

User Manual

X4-Series

4K60 Modular Seamless Matrix Switcher

16 x 16 / 36 x 36



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Version: X4-Series_2026V3.1

Preface

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference. Pictures are shown in this manual for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated till April, 2026. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation.

Please refer to the dealers for the latest details.

All product functions are valid till 2026-04-21.

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FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.



SAFETY PRECAUTIONS

To ensure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

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.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

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1. Introduction

1.1. Product 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 16~36 signal inputs and 16~36 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 RGB 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 and HDBaseT input/ output cards, one card is with four channels, resolutions up to 4Kx2K@60Hz per channel 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 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.

1.2. Features

- HDMI 2.0b and HDCP 2.2 compliant
- HDMI 18Gbps video bandwidth, up to 4K60 RGB 4:4:4 24bit
- Pluggable card structure (One card with four channels)
- Support 16/ 36 channel video signal inputs and outputs
- Multiple input/ output cards with HDMI and HDBaseT
- Video resolution up to 3840x2160p60hz
- 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 16x16~36x36, 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

1.3. Compatible Signal Card

The matrix supports multiple signal cards as listed in the following charts:

Signal	Model	Description
HDMI	X2-4I-UH	4K60 HDMI2.0 input card with 4 HDMI, and 4 external L+R audio ports.
	X2-4O-UH	4K60 HDMI2.0 output card with 4 HDMI and 4 external L+R audio ports.
HDBaseT	X4-4I-BT-100	4K60 HDBaseT input card with 4 HDBT, and 4 external stereo audio ports.
	X4-4O-BT-100	4K60 HDBaseT output card with 4 HDBT, and 4 external stereo audio ports.

1.4. Package List

- 1x X4-1616A/ X4-3636A: Modular Seamless Matrix Switcher Chassis 16x16 / 36/36
- 1x IR Remote (with CR2025 battery)
- 1x RS232 Serial Cable (DP9 female connector to 3pin H2.0 Phoenix Connector, 1.5 meters)
- 1x USB to RS-232 Serial Cable (USB A to RS-232 serial DB9 male connector)
- 4x Rubber Foot
- 4x Machine Screw (M3*4)
- 2x Power Cords (100~240V AC 50/60Hz)
- 1 x User Manual

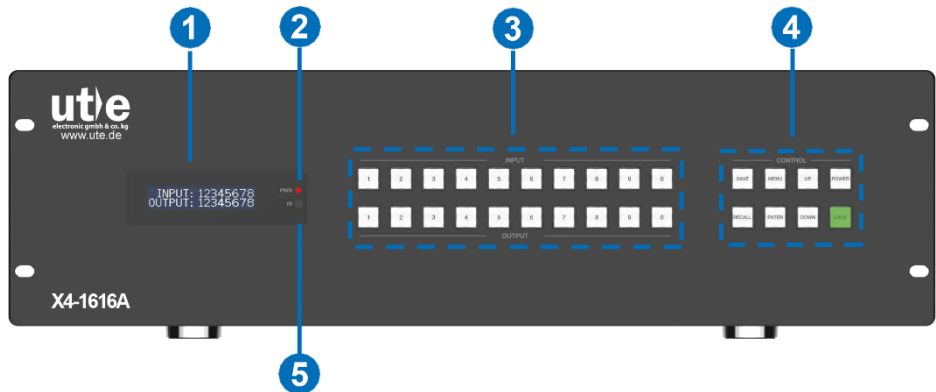


Notes:

- Please confirm if the product and the accessories are all included, if not, please contact the dealers.
- Please contact your dealer immediately if any damage or defects in the components are found.

2. Panel Description (take the X4-1616A as an example)

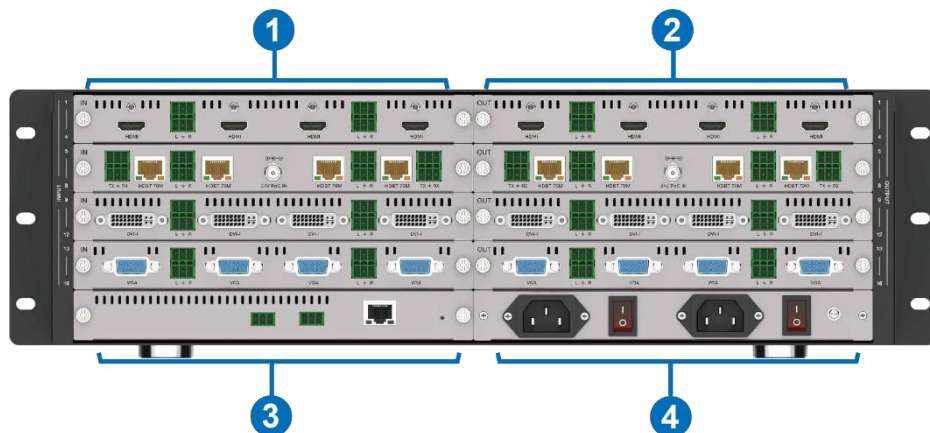
2.1. Matrix Front Panel



No.	Name	Description
①	LED screen	Display the current status information (Matrix switching channel, EDID information, baud rate and so on).
②	Power LED	The LED “PWR” 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

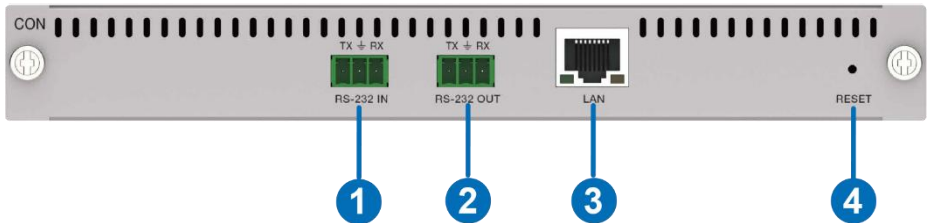
		press ENTER to confirm.
		UP: Press this button to select upwards on the display screen.
		DOWN: Press this button to select downwards on the display screen. POWER: Press and hold this button for 3s to enter the standby mode, the power LED will light in red; press the button again to resume starting, 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.

2.2. Matrix Rear Panel



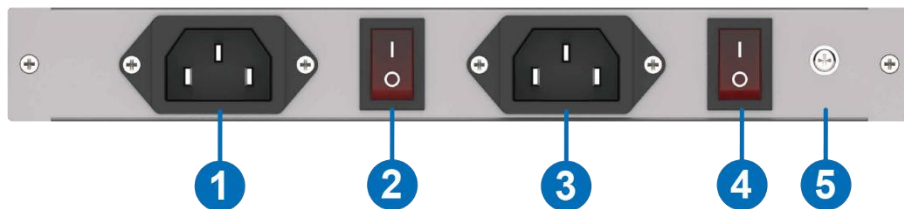
No.	Name	Description
①	INPUTS/ Input cards	Signal card slots to insert necessary input cards. Video input card, connected to source devices directly or via an Extender.
②	OUTPUTS/ Output cards	Signal card slots to insert necessary output cards. Video output card, connected to display devices directly or via an Extender.
③	Main Control card	Main control card, equipped with various control ports. (For more information, please refer to section 2.3)
④	Power card	Power card, equipped with two power ports, two power switches and a ground port. (For more information, please refer to section 2.4)

2.3. Main Control Card



No.	Name	Description
①	RS232 port IN port	RS-232 serial signal input port, connect 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

2.4. Power Card



No.	Name	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.

2.5. Signal Cards

There are various changeable 4K input and output cards available for the X4-series.
Here is a brief introduction to the changeable HDMI and HDBaseT cards.

2.5.1. HDMI Signal Cards

2.5.1.1. X4-4I-UH: 4K60 HDMI input card

4K60 HDMI2.0 input card with 4 HDMI, and 4 external L+R audio ports.



X4-4I-UH

- Supports HDMI 2.0b and HDCP 2.2.
- Input resolution is up to 4Kx2K: 4096x2160p60 (2160p60).
- Supports seamless switching.
- Synchronously switch audio and video.
- Supports 4 external L+R audio inputs and audio channel control.

2.5.1.2. X4-4O-UH: 4K60 HDMI output card

4K60 HDMI2.0 output card with 4 HDMI, and 4 external L+R audio ports.



X4-4O-UH

- Supports HDMI 2.0b and HDCP 2.2.
- Output resolution is up to 4Kx2K: 4096x2160p60 (2160p60).
- Supports seamless switching.
- Synchronously switch audio and video.
- Supports 4 external L+R audio outputs.

2.5.2. HDBaseT Signal Cards

2.5.2.1. X4-4I-BT-100: 4K60 HDBaseT input card

4K60 HDBaseT input card with 4 HDBT, 4 RS232 and 4 external stereo audio ports.



X4-4I-BT-100

- Supports HDMI 2.0b and HDCP 2.2.
- Input resolution is up to 4Kx2K: 4096x2160p60 (2160p60).
- Supports seamless switching.
- It is used with HDBaseT transmitter to extend video signal, and the transmission distance can up to 100 meters at 1080P, or 70 meters at 4Kx2K.
- Features 4 RS232 ports for two-way RS232 pass-through.
- Supports 4 external stereo audio inputs and audio channel control.

2.5.2.2. X4-4O-BT-100: 4K60 HDBaseT output card

4K60 HDBaseT output card with 4 HDBT, 4 RS232 and 4 external stereo audio ports.



X4-4O-BT-100

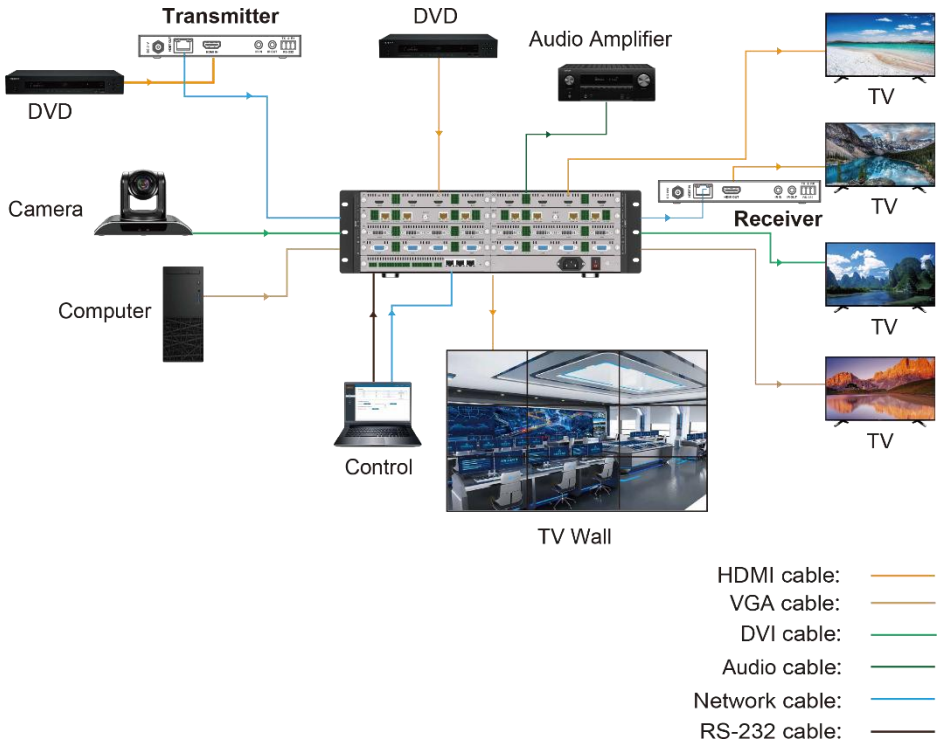
- Supports HDMI 2.0b and HDCP 2.2.
- Output resolution is up to 4Kx2K: 4096x2160p60 (2160p60).
- Supports seamless switching.
- It is used with HDBaseT receiver to extend video signal, and the transmission distance can up to 100 meters at 1080P, or 70 meters at 4Kx2K.
- Features 4 RS232 ports for two-way RS232 pass-through.
- Supports 4 external stereo audio outputs and audio channel control.

3. System Connection

3.1. Usage Precautions

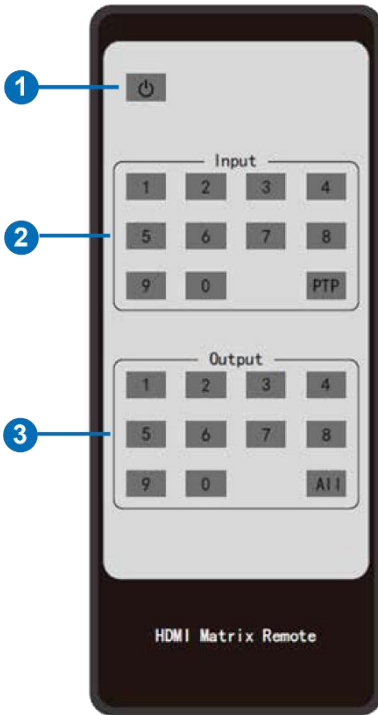
- Make sure all components and accessories included before installation.
- System should be installed in a clean environment with proper temperature and humidity.
- All of the power switches, plugs, sockets, and power cords should be insulated and safe.
- All devices should be connected before power on.

3.2. System Diagram (take the X4-1616A as an example)



4. IR Remote Control

With the IR remote, the matrix could be controlled remotely.



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.

4.1. IR operation methods

The IR Remote has the following three operation methods

(take the 36x36 Matrix as an example):

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 36)

Then press Output-X

(X represents the output button from 01 to 36)



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.

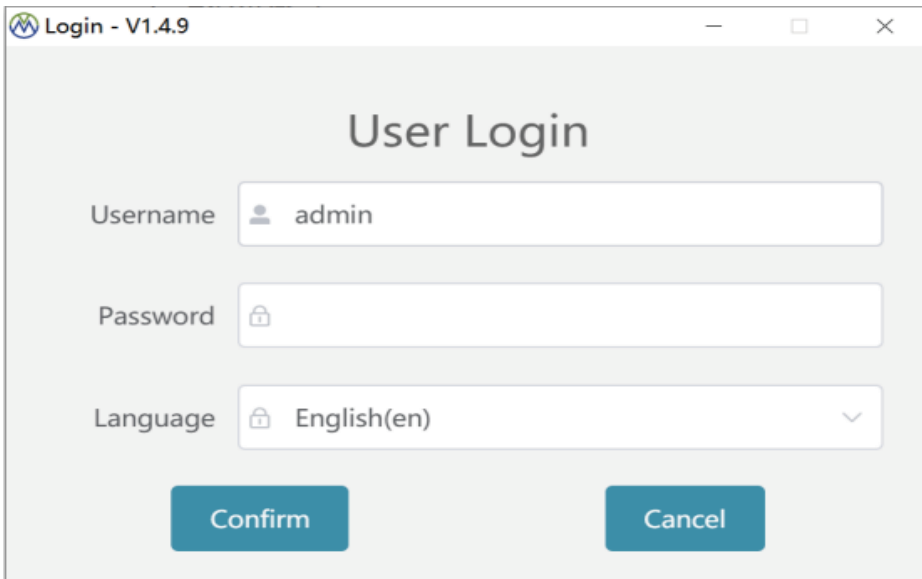
Method 3: First press the input button (select the input channel), then press All button (select all output channels), the signals of the selected input channel will be output to all display devices.

5. Host Computer Control Operation Guide

5.1. Login & Connection

5.1.1. Login

Double-click the Host Computer to enter the Login interface, as shown in the figure below:



The screenshot shows a web-based login window titled "Login - V1.4.9". The main heading is "User Login". There are three input fields: "Username" containing "admin", "Password" (masked with dots), and "Language" set to "English(en)". Below the fields are two buttons: "Confirm" and "Cancel".

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.

5.1.2. Connection

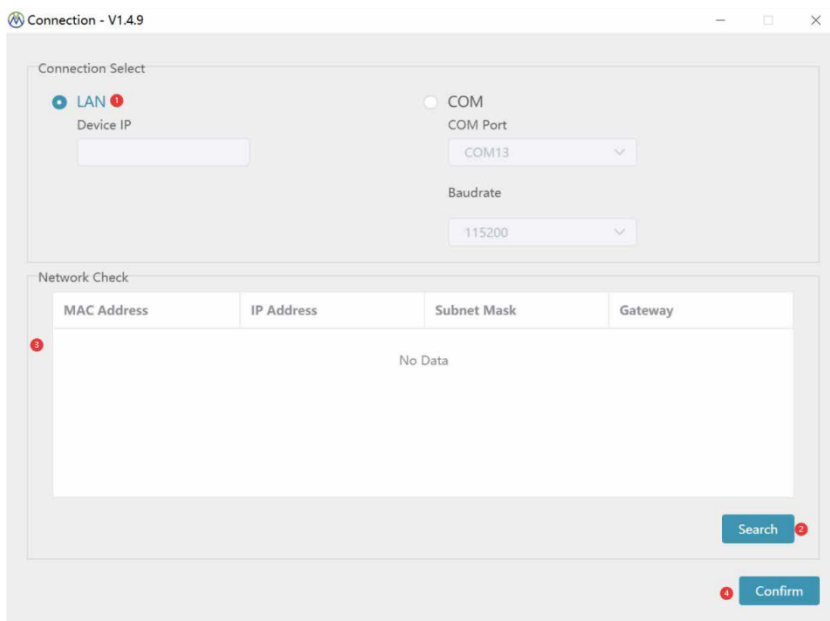
There are two connection methods: Network and serial port.

5.1.2.1. Network connection

Step1. 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).

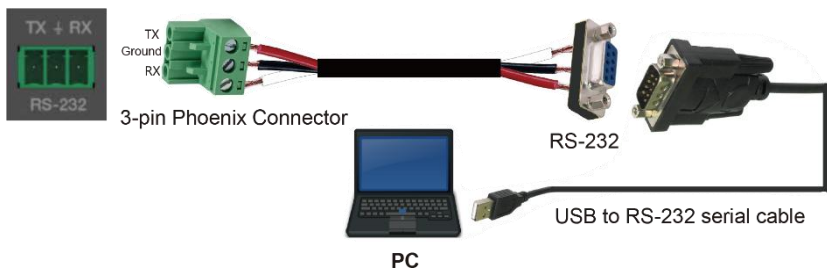


Step2. Check “LAN” on the Connection page and click “Search”. Then the searched device will appear in the list of “Network Check”. Click to select the device and click “Confirm” to connect the device.

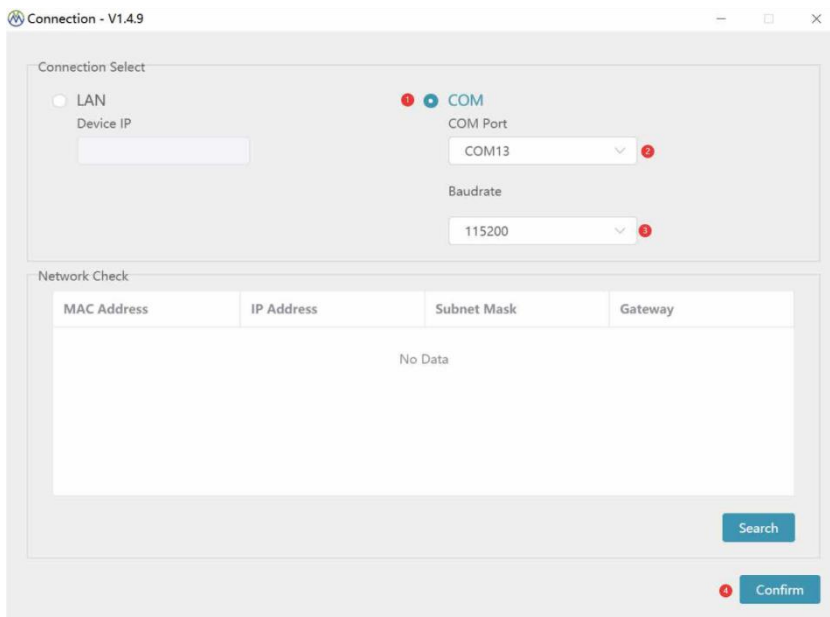


5.1.2.2. Serial connection

Step1. 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.



Step2. Check “COM” on the Connection page and select the corresponding COM Port and Baudrate (default Baudrate: 115200). Then click “Confirm” to connect the device.



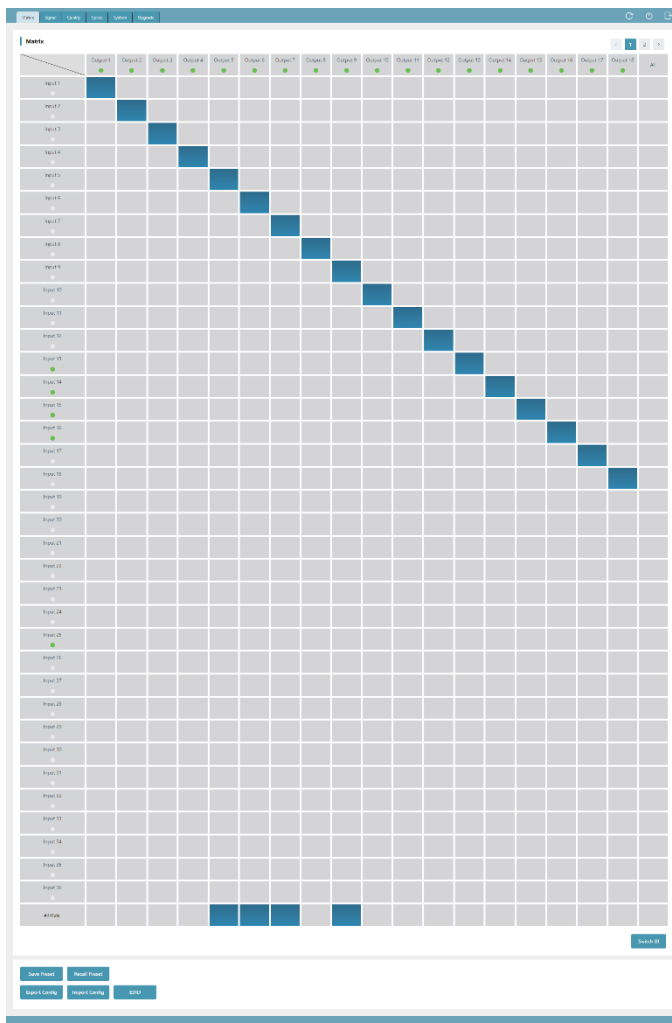
5.2. Host Computer Main Interface (take the X4-3636A as an example)

5.2.1. Matrix Switching Page

5.2.1.1. Matrix Switching User Interfaces styles

There are two User Interfaces (UI) styles of the Host Computer software. You can click the “Switch UI” button to switch between UI 1 and UI 2.

5.2.1.1.1. Matrix Switching UI 1



5.2.1.1.2. Matrix Switching UI 2

Main Signal Quality Setup System Upgrade

Matrix

Input

Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8	Input 9	Input 10	Input 11	Input 12	Input 13
Input 14	Input 15	Input 16	Input 17	Input 18	Input 19	Input 20	Input 21	Input 22	Input 23	Input 24	Input 25	Input 26
Input 27	Input 28	Input 29	Input 30	Input 31	Input 32	Input 33	Input 34	Input 35	Input 36			

Output

Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	
Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	All
Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	Output...	

Switch

Cancel

Port Name

Modify

Restore

Switch UI

Save Preset

Recall Preset

Export Config

Import Config

EDID

5.2.1.2. Refresh Data & Reconnection

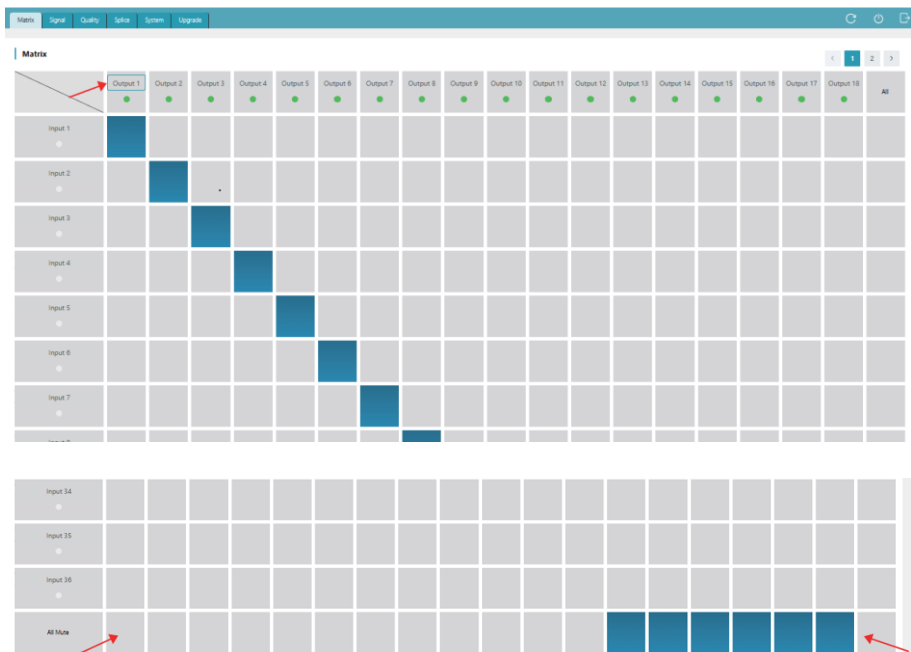


As shown in the figure above, icon ① is used to refresh the data of the current page; icon ② is used to return to the connection interface and reselect the connection method; icon ③ is used to power on the Matrix or set it to standby mode.

5.2.1.3. Matrix Switching

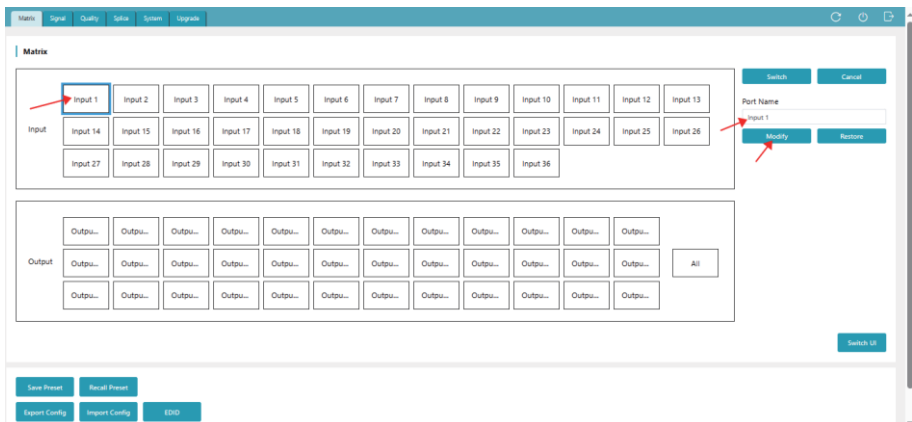
The Matrix Switching page displays the names and statuses of all input and output ports. The green light under the name of the input/output port indicates that there are connected signal sources or display devices; The gray light indicates that no signal sources or display devices are connected. Besides, you can rename the input /output port, switch the matrix correspondence or turn off the output.

5.2.1.3.1. Matrix Switching UI 1

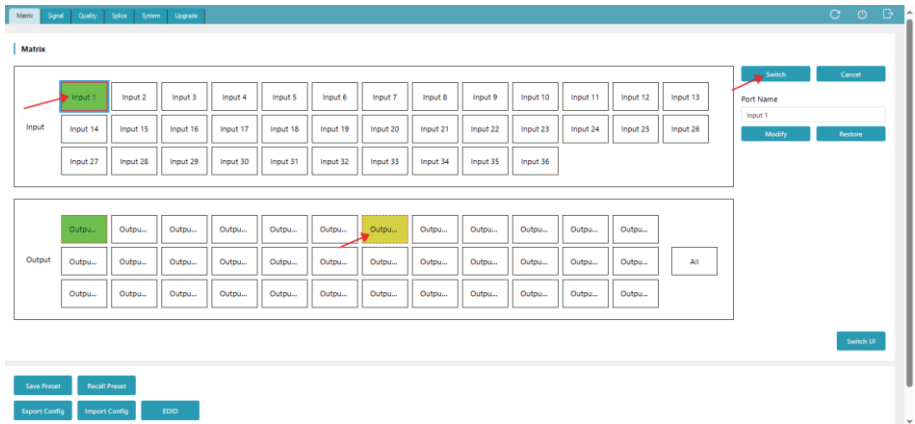


- ① Modify the name: Click the input/ output port to rename it. (The name supports numbers, uppercase and lowercase letters and spaces, not all spaces. The maximum length is 32 English characters or 16 Chinese characters). And then click outside the input box to complete the name modification.
- ② Switch matrix correspondence: Click the grid corresponding to the input/output channel to set a single input and output switching; When "All" is selected, the same signal source can be output to all display devices.
- ③ Turn off the output: Click the grid of "AV Mute" corresponding to an output channel to turn off its audio and video output; When the grid of "AV Mute" corresponding to "All" is selected, the outputs of all output channels will be turned off.

5.2.1.3.2. Matrix Switching UI 2

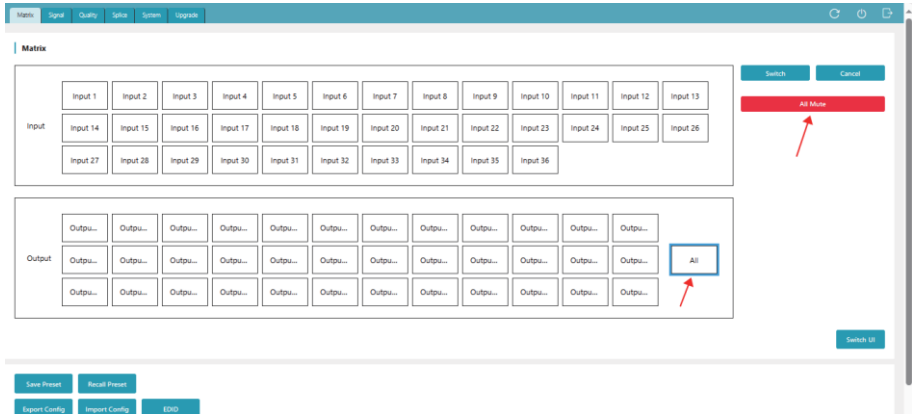


- ① Modify the name: As shown in the above figure, double-click the input/output port, then edit the name in the input box of "Port Name" (The name supports numbers, uppercase and lowercase letters and spaces, not all spaces. The maximum length is 32 English characters or 16 Chinese characters). And then click "Modify" to complete the name modification.



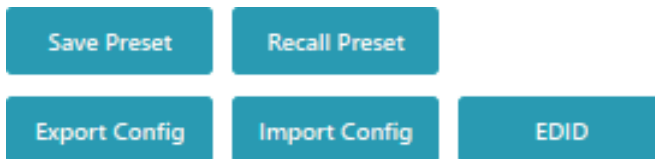
② Switch matrix correspondence: As shown in the above figure, click an input channel, and then click an output channel or click "All" (the selected output channel will turn to yellow), finally click "Switch" to take effect. After switching is completed, the output channel will turn to green.



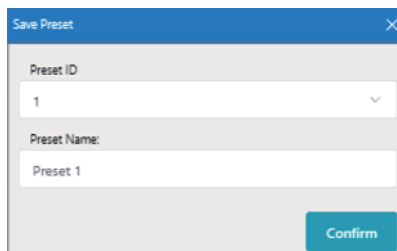


③ Turn off the output: As shown in the above figures, double-click an output port, then click “All Mute” to turn off the audio and video output of the selected output port; double-click “All”, then click “All Mute” to turn off the outputs of all output channels.

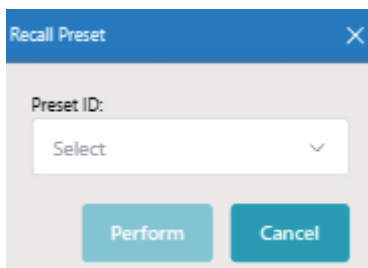
5.2.1.4. Preset & Configuration



① Save Preset: Click the “Save Preset” button, and the following window will pop up. Select a preset ID, set a preset name or use the default name, then click “Confirm” to save the preset.



② Recall Preset: Click the “Recall Preset” button, and the following window will pop up. Select a preset ID, then click “Perform” to recall the preset.



③ Import Config: Click the “Import Config” button, select the configuration file, it will prompt as shown in the lower left figure. Then click “Confirm” to import the configuration. After successful import, a prompt will appear, as shown in the lower right figure. After clicking “Confirm”, the system will automatically switch to the login interface.

Tips



The page needs to be refreshed after importing the configuration. Are you sure to import the configuration?

Cancel

Confirm

Tips

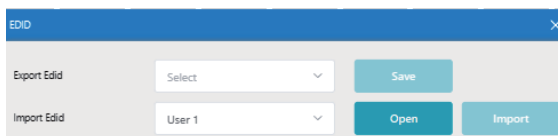


Import Config Success

Confirm

④ Export Config: Click the “Export Config” button, select the address to save the configuration, and then click "Confirm" to download the corresponding EDID file successfully.

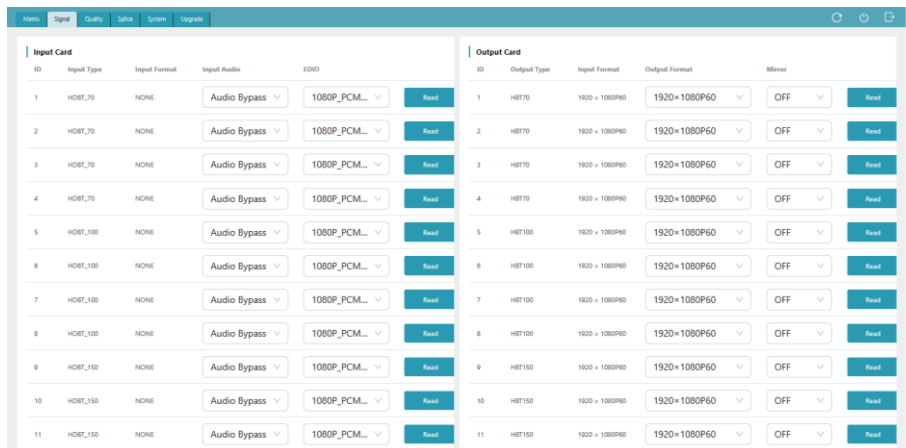
⑤ Import/Export EDID: Click the “EDID” button, and the following window will pop up.



Export EDID: Select an input channel in the matrix interface, click the drop-down list of “Export EDID” to select an address, then click “Save” to download the corresponding EDID file.

Import EDID: Click the drop-down list of “Import EDID” to select an address (User1/User2), click “Open” to select an EDID file, then click “Import” to complete import.

5.2.2. Signal Setting Page



The screenshot displays the 'Signal' tab of the configuration interface. It is divided into two main sections: 'Input Card' and 'Output Card'. Each section contains a table with 11 rows, representing different input/output ports. The columns for the 'Input Card' are ID, Input Type, Input Format, Input Audio, and EDID. The columns for the 'Output Card' are ID, Output Type, Input Format, Output Format, and Mirror. Each row has a 'Read' button next to the EDID field.

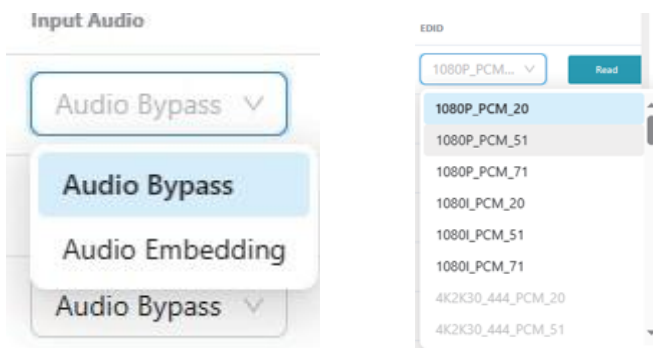
ID	Input Type	Input Format	Input Audio	EDID
1	HDBT_70	NONE	Audio Bypass	1080P_PCM...
2	HDBT_70	NONE	Audio Bypass	1080P_PCM...
3	HDBT_70	NONE	Audio Bypass	1080P_PCM...
4	HDBT_70	NONE	Audio Bypass	1080P_PCM...
5	HDBT_100	NONE	Audio Bypass	1080P_PCM...
6	HDBT_100	NONE	Audio Bypass	1080P_PCM...
7	HDBT_100	NONE	Audio Bypass	1080P_PCM...
8	HDBT_100	NONE	Audio Bypass	1080P_PCM...
9	HDBT_150	NONE	Audio Bypass	1080P_PCM...
10	HDBT_150	NONE	Audio Bypass	1080P_PCM...
11	HDBT_150	NONE	Audio Bypass	1080P_PCM...

ID	Output Type	Input Format	Output Format	Mirror
1	HBT70	1920 x 1080P60	1920x1080P60	OFF
2	HBT70	1920 x 1080P60	1920x1080P60	OFF
3	HBT70	1920 x 1080P60	1920x1080P60	OFF
4	HBT70	1920 x 1080P60	1920x1080P60	OFF
5	HBT100	1920 x 1080P60	1920x1080P60	OFF
6	HBT100	1920 x 1080P60	1920x1080P60	OFF
7	HBT100	1920 x 1080P60	1920x1080P60	OFF
8	HBT100	1920 x 1080P60	1920x1080P60	OFF
9	HBT150	1920 x 1080P60	1920x1080P60	OFF
10	HBT150	1920 x 1080P60	1920x1080P60	OFF
11	HBT150	1920 x 1080P60	1920x1080P60	OFF

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

5.2.2.1. Configuration and settings of input cards

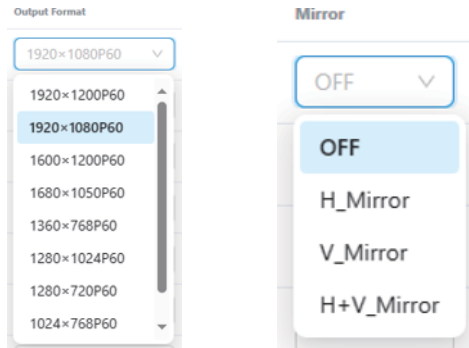
The input card supports the configuration of audio source (bypass or embedding) and EDID.



The left screenshot shows the 'Input Audio' dropdown menu with options: 'Audio Bypass', 'Audio Bypass', 'Audio Embedding', and 'Audio Bypass'. The right screenshot shows the 'EDID' dropdown menu with a list of EDID addresses including '1080P_PCM_20', '1080P_PCM_51', '1080P_PCM_71', '1080L_PCM_20', '1080L_PCM_51', '1080L_PCM_71', '4K2K30_444_PCM_20', and '4K2K30_444_PCM_51'.

5.2.2.2. Configuration and settings of output cards

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



5.2.3. Picture Quality Setting Page

Matrix

Signal

PQ

Video Wall

System

Upgrade

PQ

Port

Output1

Brightness

16

Contrast

16

Chroma

16

Sharpness

16

Read

Reset

Position Setting

Port

Output1

Port

DVI

H_Position

16

V_Position

16

H_Size

16

V_Size

16

Read

Reset

5.2.3.1. Picture Quality Setting

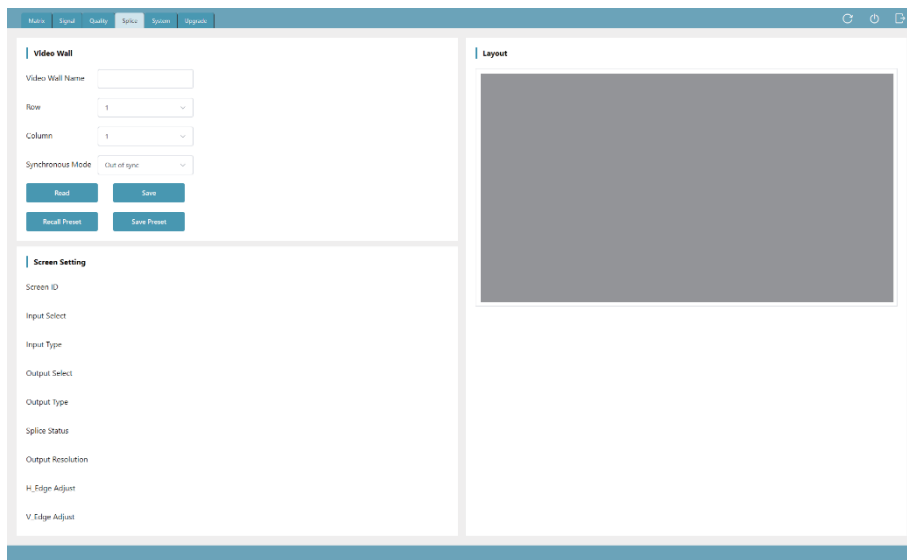
Click the drop-down list to select the output port, set the brightness, contrast, chroma and sharpness, then click “Read” to take effect. Finally, click the refresh icon to refresh the data.

5.2.3.2. Picture Position Setting

Click the drop-down list to select the output port and port type, set the H_Position, V_Position, H_Size and V_Size, then click “Read” to take effect. Finally, click the refresh icon to refresh the data.

 **Note:** Only output ports support picture quality setting and position setting, with a range of 0-32. If you click “Reset”, all values will be reset to 16.

5.2.4. Video Wall Setting Page



5.2.4.1. Video Wall Creation

Follow the steps below to create a video wall.

Step1. Input the video wall name (The maximum length is 32 English characters or 16 Chinese characters).

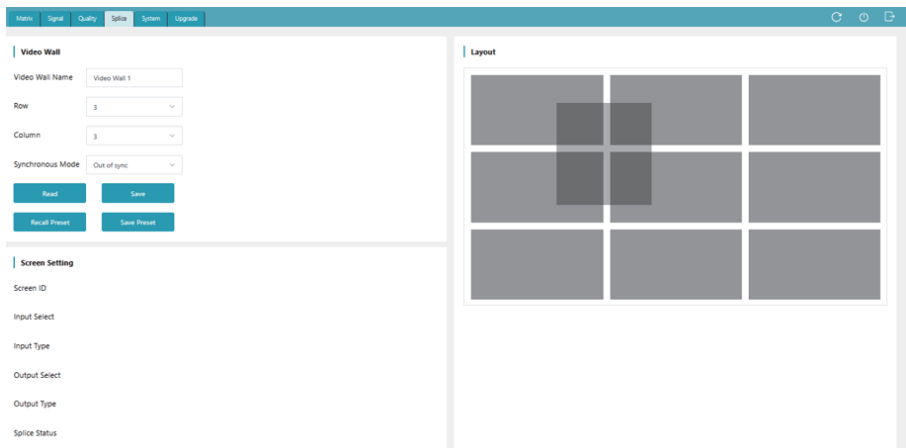
Step2. Set the number of rows and columns of the video wall (ranging from 1 to 36).
After the creation, parts with more than 36 screens will not be displayed.

Step3. Click the drop-down list of “Synchronous Mode” to set the synchronous mode.
Step 4.

Step4. Click the “Save” button, then the layout interface on the right side will display the corresponding windows.

Step5. Set the splicing. Hold down the left mouse button and drag to select the desired screens. The selected area is displayed as a gray curtain, and the screens covered by the gray curtain will be added to the current group, as shown in the following figure.

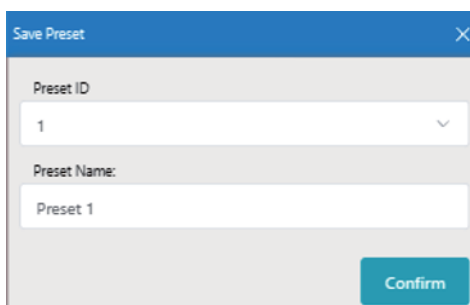
 **Note:** If the screen covered by the grey curtain is already occupied by other groups at this time, there will be no response.



Step6. After releasing the mouse, the selected screens will turn blue. Then click the right mouse button and select “Screen Splicing” from the settings menu to complete the splicing

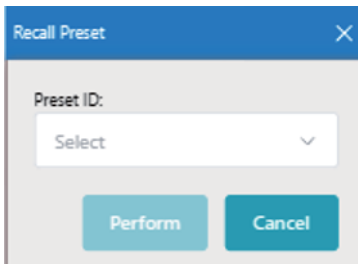
5.2.4.2. Save Video Wall Preset

Click the “Save Preset” button, and the following window will pop up. Select a preset ID, set a preset name or use the default name, then click “Confirm” to save the preset.



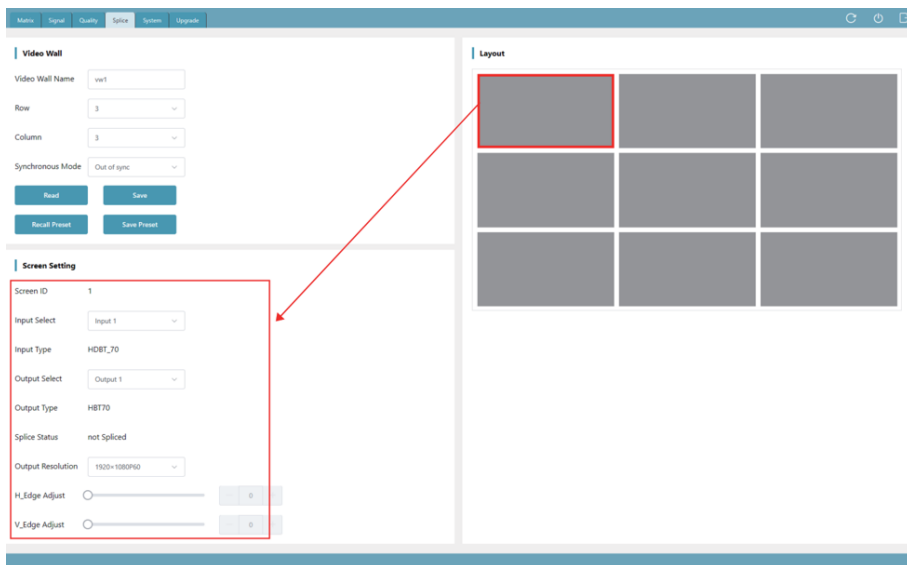
5.2.4.3. Recall Video Wall Preset

Click the “Recall Preset” button, and the following window will pop up. Select a preset ID, then click “Perform” to recall the preset.



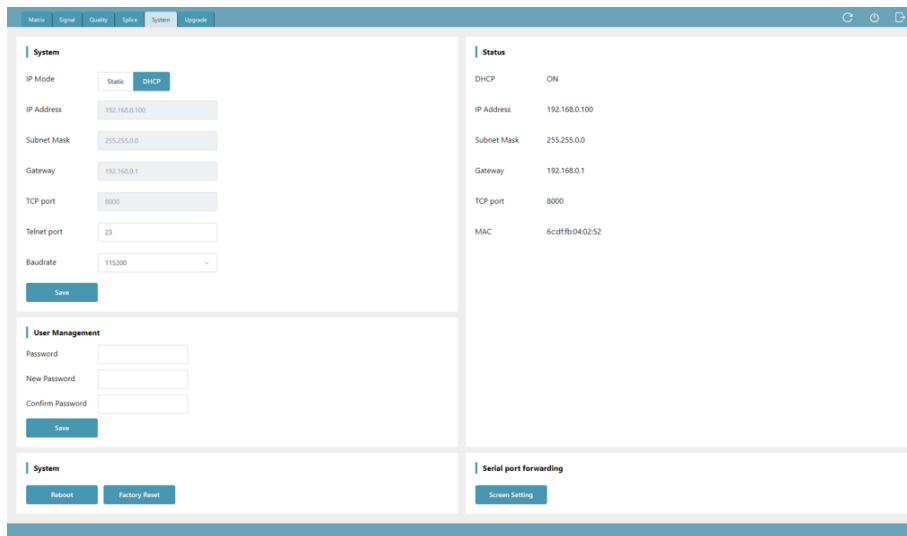
5.2.4.4. Video Wall Screen Setting

You can click any screen to view the screen's configuration information, or configure the corresponding input, output and other parameters, as shown in the figure below.



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

5.2.5. System Setting Page



System	Status
IP Mode: Static DHCP*	DHCP: ON
IP Address: 192.168.0.100	IP Address: 192.168.0.100
Subnet Mask: 255.255.0.0	Subnet Mask: 255.255.0.0
Gateway: 192.168.0.1	Gateway: 192.168.0.1
TCP port: 8000	TCP port: 8000
Telnet port: 23	MAC: 6c0ff8b040252
Baudrate: 115200	

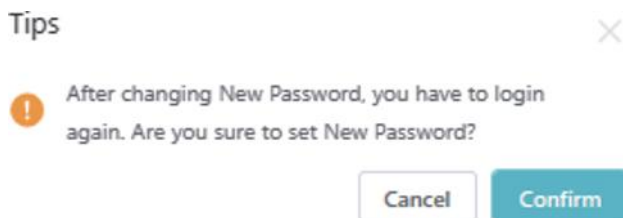
5.2.5.1. Modify Network Setting

If the IP Mode is set to “Static”, you can modify the IP Address, Subnet Mask, Gateway, TCP Port, Telnet Port and Baudrate as required, and click “Save” to take effect. Then the system will switch to the corresponding IP Address automatically.

If the IP Mode is set to “DHCP”, it will automatically search and switch to the IP Address assigned by the router.

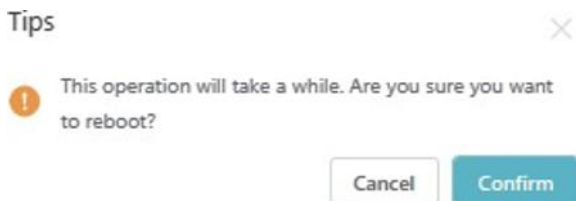
5.2.5.2. Modify User Password

You can modify the login password in User Management as required. Enter the correct Old Password, New Password and Confirm Password, then click “Save” to pop up a window as shown below. Click “Confirm” to take effect, then the system will switch to the login interface automatically, and you need to log in with the new password.

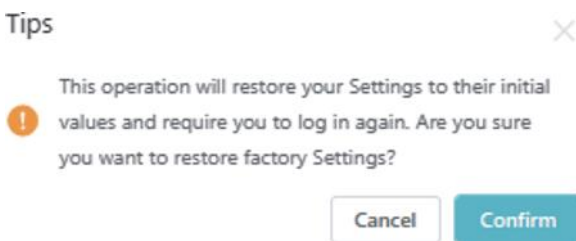


5.2.5.3. System Operation

You can click “Reboot” to pop up the window below, then click “Confirm” to reboot the system. After reboot, the system will automatically switch to the login page.



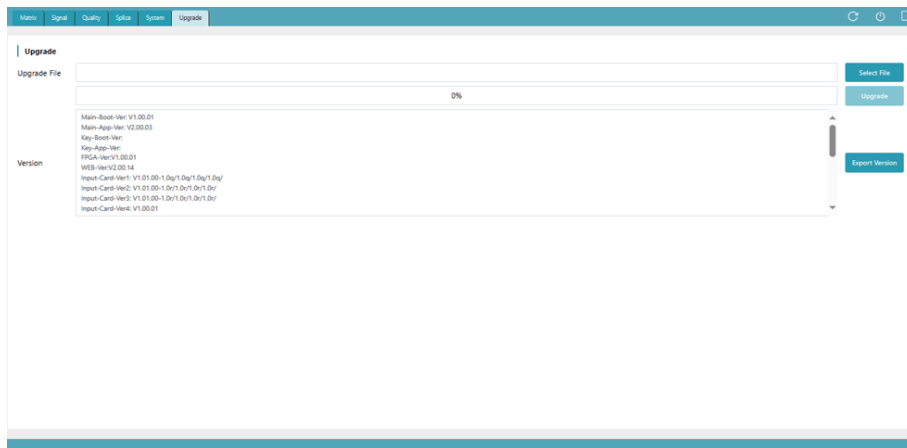
You can click “Factory Reset” to pop up the window below, then click “Confirm” to reset the device to factory defaults. After reset, the system will automatically switch to the login page.



5.2.5.4. 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, in which you can add the command (ASCII/HEX) for the manufacture and select the baud rate, then click “Send” to send commands through the external serial port.

5.2.6. System Upgrade Page

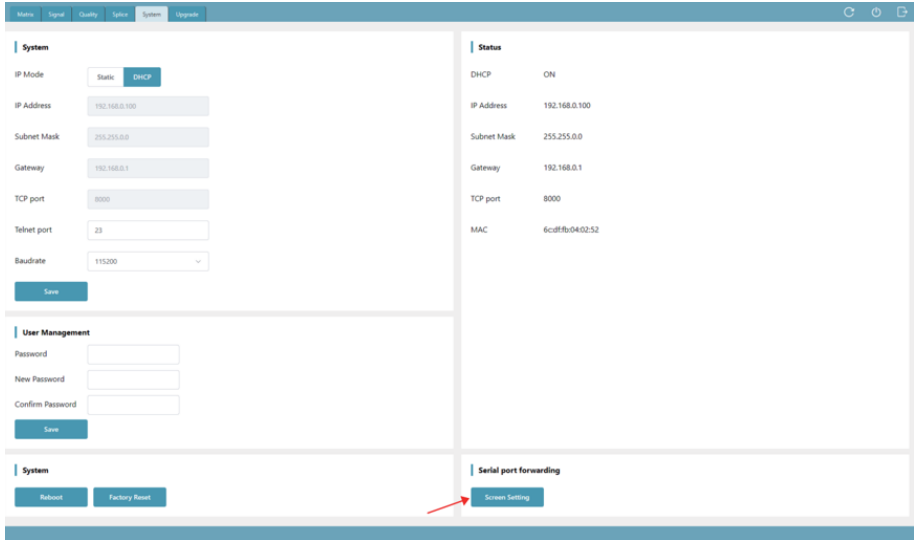


Click “Select File” to select the upgrade file, then click “Upgrade” to start the system upgrade. After the progress bar reaches 100%, the upgrade is successful, and the device will reboot automatically.

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

5.2.7. Screen Setting Page

The system setting with the main control card (optional 2) supports serial port pass-through function, as shown in the figure below.



The screenshot shows the 'System' configuration page of the device. The left sidebar has three main sections: 'System' with input fields for IP Mode (Static/DHCP), IP Address (192.168.0.100), Subnet Mask (255.255.0.0), Gateway (192.168.0.1), TCP port (8000), Telnet port (23), and Baudrate (115200); 'User Management' with fields for Password, New Password, and Confirm Password; and a 'System' section with 'Reboot' and 'Factory Reset' buttons. The right sidebar has a 'Status' section showing DHCP (ON), IP Address (192.168.0.100), Subnet Mask (255.255.0.0), Gateway (192.168.0.1), TCP port (8000), and MAC (6c0ffbf040252). Below the status section is a 'Serial port forwarding' section with a 'Screen Setting' button, which is highlighted by a red arrow.

Click “Screen Setting” to enter the Screen Setting page, as shown in the figure below. You can add the command (ASCII/HEX) for the manufacture and select the baud rate, then click “Send” to send commands through the external serial port.

Screen Setting

Baud Rate: 9600 Set Baud Rate

Add Manufacturer: Confirm

* Click the list to display the manufacturer's commands, and right-click to delete the manufacturer and commands

Manufacturer ID	Manufacturer Name
No Data	

Current Manufacturer

Screen Poweron Command Setting Send

Screen Poweroff Command Setting Send

☐ The command data is hexadecimal

Add this Manufacturer's command

Add Command Command Data

☐ The command data is hexadecimal Add Command

* Double click the list to send a custom command, and right-click to delete a custom command Send Command

Command ID	Manufacturer ID	Command Type	Command Name	Command Data
No Data				

5.2.7.1. Add Manufacturer

Input the name in the input box of “Add Manufacturer”, select the Baud Rate that needs to be sent by the manufacturer, then click “Conform” to complete adding.

Notes:

1. The manufacturer cannot be added repeatedly.
2. Any character with a length of 16 is supported.

5.2.7.2. Add Manufacturer Power On/ Off Command

Follow the steps below to add manufacturer power on/off command.

Step1. Select the manufacturer from the manufacturer list on the left.

Step2. Input the power on command.

Step3. Click the corresponding “Setting” button to complete the setting.

Step4. Input the power off command.

Step5. Click the corresponding “Setting” button to complete the setting.

Screen Setting

Baud Rate: 9600

Set Baud Rate

Add Manufacturer:

Confirm

* Click the list to display the manufacturer's commands, and right-click to delete the manufacturer and commands

Manufacturer ID	Manufacturer Name
1	APPLE
2	BAIDU

Current Manufacturer: 1

APPLE

Screen Poweron Command

Setting

Send

Screen Poweroff Command

Setting

Send

☐ The command data is hexadecimal

Add this Manufacturer's command

Add Command

Command Data

☐ The command data is hexadecimal

Add Command

* Double click the list to send a custom command, and right-click to delete a custom command

Send Command

Command ID	Manufacturer ID	Command Type	Command Name	Command Data
No Data				


Note: If the option “The command data is hexadecimal” is checked, the command should be input in hexadecimal format, for example: f1 11 ff.

5.2.7.3. Add Manufacturer Other Commands

Input the name in the input box of “Add Command”, input the command data in the input box of “Command Data”, then click “Add Command” button to complete adding, as shown in the figure below.

Screen Setting

Baud Rate: 9600

Set Baud Rate

Add Manufacturer:

Confirm

* Click the list to display the manufacturer's commands, and right-click to delete the manufacturer and commands.

Manufacturer ID	Manufacturer Name
1	APPLE
2	BAIDU

Current Manufacturer

1APPLE

Screen Poweron Command

FF FF

SettingSend

Screen Poweroff Command

FF 00

SettingSend

☐ The command data is hexadecimal

Add this Manufacturer's command

Add Command

Command Data

☐ The command data is hexadecimal

Add Command

* Double click the list to send a custom command, and right-click to delete a custom command.

Command ID	Manufacturer ID	Command Type	Command Name	Command Data
No Data				

5.2.7.4. Send Manufacturer Power On/Off Command

There are two methods to send manufacturer power on/off command.

Method 1: Select the manufacturer from the manufacturer list on the left and input the customized power on/off command in the “Screen Poweron Command” / “Screen Poweroff Command”, then click “Send” to send the command, as shown in the following figure.

Screen Setting

Baud Rate: 9600

Set Baud Rate

Add Manufacturer:

Confirm

* Click the list to display the manufacturer's commands, and right-click to delete the manufacturer and commands

Manufacturer ID	Manufacturer Name
1	APPLE
2	BAIDU

Current Manufacturer

1

APPLE

Screen Poweron Command

FF FF

Setting

Send

Screen Poweroff Command

FF 00

Setting

Send

The command data is hexadecimal

Add this Manufacturer's command

Add Command

Command Data

The command data is hexadecimal

Add Command

* Double click the list to send a custom command, and right-click to delete a custom command

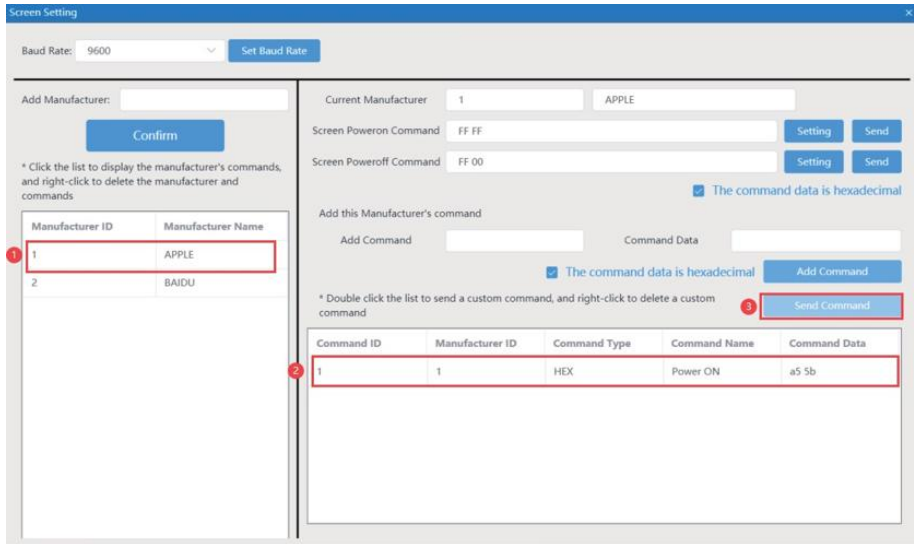
Send Command

Command ID	Manufacturer ID	Command Type	Command Name	Command Data
1	1	HEX	Power ON	a5 5b

Method 2: Click “Screen Poweron / Screen Poweroff” on the Main Function interface to send the manufacturer power on/off command that is set for the last time.

5.2.7.5. Send Manufacturer Other Commands

Select the manufacturer from the manufacturer list on the left, and click the command in the command list, then click “Send Command” button to send the command, or directly double- click the command in the command list to complete send, as shown in the figure below.



The screenshot shows the 'Screen Setting' window. On the left, there is a 'Manufacturer List' table with two entries: 1 (APPLE) and 2 (BAIDU). A red box highlights the first row, and a red circle with the number 1 is next to it. Below this list is a 'Confirm' button. On the right, there is a 'Current Manufacturer' section showing '1' and 'APPLE'. Below this are fields for 'Screen Poweron Command' (FF FF) and 'Screen Poweroff Command' (FF 00), each with 'Setting' and 'Send' buttons. A checkbox 'The command data is hexadecimal' is checked. Below this is an 'Add this Manufacturer's command' section with 'Add Command' and 'Command Data' fields, and another checked 'The command data is hexadecimal' checkbox. A red circle with the number 2 is next to the 'Add Command' button. At the bottom, there is a 'Command List' table with one entry: 1 (Power ON) with Command Data 'a5 5b'. A red box highlights this row, and a red circle with the number 3 is next to it. A 'Send Command' button is also visible, with a red circle with the number 4 next to it.

Baud Rate: 9600 Set Baud Rate

Add Manufacturer: Confirm

* Click the list to display the manufacturer's commands, and right-click to delete the manufacturer and commands

Manufacturer ID	Manufacturer Name
1	APPLE
2	BAIDU

Current Manufacturer: 1 APPLE

Screen Poweron Command: FF FF Setting Send

Screen Poweroff Command: FF 00 Setting Send

☒ The command data is hexadecimal

Add this Manufacturer's command

Add Command Command Data

☒ The command data is hexadecimal Add Command

* Double click the list to send a custom command, and right-click to delete a custom command Send Command

Command ID	Manufacturer ID	Command Type	Command Name	Command Data
1	1	HEX	Power ON	a5 5b

6. Web GUI Operation Guide

6.1. Connection & Login

The matrix can be controlled by Web GUI, allowing users to operate the matrix online. Follow the steps below to connect and log in.

Step1. Get the current IP Address.

The default IP address is 192.168.0.100 (when the system is not connected to a router). You can get the current matrix IP address in the following two methods.

Method 1: Get the IP address via API control command. 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, and set the IP address of the PC to be in the same network segment with the Matrix. Then send the ASCII command "r ipconfig!" through a Serial Command tool, then you'll get the feedback information as shown below.

```
ip mode:dhcp
ip address:192.168.66.19
subnet mask:255.255.255.0
gateway:192.168.66.1
mac address:6c-df-fb-04-02-52
tcp/ip port:8000
telnet port:23
|
```

IP:192.168.66.19 in the above figure is the current IP Address of the Matrix (The IP address is variable, depending on what the specific machine returns).

For the details of API control, please refer to "7. API Control Command".

Method 2: Get the IP address via the Host Computer. Connect the LAN port of the Matrix to a PC with an UTP cable, and set the IP address of the PC to be in the same network segment with the Matrix. Then open an upgrade software (e.g. GTool) on PC, and select "IP", then click "Search" to search and check the current Matrix IP address, as shown in the figure below.

GTool_V1.1.9

Connection 13 Bytes

☐ COM COM29 115200 Connect

☒ IP 192.168.0.100 Search

Upgrade

FW File Open

Progress 0% Upgrade

System Log

Save

Clear

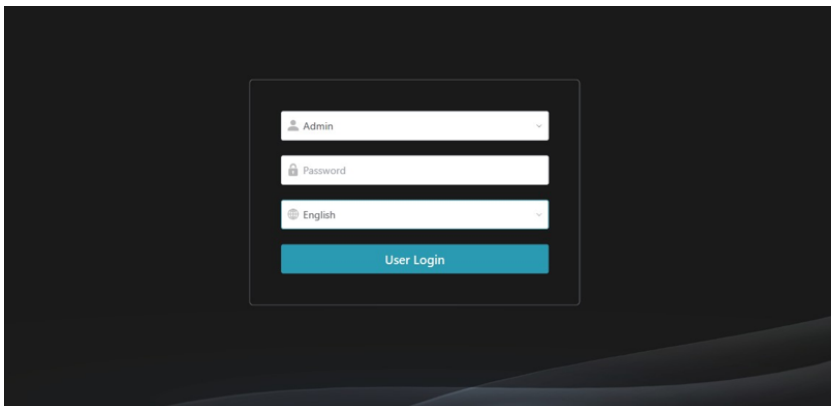
MCU: V1.00.03

Step2. Input the current IP address of matrix into your browser on the PC to enter the Web GUI login interface.

http://192.168.0.100

Step3. In the login interface, select the username and input the password, as shown below. Select the desired language, then click “User Login”, or tap the “Enter” button to log in.

Username	User	Admin
Password	user	admin



6.2. Web GUI Interface Instruction

(take the 36x36 Matrix as an example)

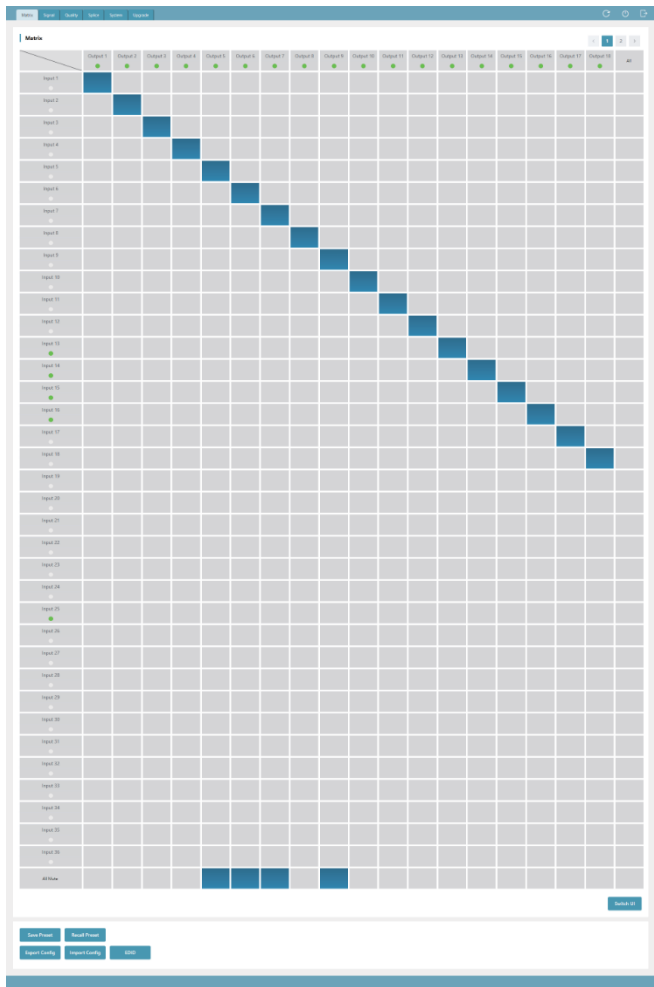
6.2.1. Matrix Switching Page

6.2.1.1. Matrix Switching User Interfaces styles

There are two UI styles of the Web GUI.

You can click the “Switch UI” button to switch between UI 1 and UI 2.

6.2.1.1.1. Matrix Switching UI 1



6.2.1.1.2. Matrix Switching UI 2

Main
Signal
Quality
Setup
System
Upgrade

Matrix

Input 1

Input 2

Input 3

Input 4

Input 5

Input 6

Input 7

Input 8

Input 9

Input 10

Input 11

Input 12

Input 13

Input 14

Input 15

Input 16

Input 17

Input 18

Input 19

Input 20

Input 21

Input 22

Input 23

Input 24

Input 25

Input 26

Input 27

Input 28

Input 29

Input 30

Input 31

Input 32

Input 33

Input 34

Input 35

Input 36

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Output...

Output...

Output...

Output...

Output...

Output...

Output...

Output...

Output...

Output...

Output...

All

Switch

Cancel

Port Name

Modify

Reset

Switch Up

Save Preset

Recall Preset

Export Config

Import Config

EDID

6.2.1.2. Refresh Data & Reconnection

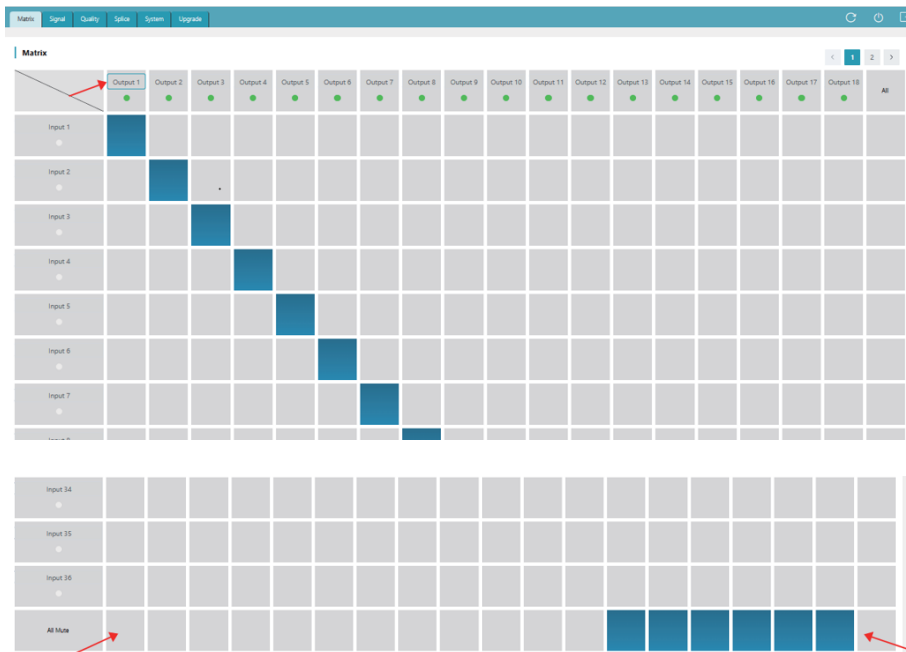


As shown in the figure above, icon ① is used to refresh the data of the current page; icon ② is used to power on the Matrix or set it to standby mode; icon ③ is used to logout and return to the login interface, then log in again.

6.2.1.3. Matrix Switching

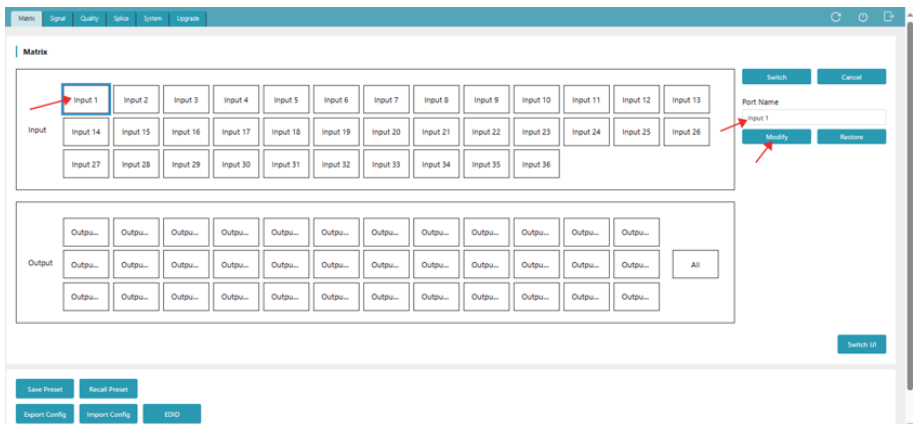
The Matrix Switching page displays the names and statuses of all input and output ports. The green light under the name of the input/output port indicates that there are connected signal sources or display devices; The gray light indicates that no signal sources or display devices are connected. Besides, you can rename the input/output port, switch the matrix correspondence or turn off the output.

6.2.1.3.1. Matrix Switching UI 1

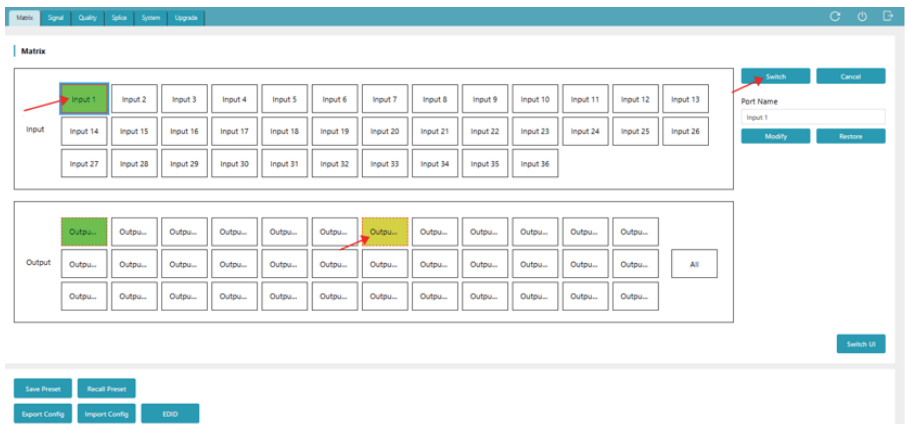


- ① Modify the name: Click the input/output port to rename it. (The name supports numbers, uppercase and lowercase letters and spaces, not all spaces. The maximum length is 32 English characters or 16 Chinese characters). And then click outside the input box to complete the name modification.
- ② Switch matrix correspondence: Click the grid corresponding to the input/output channel to set a single input and output switching; When "All" is selected, the same signal source can be output to all display devices.
- ③ Turn off the output: Click the grid of "AV Mute" corresponding to an output channel to turn off its audio and video output; When the grid of "AV Mute" corresponding to "All" is selected, the outputs of all output channels will be turned off.

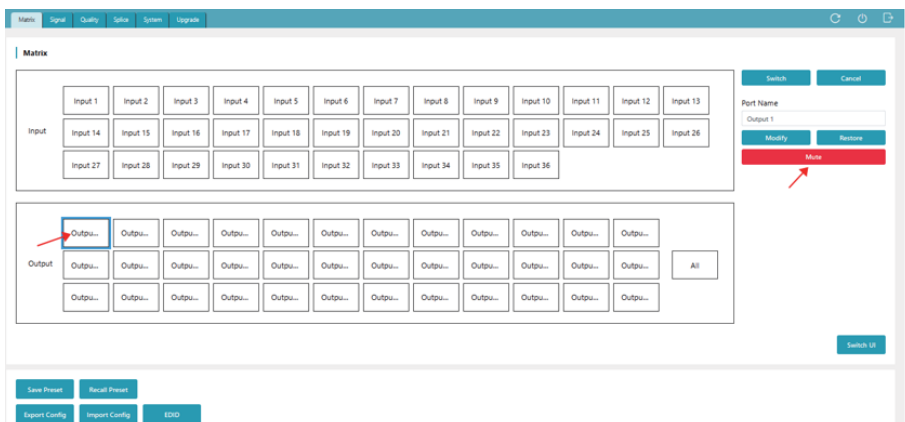
6.2.1.3.2. Matrix Switching UI 2

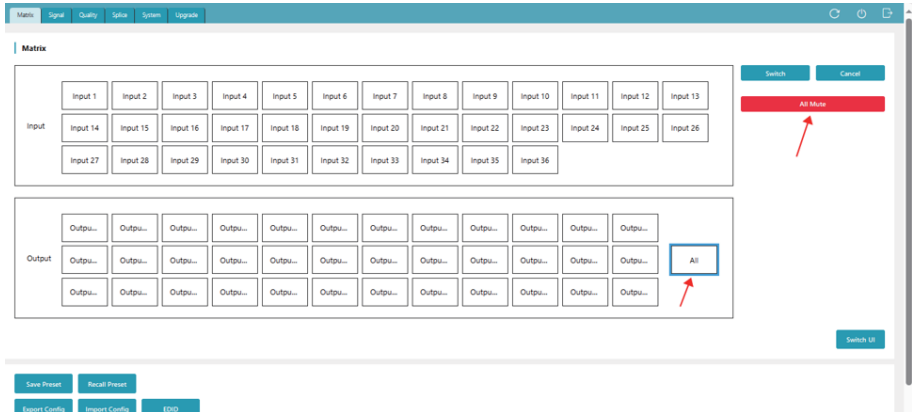


- ① Modify the name: As shown in the above figure, double-click the input/output port, then edit the name in the input box of "Port Name" (The name supports numbers, uppercase and lowercase letters and spaces, not all spaces. The maximum length is 32 English characters or 16 Chinese characters). And then click "Modify" to complete the name modification.



② Switch matrix correspondence: As shown in the above figure, click an input channel, and then click an output channel or click "All" (the selected output channel will turn to yellow), finally click "Switch" to take effect. After switching is completed, the output channel will turn to green.



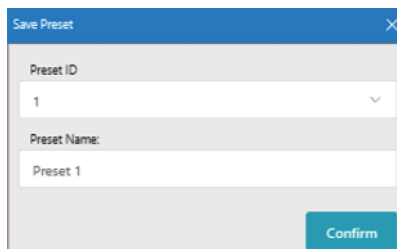


③ Turn off the output: As shown in the above figures, double-click an output port, then click “All Mute” to turn off the audio and video output of the selected output port; double-click “All”, then click “All Mute” to turn off the outputs of all output channels.

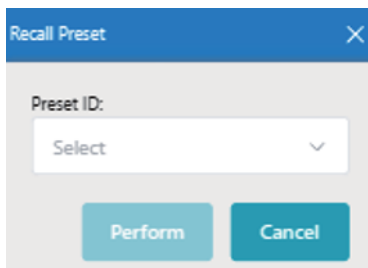
6.2.1.4. Preset & Configuration



① Save Preset: Click the “Save Preset” button, and the following window will pop up. Select a preset ID, set a preset name or use the default name, then click “Confirm” to save the preset.



② Recall Preset: Click the “Recall Preset” button, and the following window will pop up. Select a preset ID, then click “Perform” to recall the preset.



③ Import Config: Click the “Import Config” button, select the configuration file, it will prompt as shown in the lower left figure. Then click “Confirm” to import the configuration.

After successful import, a prompt will appear, as shown in the lower right figure. After clicking “Confirm”, the system will automatically switch to the login interface.

Tips

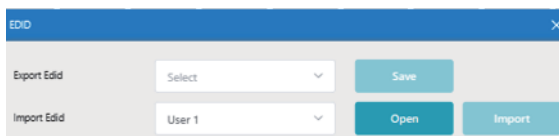
 The page needs to be refreshed after importing the configuration. Are you sure to import the configuration?

Tips

 Import Config Success

④ Export Config: Click the “Export Config” button, select the address to save the configuration, and then click "Confirm" to download the corresponding EDID file successfully.

⑤ Import/ Export EDID: Click the “EDID” button, and the following window will pop up.



Export EDID: Select an input channel in the matrix interface, click the drop-down list of “Export EDID” to select an address, then click “Save” to download the corresponding EDID file.

Import EDID: Click the drop-down list of “Import EDID” to select an address (User1/User2), click “Open” to select an EDID file, then click “Import” to complete import.

6.2.2. Signal Setting Page

Menu

Signal

Quality

Salice

System

Upgrade

Input Card

ID	Input Type	Input Format	Input Audio	EDID	
1	HDBT_70	NONE	Audio Bypass	1080P_PCM...	Read
2	HDBT_70	NONE	Audio Bypass	1080P_PCM...	Read
3	HDBT_70	NONE	Audio Bypass	1080P_PCM...	Read
4	HDBT_70	NONE	Audio Bypass	1080P_PCM...	Read
5	HDBT_100	NONE	Audio Bypass	1080P_PCM...	Read
6	HDBT_100	NONE	Audio Bypass	1080P_PCM...	Read
7	HDBT_100	NONE	Audio Bypass	1080P_PCM...	Read
8	HDBT_100	NONE	Audio Bypass	1080P_PCM...	Read
9	HDBT_150	NONE	Audio Bypass	1080P_PCM...	Read
10	HDBT_150	NONE	Audio Bypass	1080P_PCM...	Read
11	HDBT_150	NONE	Audio Bypass	1080P_PCM...	Read

Output Card

ID	Output Type	Input Format	Output Format	Minor	
1	HBT70	1920 × 1080P60	1920 × 1080P60	OFF	Read
2	HBT70	1920 × 1080P60	1920 × 1080P60	OFF	Read
3	HBT70	1920 × 1080P60	1920 × 1080P60	OFF	Read
4	HBT70	1920 × 1080P60	1920 × 1080P60	OFF	Read
5	HBT100	1920 × 1080P60	1920 × 1080P60	OFF	Read
6	HBT100	1920 × 1080P60	1920 × 1080P60	OFF	Read
7	HBT100	1920 × 1080P60	1920 × 1080P60	OFF	Read
8	HBT100	1920 × 1080P60	1920 × 1080P60	OFF	Read
9	HBT150	1920 × 1080P60	1920 × 1080P60	OFF	Read
10	HBT150	1920 × 1080P60	1920 × 1080P60	OFF	Read
11	HBT150	1920 × 1080P60	1920 × 1080P60	OFF	Read

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

6.2.2.1. Configuration and settings of input cards

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

Input Audio

Audio Bypass

Audio Bypass

Audio Embedding

Audio Bypass

EDID

1080P_PCM...

1080P_PCM_20

1080P_PCM_51

1080P_PCM_71

1080I_PCM_20

1080I_PCM_51

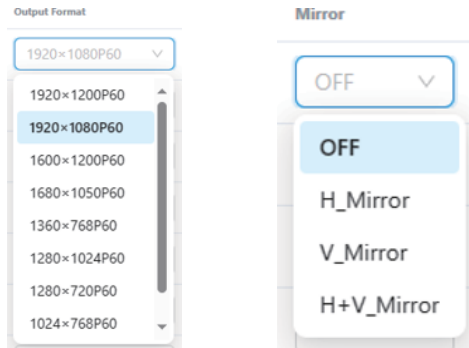
1080I_PCM_71

4K2K30_444_PCM_20

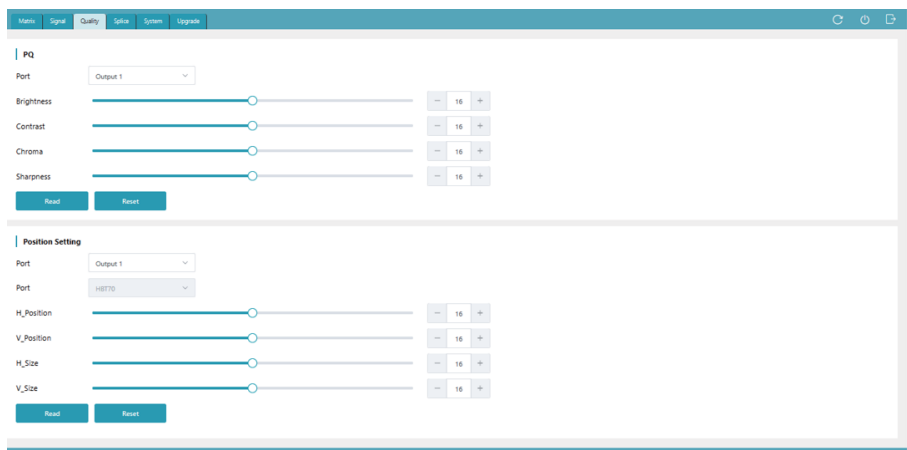
4K2K30_444_PCM_51

6.2.2.2. Configuration and settings of output cards

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



6.2.3. Picture Quality Setting Page



6.2.3.1. Picture Quality Setting

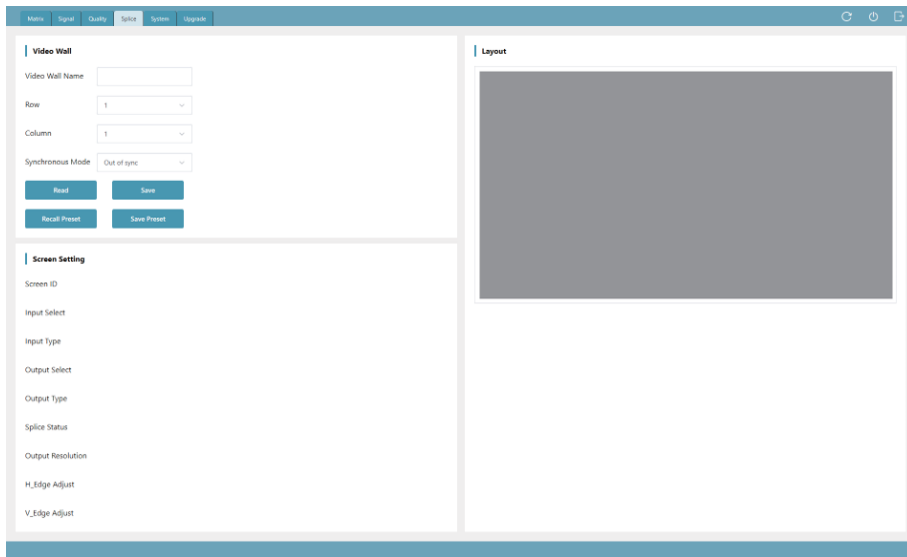
Click the drop-down list to select the output port, set the brightness, contrast, chroma and sharpness, then click “Read” to take effect. Finally, click the refresh icon to refresh the data.

6.2.3.2. Picture Position Setting

Click the drop-down list to select the output port and port type, set the H_Position, V_Position, H_Size and V_Size, then click “Read” to take effect. Finally, click the refresh icon to refresh the data.

 **Note:** Only output ports support picture quality setting and position setting, with a range of 0-32. If you click “Reset”, all values will be reset to 16.

6.2.4. Video Wall Setting Page

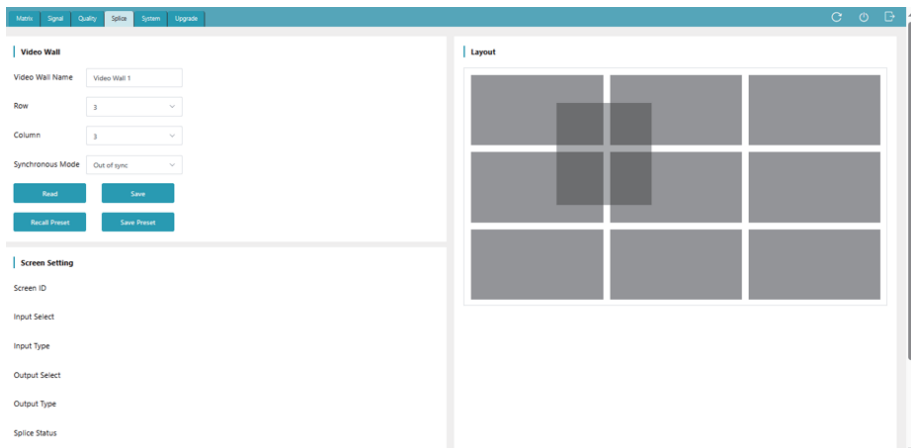


6.2.4.1. Video Wall Creation

Follow the steps below to create a video wall.

- Step1.** Input the video wall name (The maximum length is 32 English characters or 16 Chinese characters).
- Step2.** Set the number of rows and columns of the video wall (ranging from 1 to 36).
After the creation, parts with more than 36 screens will not be displayed.
- Step3.** Click the drop-down list of “Synchronous Mode” to set the synchronous mode.
- Step4.** Click the “Save” button, then the layout interface on the right side will display the corresponding windows.
- Step5.** Set the splicing. Hold down the left mouse button and drag to select the desired screens. The selected area is displayed as a gray curtain, and the screens covered by the gray curtain will be added to the current group, as shown in the following figure.

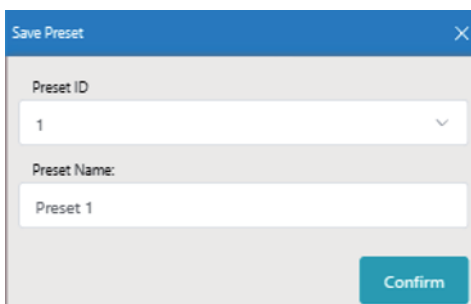
 **Note:** If the screen covered by the grey curtain is already occupied by other groups at this time, there will be no response.



Step6. After releasing the mouse, the selected screens will turn blue. Then click the right mouse button and select “Screen Splicing” from the settings menu to complete the splicing.

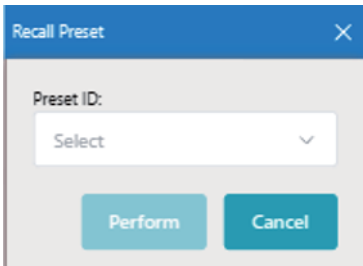
6.2.4.2. Save Video Wall Preset

Click the “Save Preset” button, and the following window will pop up. Select a preset ID, set a preset name or use the default name, then click “Confirm” to save the preset.



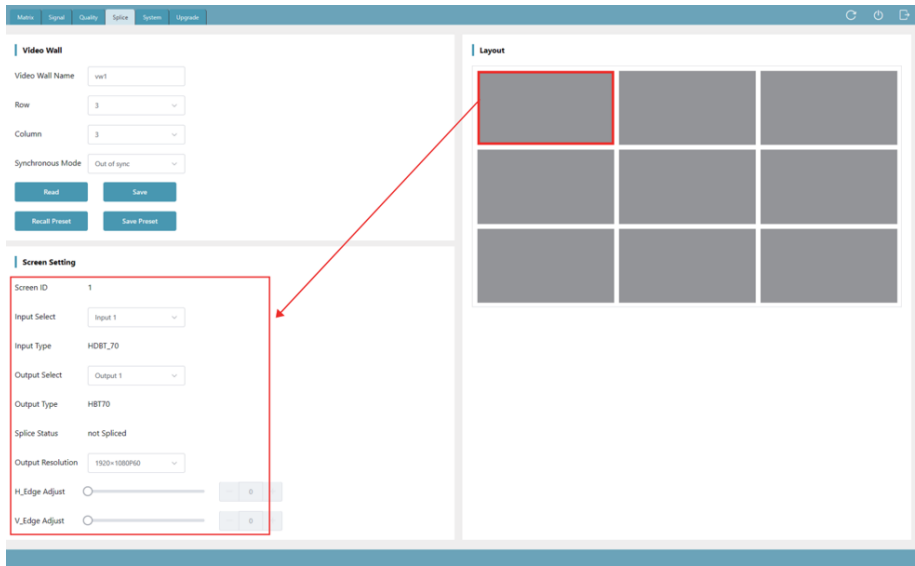
6.2.4.3. Recall Video Wall Preset

Click the “Recall Preset” button, and the following window will pop up. Select a preset ID, then click “Perform” to recall the preset.



6.2.4.4. Video Wall Screen Setting

You can click any screen to view the screen’s configuration information, or configure the corresponding input, output and other parameters, as shown in the figure below.



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

6.2.5. System Setting Page

Main
Signal
Quality
Splice
System
Upgrade

System

IP Mode

Static
DHCP

IP Address

192.168.0.100

Subnet Mask

255.255.0.0

Gateway

192.168.0.1

TCP port

8000

Telnet port

23

Baudrate

115200

Save

User Management

Password

New Password

Confirm Password

Save

System

Reboot
Factory Reset

Status

DHCP

ON

IP Address

192.168.0.100

Subnet Mask

255.255.0.0

Gateway

192.168.0.1

TCP port

8000

MAC

6c0ff8b040252

Serial port forwarding

Screen Setting

6.2.5.1. Modify Network Setting

If the IP Mode is set to “Static”, you can modify the IP Address, Subnet Mask, Gateway, TCP Port, Telnet Port and Baudrate as required, and click “Save” to take effect. Then the system will switch to the corresponding IP Address automatically.

If the IP Mode is set to “DHCP”, it will automatically search and switch to the IP Address assigned by the router.

6.2.5.2. 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” to pop up a window as shown below. Click “Confirm” to take effect, then the system will switch to the login interface automatically, and you need to log in with the new password.

Tips

!

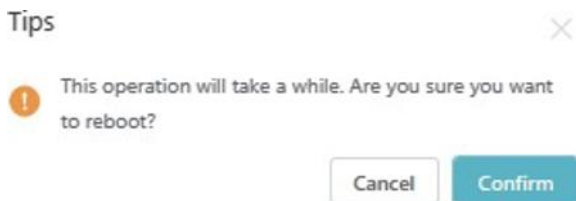
After changing New Password, you have to login again. Are you sure to set New Password?

Cancel

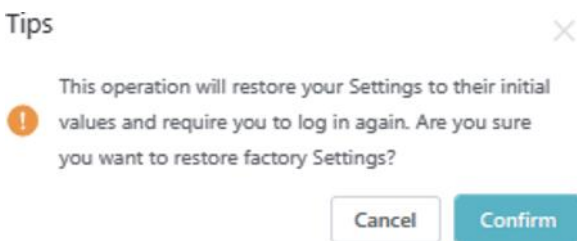
Confirm

6.2.5.3. System Operation

You can click “Reboot” to pop up the window below, then click “Confirm” to reboot the system. After reboot, the system will automatically switch to the login page.



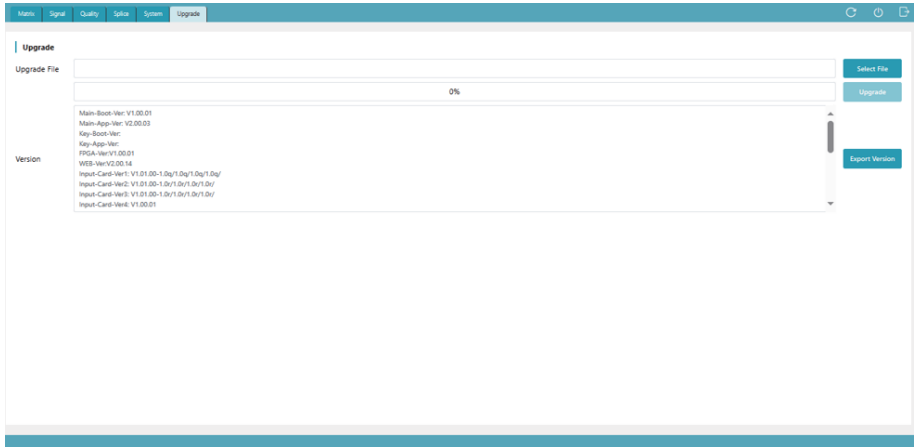
You can click “Factory Reset” to pop up the window below, then click “Confirm” to reset the device to factory defaults. After reset, the system will automatically switch to the login page.



6.2.5.4. Serial Port Pass-through

The system setting with the main control card supports serial port pass-through function. Click “Screen Setting” to enter the Screen Setting page, in which you can add the command (ASCII/HEX) for the manufacture and select the baud rate, then click “Send” to send commands through the external serial port.

6.2.6. System Upgrade Page

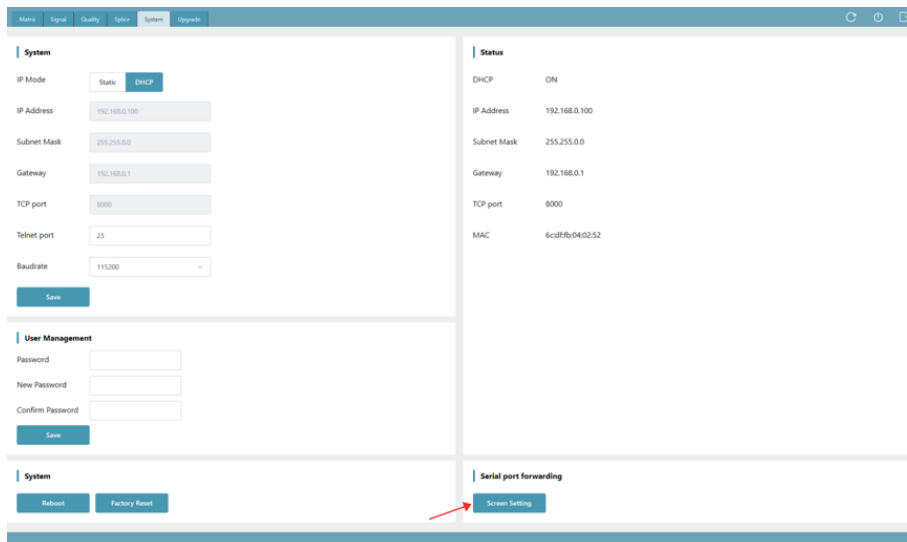


Click “Select File” to select the upgrade file, then click “Upgrade” to start the system upgrade. After the progress bar reaches 100%, the upgrade is successful, and the device will reboot automatically.

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

6.2.7. Screen Setting Page

The system setting with the main control card supports serial port pass-through function, as shown in the figure below.



The screenshot shows a web interface for system configuration. The top navigation bar includes tabs for Main, Signal, Quality, IP, System, and Upgrade. The 'System' tab is selected. The left sidebar contains three sections: 'System' with input fields for IP Mode (Static/DHCP), IP Address (192.168.0.100), Subnet Mask (255.255.0.0), Gateway (192.168.0.1), TCP port (8000), Telnet port (23), and Baudrate (115200), along with a 'Save' button; 'User Management' with fields for Password, New Password, and Confirm Password, and a 'Save' button; and a 'System' section with 'Reboot' and 'Factory Reset' buttons. The right sidebar has a 'Status' section displaying DHCP (ON), IP Address (192.168.0.100), Subnet Mask (255.255.0.0), Gateway (192.168.0.1), TCP port (8000), and MAC (6cdfbf040252). Below this is a 'Serial port forwarding' section with a 'Screen Setting' button, which is highlighted by a red arrow.

Click “Screen Setting” to enter the Screen Setting page, as shown in the figure below. You can add the command (ASCII/HEX) for the manufacture and select the baud rate, then click “Send” to send commands through the external serial port.

Screen Setting

Baud Rate: 9600

Set Baud Rate

Add Manufacturer:

Confirm

* Click the list to display the manufacturer's commands, and right-click to delete the manufacturer and commands

Manufacturer ID	Manufacturer Name
No Data	

Current Manufacturer

Screen Poweron Command

Screen Poweroff Command

The command data is hexadecimal

Add this Manufacturer's command

Add Command

Command Data

The command data is hexadecimal

Add Command

* Double click the list to send a custom command, and right-click to delete a custom command

Send Command

Command ID	Manufacturer ID	Command Type	Command Name	Command Data
No Data				

6.2.7.1. Add Manufacturer

Input the name in the input box of “Add Manufacturer”, select the Baud Rate that needs to be sent by the manufacturer, then click “Conform” to complete adding.

Notes:

1. The manufacturer cannot be added repeatedly.
2. Any character with a length of 16 is supported.

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6.2.7.2. Add Manufacturer Power On/ Off Command

Follow the steps below to add manufacturer power on/off command.

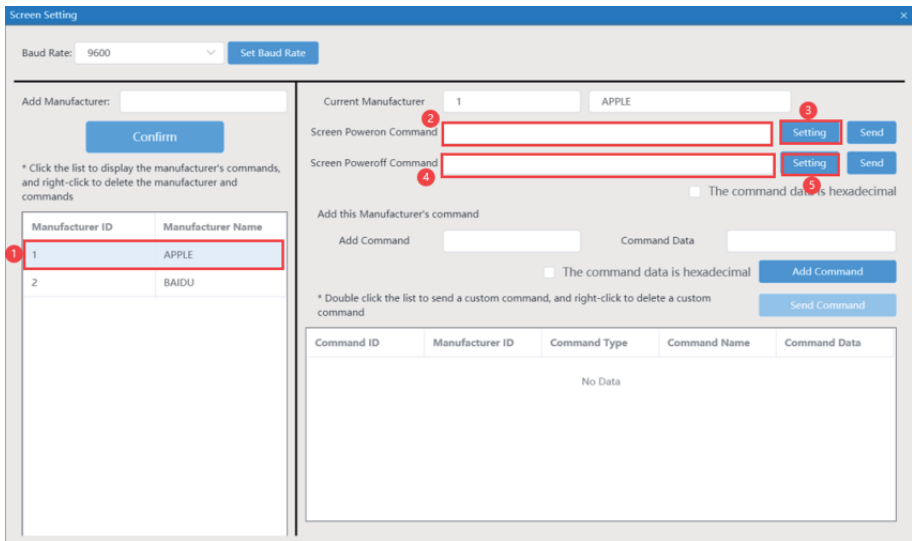
Step1. Select the manufacturer from the manufacturer list on the left.

Step2. Input the power on command.

Step3. Click the corresponding “Setting” button to complete the setting.

Step4. Input the power off command.

Step5. Click the corresponding “Setting” button to complete the setting.



The screenshot shows the 'Screen Setting' window. On the left, there is a list of manufacturers with 'APPLE' selected (Step 1). A 'Confirm' button is below the list. On the right, the 'Current Manufacturer' is set to 'APPLE' (Step 2). Below this, there are two input fields for 'Screen Poweron Command' (Step 3) and 'Screen Poweroff Command' (Step 4). Each input field has a 'Setting' button (Step 5) and a 'Send' button. There are checkboxes for 'The command data is hexadecimal'. At the bottom, there is a table for 'Add this Manufacturer's command' with columns for 'Command ID', 'Manufacturer ID', 'Command Type', 'Command Name', and 'Command Data'. The table currently shows 'No Data'.

Note: If the option “The command data is hexadecimal” is checked, the command should be input in hexadecimal format, for example: f1 11 ff.

6.2.7.3. Add Manufacturer Other Commands

Input the name in the input box of “Add Command”, input the command data in the input box of “Command Data”, then click “Add Command” button to complete adding, as shown in the figure below.

Screen Setting

Baud Rate: 9600

Set Baud Rate

Add Manufacturer:

Confirm

* Click the list to display the manufacturer's commands, and right-click to delete the manufacturer and commands.

Manufacturer ID	Manufacturer Name
1	APPLE
2	BAIDU

Current Manufacturer

1APPLE

Screen Poweron Command

FF FF

SettingSend

Screen Poweroff Command

FF 00

SettingSend

☐ The command data is hexadecimal

Add this Manufacturer's command

Add Command

Command Data

☐ The command data is hexadecimal

Add Command

* Double click the list to send a custom command, and right-click to delete a custom command

Command ID	Manufacturer ID	Command Type	Command Name	Command Data
No Data				

6.2.7.4. Send Manufacturer Power On/Off Command

There are two methods to send manufacturer power on/off command.

Method 1: Select the manufacturer from the manufacturer list on the left, and input the customized power on/off command in the “Screen Poweron Command” / “Screen Poweroff Command”, then click “Send” to send the command, as shown in the following figure.

Screen Setting

Baud Rate: 9600

Set Baud Rate

Add Manufacturer:

Confirm

* Click the list to display the manufacturer's commands, and right-click to delete the manufacturer and commands

Manufacturer ID	Manufacturer Name
1	APPLE
2	BAIDU

Current Manufacturer: 1

APPLE

Screen Poweron Command

FF FF

Setting

Send

Screen Poweroff Command

FF 00

Setting

Send

☒ The command data is hexadecimal

Add this Manufacturer's command

Add Command

Command Data

☒ The command data is hexadecimal

Add Command

* Double click the list to send a custom command, and right-click to delete a custom command

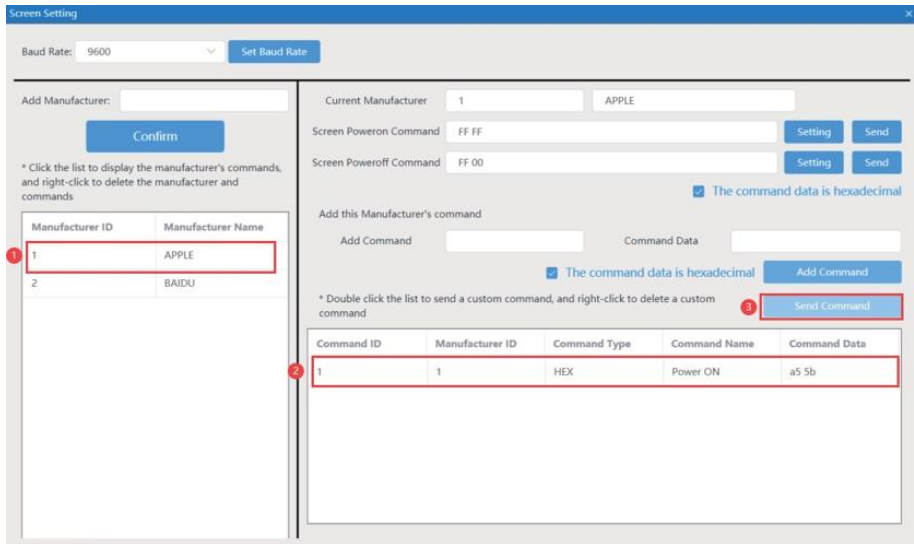
Send Command

Command ID	Manufacturer ID	Command Type	Command Name	Command Data
1	1	HEX	Power ON	a5 5b

Method 2: Click “Screen Poweron / Screen Poweroff” on the Main Function interface to send the manufacturer power on/off command that is set for the last time.

6.2.7.5. Send Manufacturer Other Commands

Select the manufacturer from the manufacturer list on the left, and click the command in the command list, then click “Send Command” button to send the command, or directly double-click the command in the command list to complete send, as shown in the figure below.



The screenshot shows the 'Screen Setting' window. On the left, there is a 'Manufacturer List' table with two entries: '1' (APPLE) and '2' (BAIDU). The first entry is highlighted with a red box and a red circle labeled '1'. Below this list is a 'Confirm' button. On the right, the 'Current Manufacturer' is set to '1' (APPLE). Below this, there are fields for 'Screen Poweron Command' (FF FF) and 'Screen Poweroff Command' (FF 00), each with 'Setting' and 'Send' buttons. A checkbox 'The command data is hexadecimal' is checked. Below these fields is a section 'Add this Manufacturer's command' with 'Add Command' and 'Send Command' buttons. The 'Send Command' button is highlighted with a red box and a red circle labeled '1'. At the bottom, there is a 'Command List' table with one entry: '1' (Power ON) with a red box and a red circle labeled '2'.

Baud Rate: 9600 Set Baud Rate

Add Manufacturer: Confirm

* Click the list to display the manufacturer's commands, and right-click to delete the manufacturer and commands

Manufacturer ID	Manufacturer Name
1	APPLE
2	BAIDU

Current Manufacturer: 1 APPLE

Screen Poweron Command: FF FF Setting Send

Screen Poweroff Command: FF 00 Setting Send

☒ The command data is hexadecimal

Add this Manufacturer's command

Add Command Command Data

☒ The command data is hexadecimal Add Command

* Double click the list to send a custom command, and right-click to delete a custom command

Send Command

Command ID	Manufacturer ID	Command Type	Command Name	Command Data
1	1	HEX	Power ON	a5 5b

7. API Control Command (take the X4-1616A 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.

ASCII Command
Serial port protocol. Baud rate: 115200 (default), Data bits: 8bit, Stop bits: 1, Check bit: 0 TCP/IP protocol port: 8000 Telnet port:23
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

7.1. Power Setting

Command Code	Function Description	Example	Feedback	Default Setting
s power z!	Power on/off the device,z=0~1 (z=0 power off, z=1 power on)	s power 1!	power on System Initializing... Initialization Finished! FW version x.xx.xx	power on
r power!	Get current power state	r power!	power on/power off	
s reboot!	Reboot the device	s reboot!	reboot... System Initializing... Initialization Finished! FW version x.xx.xx	

7.2. System Setup

Command Code	Function Description	Example	Feedback	Default Setting
help!	List all commands	help!		
r type!	Get device model	r type!	hdp-mx91616m	
r status!	Get device current status	r status!	Get the unit all status: power, beep, lock, in/ out connection, video/ audio crosspoint, edid, scaler, network status	
r fw version!	Get Firmware version	r fw version!	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	
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 hdcv:0 input timing:	

Command Code	Function Description	Example	Feedback	Default Setting
			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 output x info!	Get the information of the x output port, x=0~16(0=all)	r output 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 hdp:0 mute:1 mirror:0 inputTiming: hPixel:1920 vPixel:1080 rate:60 scan:1 tmds:148	

Command Code	Function Description	Example	Feedback	Default Setting
			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	
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 remains on 60s HDMI output card: 1. Output port name: Output1-16 2. u8Resolution: 1920x1080P6 0 3. MODE: HDMI 4. HDCP: ON <If supported> 5. Splicing: No splicing 6. Position :H:

Command Code	Function Description	Example	Feedback	Default Setting
				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	
r preset z!	Get preset z information, z=1~16	r preset 2!	preset 2 data: beep:1	

Command Code	Function Description	Example	Feedback	Default Setting
			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	

Command Code	Function Description	Example	Feedback	Default Setting
			the input of screen: 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 x!	Set the baud rate of the external serial port, z= (1:115200, 2:57600, 3:38400, 4:19200, 5:9600, 6:4800)	s baud rate 1!	Baudrate: 115200	115200
r baud rate!	Get the serial port baud rate of RS02 module	r baud rate!	Baudrate: 115200	
r activation!	Get the authorization status of the system	r activation!	activated permanently	activated permanently

7.3. Input and Output Setting

Command Code	Function Description	Example	Feedback	Default 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	
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	

Command Code	Function Description	Example	Feedback	Default Setting
			output 15 stream:off output 16 stream:off	
s ptp!	set to ptp mode	s ptp!	ptp	ptp
s out x hdcv y!	set output port HDCP mode, x:0~16 y:0~2 0:off 1:1.4 2:2.2	s out 1 hdcv 0!	set output 1 hdcv 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	
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	

Command Code	Function Description	Example	Feedback	Default Setting
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 ld: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, $1 < (x*y) \leq 16$	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, $1 \leq x \leq 16$ y:1~16	s screen 1 source 1!	set screen 1 source: input 1	
s screen x	Set output y to screen x	s screen 1	set screen 1 output:	

Command Code	Function Description	Example	Feedback	Default Setting
output y!	x: the screen of video wall, 1 <= x && x <= row*col y:1~16	output 1!	1	
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	

7.4. EDID Setting

Command Code	Function Description	Example	Feedback	Default Setting
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	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
	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			
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	
edid userx yy!	set user edid x:1~2 yy:edid data	s edid user 1 00ffffffffffff...!	user1 edid setting ok!	
r edid userx!	get user defined edid	r edid user 1!	user1 edid data:	

Command Code	Function Description	Example	Feedback	Default Setting
			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 00	

7.5. Network Setting

Command Code	Function Description	Example	Feedback	Default 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	

Command Code	Function Description	Example	Feedback	Default Setting
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	
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	

8. Specification

8.1. Main Unit

	X4-1616A	X4-3636A
Connections		
Input Ports	(4) Input card	(9) Input card
Output Ports	(4) Output card	(9) Output card
Control Ports	(1) Master control card, including the following ports : (1) RS-232 IN [3-pin Phoenix Connector] (1) RS-232 OUT [3-pin Phoenix Connector] (1) LAN [RJ45] (1) RESET [Reset button for the central control system]	
AV General		
HDMI Compliance	HDMI 2.0b	
HDCP Compliance	HDCP2.2	
Video Bandwidth	600MHz/ 18Gbps	
Video Resolution	3840x2160p60Hz 4:4:4	
Color Depth	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/100 meters, 4K60/ 70 meters	
Control parts		
Serial Control Port	RS232, 3-pin Phoenix Connector	
Front Panel Control	Buttons	
IR Control	IR Remote (included)	
TCP/IP Control	via TCP/IP, Web GUI or PC program	
Power		
Power Port	(2) IEC C14	
Power Supply	100VAC ~ 240VAC, 50/60Hz	
Power Consumption	80W~320W	200W~840W
	(Match with different input/output cards)	
Power Switch	To turn on/off the system	
ESD Protection	Human body model — ± 8KV (Air-gap discharge) & ± 4KV (Contact discharge)	

Environmental		
Operation 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)	
Physical		
Installation	Rack Mountable	
Housing	Metal Enclosure	
Color	Black	
Dimension (W*H*D)	483mm x 133mm x 379mm (3U high)	483mm x 266mm x 379mm (6U high)
Net Weight	8.62 kg	15.4 kg
	(No input/output cards are included)	

8.2. Changeable Signal Cards

8.2.1. HDMI Signal Cards

8.2.1.1. X4-4I-UH: 4K HDMI Input Card

HDMI input card, seamless, up to 4K60Hz

General	
Signal Channel	4-channel HDMI & Audio input signals
Inputs	(4) HDMI, (4) Audio
Input Connectors	(4) HDMI female (Type A), (4) 3-pin pluggable terminal block (3.81mm Phoenix Connector)
Video & Audio	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18 Gbps
Color Depth	8, 10, 12 bit
Resolution	Up to 4Kx2K including: 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)
Audio	Support external audio source input (LPCM 2.0CH)

8.2.1.2. X4-4O-UH: 4K HDMI Output Card

HDMI output card, seamless, up to 4K60Hz

General	
Signal Channel	4-channel HDMI & Audio output signals
Outputs	(4) HDMI, (4) Audio
Output Connectors	(4) HDMI female (Type A), (4) 3-pin pluggable terminal block (3.81mm Phoenix Connector)
Video & Audio	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18 Gbps
Color Depth	8, 10, 12 bit
Resolution	Up to 4Kx2K including: 720x576i50, 720x480i60, 1024x768p60, 1280x720p50, 1280x720p60, 1280x800p60, 1360x768p60, 1920x1200p60, 1920X1080i50, 1920X1080i60, 1920X1080P50, 1920x1080p60, 3840x2160p30, 3840x2160p50, 3840x2160p60, 4096x2160p50(2160p50), 4096x2160p60(2160p60)
Audio	Support external audio source input (LPCM 2.0CH)

8.2.2. HDBaseT Signal Cards

8.2.2.1. X4-4I-BT-100: 4K HDBaseT Input Card

HDBaseT input card, seamless switching, up to 4K at 60Hz, 100m range

General	
Signal Channel	4-channel HDBT, Audio & RS232 input signals
Inputs	(4) HDBT, (4) Audio, (4) RS232
Input Connectors	(4) Female RJ45 (with dual-color indicator), (4) 3-pin pluggable terminal block (3.81mm Phoenix Connector) (4) 3-pin pluggable terminal block (3.81mm Phoenix Connector)
Video & Audio	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18 Gbps
Color Depth	8, 10, 12 bit
Resolution	Up to 4Kx2K including: 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)
Audio	Support external audio source input (LPCM 2.0CH)
Transmission Distance	1080p60≤100m, 4K30Hz/4K60Hz≤70m

8.2.2.2. X4-40-BT-100: 4K HDBaseT Ouput Card

HDBaseT output card, seamless switching, up to 4K at 60Hz, 100m range

General	
Signal Channel	4-channel HDBT, Audio & RS232 output signals
Inputs	(4) HDBT, (4) Audio, (4) RS232
Input Connectors	(4) Female RJ45 (with dual-color indicator), (4) 3-pin pluggable terminal block (3.81mm Phoenix Connector) (4) 3-pin pluggable terminal block (3.81mm Phoenix Connector)
Video & Audio	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18 Gbps
Color Depth	8, 10, 12 bit
Resolution	Up to 4Kx2K including: 720x576i50, 720x480i60, 1024x768p60, 1280x720p50, 1280x720p60, 1280x800p60, 1360x768p60, 1920x1200p60, 1920X1080i50, 1920X1080i60, 1920X1080P50, 1920x1080p60, 3840x2160p30, 3840x2160p50, 3840x2160p60, 4096x2160p50(2160p50), 4096x2160p60(2160p60)
Audio	Support external audio source input (LPCM 2.0CH)
Transmission Distance	1080p60≤100m, 4K30Hz/4K60Hz≤70m

9. Troubleshooting & Maintenance

Problems	Potential Causes	Solutions
Output image with ghost	Bad quality of the connecting cable	Try another high quality cable
	Improprate image setting of the displayer	Adjust corresponding image settings
Output image with color loss or no video signal output	Fail connection	Reconnect the displayer and the matrix
No output image when switching	No signal at the input / output end	Check with oscilloscope or multimeter if there is any signal at the input/ output end.
	Fail or loose connection	Make sure the connection is good
	The switcher is broken	Contact an authorized/ your dealer for repairing.
IR remote does not work	Run out of battery	Change for another battery
	IR remote is broken	Contact an authorized/ your dealer for repairing.
POWER indicator doesn't work or no respond to any operation	Fail connection of power cord.	Make sure the power cord connection is good.
EDID management does not work normally	The HDMI cable is broken at the output end.	Change for another HDMI cable which is in good working condition.
There is a blank screen on the display when switching	The display does not support the resolution of the video source.	Switch again.
		Manage the EDID data manually to make the resolution of the video source automatically compliant with the output resolution.
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.

Cannot control the device by control device (e.g. a PC) through RS232 port	Wrong RS232 communication parameters	Type in correct RS232 communication parameters.
	Broken RS232 port	Contact an authorized/ your dealer for checking.
Cannot control the device by front panel buttons while can control it through RS232 port	The front panel buttons are locked	Send command s lock 0! to unlock the front panel buttons.

If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support (info@ute.de).

10. After-sales/ Customer Service

If there are some problems when running the 4k60 Modular Seamless Matrix Switcher, please check and deal with the problems referring to this user manual. Any transport costs are borne by the users during the warranty.

The return of a product to our Customer Service implies the full agreement of the terms and conditions hereinafter. These terms and conditions may be changed without prior notice.

- 1) Product Limited Warranty:** We warrants that its products will be free from defects in materials and workmanship for two years, which starts from the first day you buy this product (The purchase invoice shall prevail).

Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service.

2) Scope

These terms and conditions of Customer Service apply to the customer service provided for the products or any other items sold by authorized distributor only.

3) What the warranty does not cover (Warranty Exclusion)

- Warranty expiration.
- Factory applied serial number has been altered or removed from the product.
- Damage, deterioration or malfunction caused by:
 - Normal wear and tear.
 - Use of supplies or parts not meeting our specifications.
 - No certificate or invoice as the proof of warranty.
 - The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
 - Damage caused by force majeure.
 - Servicing not authorized by distributor.
 - Any other causes which does not relate to a product defect.
- Shipping fees, installation or labor charges for installation or setup of the product.

4) Documentation

Customer Service will accept defective product(s) in the scope of warranty coverage at the sole condition that the defeat has been clearly defined, and upon reception of the documents or copy of invoice, indicating the date of purchase, the type of product, the serial number, and the name of dealer.

5) Technical Support: Email to our after-sales department or make a call, please inform us the following information about your cases.

- Product version and name.
- Detailed failure situations.
- The formation of the cases.

Remarks: For any questions or problems, please try to get help from your local dealer or our customer support (info@ute.de).



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