

Video Matrix Platform (M60)

User's Manual

V2.1.0

Foreword

General

This manual introduces function, installation, use, operation and maintenance of Video Matrix Platform.

Model

Video Matrix Platform-12U, Video Matrix Platform-7U

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

Version	Revision Content	Release Date
V2.0.0	Baseline Revision	April 2019
V1.0.0	First release	June 2018

Privacy Protection Notice

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

About the Manual

- The Manual is for reference only. If there is inconsistency between the manual and the actual product, the actual product shall 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 or install the Device in a place exposed to sunlight or near the heat source.
- Keep the Device away from dampness, dust or soot.
- Keep the Device installed horizontally on the stable place to prevent it from falling.
- Do not drop or splash liquid onto the Device, and make sure there is no object filled with liquid on the Device to prevent liquid from flowing into the Device.
- Install the Device in a well-ventilated place, and do not block the ventilation of the Device.
- Operate the device within the rated range of power input and output.
- Do not disassemble the Device.
- Transport, use and store the Device under the allowed humidity and temperature conditions.

Electrical Safety

- Use the battery of specified manufacturer; otherwise there might result in explosion. When replacing battery, make sure the same type is used. Improper battery use might result in fire, explosion, or inflammation.
- Follow the instructions to dispose of the used battery.
- Use the recommended power cables in the region and conform to the rated power specification.
- Use the power adapter provided with the Device; otherwise, it might result in people injury and device damage.
- The power source shall conform to the requirement of the Safety Extra Low Voltage (SELV) standard, and supply power with rated voltage which conforms to Limited power Source requirement according to IEC60950-1. Please note that the power supply requirement is subject to the device label.
- Connect the device (I-type structure) to the power socket with protective earthing.
- The appliance coupler is a disconnection device. When using the coupler, keep the angle for easy operation.

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1 Overview

1.1 Introduction

Based on Advanced Telecommunications Computing Architecture (ATCA), video matrix platform is designed as a modern telecommunication-level device which supersedes DVR, decoder, analog matrix, and video wall controller. It is compatible with past and current network monitoring environments.

Main Application:

- Flexible equipping of function card.
- Connect analog/HD-SDI camera and IPCs.
- With HDMI port, achieve matrix switch, encoding and decoding.
- Support online real-time preview.

Figure 1-1 Appearance of 12U video matrix platform



Figure 1-2 Appearance of 7U video matrix platform



1.2 Functional Feature

- This product is a digital video matrix system with functions of digital video switch, multiple operation access, centralized management and distributed deployment.
- It switches among analog signal, digital signal, HD network signal and HD digital video signal, and makes HD image available on video walls.

- This platform integrates video signal encoding/decoding, centralized data storage, online real-time preview and various networks, plan, log, user right management, device maintenance functions and etc., and allows HD video command/dispatch and video conference system.

1.2.1 Structural Feature

- 19-inch 7U and 12U standard rack case for universal uses.
- Card-type ATCA structure with strong expansibility and flexibility.
- Seven fans in three groups for intelligent temperature controlling, stabilized air passage with the case structure to balance internal temperature.
- Dual-channel redundant power supply for continuous working of device and security of data.
- Double blade function card.

1.2.2 Hardware Feature

- Intel x86 platform for device expandability and fluency when system is in full load.
- High-speed connector on compression card, x8 PCI-E gen2, DC 12V power supply and 5 GIO, for fluency of high-speed data flow.
- Compression card's hot swap button and indicator for users' flexible extension on the application and knowledge of compression card status.
- Various ports of compression card, such as USB, serial, Internet interface, HDMI, BNC, DVI and etc. which guarantee device functions and simplify operation and debugging done by users and technical staffs.
- With industrial embedded micro-processor, each function card works independently to balance system's work load and ensure fluency.
- Dual-high-speed non-blocking design for rear panel to meet demand of large volume A/V data transmission.

1.2.3 Software Feature

Embedded LINUX OS: safe, stable, efficient, easy development and maintenance.

A/V Encoding and Decoding

- A/V encoding card supports 32-ch BNC, 16-ch HD-SDI, 16-ch optical fiber, 8-ch DVI (support DVI, VGA, HDMI signal), and 16-ch HDCVI.
- A/V decoding card supports maximum 384-ch D1 real-time decoding or 96-ch HD1080P decoding output.

Network Function

- Eight RJ45 ports, each of which supports 1000M network; 8 optical fiber ports (Ethernet port and optical fiber port cannot be used at the same time).

- Support cascading among video matrix platforms, extending the video processing and networking abilities of video matrix platforms, and thus achieving the integration of multi-level video surveillance system.
- Support TCP/IP protocol stack, including TCP, UDP, RTP, RTSP, DHCP, DNS, DDNS, NTP, SADP protocols.
- Support management software to achieve remote switching between analog and digital videos on video wall and control with keyboard.
- Receive and configure parameter, reboot, export and import parameters remotely.

Video Management

- Support HD and SD digital matrix, and direct switch as non-compression bit stream which eliminates image quality reduction after multiple switches of video signal.
- Support HD and SD IPC matrix.
- Support digital video full crossing switch matrix, based on different applied compression card combinations, forming digital video full crossing switch matrix with different specifications.
- A/V decoding card supports HDMI, DVI, VGA and BNC ports; support up to 1080P (1920*1080P) resolution output.
- Allow operator to loop display different images on the same screen, pre-set and switch as group.
- Splicing image favorites, simplified operations on multiple video channels.

Other Functions

- Operation, alarm, abnormality and log recording facilitates user and technical staff's maintenance.
- Improve user authority management to provide more clear and orderly authorization levels.
- Timely upgrade the system in local and remote online way.
- Support device cascading and network storage to meet demand from medium to large surveillance systems.
- Multiple users and clients login, convenient for users to preview and manage monitoring whenever and wherever possible.

Figure 1-3 Connection diagram



1.3 Introduction to Cards in System

Table 1-1 System cards

No.	Name	Model	Functional Module	Description	Note
1	Platform Host	M60-12U	Video matrix platform host	- One 12U host supports 10 function cards. - One MBC0050 main control panel. - Two built-in power adaptors (redundant).	Standard
		M60-7U		- One 7U host supports 5 function cards. - One MBC0050 main control panel. - Two built-in power adaptors (redundant).	
2	Input Module	VEC3204FB	SD BNC video encoding card	32-ch video input (BNC). - Two DVI audio input ports (32-ch). 2-ch RS-485 port.	Optional

No.	Name	Model	Functional Module	Description	Note
		VEC1604HS	HD-SDI video encoding card (16-ch)	16-ch HD-SDI video input (BNC). - One DVI audio input port (16-ch). 2-ch RS-485 port.	Optional
		VEC0804HD	HD DVI video encoding card	8-ch DVI video input. - One VGA audio input port (8-ch). 2-ch RS-485 port.	Optional (support DVI,VGA, HDMI)
		VEC1604HC	16-ch HDCVI encoding card	16-ch BNC video input (HDCVI). - One DVI audio input (16-ch). 2-ch RS-485 port.	Optional
		VEC0804US	HD 3G-SDI encoding card (8-ch)	8-ch 3G-SDI video input (BNC). - One DVI audio input port (8-ch). 2-ch RS-485 port.	Optional
		VEC1605UH	16-ch UHD encoding card	16-ch HDMI video input. 4-ch VGA video input. - Two VGA audio input ports (16-ch). 1-ch RS-485 port.	Optional
		VEC0805UH	8-ch UHD encoding card	8-ch HDMI video input. 2-ch VGA video input. - One VGA audio input port (8-ch). 1-ch RS-485 port.	Optional
3	Output Module	VDC0905H	9-ch HDMI decoding card	9 HDMI video output ports	Optional
		VDC1205H	12-ch HDMI decoding card	12 HDMI video output ports	Optional
		VDC1505H	15-ch HDMI decoding card	15 HDMI video output ports	Optional
		VDC1805H	18-ch HDMI decoding card	18 HDMI video output ports	Optional

1.4 Host System

1.4.1 12U Host Case

Video Matrix Platform with 19-inch 12U structure host case includes function card slot, power port and intelligent temperature-controlling fan. See Figure 1-4.

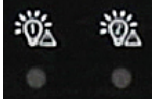
Figure 1-4 Appearance of 12U Host Case



Indicator lights on the front panel display device working status. See Table 1-2.

Table 1-2 Function introduction

	ON/OFF button.
	Power indicator light. • Red: Not operating after plugged in. • Red-Blue: Operating.
	Network indicator light. • Red: Device network is abnormal. • Off: Device network is normal.
	Alarm indicator light. • Red: Fault occurs. • Off: Device is normal.
	Temperature indicator light. • Red: Board card temperature is too high. • Off: Board card temperature is normal.

	Power module indicator light. • Red: Power module is abnormal. • Off: Power module is normal.
	Fan indicator light. • Red: Fan is abnormal. • Off: Fan is normal.

Hardware structure is as below:

- Air intake of host has a dust filter behind the plastic shell.
- Three groups of intelligent temperature-controlling fans allow hot swap.
- 10 interface board slots of function card are labeled in sequence and used to install rear interface board of function card.
- Interface board slots of main control panel are marked to “M”.
- Dual-power module supports 220V and 48V module.

1.4.2 7U Host Case

Video Matrix Platform with 19-inch 7U structure host case includes function card slot, power port and intelligent temperature-controlling fan. See Figure 1-5.

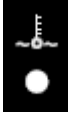
Figure 1-5 Appearance of 7U Host Case



Indicator lights on the front panel display device working status. See Table 1-3.

Table 1-3 Function introduction

	
	Power supply indicator light. It is green after the device is power-on normally.
	Operation indicator light. • Off: Not operating after plugged in. • Green: Operating.
	Network indicator light. • Red: Device network is abnormal. • Off: Device network is normal.

	Alarm indicator light. - Red: Fault occurs. - Off: Device is normal.
	Temperature indicator light. - Red: Board card temperature is too high. - Off: Board card temperature is normal.
	Power module indicator light. - Red: Power module is abnormal. - Off: Power module is normal.
	Fan indicator light. - Red: Fan is abnormal. - Off: Fan is normal.
	Infrared remote control signal receiving port.

Hardware structure is as below:

- Single fan box, air intake of host with dust filter at side.
- Three groups of intelligent temperature-controlling fans allow hot swap.
- Five interface board slots of function card are labeled in sequence and used to install rear interface board of function card.
- Interface board slots of main control panel are marked to “M”.
- Dual-power module supports 220V module.

1.4.3 Main Control Panel

MBC0050 main control panel of video matrix platform.

1.4.3.1 Port Introduction

Figure 1-6 Functional board ports of main control panel

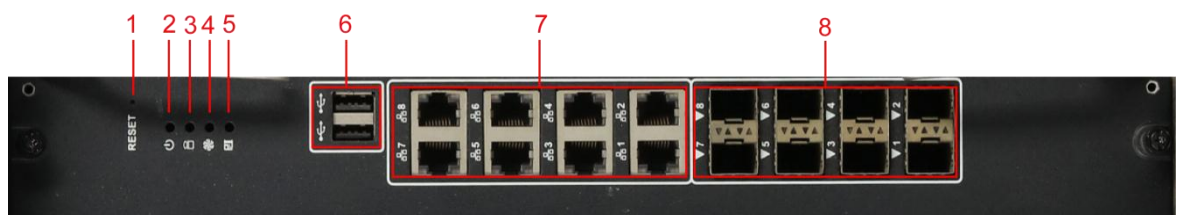


Figure 1-7 Interface board ports of main control panel

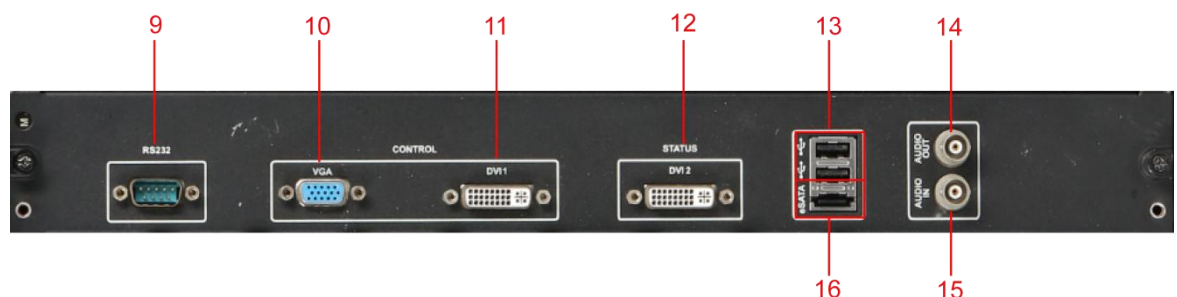


Table 1-4 Introduction to ports of main control panel

No.	Port	Quantity	Function
1	Reset Button	One	Restore to default settings.
2	Power Indicator of Main Control Panel	One	Display power status of main control panel
3	Disk Reading-writing Status Indicator	One	Display disk reading-writing status.
4	CPU Working Status Indicator	One	Display CPU working status.
5	PCIE Working Status Indicator	One	Display PCIE working status.
6	USB Port	Two	Connect mouse, keyboard and flash drive.
7	Gigabit RJ45 Port	Eight	Transmit network A/V data and control signal.
8	Gigabit SFP Port	Eight	Either Gigabit RJ45 port or Gigabit SFP port can be used at the same time.
9	RS-232 Serial Port	One	Connect serial port device.
10	VGA	One	Local display output port. Connect LCD screen.
11	DVI	One	Local display output port. Connect LCD screen.
12	DVI	One	Decoding output port.
13	USB Port	Two	Connect mouse, keyboard, USB.
14	Audio Output	One	For audio talk.
15	Audio Input	One	For audio talk.
16	ESATA Port	One	For external storage device, and data backup.

1.4.3.2 Performance Feature

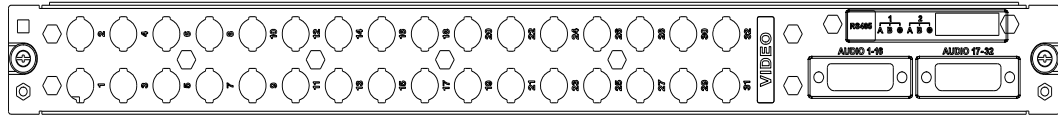
- High speed connector, including x80 PCIE gen2, DC 12V power, 3x10 GIO (3 GIO/operational card), IIC.
- Four memory slots, two channels.
- Fan port, power/rotation rate control (CPU).
- Four indicators (power indicator of main control panel, CPU failure indicator, PCIE failure indicator and disk reading-writing indicator).
- High speed connector, including x8 PCIE gen2, DC 12V power and 5 GIO.

1.5 Function Card

Function card with blade modular design is mainly used for analog and digital image input, centralized encoding compression, remote preview, network centralized storage, centralized management and centralized decoding and so on.

1.5.1 VEC3204FB SD A/V Encoding Card

Figure 1-8 VEC3204FB SD A/V encoding card



1.5.1.1 Main Features and Functions

Features

- 32-ch BNC video port input (1.0 Vp-p, 75 ohms).
- 32-ch audio input.
- 2-ch RS-485 port.
- One power button.
- Five indicators (power, PCIE, PCIE failure, encoding chip operating indicator).
- High speed connector, including x8 PCIE gen2, 12V DC power and 5 GIO.

Functions

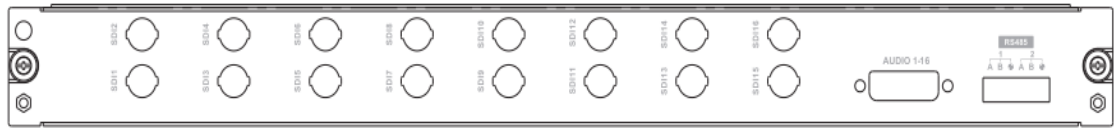
- PAL/NTSC signal input.
- H.264 video compression technology.
- G711a, PCM and G711u audio compression standard.
- Video encoding parameter is adjustable in each channel, including resolution, frame rate, bit stream rate, image quality and etc.
- Each channel supports schedule and event as compression parameters.
- Support composite and bit stream encoding. A/V is synchronized in composite stream encoding.
- Dual stream technology.
- Picture compression and network transmission of 4CIF or CIF under JPEG standard.
- Watermark technology.

1.5.1.2 Port Introduction

- AIN audio input port, DB29 port.
- VIN video input port, BNC port.

1.5.2 VEC1604HS 16-CH HD SDI Encoding Card

Figure 1-9 VEC1604HS 16-ch HD SDI encoding card



1.5.2.1 Main Features and Functions

Features

- 16-ch HD-SDI video input port.
- 16-ch audio input.
- 2-ch RS-485 port.
- 16 1080P, 30 fps.
- One power button.
- Seven indicators (power, PCIE and PCIE failure, encoding chip operating indicator).
- High speed connector, including x8 PCIE gen2, DC 12V power and 5 GIO.

Functions

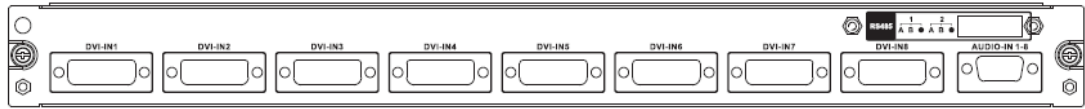
- H.264 video compression technology.
- G711a, PCM and G711u audio compression standard.
- Video encoding parameter is adjustable in each channel, including resolution, frame rate, bit stream rate, image quality and etc.
- Each channel supports schedule and event as compression parameters.
- Support composite and bit stream encoding. A/V is synchronized in composite stream encoding.
- Dual stream technology.
- Picture compression and network transmission of 4CIF or CIF under JPEG standard.
- Watermark technology.

1.5.2.2 Port Introduction

- AIN audio input port, DB29 port.
- VIN video input port, BNC port.

1.5.3 VEC0804HD HD DVI Encoding Card

Figure 1-10 VEC0804HD HD DVI encoding card



1.5.3.1 Main Features and Functions

Features

- 8-ch DVI-I video port input, supporting DVI, VGA and HDMI input.
- 8-ch audio input.
- 2-ch RS-485 port.
- One power button.
- Seven indicators (power, PCIE and PCIE failure, encoding chip operating indicator).
- High speed connector, including x8 PCIE gen2, DC 12V power and 5 GIO.

Functions

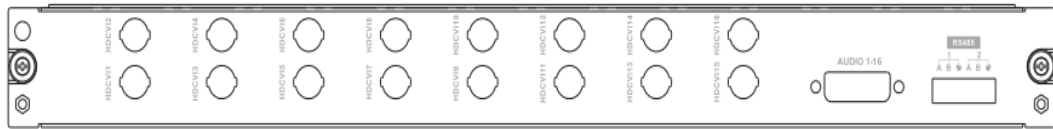
- Support 1920×1080@60Hz, 1680×1050@60Hz, 1440×900@60Hz, 1366×768@60Hz, 1280×1024@60Hz, 1280×960@60Hz, 1280×800@60Hz, 1280×720@60Hz, 1152×864@60Hz, 1024×768@60Hz, 800×600@60Hz.
- H.264 video compression technology.
- G711a, PCM and G711u audio compression standard.
- Video encoding parameter is adjustable in each channel, including resolution, frame rate, bit stream rate, image quality and etc.
- Each channel supports schedule and event as compression parameters.
- Support composite and bit stream encoding. A/V is synchronized in composite stream encoding.
- Dual stream technology.
- Picture compression and network transmission of 4CIF or CIF under JPEG standard.
- Watermark technology.

1.5.3.2 Port Introduction

- AIN audio input port, DB15 port.
- VIN video input port, DVI-I port.

1.5.4 VEC1604HC 16-CH HDCVI Encoding Card

Figure 1-11 VEC1604HC 16-ch HDCVI encoding card



1.5.4.1 Main Features and Functions

Features

- 16-ch BNC video input port. HDCVI signal input.
- 16-ch audio input, support external and built-in.
- 2-ch RS-485 port.
- Reverse control.
- One power button.
- Seven indicators (power, PCIE and PCIE failure, encoding chip operating indicator).
- High speed connector, including x8 PCIE gen2, DC 12V power and 5 GIO.

Functions

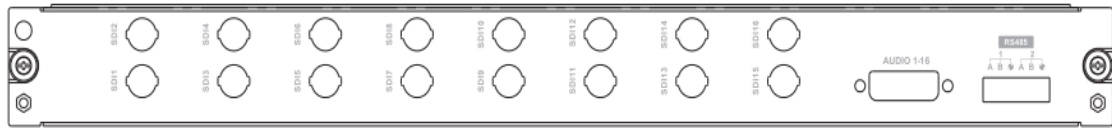
- Support 1080P@30Hz, 1080P@25Hz, 720P@60Hz, 720P@50Hz, 720P@30Hz, 720P@25Hz.
- H.264 video compression technology.
- G711a, PCM and G711u audio compression standard.
- Video encoding parameter is adjustable in each channel, including resolution, frame rate, bit stream rate, image quality and etc.
- Each channel supports schedule and event as compression parameters.
- Support composite and bit stream encoding. A/V is synchronized in composite stream encoding.
- Dual stream technology.
- Picture compression and network transmission of 4CIF or CIF under JPEG standard.
- Watermark technology.

1.5.4.2 Port Introduction

- AIN audio input port, DB29 port.
- VIN video input port, BNC port.

1.5.5 VEC0804US 8-CH 3G-SDI Encoding Card

Figure 1-12 VEC0804US 8-ch 3G-SDI encoding card



1.5.5.1 Main Features and Functions

Features

- 8-ch 3G-SDI video input port.
- 8-ch audio input.
- 2-ch RS-485 port.
- Eight 1080P, 60 fps.
- One power button.
- Seven indicators (power, PCIE and PCIE failure, encoding chip operating indicator).
- High speed connector, including x8 PCIE gen2, DC 12V power and 5 GIO.

Functions

- H.264 video compression technology.
- G711a, PCM and G711u audio compression standard.
- Video encoding parameter is adjustable in each channel, including resolution, frame rate, bit stream rate, image quality and etc.
- Each channel supports schedule and event as compression parameters.
- Support composite and bit stream encoding. A/V is synchronized in composite stream encoding.
- Dual stream technology.
- Picture compression and network transmission of 4CIF or CIF under JPEG standard.
- Watermark technology.

1.5.5.2 Port Introduction

- AIN audio input port, DB29 port.
- VIN video input port, BNC port.

1.5.6 VEC1605UH 16-CH UHD Encoding Card

Figure 1-13 VEC1605UH 16-ch UHD Encoding Card



1.5.6.1 Main Features and Functions

Features

- 16-ch HDMI video input port, and 4-ch VGA video input port.
- 16-ch HDMI built-in audio input, and 16-ch external audio input port.
- 1-ch RS-485 port.
- 8-ch 4K (4096x2160@24 or 3840x2160@30) and 12-ch 1080P (1920x1080@60).
- One power button.
- 10 indicators (power, PCIE and PCIE failure indicator, encoding chip operating indicator).

Functions

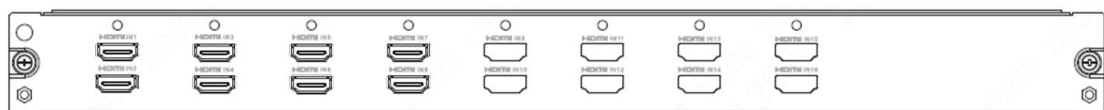
- H.264/H.265 video compression technology.
- PCM audio compression standard.
- Video encoding parameter is adjustable in each channel, including resolution, frame rate, bit stream rate, image quality and etc.
- Each channel supports schedule and event compression parameters.
- Support composite and video stream encoding. A/V is synchronized in composite stream encoding.
- Dual stream technology.

1.5.6.2 Port Introduction

- AIN audio input port, DB15 port.
- VIN video input port, HDMI and VGA port.

1.5.7 VEC0805UH 8-CH UHD Encoding Card

Figure 1-14 VEC0805UH 8-ch UHD encoding card



1.5.7.1 Main Features and Functions

Features

- 8-ch HDMI video input port, and 2-ch VGA video input port.
- 8-ch HDMI built-in audio input, and 8-ch external audio input port.
- 1-ch RS-485 port.
- 4-ch 4K (4096x2160@24 or 3840x2160@30) and 6-ch 1080P (1920x1080@60).
- One power button.
- 6 indicators (power, PCIE and PCIE failure indicator, encoding chip operating indicator).

Functions

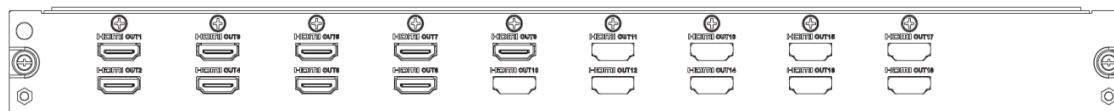
- H.264/H.265 video compression technology.
- PCM audio compression standard.
- Video encoding parameter is adjustable in each channel, including resolution, frame rate, bit stream rate, image quality and etc.
- Each channel supports schedule and event compression parameters.
- Support composite and video stream encoding. A/V is synchronized in composite stream encoding.
- Dual stream technology.

1.5.7.2 Port Introduction

- AIN audio input port, DB15 port.
- VIN video input port, HDMI and VGA port.

1.5.8 VDC0905H 9-CH HD HDMI Decoding Card

Figure 1-15 VDC0905H 9-ch HD HDMI decoding card



1.5.8.1 Main Features

- 9-ch HDMI digital video port output.
- 9-ch audio output.
- 2-ch RS-485 port.
- 4-ch alarm input port.
- 2-ch alarm output port.
- One power switch.
- Eight indicators (power, PCIE indicator, decoding chip operating indicator).

1.5.8.2 Port Introduction

- AOUT audio output port, DB15 port.
- VOUT video output port, HDMI port.

1.5.9 VDC1205H 12-CH HD HDMI Decoding Card

Figure 1-16 VDC1205H 12-ch HD HDMI decoding card



1.5.9.1 Main Features

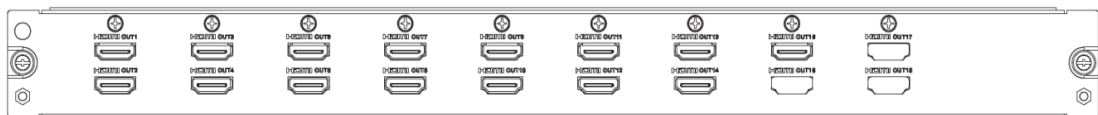
- 12-ch HDMI digital video port output.
- 12-ch audio output.
- 2-ch RS-485 port.
- 4-ch alarm input port.
- 2-ch alarm output port.
- One power switch.
- 10 indicators (power, PCIE indicator, decoding chip operating indicator).

1.5.9.2 Port Introduction

- AOUT audio output port, DB15 port.
- VOUT video output port, HDMI port.

1.5.10 VDC1505H 15-CH HD HDMI Decoding Card

Figure 1-17 VDC1505H 15-ch HD HDMI decoding card



1.5.10.1 Main Features

- 15-ch HDMI digital video port output.
- 15-ch audio output.
- 2-ch RS-485 port.
- 4-ch alarm input port.
- 2-ch alarm output port.
- One power switch.
- 12 indicators (power, PCIE indicator, decoding chip operating indicator).

1.5.10.2 Port Introduction

- AOUT audio output port, DB15 port.
- VOUT video output port, HDMI port.

1.5.11 VDC1805H 18-CH HD HDMI Decoding Card

Figure 1-18 VDC1805H 18-ch HD HDMI decoding card



1.5.11.1 Main Features

- 18-ch HDMI digital video port output.
- 18-ch audio output.
- 2-ch RS-485 port.
- 4-ch alarm input port.
- 2-ch alarm output port.
- One power switch.
- 14 indicators (power, PCIE indicator, decoding chip operating indicator).

1.5.11.2 Port Introduction

- AOUT audio output port, DB15 port.
- VOUT video output port, HDMI port.

2 Device Installation

2.1 Inspection Steps

When you receive Video Matrix Platform, please inspect it according to the following steps.

Step 1 Inspect whether there are obvious damages on its appearance.

The material of product package should be able to protect the product from most impacts during transportation.

Step 2 Open the external package, and check whether any part of accessories is missing. You may refer to accompanied accessory bag. After you have checked that all parts are included, you may remove protective film on the device.

Step 3 Open device case to inspect data cable and power cable of front panel, and see if the connection between main control panel and interface board is loose. Inspect whether main control panel, control panel and function card are inserted tightly.



One label at the side of the case owns serial number and other information of the device, which shall be provided when dialing after-sales calls. This label shall be protected well, and shall not be torn or discarded; otherwise, we may not be able to provide effective service.

2.2 Accompanied Assessory Bag

Accompanied assessory bag includes user's manual, disk and certificate of quality. When you unpackage the product, please make sure that all contents match the checklist.

2.3 Device Installation

2.3.1 Preparation of Installation Environment

As a system-level monitoring device, Video Matrix Platform is usually used in central machine room of monitoring system. Its installation site shall meet national and local machine room construction standards.

Video Matrix Platform is a standard rack-mounted device fixed in a cabinet. Please pay attention to the following points during installation and use:

- Ensure that the cabinet is sufficiently firm to support Video Matrix Platform and accessories. During installation, avoid dangers resulting from uneven mechanical load.
- Ensure that A/V cable owns sufficient installation space. Bending radius of cables shall not be less than 5 times as many as their outer diameter.

- Ensure well ventilation. It is suggested that its installation position shall be more than 50cm above the ground.

Power Supply Requirement

Rated voltage range: AC 100V–AC 120V, AC 200V–AC 240V, 50 Hz/60 Hz.

Anti-interference Requirement

- On-site power supply system shall take effective anti-interference measures.
- Working ground shall not be shared with ground wire or lightning protection device of electrical device, and shall keep away from them as far as possible.
- Keep away from high-power radio transmitting stations, radars and high-frequency heavy-current devices.
- When necessary, adopt electromagnetic shielding methods to resist interference.

Environmental Requirement

- Ensure that temperature in the cabinet is 0°C—50°C.
- Ensure that humidity in the machine room is 10%RH—90%RH.
- Ensure air ventilation required by safe operation of the device.

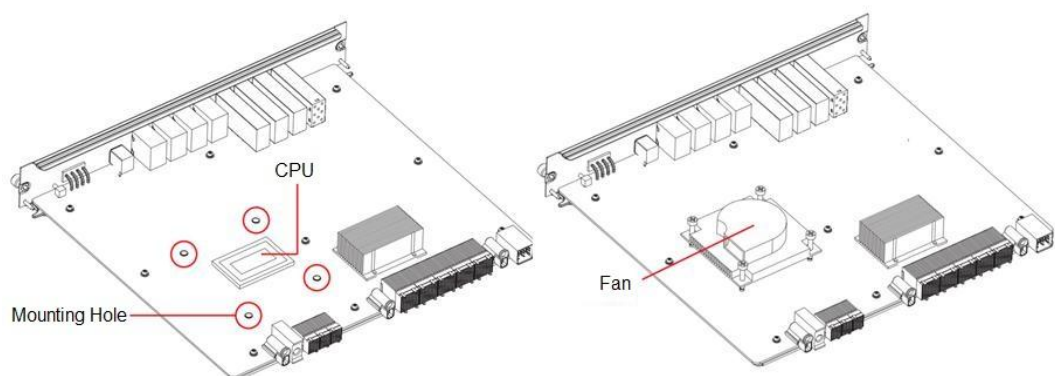
2.3.2 Installation Steps

Step 1 Align four mounting rings of the fan with mounting holes of main control panel, and then fix the fan onto CPU of main control panel with screws. See Figure 2-1.



- Because fan is very heavy and might damage CPU during transportation, the fan and main control panel are separated, but their wirings are still connected. Please handle them gently.
- Make the air outlet of CPU fan upward after main control panel is inserted into chassis. See Figure 2-1.

Figure 2-1 Install fan of main control panel

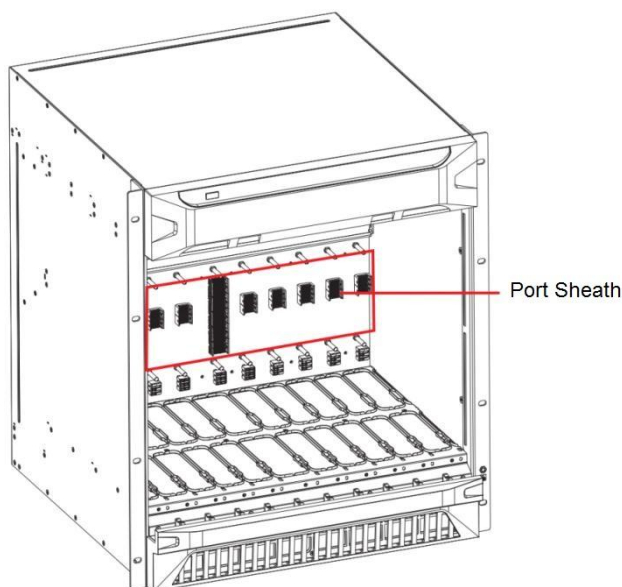


Step 2 Remove port sheath from rear panel of chassis. See Figure 2-2.



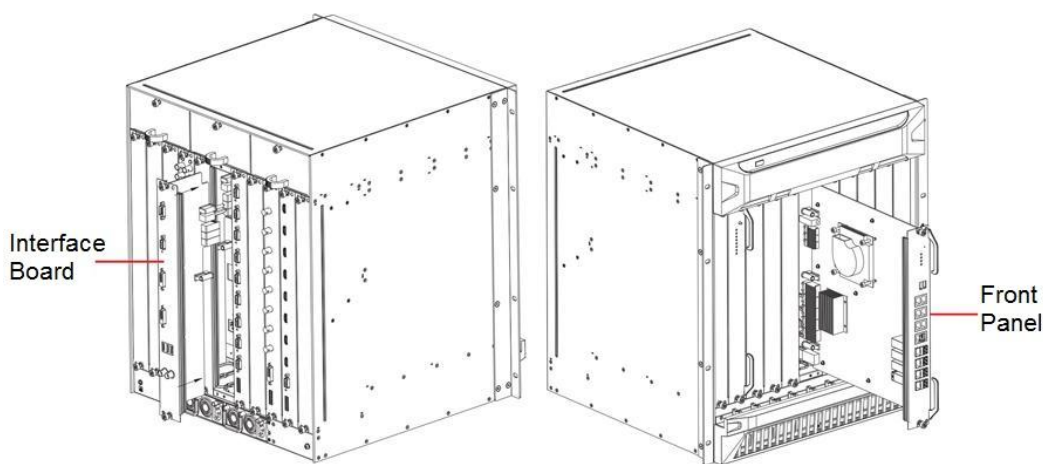
Before you insert board card, please remove the black port sheath first.

Figure 2-2 Remove sheath



Step 3 Insert interface board and front panel of main control panel into "M" slot of the chassis, and then tighten screws. See Figure 2-3.

Figure 2-3 Install board card

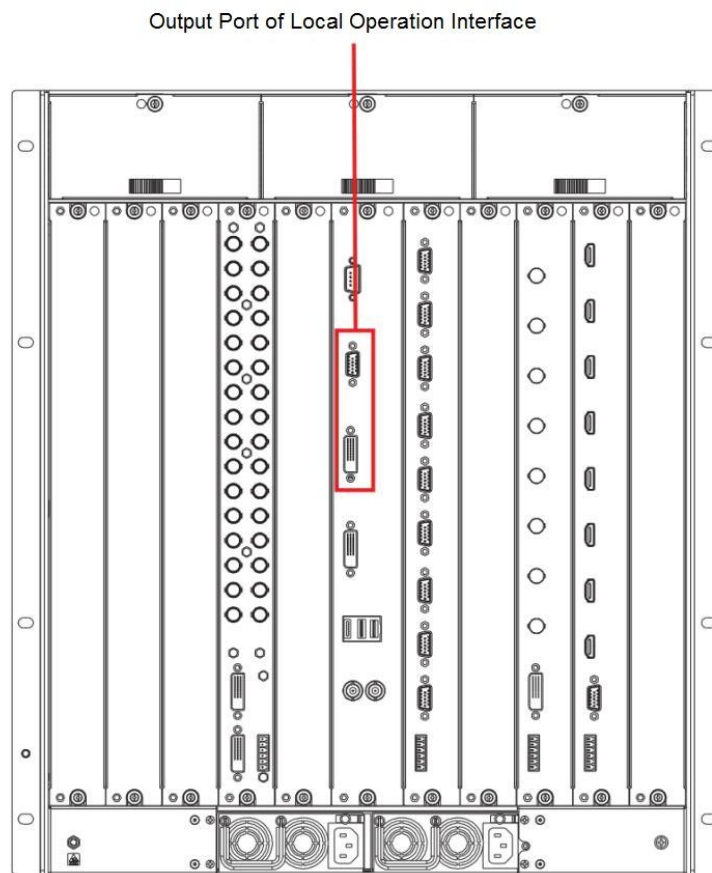


- Insert the interface board, tighten the set screws, and then insert front panel.
- When inserting main control panel and control panel, pull the extraction tool, and then insert the panel in place by pushing the extraction tool inward.

Step 4 According to need, insert interface board and front panel of business card, and then tighten screws. Installation is the same as that of main control panel.

Step 5 Connect monitor of local interface to any VGA or DVI port on interface board of main control panel. See Figure 2-4.

Figure 2-4 Connect the monitor of local interface

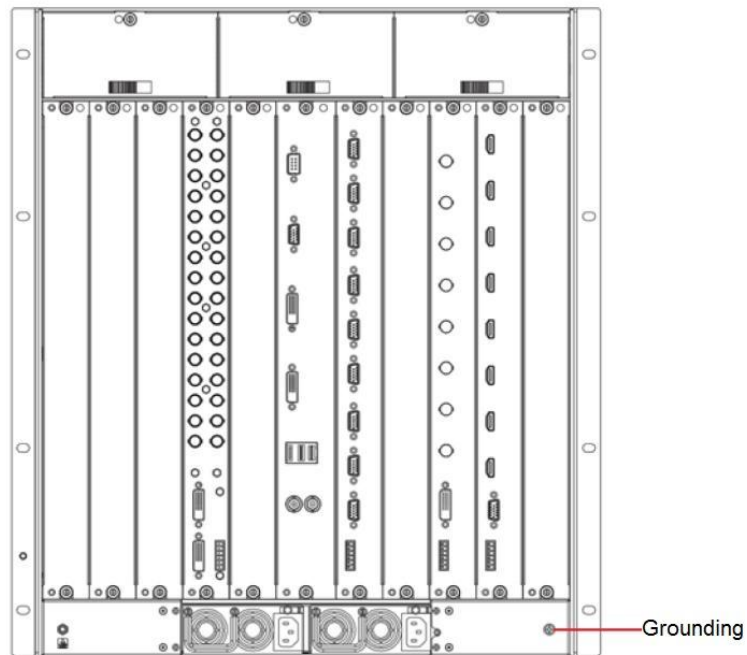


Step 6 Ground terminal of Video Matrix Platform must be properly grounded. See Figure 2-5.



To guarantee personal safety and device safety, Video Matrix Platform and those devices (such as video wall and PC) that are connected the platform with cables shall be grounded.

Figure 2-5 Grounding

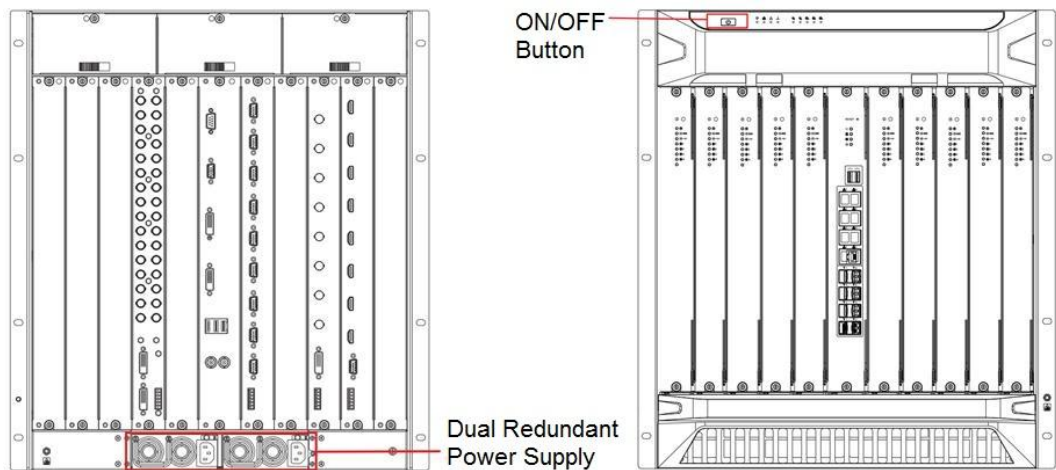


At present, power supply of most devices can be grounded directly. In this case, their grounding terminals don't require grounding treatment.

Step 7 Connect network cable, VGA cable and other cables.

Step 8 Plug in and press ON/OFF button to boot the device. See Figure 2-6.

Figure 2-6 Boot-up



2.3.3 Boot-up/shutdown

2.3.3.1 Boot-up

Plug in power cable, and press power switch on front panel. Power indicator turns on and device boots up, followed by 90s booting interface. The time depends on quantity of inserted board cards.

Please pay attention to the following points during booting:

- Make sure that the supplied voltage is within 100V-240V 47Hz-63Hz. Turn on the device after you check power cable connection.
- We recommend you to use power supply with stable voltage and little interference (refer to international standard), which help the device to work stably and prolong service life. This will also benefit external devices such as camera. UPS is the best choice if possible.

2.3.3.2 Shutdown



- Method 1 is recommended, in order to protect the device from damages due to unexpected outage.
- Stop all operations of the device, before you unplug the device from power supply.

There are two shutdown methods:

- Method 1: Enter **Main Menu > Shut down System**, and choose **Shut down Device**.
- Method 2: Press power button on the panel for 5s.

2.3.3.2.1 Outage Recovery

In case of outage or forced shutdown during working, after connecting power supply again, the device will automatically save and resume previous working status.

2.3.3.2.2 Replace Button Battery



Before replacement, please export and save configurations, or all configurations will be lost!

We recommend that the same type of battery should be used. Inspect system time regularly. Generally speaking, battery shall be replaced once a year, to guarantee system time accuracy.

3 Local Interface Configuration



Before you operate in local interface, you must connect monitor and other control devices (i.e. mouse, keyboard) to the device.

3.1 Basic Operation of Software Interface

3.1.1 Entering System Menu

Step 1 Turn on the device.

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

Figure 3-1 Device initialization

The screenshot shows a 'Device Initialization' window. It has a dark background with white text. The 'User' field is pre-filled with 'admin'. The 'Password' and 'Confirm Password' fields are empty. Below the 'Confirm Password' field is a note: '(Min 8-digit containing letter(s) and number(s))'. An 'OK' button is at the bottom.

Step 2 Set the password of admin user.



Password can be non-blank characters with 8–32 digits and shall include at least 2 types of characters, including capital letter, small letter, number and special character (except “'”, “!””, “,””, “.”” and “&”). New password and confirmed password shall be the same. Please set a highly safe password according to password strength.

Step 3 Click **OK**.

Step 4 Right-click the interface.

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

Figure 3-2 System login



The image shows a 'SYSTEM LOGIN' window. At the top left is a small icon of a computer monitor. The title bar says 'SYSTEM LOGIN'. Below the title bar, there are two input fields: 'User Name' with a dropdown arrow and 'Password' with a text box. A virtual keyboard is overlaid on the bottom half of the window, showing keys for punctuation, letters, numbers, and function keys like Enter, Shift, and a back arrow.

Step 5 Input password, click **OK** to log in the system.

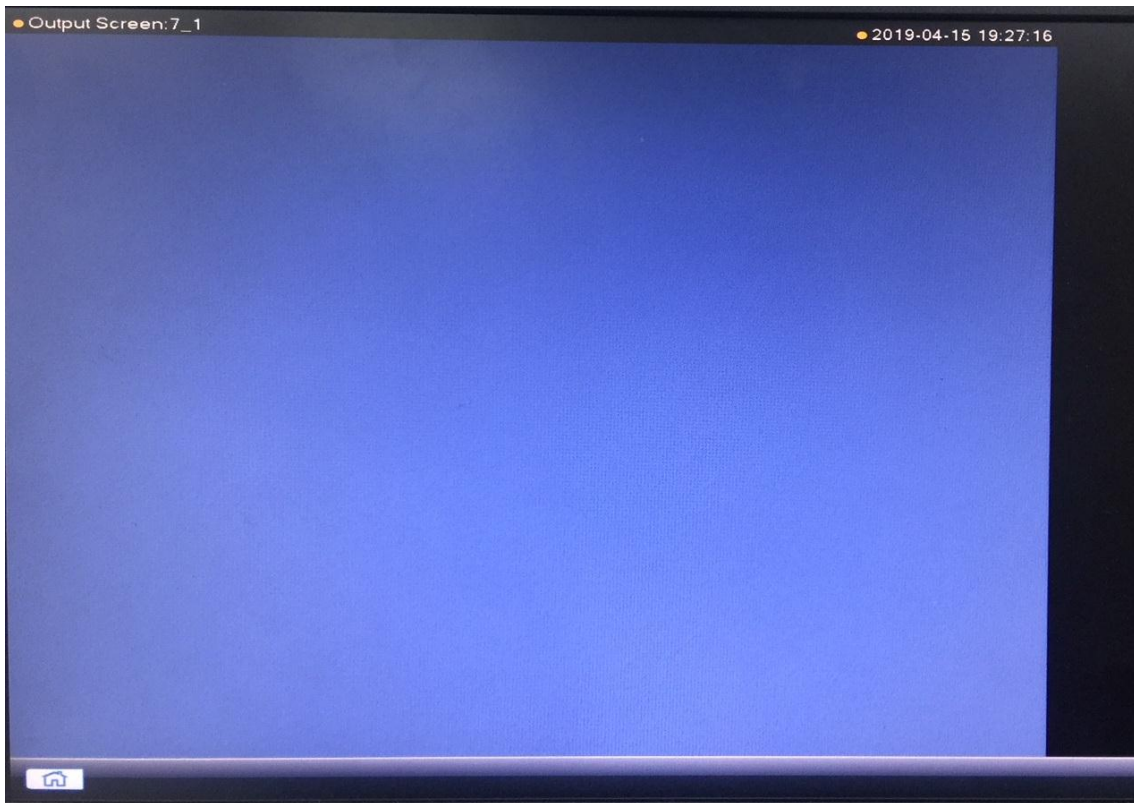


Password security measure: In case that password is wrong for 5 times within every 30 minutes, the account will be locked.

3.1.2 Main Interface

After normal login, the main interface is displayed. See Figure 3-3.

Figure 3-3 Main interface



3.1.3 Menu Introduction

After login, right-click the main interface. The system pops up functional menu. See Figure 3-4 and Table 3-1.

Figure 3-4 Functional menu

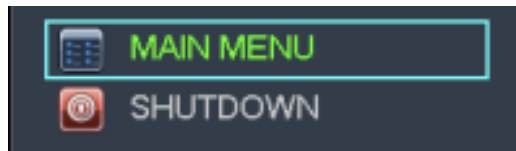


Table 3-1 Functional description

Name	Description
Main menu	Display main menu, including system setting, system info and shutdown.
Shutdown	Shut down the device.

3.2 Advanced Operation of Menu

3.2.1 Main Menu

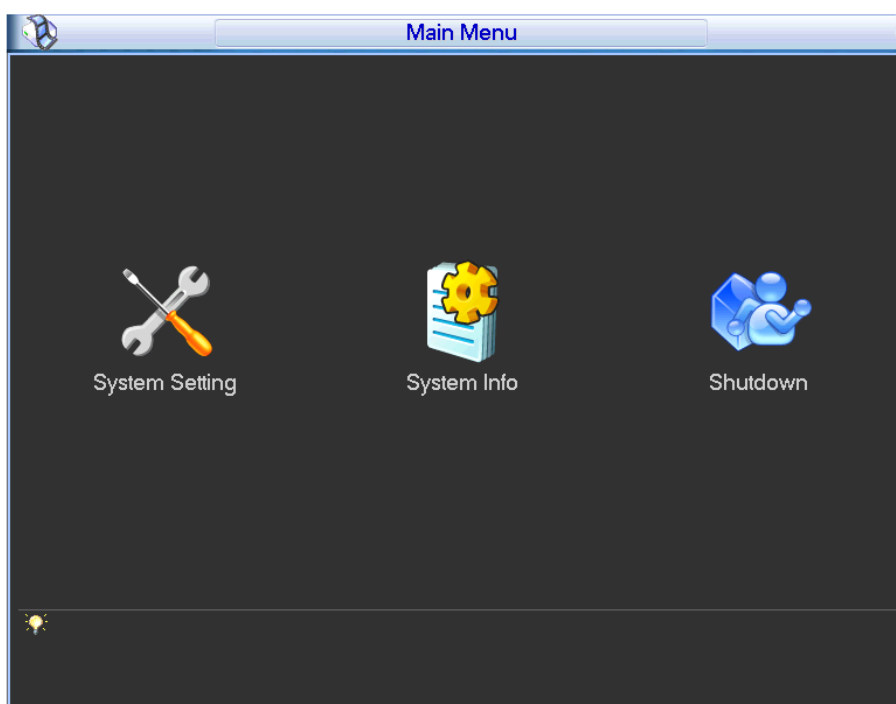
Main menu includes system setting, system info and shutdown. See Figure 3-5.



- 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

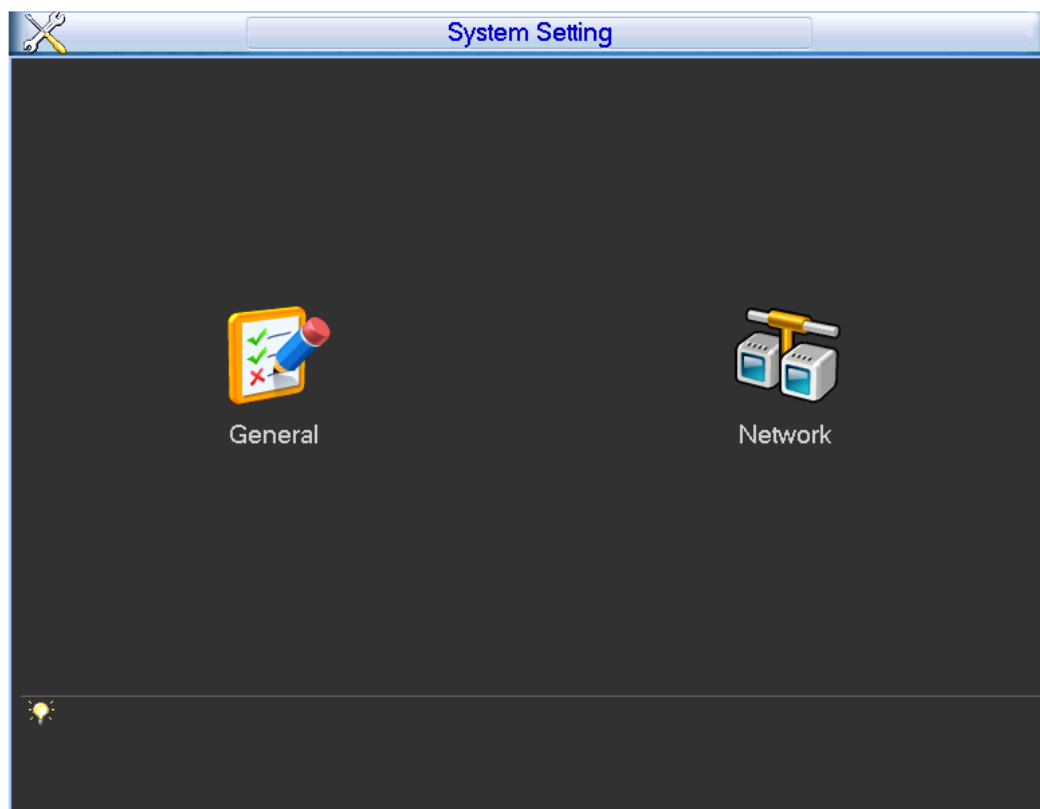
Table 3-2 Menu navigation

Main menu	Sub menu	Description
System setting	General	Set system time, device no. and other parameters.
	Network	Set IP address, video data transmission protocol and other parameters.
System info	Version	View the version details such as system hardware feature, software version and build date.
	Online users	View information about online users.
	Status	View fan speed, card and temperature information, source information, net percentage, CPU percentage and memory percentage.
Shutdown	–	Log out menu user, shut down system, restart system and switch user.

3.2.3 System Setting

You can configure the system, including general and network setting. See Figure 3-6.

Figure 3-6 System setting



System setting shall be carried out by authorized users only.

3.2.3.1 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 **System Setting > General**.

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

Figure 3-7 General

The screenshot shows a 'General' configuration window with the following fields and values:

- System Time:** 2019 - 03 - 16 11 : 30 : 57
- Date Format:** YYYY MM DD
- Date Separator:** -
- Time Format:** 24-HOUR
- Language:** ENGLISH
- Video Standard:** PAL
- Device No.:** 8
- Device Name:** M60-12U
- Auto Logout:** 10 min.

Buttons: Save, Default, OK, Cancel.

Step 2 Configure parameters. See Table 3-3.



System time cannot be changed arbitrarily, or you cannot search records. System time can only be changed when it is not recording time according to hard drive information, or when the recording is stopped.

Table 3-3 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**.

3.2.3.2 Network

Configure device network parameters, so that device can communicate with devices in the network.

Step 1 In the main menu, select **System Setting > Network**.

The **Network** interface is displayed. See Figure 3-8.

Figure 3-8 Network

The screenshot shows a 'NETWORK' configuration window. It includes the following fields and controls:

- Net Mode:** A dropdown menu set to 'Multi-address'.
- MAC ADDRESS:** A button to configure the MAC address.
- Network Device Name:** A dropdown menu set to 'Ethernet1'.
- Default Ethernet Port:** A dropdown menu set to 'Ethernet1'.
- IP Version:** A dropdown menu set to 'IPv4'.
- IP Address:** A text input field.
- Subnet Mask:** A text input field.
- Gateway:** A text input field.
- DHCP:** An unchecked checkbox.
- TCP Port:** A text input field with the value '37777'.
- HTTP Port:** A text input field with the value '80'.
- UDP Port:** A text input field with the value '37778'.
- RTSP Port:** A text input field with the value '554'.
- Max Connection:** A text input field with the value '128'.
- Preferred DNS:** A text input field with the value '0 . 0 . 0 . 0'.
- Alternate DNS:** A text input field with the value '0 . 0 . 0 . 0'.
- Buttons:** 'Default', 'Save', and 'Cancel' buttons at the bottom.

Step 2 Configure parameters. See Table 3-4.

Table 3-4 Network parameters description

Parameter	Description
Net Mode	The default setting is fault tolerance.
MAC Address	Configure MAC address.
Network Device Name	It is Bond1 by default.
IP Version	It is IPv4 by default.
IP Address	Enter numbers to change the IP address, and then configure its Subnet Mask and Gateway .

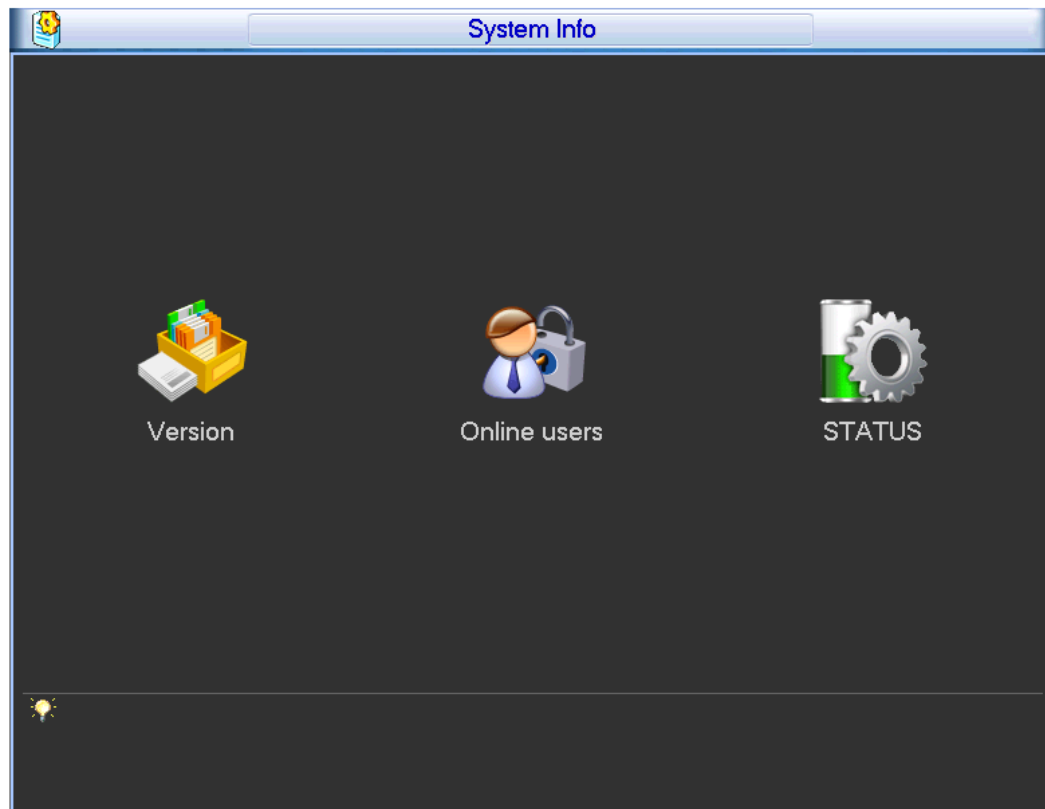
Parameter	Description
DHCP	Select the DHCP box, the system automatically obtains an IP address. When the DHCP function is enabled, the IP address, gateway, and subnet mask cannot be set manually. • If DHCP is effective, the obtained information will be displayed in the IP address box, subnet mask box 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. • When PPPoE is enabled, IP address, subnet mask, gateway and DHCP cannot be changed.
Subnet Mask	Enter subnet mask and gateway corresponding to the IP address.
Gateway	 IP address and gateway must be in the same network segment.
TCP Port	It is 37777 by default. You can configure port.
HTTP Port	It is 80 by default. You can configure port.
UDP Port	It is 37778 by default. You can configure port.
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**.

3.2.4 System Info

You can view version info, online users and system status. See Figure 3-9.

Figure 3-9 System info



3.2.4.1 Version

You can view the version details such as system version, build date, web version and serial number.

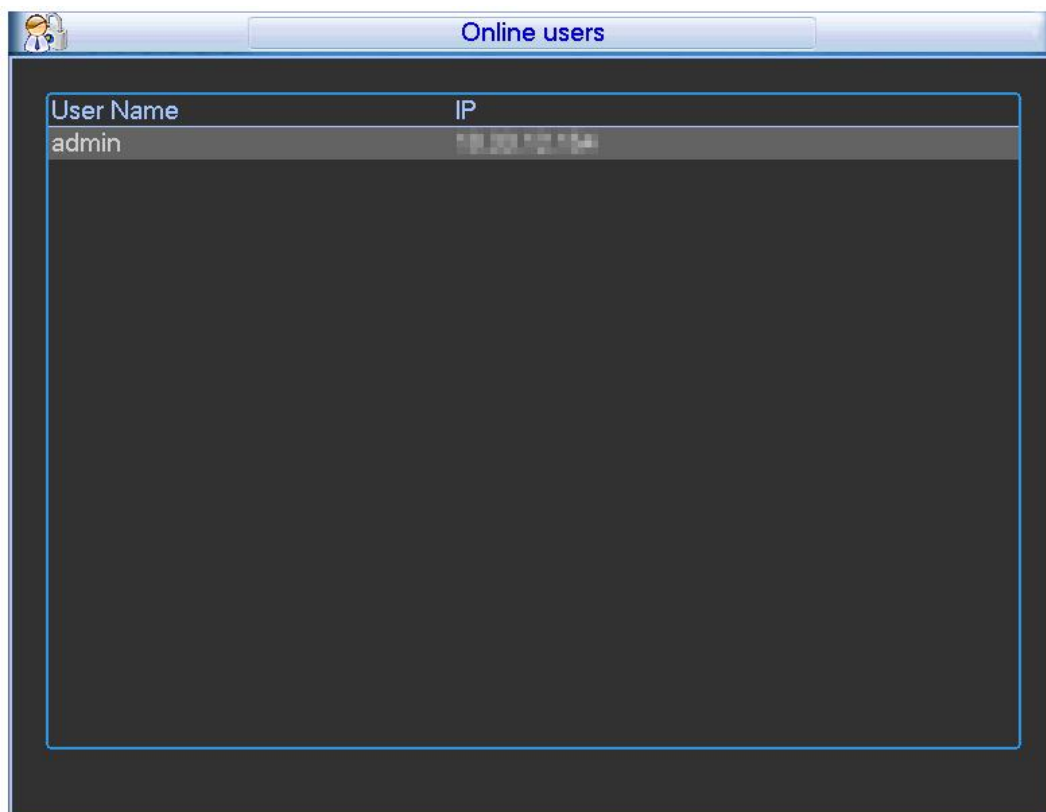
3.2.4.2 Online Users

You can view online users that visit the video matrix platform remotely.

In the main menu, select **System Info > Online users**.

The **Online users** interface is displayed. See Figure 3-10.

Figure 3-10 Online users



The screenshot shows a window titled 'Online users' with a blue header bar. Inside the window is a table with two columns: 'User Name' and 'IP'. The first row of the table contains the text 'admin' under 'User Name' and a blurred IP address under 'IP'.

User Name	IP
admin	[blurred IP address]

3.2.4.3 Status

You can view fan speed, card, temperature and source information, device time, net percentage, CPU percentage and memory percentage.

In the main menu, select **System Info > Status**.

The **Status** interface is displayed. See Figure 3-11 and Table 3-5.

Figure 3-11 Status



Table 3-5 System status description

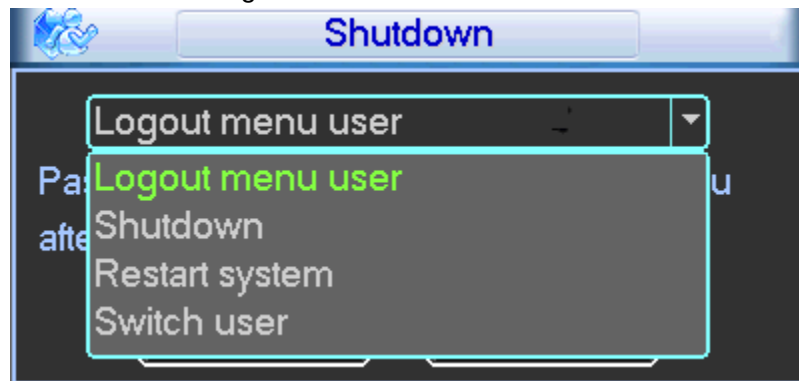
Parameter	Description
Fan Speed	Display the speed of two fans.
Card Information	Display information about cards in the slots, including card type, encoding or decoding card. Also, display present operating status, including data exchange and online status.
Temperature Information	Display present temperature and status of cards.
Source Information	Display the status of two powers.
Time	Display present time of video matrix platform.
Net Percentage	Display the receiving and transmitting rate of each network port.
CPU Percentage	Display percentage of each CPU.
Memory Percentage	Display percentage of memory.

3.2.5 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



- Logout 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 Operation

4.1 Network Connection

Step 1 Connect the video matrix platform and the PC with network.

Step 2 Set the IP address, subnet mask and gateway of PC and video matrix platform respectively. For network setup of video matrix platform, refer to “4.5.2 Network.”

Step 3 

- If there is no router in the network, distribute IP address in the same network segment.
- If there is a router in the network, configure the corresponding gateway and subnet mask.

Step 4 Ping ***.***.***.*** (IP address of video matrix platform) to check whether connection is OK or not.

Step 5 Open IE browser, in Tool > Internet Option > Security > Custom Level, select ActiveX and plug-in to be Enable or Prompt.



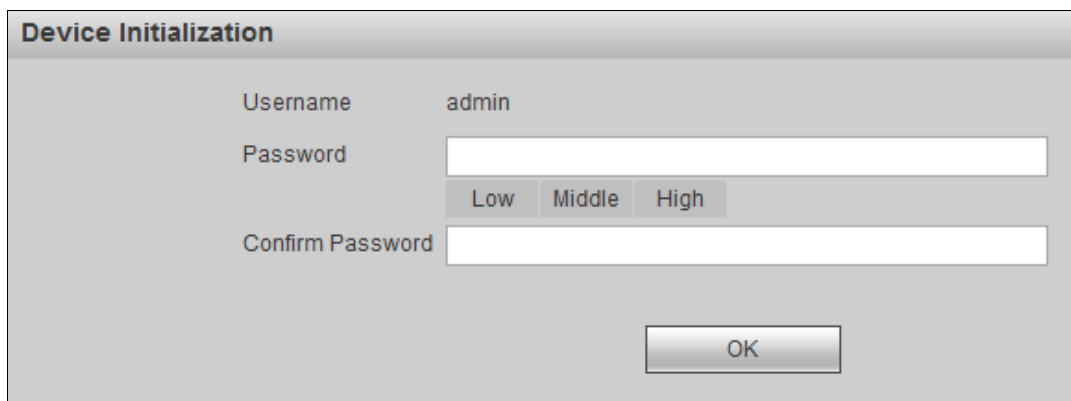
Recommended IE browser is IE8 and later version.

4.2 System Login

Step 1 Enter IP address of video matrix platform 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



The image shows a web-based 'Device Initialization' window. It has a title bar with the text 'Device Initialization'. Inside the window, there are three labels: 'Username', 'Password', and 'Confirm Password'. The 'Username' field contains the text 'admin'. The 'Password' field is an empty text box, and below it are three buttons labeled 'Low', 'Middle', and 'High' for password strength selection. The 'Confirm Password' field is also an empty text box. At the bottom right of the window is an 'OK' button.

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**.

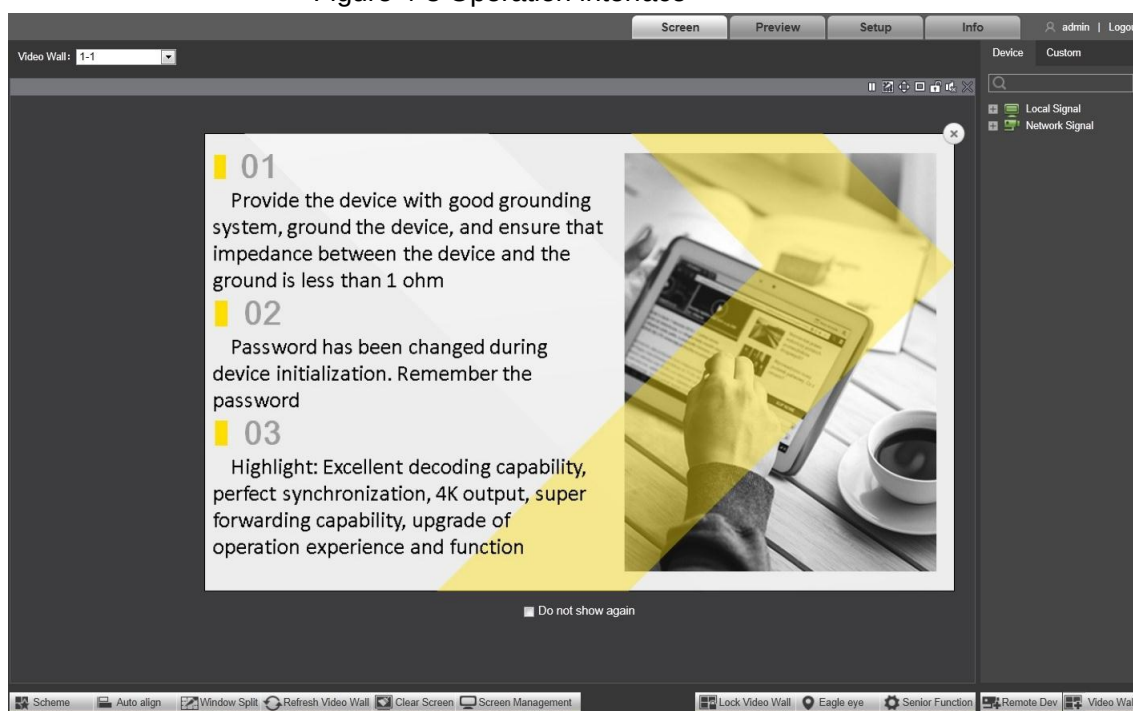
The login interface is displayed. See Figure 4-2.

Figure 4-2 Login



Step 4 Enter username and password, and then click **Login**. See Figure 4-3.

Figure 4-3 Operation interface



Step 5 View the points for attention and highlights on the page.



- Please conform to the points for attention.
- Click  to close the page.
- Tick “Do not show again”, so this page will not show when you log in for the next time.

Step 6 Install or load controls as prompted by the system.⁷



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

4.3 Screen

Click the **Screen** tab. The **Screen** interface is displayed. See Figure 4-4 and Table 4-1.

Figure 4-4 Screen

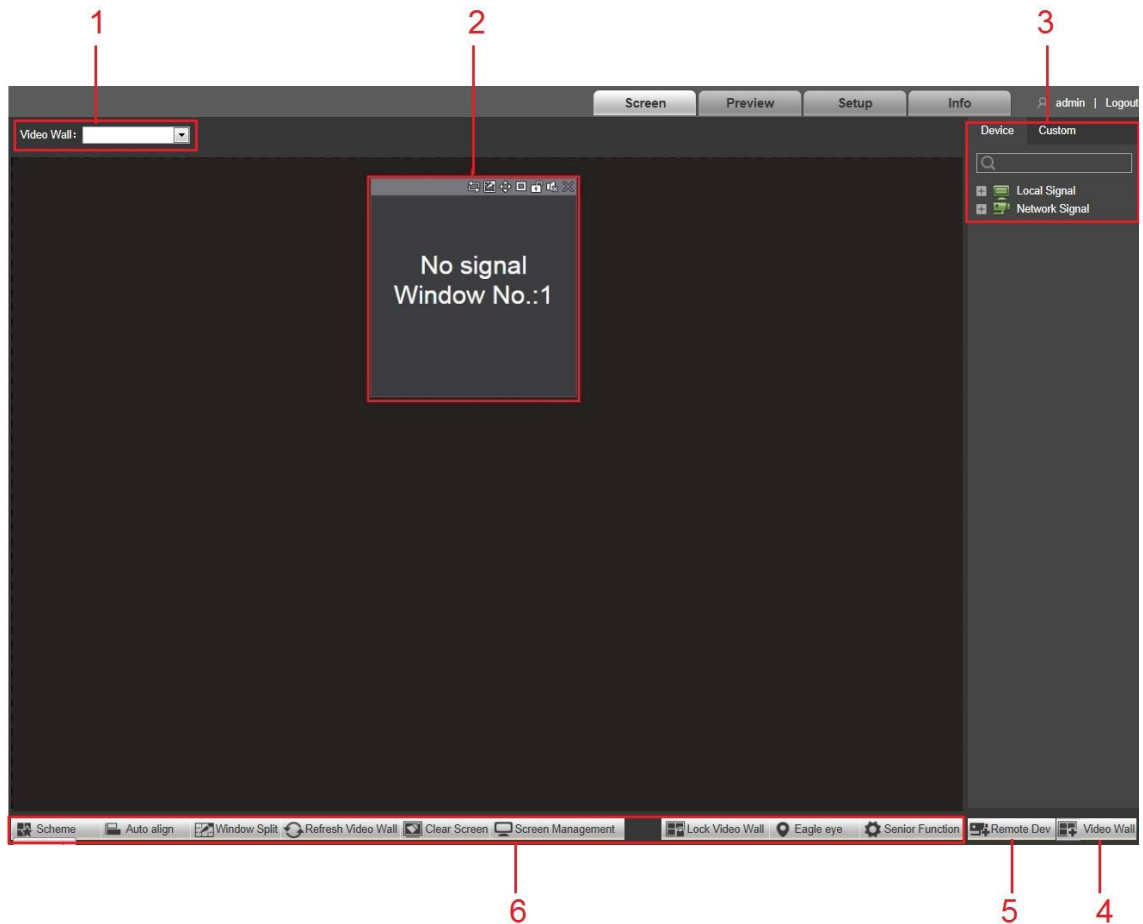


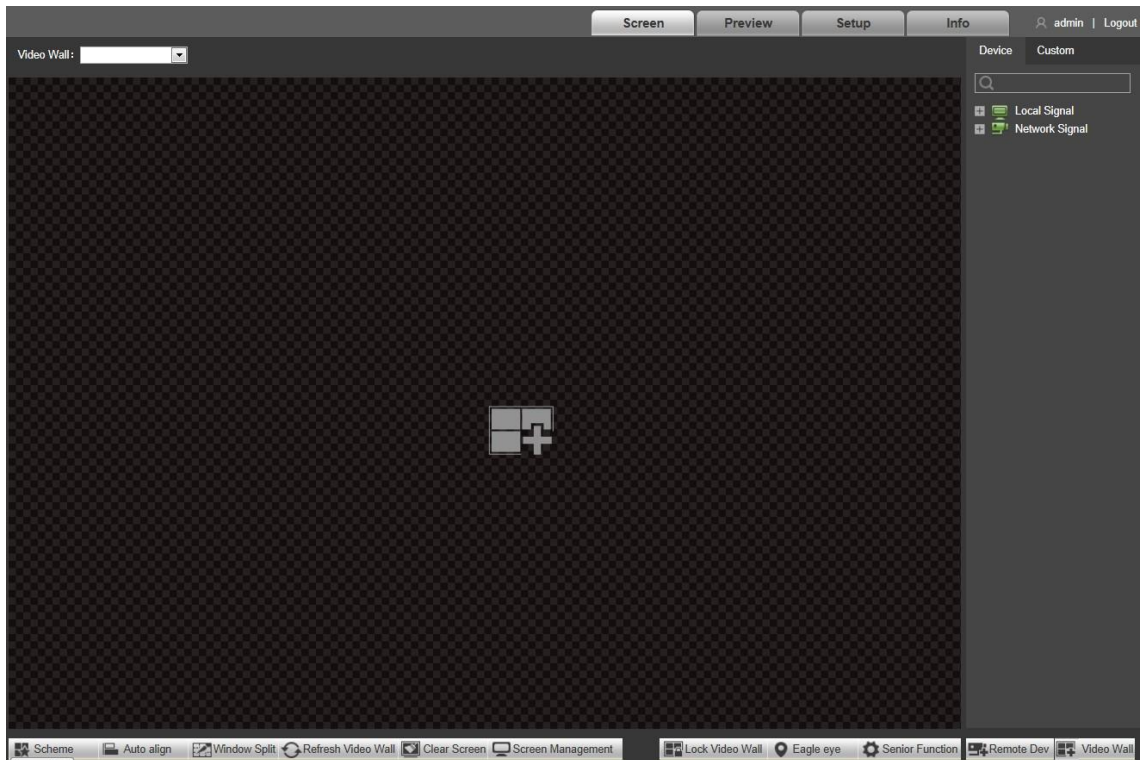
Table 4-1 Screen function description

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 . See "4.3.1 Adding Video Wall."
2	Window configuration	Add window, adjust window, put the window at the bottom and turn off the signal. See "4.3.2 Window Configuration."
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. - In Custom tab, you can view signal group information, and configure signal tour on the video wall.
4	Video wall	Click  to enter Video Wall Setup interface. You can add, modify and delete video wall. See "4.5.5.1 Video Wall Setup."
5	Network signal	Click  to enter Network Signal interface. You can add, modify and delete device. See "4.5.4.1 Network Signal."
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. See "4.3.4 Video Wall Management ."

4.3.1 Adding Video Wall

You need to add video wall when you log in for the first time. See Figure 4-5.

Figure 4-5 Adding video wall



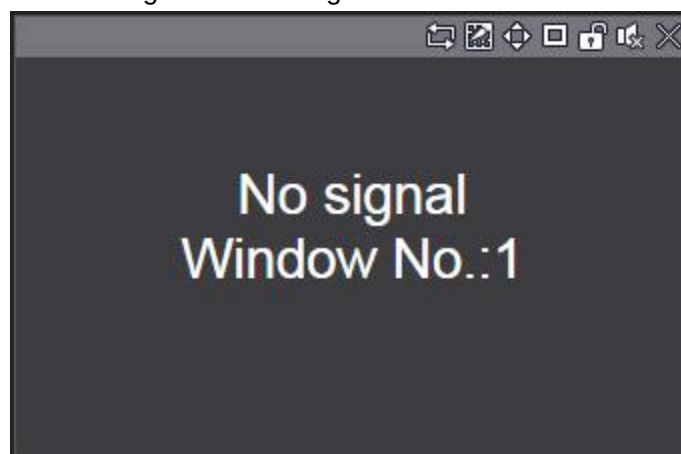
Click  in the center of interface to enter **Video Wall Setup** interface. See "4.5.5.1 Video Wall Setup."

4.3.2 Window Configuration

4.3.2.1 Adding a Window

Press and hold the left mouse button on the video wall, drag and form a window. See Figure 4-6.

Figure 4-6 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.

4.3.2.2 Adjusting Window

The operation icons are displayed at the top right corner of the window. See Figure 4-7 and Table 4-2.

Figure 4-7 Window adjustment icons



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. See "4.3.3.4 Signal Tour."
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.

4.3.2.3 Configuring Window Information

You can set window position and size according to your need.

Precondition

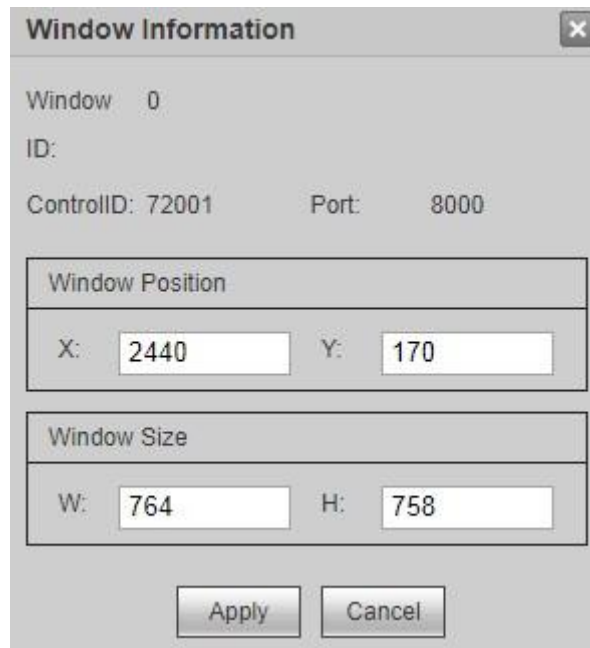
Manual setting window wide and height has been enabled. See “4.5.5.3.2 Global Setup.”

Operation Steps

Step 1 Double click the window.

The **Window Information** interface is displayed. See Figure 4-8.

Figure 4-8 Window information

The image shows a 'Window Information' dialog box with a close button in the top right corner. It contains the following fields: 'Window' with a dropdown set to '0', 'ID:' (empty), 'ControlID: 72001', and 'Port: 8000'. Below these are two sections: 'Window Position' with 'X: 2440' and 'Y: 170' input fields, and 'Window Size' with 'W: 764' and 'H: 758' input fields. At the bottom are 'Apply' and 'Cancel' buttons.

Step 2 Configure window position and window size.

Step 3 Click **Apply**.

The window position and size is adjusted according to the configuration.

4.3.3 Signal Configuration

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

4.3.3.1 Device Tree

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

- Local signal: Display local signal sources. See "4.5.4.2 Local Signal."
- Network signal: Display the added signal sources. Click  to add. See "4.5.4.1 Network Signal."

4.3.3.2 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. See "4.5.4.3 Signal Group."

4.3.3.3 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 4-9.

Figure 4-9 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.

4.3.3.4 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.



Configure signal group in **Collection** tab. See "4.5.4.3 Signal Group."

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 4-10.

Figure 4-10 Signal information

No.	IP	Channel Name	Stay Time :	Stream Type	Operation
1	192.168.1.101	Channel_1	10	Sub Stream1	  

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.

4.3.4 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.

4.3.4.1 Scheme Management

You can manage schemes and configure switch timer.

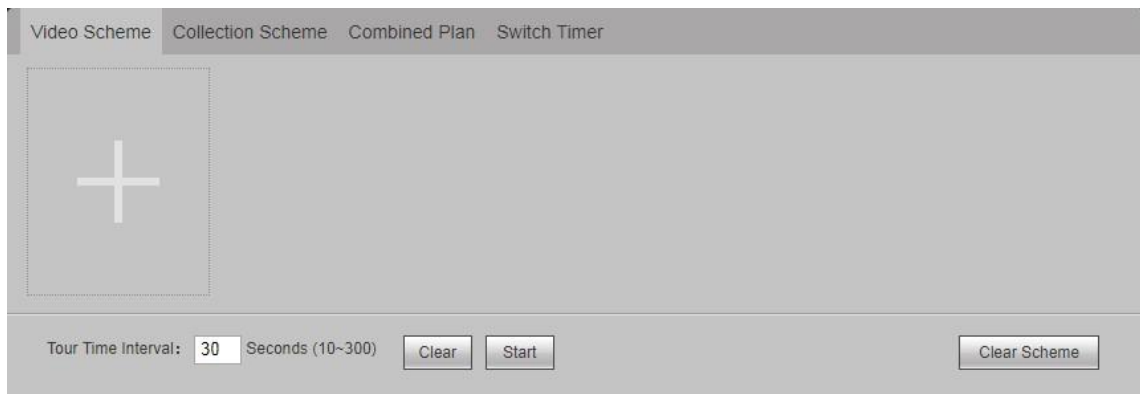
4.3.4.1.1 Video Scheme

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

Step 1 Click  **Scheme**.

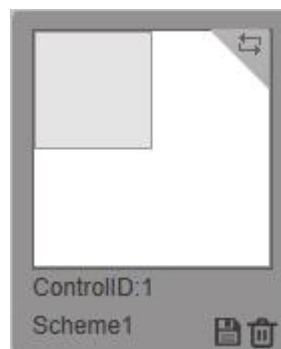
The **Video Scheme** interface is displayed. See Figure 4-11.

Figure 4-11 Video scheme



Step 2 Click  to save the scheme. See Figure 4-12.

Figure 4-12 Save video 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.

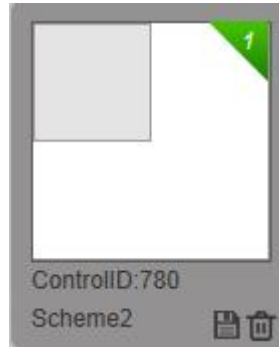
Step 5 Click  at the top right corner of each scheme to add the scheme to tour queue.

 turns into a number, meaning its sequence in tour queue. See Figure 4-13.



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

Figure 4-13 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 4-14.

Figure 4-14 Tour information



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

4.3.4.1.2 Collection Scheme

Save virtual LED and background configuration to be a collection scheme. Multiple collection schemes can be displayed on the video wall in turn. See "4.3.4.1.1 Video Scheme."



See "4.3.4.9.2 Virtual LED" for virtual LED configuration, and "4.3.4.9.3 Background" for background configuration.

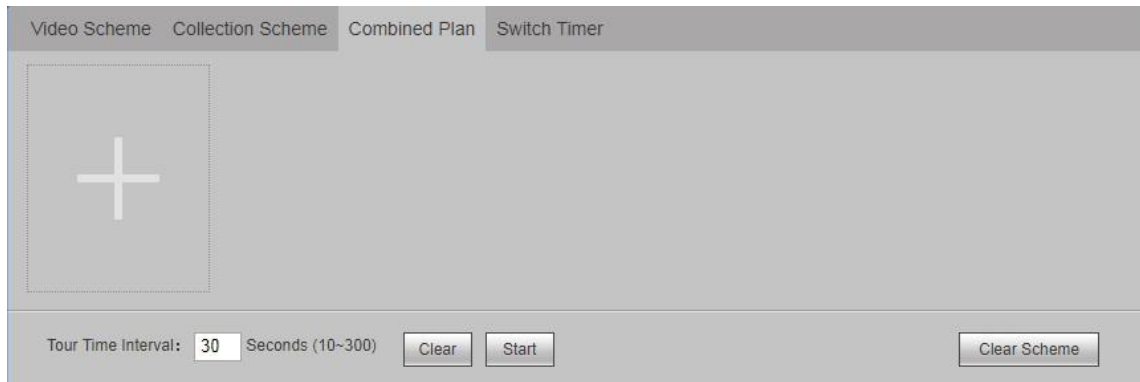
4.3.4.1.3 Combined Plan

According to your need, combine the video scheme and collection scheme into a combined plan, and display it on the video wall.

Step 1 Select **Combined Plan** tab.

The **Combined Plan** interface is displayed. See Figure 4-15.

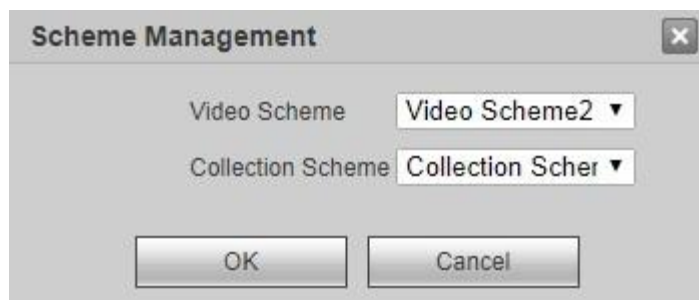
Figure 4-15 Combined plan



Step 2 Click .

The **Scheme Management** interface is displayed. See Figure 4-16.

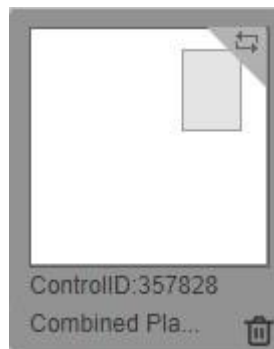
Figure 4-16 Scheme Management



Step 3 Select video scheme and collection scheme you want.

Step 4 Click **OK** to save the combined plan. See Figure 4-17.

Figure 4-17 Save combined plan



For other configurations, see “4.3.4.1.1 Video Scheme.”

4.3.4.1.4 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 4-18.

Figure 4-18 Switch timer

Video Scheme Collection Scheme Combined Plan Switch Timer

Type Video Scheme ▼

Scheme Video Scheme2 ▼

Week Sun ▼

☐ 00 : 00 : 00

☐ 00 : 00 : 00

☐ 00 : 00 : 00

☐ 00 : 00 : 00

☐ 00 : 00 : 00

☐ 00 : 00 : 00

OK Refresh

Note: Switch time cannot be conflict with auto maintenance time.

Step 2 Select **Type**, **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.

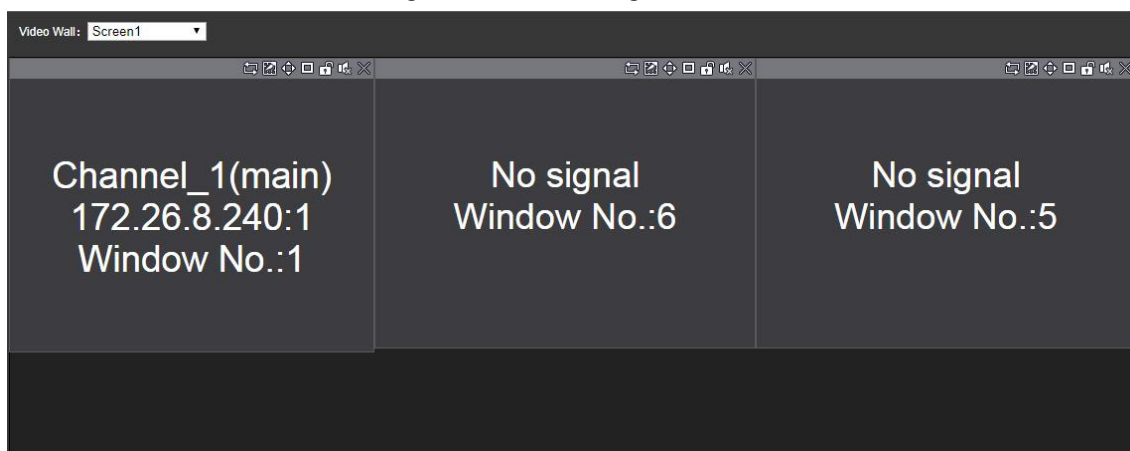
Step 3 Click **OK**.

4.3.4.2 Auto-align

Click  **Auto align**, and all windows will be automatically aligned in the following way. See Figure 4-19.

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

Figure 4-19 Auto-align



4.3.4.3 Window Split

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

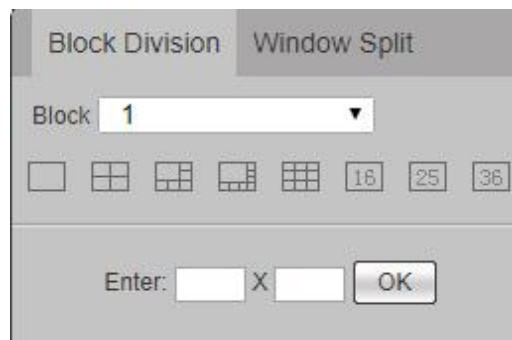
4.3.4.3.1 Block Division

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 4-20.

Figure 4-20 Block division

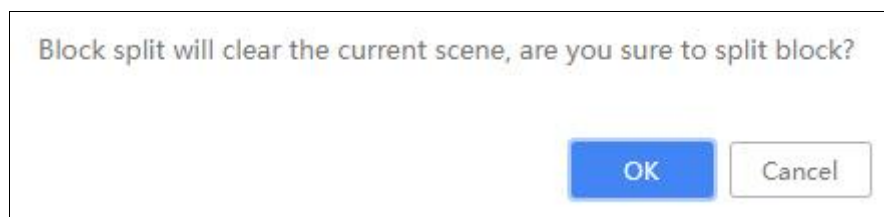


Step 2 Select the fixed split  or enter the split number manually (for example, 3×3 represents 9-split).

Step 3 Click **OK**.

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

Figure 4-21 Prompt box



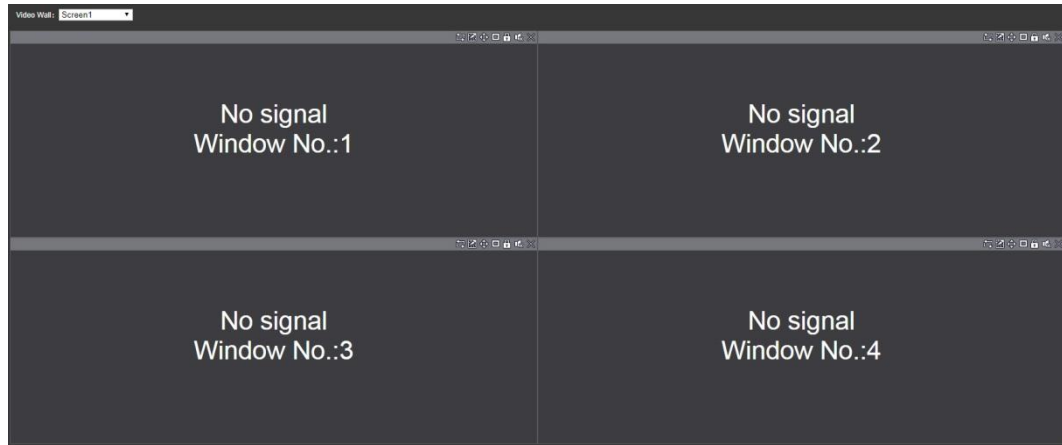
Step 4 Click **OK**.

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



4.3.4.3.2 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.

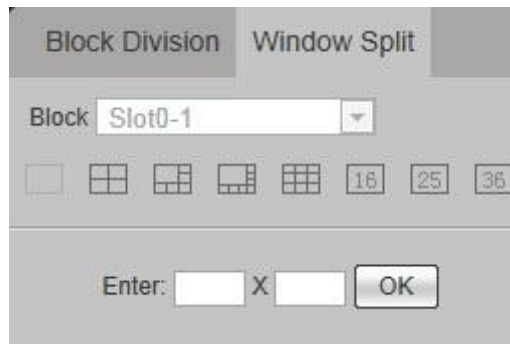


It is suggested that four window should not be selected for window split.

Step 2 Select Window Split > Window Split.

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

Figure 4-23 Window split



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

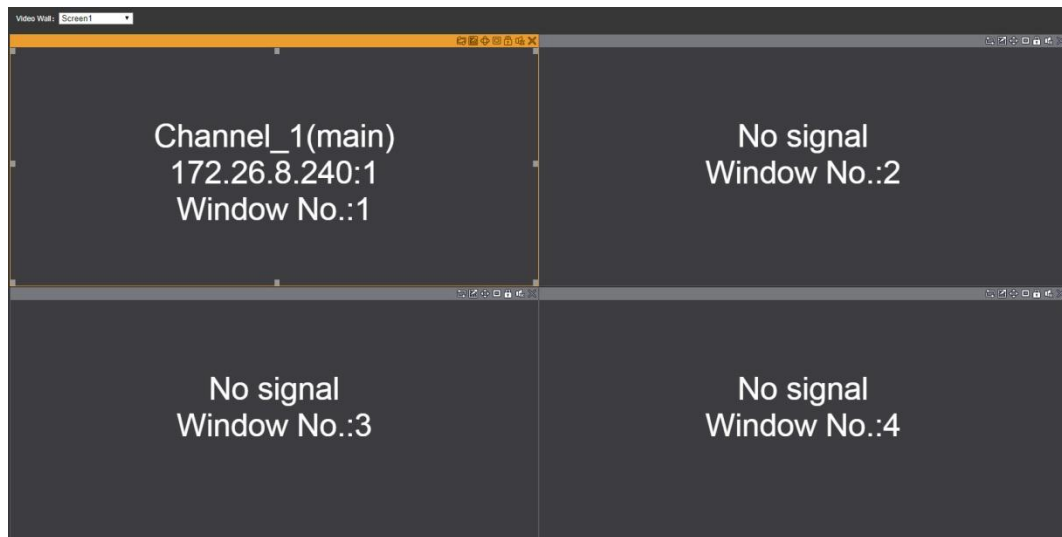
Step 4 Click **OK**.

The split windows are displayed. See Figure 4-24.



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

Figure 4-24 Window split display



4.3.4.4 Refresh Video Wall

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

4.3.4.5 Clear Screen

Click  to clear screen.

4.3.4.6 Screen Management

You can manage the screen, including controlling screen power, controlling power switch and adjusting screen parameters.



Only DH-LED-N protocol supports to control the power switch and adjust screen, whereas LED-CLT protocol only supports power switch function. For screen protocol configuration, see “4.5.5.2.1 Screen Setup.”

4.3.4.6.1 Screen Power

According to requirement, connect the video matrix platform with screen serial cable correctly, so you can turn on/off the screen. After the screen is turned off, it will be black.

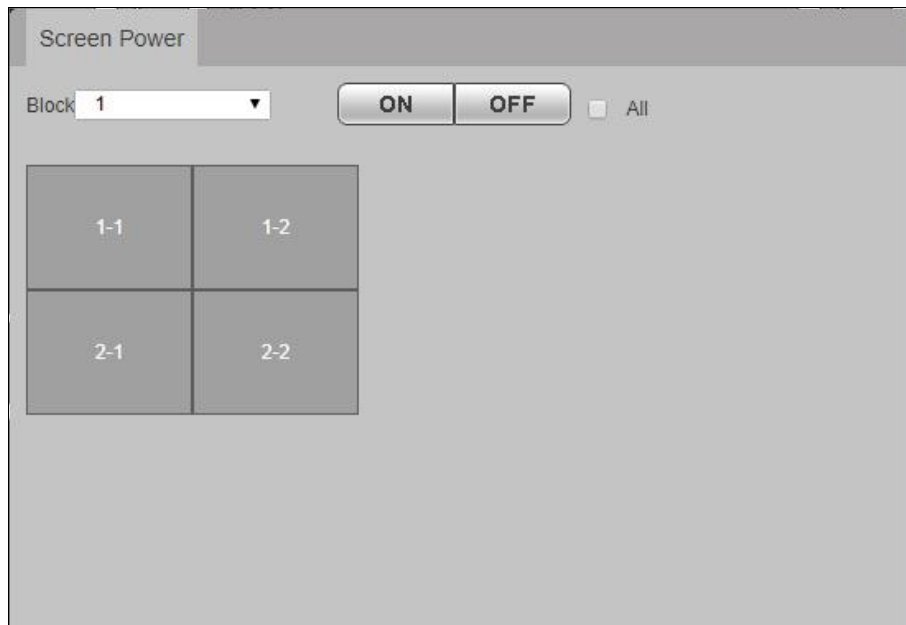
Click . The **Screen Power** interface is displayed. See Figure 4-25.

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



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

Figure 4-25 Screen management



Step 1 Select a block from the drop-down list of **Block**.

Step 2 In the block, select one or more screens, and then click **ON** or **OFF** to turn on or turn off the screen.

4.3.4.6.2 Power Switch

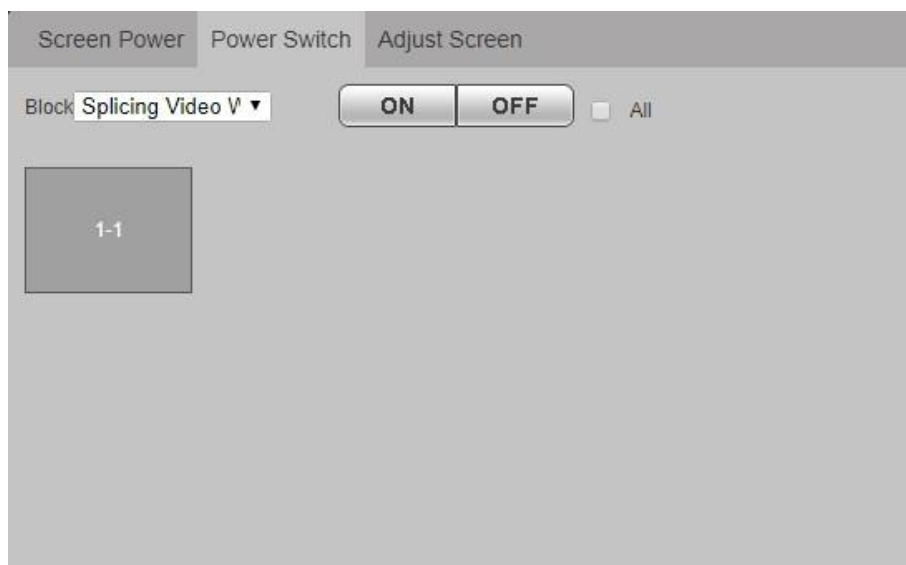
According to the requirement, connect the video matrix platform with serial port cable of LED screen, in order to control the power of LED screen.



If manufacturer protocol is DH-LED-N or LED-CLT, video signal can be displayed on LED. When **Power Switch** tab is displayed in **Screen Management** interface, the system can control LED power to turn on/off.

Select **Power Switch**. The **Power Switch** interface is displayed. See Figure 4-26. For details, see "4.3.4.6.1 Screen Power."

Figure 4-26 Power switch



4.3.4.6.3 Adjust Screen

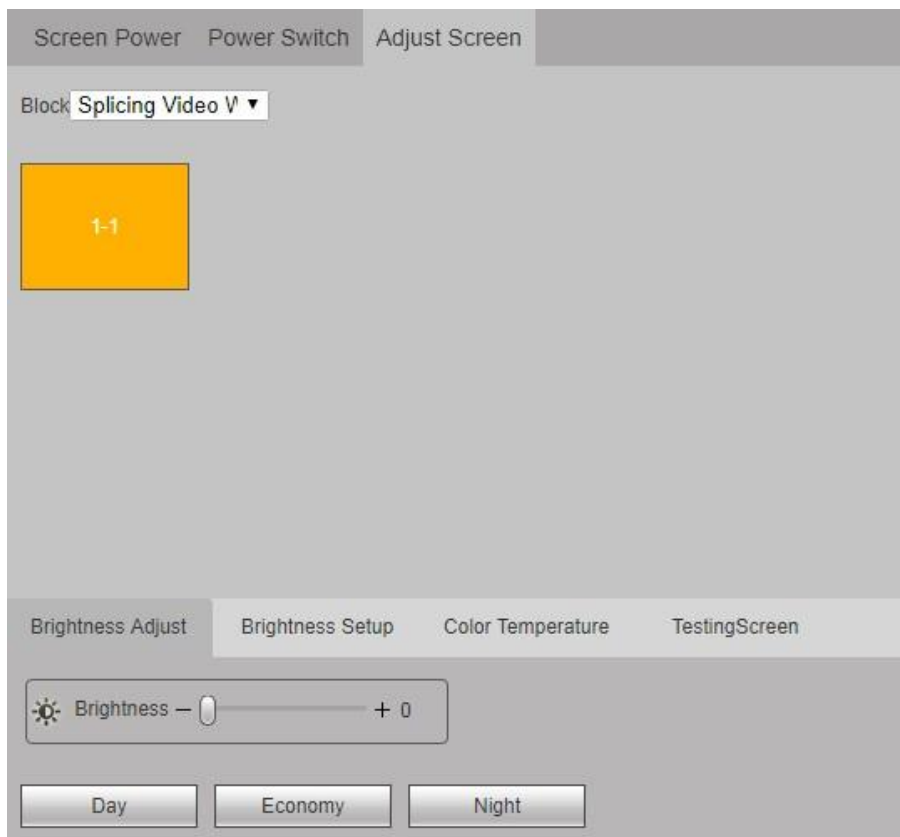
You can configure brightness, color temperature and other parameters of LED corresponding to output signal, and adjust screen display.



If manufacturer protocol is DH-LED-N, the **Adjust Screen** tab is displayed in **Screen Management** interface, so you can adjust LED parameters.

Select the **Adjust Screen** tab. The **Adjust Screen** interface is displayed. See Figure 4-27.

Figure 4-27 Adjust screen



Configure screen display parameters, depending on the hardware of display device.

4.3.4.7 Lock Video Wall

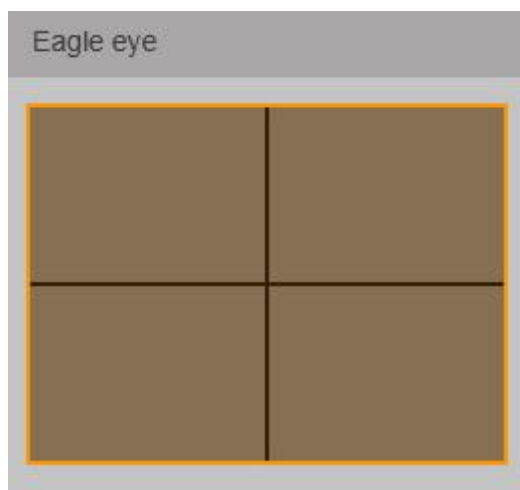
Click  **Lock Video Wall**, and the video wall will be locked. The user cannot adjust relative position of the window. Click it again to unlock the video wall.

4.3.4.8 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 4-28.

Figure 4-28 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.

4.3.4.9 Senior Function

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

4.3.4.9.1 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 , and then click . The **PTZ Control** interface is displayed. See Figure 4-29 and Table 4-3.

Figure 4-29 PTZ control



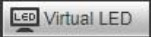
Table 4-3 PTZ control parameter description

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  to open PTZ menu of preview interface. Then, select different functions with direction key, to operate PTZ. - Click  to turn off the PTZ menu of preview interface.

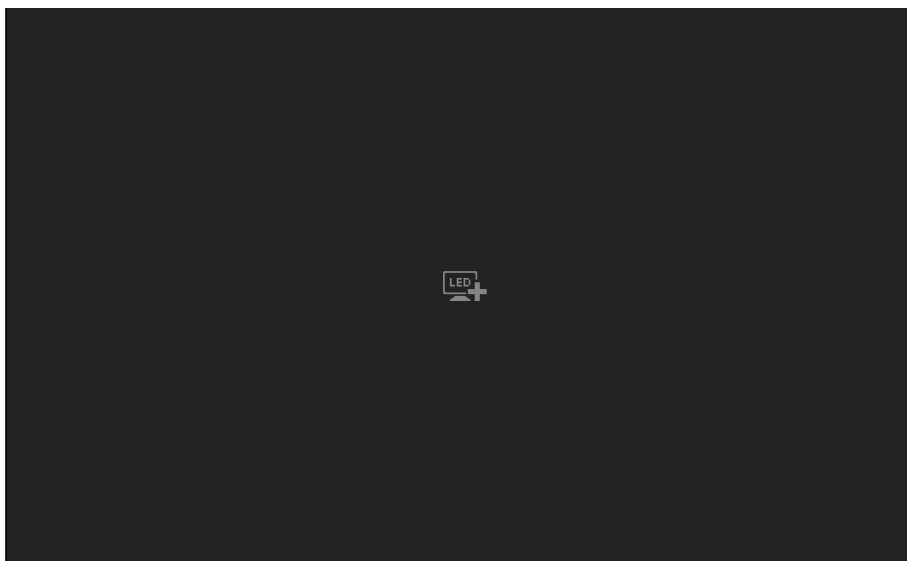
4.3.4.9.2 Virtual LED

Divide a customized area on the video wall, enter any characters, and display them on the screen.

Step 1 Click .

The system displays virtual LED interface. See Figure 4-30.

Figure 4-30 Open virtual LED



Step 2 Click .

The system displays **Virtual LED** interface. See Figure 4-31.

Figure 4-31 Virtual LED

Step 3 Configure parameters. See Table 4-4.

Table 4-4 Virtual LED parameter description

Parameter	Description
Title	Enter the title of virtual LED, which will be displayed on the video wall.
W/H	Enter width and height of virtual LED.
X/Y	Enter coordinate of virtual LED.
Transparence	Enter transparence of virtual LED.
Back color	Configure background color of virtual LED. You can enter 6-digit RGB value manually, or click the color area to select.
Time OSD	Select the left check box to enable the function. Date , Week and Time are displayed by default. Please select time display type according to your need.  Select at least one item from Date , Week and Time .
Display way	Configure display way of the title, including Horizontal or Vertical .
Enable	Choose to display the title on video wall or not. - Select the check box and click OK. The title will be displayed on video wall. - De-select the check box and click OK. The title will be displayed on web, rather than video wall.
Text align	Configure alignment of the title against the background, including Left , Center and Right .

Parameter	Description
Roll mode	Configure roll mode of virtual LED title on the screen, including Left to right , Right to left , Top to bottom and Bottom to top .
Roll speed	Configure roll speed of virtual LED title, ranging from 0 to 5.  It is static text when the roll speed is 0.
Font	Configure the title font from 0 to 100.
Pitch	Configure the title character distance from 0 to 5.
Font type	Configure the title font type, including simSun and simHei.
Font color	Configure the title color. You can enter 6-digit RGB value manually, or click the color area to select.

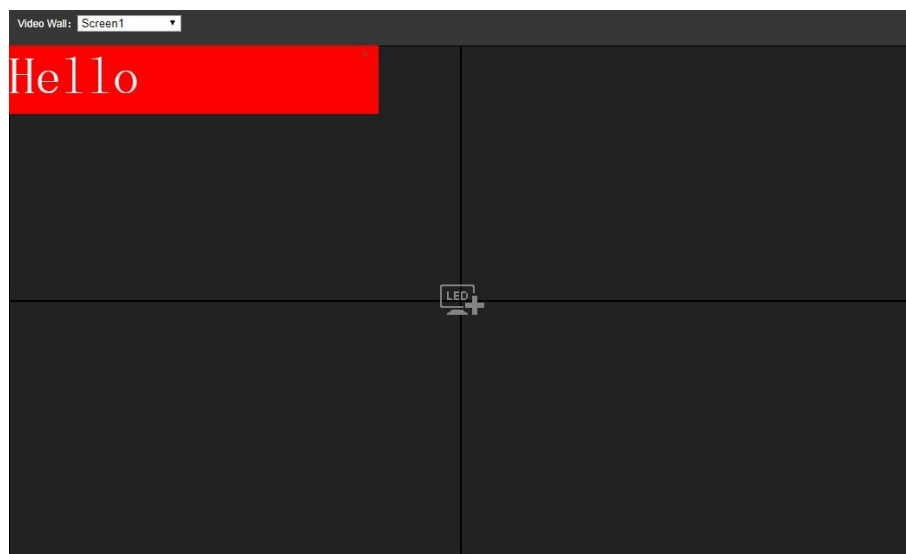
Step 4 Click **OK**.

Virtual LED displays the title. See Figure 4-32.



- Move your mouse onto virtual LED, press and hold left mouse button, and move. The virtual LED can be moved to other places.
- Click virtual LED, drag any direction control point to change the size of virtual LED.

Figure 4-32 Effect



4.3.4.9.3 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.

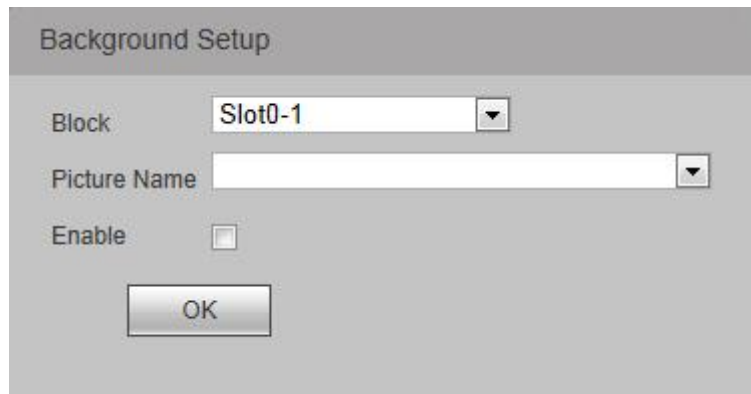


Background can only be selected from pictures that have been uploaded to the system. See "4.5.1.6 Picture Management."

Step 1 Click  **Senior Function**, and then click  **Background**.

The **Background Setup** interface is displayed. See Figure 4-33.

Figure 4-33 Add background

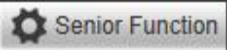


Step 2 Select **Block** and **Picture Name**, and select **Enable**.

Step 3 Click **OK**.

4.3.4.9.4 Decoding Strategy

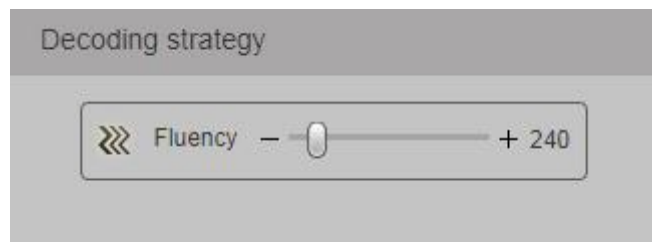
Drag the slider to adjust window fluency, and thus balance real-time decoding and fluency (only network signal supports this function).

Step 1 Select a network signal window, click  , and then click



The **Decoding Strategy** interface is displayed. See Figure 4-34.

Figure 4-34 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.

4.3.4.9.5 Show Screen ID

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

4.4 Preview

Select **Preview** tab. The **Preview** interface is displayed. See Figure 4-35 and Table 4-5.

Figure 4-35 Preview

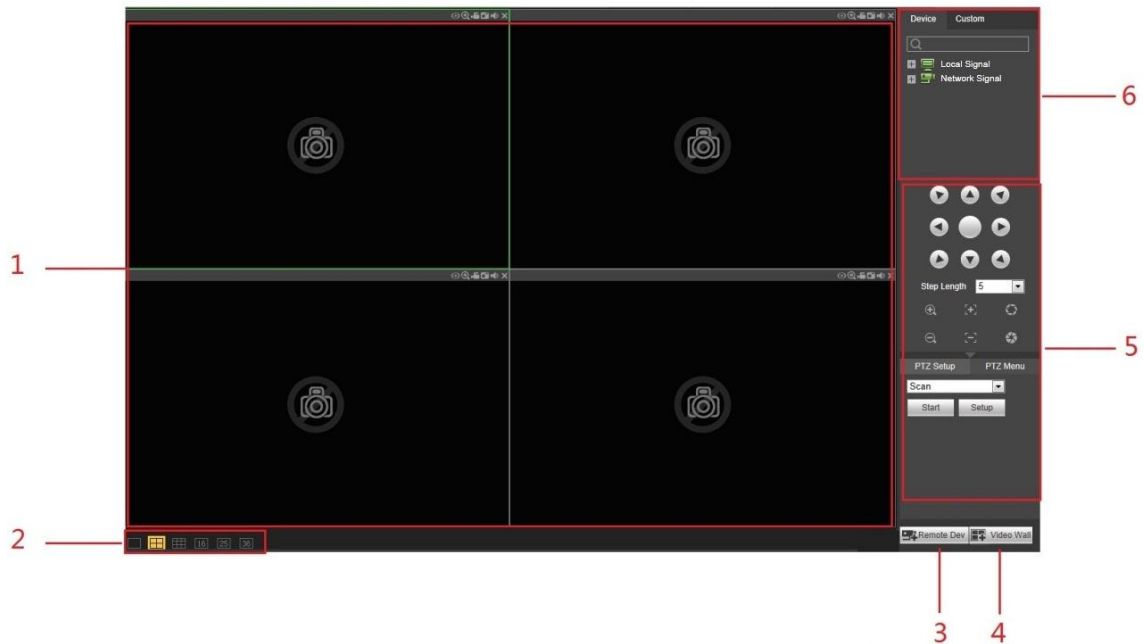
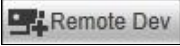


Table 4-5 Function description of preview interface

No.	Name	Description
1	Window	Preview video in the window. See "4.4.1 Window Function."
2	Window split	Carry out single, 4-split, 9-split, 16-split, 25-split and 36-split of the window.
3	Remote device	Click  to enter Network Signal interface. You can add, modify and delete device. See "4.5.4.1 Network Signal."
4	Video wall	Click  to enter Video Wall Setup interface. You can add, modify and delete video wall. See "4.5.5.1 Video Wall Setup."
5	PTZ control area	Operate cameras with PTZ function. See "4.4.3 PTZ Control."
6	Signal configuration area	Configure local signals and network signals. See "4.4.2 Signal Configuration."

4.4.1 Window Function

There are functions at the top right corner of the window. See Figure 4-36 and Table 4-6.

Figure 4-36 Window function

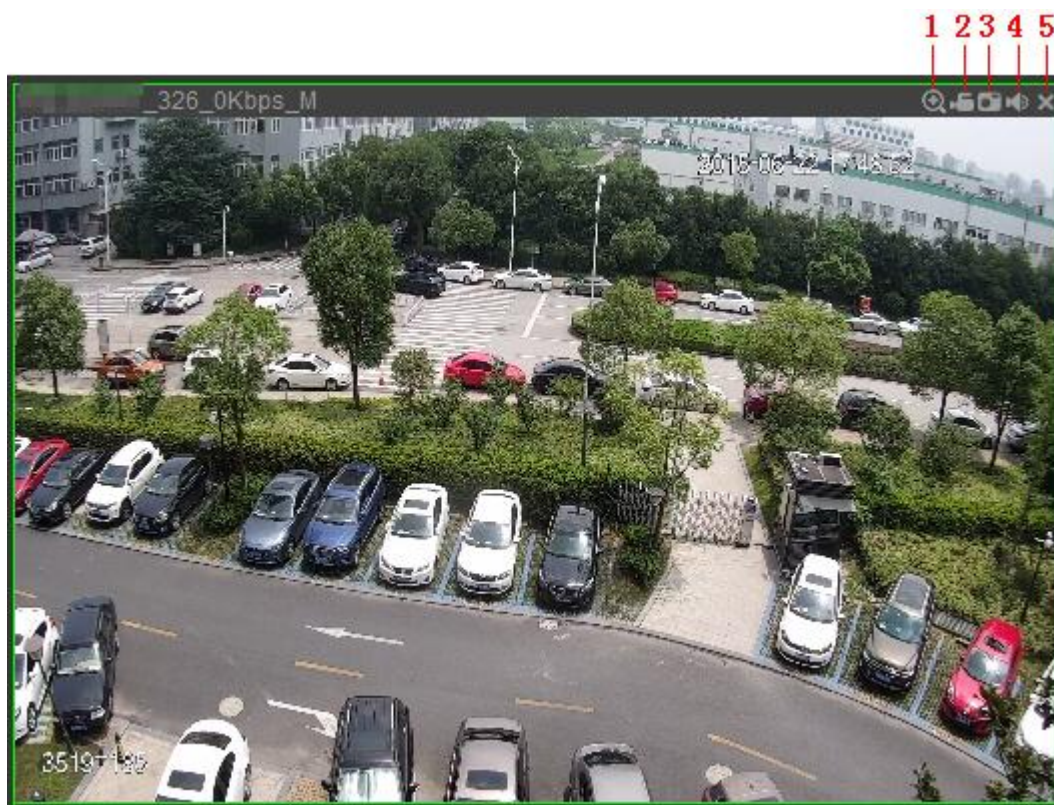


Table 4-6 Functional description

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 in the recorded video path as configured in "4.5.1.11Storage Path".
3	Snapshot	Click the icon to take a snapshot. The snapshot file is saved in the snapshot path as configured in "4.5.1.11Storage Path".
4	Turn on Sound	Click the icon to turn on sound of the video.
5	Close Video	Close this window.

4.4.2 Signal Configuration

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

4.4.2.1 Device Tree

Display all signal sources in device tree.

- Local signal: Display local signal source. For specific configurations, refer to “4.5.4.2 Local Signal.”
- Network signal: Display signal source of the added device in “Remote Device”. For specific adding methods, refer to “4.5.4.1 Network Signal.”

4.4.2.2 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. See "4.5.4.3 Signal Group."

4.4.2.3 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.

4.4.3 PTZ Control Panel

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 4-37 and Table 4-7. For details, see "4.3.4.9.1 PTZ Control."



To control PTZ with local serial port, configure parameters, and ensure correct wiring. See “4.5.1.8 PTZ Setup.”

Figure 4-37 PTZ Control



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	- Click Add to add a preset point. - In the input box, enter the preset value, and then click View; the camera moves to the location of 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.

4.5 Setup

4.5.1 System Config

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

4.5.1.1 General

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

4.5.1.1.1 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 4-38.

Figure 4-38 General

The screenshot shows a web interface for configuring a device. It has a tabbed interface with 'General' and 'Date' tabs. The 'General' tab is active, showing three configuration items: 'Device Name' with the value 'M60-12U', 'Device No.' with the value '8', and 'Language' with a dropdown menu set to 'ENGLISH'. At the bottom of the form are three buttons: 'OK', 'Refresh', and 'Default'.

Step 2 Configure parameters. See Table 4-8.

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**.

4.5.1.1.2 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 4-39.

Figure 4-39 Date

The screenshot shows a configuration window titled 'Date'. It has two tabs: 'General' and 'Date'. The 'Date' tab is selected. The settings are as follows:

- Date Format:** Y M D
- Time Format:** 24h
- Date Separator:** -
- System Time:** 2019 - 03 - 26 15 : 48 : 40. A **Sync PC** button is next to it.
- Sync Device Time:** ☐
- DST:** ☐
- DST Type:** ☒ Date ☐ Week
- Start Time:** 2000 - 01 - 01 00 : 00
- End Time:** 2000 - 01 - 01 00 : 00
- NTP Setup:** ☐
- Time Zone:** GMT+08:00
- Server:** clock.isc.org. A **Manual Update** button is next to it.
- Port:** 123 (1~65535)
- Interval:** 10 Minute

At the bottom, there are three buttons: **OK**, **Refresh**, and **Default**.

Step 2 Configure parameters. See Table 4-9.

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.
DST	Select the check box to enable DST.
DST Type	Select DST type, including Date and Week .
Start Time/End Time	- When DST Type is Date, enter year, month, day, start time and end time. - When DST Type is Week, select month, week, start time and end time from the drop-down list.
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**.

4.5.1.2 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).

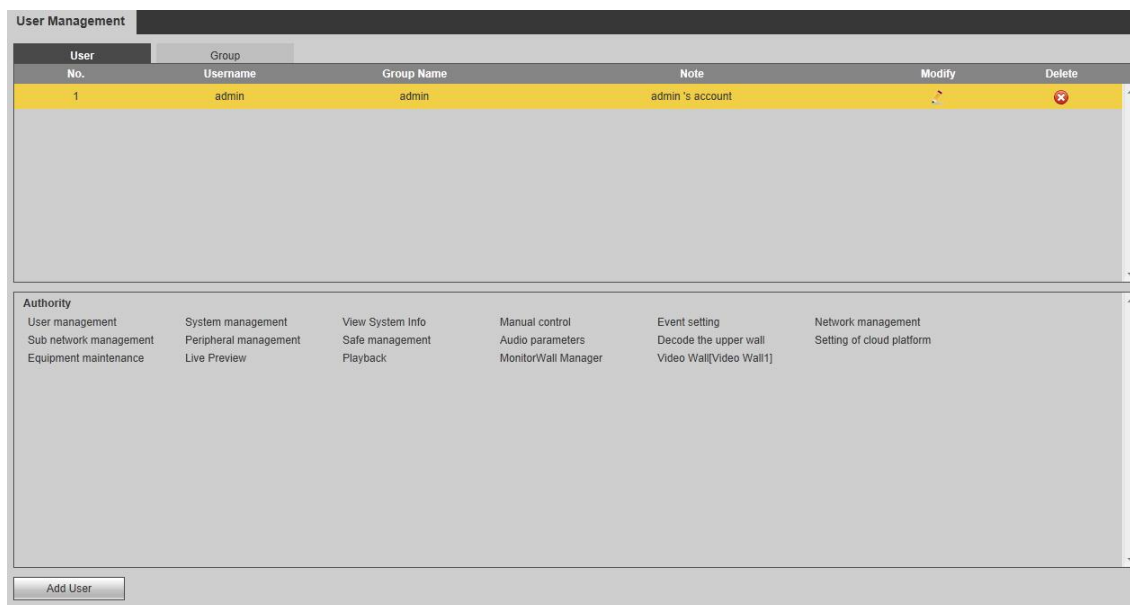
- User name and group name support maximum 6 characters and can only be consisted of letter, number, and underline (_).
- The password can be set from 8 through 32 non-empty characters and contains at least two types from capital letter, lower-case letter, number, and special characters (excluding "",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

4.5.1.2.1 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 4-40.

Figure 4-40 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 4-41.

Figure 4-41 Add User

Add User

Username:

Password:

Low Middle High

Confirm Password:

Group:

Note:

Authority

- ☒ All
- ☒ User management
- ☒ System management*
- ☒ View System Info*
- ☒ Manual control
- ☒ Event setting
- ☒ Network management
- ☒ Sub network management
- ☒ Peripheral management
- ☒ Safe management
- ☒ Audio parameters
- ☒ Decode the upper wall
- ☒ Setting of cloud platform
- ☒ Equipment maintenance
- ☒ Live Preview
- ☒ Playback
- ☒ MonitorWall Manager
- ☒ Video Wall[Video Wall1]

Note: item with ** is parent directory.

OK Cancel

Step 2 Enter username, password, confirm password and note, and then select group.



- 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**.

Modify User

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

The **Modify User** interface is displayed. See Figure 4-42.

Figure 4-42 Modify User

Modify User

Username: admin

Share: ☒

Note: admin's account

Group: admin

☐ Modify Password

Authority

- ☒ All
- ☒ User management
- ☒ System management*
- ☒ View System Info*
- ☒ Manual control
- ☒ Event setting
- ☒ Network management
- ☒ Sub network management
- ☒ Peripheral management
- ☒ Safe management
- ☒ Audio parameters
- ☒ Decode the upper wall
- ☒ Setting of cloud platform
- ☒ Equipment maintenance
- ☒ Live Preview
- ☒ Playback
- ☒ MonitorWall Manager
- ☒ Video Wall[Video Wall1]

Note: item with ** is parent directory.

OK Cancel

Step 2 Modify user information.



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

Step 3 Click **OK**.

Modify Password

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

Step 2 Select **Modify Password**.

Step 3 Input old password, input new password and confirm password.

Step 4 Click **OK**.

Delete User

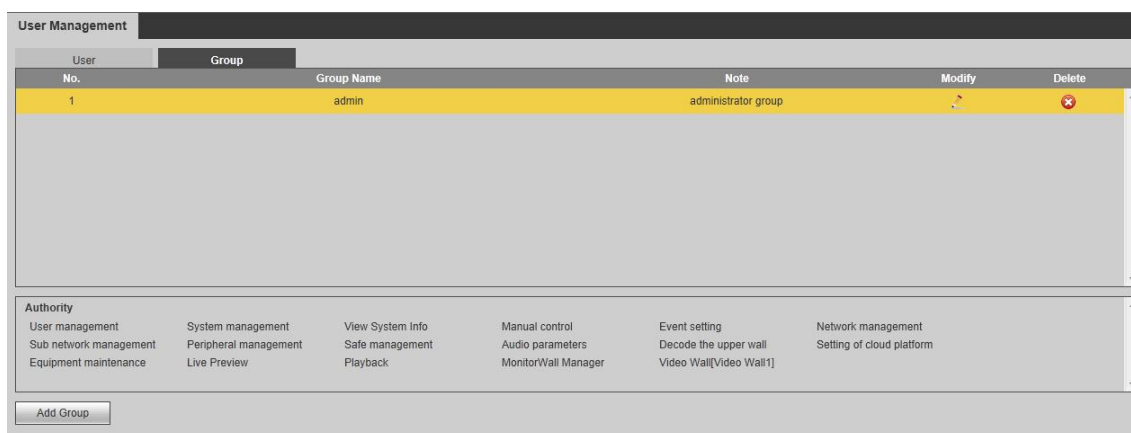
Click  corresponding to the user you want to delete.

4.5.1.2.2 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. See "4.5.1.2.1 User."

Select **Setup > System Config > User Management > User Management > Group**. The **Group** interface is displayed. See Figure 4-43.

Figure 4-43 Group



4.5.1.3 Config Backup

The configuration file of video matrix platform can be exported to flash drive for backup. When the video matrix platform 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 4-44.

Figure 4-44 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.

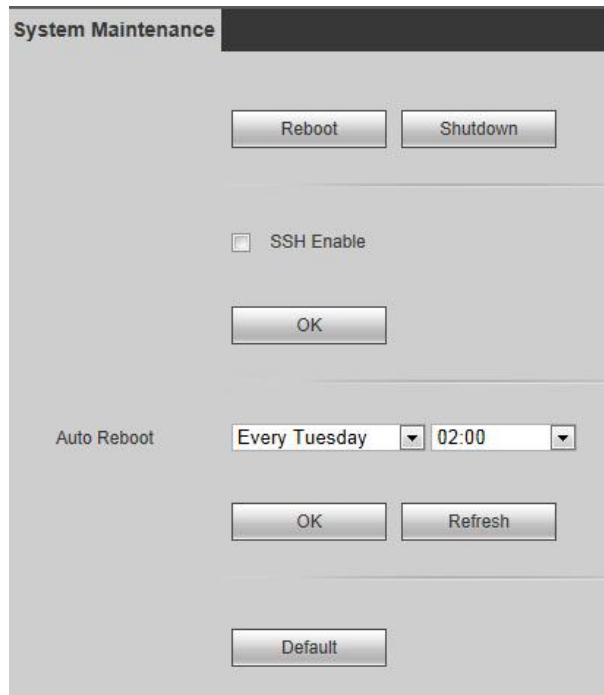
4.5.1.4 Auto Maintenance

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 4-45.

Figure 4-45 System maintenance

The image shows a web-based 'System Maintenance' interface. At the top, there's a title bar with the text 'System Maintenance'. Below this, there are two buttons: 'Reboot' and 'Shutdown'. Further down, there is a checkbox labeled 'SSH Enable'. Below the checkbox is an 'OK' button. At the bottom of the interface, there is a section for 'Auto Reboot' which includes a dropdown menu currently set to 'Every Tuesday' and a time dropdown set to '02:00'. Below these are 'OK' and 'Refresh' buttons. At the very bottom, there is a 'Default' button.

- To manually reboot the system, 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.
- To reboot the system automatically, select 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.

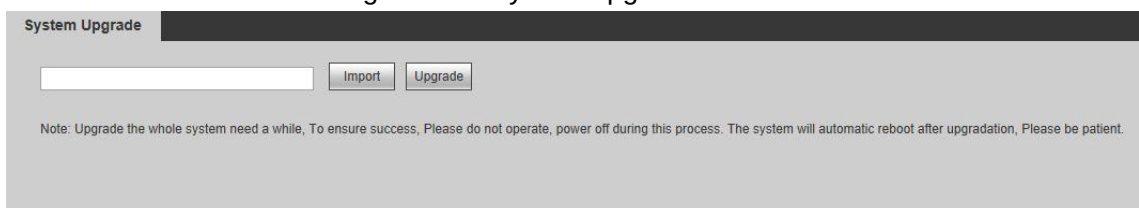
4.5.1.5 System Upgrade

Store upgrade file in PC that is associated with video matrix platform. 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 4-46.

Figure 4-46 System upgrade

The image shows a web-based 'System Upgrade' interface. It has a title bar with 'System Upgrade'. Below the title bar, there is a text input field for the upgrade file path. To the right of the input field are two buttons: 'Import' and 'Upgrade'. Below these buttons, there is a note: 'Note: Upgrade the whole system need a while, To ensure success, Please do not operate, power off during this process. The system will automatic reboot after upgradation, Please be patient.'

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.

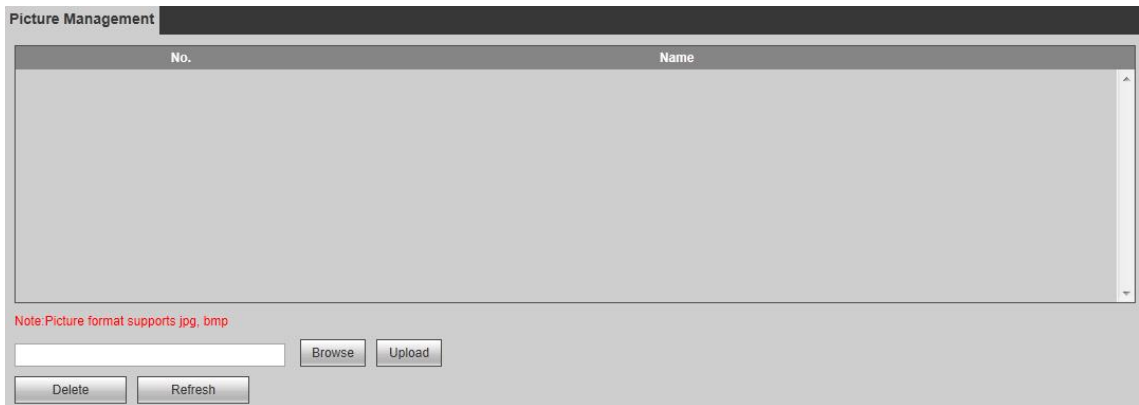
4.5.1.6 Picture Management

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 4-47.

Figure 4-47 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. See "4.3.4.9.3 Background."

4.5.1.7 Fan Control

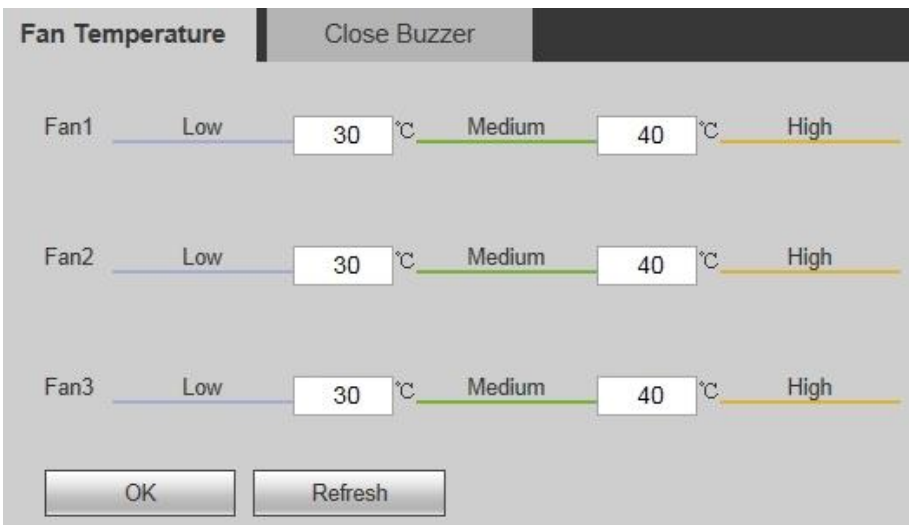
You can configure fan temperature control and buzzer alarm.

4.5.1.7.1 Fan Temperature

You can configure different temperature ranges in light of fan speed. The system will trigger different fan speed levels according to the temperature ranges.

Select **Setup > System Config > Fan Control > Fan Temperature**. See Figure 4-48.

Figure 4-48 Fan control–Fan temperature



There are three levels: low speed, medium speed, and high speed. Different temperature ranges correspond to different speeds.

4.5.1.7.2 Close Buzzer

You can configure buzzer time. In case of alarm, the system will beep continuously according to the set time. You can close buzzer according to your need.

Step 1 Select **Setup > System Config > Fan Control > Close Buzzer**.

The **Close Buzzer** interface is displayed. See Figure 4-49.

Figure 4-49 Fan control–Close Buzzer



Fan Temperature | **Close Buzzer**

Time Setup (0~600s)

Note: The buzzer will beep continuously if the time is set to 600 and The buzzer Will Shut down if the time is set to 0 .

Step 2 Configure time setup.

Step 3 Click **OK**.



Click **Close Buzzer** to close the buzzer alarm function.

4.5.1.8 PTZ Setup

PTZ is a mechanical platform that carries camera and protective hood, and provides remote all-round control. PTZ moves horizontally and vertically, and thus gives the camera an all-round and multi-angle view. In order to control PTZ, device protocol, baud rate, address and parity shall be the same as camera protocol, baud rate, address and parity.

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

The **PTZ Setup** interface is displayed. See Figure 4-50.

Figure 4-50 PTZ setup

The PTZ Setup interface is a web-based configuration tool. It features a title bar 'PTZ Setup' and a series of dropdown menus and text input fields for the following parameters:

- Device Type:** Local
- Slot:** 3
- Channel:** Channel1
- Port:** 1-1
- PTZ Type:** Local
- protocol:** NONE
- Address:** 1 (with a range indicator of 0~255)
- Baud Rate:** 9600
- Data Bit:** 8
- Stop Bit:** 1
- Parity:** N/A

At the bottom of the form are two buttons: 'Save' and 'Refresh'.

Step 2 Configure PTZ parameters. See Table 4-10.

Table 4-10 PTZ parameter description

Parameter	Description
Device Type	Select device type to be controlled. It is Local by default.
Slot	Select corresponding slot.
Channel	Select channel to be configured.
Port	Select corresponding port.
PTZ Type	Support local PTZ only.
Protocol	Select device protocol; keep consistent with camera.
Address	Set device address, ranging from 0 to 255.
Baud Rate	Set baud rate of device; keep consistent with camera.
Data Bit	Set device data bit, including 5, 6, 7 and 8.
Stop Bit	Set device stop bit, including stop bit 1 and stop bit 2.
Parity	Include odd, even, flag parity and empty parity. Keep consistent with camera parity.

Step 3 Click **Save** to save configuration.

4.5.1.9 Comm Setup

After comm parameters are set, the video matrix platform 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 4-51.

Figure 4-51 Comm setup

Comm Setup

Slot: Main Control Board

Channel: 1

COM Type: 232

Function: Normal COMM

Data Bit: 8

Stop Bit: 1

Baud Rate: 115200

Parity: N/A

Address: 1 (0 ~ 255)

Save Refresh

Step 2 Configure parameters. See Table 4-11.

Table 4-11 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.
Baud Rate	Configure Baud rate of comm. It shall be consistent with the device that 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**.

4.5.1.10 Security Management

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

4.5.1.10.1 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 4-52.

Figure 4-52 System service

Step 2 Enable system service. See Table 4-12.

Table 4-12 System service parameters description

Parameter	Description
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**.

4.5.1.10.2 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 4-53.

Figure 4-53 HTTPS

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

Step 3 Configure HTTPS port.

Step 4 Click **OK**.



- 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.

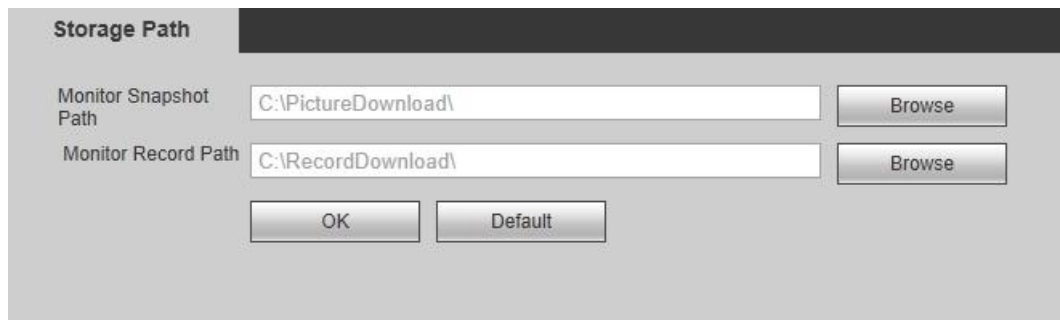
4.5.1.11 Storage Path

Select the storage path for snapshots and records.

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

The **Storage Path** interface is displayed. See Figure 4-54.

Figure 4-54 Storage path

The image shows a 'Storage Path' configuration window. It has a title bar 'Storage Path'. Inside, there are two rows. The first row is 'Monitor Snapshot Path' with a text box containing 'C:\PictureDownload\' and a 'Browse' button to its right. The second row is 'Monitor Record Path' with a text box containing 'C:\RecordDownload\' and a 'Browse' button to its right. At the bottom of the window, there are two buttons: 'OK' and 'Default'.

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

Step 3 Click **OK**.



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

4.5.2 Network

4.5.2.1 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 4-55.

Figure 4-55 TCP/IP

Ethernet Card Name	IP Address	Network Mode	Ethernet Composition	Edit	Cancel Binding
Net Card Bind1	172.26.1.199	Fault-tolerance	1,2,3,4,5,6,7,8		

IP Version:

Preferred DNS Server:

Alternate DNS Server:

Default Net Card:

Step 2 Set TCP/IP parameters. See Table 4-13.

Table 4-13 TCP/IP parameters description

Parameter		Description
IP Version		Select IP version. It is IPv4 by default.
Preferred DNS Server	DNS	Enter the configured IP address of DNS server.
Alternate DNS Server	DNS	Enter 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 4-56 and Table 4-14.

Figure 4-56 Edit

Ethernet Card: Net Card Bind1

Ethernet Mode: ☐ Single NIC ☒ Fault-tolerance ☐ Load-balance ☐ LinkAgg

Ethernet Composition

☒ Net Card1 ☒ Net Card2 ☒ Net Card3 ☒ Net Card4 ☒ Net Card5 ☒ Net Card6 ☒ Net Card7 ☒

Net Card8

IP Version:

MAC Address:

Mode: ☒ Static ☐ DHCP

IP Address:

Subnet Mask:

Default Gateway:

Table 4-14 Ethernet card parameters description

Parameter	Description
-----------	-------------

Parameter	Description
Ethernet Mode	The default setting is single NIC. - Single NIC: Two Ethernet 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. - Fault tolerance: Two Ethernet cards use one IP address, and only one Ethernet card works under normal conditions. If working Ethernet card breaks down, the other Ethernet card is enabled automatically to ensure smooth network. It is deemed that the network is disconnected only when both Ethernet cards are disconnected during network status check. Both Ethernet cards need to be in the same LAN. - Load balance: Two Ethernet cards use one IP address, and all of them work together to bear network load; the bound network throughputs are basically the same. If one Ethernet card breaks down, the other Ethernet card works normally. It is deemed that the network is disconnected only when both Ethernet cards are disconnected during network status check. Both Ethernet cards need to be in the same LAN. - Link aggregation: The system uses NIC bonding to realize communication function. All bonded NICs are working together and bearing the network load. The system allocates the corresponding ports to the specified switches according to the port load setting. Once one port link malfunctions, the system stops sending out data from current port. The system can calculate the new load and specify the new port(s) to send out data. The system calculates again to specify the port(s) once the malfunction port becomes available.  Single NIC device does not support Ethernet mode selection. The actual device shall prevail.
IP Version	It is IPv4 by default.
MAC Address	Displays the MAC address of the Device.

Parameter	Description
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	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.
Subnet Mask	
Default Gateway	

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

Step 5 Click **OK**.

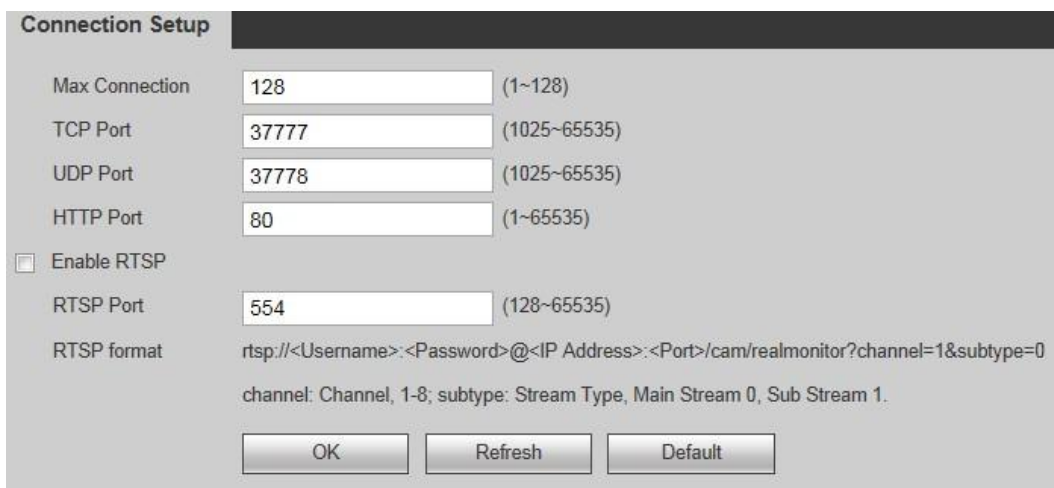
4.5.2.2 Port

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

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

The **Connection Setup** interface is displayed. See Figure 4-57.

Figure 4-57 Connection setup



Step 2 Configure max connection and port number. See Table 4-15.

Table 4-15 Port parameters description

Parameter	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 you log in the Device on the browser.
RTSP Port	Select the check box to enable RTSP. - RTSP port number is 554 by default. The following formats can be used to play when using QuickTime or VLC in Apple browser to play real-time monitoring. Blackberry also supports this feature. - URL format of real-time monitoring stream. When requesting RTSP streaming media service of real-time monitoring stream, the URL should be specified in the request channel number, stream type, as well as user name and password if you need authentication information. - To use BlackBerry to access, stream encoding mode is set to H.264B, resolution is set to CIF, and the audio shall be turned off. URL format is described as below: rtsp://username:password@ip:port/cam/realmonitor?channel=1&subtype=0 - Username: username, for example admin. - Password: password, for example admin. - IP: device IP, for example 10.7.8.122. - Port: port number. Default port is 554. It is unnecessary to enter if it is default. - Channel: channel number, starting from 1. In case of channel 2, channel=2. - Subtype: stream type. Main stream is 0 (subtype=0), sub stream is 1 (subtype=1). For example, request sub stream of channel 2 of the device. URL is as below: rtsp://admin:admin@10.12.4.84:554/cam/realmonitor?channel=2&subtype=1 If it doesn't need authentication, username and password don't need to be set. Use the following format: rtsp://ip:port/cam/realmonitor?channel=1&subtype=0

Step 3 Click **OK**.



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

4.5.2.3 IP Filter

Set network authority of other devices to access video matrix platform, 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 4-58.

Figure 4-58 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 4-59.

Figure 4-59 Add

- 3) Configure IP address information. See Table 4-16 for details.

Table 4-16 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**.

- When you log in web interface with IP host in the white list, you can login the device successfully.
- When you log in 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.

4.5.2.4 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 4-60.

Figure 4-60 Sync IP

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

Step 3 Click **OK**.

4.5.3 Event Management

Manage abnormal events. Set alarm linkage actions when an abnormal event occurs, and the system executes alarm linkage actions.

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

The **Abnormal** interface is displayed. Select abnormal type. See Figure 4-61, Figure 4-62 or Figure 4-63.

Figure 4-61 Network offline

Figure 4-62 IP conflict

Figure 4-63 MAC conflict

Step 2 Select **Enable** to enable the alarm function.

Step 3 Configure the parameters. See Table 4-17 for details.

Table 4-17 Abnormal parameters description

Parameter	Description
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 4 Click **Save**.

4.5.4 Signal Management

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

4.5.4.1 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 4-64.

Figure 4-64 Network signal

Searching and Adding

Step 1 Click **Device Search**.

The system starts to search all network signals in the LAN. See Figure 4-65.

Figure 4-65 Searching signal

No.	IP Address	Port	Device Name	Manufacturer	Type
1	192.168.1.101	80	IPC-HFW8301D	Onvif	IPC-HFW8301D
2	192.168.1.102	80	IP_Camera	Onvif	IP_Camera
3	192.168.1.103	80	IPC-HF8249F-FD	Onvif	IPC-HF8249F-FD
4	192.168.1.104	80	IPC-HF8249F-FD	Onvif	IPC-HF8249F-FD
5	192.168.1.105	80	IPC-HF8249F-FD	Onvif	IPC-HF8249F-FD
6	192.168.1.106	37777	M60-12U	Private	M60-12U
7	192.168.1.107	37777		Private	NKB1000
8	192.168.1.108	37777	NVS_4K	Private	NVS_4K



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 4-66.

Figure 4-66 Adding signal

Network Signal

No.	IP Address	Port	Device Name	Manufacturer	Type
1	192.168.1.1	80	IPC-HFW8301D	Onvif	IPC-HFW8301D
2	192.168.1.2	80	IP_Camera	Onvif	IP_Camera
3	192.168.1.3	80	IPC-HF8249F-FD	Onvif	IPC-HF8249F-FD
4	192.168.1.4	80	IPC-HF8249F-FD	Onvif	IPC-HF8249F-FD
5	192.168.1.5	80	IPC-HF8249F-FD	Onvif	IPC-HF8249F-FD
6	192.168.1.6	37777	M60-12U	Private	M60-12U
7	192.168.1.7	37777	NKB1000	Private	NKB1000
8	192.168.1.8	37777	NVS_4K	Private	NVS_4K

Device Search: Add Display Filter: N/A

No.	Connection Status	IP Address/ URL	Port	Device Name	Channel No.	Manufacturer	Type
1	Failed	192.168.1.1	80	IPC-HF8249F-FD	1	Onvif	IPC-HF8249F-FD
2	Successful	192.168.1.2	80	IPC-HFW8301D	1	Onvif	IPC-HFW8301D
3	Failed	192.168.1.3	80	IPC-HF8249F-FD	1	Onvif	IPC-HF8249F-FD

Delete Manual Add Refresh Search Added Device(IP):

Export Config Import Config

Saved successfully!

- 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 4-67.

Figure 4-67 Manual add

The 'Manual Add' dialog box contains the following fields and controls:

- Device Name:** Text input field.
- Manufacturer:** Dropdown menu with 'Private' selected.
- Protocol:** Dropdown menu with 'TCP' selected.
- IP Address:** Text input field.
- Port:** Text input field with '37777' and a range '(1~65535)'.
- Username:** Text input field with 'admin'.
- Password:** Password input field with masked characters '•••••'.
- Channel No.:** Text input field with '0' and a range '(1~1024)'.
- Channel List:** A table with columns 'Channel No.', 'Channel Name', and 'ControllID'. It is currently empty.
- Note:** A red text note stating 'Note: Check the fixed channel, do not check the temporary channel'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

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 enter 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 port number is 37777 by default.
Username	Configure the username to log in the device to be added.
Password	Configure the password to log in 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. See "4.5.2.2 Port."

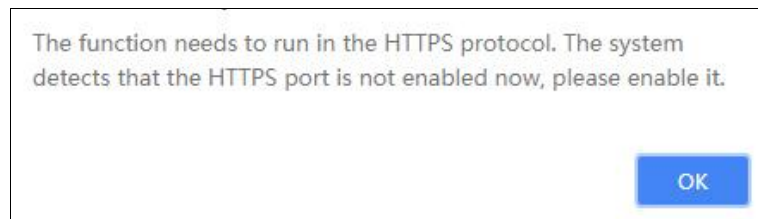
Step 1 Import or export configurations.

- 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 4-68.

Figure 4-68 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.

4.5.4.2 Local Signal

Configure local signal. For example, input title, input channel setup, make encode setup, OSD custom, capture custom and make ultra-high-resolution splicing.

4.5.4.2.1 Input Title

Configure input title and control ID of every channel of every board card. The control ID can be bound with the source (such as keyboard) to display the source on video wall.

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

The **Input Title** interface is displayed. See Figure 4-69.

Figure 4-69 Input title

Channel	Slot	ControlID
Channel1	Slot :08-01	225
Channel3	Slot :08-03	227
Channel5	Slot :08-05	229
Channel7	Slot :08-07	231
Channel9	Slot :08-09	233
Channel11	Slot :08-11	235
Channel13	Slot :08-13	237
Channel15	Slot :08-15	239
Channel17	Slot :08-17	241
Channel19	Slot :08-19	243
Channel21	Slot :08-21	245
Channel23	Slot :08-23	247
Channel25	Slot :08-25	249
Channel27	Slot :08-27	251
Channel29	Slot :08-29	253
Channel31	Slot :08-31	255
Channel2	Slot :08-02	226
Channel4	Slot :08-04	228
Channel6	Slot :08-06	230
Channel8	Slot :08-08	232
Channel10	Slot :08-10	234
Channel12	Slot :08-12	236
Channel14	Slot :08-14	238
Channel16	Slot :08-16	240
Channel18	Slot :08-18	242
Channel20	Slot :08-20	244
Channel22	Slot :08-22	246
Channel24	Slot :08-24	248
Channel26	Slot :08-26	250
Channel28	Slot :08-28	252
Channel30	Slot :08-30	254
Channel32	Slot :08-32	256

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



Enter **Start Control ID** and click **Setup**, so control ID of channels will start from the **Start Control ID**.

Step 3 Click **OK**.

4.5.4.2.2 Input Channel Setup

Configure slot, signal type and color of the channel.

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

The **Input Channel Setup** interface is displayed. See Figure 4-70.

Figure 4-70 Input channel setup

Step 2 Configure the parameters. See Table 4-19 for details.

Table 4-19 Input channel setup parameters description

Parameter	Description
Slot	Select slot.
Channel	Select channel.
Signal Type	Select signal source type according to actual conditions.

Step 3 Click **OK**.

4.5.4.2.3 Encode Setup

Configure encode parameters of local audio and video signals, including encode mode, stream type and resolution and so on.

Step 1 Select **Setup > Signal Management > Local Signal > Encode Setup**.

The **Encode Setup** interface is displayed. See Figure 4-71.

Figure 4-71 Encode setup

The screenshot shows the 'Encode Setup' tab in a software interface. It is divided into two main sections: 'Main Stream' and 'Sub Stream'.
Main Stream Configuration:
- Slot: Slot8
- Channel: 1
- Audio Type: NORMAL
- Encode Mode: H.264
- Stream Type: General Stream
- A/V Enable: ☐ Audio
- Resolution: D1
- Frame: 25
- Recommended: Limit Stream
- Stream Value: 2048 (with a 'Custom' checkbox)
- Recommended range: (768 - 4096Kbps)
- Level: Main
- Audio Format: G.711A
Sub Stream Configuration:
- Encode Mode: H.264
- Stream Type: Sub Stream
- A/V Enable: ☒ Video ☐ Audio
- Resolution: CIF
- Frame: 25
- Stream: Limit Stream
- Control: (dropdown)
- Stream Value: 640 (with a 'Custom' checkbox)
- Recommended range: (192 - 1024Kbps)
At the bottom, there are 'Save' and 'Refresh' buttons.

Step 2 Configure the parameters. See Table 4-20 for details.

Table 4-20 Encode setup parameters description

Parameter	Description
Slot	Select slot.
Channel	Select channel.
Audio Type	Select audio type.
Encode Mode	H.264: Main Profile encode mode.
Stream Type	Main stream includes two kinds: general stream and dynamic stream. And only one sub stream is supported. Select different streams for different recording events.
A/V Enable	Determine whether audio or video is captured during recording. The main stream video is enabled by default.
Resolution	Include a variety of resolution types. Every type corresponds to different recommended stream value.
Frame	Configure video frame per second. The higher frame rate is, the more natural and smooth the video will be.
Recommended/Stream Control	It includes limit stream and VBR.  Picture quality can be set in VBR mode only.
Stream Value	In VBR mode, this value is the upper limit of stream. In limit stream mode, this value is a fixed value. Select Custom to enter stream value manually.
Recommended	According to resolution and frame configured by the user, recommend a reasonable stream value range to the user.

Parameter	Description
Level	Baseline and Main are available.
Audio Format	Audio encoding format includes G.711A, PCM, G.711Mu, AAC and MPEG2-Layer2. The default format is G.711A.  Audio format here is effective to audio stream.

Step 3 Click **OK**.

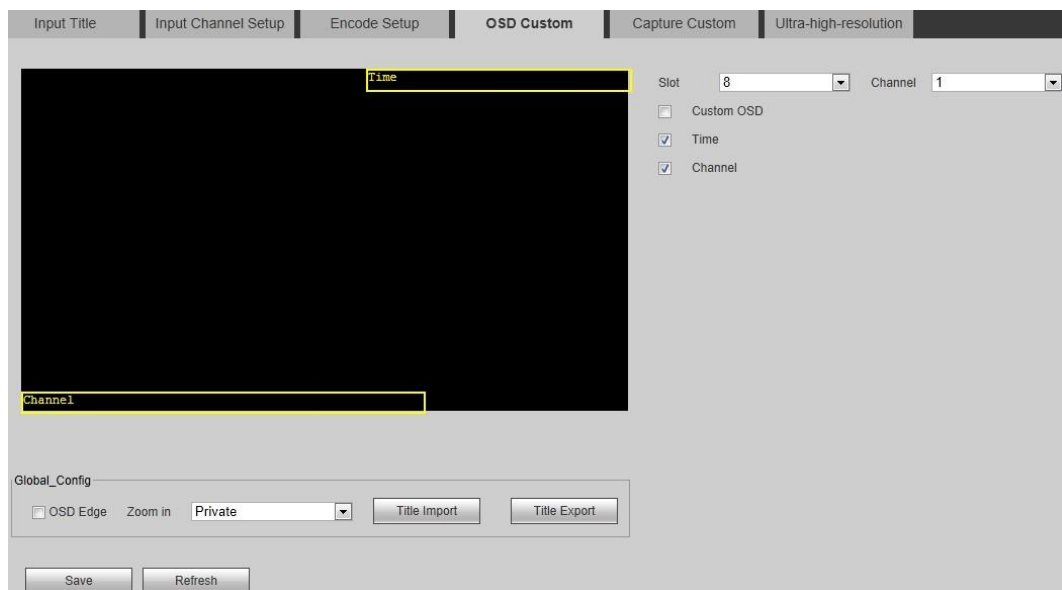
4.5.4.2.4 OSD Custom

Customize OSD effect of local signal, so time and channel title will be overlaid onto video.

Step 1 Select **Setup > Signal Management > Local Signal > OSD Custom**.

The **OSD Custom** interface is displayed. See Figure 4-72.

Figure 4-72 OSD custom



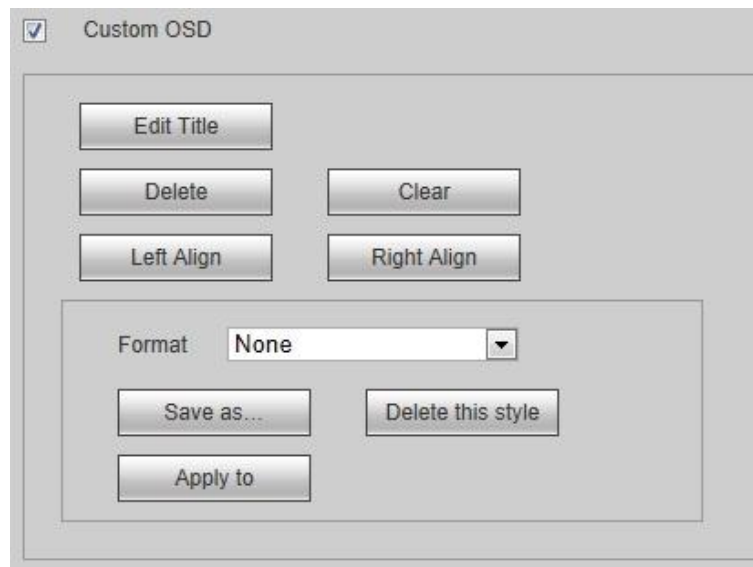
Step 2 Select the slot and channel you want to configure.

OSD Custom

Step 1 Select **Custom OSD**.

The **Custom OSD** interface is displayed. See Figure 4-73.

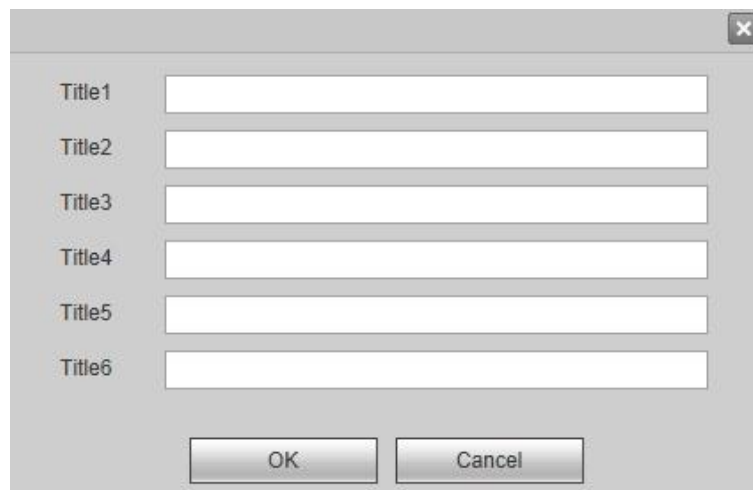
Figure 4-73 Custom OSD



Step 2 Click **Edit Title**.

The editing box pops up, and 6 titles can be configured at the same time. See Figure 4-74.

Figure 4-74 Edit title



Step 3 Edit the titles and click **OK**.

Titles are displayed on the left of the interface. See Figure 4-75.

Figure 4-75 Display title



Every title can be moved freely.

Select one title:

- Click **Delete** to delete the title.
- Click **Left Align** or **Right Align**. All titles will be aligned on the left or on the right by reference to title position.
- Click **Clear** to clear all titles.

Step 4 Click **Save as** and enter format name to save it.



- Select existing formats in **Format**.
- Click **Apply to**. This custom OSD style will be applied to other slots.
- Select a new format, and click **Delete this style** to delete it.

Set Time Title

Select **Time**, and time will be displayed. Hold the left mouse button to drag it freely.

Set Channel Title

Select **Channel**, and channel will be displayed. Hold the left mouse button to drag it freely.

Global Config

Set OSD edge and zoom; with **Title Import** and **Title Export**, set titles in batches.

Figure 4-76 Global config



Configure the parameters. See Table 4-21 for details.

Table 4-21 Global config parameters description

Parameter	Description
OSD Edge	After selection, there is a black edge around font.
Zoom in	Private and Standard are available. It is Private by default. Standard mode zooms in more than that of private mode.
Title Import	Import config table to complete batch config.
Title Export	Export config table; enter all channel titles.

4.5.4.2.5 Capture Custom

The captured image can be cut according to designated size, and displayed on the output screen according to the configured coordinate.

Step 1 Select **Setup > Signal Management > Local Signal > Capture Custom**.

The **Capture Custom** interface is displayed. See Figure 4-77.

Figure 4-77 Capture custom

The screenshot shows the 'Capture Custom' configuration window. It features a top navigation bar with the following tabs: 'Input Title', 'Input Channel Setup', 'Encode Setup', 'OSD Custom', 'Capture Custom' (which is the active tab), and 'Ultra-high-resolution'. The main configuration area includes a 'Slot' dropdown menu set to 'Slot9', a 'Channel' dropdown menu set to '1', input fields for 'Max Width' (800) and 'Max Height' (600), an 'Enable' checkbox, and four input fields for coordinates: 'X', 'Y', 'W', and 'H'. At the bottom of the window, there are two buttons: 'Save' and 'Refresh'.

Step 2 Select the slot and channel.

Step 3 Select **Enable** to enable the capture custom function.

Step 4 Configure coordinate, width and height.



X/Y refers to starting pixel coordinate, and W/H refers to width and height. The unit is pixel.

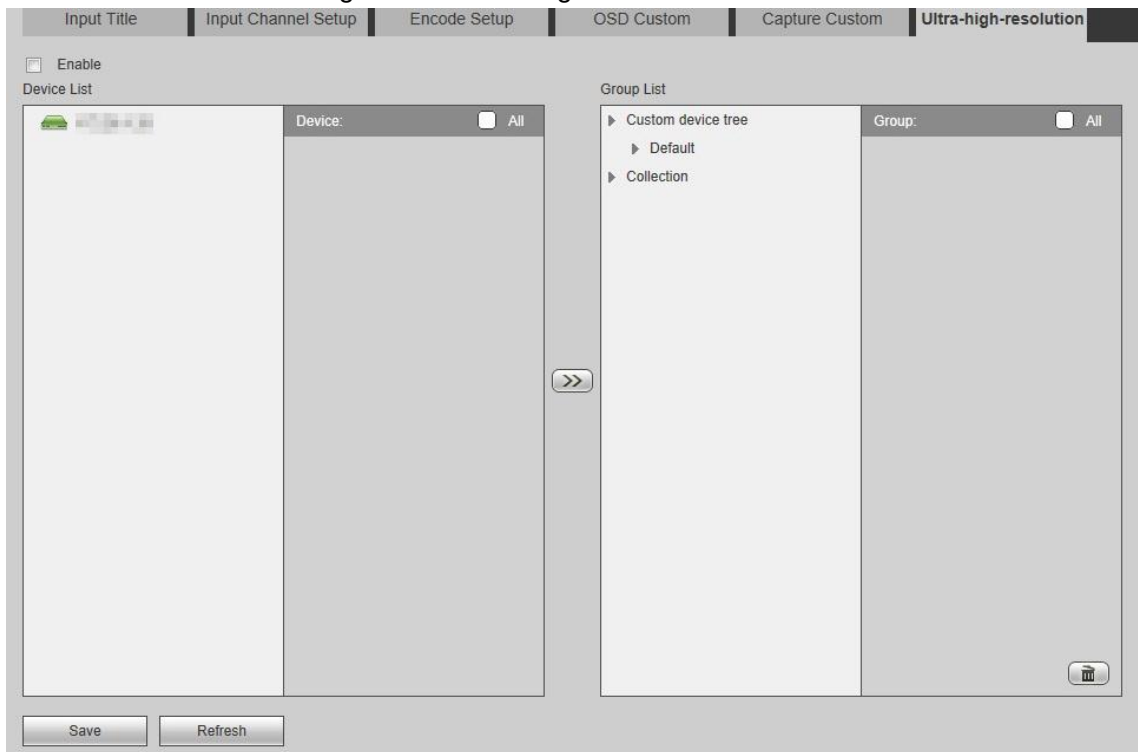
Step 5 Click **Save** to save the settings.

4.5.4.2.6 Ultra-high-resolution

The captured channels can be bound into one group. Channels in the group can be spliced, and then multiple videos can be displayed synchronously.

Select **Setup > Signal Management > Local Signal > Ultra-high-resolution**, and then select **Enable**. The **Ultra-high-resolution** interface is displayed. See Figure 4-78.

Figure 4-78 Ultra-high-resolution



Create capture and splicing group as you want. Refer to "4.5.4.3 Signal Group."

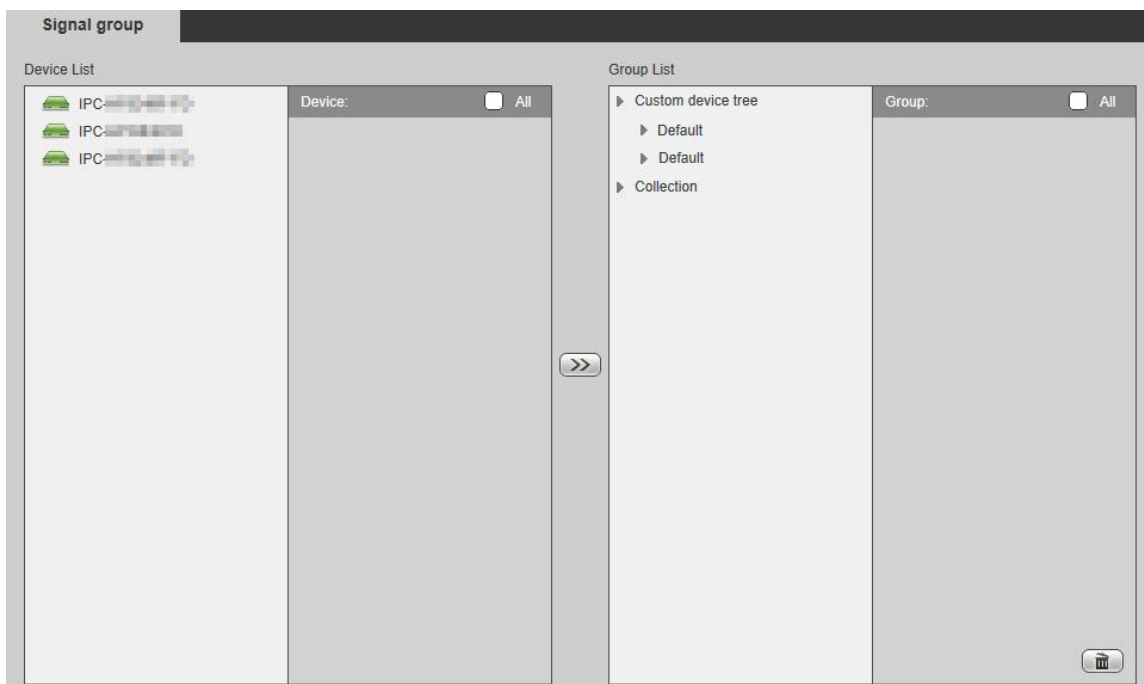
4.5.4.3 Signal Group

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 4-79.

Figure 4-79 Signal group

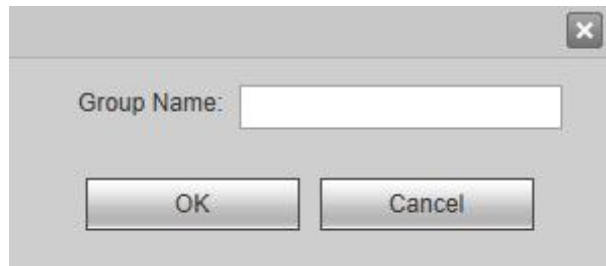


Step 2 Create a group.

- 1) Move your mouse pointer to **Custom device tree** or **Collection** in **Group list**, and then click .

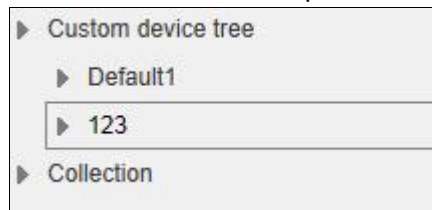
The dialog box of creating a group is displayed. See Figure 4-80.

Figure 4-80 Create a group



- 2) Enter group name, and then click **OK**.
A group has been created. See Figure 4-81.

Figure 4-81 Creation is completed



Move your mouse pointer to group name. Icons are displayed. See Figure 4-82.

Figure 4-82 Editing icons



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



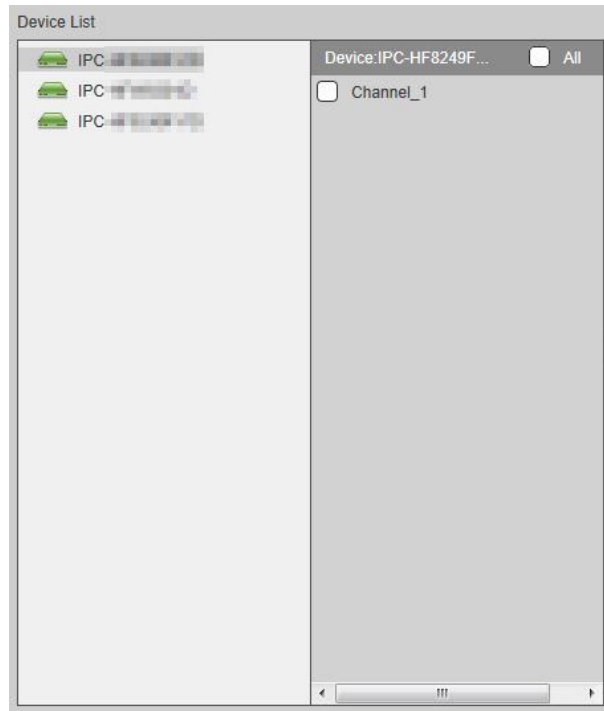
Sub-group cannot be created under **Collection** group.

- 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 4-83.

Figure 4-83 Select device



- 2) Select one signal or multiple signals.



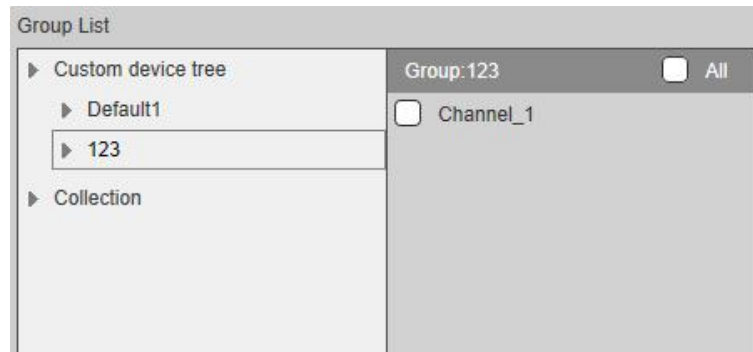
Select **All** to select all the signals.

Step 4 Select a group.

Step 5 Click .

Signals have been divided into groups. See Figure 4-84.

Figure 4-84 Grouping is completed



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

4.5.5 Display Management

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

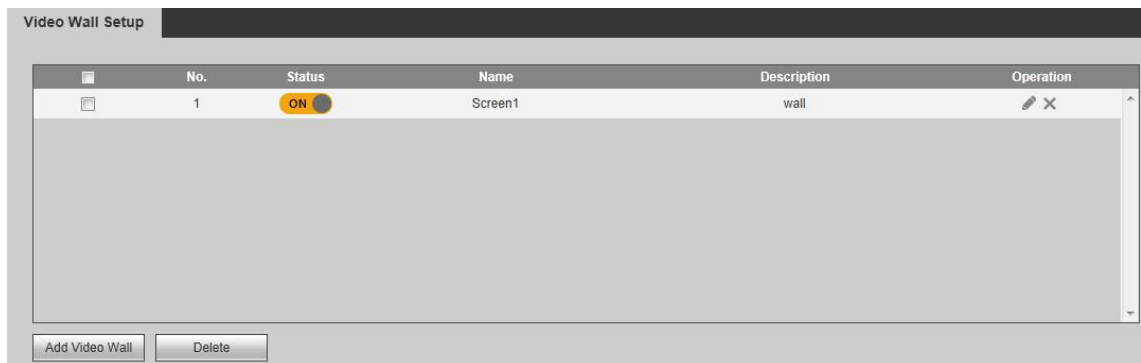
4.5.5.1 Video Wall Setup

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 4-85.

Figure 4-85 Video wall setup

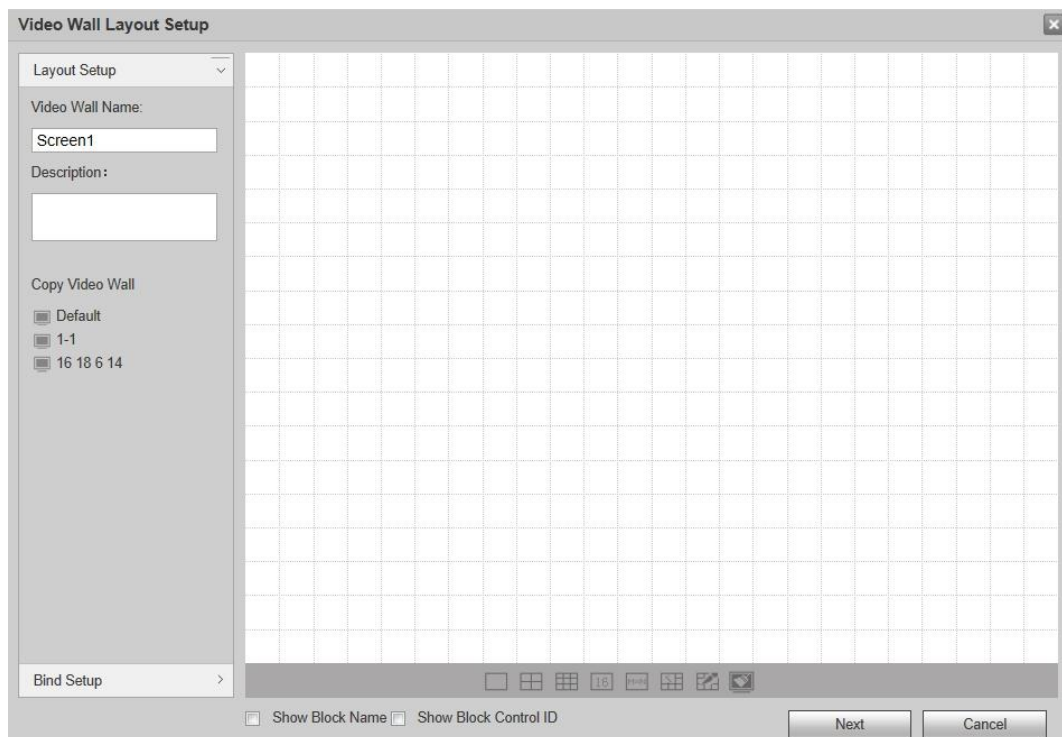


4.5.5.1.1 Adding Video Wall

Step 1 Click **Add Video Wall**.

The **Video Wall Layout Setup** interface is displayed. See Figure 4-86.

Figure 4-86 Video wall layout setup



Step 2 Configure the layout.

- 1) Customize Video Wall Name and Description.
- 2) Click icons at the bottom of the interface, to add single screen and split screen quickly. See Figure 4-87 and Figure 4-88.



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

Figure 4-87 Add screen

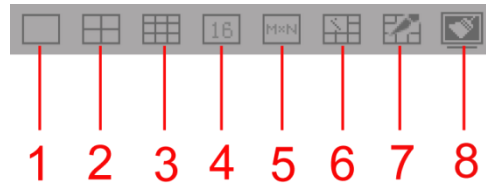
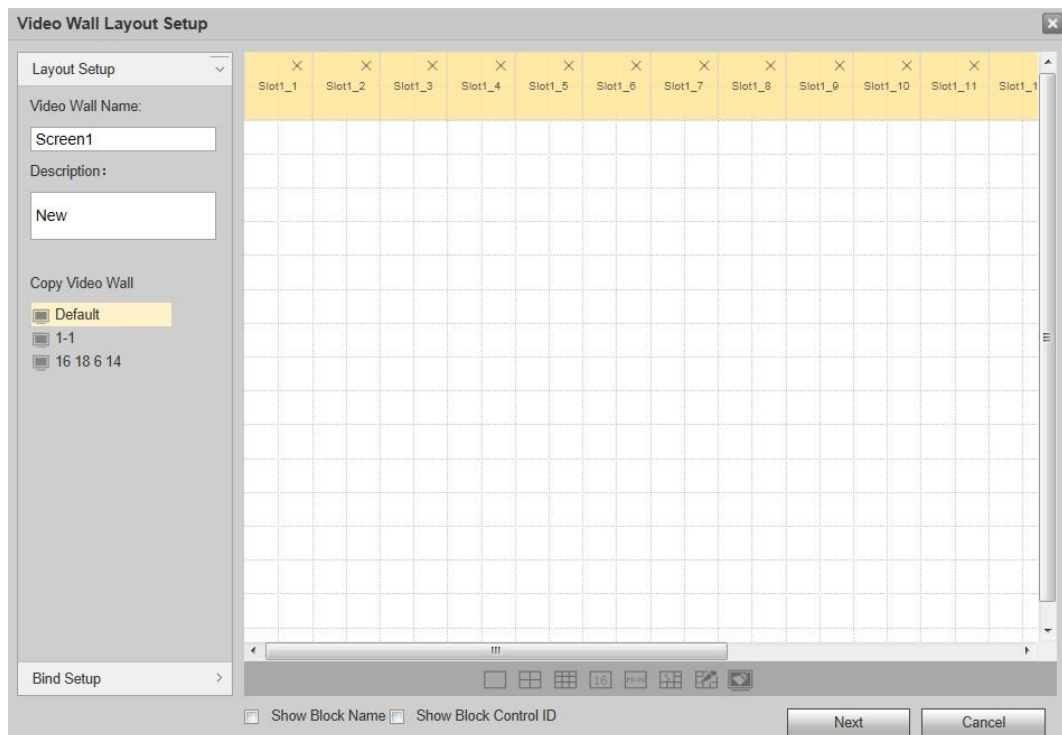


Table 4-22 Parameters description

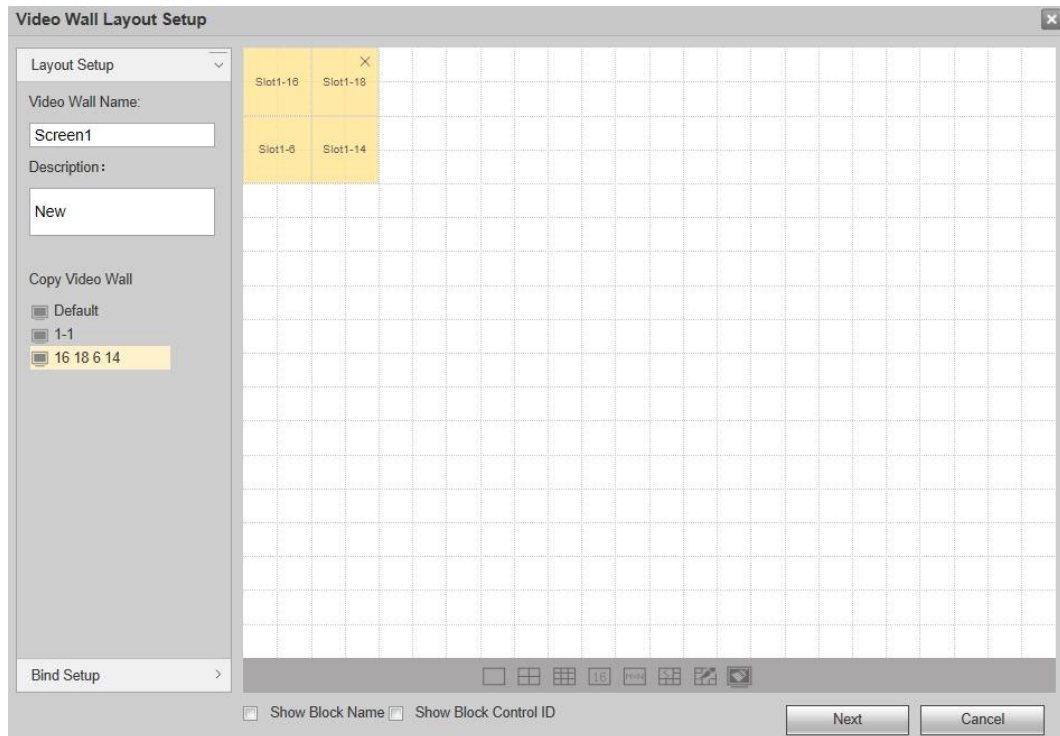
No.	Name	Description
1	Single Screen	Click to add single screen.
2	4-split Screen	Click to add a 4-split screen.
3	9-split Screen	Click to add a 9-split screen.
4	16-split Screen	Click to add a 16-split screen.
5	Custom	Click this icon, enter row and column number in the pop-up User Custom interface, and you can add a custom screen.
6	Splicing	Select separate screens, and click this icon to splice them. - Splicing screen cannot be selected. - Single screens shall be connected horizontally or vertically.
7	Cancel Splicing	Select splicing screens, and click this icon to cancel their splicing.
8	Clear Screen	Clear all screens on the video wall.

Figure 4-88 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 4-89.

Figure 4-89 Copy video wall



Step 3 (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 4-90 Show block name



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

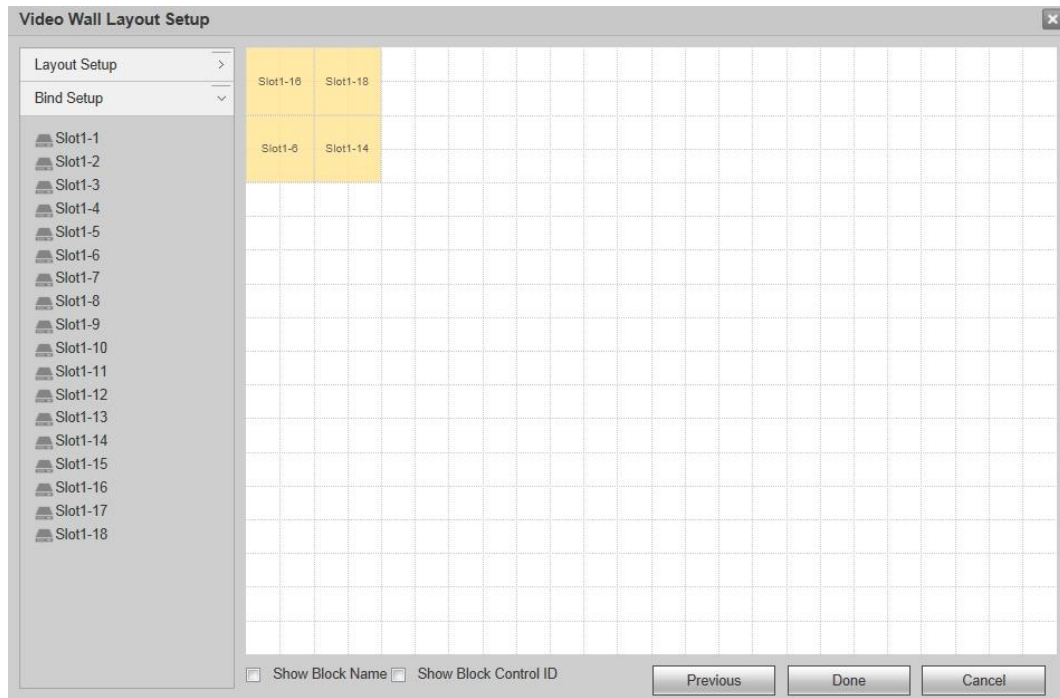


Show Block Name and **Show Block Control ID** cannot be selected at the same time.

Step 4 Click **Bind Setup** tab or **Next**.

The slot information is displayed. See Figure 4-91.

Figure 4-91 Slot information

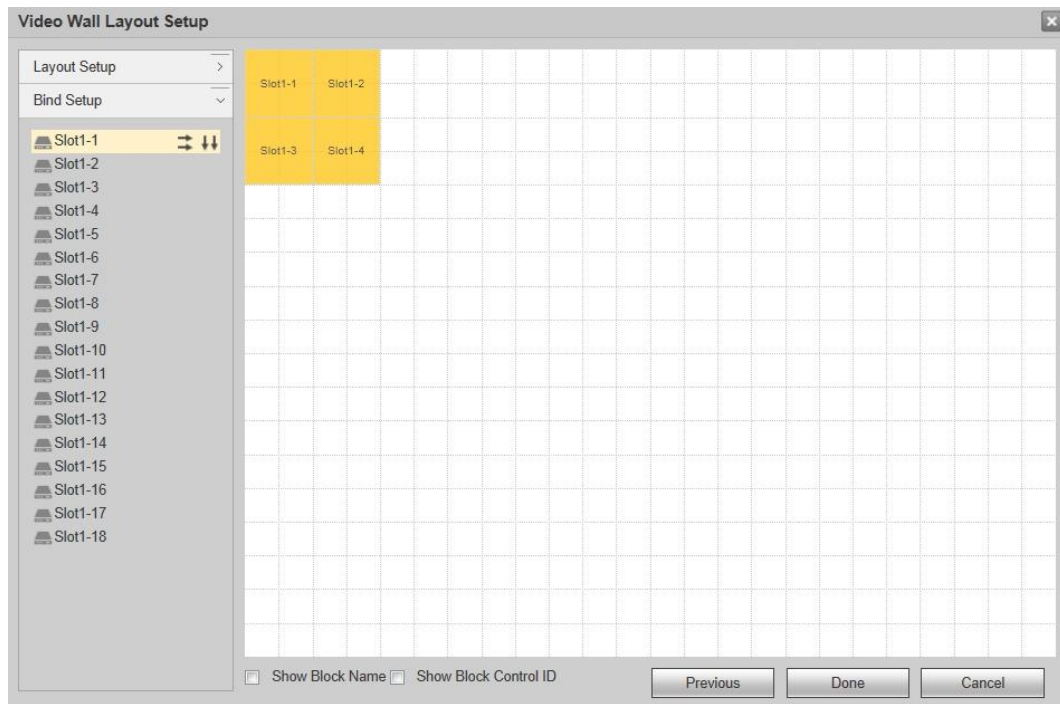


Step 5 Select one slot, press and hold on left mouse button to drag the slot onto the screen, and bind the slot channel with screen. See Figure 4-92.



- 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 4-92 Slot binding



Step 6 Double-click a new video wall block.

The **Block Setup** interface is displayed. See Figure 4-93.

Figure 4-93 Block setup

row-column	Output Port	Screen Resolution	Screen ControlID
1-1	Slot1-1	1920*1080	1
1-2	Slot1-2	1920*1080	2
2-1	Slot1-3	1920*1080	3
2-2	Slot1-4	1920*1080	4

Step 7 Set parameters. See Table 4-23.

Table 4-23 Block setup parameters description

Parameter	Description
Name	Configure block name.
Row Delay	Configure row delay ranging from 0ms to 100ms.

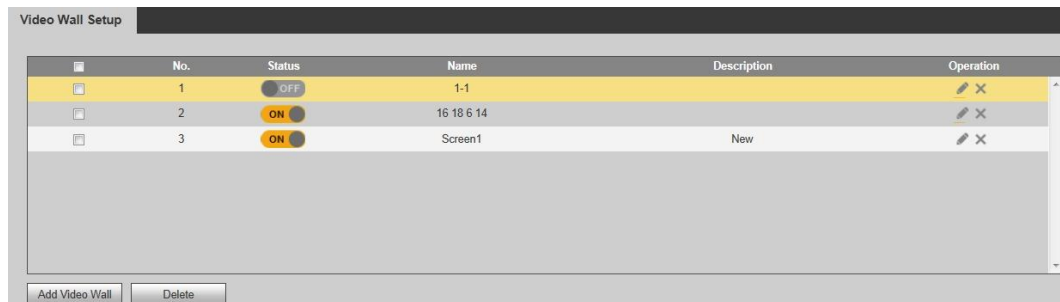
Parameter	Description
Resolution	Select Customized to configure resolution of output screen corresponding to each slot.

Step 8 Click **OK**.

Step 9 Click **Done**.

The system exits **Video Wall Layout Setup** interface. The new video wall is displayed in video wall list. See Figure 4-94.

Figure 4-94 Adding is completed



New video wall is ON by default. You can configure video wall status to be ON or OFF, so as to turn on or off the video wall.

4.5.5.1.2 Modifying Video Wall

Click , and modify video wall information in the pop-up **Video Wall Layout Setup** interface. See "4.5.5.1.1 Adding Video Wall."

4.5.5.1.3 Deleting Video Wall

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

4.5.5.2 Screen Management

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

4.5.5.2.1 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 4-95.

Figure 4-95 Screen setup

number	Output Screen	Manufacturer	Serial	Com Address
1	Slot10-1	LED-CLT	Main Control Board-1	
2	Slot10-2			
3	Slot10-3			
4	Slot10-4			
5	Slot10-5			
6	Slot10-6			
7	Slot10-7			
8	Slot10-8			
9	Slot10-9			
10	Slot10-10			
11	Slot10-11			
12	Slot10-12			
13	Slot10-13			
14	Slot10-14			
15	Slot10-15			
16	Slot10-16			

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**.

4.5.5.2.2 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 4-96.

Figure 4-96 Screen ON/OFF

Step 2 Configure the parameters. See Table 4-24.

Table 4-24 Parameters description

Parameter	Description
Regional Switch Enable	Select the check box to enable regional switch function.
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 3 Click **OK**.

4.5.5.2.3 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 4-97.

Figure 4-97 Screen timer

Screen Setup | Screen ON/OFF | **Screen Timer**

Screen: 405-144 ▼ Block: 1 ▼ Week: Sun ▼

☐ Period 1 00 : 00 (On) — 24 : 00 (Off)

☐ Period 2 00 : 00 (On) — 24 : 00 (Off)

☐ Period 3 00 : 00 (On) — 24 : 00 (Off)

☐ Period 4 00 : 00 (On) — 24 : 00 (Off)

☐ Period 5 00 : 00 (On) — 24 : 00 (Off)

☐ Period 6 00 : 00 (On) — 24 : 00 (Off)

Apply toScreen Apply toWeek OK Refresh

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

Step 3 Select period and configure ON/OFF time.

Step 4 Click **OK**.



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.

4.5.5.3 Display Setup

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

4.5.5.3.1 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 4-98.

Figure 4-98 Display setup

The screenshot shows a 'Display Setup' window with two tabs: 'Display Setup' (active) and 'Global Setup'. The 'Display Setup' tab contains the following controls:

- Slot:** A dropdown menu set to '7'.
- Channel:** A dropdown menu set to '1'.
- Resolution:** A dropdown menu set to '1280*1024P@60'. There is an unchecked checkbox labeled 'Customized' next to it.
- Audio Mode:** A dropdown menu set to 'Out To SubCard'.
- Display:** A dropdown menu set to 'Force'.
- Video Mode:** A dropdown menu set to 'HDMI'.
- Hue:** A slider control with a sun icon, ranging from -50 to +50.
- Brightness:** A slider control with a sun icon, ranging from -50 to +50.
- Contrast:** A slider control with a circle icon, ranging from -50 to +50.
- Saturation:** A slider control with a square icon, ranging from -50 to +50.
- Global_Config:** A section containing a 'Screen/Window Color' dropdown menu set to 'Black/Black'.
- Buttons:** 'OK' and 'Refresh' buttons at the bottom.

Step 2 Configure the parameters. See Table 4-25 for details.

Table 4-25 Parameter description

Parameter	Description
Slot	Configure slot of display.
Channel	Configure the channel of display.
Resolution	Configure the resolution of display. Customize the resolution after you select Customized .
Display	Configure output mode of the display, including Force and Hot Swap . - Hot swap: Images are output only when output port of the device is connected with the display. - Force: Images are output even when output port of the device is not connected with the display.
Audio Mode	Configure audio output mode, including Out to SubCard, Out to MainCard, and Both. - Out to SubCard: Decoding sound is output from audio output port of sub-card. - Out to MainCard: Decoding sound is output from audio output port of main card. - Both: Decoding sound is output from audio output port of sub-card and main card at the same time.
Video Mode	Video output mode includes DVI and HDMI.
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.

Parameter	Description
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**.

4.5.5.3.2 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 4-99.

Figure 4-99 Global setup

Step 2 Select the check boxes. See Table 4-26.

Table 4-26 Global setup parameters description

Parameter	Description
Main/Sub Stream Auto Switch	If main stream is displayed on the window, when the resolution is lower than D1, main stream will automatically switch to sub stream.

Parameter	Description
IVS Rule	After the camera enables IVS rule function, rule line turns red and flickers if a moving object enters the alarm zone of blue rule line.
Tracking Box	After the camera enables tracking box function, the system selects and tracks moving objects with a green box on the output interface.
Window Prompt Info	Prompt information will be displayed on the window.
Do not decode when being covered	The covered window will pause decoding.
Platform NetCard Pull Stream	Enable platform netcard pull stream function.
Device NetCard Pull Stream	Enable device netcard pull stream function.
Manual setting window wide and height	Double click window on the video wall to adjust window coordinate and size. See “4.3.2.3 Configuring Window Information.”
Abnormal Stream Filtering	The system checks and filters abnormal stream, in order to prevent green screen.
Plan Neat Switching	Plan stream will be switched synchronously and neatly, to enhance visual effect.
Decoding Strategy	Select the check box. Fluency adjustment zone is displayed. You can drag the slider to adjust window fluency.  You can only adjust fluency of network signal.

Step 3 Click **Save**.

4.5.5.4 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 4-100.

Figure 4-100 Output name

Output Name		Start ControlID	ControlID
Channel10-1	10_1		217
Channel10-2	10_2		218
Channel10-3	10_3		219
Channel10-4	10_4		220
Channel10-5	10_5		221
Channel10-6	10_6		222
Channel10-7	10_7		223
Channel10-8	10_8		224
Channel10-9	10_9		225
Channel10-10	10_10		226

Previous Next (1 / 2)

Save Refresh

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



Enter **Start Control ID** and click **Setup**, so control ID of channels will start from the **Start Control ID**.

Step 3 Click **Save**.

4.5.5.5 Structured Info

Receive structured data info about face, motor vehicle, non-motor vehicle and crowd density, and then display the data on the video wall.

- **Face structure:** After camera enables face recognition function and video matrix platform enables face structure function, the camera collects video stream and detects face info in the stream. The face info can be displayed on the screen through video matrix platform.
- **Human, motor vehicle and non-motor vehicle structure:** After camera enables human, motor vehicle and non-motor vehicle recognition function and video matrix platform enables human, motor vehicle and non-motor vehicle structure function, the camera collects video stream and detects human, motor vehicle and non-motor vehicle info in the stream. The human, motor vehicle and non-motor vehicle info can be displayed on the screen through video matrix platform.
- **Crowd density:** After camera enables crowd density recognition function and video matrix platform enables crowd density structure function, the camera collects video stream and detects crowd density info in the stream. The video stream can be displayed on the screen through video matrix platform. Crowd density is indicated with blue spots. The denser blue spots become, the higher crowd density will be.

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

The **Structured Info** interface is displayed. See Figure 4-101.

Figure 4-101 Structured info

Structured Info

☐ Enable Face Structure
 ☐ Enable Men Motor Vehicle Non-Motor Vehicle Structure
 ☐ Enable Crowd Density

Note:

1. Structured info, virtual LED and screen number of one output port cannot be displayed at the same time.

2. Structured info can only be shown on single physical display in full screen (which is not supported by customized resolution).

3. Structured info is available after Device NetCard Pull Stream and Platform NetCard Pull Stream are enabled (the platform shall configure direct mode).

OK

Refresh

Step 2 Select the structure info you want.

Step 3 Click **OK**.

4.6 Info

4.6.1 Device Info

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

4.6.1.1 Card Info

You can view card status, type, port type and temperature status of the video matrix platform.

Select **Info > Device Info > Card Info**. The **Card Info** interface is displayed. See Figure 4-102.

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

Figure 4-102 Card info

Card Info						
Board Quantity(2/10)						
Status	Slot	Type	Port Type	Status	Temperature Status	Bios Version
	Main Card	Main Card	DVI / VGA	Normal	42°C	M60.010
	Slot1					
	Slot2					
	Slot3					
	Slot4					
	Slot5					
	Slot6					
	Slot7					
	Slot8	Encoding Card	CVBS	Normal	33°C	M60.010
	Slot9					
	Slot10	Enhanced Decoding Board	HDMI	Normal	66°C	03.01,03.01,03.01,03.01,03.01,03.01,03.01
						Refresh

4.6.1.2 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 4-103.

Decode Info						Record Time Interval	20	(20~120)S
Channel	Status	Resolution	FPS	Data Flow(kb/s)	Decode Flow(kb/s)	Record		
405-144_1_1	Monitor	3840 * 2160	25	7623	8277			



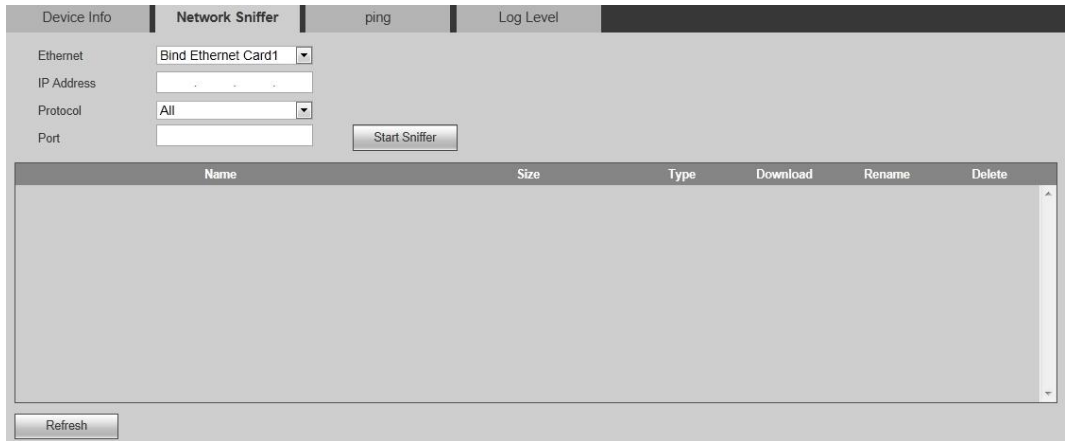
4.6.1.3.2 Network Sniffer

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 4-106.

Figure 4-106 Network sniffer



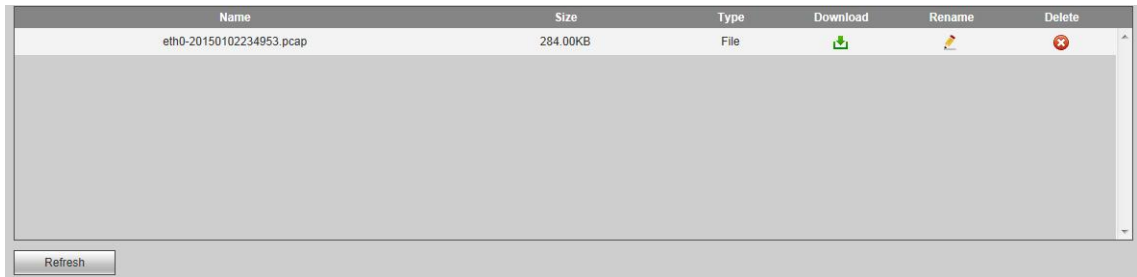
- Step 2 Set parameters according to your actual situation. See Table 4-27.

Table 4-27 Network sniffer parameter description

Parameter	Description
Ethernet	Select the net card that has been bound.
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 4-107.

Figure 4-107 Data packet



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

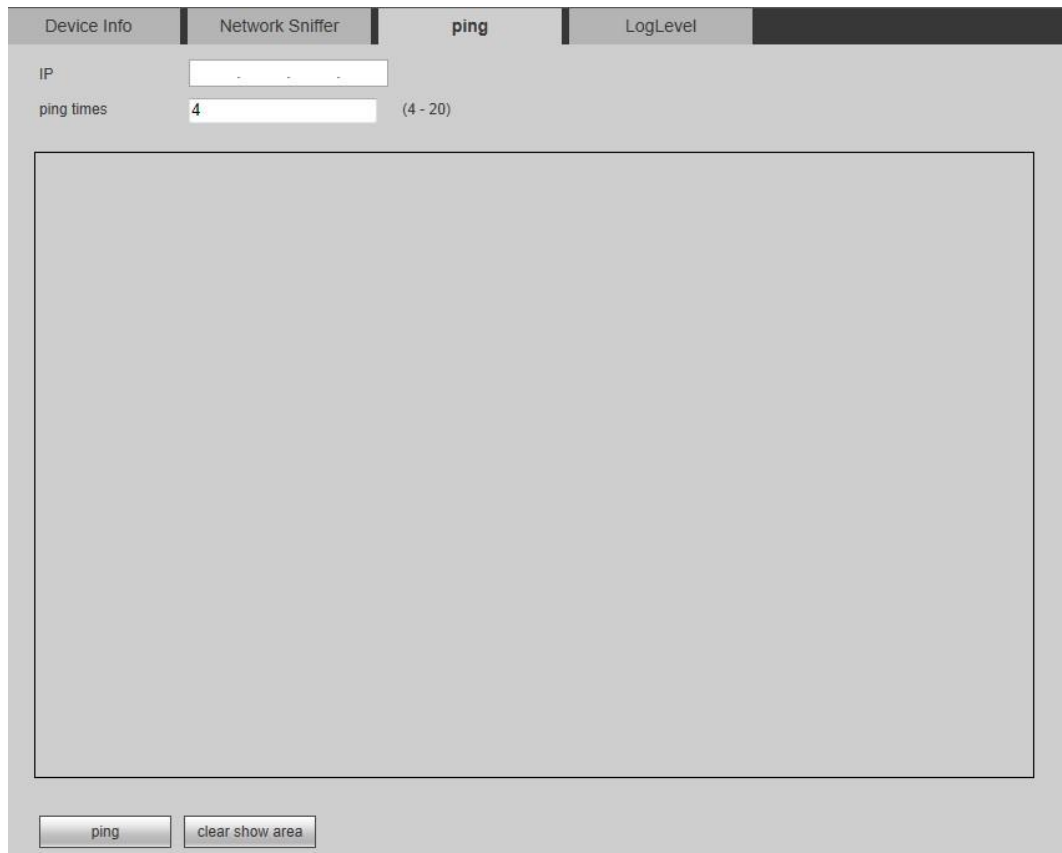
4.6.1.3.3 Ping

With ping command, check whether camera or video matrix platform is connected normally.

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

The **Ping** interface is displayed. See Figure 4-108.

Figure 4-108 Ping

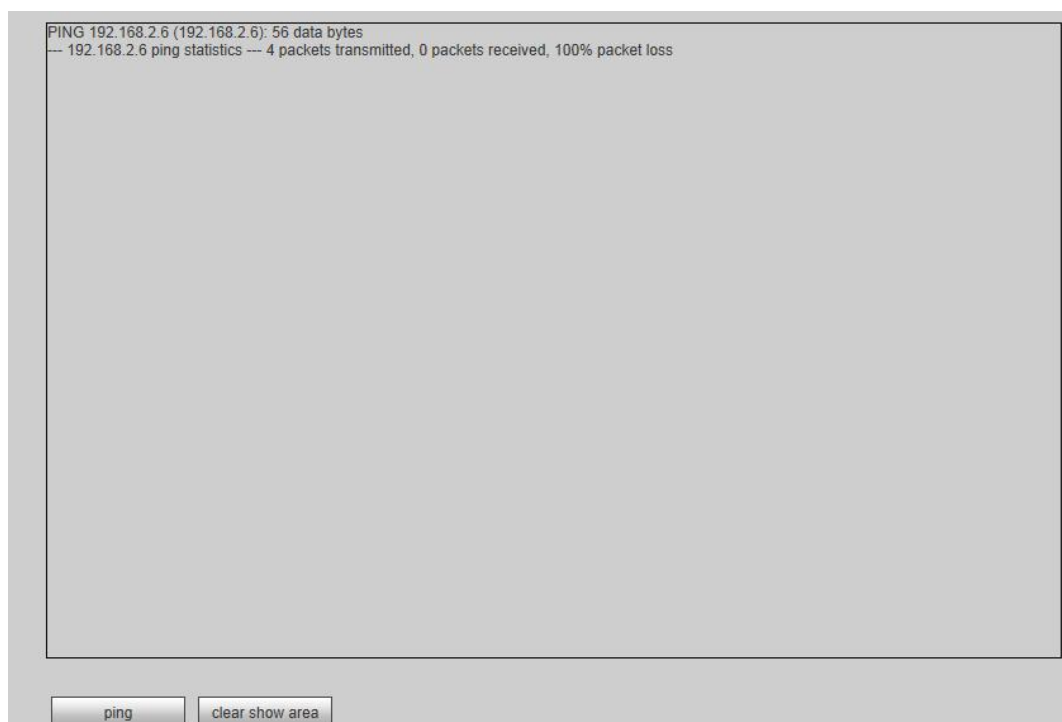


The screenshot shows a web application interface with a top navigation bar containing four tabs: "Device Info", "Network Sniffer", "ping", and "LogLevel". The "ping" tab is currently selected. Below the navigation bar, there are two input fields: "IP" with a placeholder " - - - " and "ping times" with a value of "4" and a range "(4 - 20)". A large, empty rectangular area occupies the center of the interface. At the bottom, there are two buttons: "ping" and "clear show area".

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

After several seconds, ping info is displayed. See Figure 4-109.

Figure 4-109 Information display



The screenshot shows the same web application interface as Figure 4-108, but now the large rectangular area displays ping results. The text displayed is: "PING 192.168.2.6 (192.168.2.6): 56 data bytes" followed by "--- 192.168.2.6 ping statistics --- 4 packets transmitted, 0 packets received, 100% packet loss". The "ping" and "clear show area" buttons remain at the bottom.



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

4.6.1.3.4 Log Level

Configure background printing debugging log level.

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

The **Log Level** interface is displayed. See Figure 4-110.

Figure 4-110 Log level

Device Info | Network Sniffer | ping | **Log Level**

Log Level: Trace

Step 2 Configure log level.

Step 3 Click **OK**.

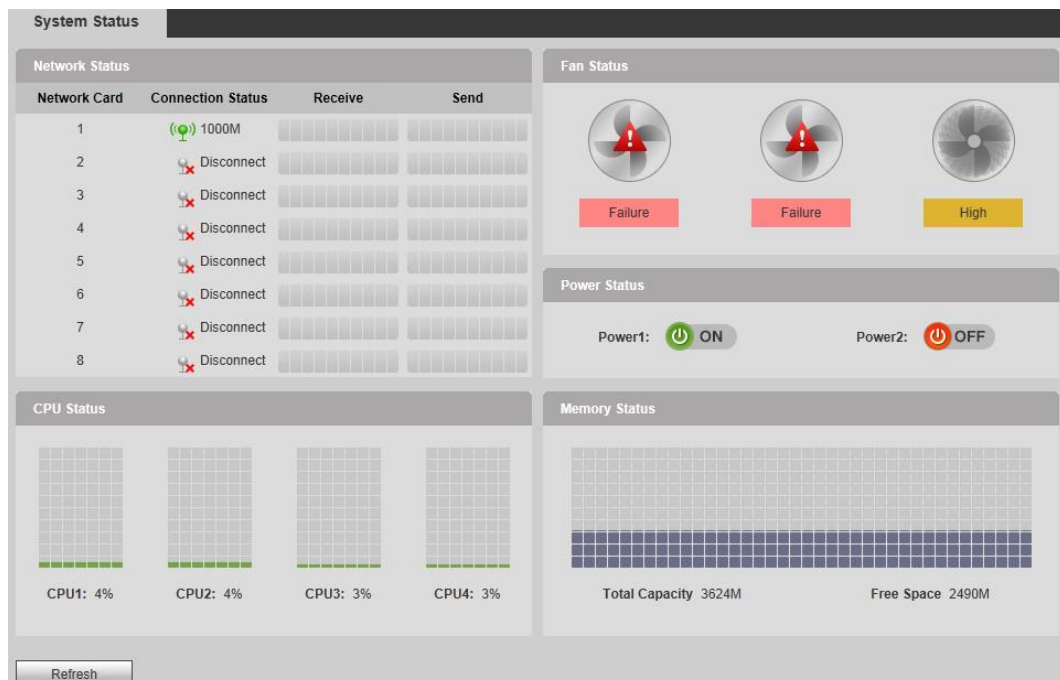
4.6.1.4 System Status

You can view network status, fan status, power status, CPU status and memory status of the video matrix platform.

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

The **System Status** interface is displayed. See Figure 4-111.

Figure 4-111 System status



- Network status: Display connection status, data receiving and sending of network card.
- CPU status: Display CPU status of all inserted board cards.
- Fan status: Display fan status.
- Power status: Display status of two power supplies.
- Memory status: Display memory status.

4.6.1.5 System Log

You can search and view system log information about video matrix platform 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 4-112.

Figure 4-112 System log

No.	Time	Event
-----	------	-------

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 back up the searched system log information to the PC under use.

4.6.1.6 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 4-113.

Figure 4-113 Online user

No.	Username	User Group	IP Address	User Login Time
1	admin	admin	[redacted]	2018-12-26 15:39:05

4.6.1.7 About

Select **Info > Device Info > About**, and you can view version information about this device.

4.6.2 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 Platform Software Operation

Besides web, remote control can be realized with Digital Surveillance System (DSS) and Professional Surveillance System (PSS). For specific operations, please refer to the user's manual of Digital Surveillance System (DSS) and Professional Surveillance System (PSS).

6 FAQ and Maintenance

6.1 FAQ

If your question is not included hereunder, please contact local customer service personnel or call headquarter customer service personnel. We will be always at your service.

1. Q: I cannot boot up the device properly after connecting it to power supply.

A: In case that the device doesn't boot up after normal shutdown and connection with power supply, please press the Power Button on front panel.

2. Q: Device buzzer turns on when I press the Power Button.

A: The device supports dual power, so it alarms if only one power cable is plugged.

- Insert the other power cable.
- Press the red button beside power module socket, in order to cancel buzzer alarm.

3. Q: There is no local operation display after the device is connected with power supply and booted up.

A: This may be due to:

- It takes some time to boot up after connection with power supply. During the period, the screen is black. Booting progress bar appears after a while.
- The interface board is not in good contact with mainboard, so signals of local operation interface are not output to the interface board. Please pull out and plug the interface board again.
- Upgrade error. Please upgrade the program again.
- Program configurations have changed, so the program cannot boot up. Please press RESET hole on main control panel with a needle or equivalent for a few seconds, until the device is rebooted. At this time, configurations have been cleared.
- X86 board breaks down.

4. Q: After the device is booted up, it cannot output decoded images or preview images.

A: This may be due to:

- There is no output by default. Images will be output after relevant output channels are configured.

- Front panel is not in good contact with interface board, so signals are not output to the interface board. Please pull out and plug the front panel again.
- There is an error in front-end device.
- Configured screen and observed screen are not the same one.
- The display doesn't support the output resolution of decoding channel.
- Network error.

5. Q: There is no video output whether it is one-channel, multiple-channel or all-channel output.

A: This may be due to:

- The program is incompatible with front-end third-party manufacturers' devices. Upgrade correct program again.
- Video source error.
- Hardware failure.

6. Q: Real-time image problem. For example, video image color and brightness are distorted seriously.

A: This may be due to:

- The device is incompatible with the monitor resistance; ground connection is inconsistent.
- Video transmission distance is too far or attenuation of video transmission cable is too large.
- Color and brightness setups are incorrect.

7. Q: Decoding and output to video wall are not fluent.

A: This may be due to:

- Poor network environment.
- Setup (frame rate) error or failure of front-end device.
- Limitations in decoding capacity of decoding channel.
- Decoding channel failure.

8. Q: Images on the wall flicker or they are interfered by stripes.

A: This may be due to:

- Display and video matrix platform have no common grounding.
- Video cable quality is poor or it is too long.

9. Q: There is no audio during monitoring.

A: This may be due to:

- It is not an active pickup.
- It is not an active sound device.
- Audio cable breaks down.
- Hardware failure.

10. Q: There is audio during monitoring, but no audio during playback.

A: This may be due to:

- Setting issue: Audio is not enabled.
- Corresponding channel is not connected with video. Playback is not continuous in case of blue screen.

11. Q: Time display is not correct.

A: This may be due to:

- Wrong setup.
- Bad contact or low voltage of the battery.
- Bad crystal oscillator.

12. Q: Device cannot control PTZ.

A: This may be due to:

- Front-end PTZ failure.
- Incorrect PTZ installation.
- Incorrect wiring.
- PTZ parameter setups in the device are incorrect.
- PTZ protocol doesn't match the device.

13. Q: Motion detection function does not work.

A: This may be due to:

- Period setup is incorrect.
- Motion detection zone setup is incorrect.
- Sensitivity is too low.

14. Q: I cannot login client-end or web.

A: This may be due to:

- ActiveX control has been disabled.
- Network connection error.
- Network setup error.
- Username or password is invalid.
- Client-end version is incompatible with program version. Clear C:\Program

Files\webrec in PC.

15. Q: There is mosaic or no video when preview video in the network.

A: This may be due to:

- Network is not stable.
- The client is subject to resource constraints.
- There is area tampering in the device.
- The user doesn't have monitoring authority.
- The device has problems in outputting real-time images.

16. Q: Network connection is not stable.

A: This may be due to:

- Network is not stable.
- IP address conflict.
- MAC address conflict.
- LAN switch malfunction or config problem.
- Network interface card breaks down.

17. Q: Alarm signal cannot be disarmed.

A: This may be due to:

- Alarm setup is incorrect.
- Alarm output has been enabled manually.
- Input device breaks down or connection is incorrect.
- Some program versions may have this problem. Please upgrade your program.

18. Q: Alarm function doesn't work.

A: This may be due to:

- Alarm setup is incorrect.
- Alarm wiring is incorrect.
- Alarm input signal is incorrect.
- Two loops are connected with one alarm device at the same time.

19. Q: Record storage space is not enough.

A: This may be due to:

- Camera has poor quality; lens is dirty; it is installed at backlight position; lens has not been adjusted well, leading to large stream.
- HDD capacity is not enough.
- HDD breaks down.

20. Q: I cannot play the downloaded file.

A: This may be due to:

- There is no video player.
- DXB8.1 or higher graphic acceleration software has not been installed.
- There is no DivX503Bundle.exe control when you play the AVI file via media player.
- DivX503Bundle.exe and ffdshow-2004 1012.exe haven't been installed in Windows XP System.

6.2 Use and Maintenance

- Prevent foreign matters entering the device, so as to avoid failure.
- Do not hang the panels downwards during handling and transportation.
- Please complete electrical wiring carefully. Violation in connection procedures will damage the device.
- All external wirings shall prevent short circuit.
- After all cable connections have been completed, connect the power cable.
- After connection, all cables shall be tied with a wiring harness, so as to prevent short circuit, heating and electrical shock risks.
- During wiring, make sure to dismantle (-) binding post of the battery.
- Protect the device from water or excessive dampness, since water and excessive dampness may lead to short circuit, fire or other failures.
- Do not install the device at a position exposed to sunlight during installation. Guarantee well ventilation.
- Damp dust on the circuit board leads to short circuit, affects normal operation or even damages the device. For the purpose of long-term stable operation, please regularly remove dust from the circuit board, connector assembly and case with a brush.
- Guarantee good grounding, protect video-audio signals from interference, and protect the device from static electricity or induced voltage.
- AV signal cable, RS-232 and RS485 ports shall avoid hot plugging, which damages them easily.
- Keep the device away from high-temperature heat sources and places.
- Guarantee horizontal fixed installation of the device; ensure normal operation of internal anti-vibration components.
- Carry out regular systematic inspections.

Appendix 1 Mouse Operation



This part illustrates mouse operation with right hand.

Plug a mouse with USB port into USB port of the device, so as to operate the menu functions.

Click left mouse button	System pops up password input dialogue box if you have not logged in. During live surveillance, left-click to enter main menu or open the navigation bar.
	Left-click one functional menu icon to enter the menu.
	Implement the control operation.
	Modify status of check box or motion detection block.
	Click combo box to pop up pull-down list.
	 ← means backspace and ⇧ means space key. Click Shift to switch upper/lower cases, Chinese/English. • In English input mode: Space key means to input a space, while backspace key means to clear one character in front of cursor. • In numerical input mode: Space key means zero clearing, while backspace key means to clear the last number. • In special symbol input mode: Space key means to input a space, while backspace key means to clear one symbol in front of cursor.
Double click left mouse button	Implement special control operation.
	In multi-image mode, double click one channel image with left mouse button, to make it full screen. Double click it again to restore multi-image mode.
Click right mouse button	In real-time monitoring mode, pop up a shortcut menu: Close Video, Composite, Input Group, Scheme, Main Menu and Shutdown. "Close Video" means to close the configured input in the selected window; "Composite" means to merge output channels, and combine on-wall images into one video wall; "Input Group" means to group the input devices, so as to facilitate operation in case of multiple input channels.
	 Exit current menu without saving the modification.

Scroll Mouse Wheel	In numerical input box: Increase or decrease numerical value.
	Switch items in the combo box.
	Page up or page down.
Move mouse	Select and move the control or one item of the control under current coordinate.
Drag mouse	Select a motion detection area with a frame.
	Select cover-area.
	Drag an input channel into the designated output channel.

Appendix 2 Cybersecurity Recommendations

Cybersecurity is more than just a buzzword: it's something that pertains to every device that is connected to the internet. IP video surveillance is not immune to cyber risks, but taking basic steps toward protecting and strengthening networks and networked appliances will make them less susceptible to attacks. Below are some tips and recommendations on how to create a more secured security system.

Mandatory actions to be taken for basic equipment network security:

1. Use Strong Passwords

Please refer to the following suggestions to set passwords:

- The length should not be less than 8 characters;
- Include at least two types of characters; character types include upper and lower case letters, numbers and symbols;
- Do not contain the account name or the account name in reverse order;
- Do not use continuous characters, such as 123, abc, etc.;
- Do not use overlapped characters, such as 111, aaa, etc.;

2. Update Firmware and Client Software in Time

- According to the standard procedure in Tech-industry, we recommend to keep your equipment (such as NVR, DVR, IP camera, etc.) firmware up-to-date to ensure the system is equipped with the latest security patches and fixes. When the equipment is connected to the public network, it is recommended to enable the “auto-check for updates” function to obtain timely information of firmware updates released by the manufacturer.
- We suggest that you download and use the latest version of client software.

“Nice to have” recommendations to improve your equipment network security:

1. Physical Protection

We suggest that you perform physical protection to equipment, especially storage devices. For example, place the equipment in a special computer room and cabinet, and implement well-done access control permission and key management to prevent unauthorized personnel from carrying out physical contacts such as damaging hardware, unauthorized connection of removable equipment (such as USB flash disk, serial port), etc.

2. Change Passwords Regularly

We suggest that you change passwords regularly to reduce the risk of being guessed or cracked.

3. Set and Update Passwords Reset Information Timely

The equipment supports password reset function. Please set up related information for password reset in time, including the end user's mailbox and password protection questions. If the information changes, please modify it in time. When setting password protection questions, it is suggested not to use those that can be easily guessed.

4. Enable Account Lock

The account lock feature is enabled by default, and we recommend you to keep it on to guarantee the account security. If an attacker attempts to log in with the wrong password several times, the corresponding account and the source IP address will be locked.

5. Change Default HTTP and Other Service Ports

We suggest you to change default HTTP and other service ports into any set of numbers between 1024~65535, reducing the risk of outsiders being able to guess which ports you are using.

6. Enable HTTPS

We suggest you to enable HTTPS, so that you visit Web service through a secure communication channel.

7. Enable Whitelist

We suggest you to enable whitelist function to prevent everyone, except those with specified IP addresses, from accessing the system. Therefore, please be sure to add your computer's IP address and the accompanying equipment's IP address to the whitelist.

8. MAC Address Binding

We recommend you to bind the IP and MAC address of the gateway to the equipment, thus reducing the risk of ARP spoofing.

9. Assign Accounts and Privileges Reasonably

According to business and management requirements, reasonably add users and assign a minimum set of permissions to them.

10. Disable Unnecessary Services and Choose Secure Modes

If not needed, it is recommended to turn off some services such as SNMP, SMTP, UPnP, etc., to reduce risks.

If necessary, it is highly recommended that you use safe modes, including but not limited to the following services:

- SNMP: Choose SNMP v3, and set up strong encryption passwords and authentication passwords.
- SMTP: Choose TLS to access mailbox server.
- FTP: Choose SFTP, and set up strong passwords.
- AP hotspot: Choose WPA2-PSK encryption mode, and set up strong passwords.

11. Audio and Video Encrypted Transmission

If your audio and video data contents are very important or sensitive, we recommend that you use encrypted transmission function, to reduce the risk of audio and video data being stolen during transmission.

Reminder: encrypted transmission will cause some loss in transmission efficiency.

12. Secure Auditing

- Check online users: we suggest that you check online users regularly to see if the device is logged in without authorization.
- Check equipment log: By viewing the logs, you can know the IP addresses that were used to log in to your devices and their key operations.

13. Network Log

Due to the limited storage capacity of the equipment, the stored log is limited. If you need to save the log for a long time, it is recommended that you enable the network log function to ensure that the critical logs are synchronized to the network log server for tracing.

14. Construct a Safe Network Environment

In order to better ensure the safety of equipment and reduce potential cyber risks, we recommend:

- Disable the port mapping function of the router to avoid direct access to the intranet devices from external network.
- The network should be partitioned and isolated according to the actual network needs. If there are no communication requirements between two sub networks, it is suggested to use VLAN, network GAP and other technologies to partition the network, so as to achieve the network isolation effect.
- Establish the 802.1x access authentication system to reduce the risk of unauthorized access to private networks.