottom left, top right and bottom right.

Parameter	Description
Step	Control PTZ turning speed. 1–8 steps can be set.
Zoom	Click  or  to adjust zoom.
Focus	Click  or  to adjust definition.
Iris	Click  or  to adjust brightness.
PTZ menu	• Click Open to open PTZ menu of preview interface. Then, select different functions with direction key, to operate PTZ. • Click OFF to turn off the PTZ menu of preview interface.

4.5.4.9.2 Background

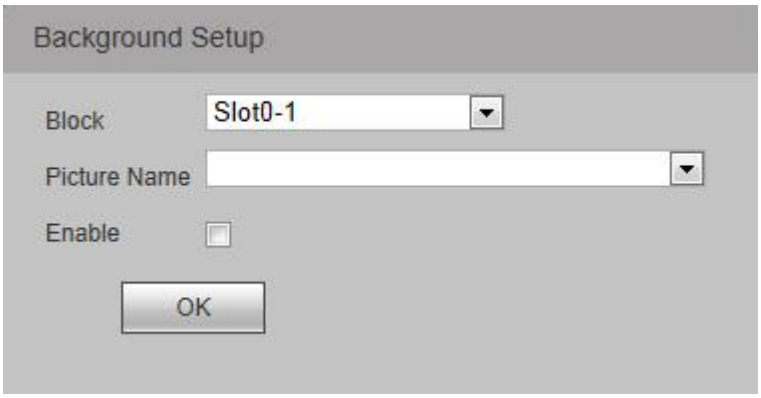
Upload a picture to the system, and configure it to be screen background, so the picture is displayed in the screen as a background.

Background can only be selected from pictures that have been uploaded to the system. Refer to "4.7.1.6 Picture Management" for details.

Step 1 Click Senior Function, and then click Background.

The **Background Setup** interface is displayed. See Figure 4-29.

Figure 4-29 Add background



Step 2 Select **Block** and **Picture Name**, and select **Enable**.

Step 3 Click **OK** to complete the settings.

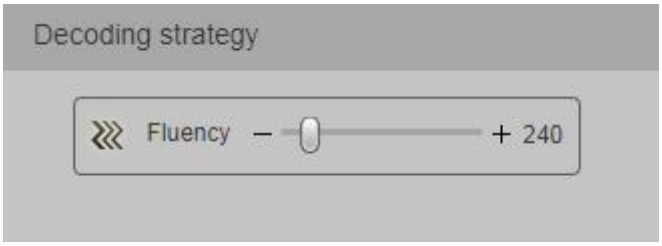
4.5.4.9.3 Decoding Strategy

Drag the slider to adjust window fluency, and thus balance real-time decoding and fluency (only network signal supports this function).

Step 1 Select a network signal window, click Senior Function, and then click Decoding strategy.

The **Decoding Strategy** interface is displayed. See Figure 4-30.

Figure 4-30 Decoding strategy



Step 2 Drag the slider to adjust window fluency.

Greater fluency value represents lower definition of the image. Please set it according to actual conditions.

4.5.4.9.4 Show Screen ID

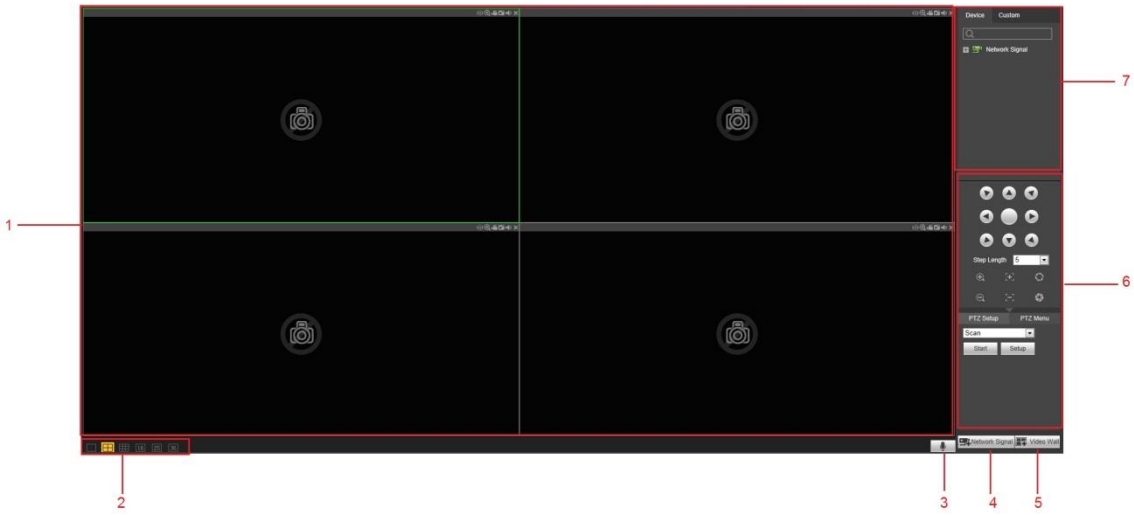
Click 

to show screen ID on the video wall. Click it again to hide screen ID.

4.6 Preview

Select **Preview** tab. The **Preview** interface is displayed. See Figure 4-31.

Figure 4-31 Preview



Refer to Table 4-5 for details.

Table 4-5 Function description of preview interface

No.	Name	Description
1	Window	Preview video in the window. Refer to "4.6.1 Window Function".
2	Window split	Carry out single split, 4-split, 9-split, 16-split, 25-split and 36-split of the window.
3	Audio talk	Click the icon to enable audio talk function. 3.5mm microphone port or earphone port connects audio input/output device.
4	Network signal	Click  to enter **Network Signal** interface. You can add, modify and delete device. Refer to "4.7.4.1 Network Signal" for details.

No.	Name	Description
5	Video wall	Click Video Wall to enter **Video Wall Setup** interface. You can add, modify and delete video wall. Refer to "4.7.5.1 Video Wall Setup" for details.
6	PTZ control area	Operate cameras with PTZ function. Refer to "4.6.3 PTZ Control" for details.
7	Signal configuration area	Configure signals. Refer to "4.6.2 Signal Configuration" for details.

4.6.1 Window Function

There are functions at the top right corner of the window. See Figure 4-32.

Figure 4-32 Window function



Refer to Table 4-6 for details.

Table 4-6 Functional description

No.	Name	Description
1	Partial zoom in	● When the video is in the original status, click the icon, press and hold on left mouse button to select any area. The selected area will be zoomed in. When the video is zoomed in, press and hold on left mouse button to drag the video image. Click right mouse button to restore original status. ● Click the icon to zoom in and zoom out the video image with wheel button.
2	Local record	Click the icon to record the video. The recorded video file is saved

No.	Name	Description
		in the recorded video path as configured in "4.7.1.9Storage Path".
3	Snapshot	Click the icon to take a snapshot. The snapshot file is saved in the snapshot path as configured in "4.7.1.9Storage Path".
4	Turn on Sound	Click the icon to turn on sound of the video.
5	Close Video	Close this window.

4.6.2 Signal Configuration

After adding a signal, you can view signal information or the added signal group information, and configure signal preview.

4.6.2.1 Device Tree

Device tree displays all the added network signals.

Network signal: Display the signal sources added on the **Remote Device** interface. Refer to "4.7.4.1 Network Signal" for details.

4.6.2.2 Custom

You can customize signal group. **Custom** tab displays added group and signal source. You can drag signal group to the window for loop play of signals in the group. Refer to "4.7.4.3 Signal Group" for details.

4.6.2.3 Image Preview

Add signal to preview window, so you can preview the video in preview window.

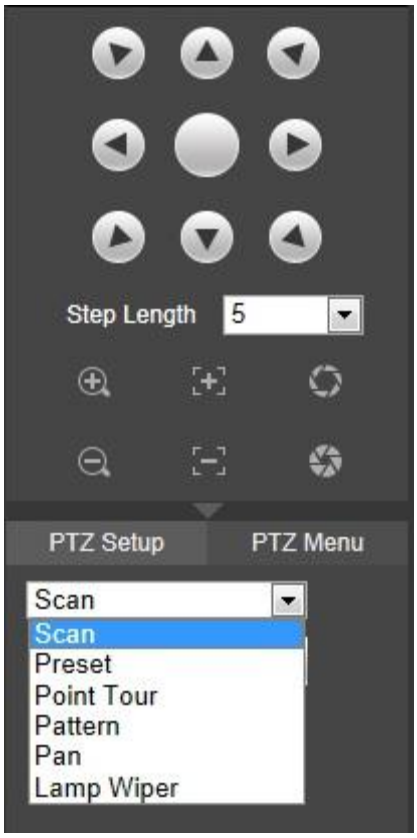
Step 1 Select a preview window.

Step 2 Select signal source in **Device** or **Custom**, and click the signal source to preview image in the corresponding window.

4.6.3 PTZ Control

PTZ control is used to adjust the direction of the PTZ device, carry out scan, preset point, point tour, pattern and other settings. See Figure 4-33.

Figure 4-33 PTZ Control



Refer to Table 4-7 for details.

Table 4-7 PTZ parameters description

Parameter	Description
Scan	● Click **Setup**, turn the camera with direction buttons, and click **Set Left Border** and **Set Right Border** to set left and right borders of PTZ scan. ● Click **Start**, and PTZ starts to scan. Click **Stop**, and PTZ stops scanning.
Preset	● In the input box, enter the preset value, and then click **View**; the camera moves to the location of preset point. ● Click **Add** to add a preset point.
Point Tour	● In the input box, enter tour path, and click **Start** to start tour. Click **Stop** to stop tour. ● Enter preset point number, and then click **Add** to add this preset point after the last preset point of this tour path.
Pattern	● Enter the pattern value, and then click **Start** to start pattern. Click **Stop** to stop the pattern. ● Click **Add**, and you can configure a new pattern path with **Start Record** and **Stop Record**.
Pan	Click **Start**, and PTZ starts to pan. Click **Stop**, and PTZ stops panning.
Lamp Wiper	Click **Enable** to enable the lamp and wiper, and click **Disable** to disable the lamp and wiper.

Refer to "4.5.4.9.1 PTZ Control" for details.

4.7 Setup

4.7.1 System Config

On this interface, you can complete general setting, user management, config backup, auto maintenance, system upgrade, picture management, comm setup, safe management and storage path.

4.7.1.1 General

You can configure basic information of the device, such as device information and system date.

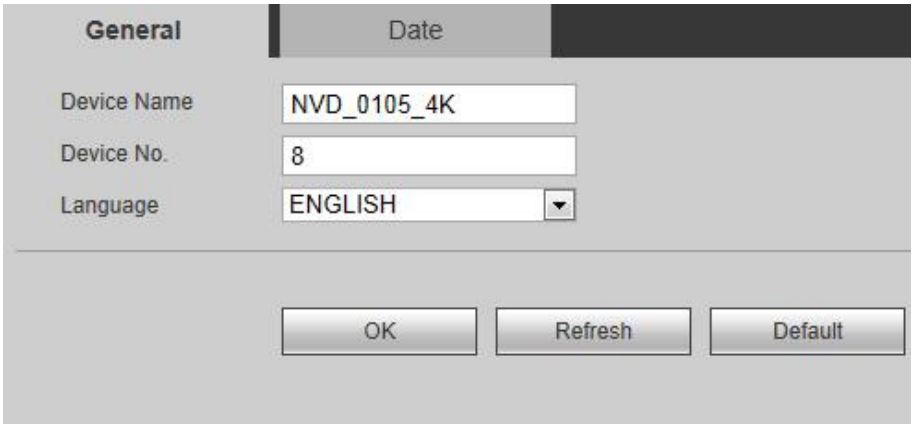
4.7.1.1.1 Setting of General Information

Set device name, no. and so on.

Step 1 Select **Setup > System Config > General > General**.

The **General** interface is displayed. See Figure 4-34.

Figure 4-34 General



Step 2 Configure parameters according to your actual need. Refer to Table 4-8 for details.

Table 4-8 General parameters description

Parameter	Description
Device Name	Set device name.
Device No.	Set device No..
Language	System language is determined by program package.

Step 3 Click **OK** to complete the settings.

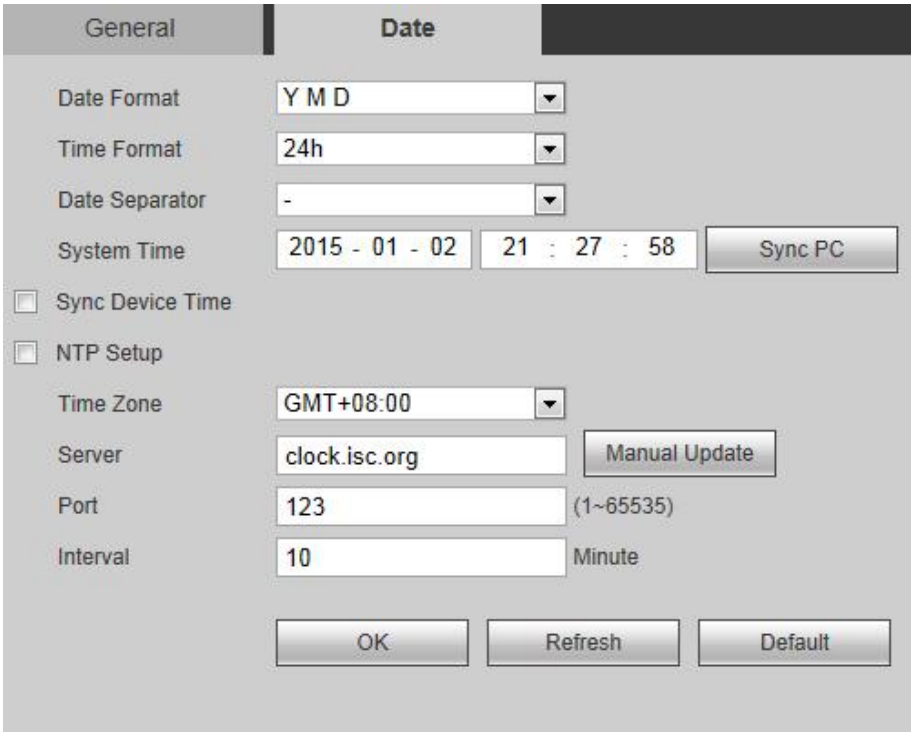
4.7.1.1.2 Date

You can configure the system date, and choose to enable NTP (Network Time Protocol) or not. After enabling NTP function, device can automatically synchronize time with the NTP server.

Step 1 Select **Setup > System Config > General > Date**.

The **Date** interface is displayed. See Figure 4-35.

Figure 4-35 Date



Step 2 Configure parameters according to your actual need. Refer to Table 4-9 for details.

Table 4-9 Date parameters description

Parameter	Description
Date Format	Select date display format you want.
Time Format	Select time format you want.
Date Separator	Select date separator you want.
System Time	Set system time. Click **Sync PC** to synchronize with current PC time.
Sync Device Time	Select the check box to enable function to synchronize remote device time.
NTP Setup	Select the check box to enable NTP sync function.
Time Zone	Select time zone.
Server	Enter server address or domain name.
Port	Enter the port number of NTP server.
Interval	Set the interval to update NTP server.

Step 3 Click **OK** to complete the settings.

4.7.1.2 User Management

User management adopts two-level management mode: user and user group.You can manage their basic information (only those with user management authority can operate user management).

- User name and group name support maximum 6 characters and can only be consisted of letter, number, and underline (_).
- The password can be set from 8 through 32 non-empty characters and contains at least two types from capital letter, lower-case letter, number, and special characters (excluding

"'", "'", ";", ":" and "&"). The user with authority can modify his/her own password, but also modify the password of other users.

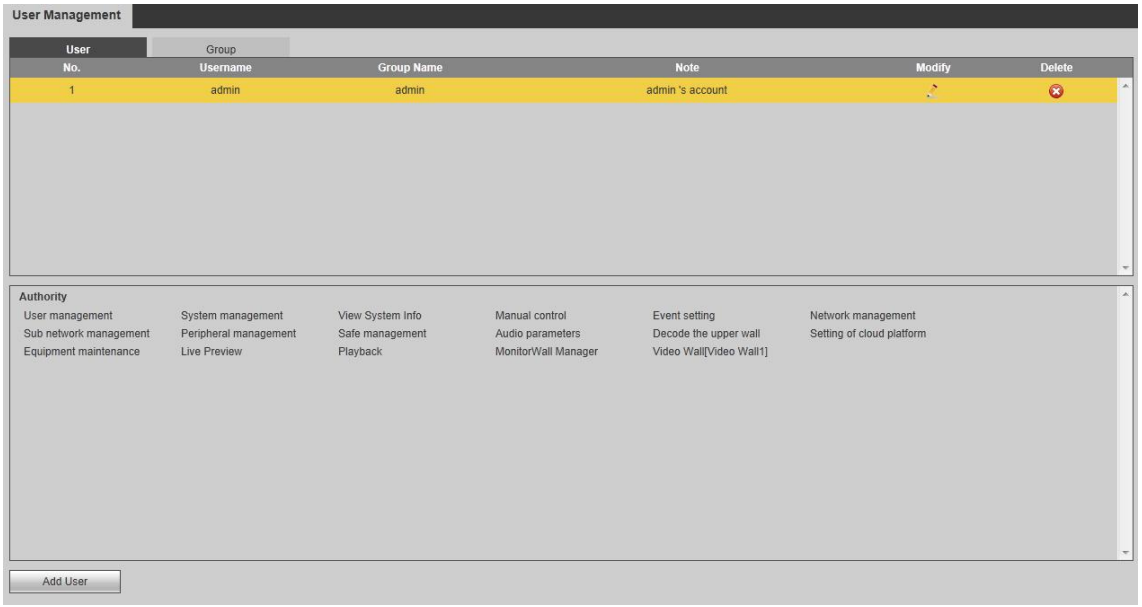
- According to factory defaults, maximum user quantity is 64, while maximum user group quantity is 20.
- There are two-level management modes: user and user group. Group name and user name shall be unique. One user can only belong to one group.
- Current user cannot modify his/her own authority.
- During initialization, there is 1 default user— admin. Admin is defined as high-authority user when leaving factory.

4.7.1.2.1 User

You can manage user information. Add, modify and delete user, modify user password.

Select **Setup > System Config > User Management > User Management > User.** The **User** interface is displayed. See Figure 4-36.

Figure 4-36 User



Add User

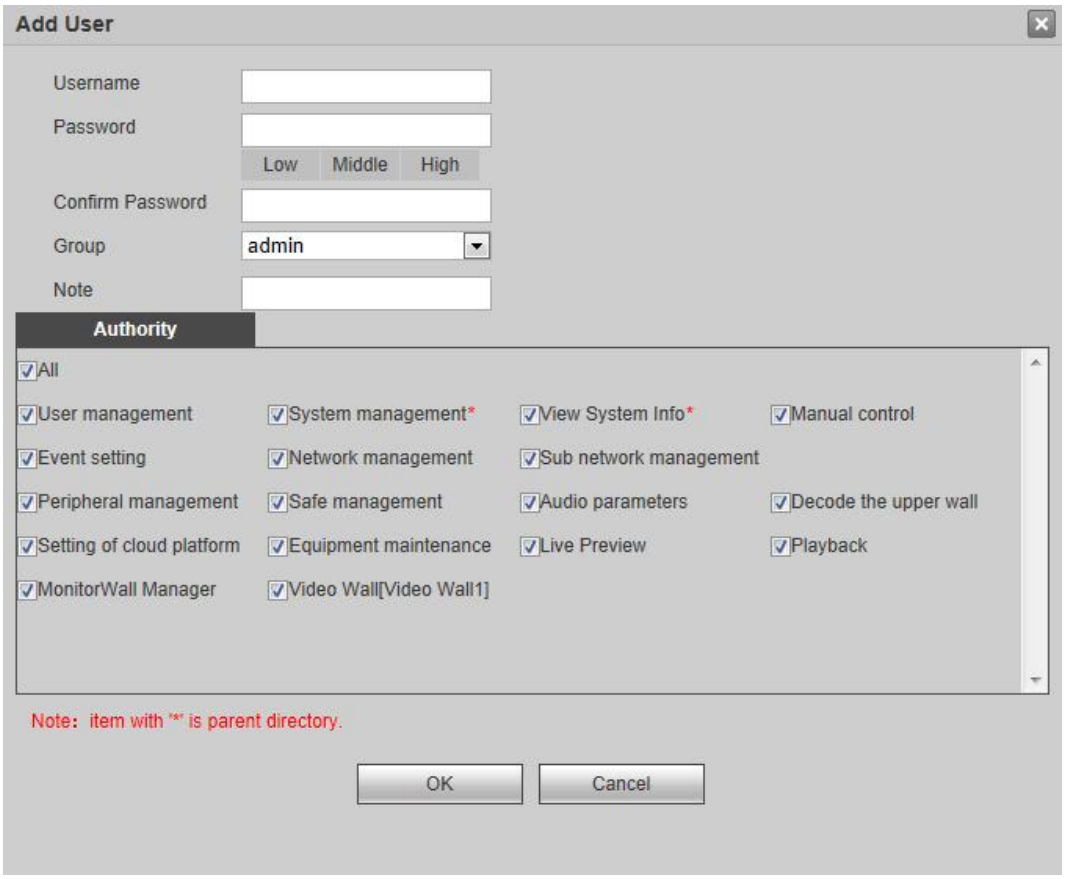
Add one user to the group, and configure user authority control.

As default user with the highest authority, admin cannot be deleted.

Step 1 Click **Add User**.

The **Add User** interface is displayed. See Figure 4-37.

Figure 4-37 Add User



Step 2 Enter **Username**, **Password** and **Confirm Password**. Select **Group** and fill in **Note**.

- When selecting a group for a user, authority of the user can only be a subset of the group, and should be no higher than the group authority.
- To conveniently manage the user, it is suggested that general user authorities shall be lower than high-level user authorities.

Step 3 In **Authority** list, select operating authorities for the user.

- Select the check box to enable the authority.
- Select **All** to select all authorities.

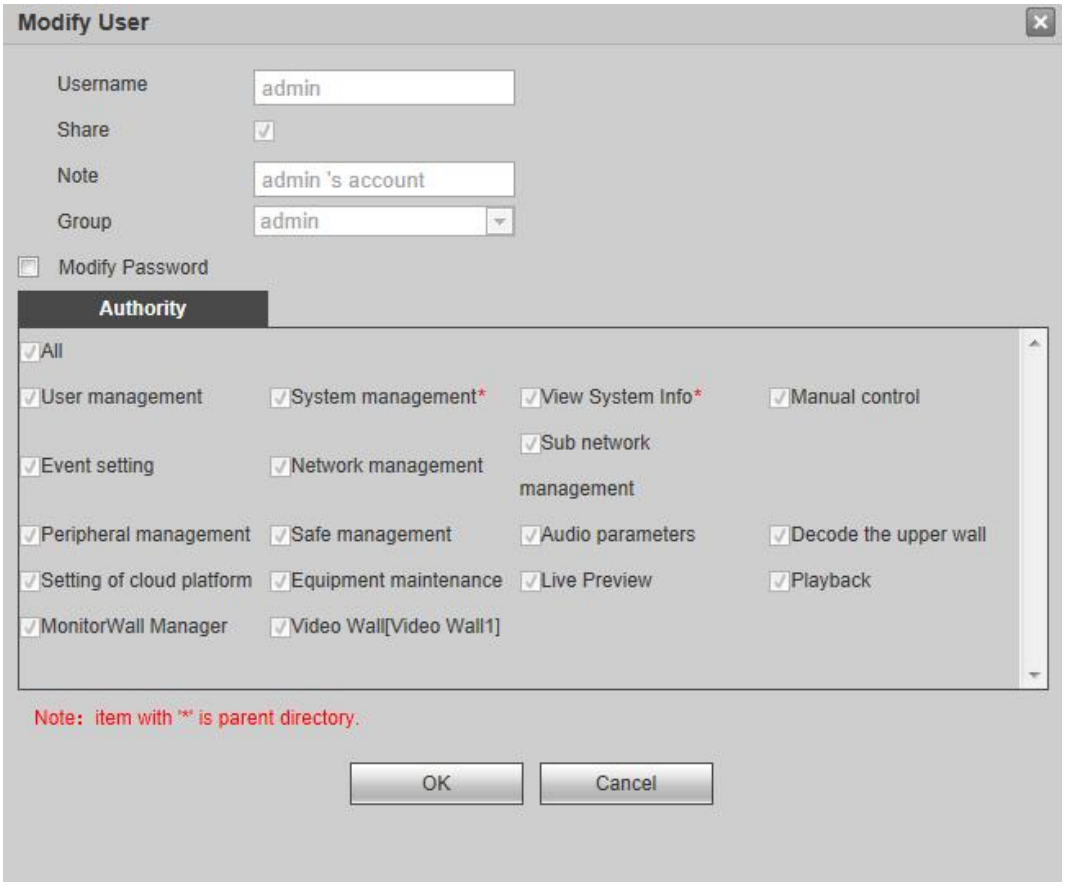
Step 4 Click **OK** to complete the settings.

Modify User

Step 1 Click corresponding to the user you want to modify.

The **Modify User** interface is displayed. See Figure 4-38.

Figure 4-38 Modify User



Step 2 Modify user information according to your actual needs.

Default user can only modify password, rather than other information.

Step 3 Click **OK** to complete the settings.

Modify Password

Step 1 Select **Modify Password**.

Step 2 Input old password, input new password and confirm password.

Step 3 Click **OK**.

Delete User

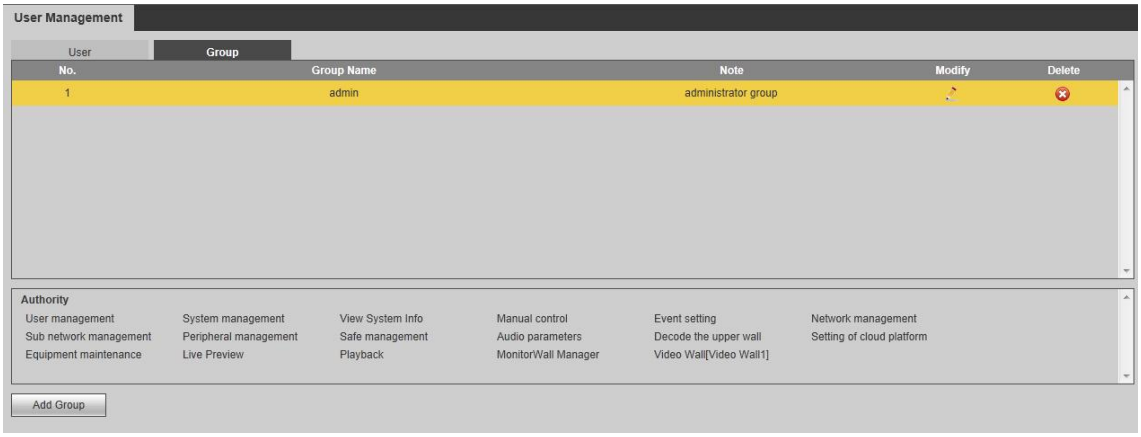
Click corresponding to the user you want to delete.

4.7.1.2.2 Group

Different users may have different authorities to access the device. You can divide the users with the same authority into one group. It is easy for you to maintain and manage the user information. You can manage group information. Add and delete group, and modify group password. Refer to "4.7.1.2.1 User".

Select **Setup > System Config > User Management > User Management > Group.** The **Group** interface is displayed. See Figure 4-39.

Figure 4-39 Group

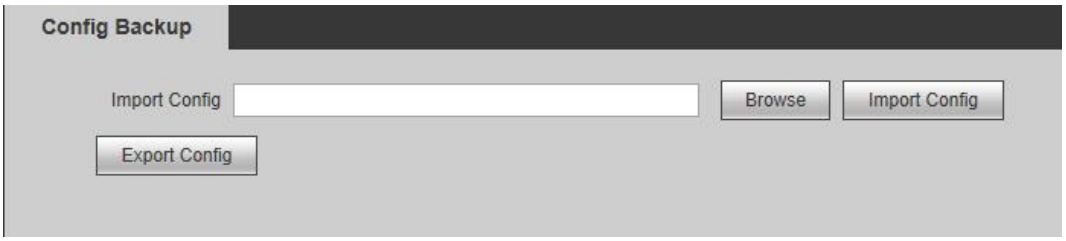


4.7.1.3 Config Backup

The configuration file of network video decoder can be exported to flash drive for backup. When the network video decoder goes wrong, you can import configuration file to restore configuration quickly.

Select **Setup > System Config > Config Backup.** The **Config Backup** interface is displayed. See Figure 4-40.

Figure 4-40 Config backup



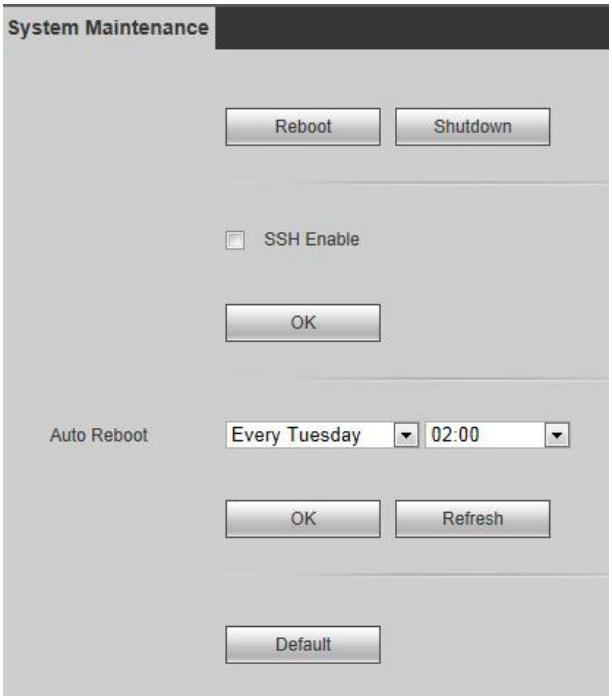
- Click **Import Config**, and then select configuration file (.backup) to import the configuration file.
- Click **Export Config**, and then select storage path to export configuration file for backup.

4.7.1.4 Auto Maintenance

You can maintain and operate the system, including reboot, shutdown, SSH enable, auto reboot and default.

Select **Setup > System Config > Auto Maintenance > System Maintenance.** The **System Maintenance** interface is displayed. See Figure 4-41.

Figure 4-41 System maintenance



- When you select manual reboot, click **Reboot**, and the system will reboot at once. Click **Shutdown**, and the system will be shut down at once.
- SSH is used to open background debugging port for technicians. Select **SSH Enable**, and click **OK** to enable remote debugging function.
- When you select auto reboot, configure auto reboot day and time, and then click **OK**.
- Click **Default**. The system will be restored to the factory default settings, and your current configurations will be lost. Be cautious.

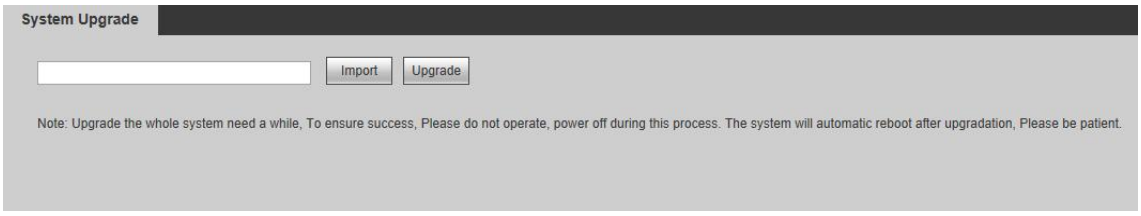
4.7.1.5 System Upgrade

Store upgrade file in PC that is associated with network video decoder. You can import upgrade file to upgrade the system version.

Step 1 Select **Setup > System Config > System Upgrade**.

The **System Upgrade** interface is displayed. See Figure 4-42.

Figure 4-42 System upgrade



Step 2 Click **Import**, and select the upgrade file.

Step 3 Click **Upgrade**. There is progress bar during upgrade.

After upgrade file is uploaded according to system prompt, the device will reboot. Please keep the power supply on, wait patiently, until the system is automatically rebooted.

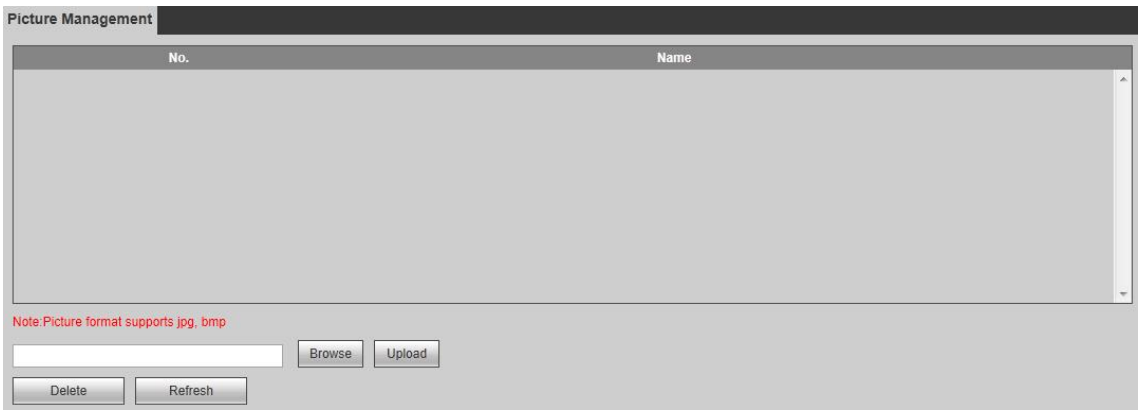
4.7.1.6 Picture Management

You can upload a picture to the system, and set the uploaded picture to be screen background.

Step 1 Select **Setup > System Config > Picture Management**.

The **Picture Management** interface is displayed. See Figure 4-43.

Figure 4-43 Picture management



Step 2 Click **Browse** to select a local picture.

Step 3 Click **Upload** to upload local picture.

- Select one picture, and click **Delete** to delete the picture.
- After the background is uploaded successfully, select the background in video wall configuration. Refer to "4.5.4.9.2 Background" for details.

4.7.1.7 Comm Setup

After comm parameters are set, the network video decoder can connect other devices through comm ports, for the purpose of debugging and operation.

Step 1 Select **Setup > System Config > Comm Setup**.

The **Comm Setup** interface is displayed. See Figure 4-44 or Figure 4-45.

1-channel 4K high definition (H.265) series displays Figure 4-44, and 4-channel 4K high definition (H.265, with 2 input ports) series displays Figure 4-45.

Figure 4-44 Comm setup (1)

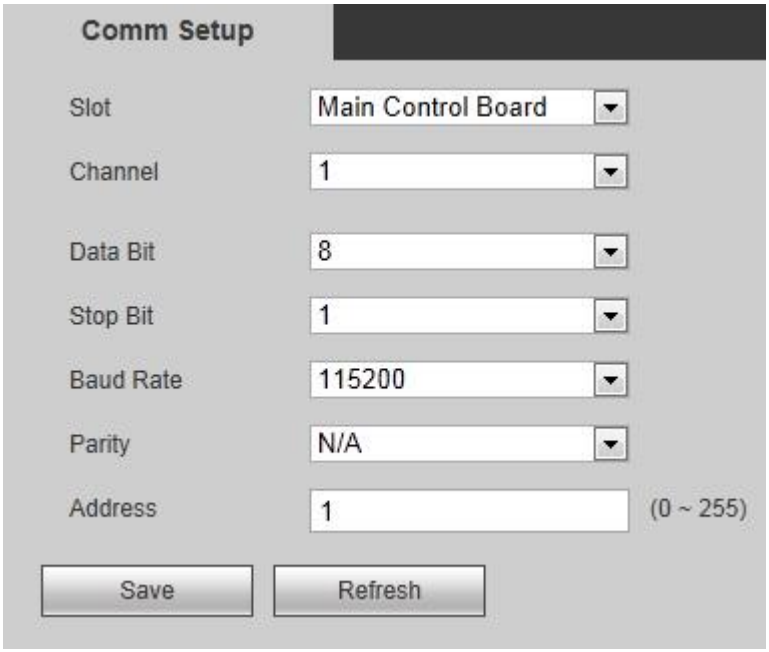
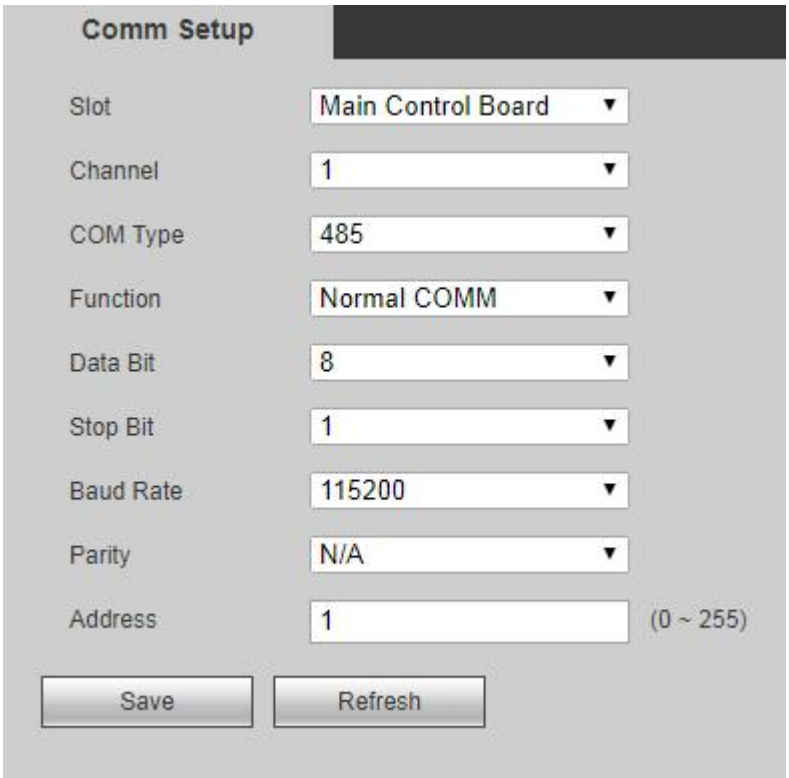


Figure 4-45 Comm setup (2)



Step 2 Configuration comm parameters. Refer to Table 4-10 for details.

Table 4-10 Comm parameters description

Parameter	Description
Slot	Select the slot you want to configure.
Channel	Select the channel you want to configure.
Com Type	The default is RS–232.
Function	Configure comm function.
Data Bit	Select a data bit. The options include 5, 6, 7 and 8.
Stop Bit	Select stop bit of comm, including 1 and 2.

Parameter	Description
Baud Rate	Configure Baud rate of comm. It shall be consistent with the device tthat will be connected.
Parity	Select a parity mode from N/A, Odd, Even, Flag Parity and Empty Parity.
Address	Configure comm address from 0 to 255.

Step 3 Click **Save**.

4.7.1.8 Security Management

Configure system service, enable or disable HTTPS function according to your need, in order to strengthen system security management.

4.7.1.8.1 System Service

Select the system service you want to enable.

Step 1 Select **Setup > System Config > Safe Management > System Service**.

The **System Service** interface is displayed. See Figure 4-46.

Figure 4-46 System service



Step 2 Enable system service according to your actual need. Refer to Table 4-11 for details.

Table 4-11 System service parameters description

Parameter	Description
Multicast/Broadcast Discovery	Multicast: Provides one-to-many network connection between the sender and each receiver. Broadcast discovery: Broadcast the data packet within IP subnet, so all hosts in the subnet will receive these data packets.
CGI	Common Gateway Interface (CGI) is an interface between external application programs and web server.
Audio/Video Transmission Encryption	Encrypt the audio and video during transmission.

Step 3 Click **OK** to complete the settings.

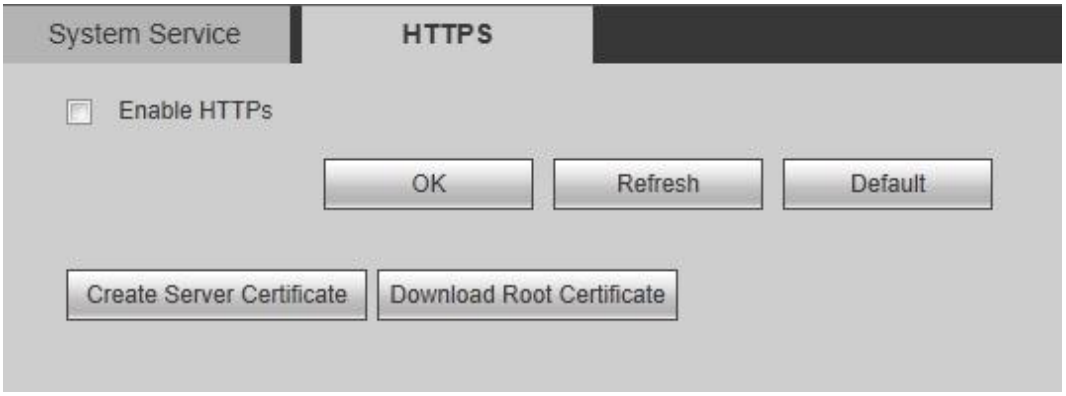
4.7.1.8.2 HTTPS

Through creating server certificate or downloading root certificate on the HTTPS interface, the PC can login by HTTPS, to ensure the security of communication data, and guard the users information and device security with stable technology measure.

Step 1 Select **Setup > System Config > Safe Management > HTTPS**.

The **HTTPS** interface is displayed. See Figure 4-47.

Figure 4-47 HTTPS



Step 2 Select the **Enable HTTPs** check box.

Step 3 Click **OK** to complete the settings.

- For the first time to use this function or after changing IP address of the device, you need to create server certificate again.
- For the first time to use HTTPS after changing the PC, you need to download root certificate again.
- HTTPS enable status will take effect after reboot.

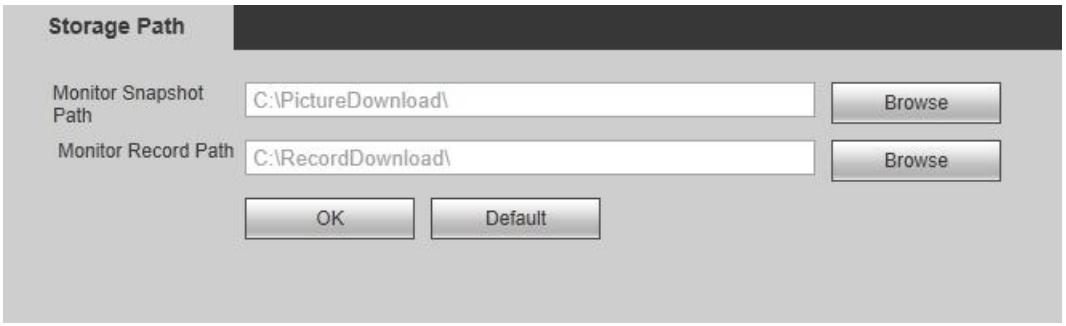
4.7.1.9 Storage Path

Select the storage path for snapshots and records.

Step 1 Select **Setup > System Config > Storage Path**.

The **Storage Path** interface is displayed. See Figure 4-48.

Figure 4-48 Storage path



Step 2 Click **Browse** to select the storage path for snapshots and records respectively.

Step 3 Click **OK** to complete the settings.

Click **Default** to restore default path. Default storage path of monitor snapshot and monitor record is C:\PictureDownload and C:\RecordDownload respectively.

4.7.2 Network

4.7.2.1 TCP/IP

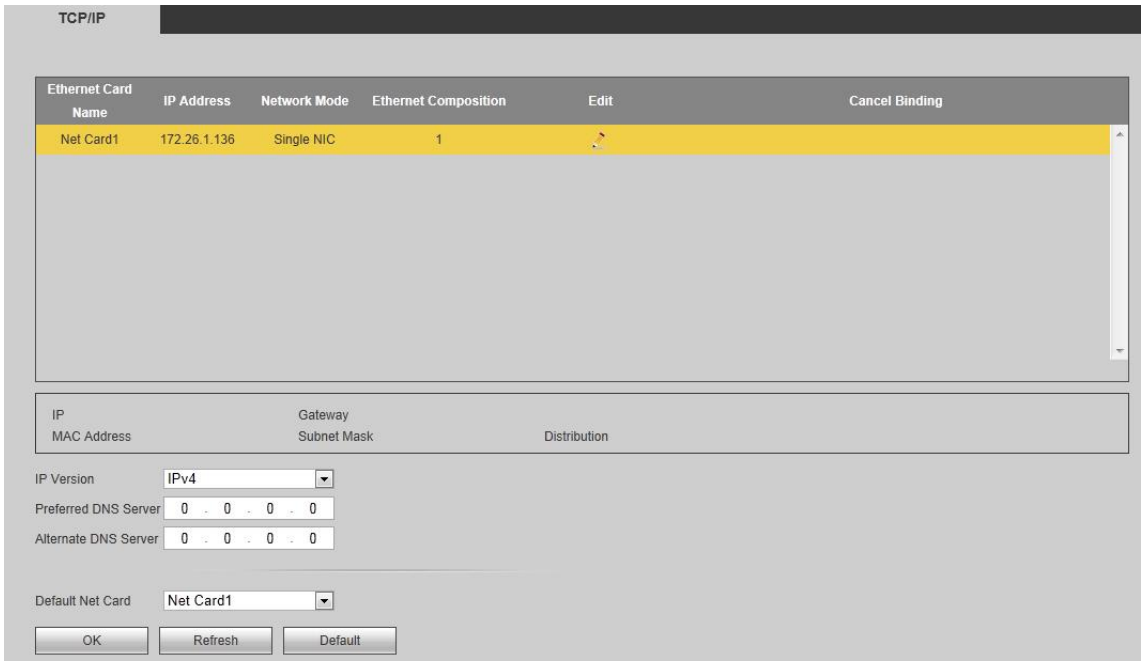
Set device IP address, DNS server information and other information according to network planning.

- Before configuring network parameters, make sure that the device is connected to the network properly.
- If there is no routing device in the network, distribute IP address in the same network segment.
- If there is a routing device in the network, you only need to configure gateway and subnet mask.

Step 1 Select **Setup > Network > TCP/IP**.

The **TCP/IP** interface is displayed. See Figure 4-49.

Figure 4-49 TCP/IP



Step 2 Set TCP/IP parameters. Refer to Table 4-12 for details.

Table 4-12 TCP/IP parameters description

Parameter	Description
IP Version	Select IP version. It is IPv4 by default.
Preferred DNS Server	Fill in the configured IP address of DNS server.
Alternate DNS Server	Fill in the configured IP address of alternate DNS server.
Default Net Card	Select default net card.

Step 3 Click  to edit Ethernet card information. See Figure 4-50. Refer to Table 4-13 for details.

Figure 4-50 Edit

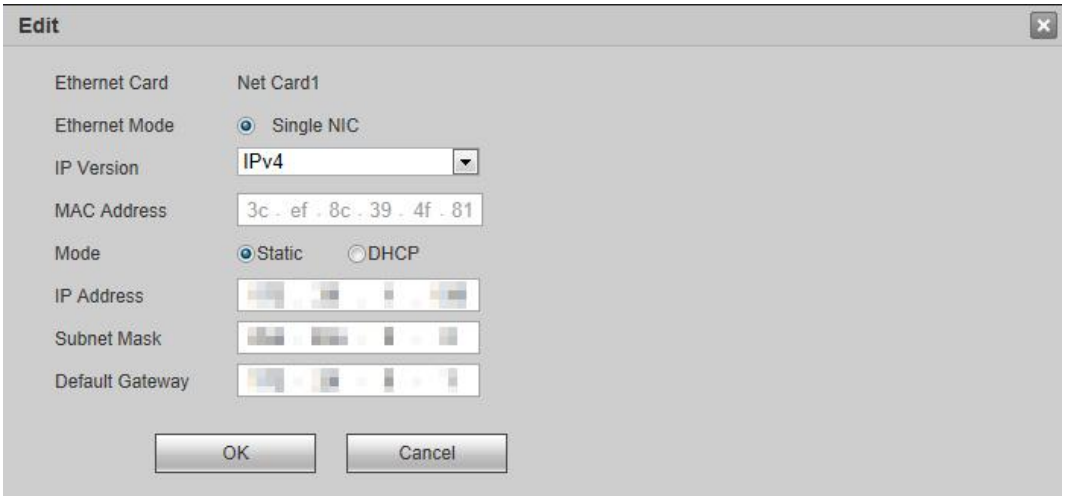


Table 4-13 Ethernet card parameters description

Parameter	Description
Ethernet Mode	The default setting is single NIC. Single NIC: Two net cards are used independently. Request HTTP, RTSP and other services of the device through net card 1 or net card 2. You need to configure one default net card (net card 1 by default), to request network services launched by the device, including DHCP, Email and FTP. During network status detection, the network is deemed to be disconnected if one net card is disconnected.
IP Version	It is IPv4 by default.
MAC Address	Displays the MAC address of the Device.
Mode	● Static Manually enter the IP address, subnet mask and gateway. ● DHCP Select the **DHCP** box, the system automatically obtains an IP address. When the **DHCP** function is enabled, the IP address, subnet mask and default gateway cannot be set manually. ◇ If DHCP is effective, the obtained information will be displayed in the **IP Address** box, **Subnet Mask** box and **Default Gateway** box. If DHCP is not effective, they all display 0. ◇ To view manually set IP when DHCP is not effective, you shall disable DHCP first, and then the device will display IP info that is not obtained through DHCP. If DHCP is effective, if DHCP is disabled, static IP information will restore default settings. You need to configure IP again.
IP Address Subnet Mask Default Gateway	Enter numbers to change the IP address, and then configure its **Subnet Mask** and **Default Gateway**. IP address and default gateway must be in the same network segment.

Step 4 Click **OK** to complete modification of net card information.

Step 5 Click **OK** to complete the settings.

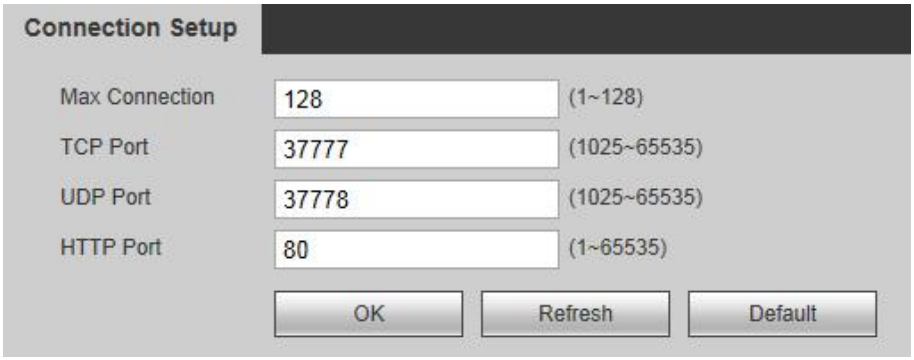
4.7.2.2 Port

Set max connection and port number to visit network video decoder through client (including web client and PC client).

Step 1 Select **Setup > Network > Port > Connection Setup**.

The **Connection Setup** interface is displayed. See Figure 4-51.

Figure 4-51 Connection setup



Step 2 Configure max connection and port number. Refer to Table 4-14 for details.

Table 4-14 Port parameters description

Parameter	Description
Max Connection	The allowable maximum number of clients accessing the Device at the same time, such as web, platform, and mobile phone. The default value is 128.
TCP Port	TCP service port. The default setting is 37777. You can configure this parameter according to your actual situation.
UDP Port	User Datagram Protocol port.The default value setting is 37778. You can enter the value according to your actual situation.
HTTP Port	Hyper Text Transfer Protocol port. The default setting is 80. You can enter the value according to your actual situation, and in this case, please add the modified port number after the address when logging the Device on the browser.
HTTPs Port	Tick **Enable HTTPs**. You can configure HTTPs port according to your actual situation.

Step 3 Click **OK** to complete the settings.

Except Max Connection, modifications of other parameters will take effect after reboot.

4.7.2.3 IP Filter

Set network authority of other devices to access network video decoder, to enhance device network and data security. Network authority strategy includes white list and black list.

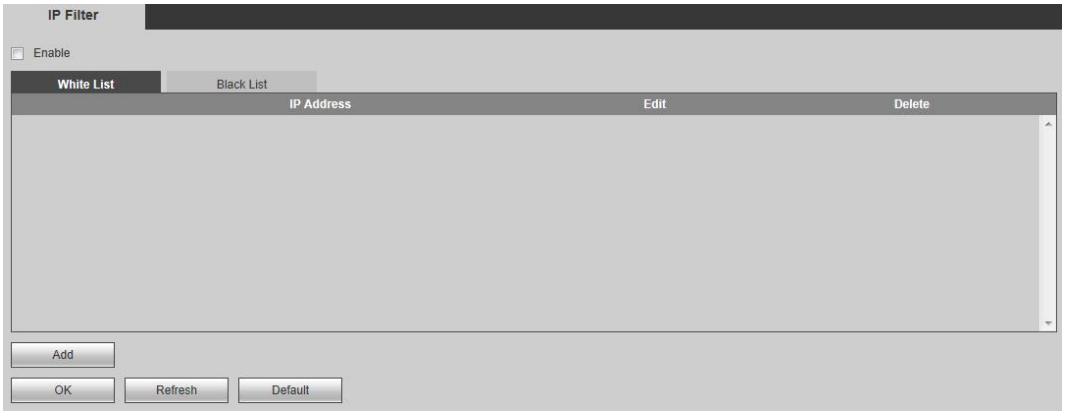
- After white list is enabled, only devices in the white list can login web interface successfully.
- After black list is enabled, devices in the black list cannot login web interface.

White list and black list cannot be enabled at the same time.

Step 1 Select **Setup > Network > IP Filter**.

The **IP Filter** interface is displayed. See Figure 4-52.

Figure 4-52 IP filter



Step 2 Select the **Enable** check box.

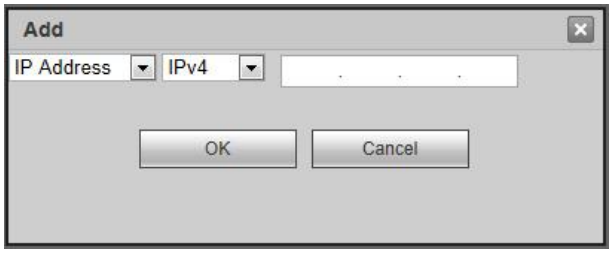
The system displays white list and black list single selection box.

Step 3 Add white list or black list.

1) Select **White List** or **Black List**.
2) Click **Add**.

   The **Add** interface is displayed. See Figure 4-53.

Figure 4-53 Add



3) Configure IP address information. See Table 4-15 for details.

Table 4-15 IP address parameters description

Parameter	Description
IP Address	Click the drop-down list, and select the adding mode. ● IP address: Enter the IP address you want to add to black list or white list. ● IP segment: Enter the IP segment you want to add to black list or white list. You can add multiple IP hosts at the same time.
IPv4	Select IP address protocol from the drop-down list. IPv4: IP address adopts IPv4 format. For example, 192.168.5.10.

4) Click **OK**.

   Device goes back to **IP Filter** interface.

Step 4 Click **OK** to complete the settings.

- When you login web interface with IP host in the white list, you can login the device successfully.
- When you login web interface with IP host in the black list, the system pops up a message that the IP host has been added to black list, and you cannot login successfully.

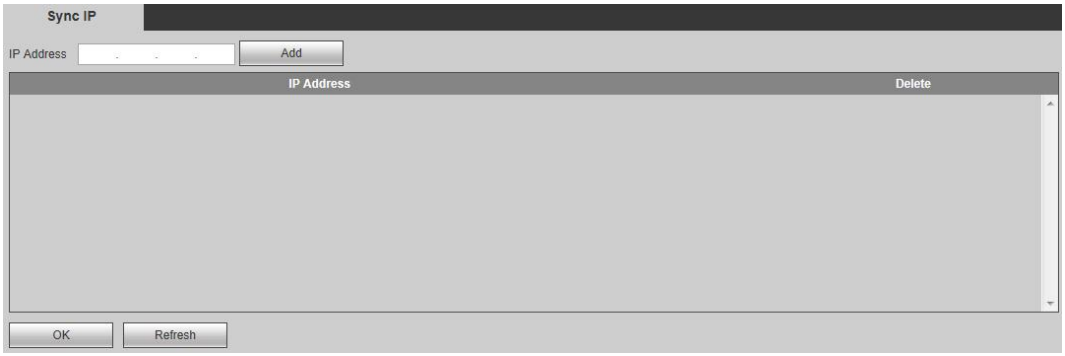
4.7.2.4 Sync IP

Sync IP adds IP of a device with timing function, to synchronize system time, and ensure the system time is correct.

Step 1 Select **Setup > Network > Sync IP**.

The **Sync IP** interface is displayed. See Figure 4-54.

Figure 4-54 Sync IP



Step 2 Enter IP address, and then click **Add**.

Step 3 Click **OK** to complete the settings.

4.7.3 Event Management

Manage abnormal events. The system executes alarm linkage actions according to settings.

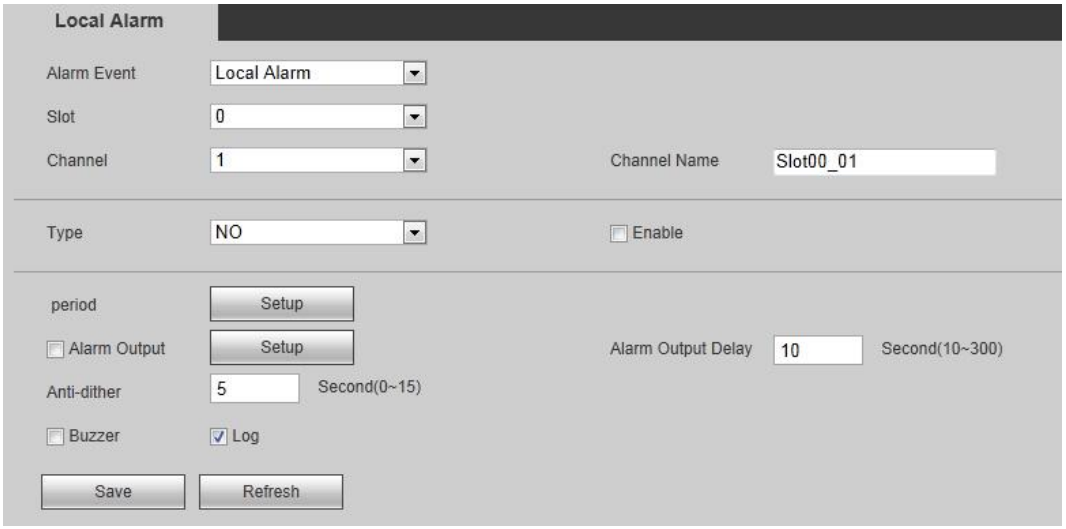
4.7.3.1 Alarm Setup

Configure local alarm. When an abnormal event occurs, the system executes alarm linkage actions.

Step 1 Select **Setup > Event Management > Alarm Setup > Local Alarm**.

The **Local Alarm** interface is displayed. See Figure 4-55.

Figure 4-55 Local alarm



Step 2 Configure the parameters. See Table 4-16 for details.

Table 4-16 Alarm parameters description

Parameter	Description

Parameter	Description
Alarm Event	Select alarm event. It is **Local Alarm** by default.
Slot	Select the slot of local alarm.
Channel	Select the alarm channel.
Channel Name	Enter the alarm channel name.
Type	Select external alarm device type. Both NO and NC are supported. Select the check box to enable the function.
Period	Configure alarm period. Alarm is produced only within the configured period. Click **Setup** to configure alarm period in the following steps: 1. Select week. 2. Configure the time period. A total of 6 periods can be configured. Click **Default Time**, and all periods will be default period, 00:00:00–23:59:59. Click **Current Time**, and the period will be the last saved time. 3. Select the day(s) in **Apply to** zone, so the configured periods will be applied to the day(s). 4. Click **OK**.
Alarm Output	Connect alarm output port with alarm devices (such as light and siren etc.). In case of alarm, the system will send alarm information to alarm devices. Click **Setup** to select slot.
Alarm Output Delay	After the alarm is stopped, the alarm output is delayed for some time, ranging from 10 seconds through 300 seconds.
Anti-dither	The system records only one alarm input event during the configured period.
Buzzer	The system activates a buzzer alarm when an alarm event occurs.
Log	The log records alarm information when an alarm event occurs.

Step 3 Click **Save**.

4.7.3.2 Abnormal

Set alarm linkage actions when an abnormal event occurs.

Step 1 Select **Setup > Event Management > Abnormal**.

The **Abnormal** interface is displayed. Select abnormal type. See Figure 4-56, Figure 4-57 or Figure 4-58.

Figure 4-56 Network offline



Figure 4-57 IP conflict



Figure 4-58 MAC conflict



Step 2 Configure the parameters. See Table 4-17 for details.

Table 4-17 Abnormal parameters description

Parameter	Description
Enable	Select the **Enable** check box to enable this function.
Alarm Output	Connect alarm output port with alarm devices (such as light and siren etc.). In case of alarm, the system will send alarm information to alarm devices. Click **Setup** to select slot.
Output Delay	After the alarm is stopped, the alarm output is delayed for some time, ranging from 0 seconds through 300 seconds.
Buzzer	The system activates a buzzer alarm when an alarm event occurs.
Log	The log records alarm information when an alarm event occurs.

Step 3 Click **Save**.

4.7.4 Signal Management

You can manage network signal, local signal and signal group.

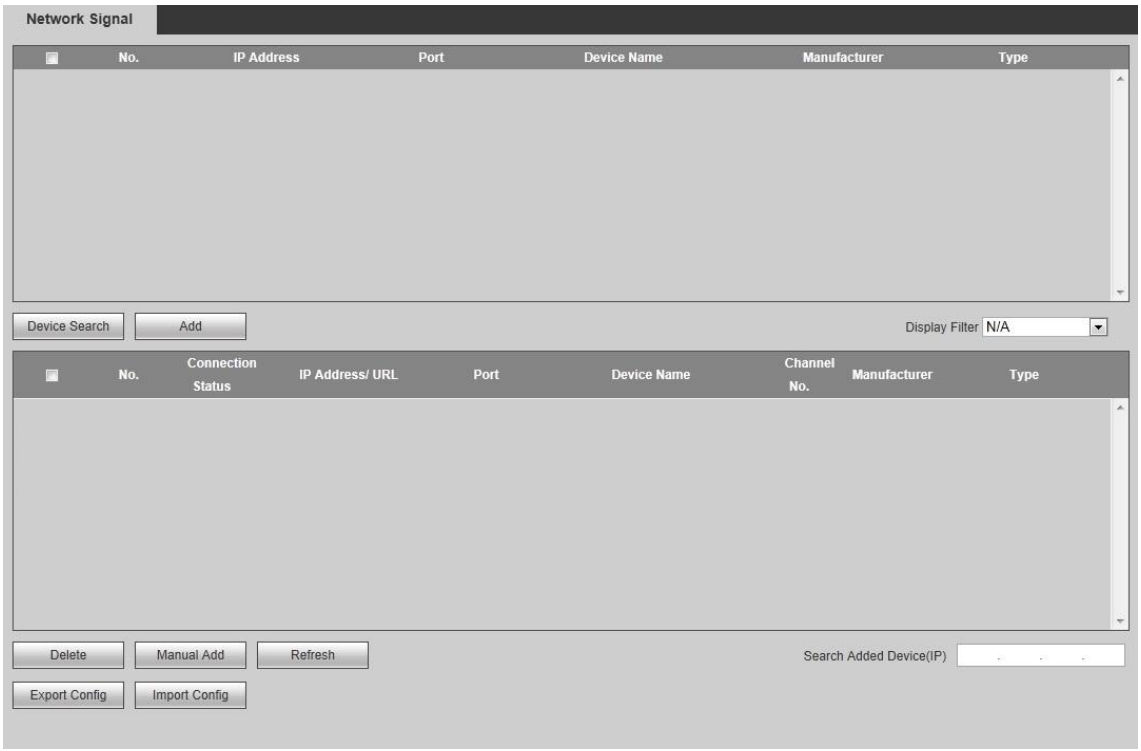
4.7.4.1 Network Signal

You can add devices in the network, preview and display network signal on the video wall, and also control the remote device.

The device shall have a decoding card, so network signal can be decoded and displayed on the video wall.

Select **Setup > Signal Management > Network Signal.** The **Network Signal** interface is displayed. See Figure 4-59.

Figure 4-59 Network signal

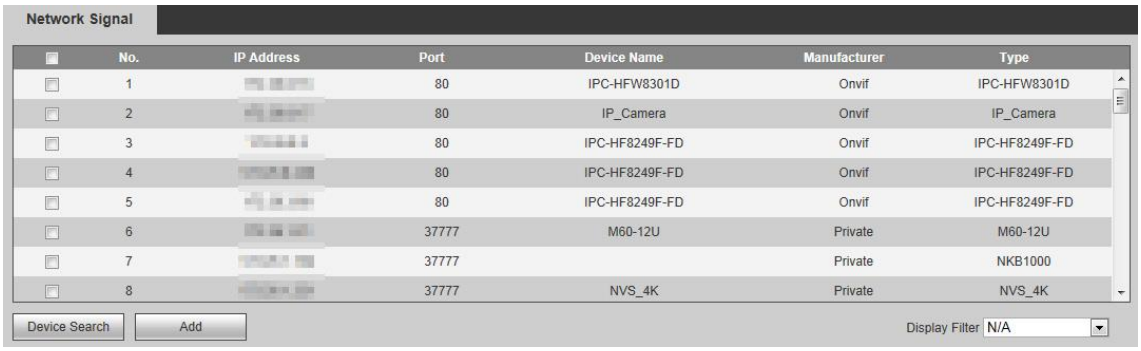


Searching and Adding

Step 1 Click **Device Search**.

The system starts to search all network signals in the LAN. See Figure 4-60.

Figure 4-60 Searching Signal

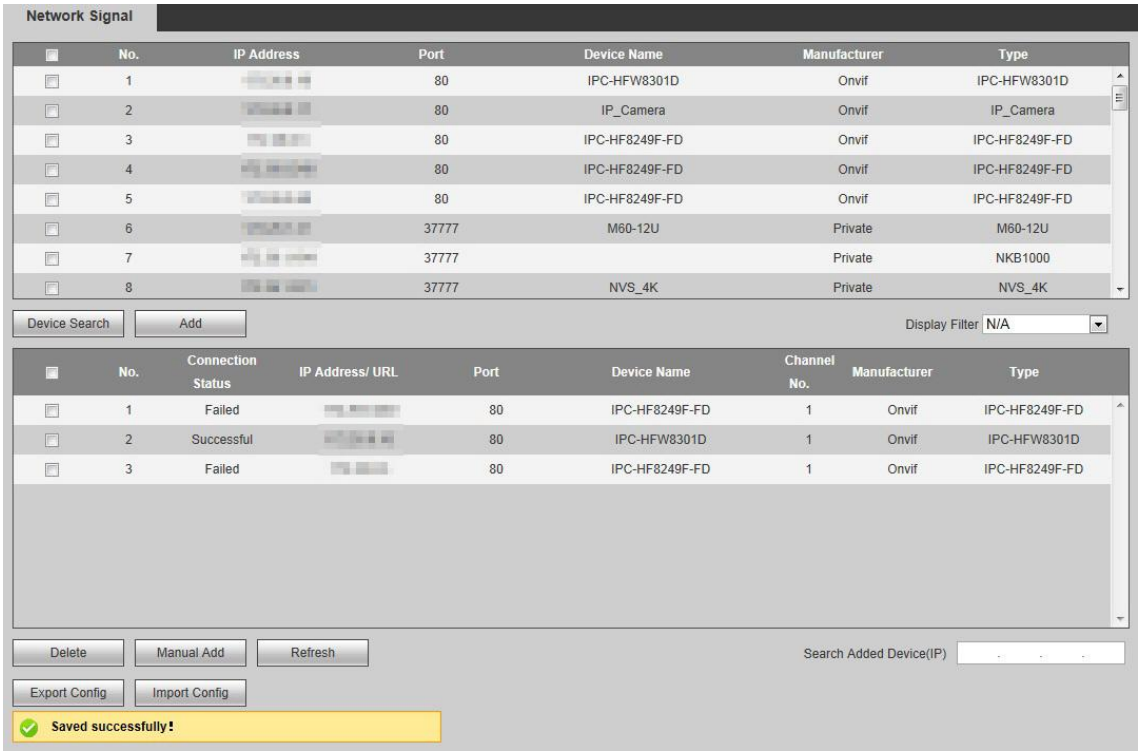


Filter device type in **Display Filter**. For example, select IPC, and all IPC devices will be displayed here.

Step 2 Select the check box corresponding to the network signal, and click **Add**.

This network signal is displayed in the list, and the system displays **Saved successfully**. See Figure 4-61.

Figure 4-61 Adding Signal



- If the device is under normal use, **Connection Status** will change from **Failed** to **Successful** after several seconds. The system will display **Saved successfully**again.
- If **Connection Status** remains **Failed**, the device might not be started, or a black list has been configured, or it is not included in a white list.

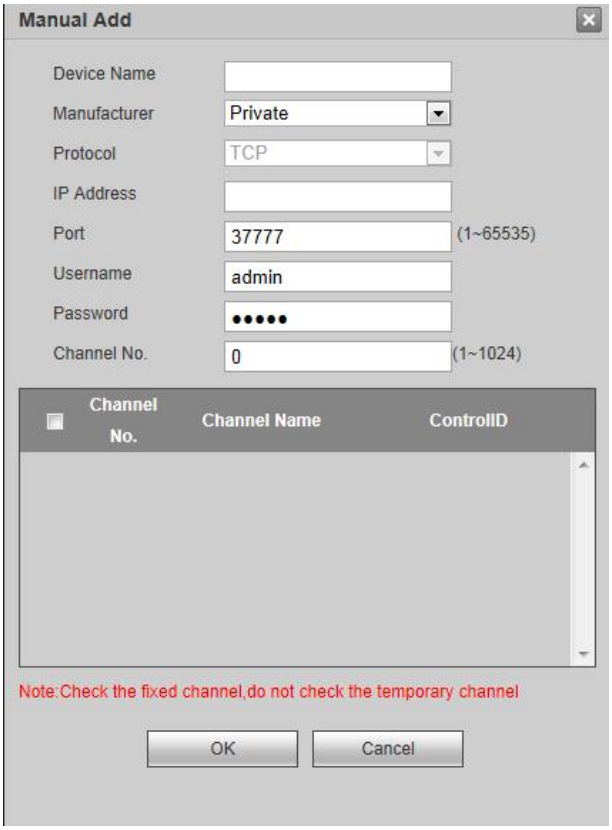
Enter IP address in **Search Added Device (IP)** search box, and this device information will be marked yellow in the list.

Manual Add

Step 1 Click **Manual Add**.

The **Manual Add** interface is displayed. See Figure 4-62.

Figure 4-62 Manual add



Step 2 Configure the parameters. See Table 4-18 for details.

Table 4-18 Manual add parameters description

Parameter	Description
Device Name	It is to fill in device name.
Manufacturer	Select device manufacturer.
Protocol	It is TCP by default.
IP Address	Configure the IP address of device to be added.
Port	Configure port number of device to be added. The default setting is 37777.
Username	Configure the username to login the device to be added.
Password	Configure the password to login the device to be added.
Channel No.	Number of connected channels.

Step 3 Click **OK**.

This network signal is displayed in the list, and the system displays **Saved successfully**.

Import and Export Config

Import and export configurations to add network signals in batches.

Enable HTTPS before using **Import Config** and **Export Config** functions. Refer to "4.7.2.2Port" for details.

Step 1 Import or export configurations.

- Click **Import Config**, to import the preset devices information into the system.

- Click **Export Config**, to export configuration file and save it in local device for backup.

Step 2 Click **Import Config** or **Export Config** in http environment.

A dialog box is displayed. See Figure 4-63.

Figure 4-63 Dialog box



Step 3 Click **OK**. The system jumps to https environment.

You need to login again, and then click **Import Config** or **Export Config.**

Deleting Network Signal

Select a network signal from the added signal list, and click **Delete** to delete the network signal.

Sorting

Click each attribute field, and ▼ will appear on the right of the field, meaning the network signal is arranged in descending order. Click it again, and the icon turns into ▲, meaning the network signal is arranged in ascending order. See Figure 4-64 and Figure 4-65.

Figure 4-64 Descending order

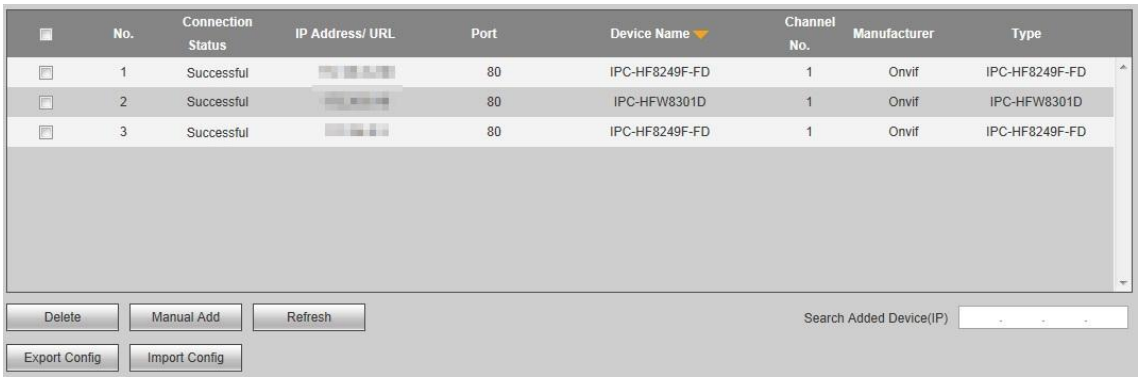
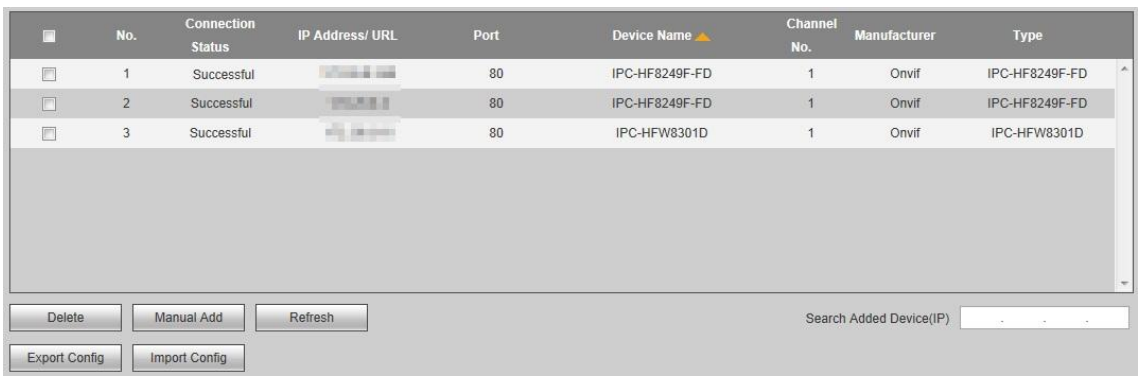


Figure 4-65 Ascending order



4.7.4.2 Local Signal

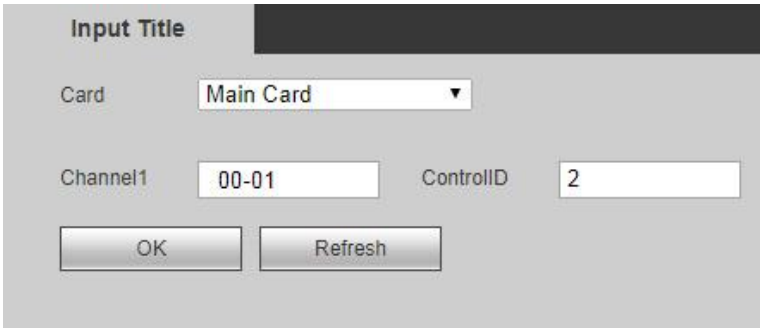
1-channel 4K high definition (H.265) series does not support local signal.

You can configure input title and control ID of each channel on the board card. Control ID can correspond to the binding source (such as keyboard), so the binding source can be displayed on the TV wall.

Step 1 Select **Setup > Signal Management > Local Signal > Input Title**.

The **Input Title** interface is displayed. See Figure 4-66.

Figure 4-66 Input title



Step 2 Select the card, and configure channel name and control ID for each channel.

Step 3 Click **OK** to complete the settings.

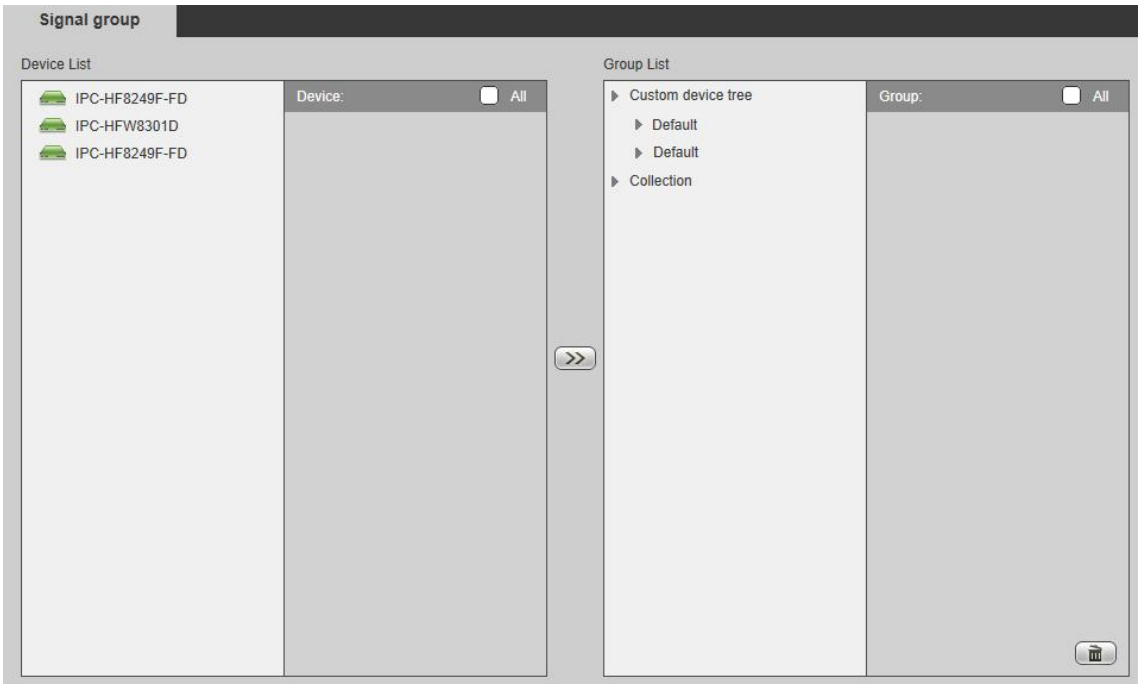
4.7.4.3 Signal Group

You can customize signal group. **Signal Group** tab displays added group and signal source. You can drag signal group to the window for loop play of signals in the group.

Step 1 Select **Setup > Signal Management > Signal Group**.

The **Signal Group** interface is displayed. See Figure 4-67.

Figure 4-67 Signal group

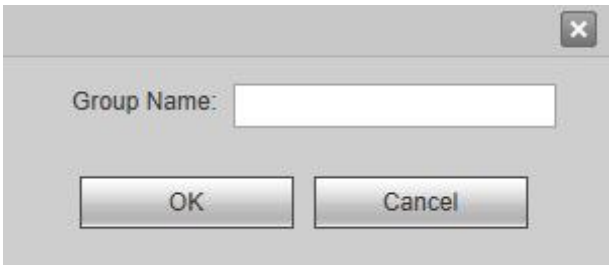


Step 2 Create a group.

1) Move your mouse pointer to **Custom Device Tree** or **Collection** in **Group list**, and then click +.

The dialog box of creating a group is displayed. See Figure 4-68.

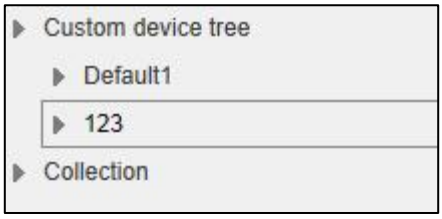
Figure 4-68 Create a group



2) Enter group name, and then click **OK**.

A group has been created. See Figure 4-69.

Figure 4-69 Creation is completed



Move your mouse pointer to group name. Icons are displayed. See Figure 4-70.

Figure 4-70 Editing icons



- Click + to create a sub-group under this group.

  Sub-group cannot be created under **Collection** group.

- Click ✎ to rename this group.

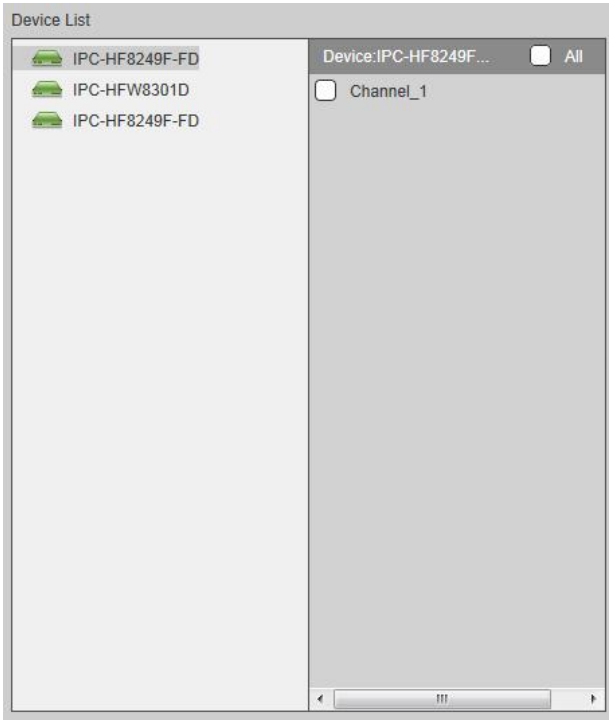
- Click ✕ to delete this group.

Step 3 Select signal.

1) Select a device from **Device List**.

Device name list displays all signals under this device. See Figure 4-71.

Figure 4-71 Select device



2) Select one signal or multiple signals.

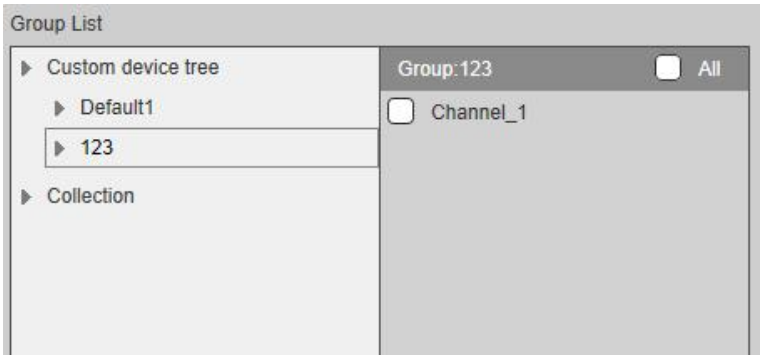
Select **All** to select all the signals.

Step 4 Select a group.

Step 5 Click >>.

Signals have been divided into groups. See Figure 4-72.

Figure 4-72 Grouping is completed



- Select a signal from a group, and click to delete the signal.
- Select **All** to select all the signals.

4.7.5 Display Management

You can configure video wall, manage screen, configure output display and output name.

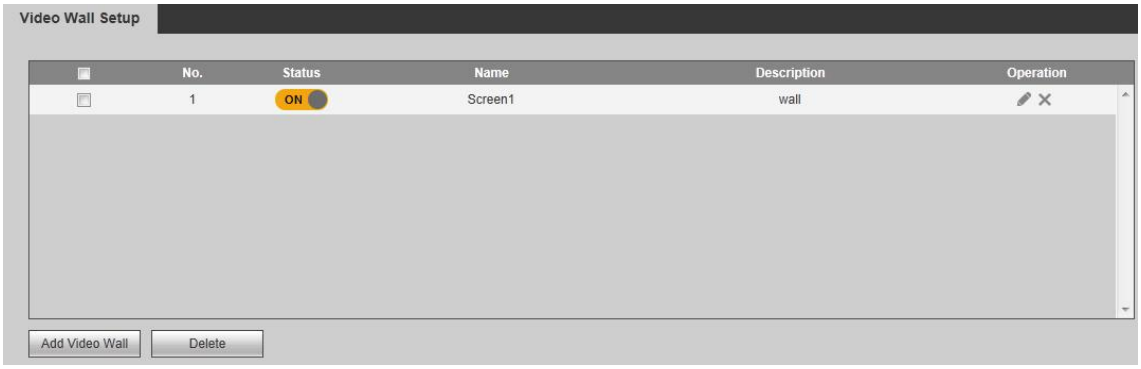
4.7.5.1 Video Wall Setup

You can configure video walls according to actual quantity and splitting of screens, so signals can be displayed on video walls.

Select **Setup > Display Management > Video Wall Setup.**

The **Video Wall Setup** interface is displayed. See Figure 4-73.

Figure 4-73 Video wall setup



4.7.5.1.1 Adding Video Wall

Step 1 Click **Add Video Wall**.

The **Video Wall Layout Setup** interface is displayed. See Figure 4-74 or Figure 4-75.

- 1-channel 4K high definition (H.265) series displays Figure 4-74, and 4-channel 4K high definition (H.265, with 2 input ports) series displays Figure 4-75.
- Take 4-channel 4K high definition (H.265, with 2 input ports) series for example. Operating steps of 1-channel 4K high definition (H.265) series are similar.

Figure 4-74 Video wall layout setup (1)

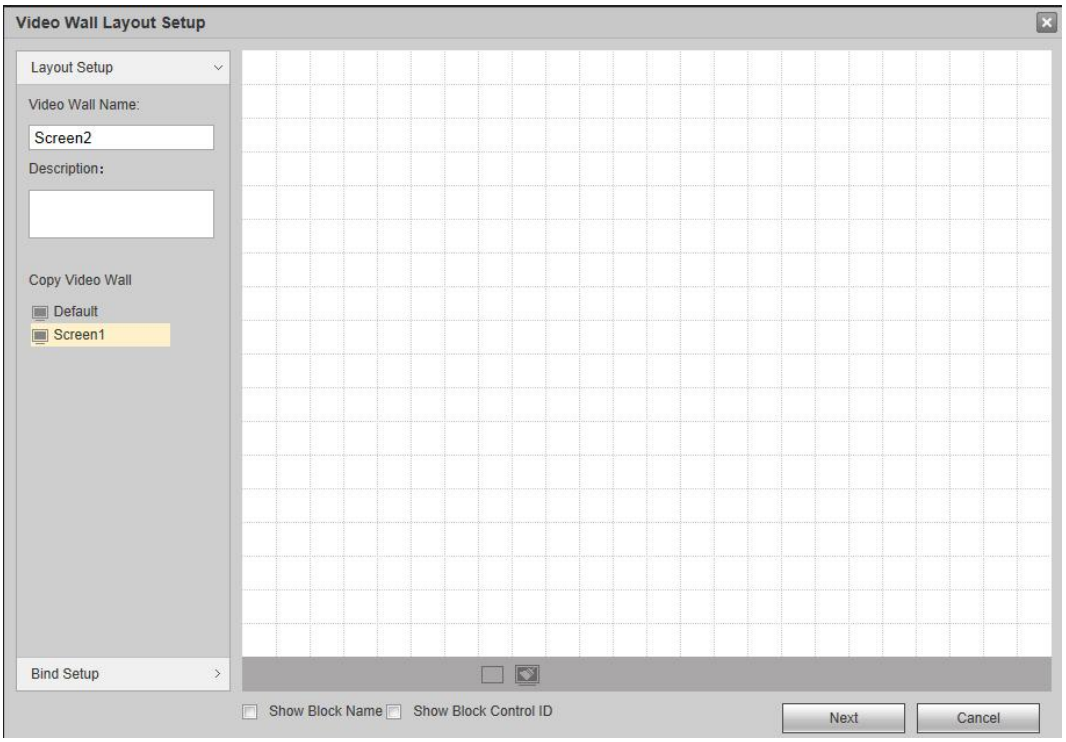
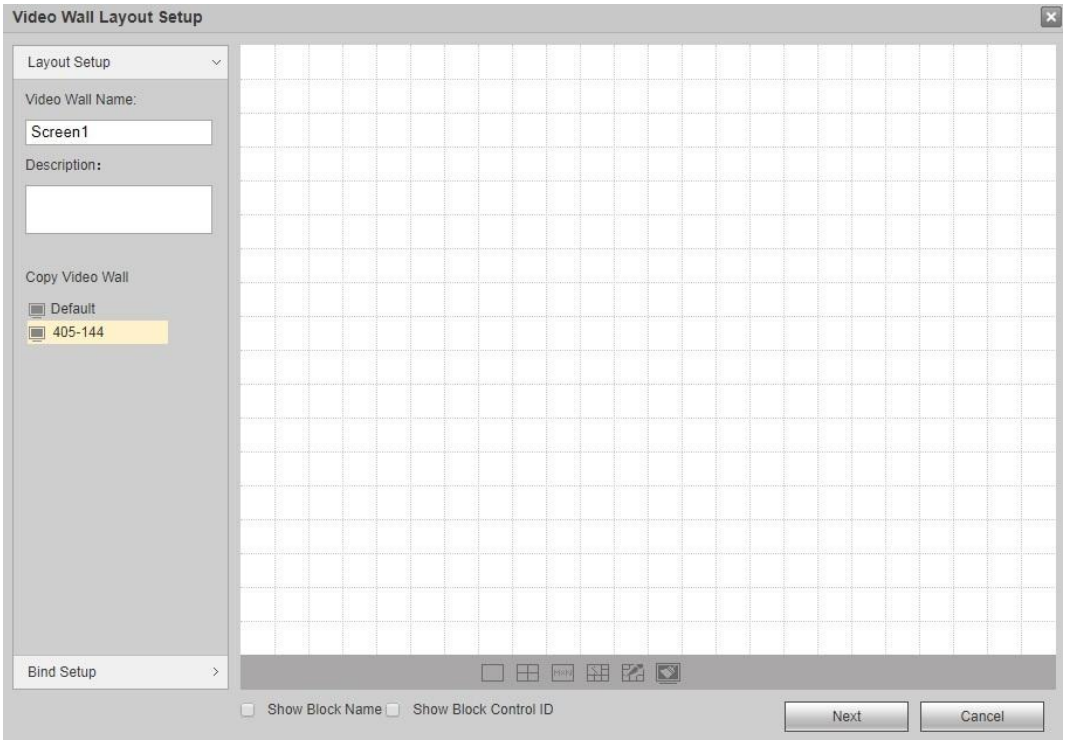


Figure 4-75 Video wall layout setup (2)



Step 2 Configure the layout. Customize **Video Wall Name** and **Description**.

1) Click icons at the bottom of the interface, to add single screen and split screen quickly. See Figure 4-76 and Figure 4-77.

Press and hold on left mouse button, you can drag the screen to anywhere you want.

Figure 4-76 Add screen

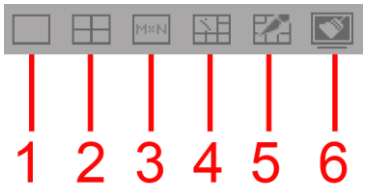
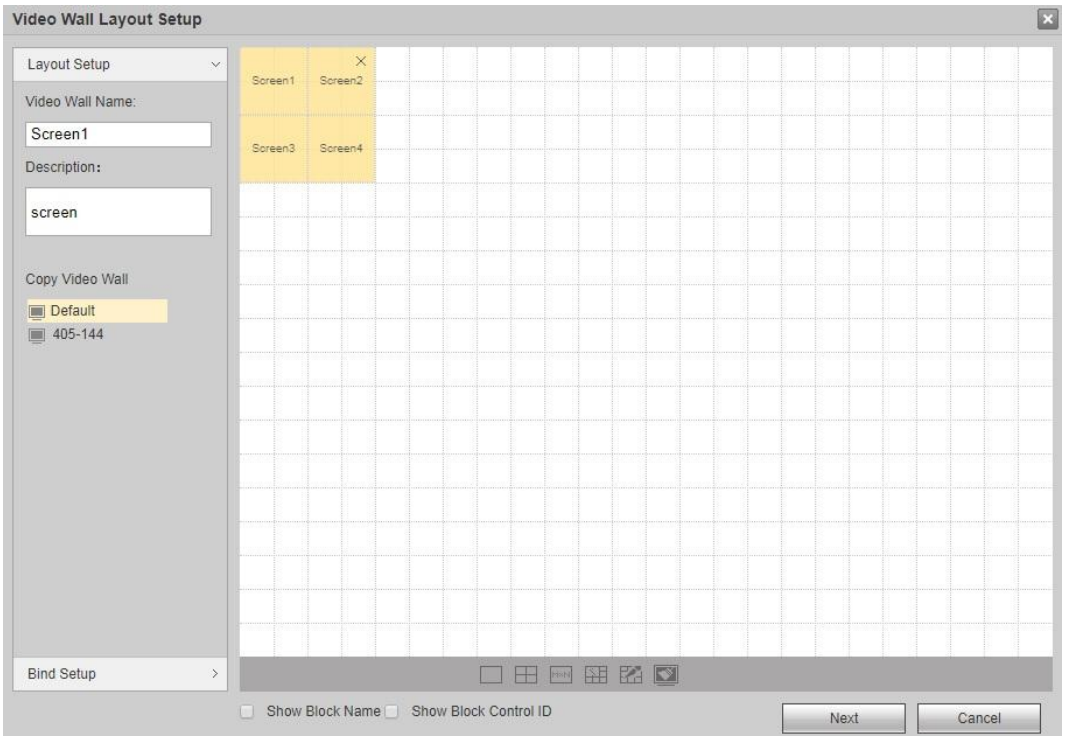


Table 4-19 Parameters description

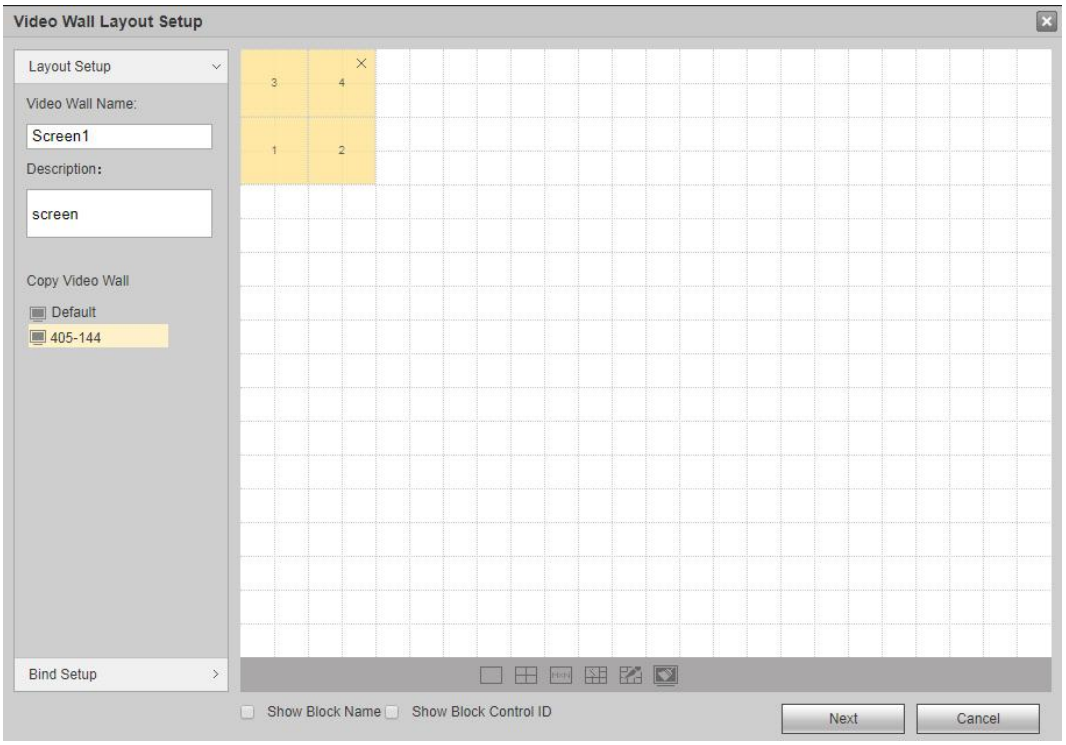
No.	Name	Description
1	Single Screen	Click to add single screen.
2	4-split Screen	Click to add a 4-split screen.
3	Custom	Click this icon, enter row and column number in the pop-up **User Custom** interface, and you can add a custom screen.
4	Splicing	Select separate screens, and click this icon to splice them. ● Splicing screen cannot be selected. ● Single screens shall be connected horizontally or vertically.
5	Cancel Splicing	Select splicing screens, and click this icon to cancel their splicing.
6	Clear Screen	Clear all screens on the video wall.

Figure 4-77 Add screen



You can select existing video wall from **Copy Video Wall** zone on the left of the interface, and then layout of video wall is displayed on the right of the interface. You can modify the layout directly. See Figure 4-78.

Figure 4-78 Copy video wall



2) (Optional) Select **Show Block Name**. Every splicing screen will show a block name, such as Splicing Video Wall 1.

- For single screen, it still shows Screen 1, Screen 2 and so on.
- Double-click to modify block name.

Figure 4-79 Show block name



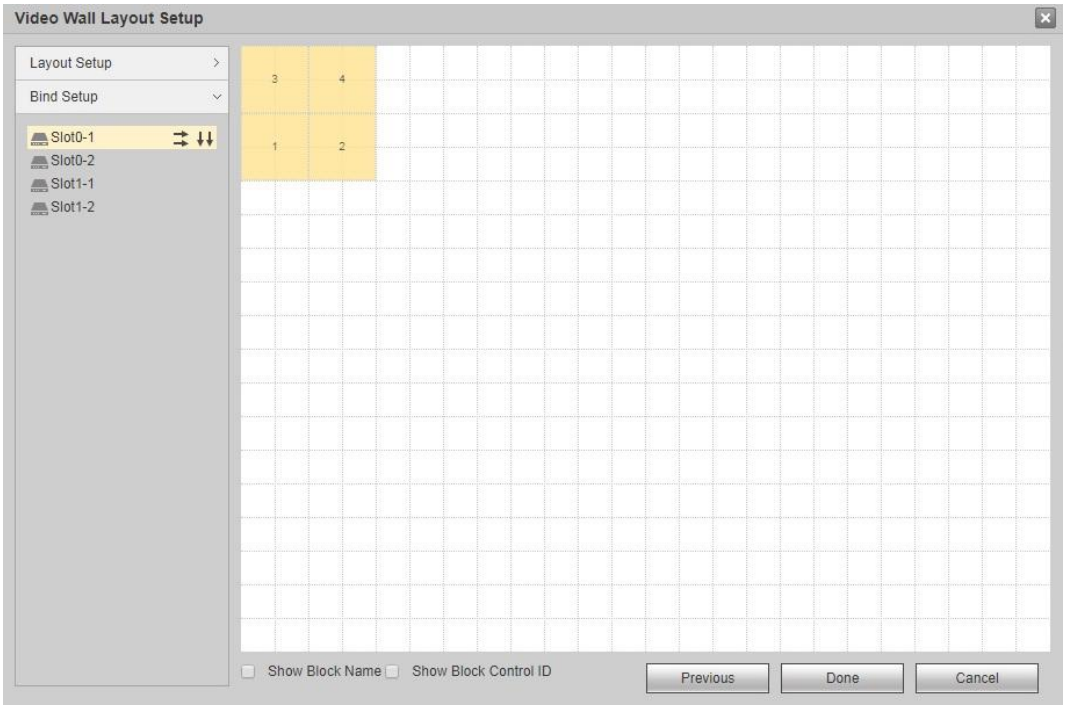
Select **Show Block Control ID**, and control ID of every block will be shown.

Show Block Name and **Show Block Control ID** cannot be selected at the same time.

Step 3 Click **Bind Setup** tab or **Next**.

The slot information is displayed. See Figure 4-80.

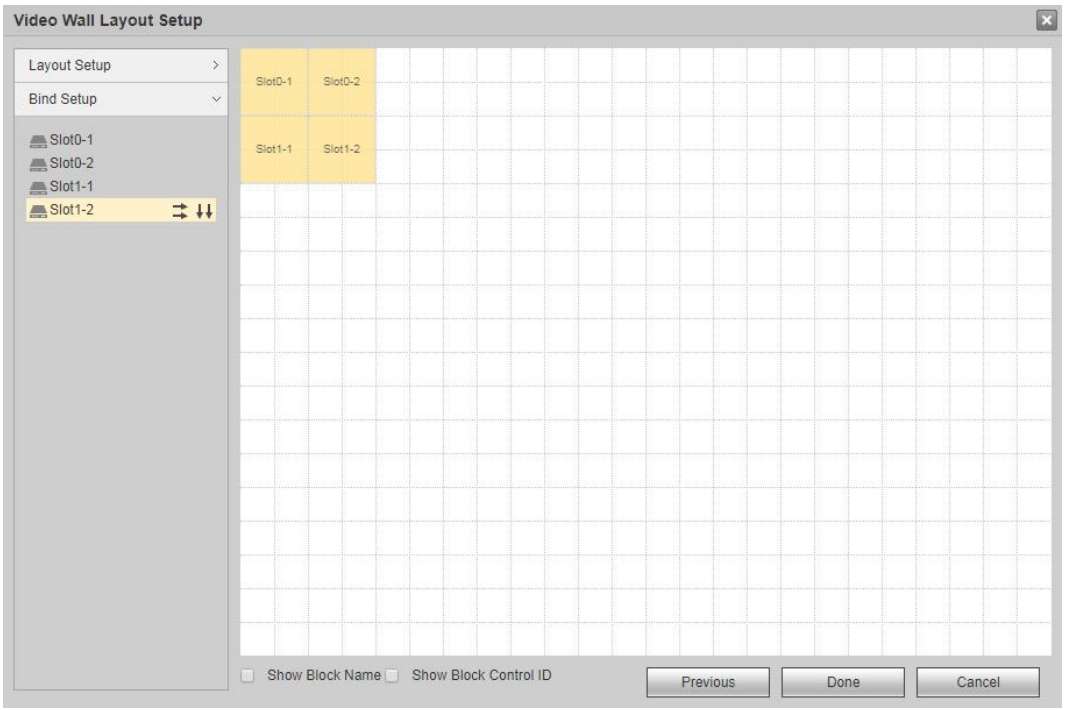
Figure 4-80 Slot information



Step 4 Select one slot, press and hold on left mouse button to drag the slot onto the screen, and bind the slot channel with screen. See Figure 4-81.

- All screens on the video wall shall be bound with slot channel; otherwise, when you click **Done**, the system will prompt you that "**There is sub screen without bound decoding channel in screen!**"
- Slot cannot be bound repeatedly. In case of error, drag a correct slot channel onto the screen, to cover it directly.
- Click to automatically bind slot with single screen horizontally.
- Click to automatically bind slot with single screen vertically.

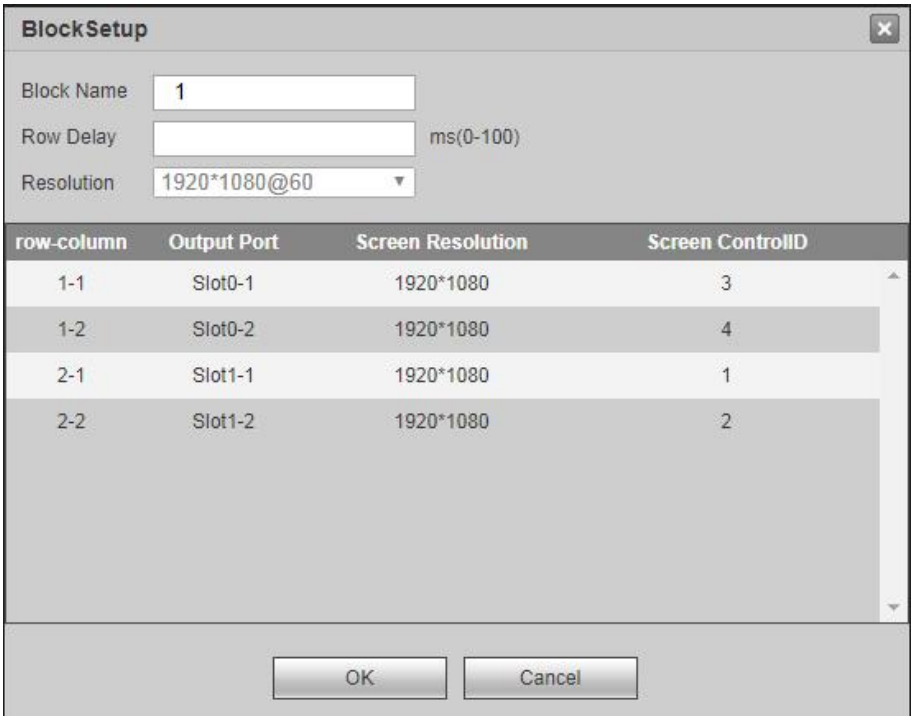
Figure 4-81 Slot binding



Step 5 Double-click a new video wall block.

The **Block Setup** interface is displayed. See Figure 4-82.

Figure 4-82 Block setup



Step 6 Set parameters. Refer to Table 4-20.

Table 4-20 Block setup parameters description

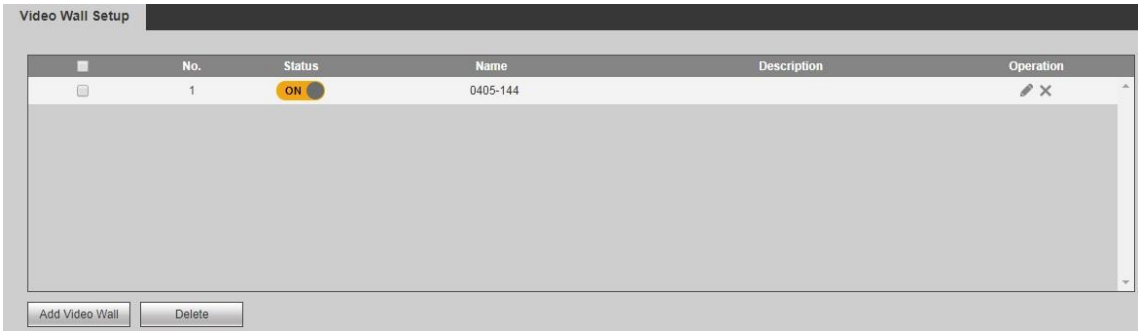
Parameter	Description
Name	Configure block name.
Row Delay	Configure row delay ranging from 0ms to 100ms.
Resolution	Resolution of output screen corresponding to each slot is 1920*1080@60 by default.

Step 7 Click **OK** to complete the settings.

Step 8 Click **Done**.

The system exits **Video Wall Layout Setup** interface. The new video wall is displayed in video wall list. See Figure 4-83.

Figure 4-83 Adding is completed



4.7.5.1.2 Modifying Video Wall

Click , and modify video wall information in the pop-up **Video Wall Layout Setup** interface. Refer to "4.7.5.1.1 Adding Video Wall" for details.

4.7.5.1.3 Deleting Video Wall

Tick the video wall check box, click **Delete** or , to delete the selected video wall after confirmation.

4.7.5.2 Screen Management

1-channel 4K high definition (H.265) series does not support screen management.

You can configure screen parameters, to turn on and turn off the screen.

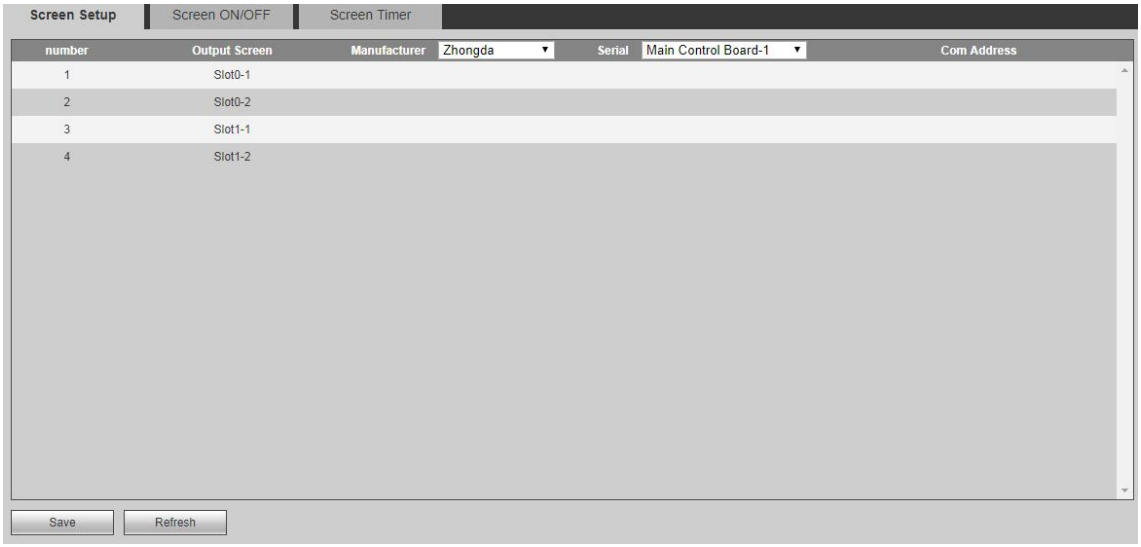
4.7.5.2.1 Screen Setup

Configure manufacturer, serial port and com address of every output screen, in order to realize communications between screen and device. Com address shall be the same with DIP address of video wall.

Step 1 Select **Setup > Display Management > Screen Management > Screen Setup**.

The **Screen Setup** interface is displayed. See Figure 4-84.

Figure 4-84 Screen setup



Step 2 Click drop-down list or text box to configure manufacturer, serial port and com address.

- They shall be the same with actual manufacturer, serial port and com address (DIP address) of video wall.
- Click drop-down list at the top, to configure manufacturer and serial port together.

Step 3 Click **Save**.

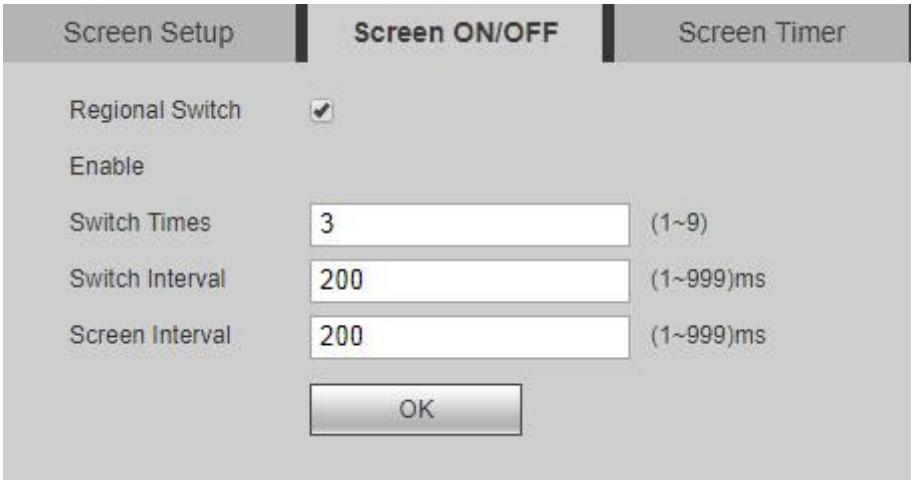
4.7.5.2.2 Screen ON/OFF

According to preset interval and time, the device sends ON/OFF commands to all screens continuously, and ensures that each screen receives commands and turns ON/OFF.

Step 1 Select **Setup > Display Management > Screen Management > Screen ON/OFF**.

The **Screen ON/OFF** interface is displayed. See Figure 4-85.

Figure 4-85 Screen ON/OFF



Step 2 Select the **Regional Switch Enable** check box to enable the function.

Step 3 Configure the parameters. Refer to Table 4-21 for details.

Table 4-21 Parameters description

Parameter	Description
Switch Times	The times of sending ON/OFF command.
Switch Interval	Interval of sending ON/OFF command.
Screen Interval	The interval for every screen to receive ON/OFF command.

Step 4 Click **OK** to complete the settings.

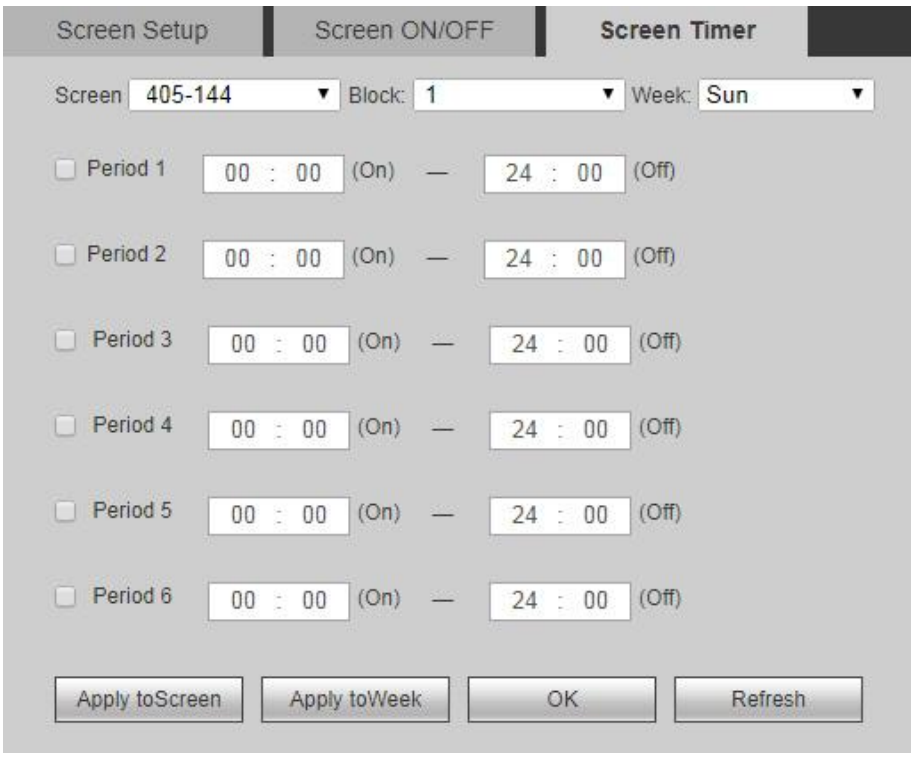
4.7.5.2.3 Screen Timer

Configure fixed ON/OFF time of every screen. Within the configured period, every screen will be turned ON/OFF at the fixed time.

Step 1 Select **Setup > Display Management > Screen Management > Screen Timer**.

The **Screen Timer** interface is displayed. See Figure 4-86.

Figure 4-86 Screen timer



Step 2 Select **Screen**, **Block** and **Week**.

Step 3 Select period and configure ON/OFF time.

After periods of one week have been configured,

- Click **Apply to Screen**, and select another slot in the pop-up interface, to apply this configuration to the slot.
- Click **Apply to Week**, and select another week in the pop-up interface, to apply this configuration to the week.

Step 4 Click **OK** to complete the settings.

4.7.5.3 Display Setup

You can configure the display parameters, enable main/sub stream auto switch, and window prompt info.

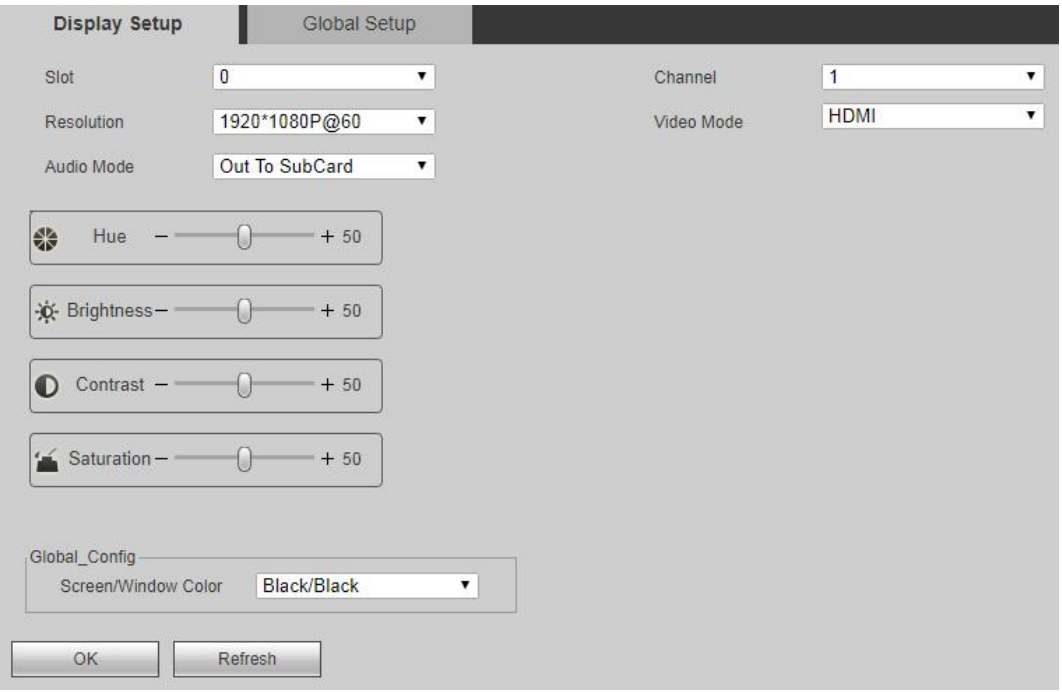
4.7.5.3.1 Display Setup

You can configure the resolution, video mode, hue, brightness and other parameters of the display, and adjust screen display.

Step 1 Select **Setup > Display Management > Display Setup > Display Setup**.

The **Display Setup** interface is displayed. See Figure 4-87.

Figure 4-87 Display setup



Step 2 Configure the parameters. See Table 4-22 for details.

Table 4-22 Parameter description

Parameter	Description
Slot	Configure slot of display.
Channel	Configure the channel of display.
Resolution	Configure the resolution of display according to your actual need.
Video Mode	Video output mode is **HDMI** by default.
Audio Mode	Audio output mode is **Out to SubCard** by default. Decoding sound is output from audio output port of subcard.
Hue	Drag the slider to adjust the image hue and saturation.
Brightness	Drag the slider to adjust the image brightness through linear adjustment. The bigger the value is, the brighter the image will become. And vice versa. However, the image is likely to become dim if the value is too big.
Contrast	Drag the slider to adjust the image contrast. The bigger the value is, the more obvious the contrast between the light area and dark area will become. And vice versa. However, if the value is too big, the dark area is likely to become darker and the light area will be over exposed. If the value is too small, the image is likely to become dim.
Saturation	Drag the slider to adjust the color shades. The bigger the value is, the heavier the color will become. And vice versa. This value does not affect the overall brightness of image.
Screen/Window Color	Configure screen and window color, including black/black and blue/green.

Step 3 Click **OK** to complete the settings.

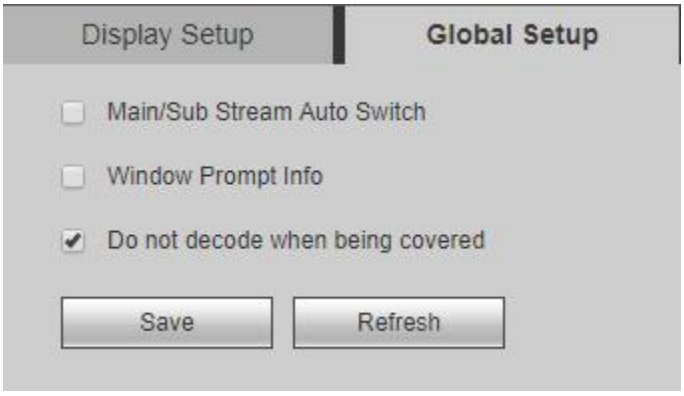
4.7.5.3.2 Global Setup

You can configure to enable main/sub stream auto switch, window prompt info and "do not decode when being covered".

Step 1 Select **Setup > Display Management > Display Setup > Global Setup**.

The **Global Setup** interface is displayed. See Figure 4-88.

Figure 4-88 Global setup



Step 2 Select the check boxes according to your actual need. Refer to Table 4-23 for details.

Table 4-23 Global setup parameters description

Parameter	Description
Main/Sub Stream Auto Switch	Select the check box, if main stream is displayed on the window, when the resolution is lower than D1, main stream will automatically switch to sub stream.
Window Prompt Info	Select the check box, and prompt information will be displayed on the window.
Do not decode when being covered	Select the check box, and the covered window will pause decoding.

Step 3 Click **Save**.

4.7.5.4 Output Name

You can configure output name and control ID of each channel on the board card. Control ID can correspond to the binding source (such as keyboard), so the binding source can be displayed on the video wall.

- Output name is only used to distinguish channels.
- Select output screens through control ID, and you can configure video wall display of keyboard or other devices.

Step 1 Select **Setup > Display Management > Output Name**.

The **Output Name** interface is displayed. See Figure 4-89.

Figure 4-89 Output name



Step 2 Configure output name and control ID for each channel.

Step 3 Click **Save**.

4.8 Info

4.8.1 Device Info

You can view device info, including card info, decode info, device info, system status, system log and online user.

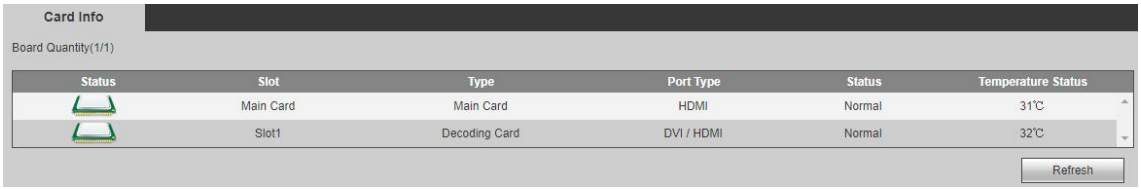
4.8.1.1 Card Info

You can view card status, type, port type and temperature status of the network video decoder.

Select **Info > Device Info > Card Info.** The **Card Info** interface is displayed. See Figure 4-90.

- : This slot has a card.
- : This slot does not have a card.

Figure 4-90 Card info



4.8.1.2 Decode Info

You can view decoding status, resolution, FPS, data flow and decode flow of the decoding channel.

Select **Info > Device Info > Decode Info.** The **Decode Info** interface is displayed. See Figure 4-91.

Figure 4-91 Decode info



You can configure **Record Time Interval** at the top right corner of the interface, and then click . The system records this channel according to the time interval.

4.8.1.3 Device Info

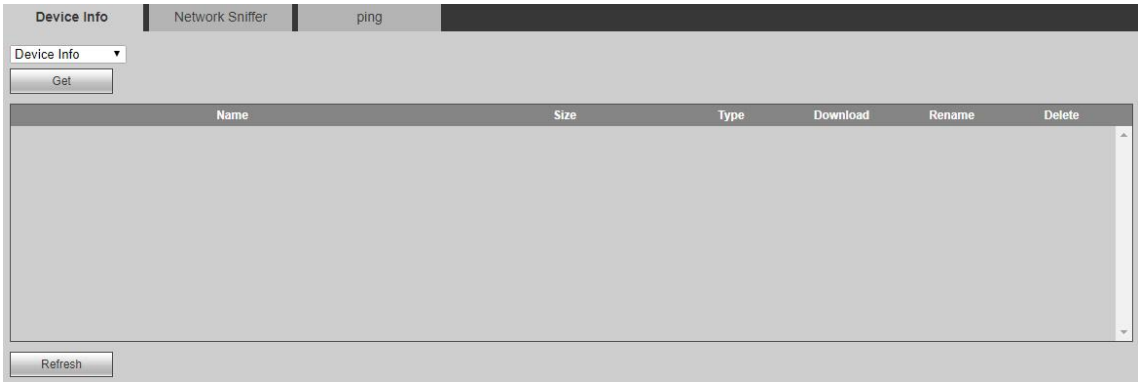
4.8.1.3.1 Device Info

You can view device info and card log of network video decoder.

Step 1 Select **Info > Device Info > Device Info > Device Info**.

The **Device Info** interface is displayed. See Figure 4-92.

Figure 4-92 Device info

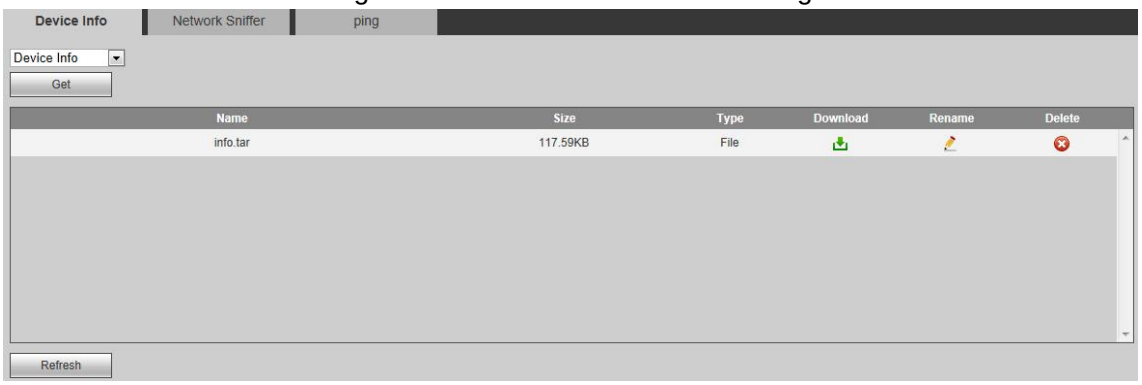


Step 2 Select **Device Info or Card Log**, and click **Get**.

The device info or card log is displayed. See Figure 4-93.

- Click to download information file or card log of the device.
- Click to rename the information file or card log of the device.
- Click to delete records on the information file or card log interface. If you delete it by mistake, you can get it again.

Figure 4-93 Get device info or card log



4.8.1.3.2 Network Sniffer

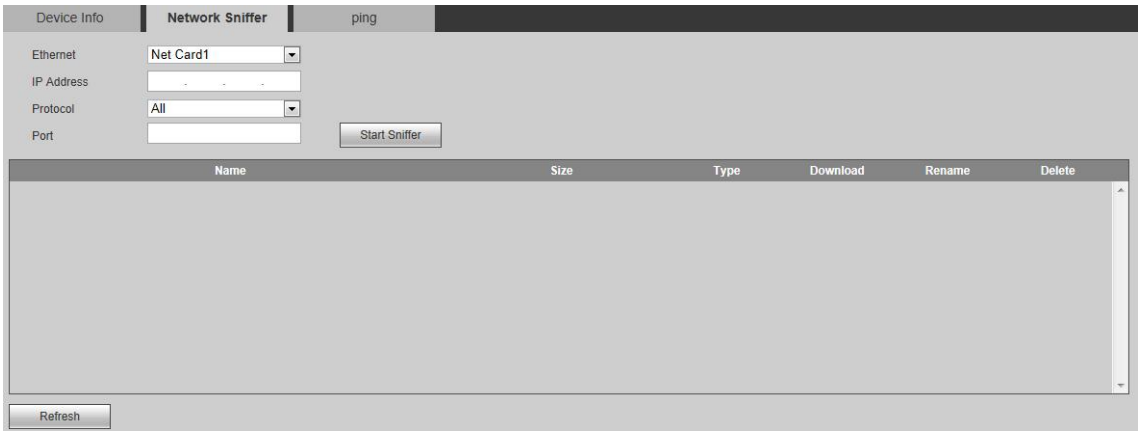
Network sniffer is to intercept, resend, edit and transfer the data received and sent through network, so as to inspect network security.

In case of network error, you can carry out sniffer operation on this interface, download the sniffer file to local device, and provide it to technicians to analyze network status.

Step 1 Select **Info > Device Info > Device Info** > **Network Sniffer**.

The **Network Sniffer** interface is displayed, see Figure 4-94.

Figure 4-94 Network sniffer



Step 2 Set parameters according to your actual situation. Refer to Table 4-24 for details.

Table 4-24 Network sniffer parameter description

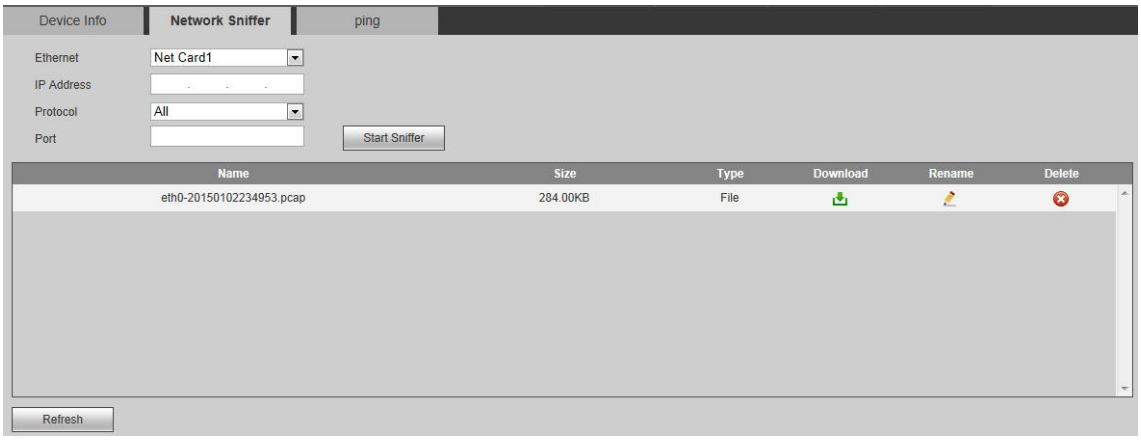
Parameter	Description
Ethernet	Select the net card that has been binded.
IP Address	Set network IP address.
Protocol	Select network protocol, including All, TCP and UDP.
Port	Set network port.

Step 3 Click **Start Sniffer**.

Step 4 After a while, click **Stop Sniffer**.

The obtained data packet is displayed. See Figure 4-95.

Figure 4-95 Data packet



- Click to download this sniffer file.
- Click to rename this sniffer file.
- Click to delete this sniffer file.

4.8.1.3.3 Ping

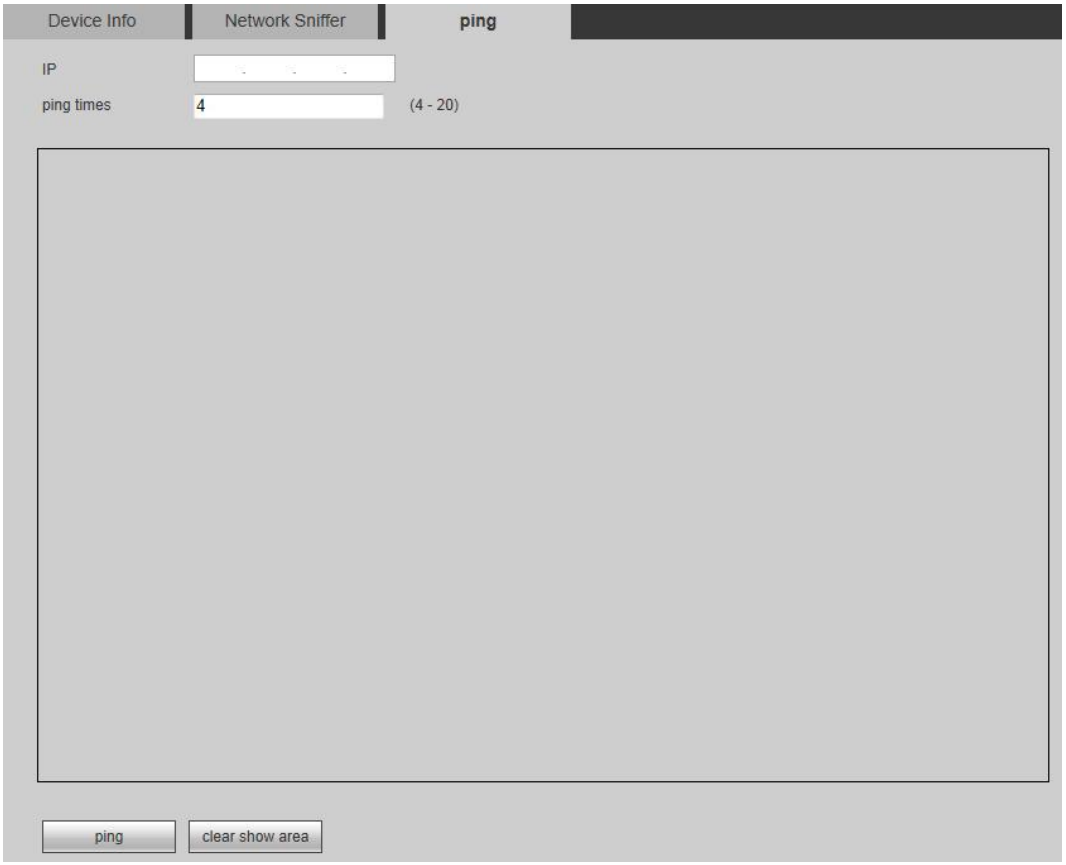
With ping command, check whether network video decoder is connected normally.

When ping function is enabled, you can open only one web client. Otherwise, ping information might not be displayed completely.

Step 1 Select **Info > Device Info > Device Info** > **Ping**.

The **Ping** interface is displayed. See Figure 4-96.

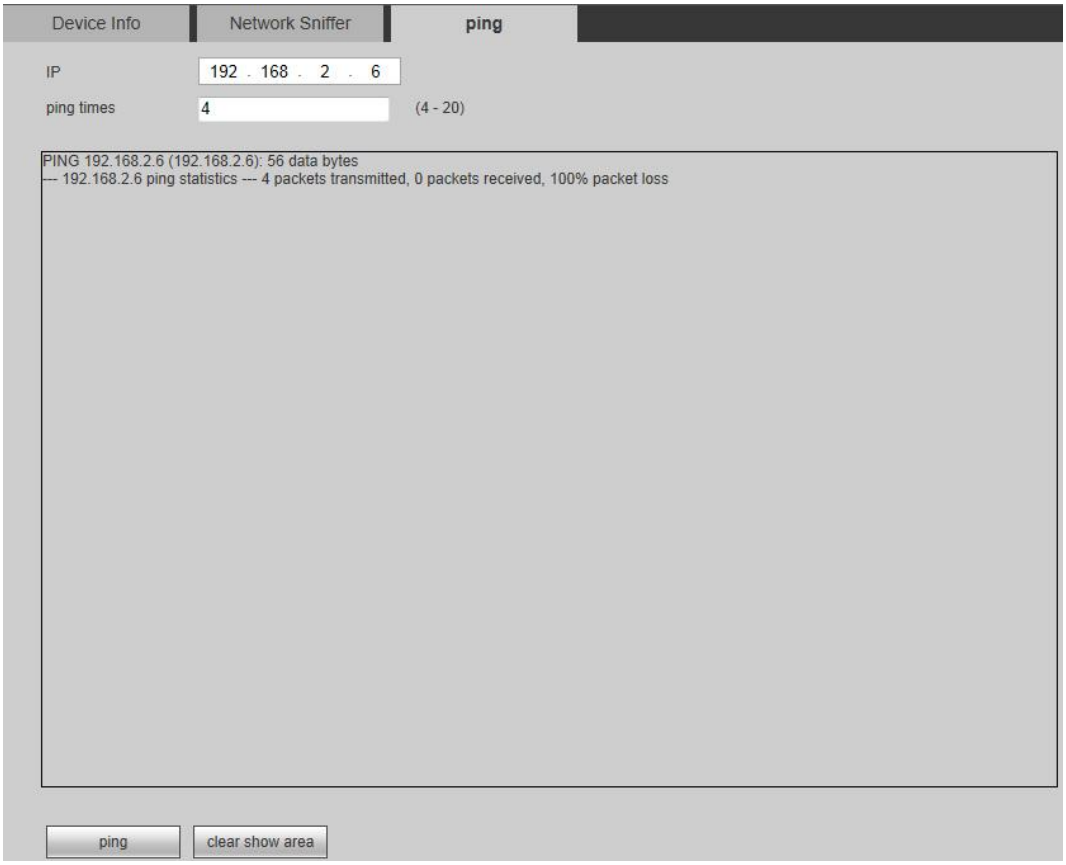
Figure 4-96 Ping



Step 2 Enter the IP address and ping times, and click **Ping**.

After several seconds, ping info is displayed. The network is connected if returned TTL value is less than or equal to 64. See Figure 4-97.

Figure 4-97 Information display



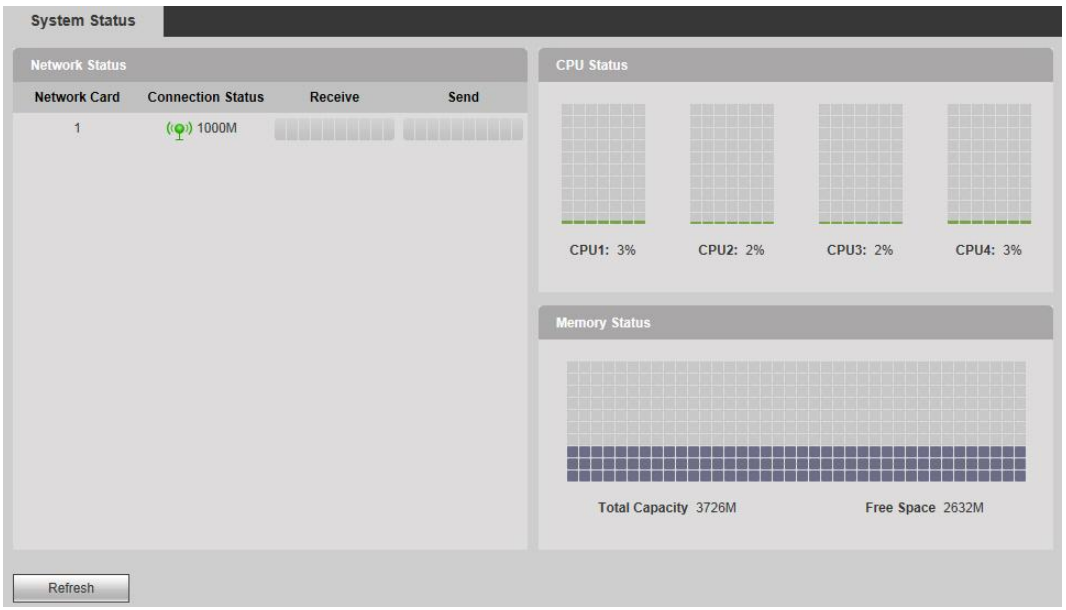
4.8.1.4 System Status

You can view network status, CPU status and memory status of the network video decoder.

Select **Info > Device Info > System Status**.

The **System Status** interface is displayed. See Figure 4-98.

Figure 4-98 System status



- Network status: Display connection status, data receiving and sending of network card.
- CPU status: Display CPU status of all inserted board cards.
- Memory status: Display memory status.

4.8.1.5 System Log

You can search and view system log information about network video decoder according to time and log type, and backup the log to local PC.

Step 1 Select **Info > Device Info > System Log.**

The **System Log** interface is displayed. See Figure 4-99.

Figure 4-99 System log



Step 2 Configure **Start Time**, **End Time** and **Type**, and then click **Search**.

The searched logs are displayed.

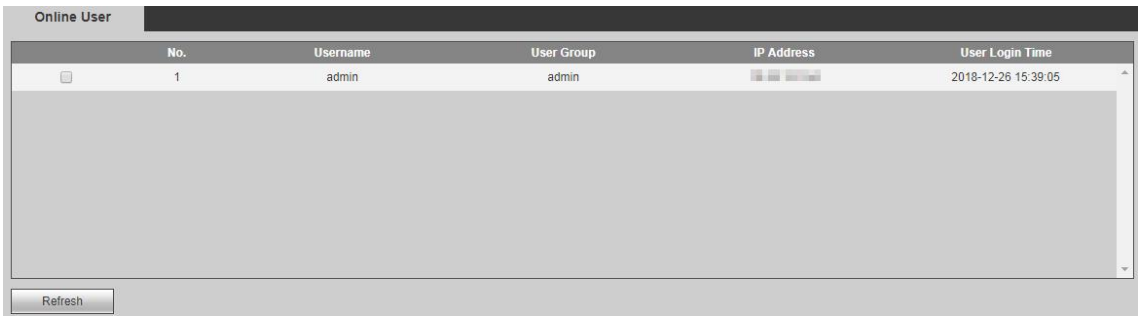
- Click the log to show details.
- Click **Clear** to clear all log information of the device. Log information cannot be cleared according to types.
- Click **Backup** to backup the searched system log information to the PC under use.

4.8.1.6 Online User

You can view online users' usernames, groups, IP addresses and other basic information.

Select **Info > Device Info > Online User**. The **Online User** interface is displayed. See Figure 4-100.

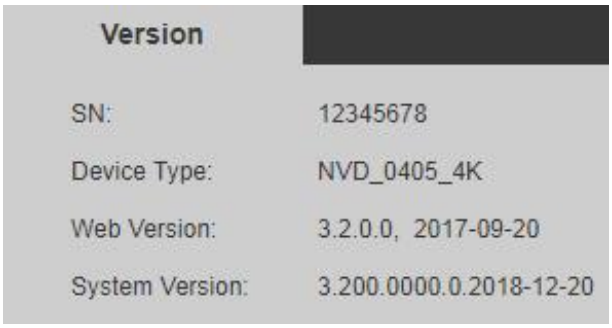
Figure 4-100 Online user



4.8.1.7 About

Select **Info > Device Info > About**, and you can view version information about this device. See Figure 4-101.

Figure 4-101 Version



Information in the image is just for your reference. The actual product shall prevail.

4.8.2 Help

In the **Info > Help > User's Manual**, you can read user's manual online, and you can click **Download** to download the user's manual.

5 Alarm Input /Output Device

Before device connection, pay attention to the following points:

- Alarm Input

  Confirm alarm type of alarm input device, and then match alarm type at network end of decoder (for example, in case of grounding alarm, the decoder shall be normally open; otherwise, it shall be normally closed).

  Alarm input is effective in case of low electrical level, so the device can be grounded.

  If the alarm device is connected to 2 decoders, or one decoder and other devices, use a relay for isolation.

- Alarm Output

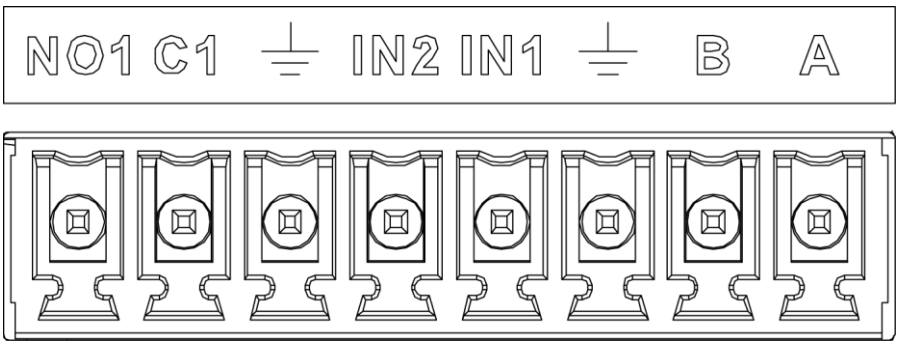
  The alarm output port of decoder cannot be connected to high-power load (less than 1A). When constructing the output circuit, the excessive current should be prevented from causing damage to the relay. Use a circuit breaker for isolation when applying high-power loads.

- Pay attention to grounding of camera, since poor grounding might lead to chip damage.

  Alarm input type can be NO (normal open) or NC (normal close).

5.1 Alarm Port

Figure 5-1 Diagram of alarm port

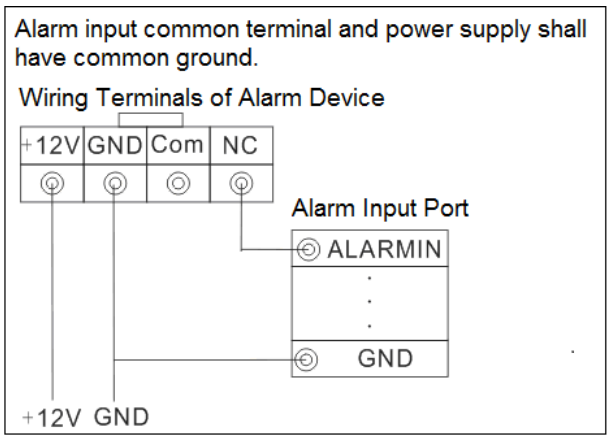


Parameter	Description
A, B	Control A and B cables of RS–485 device.
⏚	Ground line port
IN1, IN2	Alarm input port
NO1; C1	Alarm output port (NO type)

5.2 Alarm Input Port

- 16-channal alarm input, which can be NO or NC.
- Connect the NC port of alarm detector to alarm input port (ALARM) of decoder.
- When supplying power from external power source to the alarm device, the alarm device should be common-grounded with decoder.

Figure 5-2 Diagram of alarm input



5.3 Alarm Output Port

- It is 8-channel switching volume alarm output (normally open contact), and there should be additional power supply to external alarm device.
- To avoid overload to damage the Device, please refer to relay parameters. Refer to "5.4 Relay Parameters of Alarm Output Port" for details.
- RS–485 A line and B line are used for connecting the line A and line B on the PTZ decoder.

Figure 5-3 Diagram of alarm input port module

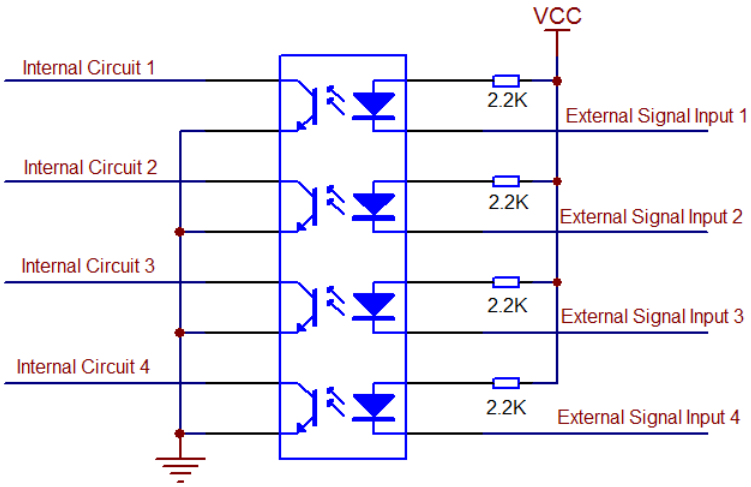
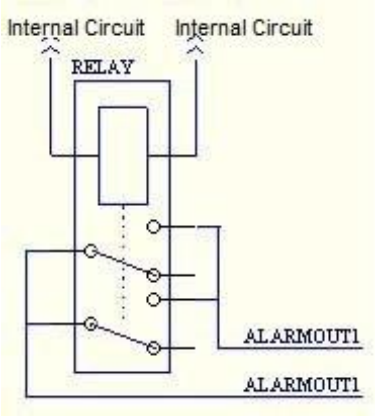


Figure 5-4 Diagram of alarm output port module



5.4 Relay Parameters of Alarm Output Port

Table 5-1 Contact parameter

Parameter	Value
Contact type	1Z
Contact resistance	100 mΩ (DC6V 0.1A)
Contact material	AgNi+Gold plated
Contact load (resistive)	AC125V 0.5A/DC 30V 1A
Maximum switching voltage	AC 125V/DC 60V
Maximum switching current	2A
Maximum switching power	62.5 VA/30 W
Minimum allowable load	1 mA 5V
Mechanical durability	$1X107^{7}$ times (300 times/min)
Electrical durability	$1X10^{5}$ times (30 times/min)

Appendix 1 Technical Parameters

Appendix 1.1 1-channel 4K High Definition (H.265) Series

Appendix table 1-1 1-channel 4K high definition (H.265) series

System parameter	**Device model**	**1-channel 4K high definition (H.265) series**
	Main processor	High-performance industrial embedded micro-controller
	Operating system	X86 system
	Input device	Front panel button, keyboard control
	Short-cut function	None
Hardware port parameter	**Video standard**	SVAC/MPEG4/H.264/MJPEG/H.265
	Audio standard	PCM/G711
	Decoding display resolution	QCIF/CIF/2CIF/HD1/D1/960H/720P/1080P/3 MP/5 MP/6 MP/8 MP/12 MP
	Video frame rate	PAL: 1 fps – 25 fps, NTSC: 1 fps – 30 fps
	Stream type	Composite stream, video stream
	Video output channel	1
	Video output port	VGA and HDMI output
	Audio output channel	1
	Audio output port	HDMI
	Communication interface	1 RJ–45 10M/100M/1000M Ethernet port 1 RS–232 port, 1 standard RS–485 port, half-duplex
	Audio talk channel	1
	Audio talk port	RCA (electrical level is 2Vrms and output impedance is 10kΩ)
	Alarm input	4
	Alarm output	4-channel relay output (DC 30V 1A, AC 125V 0.5A linkage output)
Working environment and other	**Power supply**	DC 12V 3.3A
	Power consumption	≤20W

physical parameters	**Working temperature**	－10℃ to ＋55℃(14℉ to 131℉)
	Working humidity	10%–95% 86 kPa–106 kPa
	Size	440 mm × 322.8 mm × 44 mm (1U)
	Weight	3.16 Kg (6.97 lb.)

Appendix 1.2 4-channel 4K High Definition (H.265, With 2 Input Ports) Series

Appendix table 1-2 4-channel 4K high definition (H.265, with 2 input ports) series

System parameter	**Device model**	**4-channel 4K high definition (H.265, with 2 input ports) series**
	Main processor	High-performance industrial embedded micro-controller
	Operating system	Embedded LINUX
	Input device	Front panel button, keyboard control
	Short-cut function	None
Hardware port parameter	**Video standard**	SVAC/H.264/MJPEG/H.265
	Audio standard	PCM/G711
	Decoding display resolution	QCIF/CIF/2CIF/HD1/D1/960H/720P/1080P/3 MP/5 MP/6 MP/8 MP/12 MP/32 MP
	Video frame rate	PAL: 1 fps – 25 fps, NTSC: 1 fps – 30 fps
	Stream type	Composite stream, video stream
	Audio and video input channel	2
	Audio and video input port	HDMI input
	Video output channel	4-channel HDMI, 2-channel BNC
	Video output port	HDMI, BNC output
	Audio output channel	4-channel HDMI, 2-channel BNC
	Audio output port	HDMI, BNC (electrical level is 0.2V～3V, and impedance is 5kΩ)

System parameter	**Device model**	**4-channel 4K high definition (H.265, with 2 input ports) series**
	Main processor	High-performance industrial embedded micro-controller
	Operating system	Embedded LINUX
	Input device	Front panel button, keyboard control
	Short-cut function	None
	Communication interface	1 RJ–45 10M/100M/1000M Ethernet port, 1 RS–232 port, 1 standard RS–485 port, and 1 RJ–45 port of screen control.
	Audio talk channel	1
	Audio talk port	3.5 mm Jack port Input port: 3.5 mm port (electrical level 2.0 V Line in/50 mV Mic in, input impedance 10 kΩ) Output port: 3.5 mm port (electrical level 2.0 V, output impedance 16 Ω)
	Alarm input	4
	Alarm output	4-channel relay output (DC 30V 1A, AC 125V 0.5A linkage output)
Working environment and other physical parameters	**Power supply**	DC 12V 5.0A
	Power consumption	≤40W
	Working temperature	－10℃ to ＋55℃(14℉ to 131℉)
	Working humidity	10%–95% 86 kPa–106 kPa
	Size	440 mm × 321.8 mm × 44 mm (1U)
	Weight	3.35 kg (7.39 lb.)

Appendix 1.3 9-channel 4K High Definition (H.265) Series and 9-channel 4K High Definition (H.265, with 4 Input Ports) Series

Appendix table 1-3 9-channel 4K high definition (H.265) series and 9-channel 4K high definition (H.265, with 4 input ports) series

System parameter	**Device model**	**9-channel 4K high definition (H.265) series**	**9-channel 4K high definition (H.265, with 4 input ports) series**
	Main processor	High-performance industrial embedded micro-controller	

	Operating system	Embedded LINUX	
	Input device	Front panel button, keyboard control	
	Short-cut function	None	
Hardware port parameter	**Video standard**	MPEG2/MPEG4/H.264/H.265/SVAC/MJPEG	
	Audio standard	PCM/G711/AAC	
	Decoding resolution	QCIF/CIF/2CIF/HD1/D1/960H/720P/1080P/3 MP/4 MP/5 MP/6 MP/8 MP/12 MP	
	Video frame rate	PAL: 1 fps – 25 fps, NTSC: 1 fps – 30 fps	
	Stream type	Composite stream, video stream	
	Video input port	2-channel DVI-I input port, 2-channel HDMI input port	None
	Input resolution	Local capture supports 3840×2160, 1920×1080, 1600×1200, 1680×1050, 1440×900, 1400×1050, 1366×768, 1280×1024, 1280×960, 1280×800, 1280×720, 1152×864, 1024×768 and 800×600.	None
	Video output channel	9	
	Video output port	HDMI output port	
	Audio output channel	9	
	Audio output port	HDMI	
	Communication interface	2 RJ–45 10M/100M/1000M Ethernet ports, 3 standard RS–232 ports (1 DB9 port, 2 RJ–45 ports), and 1 half-duplex RS–485 port.	
	Audio talk channel	1	
	Audio talk port	3.5 mm Jack port Input port: 3.5 mm port (electrical level 2.0 V Line in/50 mV Mic in, input impedance 10 kΩ) Output port: 3.5 mm port (electrical level 2.0 V, output impedance 16 Ω)	
	Alarm input	4	
	Alarm output	4-channel relay output (DC 30V 1A, AC 125V 0.5A linkage output)	
	USB port	2 USB ports (1 USB2.0 port and 1 USB3.0 port)	
Working	**Power supply**	AC 100V～240V, 50 Hz～60Hz	

environment and other physical parameters	**Power consumption**	≤70W
	Working temperature	－10℃ to ＋55℃(14℉ to 131℉)
	Working humidity	10%–95% 86 kPa–106 kPa
	Size	440 mm × 408 mm × 70 mm (1.5U)
	Weight	4.83 kg (10.65 lb.)

Appendix 1.4 12/15/18/21-channel 4K High Definition (H.265) Series, 12/15/18/21-channel 4K High Definition (H.265, with 4 input ports) Series

Appendix table 1-4 12/15/18/21-channel 4K High Definition (H.265) Series, 12/15/18/21-channel 4K High Definition (H.265, with 4 input ports) Series

System parameter	**Device model**	12-channel 4K high definition (H.265) series	12-channel 4K high definition (H.265, with 4 input ports) series	15-channel 4K high definition (H.265) series	15-channel 4K high definition (H.265, with 4 input ports) series	18-channel 4K high definition (H.265) series	18-channel 4K high definition (H.265, with 4 input ports) series	21-channel 4K high definition (H.265) series	21-channel 4K high definition (H.265, with 4 input ports) series
	Main processor	High-performance industrial embedded micro-controller							
	Operating system	Embedded LINUX							
	Input device	Front panel button, keyboard control							
	Short-cut function	None							
Hardware port parameter	**Video standard**	MPEG2/MPEG4/H.264/H.265/SVAC/MJPEG							
	Audio standard	PCM/G711/AAC							
	Decoding resolution	QCIF/CIF/2CIF/HD1/D1/960H/720P/1080P/3 MP/4 MP/5 MP/6 MP/8 MP/12 MP							
	Video frame rate	PAL: 1 fps – 25 fps, NTSC: 1 fps – 30 fps							
	Stream type	Composite stream, video stream							

	Video input port	2-channel DVI-I input port, 2-channel HDMI input port						
	Input resolution	Local capture supports 3840×2160, 1920×1080, 1600×1200, 1680×1050, 1440 ×900, 1400×1050, 1366 ×768, 1280×1024, 1280 × 960, 1280 ×800, 1280×720, 1152×864, 1024×768 and 800×600 resolutions.						
	Video output channel	12	12	15	15	18	18	21	21
	Video output port	HDMI output port						
	Audio output channel	12	12	15	15	18	18	21	21
	Audio output port	HDMI						
	Communication interface	2 RJ–45 10M/100M/1000M Ethernet ports, 3 standard RS–232 ports (1 DB9 port, 2 RJ–45 ports), and 1 half-duplex RS–485 port.						
	Audio talk channel	1						
	Audio talk port	3.5 mm Jack port Input port: 3.5 mm port (electrical level 2.0 V Line in/50 mV Mic in, input impedance 10 kΩ) Output port: 3.5 mm port (electrical level 2.0V, output impedance 16 Ω)						
	Alarm input	2						
	Alarm output	1-channel relay output (DC 30V 1A, AC 125V 0.5A linkage output)						
	USB port	3 USB ports (1 USB2.0 port, and 2 USB3.0 ports)						
Working environment and other physical parameters	**Power supply**	AC 100V-127V, 200V-240V, 47Hz～63Hz						
	Power consumption	≤180W						
	Working temperature	－10℃ to ＋55℃(14℉ to 131℉)						
	Working humidity	10%–95% 86 kPa–106 kPa						
	Size	440 mm × 436.6 mm × 110 mm (2.5U)						
	Weight	11.25 Kg (24.8 lb.)	11.33 Kg (24.98 lb.)	11.94 Kg (26.32 lb.)	12.03 Kg (26.52 lb.)			