4K HDMI® intelligent matrix switch

4K HDMI® intelligent matrix switch packing list

The complete HDMI® intelligent matrix switch is composed of the following components:

1. One matrix switcher
2. One power cable
3. One power adapter
4. One RS 232 serial cable
5. One infrared remote control

We are very honored you buy our products. Before using this product, please read this manual carefully to get the best performance. I hope this instructions will bring you convenience when you use it. If you have any questions, please contact us or your dealer in time.
Before use, check that our products are not damaged during transportation. Please be careful when using and installation to prevent damage to the matrix switch.

Safe Operation Guide

Before powering on the device, you need to check to ensure that the chassis is well grounded to prevent electrostatic discharge from the chassis and endangering the device and the device.
Personal safety and good shielding effect. Please comply with the following matters during installation, use and maintenance:

Please note that the chassis is well grounded

1. When moving the equipment or doing other work that requires power off, turn off all power sources, including the power switch, unplug the power plug, etc., to ensure the safety of you and the equipment.
   Note: In rainy and humid weather or when not in use for a long time, the main power switch should be turned off.
2. Do not place objects on power cables, signal cables, communication cables and other cables. Avoid stepping on or squeezing the cables to prevent dangers such as leakage or short circuit.
3. When plugging or unplugging the signal cable from the device, the device needs to be powered off to avoid damage to the device. Damage caused by hot plugging and unplugging is not covered by the warranty .
4. Equipment should be installed or placed reasonably. The power supply of the equipment will generate heat during operation, so the working environment must be well ventilated to avoid damage to the equipment due to excessive temperature. If installed into a standard rack, chassis, cabinet, or placed on a work surface with a stable platform, the device needs to be prevented from falling.
5. The equipment working environment must be dust-proof and moisture-proof, and do not place the system equipment in a place that is too cold or too hot.
6. Be careful to avoid liquid immersion and splashing into the equipment, especially chemicals or liquids from being spilled on or near the equipment.
7. All maintenance work should be completed by professional maintenance personnel. Do not attempt to repair the equipment yourself without training to avoid the risk of electric shock, accidents or increased equipment damage.

Directory

1. Product overview

This device is the latest ultra -high -definition seamless curing stitching matrix. The design method of 4 in 4 out to increase the audio analysis, transmission, distribution, splicing, splitting, rotation function, and use keys. The design concept of software, equipped with signal resolution adjustment, supports seamless and fast switching functions, strong cost performance, which reflects its value. This matrix adopts electromagnetic protection design, which can effectively shield the electromagnetic interference from the surrounding environment, so that the device can run stably.

The 4K HDMI® intelligent matrix is a high -performance professional switching device with high -performance embedded intelligent control. It is used to synchronize or switch the audio and video input signal or asynchronous to any output channel for audio and video. Using unique processing methods, the equipment switching speed is greatly improved. The control method is flexible, with long -life button panel operations, large screen lighting matrix LCD screen shows various information, with network and RS232 communication interface control, which can be used to use various remote control devices such as personal computers and central control systems.

The 4K HDMI® intelligent matrix is mainly used in radio and television engineering, multimedia conference hall, large screen display engineering, television teaching, command control centers and other places.

2. Product Features

1. Seamless instant switching, there is no black screen, blue screen, and broken screen in the switching process, and there is no slow excessive animation;
2. Support maximum resolution: 4KX2K@30Hz, 1080P@60Hz;
3. Collection allocation, switching, stitching, segmentation, rotation, mirror function integration, powerful product function;
4. There is no CPU and operating system for the full hardware architecture, and the operation response is faster;
5. Support screen splicing function, compatible with cross -screen and vertical screen multiple stitching modes (1x1, 1x2, 2x1, 2x2, 1x3, 3X1, 1x4, 4X1);
6. Product support up to 23 differential modes to meet different customers and different scenarios;
7. Support the output screen 0 °, 90 °, 180 °, 270 ° rotation, the screen is not afraid;
8. Mirror output mode, make the picture processing more convenient and more in line with the mind;
9. Support to embed the external analog audio into the HDMI signal stream to achieve audio embedded;
10. Support audio separation, with the AUDIO output port, which can be connected to the power amplifier to achieve the original HDMI® signal output audio embedded and audio separation;

11. The analysis, distribution, and switching of three -dimensional sound audio supporting various video signals;
12. Have 6 control methods: visual panel buttons, RS-232, infrared remote control, LAN, WEB and Android APP control, diversified control methods, providing users with more and more convenient operations;
13. Visual operation buttons, the input and output channel status can be visualized through the key indicator;
14. Support Harmonyos, Linux, Windows, Apple iOS and other browser web webpage control;
15. Each signal supports HDCP decoding, blue light, 3D;
16. There is an ESD static design inside the product, which supports hot insertion, and the system is stable and reliable;
17. Support EDID to write EDID adaptive functions, better adapt to the diverse display equipment on the spot, and improve compatibility;
18. The software supports the built -in 16 scene modes, and each channel has its own name. When saving, you can name each scene for subsequent recognition of the setting of the video wall scene;
19. Support fast switching of the channel, the rapid preservation and retraction of the scene mode;
20. Support the automatic storage and protection of electricity off -powering scenarios, and automatically restore the memory function;
21. 3D image multiplier repair, near pixel recurring processing, and 3D removal processing function for image repair function;
22. Support reduction frequency processing, near pixel repair processing and fuzzy processing to achieve image reduction processing function;
23. Long -term driver capacity: Enter the automatic equilibrium to effectively reduce the certainty jitter caused by line transmission;
24. Output adjustable gain mode, so that the receiving terminal can still receive signals after long -term transmission. Using high -quality HDMI1.4 cables, the input transmission distance can reach 20 meters, and the output transmission distance can reach 25 meters;
25. Support over pressure, overcurrent, overheating, and overload protection, reducing the probability of damage to equipment.
26. The host display uses an English high -resolution display, which supports logo and model burning customization.

HDMI®
HIGH-DEFINITION MULTIMEDIA INTERFACE

3. Technical parameters

Name	4K HDMI® intelligent matrix switch
Model	4 IN 4 OUT
Display method	Copy, cross, splicing, segmentation, rotation
Switch speed	Seamless second cutting ⩽5ns (±1ns)
Input interface	HDMI® *4 + 3.5MM*4
Output Interface	HDMI® *4 + 3.5MM*4
HDMI® compatible	HDMI® 1.4 (Downward compatibility)
Control method	Visual buttons, RS232, LAN,Infrared remote control, WEB, Android APP, third party (central control)
Controlling software	Professional control software
RS-232	Potter rate: 115200, data bit: 8, stop bit: 1, no strange puppet verification
Video format	4K*2K@30Hz
Color space	RGB,YCbCr4:4:4/4:2:2
Audio embedding	3.5MM*4
Audio unembedded	3.5MM*4
Power supply	DC 12V 2A
Power consumption	⩽6W
Electrostatic	Human model: ± 8KV (air discharge), ± 4KV
Protection	(contact discharge)
Height	1U
shell material	Metal

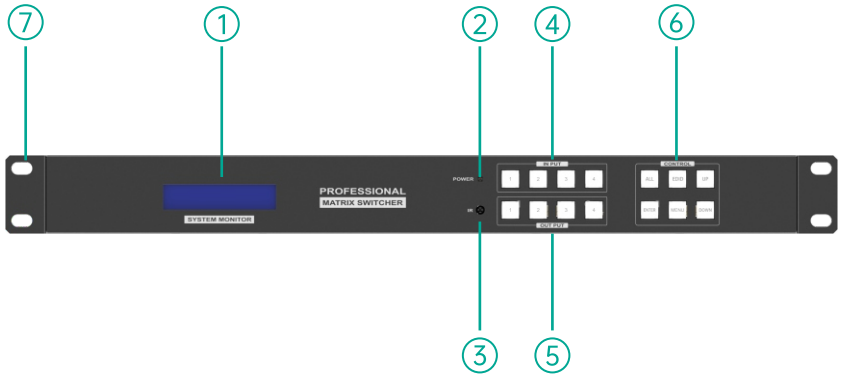
4.1 4 IN 4 OUT interface display

Front panel interface display

Rear panel interface display

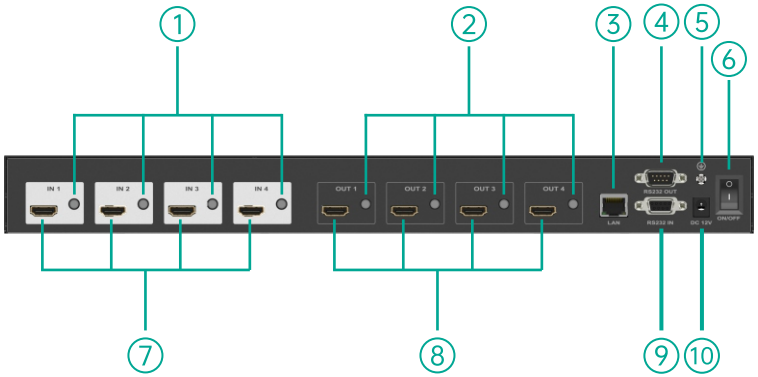
4.2 Interface description

Front panel interface description



Serial number	name	illustrate
①	LCD	Show the device current operation command
②	POWER	Power indicator light (green light for normal operation, red light for standby)
③	IR	Infrared indicator (command to receive infrared remote control)
④	IN PUT (1~4) keys	Input channel switch button
⑤	OUT PUT (1~4) keys	Output channel switch button
⑥	ALL key	Select all button
⑥	EDID key	EDID learning button
⑥	UP key	Up key
⑥	ENTER key	ENTER
⑥	MENU key	MENU
⑥	DOWN key	DOWN key
⑦	Front panel bezel	Used for fixed use on the rack

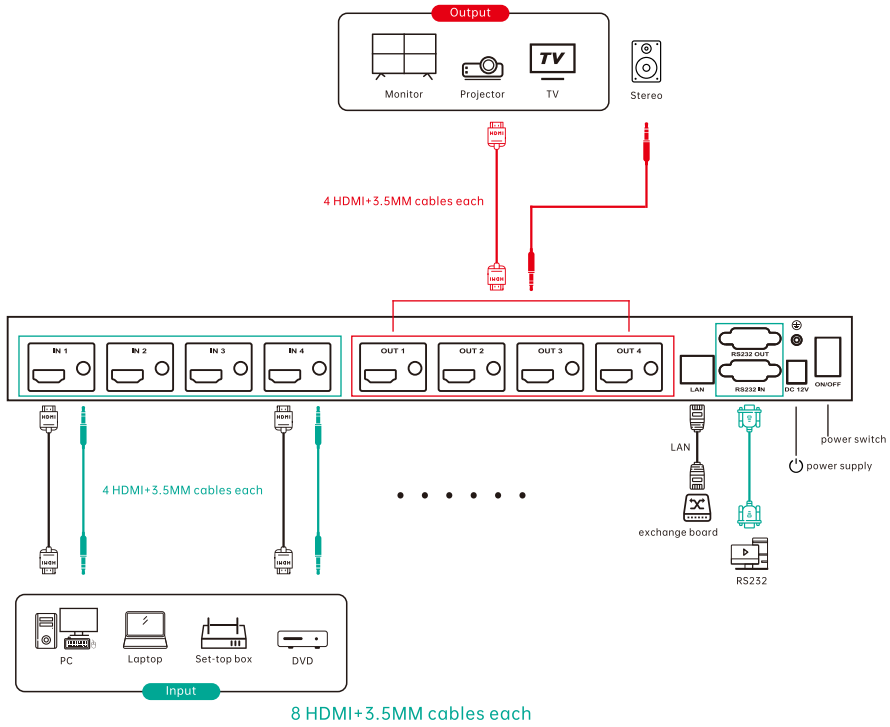
Rear panel interface description



Serial number	name	illustrate
①	AUDIO (IN1~IN4)	3.5MM audio input port
②	AUDIO (OUT1~OUT4)	3.5MM audio output port
③	LAN	network control interface
④	RS232 OUT	RS232 control interface (connect other RS232 interface devices in series)
⑤	Ground wire	Ground wire grounding mark
⑥	Switch	Power switch (control matrix switch)
⑦	HDMI® (IN1~IN4)	HDMI® signal input interface
⑧	HDMI® (OUT1~OUT4)	HDMI® signal output interface
⑨	RS232 IN	RS232 control interface (connected to computer control matrix)
⑩	DC 12V	Power interface (powering the matrix)

5. Product Connection Diagram

Product Connection Diagram



6. Operation and Explanation

6.1 Matrix Panel Description

6.1 Matrix panel description

6 .1 .1 Numeric keys

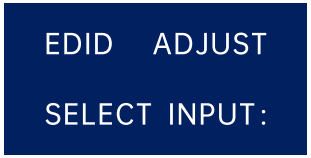
1. Input and output channel selection keys are used to set the input and output channels of audio and video signals or for current matrix status query, EDID selection, etc.

6.1.2 Function keys

1. "ALL" means selecting all input or output ports (different representations in different states) to switch selections and execute all switching commands.
2. "EDID" Press the EDID key, and the key panel will automatically prompt the input sources that can be learned. You can select a certain channel or all input sources to read. There are many internal EDID formats (4K30_DTS , 4K30_AC3, 4K30_5.1 , 4K30PStereo , HD8Suport4K, HD12DolbyDTS, HD12Stereo3D, HD8Lossless, HD8DolbyDTS, HD8Stereo, OUT1~OUT8, USER1~USER5). Do not unplug and plug HDMI cables, it will be read automatically. EDID.Example of operation

Operation example

①. Press the "EDID" button and the following operation interface will appear;



②. If you want to set the EDID data of a certain input port, select input buttons 1~4 ("x" means optional 1~4). The following left operation interface will appear. Press UP/DOWN to select the internal EDID and press ENTER to confirm. The interface on the right appears, where 1~4 refers to setting the EDID of an interface individually;

INPUT PORT: X	INPUT PORT: X
SELECT: NONE	EDID DONE

③. If you want to set the EDID data of all input ports, select the ALL button, and the left interface will appear. Press UP/DOWN to select up and down. After selecting the internal EDID, press ENTER to confirm, and the right operation interface will appear;

INPUT PORT: ALL	INPUT PORT: ALL
SELECT: NONE	EDID DONE

3. Press the "ENTER" key to confirm the operation command.
4. "MENU" menu key. If the operation is incorrect, press the menu key on the matrix panel and the device LCD screen to return to the main interface.

①. Display mode : Press the MENU key once to display the following operation interface. Press UP/DOWN up and down to select the mode to be displayed and output (SEAMLESS is seamless mode, SPLICER is splicing mode, SPLITTER is split mode, BYPASS is pass-through mode) and then press Press the ENTER key to complete the display mode setting;

Note: When the matrix is in splicing mode, some ports are switched to non-seamless in split mode, and all ports in pass-through mode are switched to non-seamless.

DISPLAY MODE
SEAMLESS_MATRIX

DISPLAY MODE
SPLICER

DISPLAY MODE
SPLITTER

DISPLAY MODE
BYPASS_MATRIX

②. Output audio selection: Press the MENU key twice to display the following operation interface, select output keys 1~4 ("x" means optional 1~4) , press the UP/DOWN key to select (HDMI RX is to select HDMI internal sound, Analog To select analog audio) press the ENTER key again to complete the audio settings;

TX Audio Select	OUT PUT PORT: X	OUT PUT PORT: X
Select Outport	SEL: HDMI RX	SEL: Analog

OUT PUT PORT: X
DONE

③. Select the output resolution: Press the MENU key three times to display the following operation interface. Press the UP/DOWN key to select the resolution to be output, and then press the ENTER key to complete the resolution setting;

TX Resolution	TX Resolution	TX Resolution
4K30	1080P	720P

④. Save scene mode : Press the MENU key 4 times to display the following operation interface. Panel operation can save 16 modes (1~16) . Press UP/DOWN up and down to select the scene that needs to be saved . After selecting the mode, press ENTER to confirm ;

STORE SCENE :	STORE SCENE :
1	1 DONE

⑤. Call scene: Press the MENU key 5 times to display the following operation interface. Panel operation can call 16 modes (1~16). Press UP/DOWN up and down to select the scene to be called. After selecting the mode, press ENTER to confirm;

RECALL SCENE :	RECALL SCENE :
1	1 DONE

⑥. Switch the buzzer sound : Press the MENU key 6 times to display the following operation interface. You can set the buzzer sound on/ off, UP/DOWN up and down selection switch buzzer sound ;

Turn on the beep.	Turn off the beep.
Beep Enable:	Beep Enable:
Enable	Disable

⑦. Gain/signal amplitude mode: Press the MENU key 7 times, and the following operation interface will appear. Press the output 1~8 number keys to determine the port that needs to be adjusted. The default amplitude of the product is 0 (Default), and there are 0~7 adjustable amplitudes; Use UP/DOWN to select the appropriate amplitude. After selecting the amplitude, press ENTER to confirm.

PE Setting:	OUT PUT PORT: 1	OUT PUT PORT: 1
Select Outport	PE SEL: 0 Default	PE DONE

⑧. One-to-one display mode: Press the MENU key 8 times and the following operation interface will appear. Press ENTER to confirm. All input channels and output channels will be displayed in one-to-one correspondence (for example, the first input channel is displayed on the first screen);

SWITCH O To O	SWITCH O To O
	DONE

⑨. Restore factory settings: Press the MENU key 9 times, and the following operation interface will appear. Press ENTER to confirm. The default factory settings can be restored, and the device LCD screen can return to the main interface;

FACTORY RESET	HDMI MATRIX
	Ver1.0

⑩. Scene polling mode (at least 2 scenes must be selected for polling): Press the MENU key 10 times, the following operation interface will appear. For the saved scene mode, you only need to press this option and press UP/DOWN to select polling. .

Polling on　　Polling off

5. "UP/DOWN" up and down selection keys

①. Query the status corresponding to the current input and output of the matrix

②. Query the version number of the matrix device (subject to the actual factory version)

③. Query matrix preferred DNS server

④. Query matrix default gateway

⑤. Query matrix subnet mask

⑥. Query the matrix IP address. The product default IP address is: 192.168.1.200

⑦. Query the output online status corresponding to the matrix ("Y" indicates that the output end is connected to a display device, "N" indicates that it is not connected to the screen)

⑧. Query the online status of the input corresponding to the matrix ("Y" means there is a signal source input, "N" means there is no signal source input)

6. Example of switching operation

Example 1 : To synchronously switch the first audio and video signal to the third output channel, the steps are as follows:

①. Press the "1" key of the input channel , and the following operation interface will appear on the LCD screen.

②. Press the "3" key of the output channel , and the following operation interface will appear on the LCD screen.

③. Press the "ENTER" key and the following operation interface will appear on the LCD screen , indicating the execution of the current command.

Example 2: To synchronously switch the first audio and video signal to all output channels, the steps are as follows:

①. Press the "1" key of the input channel , and the following operation interface will appear on the LCD screen.

②. Press the "ALL" button to select all , and the following operation interface will appear on the LCD screen.

③. Press the "ENTER" key and the following operation interface will appear on the LCD screen , indicating the execution of the current command.

6.2 Serial port, network port, WEB control operation

6 .2 .1 Software settings

1. Double-click "MatrixControler" to open the application, connection settings: the control type is divided into "serial port, network", the network default IP: 192.168.1.200,
2. Click "Serial Port" to enter and establish a connection between the matrix and the software. Take the computer connected to the serial port "COM5" as an example. The baud rate is 115200. After the operation is completed, click "Connect" to confirm. The matrix will issue a "beep" after the connection is successful. The sound indicates that the connection is successful. If there is no sound, the connection fails, as shown in the figure below:

Figure 1: Serial port login interface

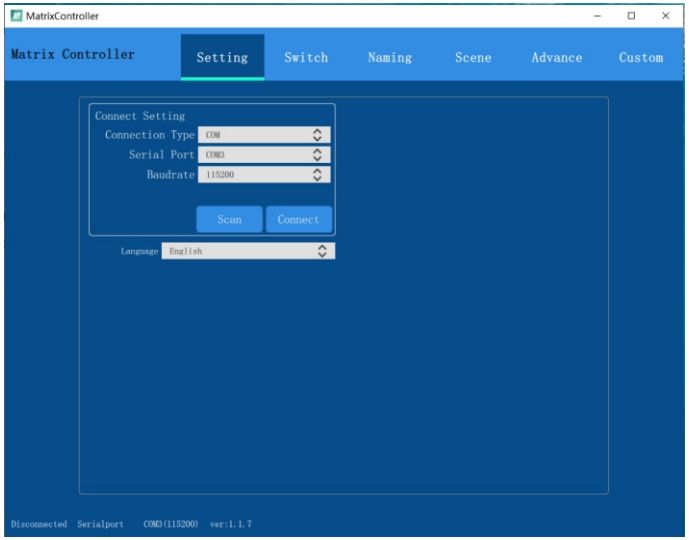
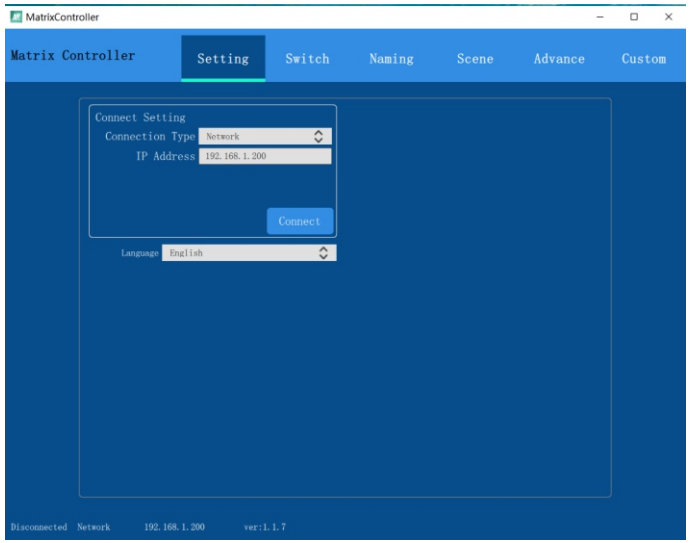
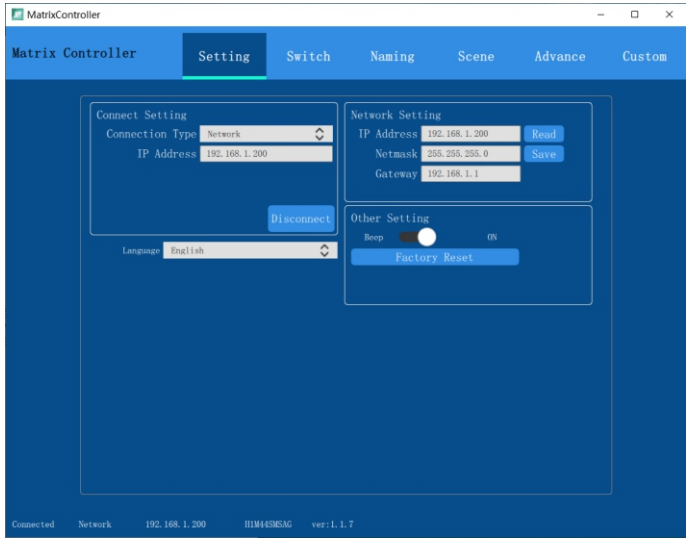


Figure 2: Network login interface



3. After the software is successfully connected, you can modify the IP of the matrix, turn on and off the beep, restore factory settings, and select language, as shown in the figure below:

Figure 3: Setting interface



4. Web control: In a local area network, mobile phones, computers, and tablets can open the browser for control. The steps of web control are as follows:

4.1. In a local area network, the mobile phone/tablet is connected to WIFI, and the computer and matrix are connected to the same router or switch.

4.2. Open the web browser for mobile phones or tablets or computers, and enter the IP address of the matrix at the URL: 192.168.1.200. (The IP address of the matrix is query by DOWN.)

4.3. Enter the account: admin, password: admin, log in.
If the IP address of the router is not 192.168.1.XX, but 192.168.2.XX, you need to modify the IP address of the matrix or the IP address of the Internet.

①Modify the IP address of the matrix. Use the serial line to connect the matrix in, open the "MatrixControler" software, and modify the IP address to 192.168.2. XX. Note: The modified IP address is not occupied in the local area network. After modifying, repeat the previous step 1-3.

②Modify the IP address of the Internet. Take a router or switch to connect a computer, turn on the router settings, modify the IP address of the router to 192.168.1.xx, and then repeat step 1-3.

Note: Don't modify the account password. If you forget it, you need to go back to the factory to set it.

4.4. Web login interface. Enter the IP address in the browser, then enter the user name and password, and click to confirm. After the login is successful, enter the video switching interface by default.
Username: admin Password: admin

Figure 2: Network login interface

5. Software to control the input and output channel

① One to all: a certain input channel is displayed on all the screen;

② One to one (equivalent to the OTO button): all input channels and output channels are displayed one by one (such as the 4th input channel displayed in the 4th screen);

③ ENTER: Select a certain input channel, then select one or multiple output channels, click Enter, this video signal is displayed on one or more screens;

④ Turn off the output: Close the output screen;

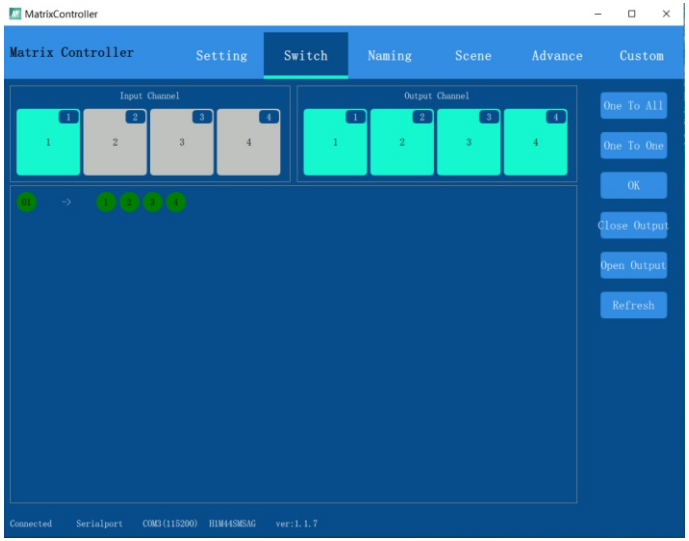
⑤ Open the output: Open the output screen;

⑥ Refresh: View the latest state.

6.2.2 Control display operation

1. Click the "Channel Switch" interface. As shown in the figure below, select the input channel "1" and output channel "1.2.3.4", and click "ENTER".
2. Switch a signal to all output channels, select a certain input channel and click "One to All".

Figure 5: One to All interface



3. One-to-one display （For example, 1-1, 2-2, 3-3, 4-4,click "One -to-One" directly.)

Figure 6: One to one interface

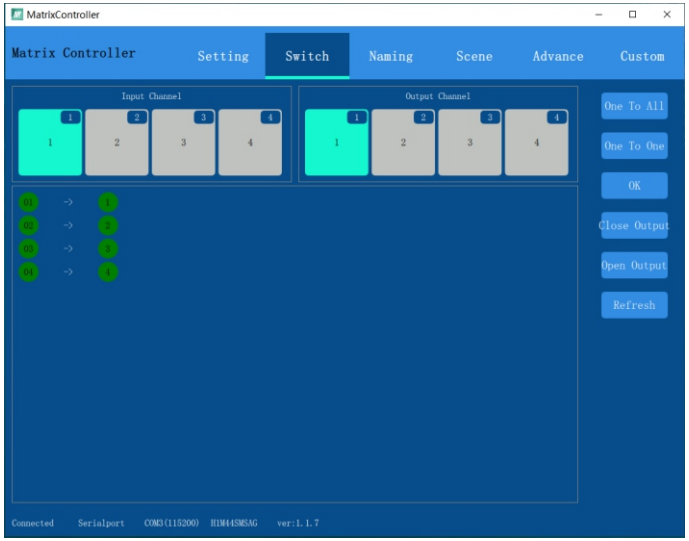
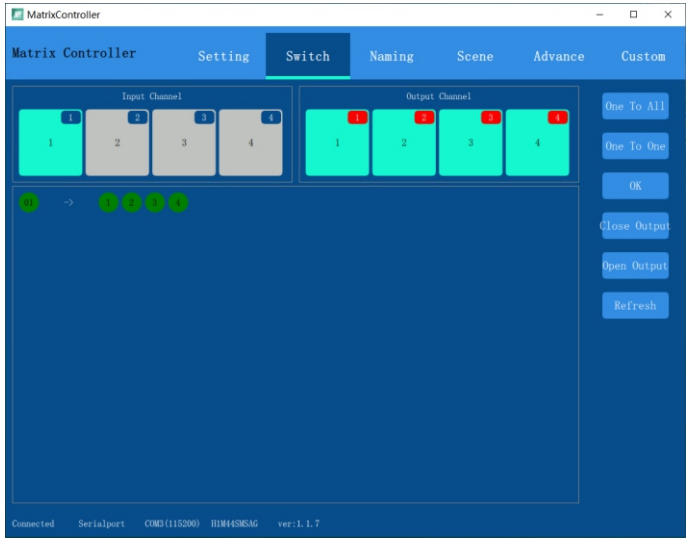
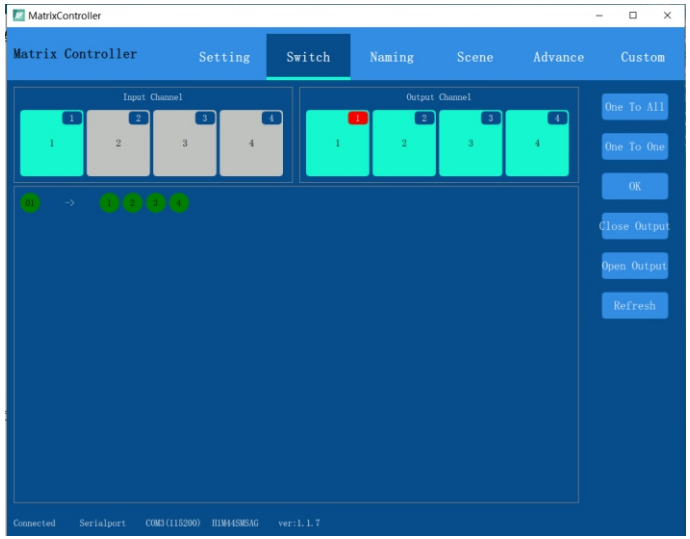


Figure 7: Close the output channel interface



5. Select the output channel "1,2,3,4", and then click "Open the output". The number of the output channel will become "blue". As shown below.

Figure 8: Close the output channel interface



6.2.3 Channel name

1. Click the "Channel Name" interface, enter the name to be changed, and click "Save". If you need to restore the factory default, click "Default", and then click "Save". Support copying and paste function. As shown below.

Figure 9: Channel name interface

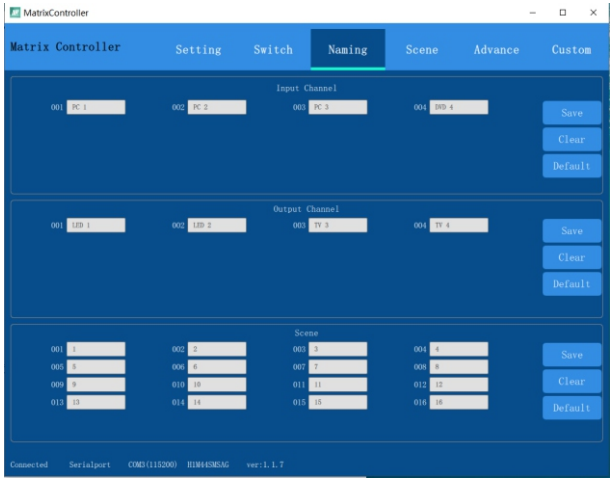
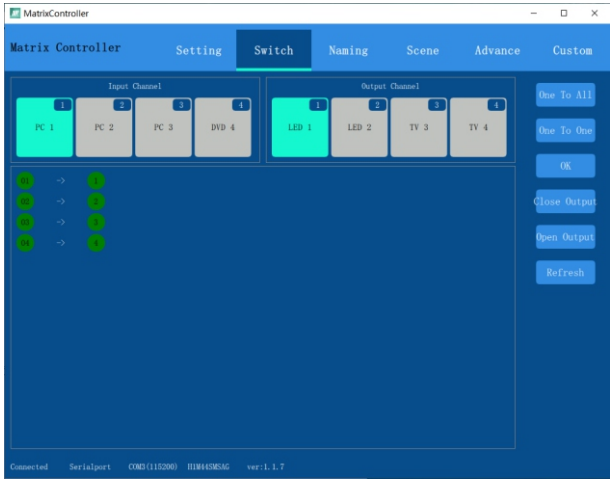


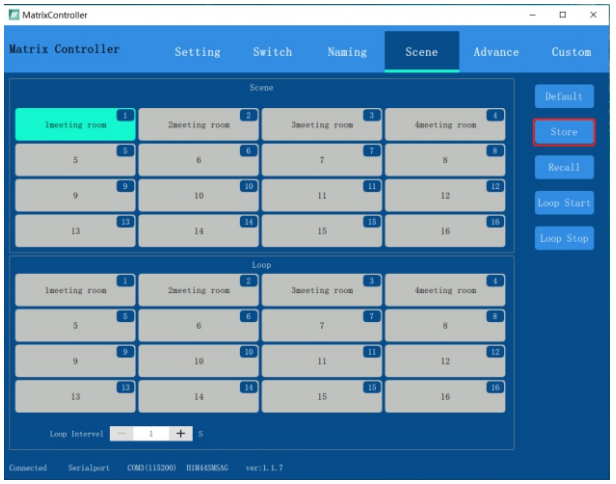
Figure 10: Channel name→Channel switch



6.2.4 Scene Operations

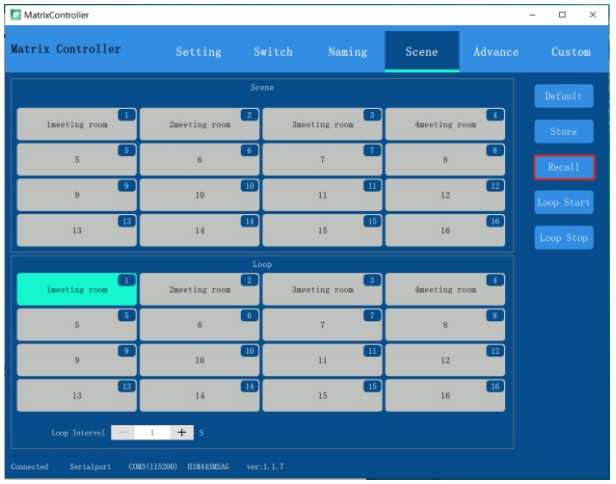
1. Save scene: Save the current matrix state. For example, switch input 1 to all outputs, select scene mode (scene 1), and click save. As shown bellow.

Figure 11: Save scene



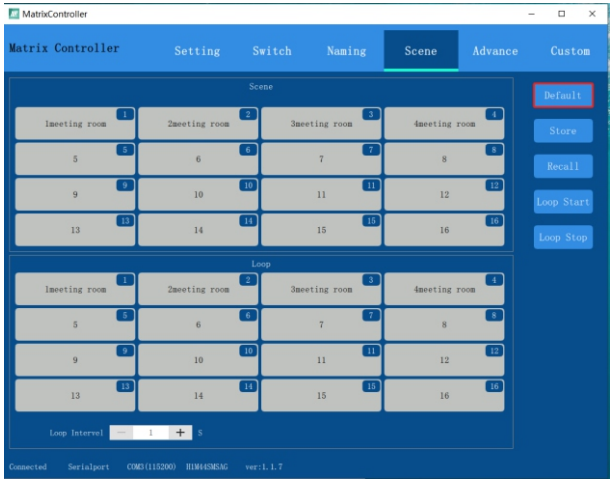
2. Call the scene: call the preserved scene mode. For example, select the scene mode (scene 2), click to call. As shown below.

Figure 12: Call the scene



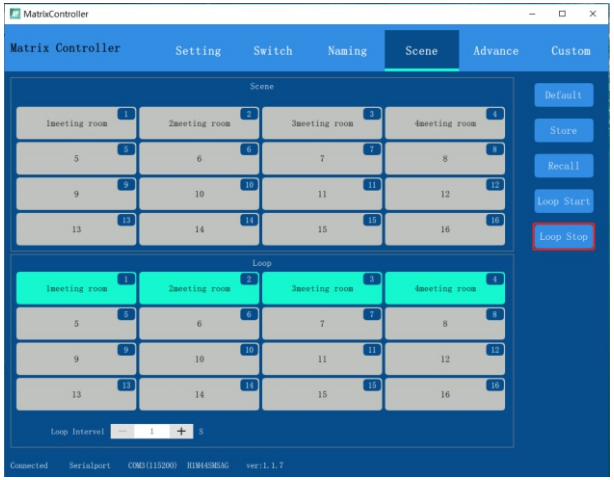
3. Restore the factory scene mode: Click "Default". As shown below.

Figure 13: Restore the factory scene mode



4. Polling settings: The currently saved scene mode is switched in a loop, and the longest settable time between the two modes is "9999" seconds. Take the saved scene mode as an example, select "1.2.3.4" for polling switching, and set the time to 5 seconds. As shown below:

Figure 14: Start polling



6.2.5 Advanced settings

1. EDID setting (the input source EDID that can be learned), EDID reading and writing (can read and write , export and save), as shown below:

Figure 16: EDID reading

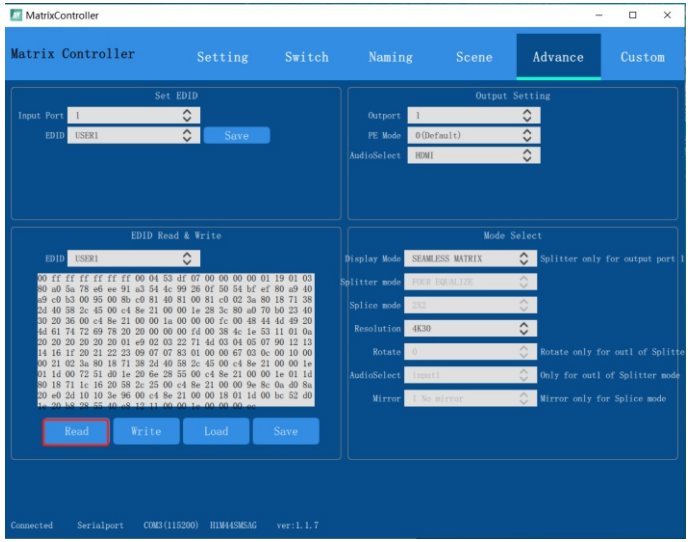


Figure 17: EDID writing

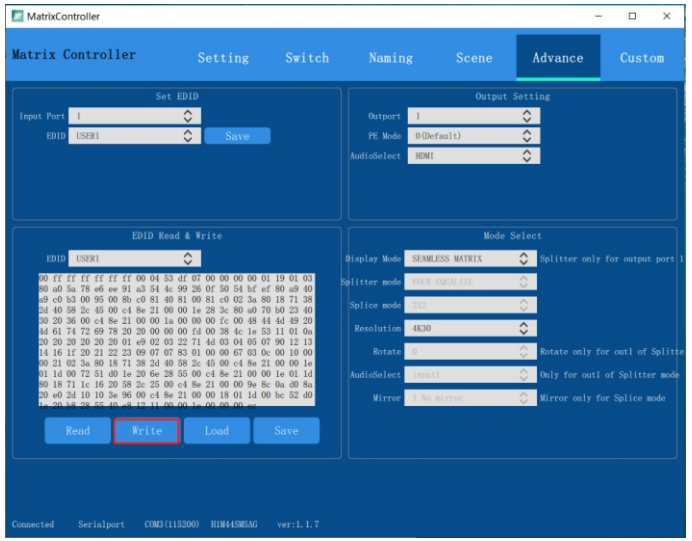


Figure 18: EDID exporting

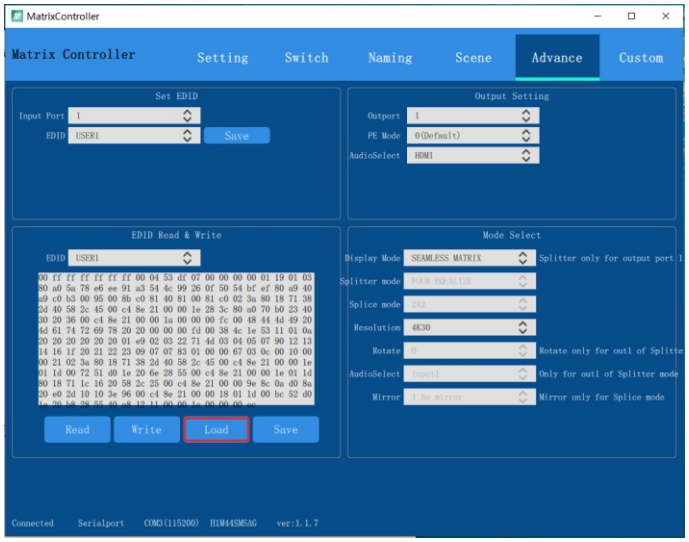
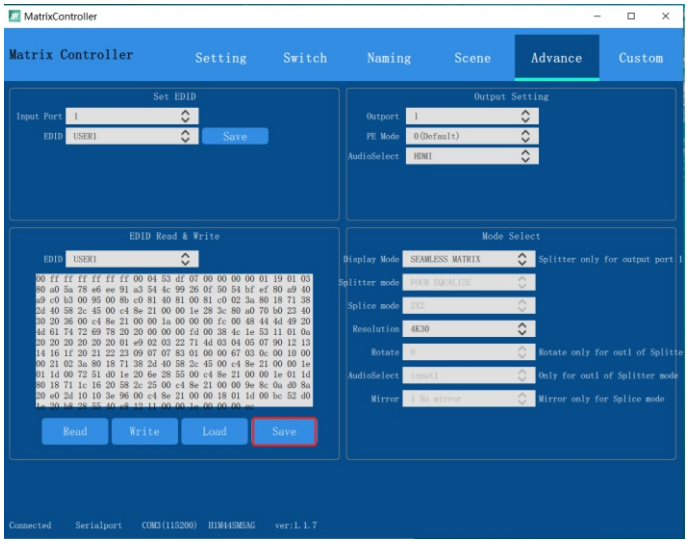
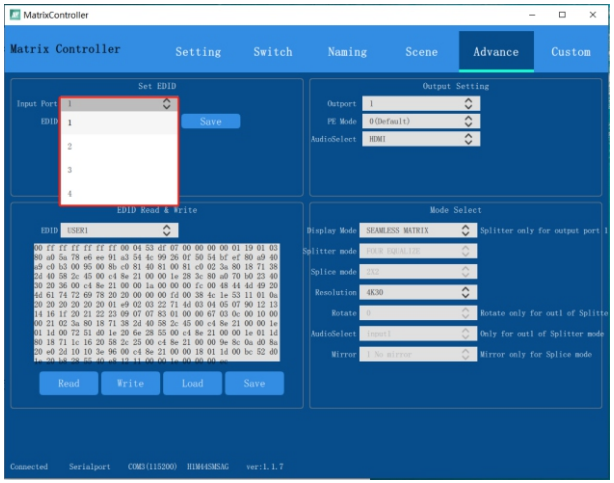


Figure 19: EDID saving



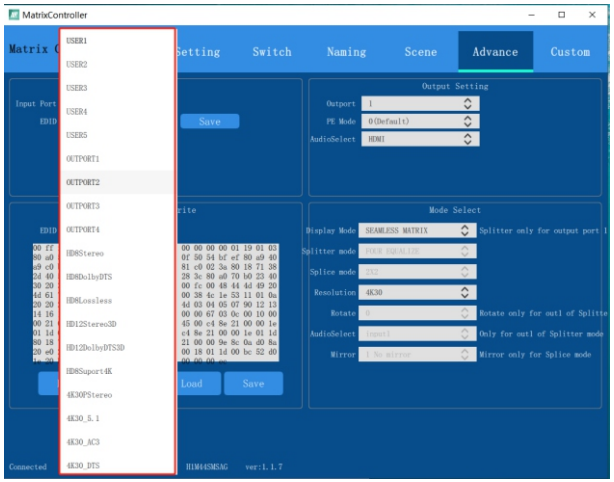
2. EDID setting: select the EDID port that needs to be read, then select the desired EDID, click "save", as shown in the figure below:

Figure 20: EDID Input port



3. The input port can be read for a certain way, as shown in the following figure.

Figure 21: EDID reading and writing



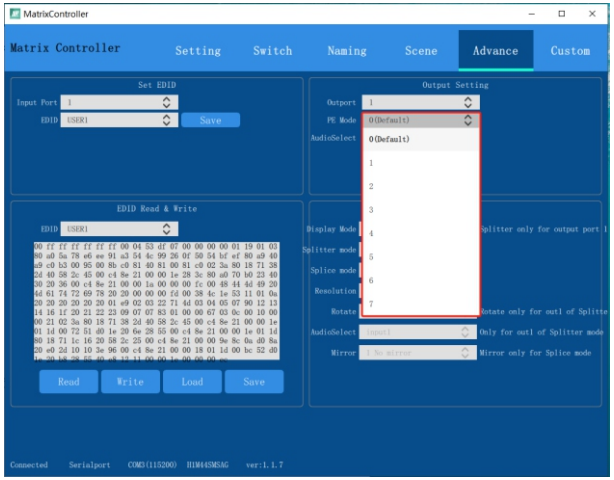
2. EDID reading and writing, select EDID [USER1~5\OUT1~N\ Built-in EDID], click [Read], it will read the EDID data into the input box, and then select EDID [USER1~5], click [Write], it will execute the EDID to write into the corresponding USER. EDID reading and writing as below:

Note: The EDID reading and writing will change according to the change of product type/number of input channels/ user-defined/number of output channels/built-in EDID, and the following is take matrix 4x4 for reference.

No.	EDID Name	Function
1~4	Input1~4	Input interface EDID
5~9	User1~5	Save user's EDID, user can save EDID here
10~13	Output1~4	Read EDID from the corresponding 1-4 output
14	HD8Stereo	1920x 1080p_ 60HZ_ 8bit_ Stereo
15	HD8DOLBYDST	1920x 1080p_ 60HZ_ 8bit_ DolbyDST
16	HD8LossLess	1920x1080p_ 60HZ_ 8bit_ Lossless
17	HD12Stereo3D	1920x1080p- 60HZ_ 12bit. _3D_ Stereo
18	HD12DolbyDTS	1920x 1080p_ 60HZ_ 12bit_ Stereo
19	HD8Suport 4k	1920x1080p_ 60HZ_ Suport4k
20	4K30 Pstereo	3840x2160_ 30HZ_ 8bit_ stereo
21	4K30_5.1	3840x2160_ 30HZ_ 8bit_ 5.1
22	4K30_AC3	3840x2160_ 30HZ_ 8bit_ AC3
23	4K30_DTS	3840x2160_ 30HZ_ 8bit_ DTS

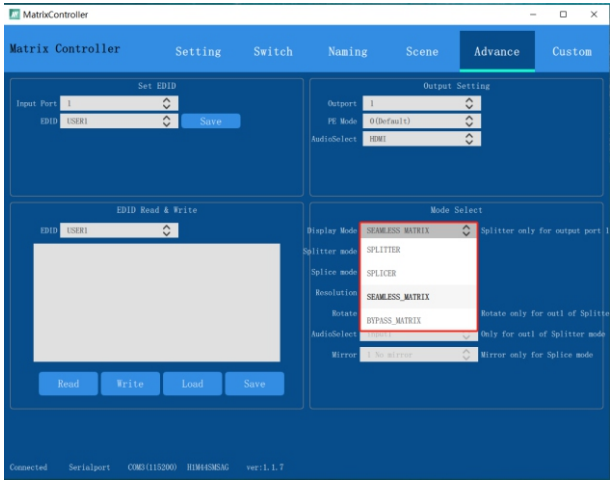
5. Equalization settings (Gain mode adjustment) ： the product default gain mode is 0 (Default)， there are 8 types (0 Default-7) to adjust.

Figure 22: Gain mode adjustment Interface



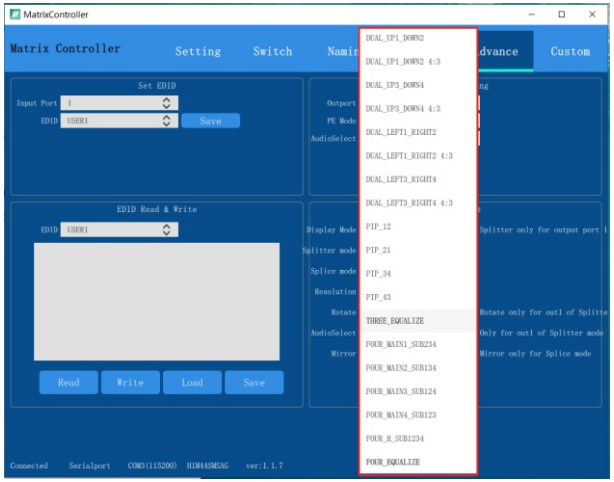
6. There are four display modes (split / splicing / seamless matrix / direct matrix), the product factory default is seamless matrix mode;

Figure 23: Display modes interface

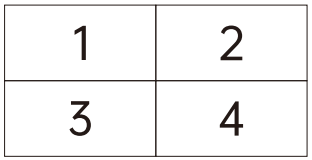


7. MT-HD44LH has a total of 23 segmentation modes, and the factory default is 4 window quad-view mode.

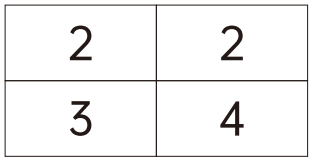
Picture 24: segmentation mode setting interface



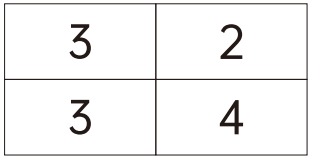
Note: The segmentation mode only works on the output port 1. Other output ports do not work.



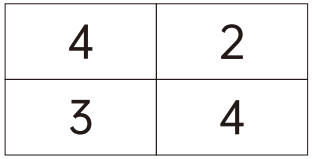
Single window 1



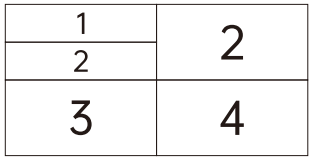
Single window 2



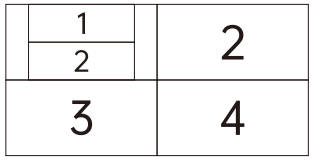
Single window 3



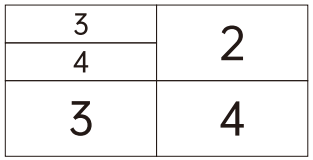
Single window 4



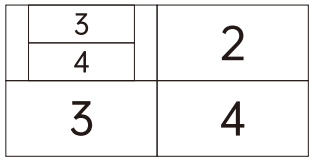
Up 1 down 2 two-windows



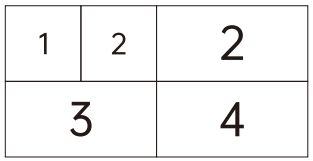
Up 1 down 2 two-windows 4:3



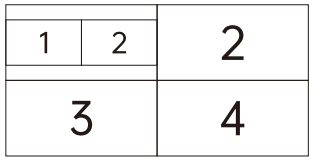
Up 3 down 4 two-windows



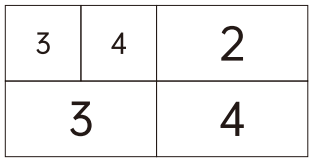
Up 3 down 4 two-windows 4:3



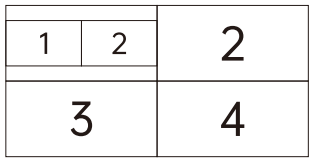
Left 1 Right 2 two-windows



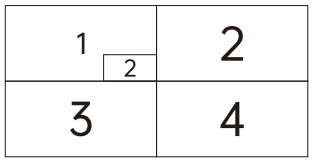
Left 1 Right 2 two-windows 4:3



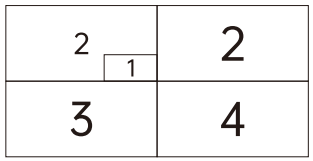
Left 3 Right 4 two-windows



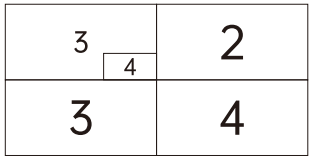
Left 3 Right 4 two-windows 4:3



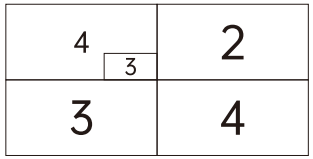
Picture in picture (PIP) 1&2



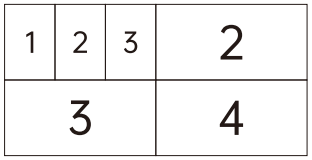
Picture in picture (PIP) 2&1



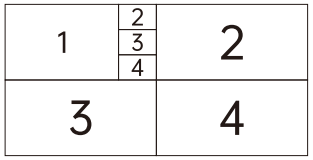
Picture in picture (PIP) 3&4



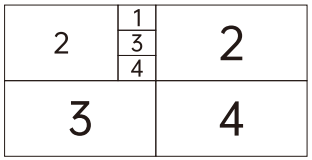
Picture in picture (PIP) 4&3



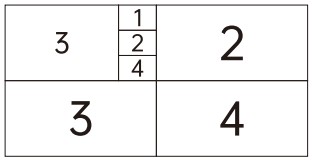
Three windows



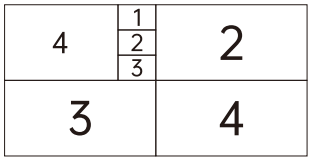
Four windows main 1



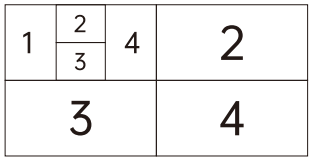
Four windows main 2



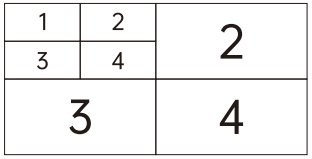
Four windows main 3



Four windows main 4



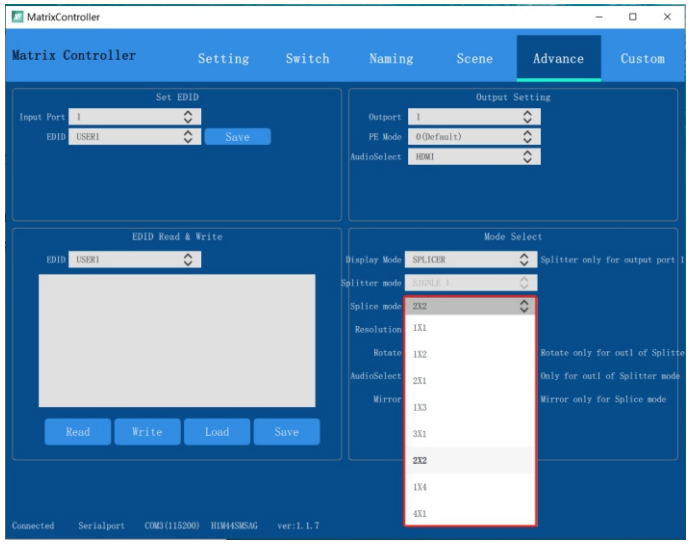
Four windows horizontally arranged

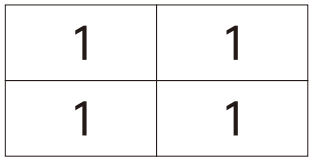


Quad-view window

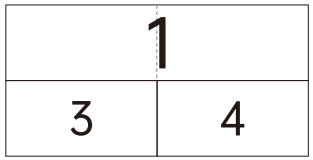
8. There are a total of 8 splicing modes（1x1、1x2、2x1、1x3、3x1、2x2、1x4、4x1）、The factory default is 2x2 splicing;

Picture 25: Splicing Mode interface

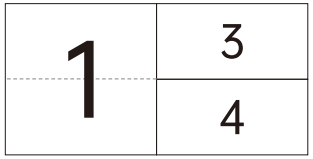




1x1

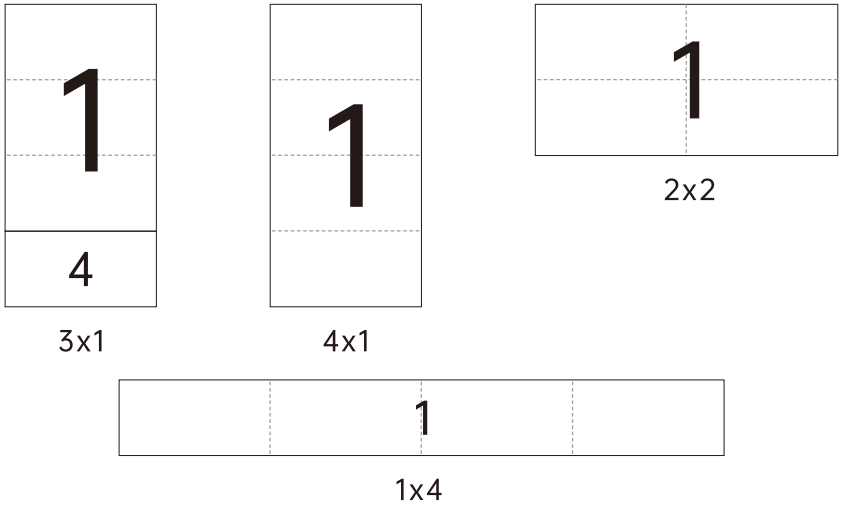


1x2



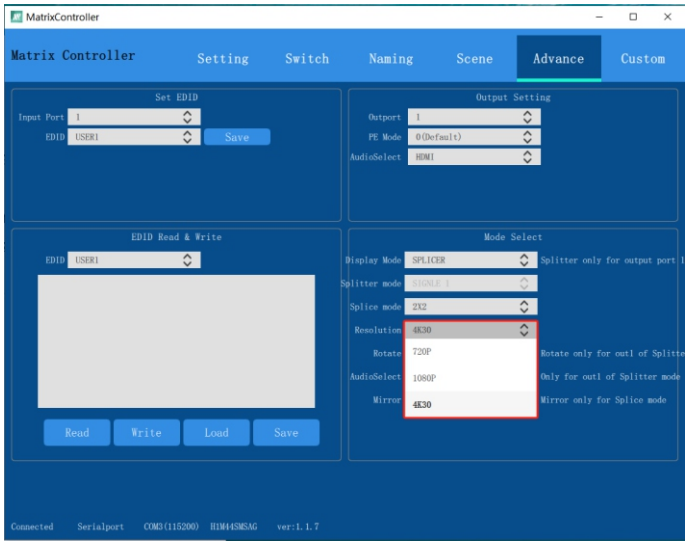
2x1

1x3



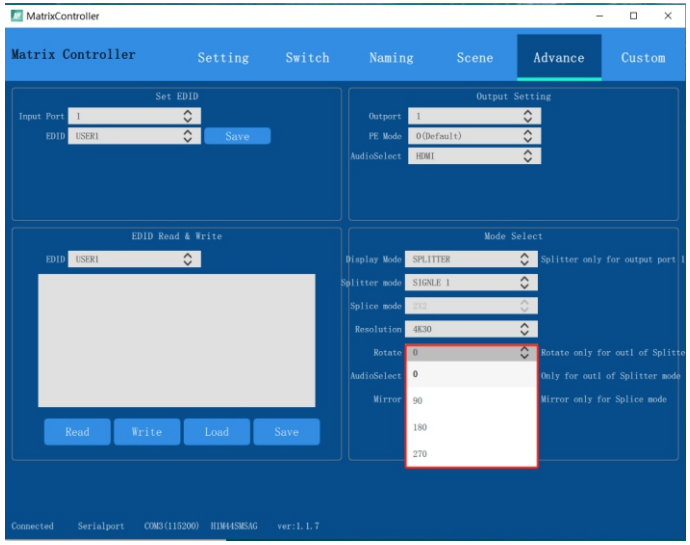
9. There are three resolution modes for the product (720P, 1080P, 4K30), and the default factory resolution is 4K30

Picture 26: Resolution interface

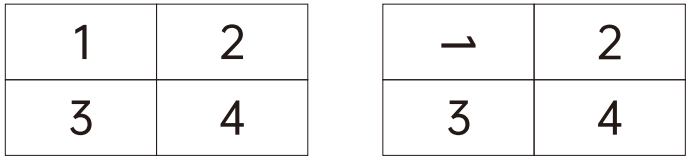


10. There are 4 rotation modes for the product (0/90/180/270 degrees), and the default factory rotation is 0 degrees. The 4K resolution does not support image rotation function;

Picture 27: Rotation degree interface

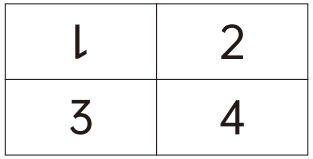


Note: The rotation mode only applies to the output port 1 of the split single screen, and other output ports do not work

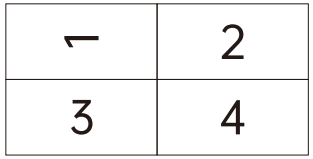


0 degree

90 degrees



180 degree



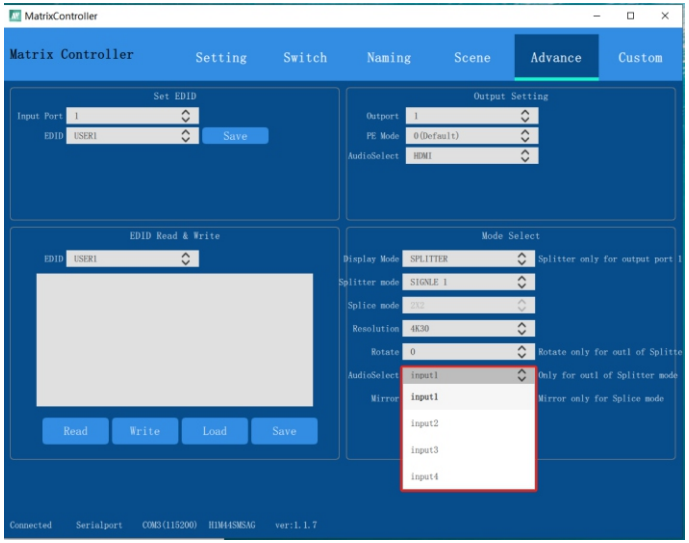
270 degrees

11. The product has 4 signal options for sound output (input 1-4), and the default sound output for the product is input 1 at the factory

Note 1: Sound selection only applies to output port 1 in split mode (four screen display, sound is output based on the selected signal source)

Note 2: The sound from other output ports is output based on the sound source of the signal source

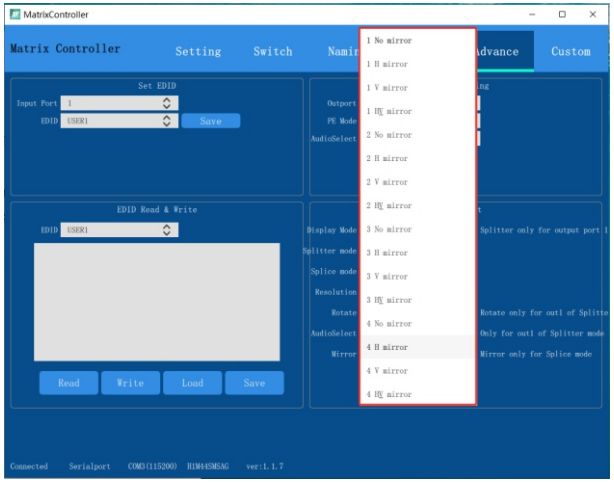
Picture 28: Sound interface



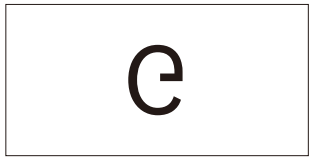
12. There are four mirroring modes for the product (no mirroring, horizontal mirroring, vertical mirroring, and horizontal vertical mirroring), and the product defaults to no mirroring at the factory

Note: Mirror mode only works for splicing mode, other modes and ports that have not been spliced do not work

Picture 29: Mirror mode interface



NO Mirror



Mirror vertically

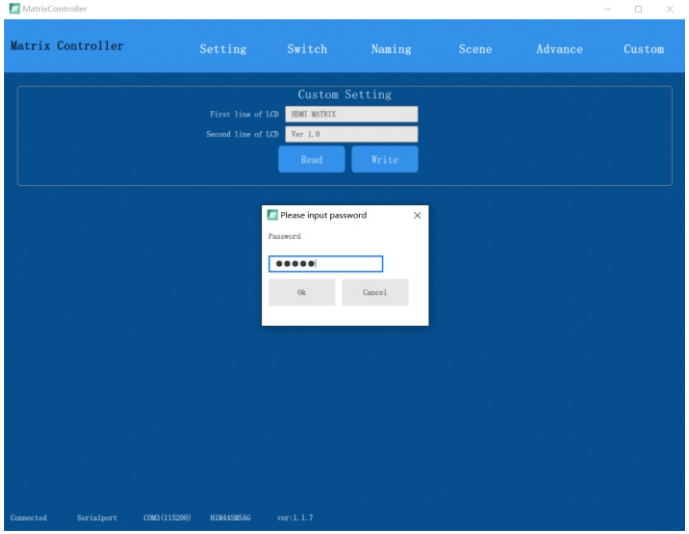
Horizontal Mirror

Horizontal and Vertical Mirror

6.2.6 Customer customization

1. According to customer needs, the device LCD screen display information can be modified. After modification, simply click "Save" and the password is "654321 *" as shown in the following figure:

Picture 30: Customer customization

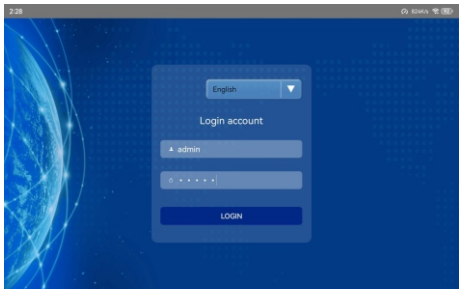


7. APP operation instructions

7.1 Install APP control software

Transfer the app control software "MatrixController2. apk" to the Android tablet through WeChat or QQ or other means, run the app control software, and after installation, the control software icon will appear. Open the software with the default account admin and the default password: admin login, as shown in the following figure:

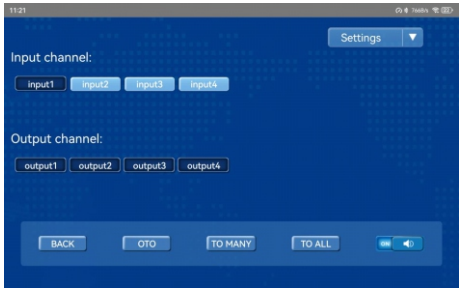
Picture 31: APP login interface



7.2 APP software operation

While entering the main interface, connect to the default IP address of the host; After successful connection, the current number of input and output channels of the device will be displayed based on the information returned by the device. After selecting the input channel, the corresponding input and output will be displayed.

Picture 32: Signal channel interface



①. the one-to-one button, the input channel and the output channel are one-to-one;

②. one to many operation instructions:
Select the input and multiple output channels, then click the one-to-many button, you can set one input signal output through multiple output channels;

③. one to all operation instructions:
Select the input channel and click one to all buttons to set one input signal output through all output channels;

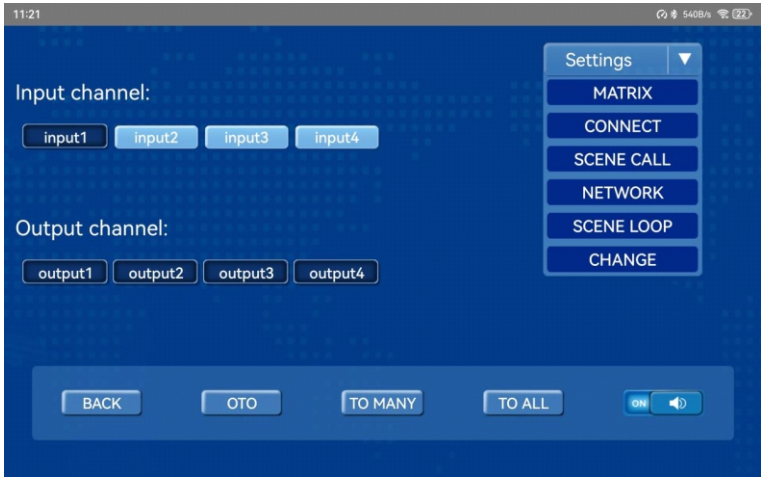
④. clear the channel operation instructions:
Click the BACK button to clear the display of the corresponding relationship between the input and output channel UI interface (without setting the display of the upper computer);

⑤. sound switch operation instructions:
Click the sound button to set the buzzer switch of upper computer.

7.3 APP software Settings

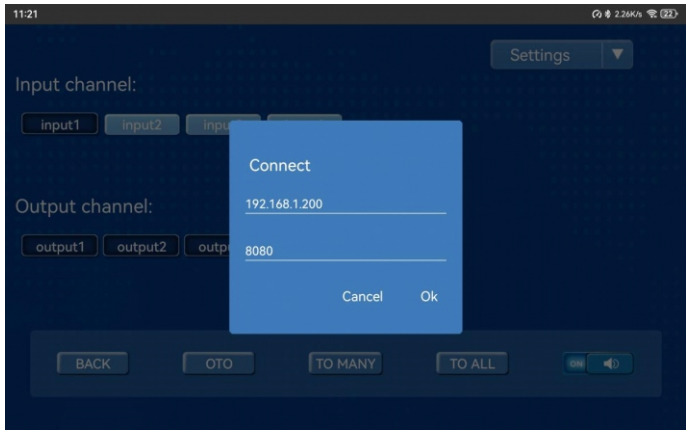
①. Click the matrix switch button to enter the main screen of matrix setting, as shown below

Picture 33: Matrix setup main



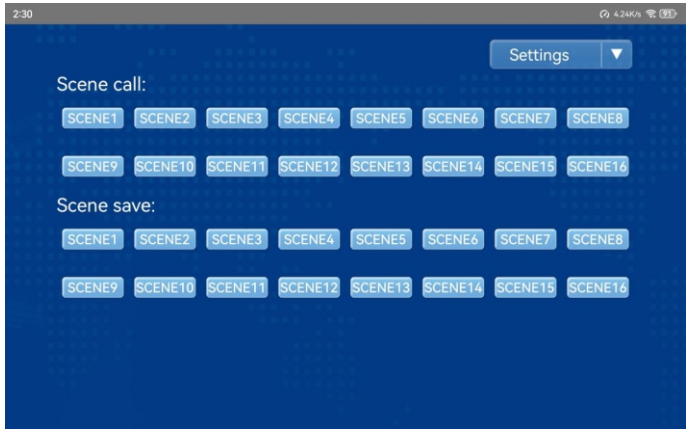
②. Click the communication setting button to set the host ip address and interface number to be connected, as shown below;

Picture 34: Communication setup interface



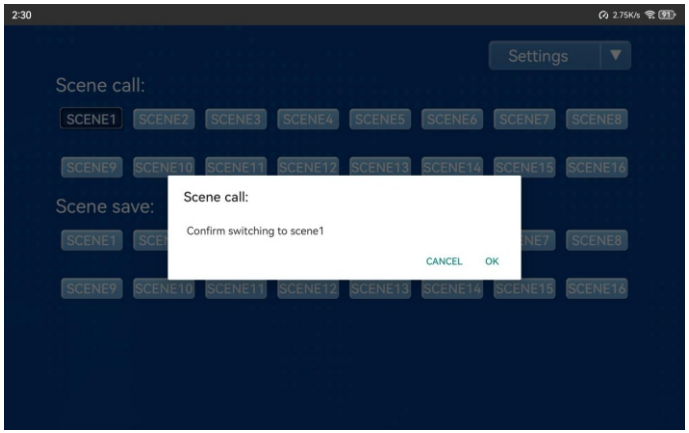
③. Click the scene call button, as shown below;

Picture 35: Scene setup interface



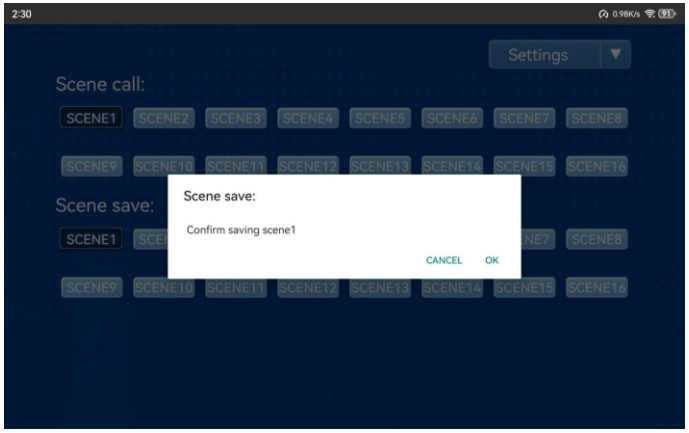
④. Click the scene call list to call the selected scene, as shown below;

Picture 36: Scene call interface



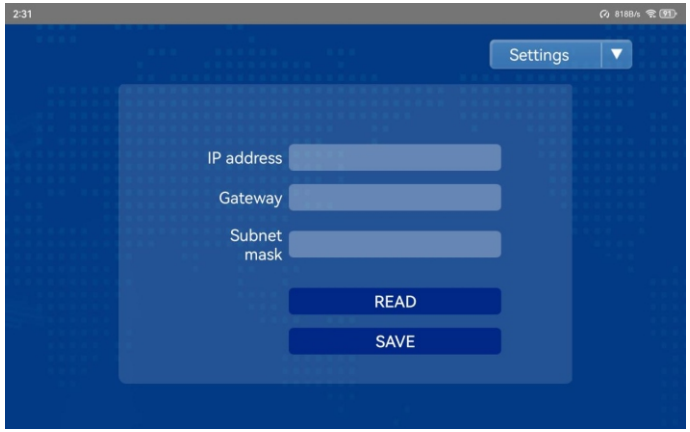
⑤. Click Save scene list to save the current scene to the selected scene, as shown below;

Picture 37: Save scene interface



⑥. Click network parameter setting to read and set the network parameters of the upper computer, as shown below;

Picture 38: Network parameter setting interface (read)



⑦. Click the scene polling button to set the scene and interval to be polled, as shown below;

Picture 39: Scene polling Settings

8. Remote control instruction

8.1 Remote control operation instructions

NO.	Name	Introduction
1		Power on/off key
2		Mute button (on/off buzzer sound)
3	F1~F8 key	Reserved function
4	SAVE key	Save scene
5	RECALL key	Call scene
6	Up&down key	Page up or down
7	Left&right key	Reserved function
8	OK key	Confirm operation
9	FUN key	Main menu function
10	CANCEL key	Return
11	0~9 key	Number
12	ALL key	Switch all
13	EDID key	EDID learning key

Remote control operation
①One to two: 1→2→OK
②One to all: 1→ALL→OK
③One to one: FUN→SWITCH O To O→OK
④Save scene: Save→Up & down key(1-16 mode)→OK
⑤Calling scene: Recall→Up & down key(1-16 mode) →OK
EDID read:
①. A certain road EDID→Number key(1-4)→Up and down key selection mode→OK
②. All EDID→ALL→Up and down key selection mode→OK

8.2 IR Code of Remote Control

QD21D-1PCB stopwatch 00FF		
45	46	47
44	40	43
07	15	09
16	19	0D
0C	18	5E
08	1C	5A
42	52	4A

User Code table 00FF			
A8			88
90	83	98	82
93	9C	8C	D6
97	95		96
98	9E		99
91	9A		A4
87	86		85
8B	8A		89
8F	8E		8D
84	92		94

9. Matrix control protocol

RS232 communication protocol and central control instruction code description
Using a direct connection (if through the USB-RS232 conversion line can be connected to the matrix serial port for control)
Communication protocol: (Baud rate 115200, stop bit 1, data bit 8, paritybit NONE)

Type	Control commands	Function
Operation commands	[x1]ALL.	Switch the input of [x1] to All output
	[xO]ALL.	Close all output
	[xO]X[x1].	Close the output of [x1]
	ALL[1].	Set all channels one to one,e.g:1->1,2->2,3->3...
	[x1]X[x2].	Switch the input of [x1] to [x2] output
	[x1]X[x2]&[x3]&[x4].	Switch the input of [x1] to [x2],[x3],[x4] output
	Save[Y].	Save current status to [Y] storage unit,[Y] can be number key from 1-16
	Recall[Y].	Recall the status saved in [Y],[Y] can be number key from 1-16.
	Beep ON.	Turn off buzzer
	Beep OFF.	Turn off buzzer

Remarks:
1. [x1], [x2], [x3], [x4] are the number of input and output channels, which are according to the controlled matrix. If the controlled matrix is a 4*4 matrix, and it is out of range, it is treated as a command input error. And "[ ]" in the instruction is not a send character;
2. The ending character of each instruction cannot be missed, and there is a ". "at the end of each instruction. Punctuation marks are punctuation marks in the English input.

3. The letters are not case sensitive and some instruction codes as examples:

①.Switch the [x1] input to all the output
Example: To switch the 3rd input to all output, type '3All.'

②.Close all output: [x0]All.
Example: Type 0All'0All. '

③.Close [x1] output: [x0]X[x1].
Example: To turn off output one, enter '0x1.'. If you need to turn off output one and two at the same time, enter '0x1.0x2.'

④.Set all channels correspond one to one: All[1].
For example, after running the 8*8 HDMI matrix, the state is 1->1, 2->2, 3->3, ..., enter 'All1.'

⑤.Video switch instruction: [x1]X[x2].
Example: To switch the 2nd input to the 4th output, enter "2X4.", and to switch the 3rd input to the 3 and 4 output, enter " 2X3&4."

⑥.Save the current status : Save[Y].
Example: To save the current state to storage unit 5, enter Save5.

⑦.Call the stored unit instruction: Recall[Y].
Example:To call the state of storage unit 6 and configure it to the input or output state of the matrix, enter Recall6.

⑧.Turn on and turn off buzzer
Example: BeepON. , Turn on buzzer
BeepOFF., Turn off buzzer

10. Product common faults and precautions

1.Large signal interference: check whether the signal connection cable and plug are good, whether the cable meets the requirements of the specification, whether the system grounding is good, and whether the AC power grounding system between the devices is consistent.
2.When there is color loss or no video signal output, it may be that the connectors at the two ends of the signal line are not connected properly, pls check the cable.
3.When the serial port (refer to: computer or central control serial port) cannot control the matrix switch, please check whether the port number of the software serial port is correct
4.When the matrix switch is switched, the buzzer sounds, but there is no corresponding image transmission:
1) See if there is a signal at the corresponding input. (Can be detected by oscilloscope or multimeter) If there is no signal input, it may be that the input cable is broken, or the connector is loose,replace the connected cable can be OK;
2) See if there is a signal at the corresponding output. (Can be detected by oscilloscope or multimeter) If there is no signal output, it may be that the output is broken, or the connector is loose, ,replace the connected cable can be OK.
5.If the matrix switch input and output signals can be switched but there is no Beep sound, it may be that you turn off the buzzer sound
6. If the LCD screen has no display, the operation does not respond, may be power supply' abnormal.
7. When connecting the connector, if the static electricity come to be strong, the power ground cable may not be connected to the ground. Please connect it properly, otherwise it will easily damage the host and shorten the life of the host.
8. When the matrix switch panel buttons, serial port and remote control cannot be controlled, the internal host may be damaged. Please send it to a professional for repair.
9.Do not put items on the power line, signal line, communication line and other cables, do not step on the cable, soak, wear, to prevent leakage,short circuit phenomenon.
10.The working environment of the device must be dustproof, moisture-proof, and the temperature must meet the working requirements of the product. Do not pour liquid or conductive solid into the product to prevent product damage.

11. After-sell service

11.1 Assurance

The Company warrants that the workmanship and materials of the product will be free from defects under normal use and service for a period of one year after purchase from the Company or its authorized distributor. If the product does not function properly within the guaranteed scope during the valid warranty period, the Company will select and pay the cost of repairing the defective product or part, delivering an equivalent product or part to the User to replace the defective item, or refund the price paid by the User for the defective product. All products replaced will become the property of the Company. The replacement product may be new or repaired. Any replacement or repaired product or part is subject to a ninety (90) day warranty or the remaining period of the original warranty, regardless of which period is longer. The Company is not responsible for any software, firmware, information, or memory data contained, stored, or integrated in the products returned to the Company for repair, whether or not within the warranty period.

11.2 Guaranteed limitations and exceptions

In addition to the above limited warranties, the Company shall not be liable in the event of damage to the Product due to abuse, misuse, negligence, accident, abnormal physical pressure or voltage, unauthorized modification, tampering, alteration or damage due to services provided by the Company or other persons other than its authorized agents. Except for faults caused by ordinary use or correct use of the product in the application for which the product is intended.