Modular Seamless Switching Matrix

8x8 Matrix

16x16 Matrix

36x36 Matrix

User Manual

VER 2.0

Thank you for purchasing this product

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Table of Contents

1. Introduction

This Modular Seamless Switching Matrix is a professional all-in-one machine that supports various audio and video signal switching and distribution, integrated video wall function and control system.

It supports up to 8~36 signal inputs and 8~36 signal outputs. Audio and video matrix adopts pure hardware high-speed matrix switching chip, which has high integration, stable system, no compression/loss/delay of signal.

Advanced full digital signal processing technology can ensure signal distortion-free processing, and the best image quality to the display devices.

This series of Modular Seamless Switching Matrix, supported by the high bandwidth backplane, provides up to 4Kx2K@60Hz YCbCr 4:4:4 24bit input/output and arbitrary routing of various signals. It supports HDMI 2.0b, 18Gbps video bandwidth, color depth up to 12 bits. The matrix adopts pluggable card structure, which is flexible and convenient for installation. It provides HDMI, DVI-U (DVI/VGA/YPbPr/CVBS), VGA, 3G/HD/SDI, HDBaseT and optical fiber input/output cards. One card with four channels, both 2K series and 4K series cards are supported. Input cards support audio embedding, and output cards support audio de-embedding, providing maximum support for the audio system in the whole system. It offers multiple control methods such as front panel buttons (with LCD screen), IR remote, RS-232 signals, LAN, PC tool or Web GUI control.

The built-in video wall function can realize any splicing mode within the range of 8/16/36 total output channels, providing a turnkey solution for the distribution and processing of video signals with various formats in various industries.

The built-in control system integrates multiple control interfaces and intelligent control GUI modules that can be directly recalled by users.

This Matrix is applicable to video conference, energy and power, judicial prison, smart city, government service, water conservancy and hydrology, meteorology and earthquake, enterprise management, metallurgy and steel, banking and finance, public security and transportation, exhibition, production scheduling, radio and television, education and scientific research and other fields.

2. Features

☆ HDMI 2.0b and HDCP 2.2 compliant

☆ HDMI 18Gbps video bandwidth, up to 4K60 YCbCr 4:4:4 24bit

☆ Pluggable card structure (One card with four channels)

☆ Support 8/16/36 channel video signal inputs and outputs

☆ Multiple input/output cards with HDMI, DVI-U (DVI/VGA/YPbPr/CVBS), VGA, 3G/HD/ SD-SDI, HDBaseT and optical fiber

☆ Video resolution up to 1920×1200p60hz (2K series card), 3840x2160p60hz (4K series card)

☆ Seamless switching without image tear, black screen or flicker in the switching process

☆ Based on Gen-Lock video wall splicing technology, the latency between any output channel is less than 0.1ms

☆ Any splicing modes in the allowed range of 8x8~36x36, especially suitable for LCD/LED video wall

☆ Multiple output resolutions to meet the needs of different types of display devices

☆ Adopt pure hardware high-speed matrix switching chip with high integration

☆ Built-in signal equalization, signal recovery and signal redriver

☆ Built-in video quality enhancement, output video quality can be adjusted

☆ Built-in HDCP processing logic to avoid HDCP compatibility issues

☆ Input cards support audio embedding, output cards support audio de-embedding

☆ Analog audio embedding supports LPCM 2.0CH, analog audio and video signals are input synchronously

☆ Analog audio de-embedding supports LPCM 2.0CH, analog audio and video signals are output synchronously

☆ Up to 64 kinds of scene presets can be recalled

☆ Advanced EDID management (Internal EDID or copy from any output devices)

☆ Control via front panel buttons, IR, RS-232, TCP/IP, Web GUI or PC program

☆ Built-in intelligent control system with user-friendly GUI

☆ Silent fan design, noiseless, stable performance

☆ AC power port with built-in power module

☆ Standard rack size design, convenient for installation

3. Package Contents

① 1 x Modular Seamless Switching Matrix

② 1 x IR Remote

③ 1 x RS-232 Serial Cable (DP9 female connector to 3pin H2.0 Phoenix Connector, 1.5 meters)

④ 1 × USB to RS-232 Serial Cable（USB A to RS-232 serial DB9 male connector）

⑤ 4 × Rubber Foot

⑥ 4 × Machine Screw (M3*4)

⑦ 1 x 100~240V AC 50/60Hz Power Cord

（Note: The dual power card is equipt with two AC power cords.)

⑧ 1 x User Manual

4. Specifications

4.1 Specifications-Matrix

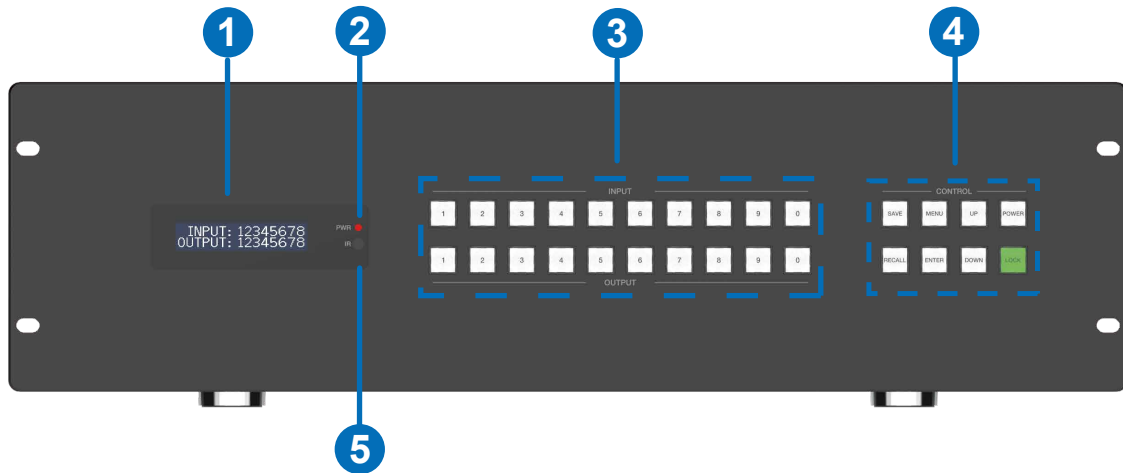| Technical	
HDMI Compliance	HDMI 1.4（2K series card）, HDMI 2.0b（4K series card）
HDCP Compliance	HDCP 1.4（2K series card）, HDCP2.2（4K series card）
Video Bandwidth	600MHz/18Gbps
Video Resolution	1920x1200p60Hz (2K series card) 3840x2160p60Hz 4:4:4 (4K series card)
Color Depth	**2K series card:** 8/10/12-bit (1080P60Hz) **4K series card:** 8/10/12-bit (4K30Hz); 8-bit (4K60Hz 4:4:4)
Color Space	RGB, YCbCr 4:4:4 / 4:2:2 / 4:2:0
Audio Formats	**HDMI audio:** LPCM 2.0 / 5.1 / 7.1CH **Analog audio:** LPCM 2.0CH
Transmission Distance	**HDMI:** 1080P/15 meters, 4K30/10 meters, 4K60/5 meters **HDBT:** 1080P/70 meters/100 meters/150 meters; 4K/40 meters/70 meters/120 meters
ESD Protection	Human body model — ± 8KV (Air-gap discharge) & ± 4KV (Contact discharge)

Connections

Input Ports	2 x Input card (8x8 Matrix); 4 x Input card (16x16 Matrix); 9 x Input card (36x36 Matrix)
Output Ports	2 x Output card (8x8 Matrix); 4 x Output card (16x16 Matrix); 9 x Output card (36x36 Matrix)
Control Ports	1 x Master control card, including the following ports: 1 x RS-232 [3-pin Phoenix Connector] 4 x COM [3-pin Phoenix Connector] 1 x IR-SERIAL [4-pin Phoenix Connector] 1 x RELAY [4-pin Phoenix Connector] 1 x I/O [3-pin Phoenix Connector] 1 x RESET [Reset button for the central control system] 3 x LAN [RJ45]

Mechanical

Housing	Metal Enclosure
Color	Black
Dimensions	8x8 Matrix: 483mm (W) × 377mm (D) × 89mm (H) 16x16 Matrix: 483mm (W) × 379mm (D) × 133mm (H) 36x36 Matrix: 483mm (W) × 378mm (D) × 266mm (H)
Weight	8x8 Matrix: 5.95kg (No input/output cards are included) 16x16 Matrix: 8.62kg (No input/output cards are included) 36x36 Matrix: 15.4kg (No input/output cards are included)
Power Supply	AC 100-240V, 50/60Hz
Power Consumption	8x8 Matrix: 40W~190W (Match with different input/output cards) 16x16 Matrix: 80W~320W (Match with different input/output cards) 36x36 Matrix: 200W~840W (Match with different input/output cards)
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Relative Humidity	20~90% RH (no condensation)

4.2 Specifications-2K Input/Output Card

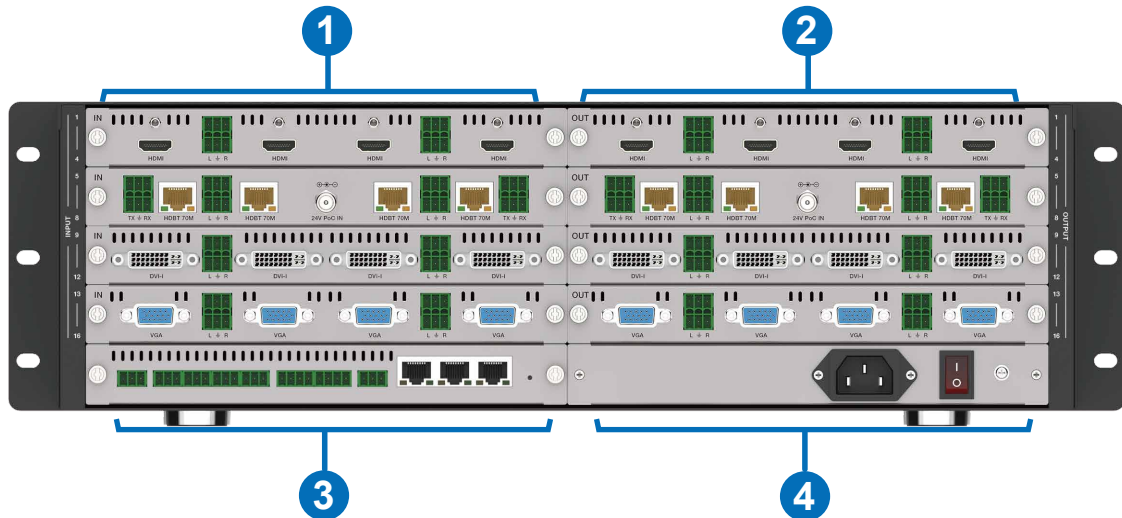|	Interface Type	Signal	Format
Input	DVI-U	HDMI DVI VGA YPbPr CVBS	**HDMI / DVI:** 640x480p60, 800x600p60, 1024x768p60, 1280x768p60, 1280x800p60, 1280x1024p60, 1360x768p60, 1400x1050p60, 1600x1200p60, 1920x1080p60, 1920x1200p60, 480i60, 576i50, 1080i50/60, 720p50/60, 1080p23/24/25/29/30/50/60 **VGA:** 640x480p60, 800x600p60, 1024x768p60, 1280x768p60, 1280x800p60, 1280x1024p60, 1360x768p60, 1440x900p60, 1400x1050p60, 1600x1200p60, 1920x1080p60, 1920x1200p60 **YPbPr:** 480i60, 576i50, 720p50, 720p60, 1080i50, 1080i60, 1080p50, 1080p60 **CVBS:** PAL, NTSC
	HDMI	HDMI	Same as HDMI input of DVI-U universal card
	VGA	VGA	Same as VGA input of DVI-U universal card
	BNC	SDI	480i60, 576i50, 1080i50/60, 720p23/24/25/29/30/50/60, 1080p23/24/25/29/30/50/60
	RJ45	HDBaseT	Same as HDMI input of DVI-U universal card
	LC	Fiber	Same as HDMI input of DVI-U universal card Single-mode with single fiber, transmission distance: 10 km
Output	Interface Type	Signal	Format
	DVI-U	HDMI DVI VGA	**HDMI / DVI / VGA:** 1024x768p60, 1280x720p60, 1280x1024p60, 1360x768p60, 1680x1050p60, 1600x1200p60, 1920x1080p30, 1920x1080p60, 1920x1200p60
	HDMI	HDMI	Same as HDMI output of DVI-U universal card
	VGA	VGA	Same as VGA output of DVI-U universal card
	BNC	SDI	480i60, 576i50, 720p25, 720p30, 720p50, 720p60, 1080i50, 1080i60, 1080p24/25/30/50/60
	RJ45	HDBaseT	Same as HDMI output of DVI-U universal card
	LC	Fiber	Same as HDMI output of DVI-U universal card Single-mode with single fiber, transmission distance: 10 km

5. Operation Controls and Functions
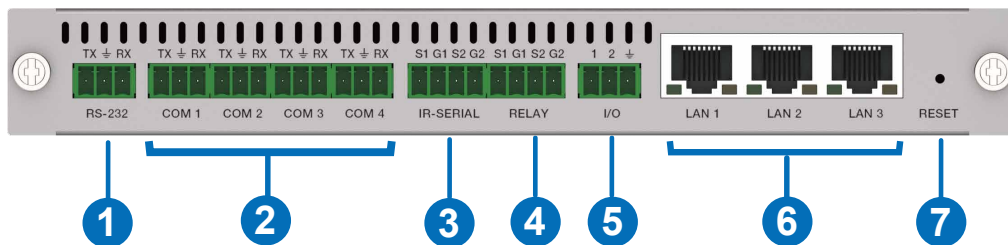   (Take the 16x16 Matrix as an example)

Front Panel

No.	Name	Function Description
1	LED screen	Display the current status information (Matrix switching channel, EDID information, baud rate and so on).
2	PWR LED	The power LED lights in green when the system is powered on, and red when the system is in standby.
3	INPUT & OUTPUT buttons (0~9)	Used to select the corresponding input and output channels. You need to press the input button (0~9) firstly, then press the output button (0~9) , finally press "ENTER" button to complete switching. Note: If the selected input/output channel number exceeds 16, it will prompt that the number is out of range and need to be reselected.
4	Control buttons	**SAVE:** Used to save the current display scene (up to 64 scenes can be saved). For example, press SAVE button firstly, the LED screen will show "Save Config to: Preset n" （n=1,2,...64）. Then press UP/DOWN button to select "Preset 1", finally press ENTER button to save the current display scene as Scene 1. **MENU:** Short press MENU to enter various menu function setting options in turn. When entering a certain function menu, select the setting parameters or input/output channel values through the UP/DOWN button circularly, and finally press ENTER to confirm. **UP:** Press this button to select upwards on the display screen. **DOWN:** Press this button to select downwards on the display screen. **POWER:** Press and hold this button for 3s to enter the standby mode, the power LED will light in red; press the button again to resume starting, the power LED will light in green. **RECALL:** Used to recall the saved scene as the current display scene. e.g. Press "RECALL→UP/DOWN (to select number 1 ~ n)→ENTER" to recall the saved Scene n as the current display scene. **ENTER:** Used to confirm the operation and save the setting. **LOCK:** Short press this button to to lock the current setting status, other panel buttons will be locked. Press this button again to unlock, all panel buttons can be used normally.
5	IR window	IR receiver window. It only receives the IR remote signal from this product.

Rear Panel

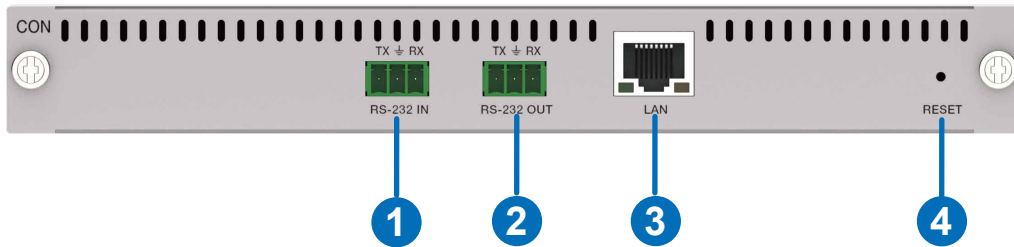| No.	Name	Function Description
1	Input cards	Video input card, connected to source devices directly or via an Extender.
2	Output cards	Video output card, connected to display devices directly or via an Extender.
3	Main Control card	Main control card, equipped with various control ports.
4	Power card	Power cord, equipped with a power port, a power switch and a ground port.

Main Control Card (optional 1)

No.	Name	Function Description
1	RS-232 port	Connect to the PC or the third party control processor to transmit RS-232 command and control the Matrix.
2	COM1-4	Four sets of programmable two-way multi-mode serial port, which is a 3-pin phoenix connector (male), compliant with RS-232 communication protocol, and capable of configuring 8 baud rates in the range of 2400-115200bps. The pin-outs of the RS-232 ports are PIN1 for TXD, PIN2 for GND, and PIN3 for RXD.

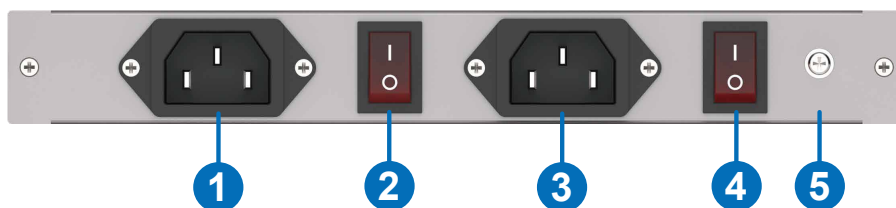| No.	Name	Function Description
3	IR-SERIAL	2 sets of multi-mode 2-PIN phoenix connectors for IR transmitting or one-way serial signal outputting. The ports can connect to devices with signal level 0-5V in RS-232 mode. The left pin is for IR/serial data, the right for signal GND. The IR-Serial working mode is programmable: In **IR transmitting** mode, the outputting IR wave length ranges within 20K-60KHZ. In **one-way serial data outputting** mode, the left pin is for TXD, the right for GND, and both are configurable in the program.
4	RELAY	2 sets of relay output ports (2-PIN phoenix connectors); each relay is isolated and normally open, and can switch up to 2A 30VDC / 1A 125VAC peak. The connector does not support voltage output.
5	I/O	2-CH GPIO dry contact input interface, with a voltage range of 0~24V, for collecting digital level signals, capable of low level signal sensing.
6	LAN1-3	Standard 10M/100M Ethernet RJ45 port, allowing device access, connected to the PC or the third party control processor to control the Matrix. The control host boots up with DHCP enabled by default. After powering on, when the control host connects to a network where there is no router present to assign IP addresses, the control host will take the pre-set IP address: 192.168.0.101. If there is a router present on the same network, the router will assign an IP address to the control host in three minutes and the pre-set IP address will be invalid. **Note:** When the control host is DHCP enabled after power on, the router (if connected to the same network) will assign an IP address to the control host. If network is disconnected at this time, the control host won't be able to pre-set an IP address and its IP address would be 0.0.0.0. If a pre-set IP address is needed, you need to power off the control host and then power it on again. If it is in static IP mode after power on, the control host won't preset an IP address either. If there is no router present, you can connect your PC to the LAN port of the host and modify the PC's IP address in the network segment of 192.168.0.X, then the PC will preset an IP address to the control host in three minutes for data communication.
7	RESET button	**#1** Short press the RESET button for less than 1s, there is no reaction. **#2** Long press the RESET button for more than 1s but less than 5s, the control device will reboot. It won't upload the user projects after rebooting. **#3** Long press the RESET button for more than 5s, the control host will reset the user configuration information, the IP will be restored to DHCP state, the login password of the management page will be initialized to "admin", the time will be initialized to automatic acquisition mode, but user projects won't be deleted by factory initialization.

Main Control Card (optional 2)

No.	Name	Function Description
1	RS-232 IN port	RS-232 serial signal input port, connected to the PC or the third party control processor to transmit RS-232 command and control the Matrix.
2	RS-232 OUT port	RS-232 serial signal output port. (1) Connect to external device and control it through RS-232 command. (2) Connect to other Matrix for cascading.
3	LAN	Standard 10M/100M Ethernet RJ45 port, allowing device access, connected to the PC or the third party control processor to control the Matrix.
4	RESET button	After the device boots up, long press the RESET button for more than 10s, then release it, the system will reset the MCU configuration and the MCU will restore factory settings.

Single Power Card (optional 1)

No.	Name	Function Description
1	Power port	Connect the power input port to the AC power supply using the included power cord.
2	Power switch	Press the power switch to turn on/off the system.
3	GND	Used for connecting the ground or the earthing conductor of the rack.

Dual Power Card (optional 2)

| No.	Name	Function Description
1	Power port	Connect the power input port to the AC power supply using the included power cord.
2	Power switch	Press the power switch to turn on/off the system.
3	Redundant power port	When the external AC power supply fails, the DC power supply continues to be provided to ensure the normal operation of the device.
4	Redundant power switch	When using the redundant power supply, press the power switch to turn on/off the system.
5	GND	Used for connecting the ground or the earthing conductor of the rack.

6. IR Remote
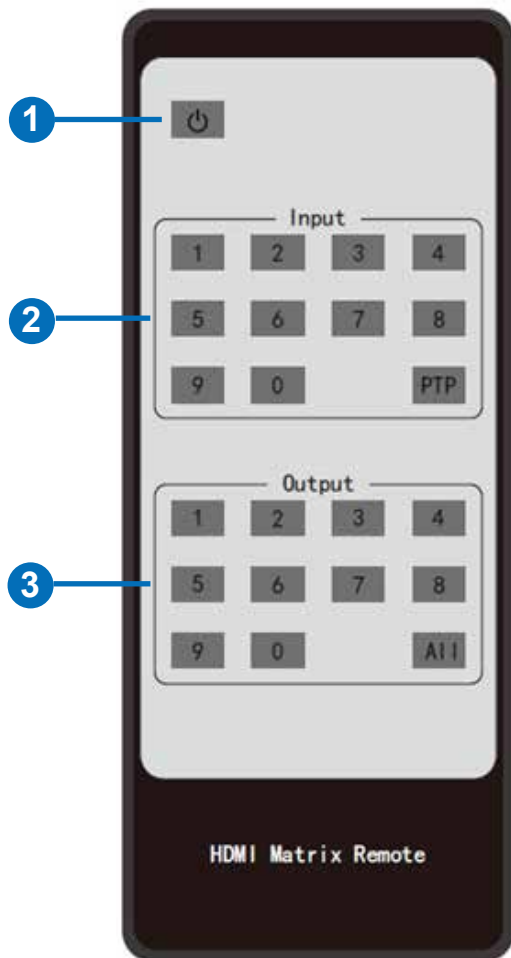
① **Power button:** Power on the Matrix or set it to standby mode.

② **Input 1/2/3/4/5/6/7/8/9/0:** Used to select the input channel.

③ **Output 1/2/3/4/5/6/7/8/9/0:** Used to select the output channel.

The IR Remote has the following three operation methods：

Method 1: First press the input button, then press the output button to switch the input signal to the display device.

For example:

Press Input-Y

(Y represents the input button from 01 to 16)

Then press Output-X

(X represents the output button from 01 to 16)

Note：In order to support the multi-channel switching of output channels, the input and output channels must be selected with double digit (the maximum value cannot exceed 16), that is, for input and output channels less than 10, press 0 first, and then press the corresponding number button. For example, when switching from input 1 to output 1, press the input buttons 0 and 1 first, and then press the output buttons 0 and 1.

Method 2: Press the PTP button, then all input channels and output channels are switched in one-to-one correspondence.

Method 3: First press the input button (select the input channel), then press All button (select all output channels), the signals of the selected input channel will be output to all display devices.

7. Card Introduction

7.1 2K Input Card

(1) 2K HDMI Input Card

Signal Channel	4-channel HDMI input signals
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x768p60Hz, 1280x800p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1400x1050p60Hz, 1600x1200p60Hz, 1920x1080p60Hz, 1920x1200p60Hz; 720x480i59.94Hz (480i59), 720x480p59.94Hz (480p59), 720x576i50Hz (576i50), 720x576p50Hz (576p50), 1280x720p50Hz (720p50), 1280x720p59.94Hz (720p59), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i59.94Hz (1080i59), 1920x1080i60Hz(1080i60), 1920x1080p23.98Hz (1080p23), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p29.97Hz (1080p29), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p59.94Hz (1080p59), 1920x1080p60Hz (1080p60), 1920x1200p60Hz (1200p60)
HDMI Compliance	HDMI 1.4
HDCP Compliance	HDCP 1.4
Video Bandwidth	6.75Gbps
Color Depth	8/10/12-bit (1080p60Hz)
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDMI Port	HDMI Type A

(2) 2K HDBT 70M Input Card

Signal Channel	4-channel HDBT input signals
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x768p60Hz, 1280x800p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1400x1050p60Hz, 1600x1200p60Hz, 1920x1080p60Hz, 1920x1200p60Hz; 720x480i59.94Hz (480i59), 720x480p59.94Hz (480p59), 720x576i50Hz (576i50), 720x576p50Hz (576p50), 1280x720p50Hz (720p50), 1280x720p59.94Hz (720p59), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i59.94Hz (1080i59), 1920x1080i60Hz(1080i60), 1920x1080p23.98Hz (1080p23), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p29.97Hz (1080p29), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p59.94Hz (1080p59), 1920x1080p60Hz (1080p60), 1920x1200p60Hz (1200p60)
HDMI Compliance	HDMI 1.4
HDCP Compliance	HDCP 1.4
Video Bandwidth	6.75Gbps
Color Depth	8/10/12-bit (1080p60Hz)
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz=70 meters

(3) 2K HDBT 100M Input Card

Signal Channel	4-channel HDBT input signals
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x768p60Hz, 1280x800p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1400x1050p60Hz, 1600x1200p60Hz, 1920x1080p60Hz, 1920x1200p60Hz; 720x480i59.94Hz (480i59), 720x480p59.94Hz (480p59), 720x576i50Hz (576i50), 720x576p50Hz (576p50), 1280x720p50Hz (720p50), 1280x720p59.94Hz (720p59), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i59.94Hz (1080i59), 1920x1080i60Hz(1080i60), 1920x1080p23.98Hz (1080p23), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p29.97Hz (1080p29), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p59.94Hz (1080p59), 1920x1080p60Hz (1080p60), 1920x1200p60Hz (1200p60)
HDMI Compliance	HDMI 1.4
HDCP Compliance	HDCP 1.4
Video Bandwidth	6.75Gbps
Color Depth	8/10/12-bit (1080p60Hz)
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz=100 meters

(4) 2K HDBT 150M Input Card

Signal Channel	4-channel HDBT input signals
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x768p60Hz, 1280x800p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1400x1050p60Hz, 1600x1200p60Hz, 1920x1080p60Hz, 1920x1200p60Hz； 720x480i59.94Hz (480i59), 720x480p59.94Hz (480p59), 720x576i50Hz (576i50), 720x576p50Hz (576p50), 1280x720p50Hz (720p50), 1280x720p59.94Hz (720p59), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i59.94Hz (1080i59), 1920x1080i60Hz(1080i60), 1920x1080p23.98Hz (1080p23), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p29.97Hz (1080p29), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p59.94Hz (1080p59), 1920x1080p60Hz (1080p60), 1920x1200p60Hz (1200p60)
HDMI Compliance	HDMI 1.4
HDCP Compliance	HDCP 1.4
Video Bandwidth	6.75Gbps
Color Depth	8/10/12-bit (1080p60Hz)
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz=150 meters

(5) 2K SDI Input Card

Signal Channel	4-channel SDI input signals
Signal Format	HD-SDI (SMPTE 292M)/3G-SDI
Resolution	720x480i59.94Hz (480i59), 720x576i50Hz (576i50), 1280x720p50Hz (720p50), 1280x720p59.94Hz (720p59), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i59.94Hz (1080i59), 1920x1080i60Hz(1080i60), 1920x1080p23.98Hz (1080p23), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p29.97Hz (1080p29), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p59.94Hz (1080p59), 1920x1080p60Hz (1080p60)
Color Depth	8-bit (1080p60Hz)
Video Bandwidth	2.97Gbps
Impedance	75Ω
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
SDI Port	BNC/female

(6) 2K VGA Input Card

Signal Channel	4-channel VGA input signals
Signal Format	RGB (Analog)
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x720p 60Hz, 1280x800p60Hz, 1280x1024p60Hz,1360x768p60Hz, 1440x900p60Hz, 1440x1050p60Hz, 1600x1200p60Hz, 1920x1080p60Hz, 1920x1200p60Hz
Color Depth	8-bit (1080p60Hz)
Horizontal Scan Frequency	15KHz ~ 90KHz
Synchronization Type	RGBHV
Impedance	75Ω
Nominal level	0.7Vp-p
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
VGA Port	DB15, 15-pin female

(7) 2K DVI Input Card

Signal Channel	4-channel DVI input signals
Signal Format	DVI-I full digital TMDS signal, which is compliant with DVI1.0
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz,1280x800p 60Hz, 1280x1024p60Hz,1360x768p60Hz, 1440x900p60Hz, 1440x1050p60Hz, 1600x1200p60Hz, 1920x1200p60Hz

Color Depth	8-bit (1080p60Hz)
Signal Level	TMDS 400 ~ 600mVp-p
Impedance	100Ω
Video Bandwidth	4.95Gbps
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
DVI Port	DVI-I, 28-pin female

(8) 2K FIBER Input Card

Signal Channel	4-channel FIBER input signals
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x768p60Hz, 1280x800p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1400x1050p60Hz, 1600x1200p60Hz, 1920x1080p60Hz, 1920x1200p60Hz; 720x480i59.94Hz (480i59), 720x480p59.94Hz (480p59), 720x576i50Hz (576i50), 720x576p50Hz (576p50), 1280x720p50Hz (720p50), 1280x720p59.94Hz (720p59), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i59.94Hz (1080i59), 1920x1080i60Hz(1080i60), 1920x1080p23.98Hz (1080p23), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p29.97Hz (1080p29), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p59.94Hz (1080p59), 1920x1080p60Hz (1080p60), 1920x1200p60Hz (1200p60)
Color Depth	8/10/12-bit (1080p60Hz)
Impedance	100Ω
Video Bandwidth	6.75Gbps
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
SFP Port	SFP_HOST, 20-pin female

7.2 2K Output Card

(1) 2K HDMI Output Card

Signal Channel	4-channel HDMI output signals
Resolution	1024x768p60, 1280x720p60, 1280x1024p60, 1360x768p60, 1680x1050p60, 1600x1200p60, 1920x1080p30, 1920x1080p60, 1920x1200p60 (The user can select the resolution through the control software)
HDMI Compliance	HDMI 1.4
HDCP Compliance	HDCP 1.4
Video Bandwidth	4.95Gbps
Color Depth	8-bit (1080p60Hz)
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDMI Port	HDMI Type A

(2) 2K HDBT 70M Output Card

Signal Channel	4-channel HDBT output signals
Resolution	1024x768p60, 1280x720p60, 1280x1024p60, 1360x768p60, 1680x1050p60, 1600x1200p60, 1920x1080p30, 1920x1080p60, 1920x1200p60 (The user can select the resolution through the control software)
HDMI Compliance	HDMI 1.4
HDCP Compliance	HDCP 1.4
Video Bandwidth	4.95Gbps
Color Depth	8-bit (1080p60Hz)
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz=70 meters

(3) 2K HDBT 100M Output Card

Signal Channel	4-channel HDBT output signals
Resolution	1024x768p60, 1280x720p60, 1280x1024p60, 1360x768p60, 1680x1050p60, 1600x1200p60, 1920x1080p30, 1920x1080p60, 1920x1200p60 (The user can select the resolution through the control software)
HDMI Compliance	HDMI 1.4
HDCP Compliance	HDCP 1.4
Video Bandwidth	4.95Gbps
Color Depth	8-bit (1080p60Hz)
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz=100 meters

(4) 2K HDBT 150M Output Card

Signal Channel	4-channel HDBT output signals
Resolution	1024x768p60, 1280x720p60, 1280x1024p60, 1360x768p60, 1680x1050p60, 1600x1200p60, 1920x1080p30, 1920x1080p60, 1920x1200p60 (The user can select the resolution through the control software)
HDMI Compliance	HDMI 1.4
HDCP Compliance	HDCP 1.4
Video Bandwidth	4.95Gbps
Color Depth	8-bit (1080p60Hz)
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz=150 meters

(5) 2K SDI Output Card

Signal Channel	4-channel SDI output signals
Resolution	720x480i60Hz (480i60), 720x576i50Hz (576i50), 1280x720p 25Hz (720p25), 1280x720p30Hz (720p30), 1280x720p50Hz (720p50), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i60Hz (1080i60), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p60Hz (1080p60)
Color Depth	8-bit (1080p60Hz)
Signal Format	HD-SDI (SMPTE 292M)/3G-SDI
Video Bandwidth	2.97Gbps
Impedance	75Ω
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
SDI Port	BNC/female

(6) 2K VGA Output Card

Signal Channel	4-channel VGA output signals
Signal Format	RGB (Analog)
Resolution	1024x768p60, 1280x720p60, 1280x1024p60, 1360x768p60, 1680x1050p60, 1600x1200p60, 1920x1080p30, 1920x1080p 60, 1920x1200p60 (The user can select the resolution through the control software)
Color Depth	8-bit (1080p60Hz)
Horizontal Scan Frequency	15KHz ~ 90KHz
Synchronization Type	RGBHV
Impedance	75Ω
Nominal level	0.7Vp-p
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
VGA Port	DB15, 15-pin female

(7) 2K DVI Output Card

Signal Channel	4-channel DVI output signals
Signal Format	DVI-I full digital TMDS signal, which is compliant with DVI1.0
Resolution	1024x768p60, 1280x720p60, 1280x1024p60, 1360x768p60, 1680x1050p60, 1600x1200p60, 1920x1080p30, 1920x1080p60, 1920x1200p60 (The user can select the resolution through the control software)
Color Depth	8-bit (1080p60Hz)
Signal Level	TMDS 400 ~ 600mVp-p
Impedance	100Ω
Video Bandwidth	4.95Gbps
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
DVI Port	DVI-I, 28-pin female

(8) 2K FIBER Output Card

Signal Channel	4-channel FIBER output signals
Resolution	1024x768p60, 1280x720p60, 1280x1024p60, 1360x768p60, 1680x1050p60, 1600x1200p60, 1920x1080p30, 1920x1080p60, 1920x1200p60 (The user can select the resolution through the control software)
Color Depth	8-bit (1080p60Hz)
Impedance	100Ω
Video Bandwidth	4.95Gbps
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
SFP Port	SFP_HOST, 20-pin female

7.3 4K Input Card

(1) 4K HDMI Input Card

Signal Channel	4-channel HDMI input signals
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x768p60Hz, 1280x800p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1400x1050p60Hz, 1600x1200p60Hz, 1920x1080p60Hz, 1920x1200p60Hz; 720x480i59.94Hz (480i59), 720x480p59.94Hz (480p59), 720x576i50Hz (576i50), 720x576p50Hz (576p50), 1280x720p50Hz (720p50), 1280x720p59.94Hz (720p59), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i59.94Hz (1080i59), 1920x1080i60Hz(1080i60), 1920x1080p23.98Hz (1080p23), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p29.97Hz (1080p29), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p59.94Hz (1080p59), 1920x1080p60Hz (1080p60), 1920x1200p60Hz (1200p60), 3840x2160p24(2160p24), 3840x2160p25(2160p25), 3840x2160p30(2160p30), 3840x2160p50(2160p50),3840x2160p60(2160p60), 4096x2160p24(2160p24), 4096x2160p25(2160p25), 4096x2160p30(2160p30), 4096x2160p50(2160p50), 4096x2160p60(2160p60)
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Color Depth	8/10/12-bit
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDMI Port	HDMI Type A

(2) 4K HDBT 70M Input Card

Signal Channel	4-channel HDBT input signals
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x768p60Hz, 1280x800p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1400x1050p60Hz, 1600x1200p60Hz, 1920x1080p60Hz, 1920x1200p60Hz; 720x480i59.94Hz (480i59), 720x480p59.94Hz (480p59), 720x576i50Hz (576i50), 720x576p50Hz (576p50), 1280x720p50Hz (720p50), 1280x720p59.94Hz (720p59), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i59.94Hz (1080i59), 1920x1080i60Hz (1080i60), 1920x1080p23.98Hz (1080p23), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p29.97Hz (1080p29), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p59.94Hz (1080p59), 1920x1080p60Hz (1080p60), 1920x1200p60Hz (1200p60), 3840x2160p24 (2160p24), 3840x2160p25 (2160p25), 3840x2160p30 (2160p30), 3840x2160p50 (2160p50), 3840x2160p60 (2160p60), 4096x2160p24 (2160p24), 4096x2160p25 (2160p25), 4096x2160p30 (2160p30), 4096x2160p50 (2160p50), 4096x2160p60 (2160p60)
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Color Depth	8/10/12-bit
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz=70 meters, 4K30Hz/4K60Hz=40 meters

(3) 4K HDBT 100M Input Card

Signal Channel	4-channel HDBT input signals
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x768p60Hz, 1280x800p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1400x1050p60Hz, 1600x1200p60Hz, 1920x1080p60Hz, 1920x1200p60Hz; 720x480i59.94Hz (480i59), 720x480p59.94Hz (480p59), 720x576i50Hz (576i50), 720x576p50Hz (576p50), 1280x720p50Hz (720p50), 1280x720p59.94Hz (720p59), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i59.94Hz (1080i59), 1920x1080i60Hz (1080i60), 1920x1080p23.98Hz (1080p23), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p29.97Hz (1080p29), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p59.94Hz (1080p59), 1920x1080p60Hz (1080p60), 1920x1200p60Hz (1200p60), 3840x2160p24 (2160p24), 3840x2160p25 (2160p25), 3840x2160p30 (2160p30), 3840x2160p50 (2160p50), 3840x2160p60 (2160p60), 4096x2160p24 (2160p24), 4096x2160p25 (2160p25), 4096x2160p30 (2160p30), 4096x2160p50 (2160p50), 4096x2160p60 (2160p60)
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Color Depth	8/10/12-bit
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz=100 meters, 4K30Hz/4K60Hz=70 meters

(4) 4K HDBT 150M Input Card

Signal Channel	4-channel HDBT input signals
Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x768p60Hz, 1280x800p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1400x1050p60Hz, 1600x1200p60Hz, 1920x1080p60Hz, 1920x1200p60Hz; 720x480i59.94Hz (480i59), 720x480p59.94Hz (480p59), 720x576i50Hz (576i50), 720x576p50Hz (576p50), 1280x720p50Hz (720p50), 1280x720p59.94Hz (720p59), 1280x720p60Hz (720p60), 1920x1080i50Hz (1080i50), 1920x1080i59.94Hz (1080i59), 1920x1080i60Hz (1080i60), 1920x1080p23.98Hz (1080p23), 1920x1080p24Hz (1080p24), 1920x1080p25Hz (1080p25), 1920x1080p29.97Hz (1080p29), 1920x1080p30Hz (1080p30), 1920x1080p50Hz (1080p50), 1920x1080p59.94Hz (1080p59), 1920x1080p60Hz (1080p60), 1920x1200p60Hz (1200p60), 3840x2160p24 (2160p24), 3840x2160p25 (2160p25), 3840x2160p30 (2160p30), 3840x2160p50 (2160p50), 3840x2160p60 (2160p60), 4096x2160p24 (2160p24), 4096x2160p25 (2160p25), 4096x2160p30 (2160p30), 4096x2160p50 (2160p50), 4096x2160p60 (2160p60)
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Color Depth	8/10/12-bit
Audio	Support external audio source input (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz/4K30Hz=150 meters, 4K60Hz=120 meters

7.4 4K Output Card

(1) 4K HDMI Output Card

Signal Channel	4-channel HDMI output signals
Resolution	720x576i50, 720x480i60, 1024x768p60, 1280x720p50, 1280x720p60, 1280x800p60, 1360x768p60, 1920x1200p60, 1920X1080i50, 1920X1080i60, 1920X1080P50, 1920x1080p60, 3840x2160p30, 3840x2160p50, 3840x2160p60, 4096x2160p50 (2160p50), 4096x2160p60 (2160p60)
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Color Depth	8/10/12-bit
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDMI Port	HDMI Type A

(2) 4K HDBT 70M Output Card


Signal Channel	4-channel HDBT output signals
Resolution	720x576i50, 720x480i60, 1024x768p60, 1280x720p50, 1280x720p60, 1280x800p60, 1360x768p60, 1920x1200p60, 1920X1080i50, 1920X1080i60, 1920X1080P50, 1920x1080p60, 3840x2160p30, 3840x2160p50, 3840x2160p60, 4096x2160p50 (2160p50), 4096x2160p60 (2160p60)
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Color Depth	8/10/12-bit
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz=70 meters, 4K30Hz/4K60Hz=40 meters

(3) 4K HDBT 100M Output Card

Signal Channel	4-channel HDBT output signals
Resolution	720x576i50, 720x480i60, 1024x768p60, 1280x720p50, 1280x720p60, 1280x800p60, 1360x768p60, 1920x1200p60, 1920X1080i50, 1920X1080i60, 1920X1080P50, 1920x1080p60, 3840x2160p30, 3840x2160p50, 3840x2160p60, 4096x2160p50 (2160p50), 4096x2160p60 (2160p60)
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Color Depth	8/10/12-bit
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz=100 meters, 4K30Hz/4K60Hz=70 meters

(4) 4K HDBT 150M Output Card

Signal Channel	4-channel HDBT output signals
Resolution	720x576i50, 720x480i60, 1024x768p60, 1280x720p50, 1280x720p60, 1280x800p60, 1360x768p60, 1920x1200p60, 1920X1080i50, 1920X1080i60, 1920X1080P50, 1920x1080p60, 3840x2160p30, 3840x2160p50, 3840x2160p60, 4096x2160p50 (2160p50), 4096x2160p60 (2160p60)
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Color Depth	8/10/12-bit
Audio	Support stereo analog audio output (LPCM 2.0CH)
Audio Port	3.81mm Phoenix Connector
HDBT Port	RJ45
Max Transmission Distance	HDBT 1080p60Hz/4K30Hz=150 meters, 4K60Hz=120 meters

8. Host Computer Control Operation Guide

8.1 Login & Connection

1. Login

Double-click the Host Computer to enter the Login interface, as shown in the figure below:
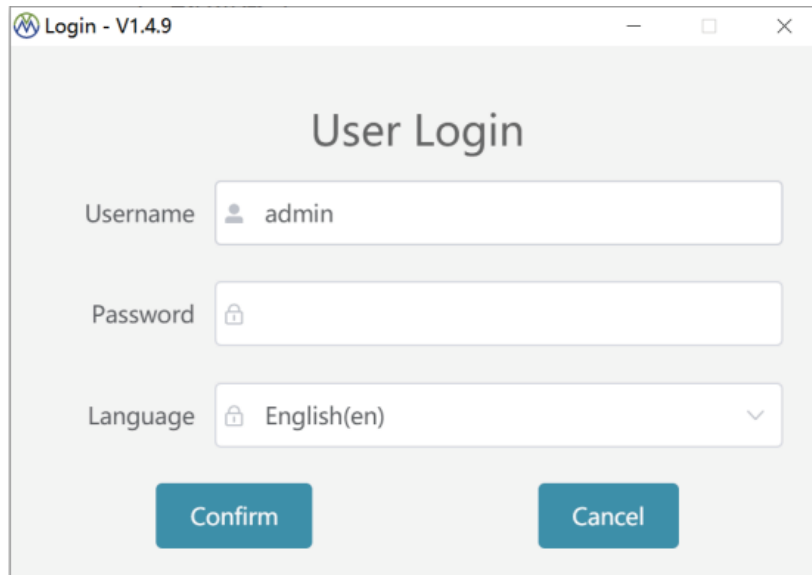
Input the username (admin) and the initial password (admin), then select the required language, finally click "Confirm" to enter the communication setting page.

Note: You can reset the password on the system setting page.
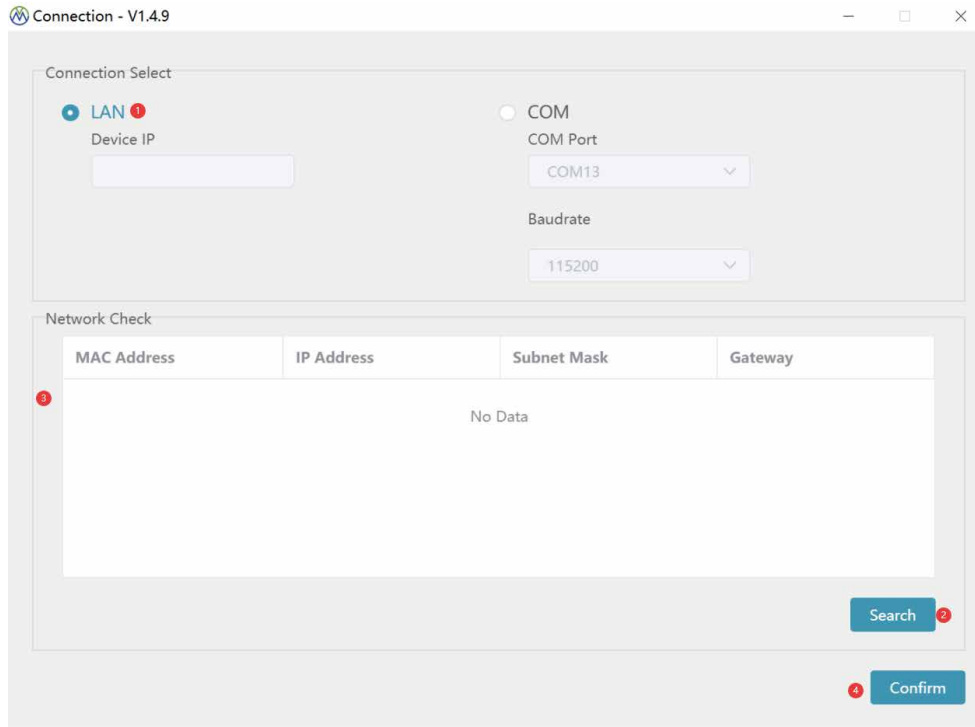
2. Connection

There are two connection methods: Network and serial port.

Method 1. Network connection

Step 1. Connect the LAN port of the Matrix to a PC with an UTP cable (as shown in the figure below), and set the IP address of the PC to be in the same network segment with the Matrix (default IP address: 192.168.0.100).

Step 2. Check "LAN" on the Connection page, and click "Search". Then the searched device will appear in the list of "Network Check". Click to select the device, and click "Confirm" to connect the device.

Method 2. Serial connection

Step 1. Connect the RS-232 port of the Matrix to a PC with the included RS-232 serial cable and USB to RS-232 serial cable, as shown in the figure below.
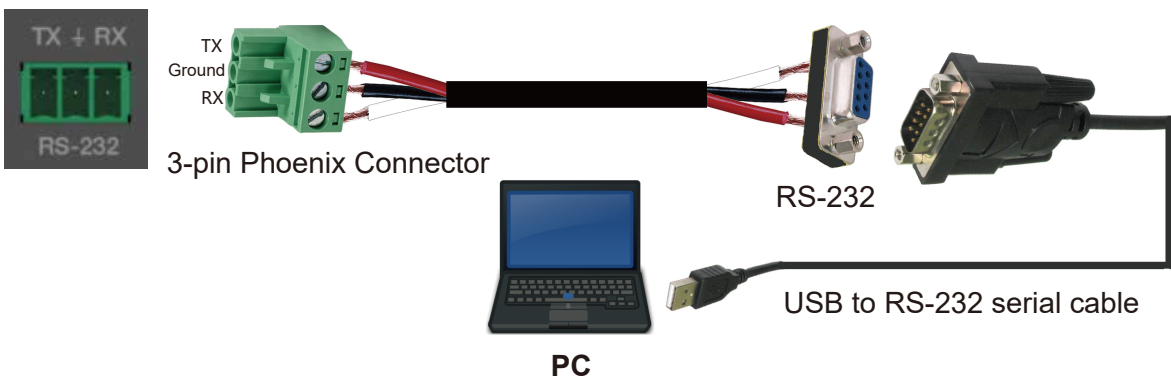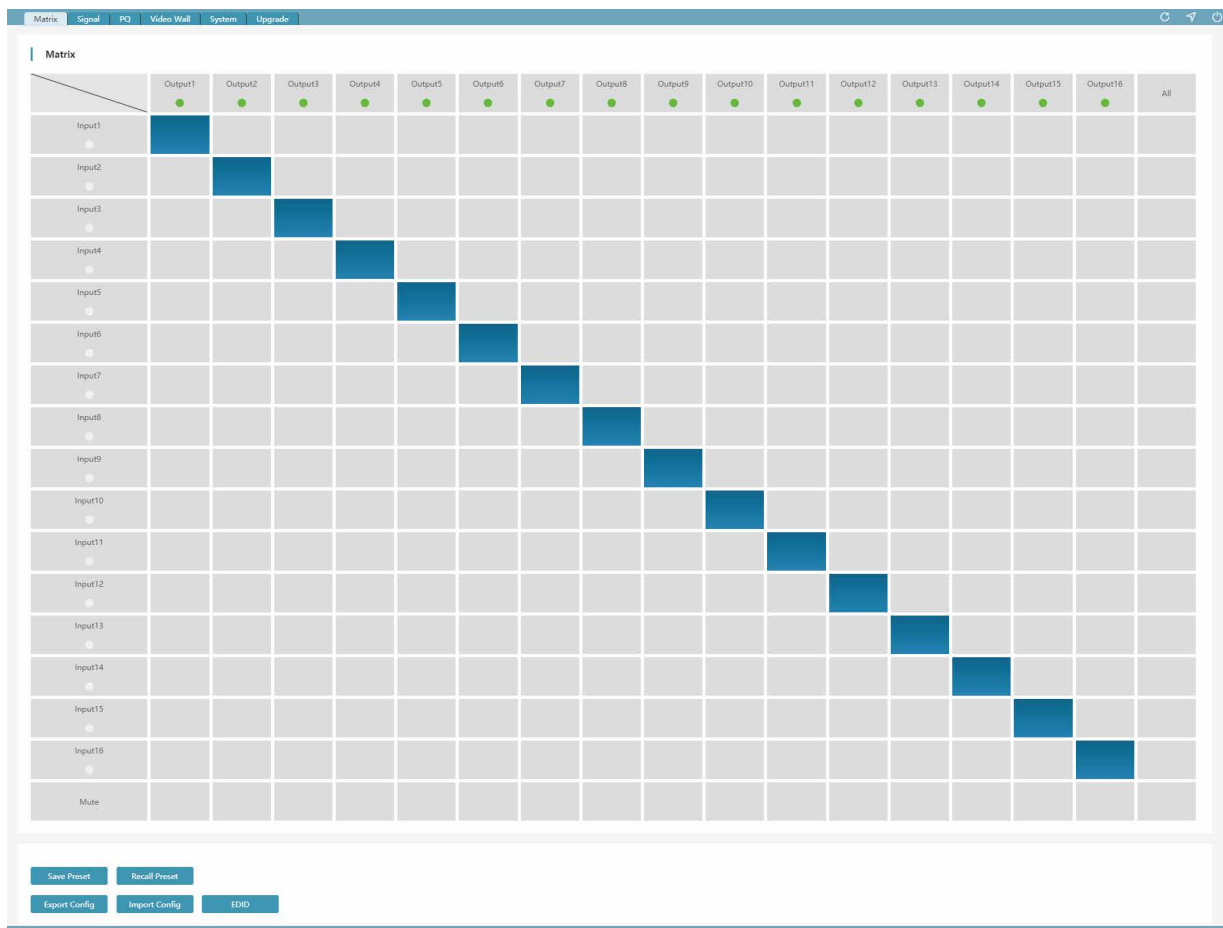
Step 2. Check "COM" on the Connection page, and select the corresponding COM Port and Baudrate (default Baudrate: 115200). Then click "Confirm" to connect the device.
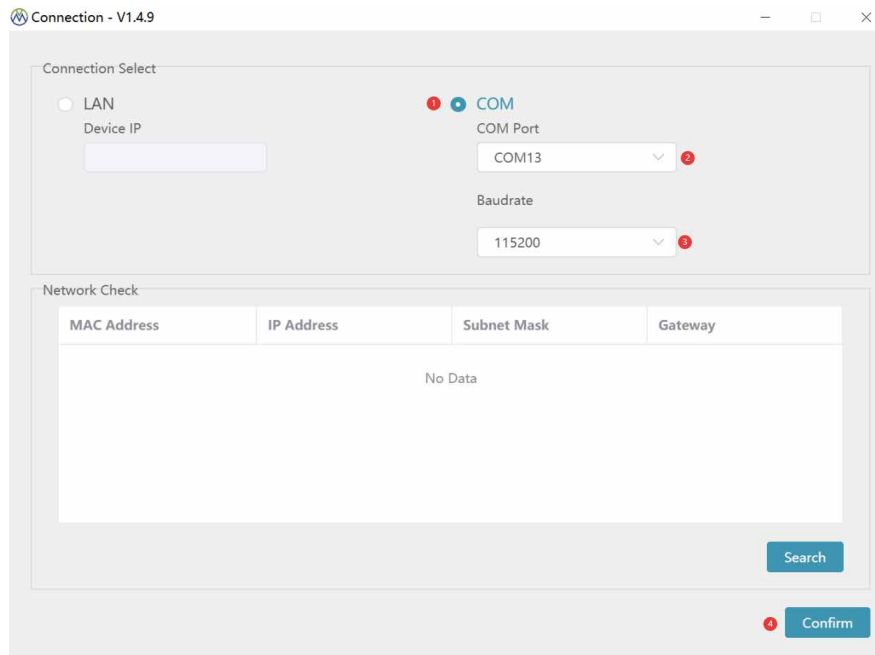
8.2. Host Computer Main Interface
(Take the 16x16 Matrix as an example)

■ Matrix Switching Page

1. Refresh Data & Reconnection

As shown in the figure above, icon ① is used to refresh the data of the current page; icon ② is used to return to the connection interface and reselect the connection method; icon ③ is used to power on the Matrix or set it to standby mode.

2. Matrix Switching
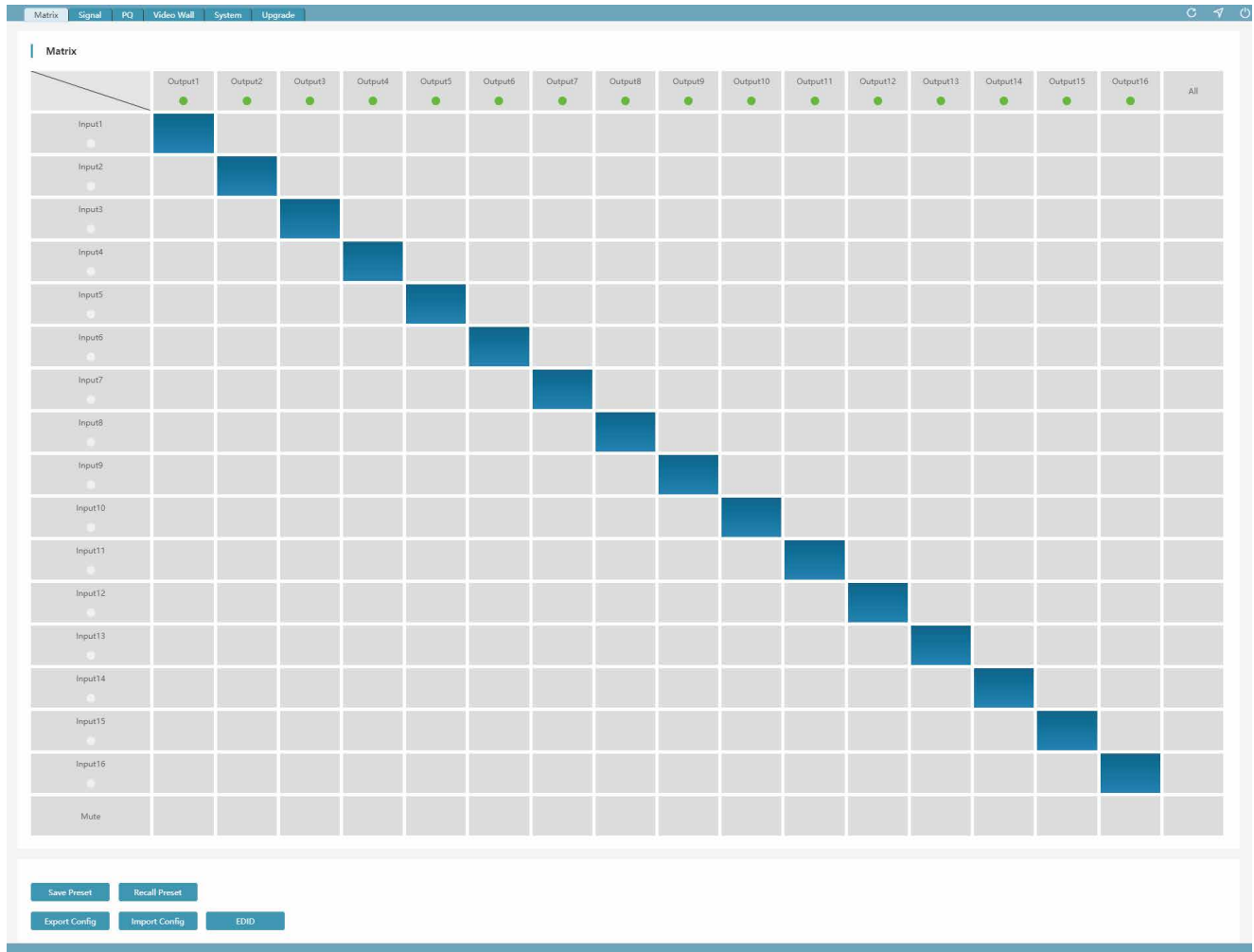
The Matrix Switching page displays the names and statuses of all input and output ports. The green light under the name of the input/output port indicates that there are connected signal sources or display devices; The gray light indicates that no signal sources or display devices are connected.

You can double-click the input/output port to rename it. (The name supports numbers, upper and lower case letters and spaces, not all spaces, and the maximum number of characters is 16.)

Click the grid corresponding to the input/output channel to set a single input/output switching; When "All" is selected, the same signal source can be output to all display devices; When Mute is selected, the TMDS of the corresponding output port is closed.
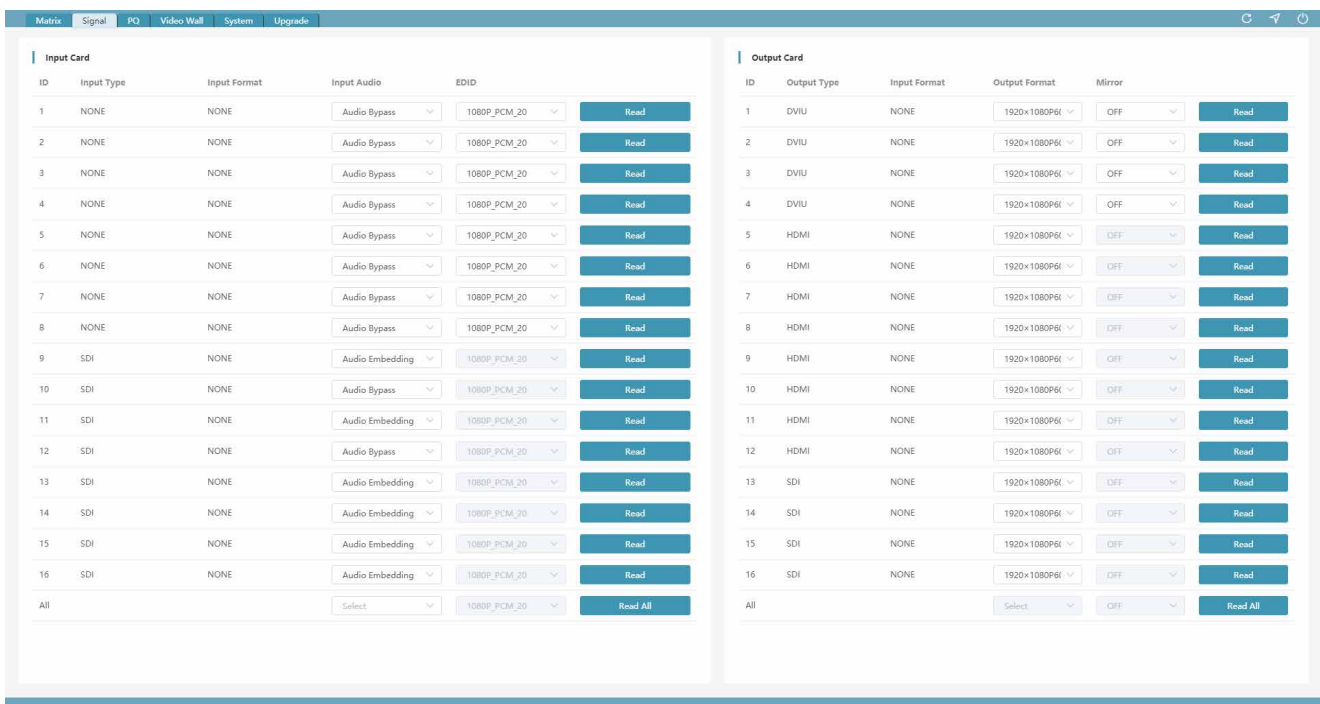
3. Scene & Configuration
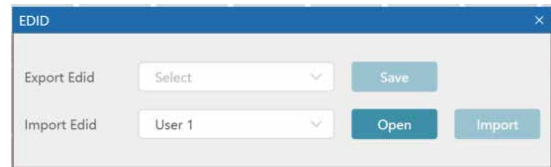
There are 64 scenes in total. You can select the corresponding scenes to save or load.
The parameters for Save Preset include the switching relationship between input and output ports and the configuration of video walls.
The exported configurations mainly include:
a. Name of input and output ports;
b. Input/output switching relationship;
c. Mute status;
d. Audio source of the input port;
e. Output resolution set for the output port;
f. Mirroring mode configured for the output port;
g. Image quality configuration parameters of the output port;
h. Position adjustment parameters of input and output ports;
i. Video wall name, rows, columns, input and output ports corresponding to a single screen, and whether the screen is in splicing;
j. System configuration parameters: IP related, TCP port, telnet port, serial port baud rate.
Click "EDID" to pop up the EDID window on the right, where you can import/export the USER EDID.

■ Signal Setting Page

This page is mainly used to configure the relevant parameters of the I/O card.

The input card supports the configuration of audio source (bypass or embedding) and EDID.

The output card supports the configuration of output resolution and mirroring.

Output resolution mainly includes:

eRESOLUTION_1920_1200P_60,

eRESOLUTION_1920_1080P_60,

eRESOLUTION_1600_1200P_60,

eRESOLUTION_1680_1050P_60,

eRESOLUTION_1360_768P_60,

eRESOLUTION_1280_1024P_60,

eRESOLUTION_1280_720P_60,

eRESOLUTION_1024_768P_60,

eRESOLUTION_1920_1080P_30,

Mirroring mainly supports: H_MIRROR V_MIRROR H+V_MIRROR

■ Picture Quality Setting Page

Only the output port supports picture quality adjustment. The value ranges from o to 32, and all values after resetting are 16.

Both input and output ports support position adjustment. The value ranges from 0 to 32, and all values after resetting are 16.

■ Video Wall Setting Page

The number of rows and columns of the video wall ranges from 1 to 16. After the video wall is created, parts with more than 64 screens will not be displayed.

The maximum length of the video wall name is 32 bytes. Video wall setting supports the synchronous mode, which can be selected by clicking the drop-down box.

You can click a screen to view the screen's configuration information, or configure the corresponding input, output, location and other information.

Note: When the screen is in splicing state, the corresponding output port can not be configured.

■ System Setting Page

Modify Network Setting

Modify the IP Mode, IP Address, Gateway, Subnet Mask, TCP Port, Telnet Port and Baudrate as required, click "Save" to save the settings, then it will come into effect.

After modification, if the IP Mode is "Static", it will switch to the corresponding IP Address; if the IP Mode is "DHCP", it will automatically search and switch to the IP Address assigned by the router.

The parameters can be set in the following ranges:

Parameters	Range Value
IP Address	1.0.0.1~223.255.255.254
Gateway	The first three digits of the Gateway must be the same as the first three digits of the IP address. The range of the last digit is 1~254.
Subnet Mask	The Subnet Mask is not allowed to be set to 0.0.0.0/255.255.255.255.
Telnet Port	1~65535
TCP Port	1~65535

Note: The supported Baudrates are 115200/57600/38400/19200/9600/4800. After restoring the factory settings, the default Baudrate is 115200 and the IP mode is DHCP.

Modify User Password

You can modify the login password in User Management as required. Enter the correct Old Password, New Password and Confirm Password, then click "Save", the settings will take effect.

System Operation

You can click "Reboot" to reboot the system, or click "Factory Reset" to reset the device to factory defaults. After reset/reboot, the system will automatically switch to the login page.

Language Switching

You can click the drop-down menu on the right and select the desired language to realize the switch.

Serial Port Pass-through

The system setting with the main control card (optional 2) supports serial port pass-through function. Click "Screen Setting" to enter the Screen Setting page, as shown in the figure below. Add the command (ASCII/HEX) for the manufacture and select the baud rate, then click "Send" to send commands through the external serial port.
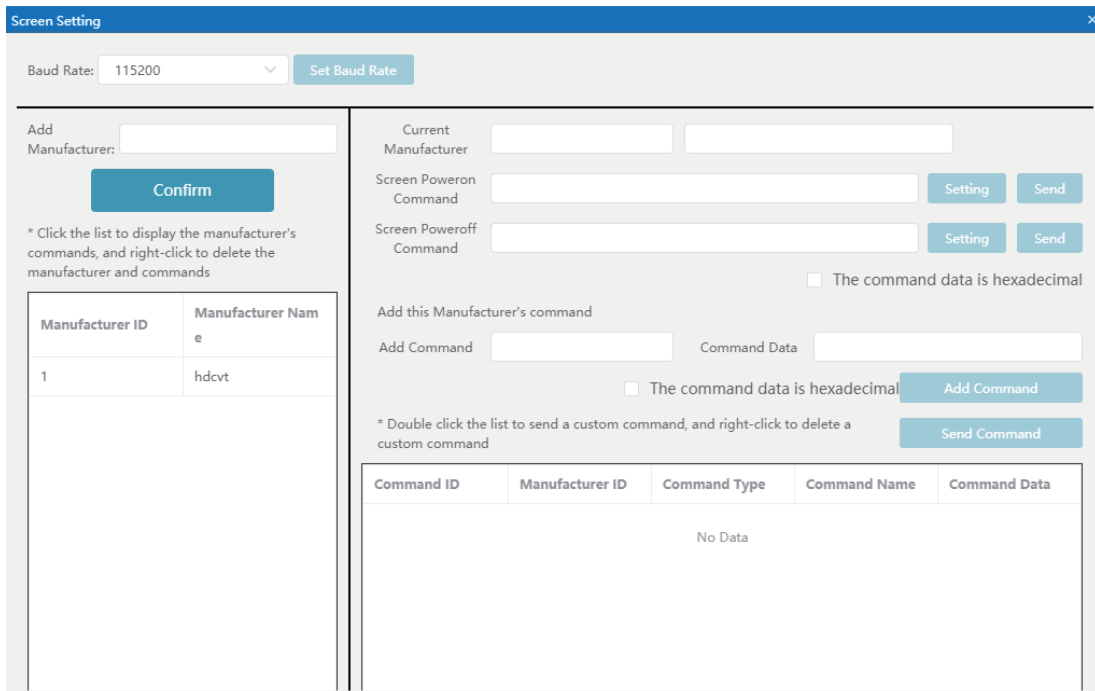
■ System Upgrade Page
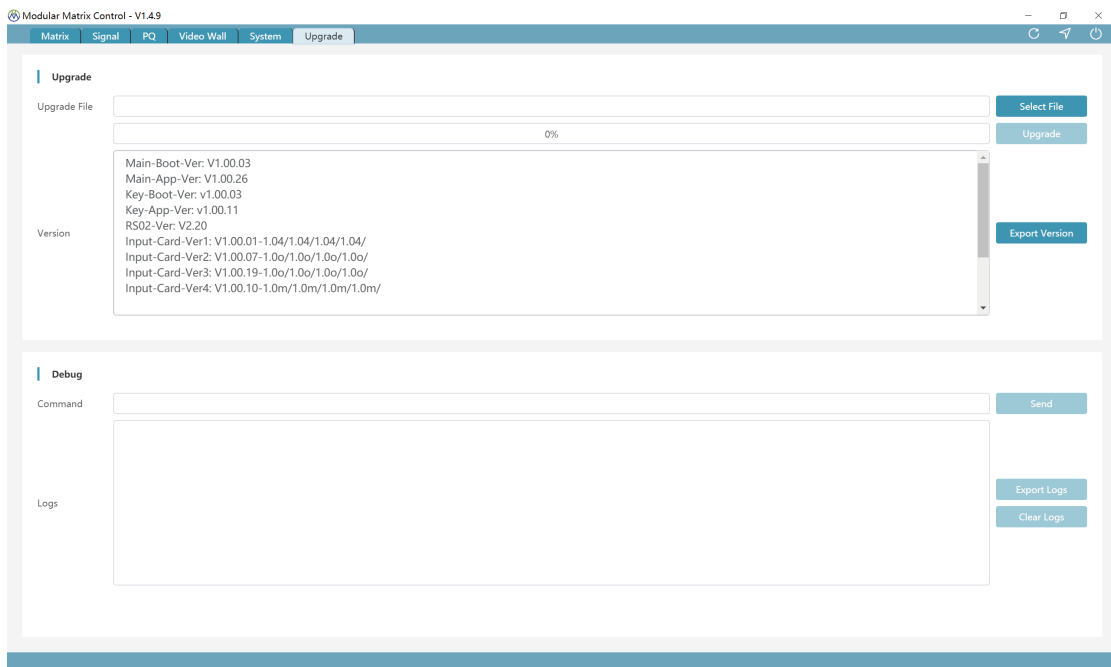
System Upgrade

Click "Select File" to select the upgrade file, then click "Upgrade" to start the system upgrade. After the progress bar reaches 100%, the upgrade is successful, and the device will reboot automatically.

You can click "Export Version" to export the current upgrade version information.

Command Debugging

Enter a command in the "Command" box, then click "Send" to send the command.
You can click "Export Logs" to export the command debugging log.

9. API Control Command
(Take the 16x16 Matrix as an example)

This Matrix supports API command control. Connect the RS-232 port or the LAN port of the Matrix to a PC, then open a command tool on PC to send ASCII commands to control the Matrix.

The ASCII command list about the product is shown as below.

<table>
<tr><th colspan="6">ASCII Command</th></tr>
<tr><td colspan="6">Serial port protocol. Baud rate: 115200 (default), Data bits: 8bit, Stop bits: 1, Check bit: 0
TCP/IP protocol port: 8000　　　　Telnet port:23</td></tr>
<tr><td colspan="6">x,y,z, XXX are parameters.
Error Code describe: E00 -> unknown command　　　E01 -> parameter out of range
E02 -> input card does not support the EDID with this resolution</td></tr>
<tr><th>Command Code</th><th>Function Description</th><th>Example</th><th>Feedback</th><th colspan="2">Default Setting</th></tr>
<tr><td colspan="6">Power</td></tr>
<tr><td>s power z!</td><td>Power on/off the device,z=0~1 (z=0 power off, z=1 power on)</td><td>s power 1!</td><td>power on

System Initializing...
Initialization Finished!
FW version x.xx.xx</td><td colspan="2">power on</td></tr>
<tr><td>r power!</td><td>Get current power state</td><td>r power!</td><td>power on/power off</td><td colspan="2"></td></tr>
<tr><td>s reboot!</td><td>Reboot the device</td><td>s reboot!</td><td>reboot...

System Initializing...
Initialization Finished!
FW version x.xx.xx</td><td colspan="2"></td></tr>
<tr><td colspan="6">System Setup</td></tr>
<tr><td>help!</td><td>List all commands</td><td>help!</td><td></td><td colspan="2"></td></tr>
<tr><td>r type!</td><td>Get device model</td><td>r type!</td><td>hdp-mx91616m</td><td colspan="2"></td></tr>
<tr><td>r status!</td><td>Get device current status</td><td>r status!</td><td>Get the unit all status: power, beep, lock, in/out connection, video/audio crosspoint, edid, scaler, network status</td><td colspan="2"></td></tr>
<tr><td>r fw version!</td><td>Get Firmware version</td><td>r fw version!</td><td>ctl-boot:v0.00.00
ctl-app:v1.00.01
rs02:v1.13
key-boot:v1.00.01
key-app:v1.00.01
in board 1:v1.00.01-1.08/1.08/1.08/1.08
in board 2:v1.00.01-1.08/1.08/1.08/1.08
in board 3:
in board 4:
out board 1:
out board 2:
out board 3:
out board 4:v1.00.02</td><td colspan="2"></td></tr>
</table>

Command Code	Function Description	Example	Feedback	Default Setting
r inport x info!	Get the information of the x input port，x=0~16(0=all)	r inport 1 info!	get input 1 info: board is on line:1 board type:inboard_hdmi input index:1 input name:Input1 input 5v:0 edid:1080p,stereo audio 2.0 out resolution:0 mirror:0 audio mode:0 hdcp:0 input timing: hdmi:0 h_pixel:0 v_pixel:0 rate:0 scan:0 tmds:0 mcu version:V1.00.01-1.08/1.08/1.08/1.08	
r outport x info!	Get the information of the x output port，x=0~16(0=all)	r outport 1 info!	get output 13 info: board is on line:1 board type:outboard_hdmi output index:13 output name:Output13 tv is on:1 edid: 0x00, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0x00, 0x52, 0x47, 0xce................................... 0x00, 0x00, 0x00, 0x00, 0x00, 0x68 outResolution:1 hdcp:0 mute:1 mirror:0 inputTiming: hPixel:1920 vPixel:1080 rate:60 scan:1 tmds:148 mcu version:V1.00.02	
s input x name yyy!	set input name x=1~16 yyy: len <= 16	s input 1 name xiaomi2!	set input 1 name:xiaomi2	
s output x name yyy!	set output name x=1~16 yyy: len <= 16	s output 1 name xiaomiTV!	set output 1 name: xiaomiTV	

Command Code	Function Description	Example	Feedback	Default Setting
s reset!	Reset to factory defaults	s reset!	reset to factory defaults	Main control card: PTP; Delete the video wall; DHCP; 115200; The buzzer is on; Panel is not locked; LCD remians on 60s HDMI output card: 1. Output port name: Output1-16 2. u8Resolution: 1920x1080P60 3. MODE: HDMI 4. HDCP: ON <If supported> 5. Splicing: No splicing 6. Position :H: 16,16 7. Size: 0,0 8. Picture quality: 16,16,16 9. Mirror :0<No mirror> HDMI input card: 1. Audio :HDMI 2. Position: 16,16 3. Size: 0,0 4. EDID: Built-in V56
s beep z!	Enable/Disable buzzer function, z=0~1(z=0 beep off, z=1 beep on)	s beep 1!	beep on beep off	beep on
r beep!	Get buzzer state	r beep!	beep on / beep off	
s lock z!	Lock/Unlock front panel button, z=0~1(z=0 lock off, z=1 lock on)	s lock 1!	panel button lock on panel button lock off	panel button lock off
r lock!	Get panel button lock state	r lock!	panel button lock on/off	
s save preset z!	Save switch state between all output port and the input port to preset z, z=1~16	s save preset 1!	save to preset 1	
s recall preset z!	Call saved preset z scenarios, z=1~16	s recall preset 1!	recall from preset 1	
s clear preset z!	Clear stored preset z scenarios, z=1~16	s clear preset 1!	clear preset 1	

Command Code	Function Description	Example	Feedback	Default Setting
r preset z!	Get preset z information, z=1~16	r preset 2!	preset 2 data: beep:1 lock:0 lcd work time:60s baudrate:115200 output 1 source: input 1 output 2 source: input 1 output 3 source: input 1 output 4 source: input 1 output 5 source: input 1 output 6 source: input 1 output 7 source: input 1 output 8 source: input 1 output 9 source: input 1 output 10 source: input 1 output 11 source: input 1 output 12 source: input 1 output 13 source: input 1 output 14 source: input 1 output 15 source: input 1 output 16 source: input 1 video wall name:111 video wall row:4 video wall col:4 the input of screen: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 the output of screen: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 mosaic id:1 mosaic row:3 mosaic col:3 mosaic screen: 1 2 3 5 6 7 9 10 11	
s lcd on time z!	Set LCD screen remain on time, z=0~4(0:off 1:always,2:30s, 3:60s,4:5m)	s lcd on time 2!	lcd on 30 seconds	lcd on 60 seconds
r lcd mode!	Get the backlight status of lcd screen	r lcd mode!	lcd always on	
s baud rate xxx!	Set the serial port baud rate of RS02 module, z=(115200,57600, 38400,19200,9600,4800)	s baud rate 115200!	Baudrate:115200	115200
r baud rate!	Get the serial port baud rate of RS02 module	r baud rate!	Baudrate:115200	
Output Setting				
s in x av out y,z,a, b...!	Set input x to output y,z,a,b..., x=1~16, y=0~16(0=all)	s in 1 av out 2,3,4,8!	input 1 -> output 2 3 4 8	ptp
r av out y!	Get output y signal status y=0~16(0=all)	r av out 0!	input 1 -> output 1 input 2 -> output 2 …… input 16 -> output 16	

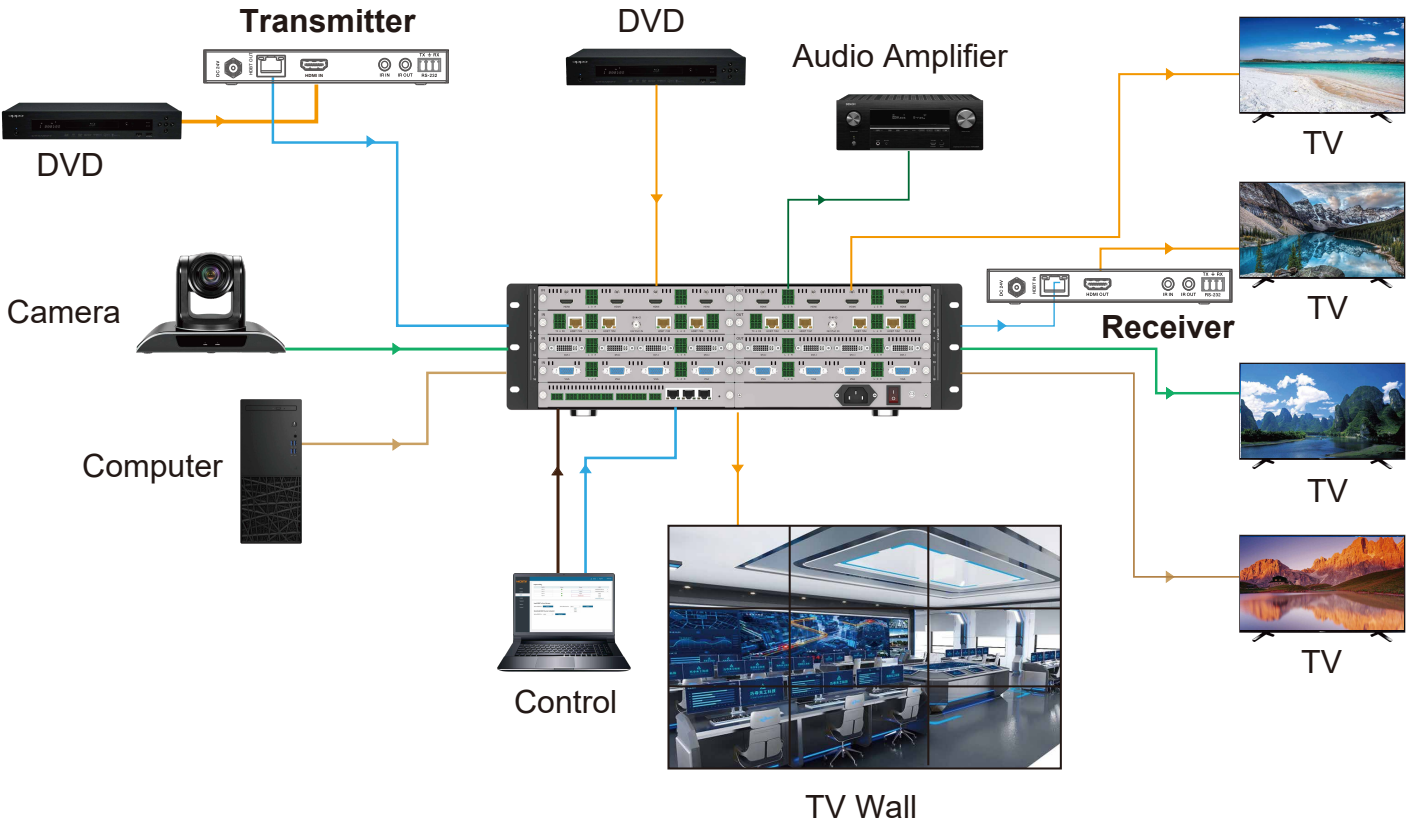| Command Code	Function Description	Example	Feedback	Default Setting
r switch and mute!	Get all output switch and mute status	r switch and mute!	input 1 -> output 1 input 1 -> output 2 input 1 -> output 3 input 1 -> output 4 input 7 -> output 5 input 7 -> output 6 input 7 -> output 7 input 7 -> output 8 input 1 -> output 9 input 1 -> output 10 input 1 -> output 11 input 1 -> output 12 input 1 -> output 13 input 1 -> output 14 input 1 -> output 15 input 1 -> output 16 output 1 stream:off output 2 stream:off output 3 stream:off output 4 stream:off output 5 stream:off output 6 stream:off output 7 stream:off output 8 stream:off output 9 stream:off output 10 stream:off output 11 stream:off output 12 stream:off output 13 stream:off output 14 stream:off output 15 stream:off output 16 stream:off	
s ptp!	set to ptp mode	s ptp!	ptp	ptp
s out x hdcp y!	set output port HDCP mode, x=0~16 y=0~2 0:off 1:1.4 2:2.2	s out 1 hdcp 0!	set output 1 hdcp off	
s input x audio mode y!	Set input x audio mode x:0~16 y:0-bypass, 1-insert	s input 1 audio mode 1!	set input 1 audio mode:insert	bypass
r input x audio mode!	get input x audio mode x:0~16	r input 1 audio mode!	input 1 audio mode: bypass	
s output x resolution y!	Set output x out format x:0~16 y:0-1920x1200@60, 1-1920x1080@60, 2-1600x1200@60, 3-1680x1050@60, 4-1360x768@60, 5-1280x1024@60, 6-1280x720@60, 7-1024x768@60, 8-1920x1080@30	s out 13 resolution 8!	set output 13 resolution: 1920x1080p@30	1920x1080@60
r output x resolution!	get output x out format	r out 1 resolution!	output 1 resolution: 1920x1200p@60	

Command Code	Function Description	Example	Feedback	Default Setting
s output x mirror mode y!	set output mirror mode x: 0~16 y:0~3, 0:OFF, 1:H_Mirror, 2:V_Mirror, 3:H+V_Mirror	s out 13 mirror mode 2!	set output 13 mirror mode: h+v_mirror	off
r output x mirror mode!	get output mirror mode	r out 1 mirror mode!	output 1 mirror mode:off	
r output x picture info!	get output picture info x:0~16	r output 1 picture info!	output1 picture info: brightness=16 contrast=16 colortemp=16 sharpness=16	
s ir x!	enable IR or not x:0-disable 1-enable	s ir 1!	enable ir	disable
s output x out mode y!	when no signal in, set output x out mode x:0~16 y:0-black 1-not connect	s output 1 out mode 1!	output 1 out mode 1	0
r vw info!	Get video wall info	r vw info!	get video wall info: name:111 col:4 row:4 output: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 input: 1 1 1 1 7 7 7 7 1 1 1 1 1 1 1 1 screen is mosaiced: 0 0 0 0 2 2 2 2 0 0 0 0 0 0 0 0 mosaic total number is:1 mosaic Id:2 mosaic row:2 mosaic col:2 mosaic screen: 5 6 7 8	
create vw row x col y name z!	Create video wall x: the row of video wall, y: the col of video wall, z: the name of video wall, 1 < (x*y) <= 16	create vw row 4 col 4 name video wall 1!	create video wall success	
s screen x source y!	Set input y to screen x x: the screen of video wall, 1 <= x && x <= row*col y:1~16	s screen 1 source 1!	set screen 1 source: input 1	
s screen x output y!	Set output y to screen x x: the screen of video wall, 1 <= x && x <= row*col y:1~16	s screen 1 output 1!	set screen 1 output: 1	

Command Code	Function Description	Example	Feedback	Default Setting
s mosiac x col y row z!	Create mosaic x:mosaic id, 1~8 y: mosaic col, 1<= y <= video wall col z:mosaic row, 1<= z <= video wall row	s mosiac 1 col 2 row 2!	set mosaic success	
s mosaic x window y screen z!	Match the mosaic window with screen x: mosaic id, 1~8 y: mosaic window, 1<= y <= (mosaic col * mosaic row) z: screen id, 1<= z <= (video wall col * video wall row)	s mosaic 1 window 1 screen 8!	set mosaic window success	
delete mosaic x!	Delete mosaic x: mosaic id, 1~8	delete mosaic 1!	delete mosaic 1 success	
s hdmi y stream z!	Set output y stream on/off, y=0~16(0=all) z=0~1 (0:disable,1:enable)	s hdmi 1 stream 1 !	output 1 stream:on	enable
r hdmi y stream!	Get output y stream status, y=0~16(0=all)	r hdmi 1 stream!	output 1 stream:off	
EDID				
s edid in x from z!	Set input x EDID from default EDID z, x=0~16(0=all),z=1~39 1, 1080p,Stereo Audio 2.0 2, 1080p,Dolby/DTS 5.1 3, 1080p,HD Audio 7.1 4, 080i,Stereo Audio 2.0 5, 1080i,Dolby/DTS 5.1 6, 1080i,HD Audio 7.1 7, 4K2K30_444,Stereo Audio 2.0 8, 4K2K30_444,Dolby/DTS 5.1 9, 4K2K30_444,HD Audio 7.1 10, 4K2K60_420,Stereo Audio 2.0 11, 4K2K60_420,Dolby/DTS 5.1 12, 4K2K60_420,HD Audio 7.1 13, 4K2K60_444,Stereo Audio 2.0 14, 4K2K60_444,Dolby/DTS 5.1 15, 4K2K60_444,HD Audio 7.1 16, 4K2K60_444,Stereo Audio 2.0 HDR 17, 4K2K60_444,Dolby/DTS 5.1 HDR 18, 4K2K60_444,HD Audio 7.1 HDR 19, USER1 20, USER2 21, copy from hdmi output 1 22, copy from hdmi output 2 23, copy from hdmi output 3 24, copy from hdmi output 4 25, copy from hdmi output 5 26, copy from hdmi output 6 27, copy from hdmi output 7 28, copy from hdmi output 8 29, copy from hdmi output 9 30, copy from hdmi output 10 31, copy from hdmi output 11 32, copy from hdmi output 12 33, copy from hdmi output 13 34, copy from hdmi output 14 35, copy from hdmi output 15 36, copy from hdmi output 16	s edid in 1 from 1!	input 1 edid:1080p,stereo audio 2.0	1080p,Stereo Audio 2.0

Command Code	Function Description	Example	Feedback	Default Setting
r edid in x!	Get EDID status of the input x, x=0~16(0=all input)	r edid in x!	input 1 edid: 1080p, stereo audio 2.0	
s edid userx yy!	set user edid x:1~2 yy:edid data	s edid user 1 00ffffffffffffff...!	user1 edid setting ok!	
r edid userx!	get user defined edid	r edid user 1!	user1 edid data: 0x00, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0x00, 0x20, 0x83, 0x10.................................... 0x21, 0x00, 0x00, 0x9e 0x00, 0x21	
r edid data hdmi y!	Get the EDID data of the hdmi output y port，y=1~16	r edid data hdmi 1!	edid : 00 ff ff ff ff ff ff 00 ………	
Network setting				
r ipconfig!	Get the Current IP Configuration	r ipconfig!	ip mode:dhcp ip address:192.168.0.200 subnet mask:255.255.255.0 gateway:192.168.0.1 mac address:ff-ff-ff-ff-ff-ff tcp/ip port=8000 telnet port=23	
r mac addr!	Get network MAC address	r mac addr!	mac address:ff-ff-ff-ff-ff-ff	
s ip mode z!	Set network IP mode to static IP or DHCP, z=0~1 (z=0 Static, z=1 DHCP)	s ip mode 1!	set ip mode:dhcp (please use "s net reboot!" command to apply new config!)	dhcp
r ip mode!	Get network IP mode	r ip mode!	ip mode:dhcp	
s ip addr xxx.xxx.xxx.xxx!	Set network IP address	s ip addr 192.168.8.180!	set ip address:192.168.8.180 (please use "s net reboot!" command to apply new config!)	
r ip addr!	Get network IP address	r ip addr!	ip address:192.168.8.180	
s subnet xxx.xxx.xxx.xxx!	Set network subnet mask	s subnet 255.255.255.0!	set subnet mask:255.255.255.0 (please use "s net reboot!" command to apply new config!)	
r subnet!	Get network subnet mask	r subnet!	subnet mask:255.255.255.0	
s gateway xxx.xxx.xxx.xxx!	Set network gateway	s gateway 192.168.8.1!	set gateway:192.168.8.1 (please use "s net reboot!" command to apply new config!)	
r gateway!	Get network gateway	r gateway!	Gateway:192.168.1.1	
s tcp/ip port x!	Set network TCP/IP port (x=1~65535)	s tcp/ip port 8000!	Set tcp/ip port:8000	8000
r tcp/ip port!	Get network TCP/IP port	r tcp/ip port!	tcp/ip port:8000	
s telnet port x!	Set network telnet port (x=1~65535)	s telnet port 23!	set telnet port:23	23
r telnet port!	Get network telnet port	r telnet port!	telnet port:23	

Command Code	Function Description	Example	Feedback	Default Setting
s net reboot!	Reboot network modules	s net reboot!	network reboot ... search for ip,please wait ...! search for ip,please wait ...! ip mode:dhcp ip address:192.168.0.200 subnet mask:255.255.255.0 gateway:192.168.0.1 mac address:ff-ff-ff-ff-ff-ff tcp/ip port=8000 telnet port=23	

10. Application Example
(Take the 16x16 Matrix as an example)

Transmitter

DVD

DVD

Audio Amplifier

Camera

Computer

Control

Receiver

TV

TV

TV

TV

TV Wall

HDMI cable:

VGA cable:

DVI cable:

Audio cable:

Network cable:

RS-232 cable: