

4K HDMI MATRIX USER MANNUL

4K HDMI MATRIX PACKING LIST

A complete HDMI matrix switcher consists of the following components:

- 1、 One matrix switcher
- 2、 One user manual
- 3、 One power cord
- 4、 One power adapter
- 5、 One RS 232 serial port cable
- 6、 One infrared remote control
- 7、 A pair of hanging ears

We are very honored that you have chosen our products. Before using this product, please read this manual carefully to get the best performance. I hope this manual will bring you convenience when using it. If you have any questions, please contact us or your dealer in time .

Check before use to confirm that our products have not been damaged during transportation. Please operate with caution when using and installing to prevent damage to the HDMI matrix switcher.

The copyright of products and registered trademarks belongs to our company

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.

For 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.

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1.Product introduction

HDMI matrix switcher is a high-performance professional switching device with built-in intelligent control. It is used to switch various audio and video input signals to any audio and video output channel synchronously or asynchronously. It adopts a unique processing method, which greatly improves the switching speed of the device. The control method is flexible, with long-life button panel operation. The large-screen illuminated matrix LCD screen displays various information. It provides a standard RS 232 communication interface to facilitate users to cooperate with various remote control devices (such as Crestron, AMX, CREATOR). Use it with an infrared remote control device.

HDMI matrix switchers are mainly used in radio and television projects, multimedia conference halls, large-screen display projects, TV teaching, command and control centers and other places.

2.Product Features

- 1、 Support maximum resolution, 4Kx2K@30HZ, 1080P@60HZ;
- 2、 Full hardware architecture without CPU and operating system, the operation response speed is faster;
- 3、 Using 3.4G high-bandwidth original switching chip, all signals can be switched synchronously;
- 4、 The product has ESD electrostatic design inside, supports hot swapping, and the system is stable and reliable;
- 5、 Each signal supports HDCP decoding, Blu-ray, 3D;
- 6、 Support signal timing reshaping, 36-bit true color technology;
- 7、 Supports fast channel switching and quick saving and retrieval of scene modes in one-to-one correspondence;
- 8、 Visual operation buttons, the input and output channels can be visualized through the button indicators;
- 9、 Supports panel buttons, infrared remote control, RS232 serial port, LAN, WEB and other control methods;
- 10、 Broadcasting and television-level switching chip, image switching can be completed with a single chip, and the integration level is higher;
- 11、 Supports EDID rewritable EDID adaptive function to better adapt to various on-site display devices and improve compatibility;

- 12、 The input supports reception delay, which effectively compensates for time when the differential pairs are of unequal length;
- 13、 Audio de-embedding and switching functions, 3.5mm audio follows the last HDMI output interface;
- 14、 The software supports 16 built-in scene modes and can call any scene;
- 15、 Power-off memory on-site protection function, automatically saves the current scene status;
- 16、 The host display adopts English high-resolution display and supports LOGO and model burning customization.

3. Technical Parameters

	Description		
name	4K HDMI Matrix Switcher		
model	HD44L	HD88L	HD1616L
Input interface	HDMI*4	HDMI*8	HDMI*16
Output interface	HDMI*4+3.5MM*1	HDMI*8+3.5MM*1	HDMI*16+3.5MM*1
HDMI compatible	HDMI 1.4		
HDCP compatible	HDCP 1.4		
Control method	Visual buttons, infrared remote control, RS232 serial port, LAN, WEB and other control methods		
Controlling software	Professional control software		
RS-232	Baud rate: 115200, Data bits: 8, Stop bits: 1, No parity		
Video format	4K*2K@30HZ		
Audio output	HDMI interface + left and right analog stereo		
Audio de-embedding	OUT 4 way follow	OUT 8 way follow	OUT 16 way follow
Power supply	DC 12V 2A	DC 12V 2A	DC 12V 3A
Power consumption	≤8W	≤15W	≤30W
Electrostatic protection	Human body model: ±8kV (air discharge), ±4kV (contact discharge)		
high	1U	1U	2U
size (length*width*height MM)	430*138*45 (Excluding hanging ears)	430*138*45 (Excluding hanging ears)	480*252*90

4. Interface display

4.1 HD44L interface display

Front panel interface display

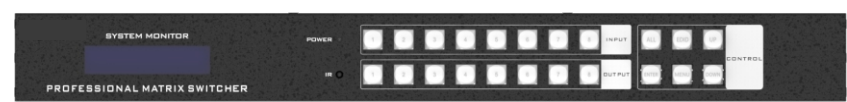


Rear panel interface display



4.2 HD88L interface display

Front panel interface display



Rear panel interface display



4.3 HD1616L interface display

Front panel interface display

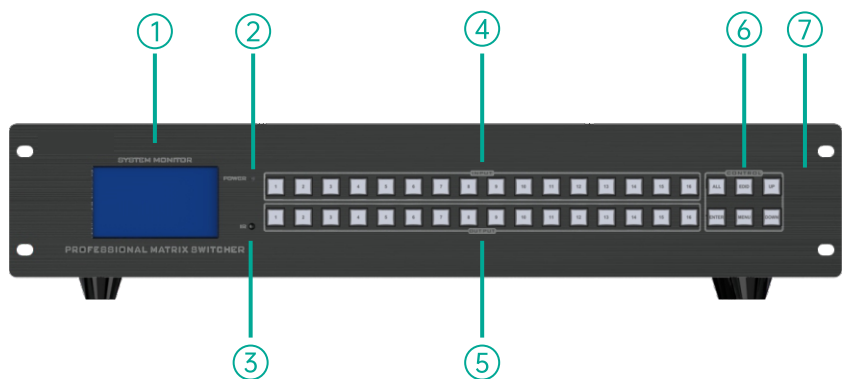


Rear panel interface display



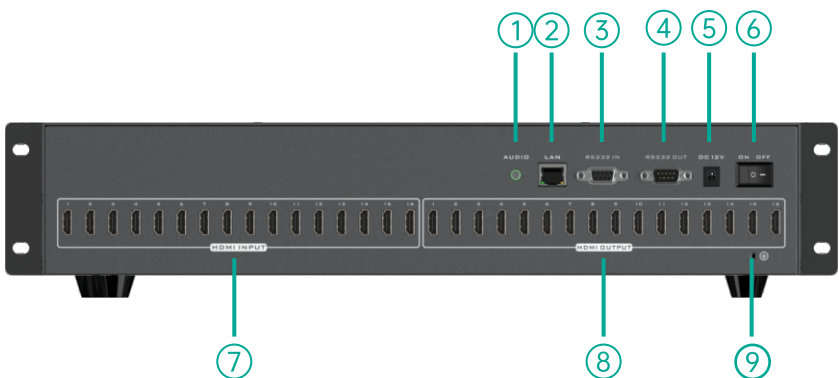
4.4 Interface description

Front panel interface description
(take 16 in and 16 out as an example)



serial number	name	illustrate
①	LCD	Display the current operating command of the device
②	POWER	Power indicator light (green light for normal operation, red light for standby)
③	IR	Infrared indicator light (receives commands transmitted by the infrared remote control)
④	IN PUT (0~16) key	Input channel switching button
⑤	OUT PUT (1~16) key	Output channel switching button
⑥	ALL key	Select all button
⑥	EDID key	EDID learning button
⑥	UP key	Up selection key
⑥	ENTER key	Enter
⑥	MENU key	menu
⑥	DOWN key	down select key
⑦	front panel bezel	For fixed use on the rack

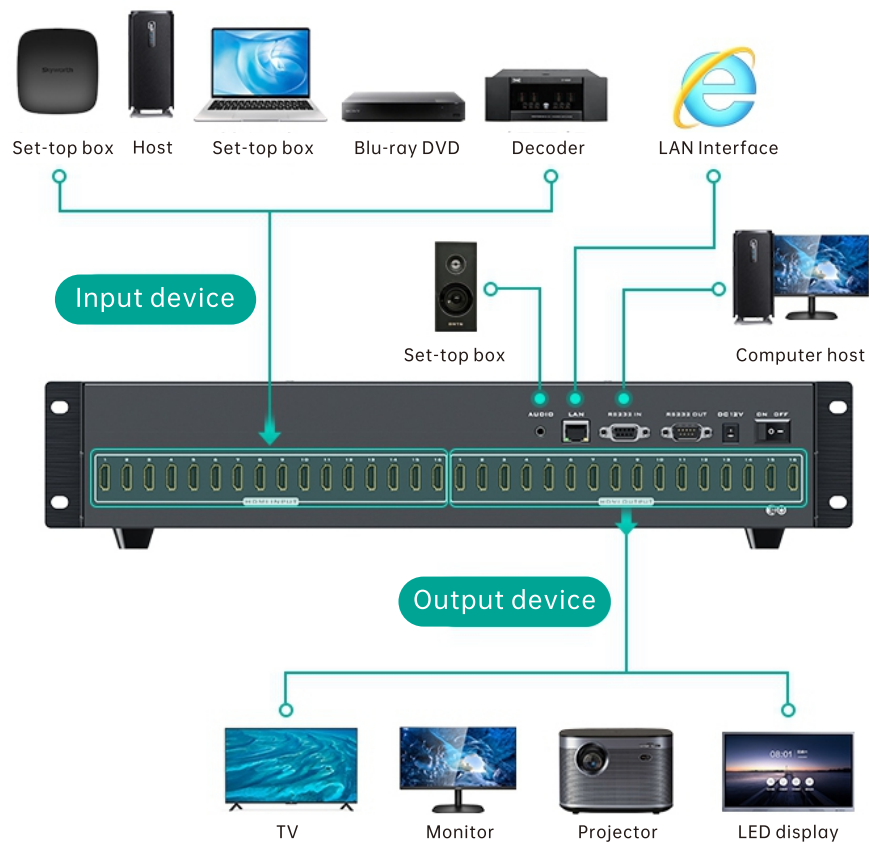
Rear panel interface description (take 16 in and 16 out as an example)



serial number	name	illustrate
①	AUDIO	3.5MM audio output interface
②	LAN	network control interface
③	RS232 IN	RS232 control interface (connected to computer control matrix)
④	RS232 OUT	RS232 control interface (connect other RS232 interface devices in series)
⑤	DC 12V	Power interface (powering the matrix)
⑥	Power switch	On/Off Matrix
⑦	IN PUT	Signal input interface
⑧	OUT PUT	Signal output interface
⑨	Ground wire	Ground wire grounding identification

5. Product connection diagram

Product connection diagram (taking 16 in and 16 out as an example)



6. Equipment operation and instructions

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

- "ALL" means selecting all input or output ports (different representations in different states) to switch selections and execute all switching commands.
- "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, HD8Support4K, HD12DolbyDTS, HD12Stereo3D, HD8Lossless, HD8DolbyDTS, HD8Stereo, OUT1~OUT16, USER1~USER5) Do not unplug or plug in the HDMI cable, the EDID will be read automatically.

Operation example

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

EDID ADJUST
SELECT INPUT:

②. If you want to set the EDID data of a certain input port, select input buttons 1-16 ("x" means optional 1~16). 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 1~16 refers to setting the EDID of an interface individually;

INPUT PORT: X INPUT PORT: X
ELECT: 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. Save scene mode : Press the MENU key once , the following operation interface will appear. Panel operation can save 16 modes (1~16). Press UP/DOWN to select up and down. After selecting the mode, press ENTER to confirm ;

STORE SCENE : STORE SCENE :
1 1 DONE

- ②. Call the scene mode: press the MENU key twice, the following operation interface will appear. The panel operation can call 16 modes (1~16), press UP/DOWN to select up and down, and press ENTER after selecting the mode;

RECALL SCENE : RECALL SCENE :
1 1 DONE

- ③. Switch the buzzer sound on and off : Press the MENU key three times , and the following operation interface will appear. You can set the buzzer sound on/ off, and select UP/DOWN to switch the buzzer sound on and off ;

B e e p E n a b l e :
E n a b l e

Turn on beep

B e e p E n a b l e :
D i s a b l e

Turn off the beep

- ④. Gain/signal amplitude mode (only HD88L / HD1616L supports this function): Press the MENU key 4 times, the following operation interface will appear. Press the output 1~16 numeric key to determine the port that needs to be adjusted. The default amplitude of the product is 10 (Default), there are a total of 0~31 adjustable amplitudes;

TX Swing ADJUST
SELECT OUTPUT:

- ⑤. One-to-one display mode: Press the MENU key 5 times, 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
DONE

- ⑥. Restore factory settings: Press the MENU key 6 times, the following operation interface will appear, press ENTER to confirm, you can restore the default factory settings;

FACTORY RESET

- ⑦. Scene polling mode (at least 2 scenes must be selected for polling): Press the MENU key 7 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. .

S C E N E L o o p
E n a b l e

Polling on

S C E N E L o o p
D i s a b l e

Polling off

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

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

```
OUT 1 2 3 4 5 6 7 8
IN  1 2 3 4 5 6 7 8
```

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

```
FIRMWARE
01.00.0
```

- ③. Query matrix preferred DNS server

```
DNS
144.144.144.144
```

- ④. Query matrix default gateway

```
GateWay
192.168.1.1
```

- ⑤. Query matrix subnet mask

```
MASK
255.255.255.0
```

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

```
IP ADDRESS
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)

```
OUT 1 2 3 4 5 6 7 8
CON Y Y Y Y N N N N
```

- 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)

```
IN  1 2 3 4 5 6 7 8
CON Y Y Y Y N N N N
```

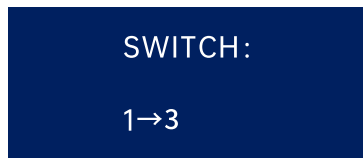
6. Example of switching operation

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 .

```
SWITCH:
1→
```

- 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 and network port control operations

6.2.1 Software settings

1. Double-click "MatrixController" 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

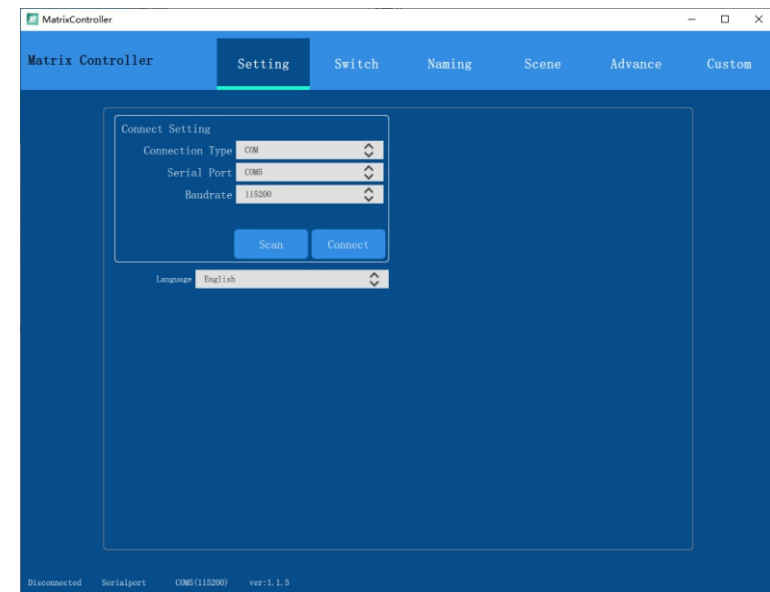
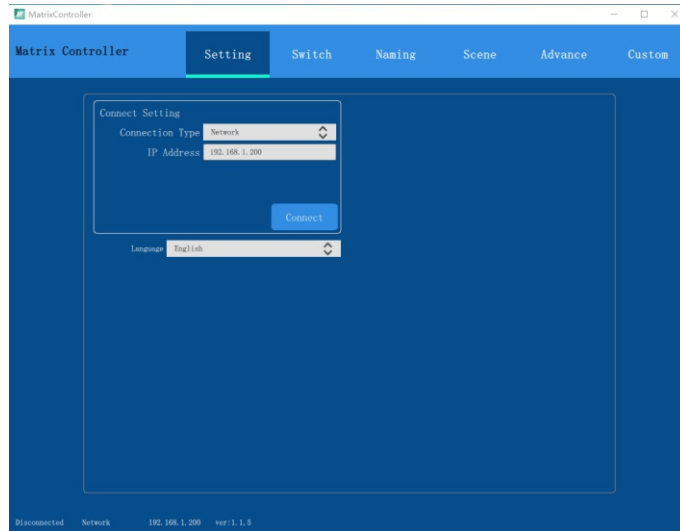
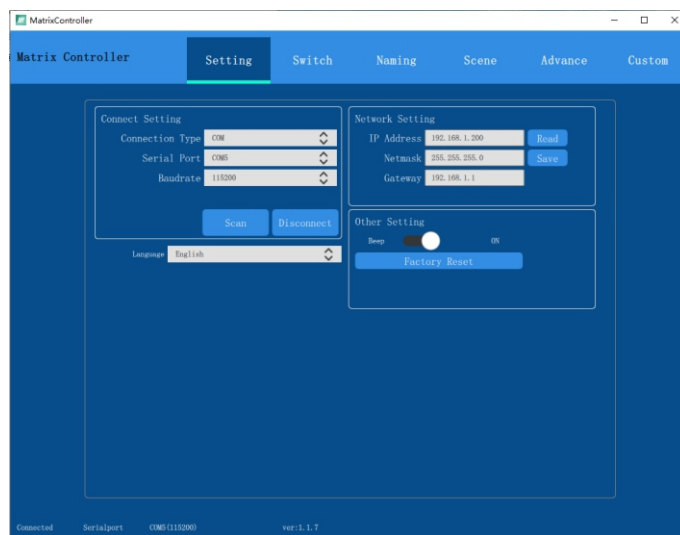


Figure 2: Network login interface



- 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



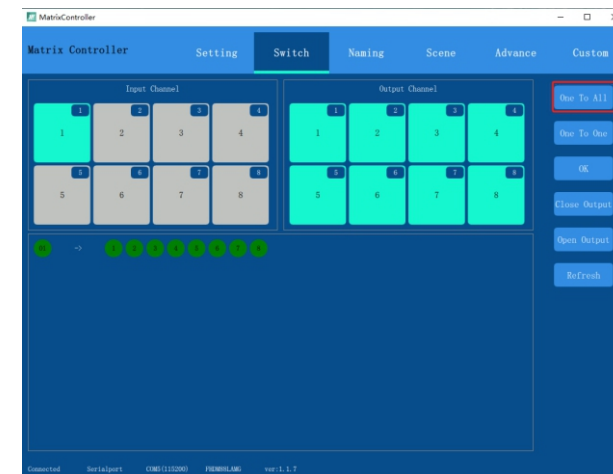
4. Correspondence between software-controlled input and output channels

- ① Pair of all: After selecting the input channel with the All command execution button, click to display this channel on all screens (for example, the third input channel is displayed on all screens);
- ② One-to-one: Quickly correspond to the display button (equivalent to the OTO button) for all input channels and output channels. One corresponding display (for example, the 4th input channel is displayed on the 4th screen);
- ③ Confirm: After selecting the input channel, click on the required output channel to display 1 channel of video on one or more screens;
- ④ Close output: close the display screen (close the output screen that does not need to be displayed);
- ⑤ Open output: open the display screen (open the previously closed output screen);
- ⑥ Refresh: View the latest status.

6.2.2 Control display operations

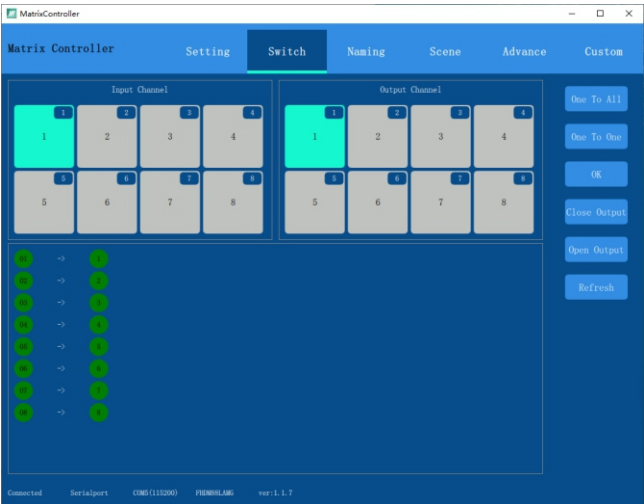
1. Click the "Channel Switching" interface (take the first input channel to the output "1.2.3.4 as an example"), select the input channel "1" and the output channel "1.2.3.4" and click "OK" as shown in the figure below:
2. Synchronously switch 1 audio and video signal to all output channels (for example, all outputs are 16 channels). After selecting the input channel, click "One pair all" directly.

Figure 4: A pair of all channel switching interfaces



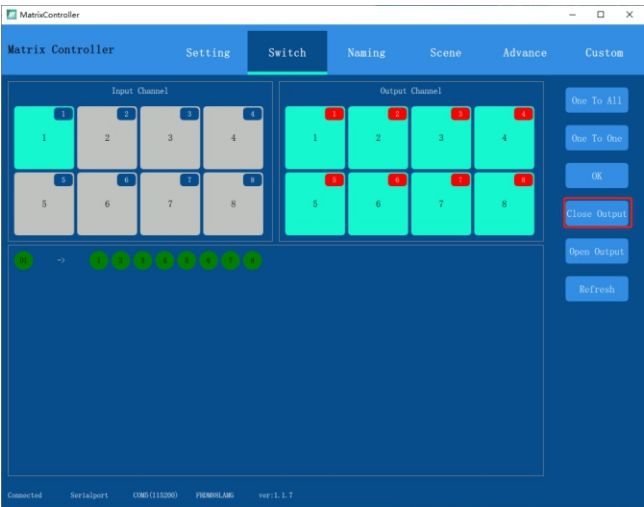
3. Switch the screen to display one-to-one correspondence (such as 1-1, 2-2, 3-3, 4-4...16-16 directly click "One-to-one"

Figure 5: One-to-one channel switching interface



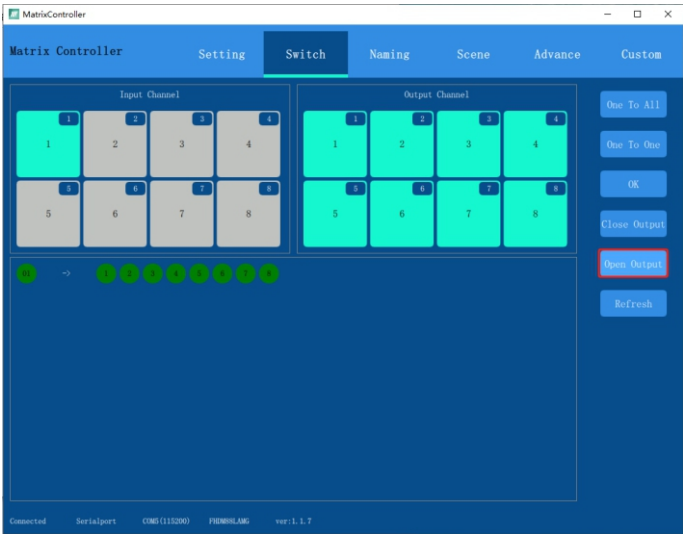
- 4、Close the screen that you do not want to display, click the corresponding output channel (such as output "1.2.3.4"), and then click "Close Output". The number of the output channel will turn to "red" to indicate that the output is not displayed, as shown in the figure below:

Figure 6: Close the output channel interface



5. Open the output channel "1.2.3.4", select the output channel "1.2.3.4", and then click "Open Output". The number of the output channel will turn to "blue", indicating that the output is displayed, as shown in the figure below:

Figure 7: Open the output channel interface



6.2.3 Channel naming

1. Click the "Channel Naming" interface and directly enter the name to be changed: input channel, output channel, scene. After the operation is completed, click "Save". If you need to restore the factory defaults, just click "Default" and then "Save" to restore the factory settings. The software supports copy and paste function, as shown in the figure below:

Figure 8: Channel naming interface

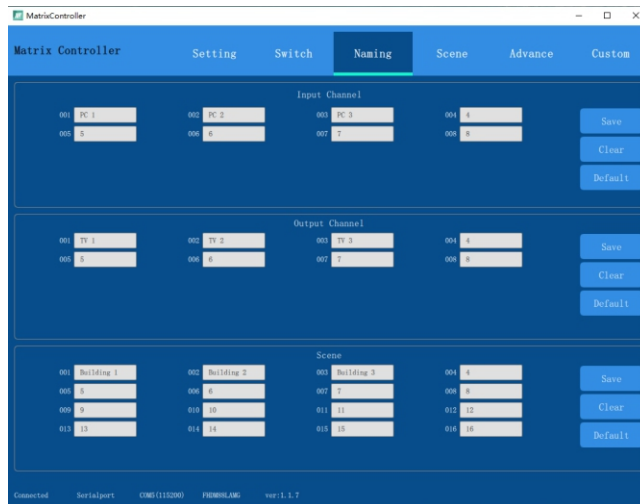
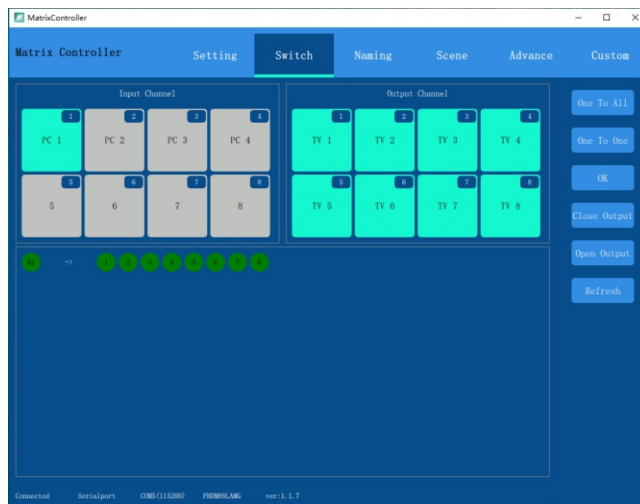


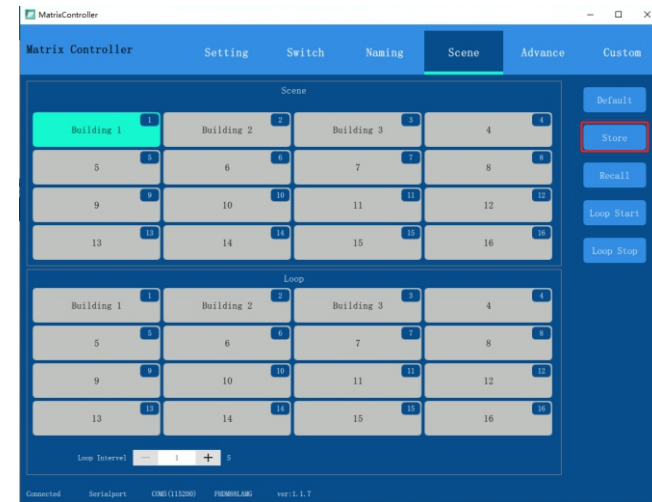
Figure 9: Channel naming → channel switching



6.2.4 Scene operation

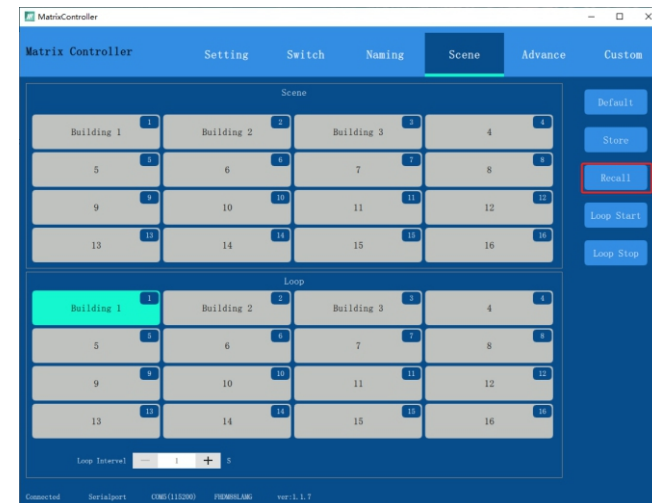
1. Save the scene: Save the current matrix state. For example, after switching input 1 to all output operations, click "Scene Mode" (taking saving in scene 1 as an example), click scene "1", and then click save. As shown below:

Figure 10: Saving the scene



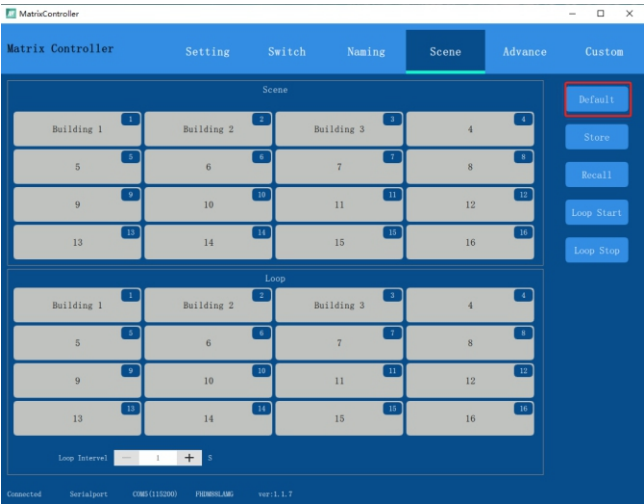
2. Call scene: To call the currently saved scene mode, click "Scene Mode" (take calling scene 1 as an example), click scene "1", and then click call. As shown below:

Figure 11: Calling scenario



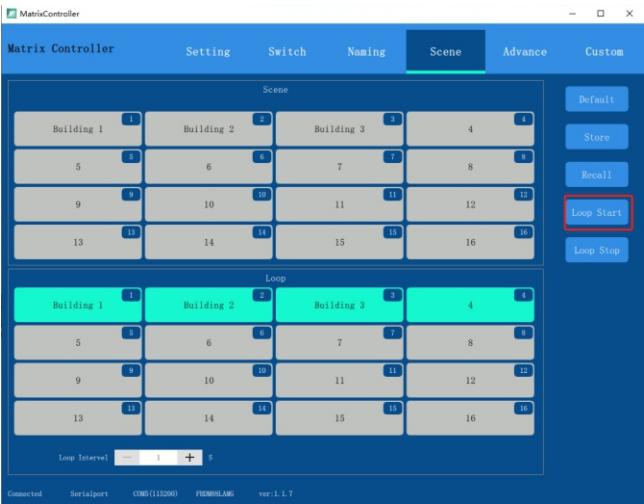
3. Restore the factory default scene mode: Click "Default" directly to restore the factory scene mode. As shown below:

Figure 12: Restore factory scene mode



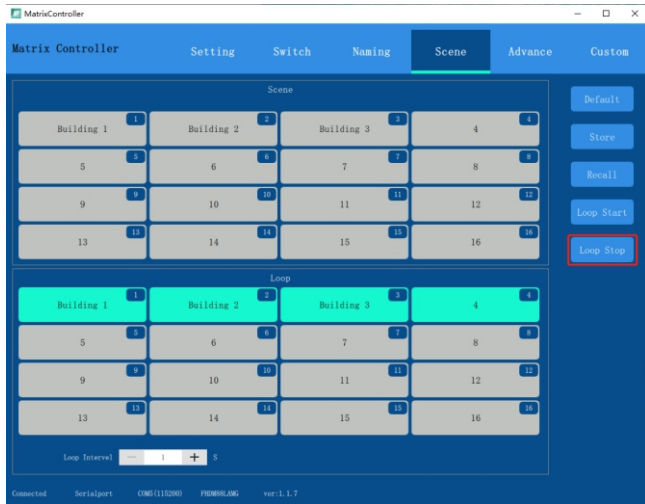
4. Polling settings: The currently saved scene modes are switched cyclically, and the maximum set time between the two modes is "9999" seconds. Taking the saved scene mode as an example, select "1.2.3.4" for polling switching, and set the time to 5 seconds.

Figure 13: Starting polling



5. Stop polling: Click "Stop Polling" to stop polling switching.

Figure 14: Stop polling



6.2.5 advanced settings

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

Figure 15: EDID reading

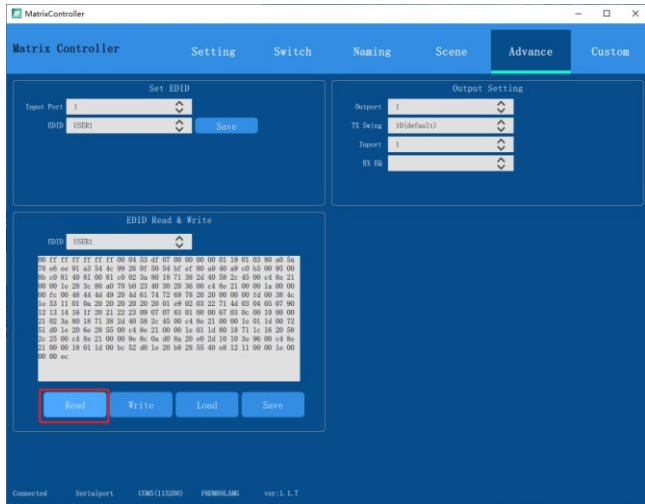


Figure 16: EDID writing

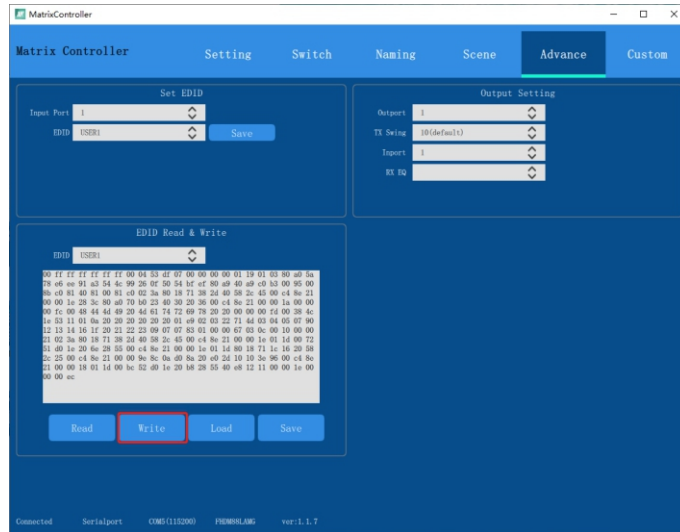


Figure 17: EDID import

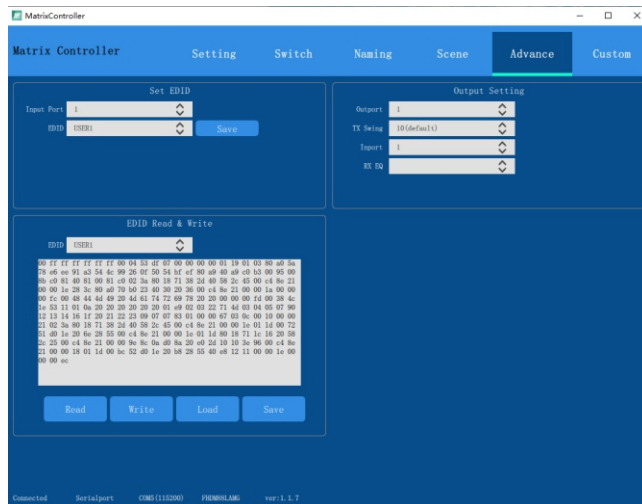
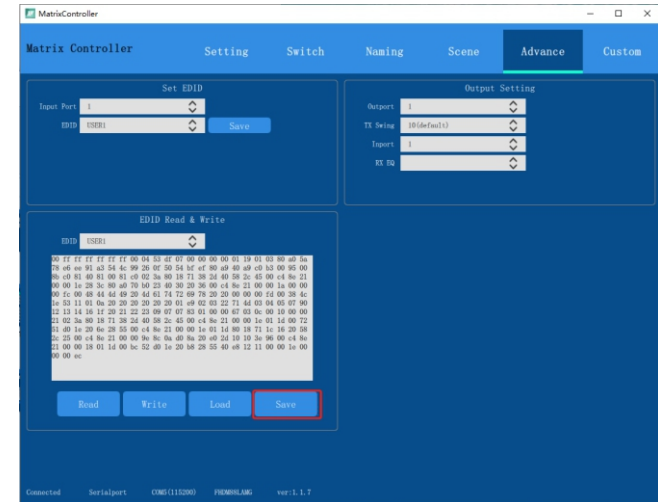
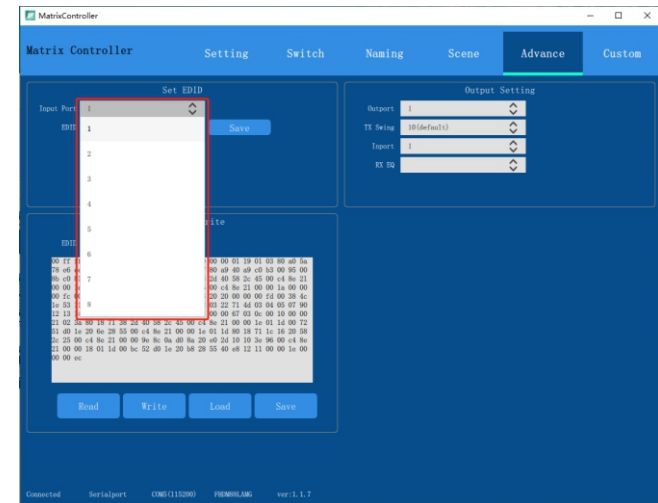


Figure 18: EDID saving



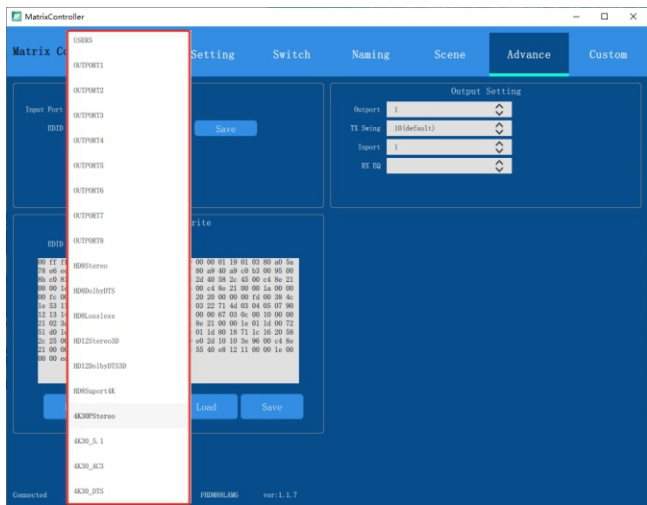
- 2、EDID settings: Select the EDID port that needs to be read, then select the required EDID and click "Save", as shown in the figure below:

Figure 19: EDID input port



3、The input port can be read for a certain channel, as shown in the figure below:

Figure 20: EDID reading and writing



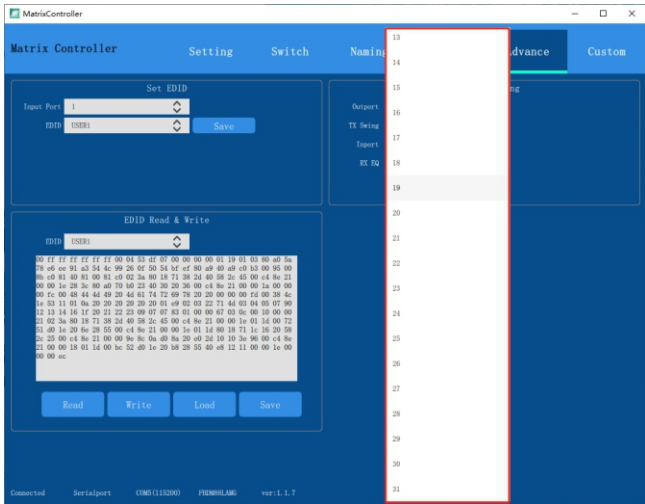
4、EDID reading and writing, select EDID [USER1~5\OUT1~N\built-in EDID], click [Read], the EDID data will be read into the input box, then select EDID [USER1~5], click [Write] , write the execution EDID into the corresponding USER , and the EDID signing is as shown below:

Note: EDID reading and writing will change according to product type/ number of input channels/customization/number of output channels/built-in EDID. The following MT-HD88L as a reference.

serial number	EDID name	Function
1~8	Enter 1~8	Input interface EDID
9~13	User 1~5	Save the user's EDID data. The user can save the EDID here.
14~21	Output 1~8	D from corresponding 1-8 outputs
22	HD8Stereo	1920x1080p_ 60HZ_ 8bit_ Stereo
23	HD8DOLBYDST	1920x1080p_ 60HZ_ 8bit_ DolbyDST
24	HD8LossLess	1920x1080p_ 60HZ_ 8bit_ Lossless
25	HD12Stereo3D	1920x1080p- 60HZ_ 12bit_ _3D_ Stereo
26	HD12Dolbydts	1920x1080p_ 60HZ_ 12bit_ 3D_ Dolby_ DTS
27	HD 8 Support 4k	1920x1080p_ 60HZ_ Suport4k
28	4K30 Ps tereo	3840x2160_ 30HZ_ 8bit_ stereo
29	4K30_5.1	3840x2160_ 30HZ_ 8bit_ 5.1
30	4K30_AC3	3840x2160_ 30HZ_ 8bit_ AC3
31	4K30_DTS	3840x2160_ 30HZ_ 8bit_ DTS

- 5、Gain/signal amplitude mode (only HD88L/ HD1616L supports this function), the product default amplitude is 10 (Default), and there are 0~31 adjustable amplitudes;

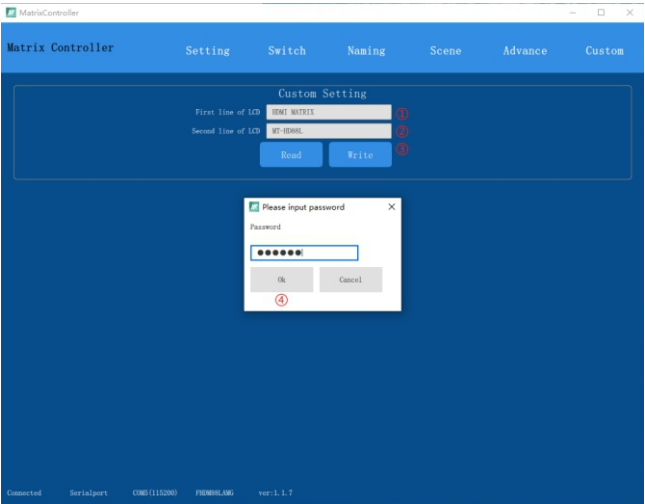
Figure 21: Signal amplitude interface



6.2.6 Customer settings

1. According to customer needs, the information displayed on the LCD screen of the device can be modified. After modification, just click "Save". The password is "654321*" as shown in the figure below:

Figure 22: Customer customization



6.3 WEB control operation

6.3.1 Software settings

WEB control : (WEB control method is the latest and most convenient switching method. In a local area within the network, mobile phones, computers, and tablets can open browsers for control) using WEB control methods and the steps are as follows:

1. In a local area network, mobile phones and tablets are connected to WIFI , and the control computer and matrix are connected to the same router server or switch.
2. Open the web browser on your phone, tablet or computer, and enter the IP address of the matrix at the URL:192.168. 1.200 (press down to query the matrix IP address).
3. Enter account number: admin, password: admin, and log in. If the IP address of the router is not 192.168.1.XX, but 192.168.2.XX, you need modify the IP address of the matrix or the IP address of the Internet.

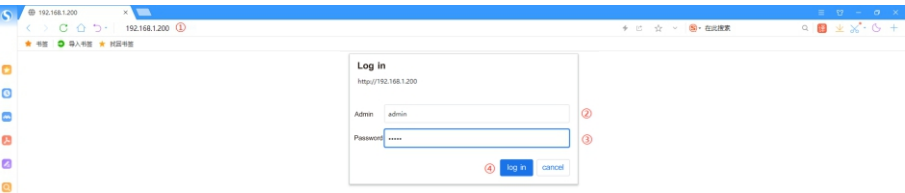
- ① Modify the IP address of the matrix: directly use the " MatrixControler 2 " software to modify it, and use the serial port connect the IN of the matrix to the cable, open the software, and change the IP address to 192. 168.2. XX. Pay attention to the modification. The IP address is not occupied within the LAN. After modification, repeat the previous steps 1-3.
- ② Modify the IP address for Internet access: Get a router or switch, connect it to a computer, and open the routing In the router settings, change the router's IP address to 192.168.1.XX, and then repeat steps 1-3.

Note: Do not change the account password. If you forget it, you need to return it to the factory settings.

4. On the WEB login interface, enter the IP in the browser to access the WEB backend, enter the username and password and click to confirm the login. After successful login, you will enter the video switching interface by default.

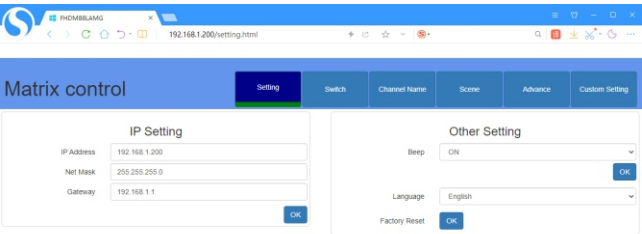
Username: admin Password: admin

Figure 23: WEB login interface



5. After the connection is successful, 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:

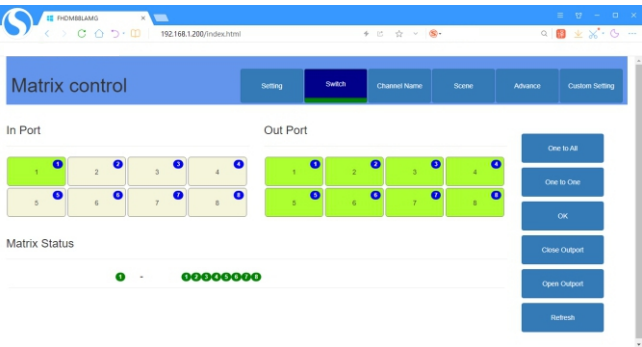
Figure 24: Setting interface



6.3.2 Control display operations

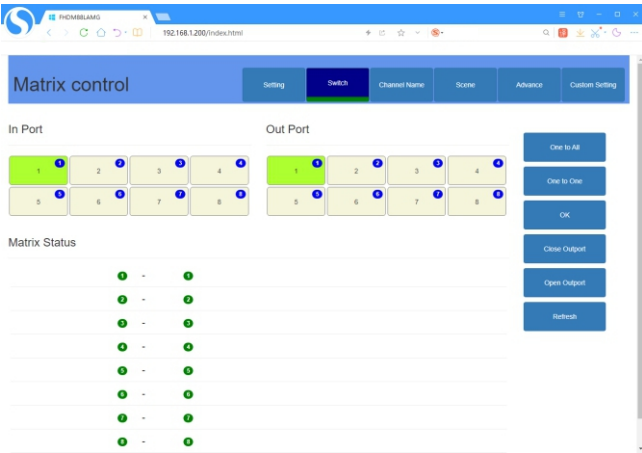
1. Click the "Channel Switching" interface (take the first input channel to the output "1.2.3.4 as an example"), select the input channel "1" and the output channel "1.2.3.4" and click "OK" as shown in the figure below: Simultaneously switch 1 audio and video signal to all output channels (for example, all outputs are 16 channels). After selecting the input channel, click "One pair all" directly.

Figure 25: A pair of all channel switching interfaces



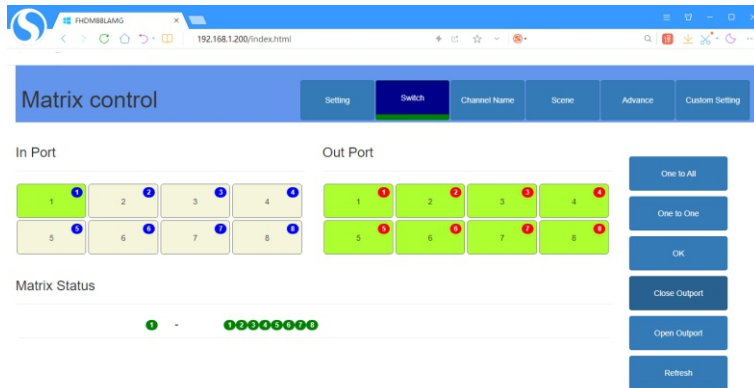
2. Switch the screen to display one-to-one correspondence (such as 1-1, 2-2, 3-3, 4-4...16-16 directly click "One-to-one"

Figure 26: One-to-one channel switching interface



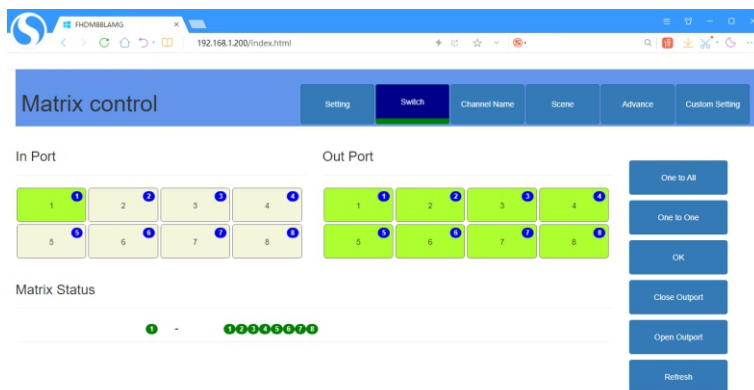
- Close the screen that you do not want to display, click the corresponding output channel (such as output "1.2.3.4"), and then click "Close Output". The number of the output channel will turn to "red" to indicate that the output is not displayed, as shown in the figure below:

Figure 27: Close the output channel interface



- Open the output channel "1.2.3.4", select the output channel "1.2.3.4", and then click "Open Output". The number of the output channel will turn to "green", indicating that the output is displayed, as shown in the figure below:

Figure 28: Open the output channel interface



6.3.3 Channel naming

- Click the "Channel Naming" interface and directly enter the name to be changed: input channel, output channel, scene. After the operation is completed, click "Save". If you need to restore the factory defaults, just click "Default" and then "Save" to restore the factory settings. The software supports copy and paste function, as shown in the figure below:

Figure 29: Channel naming interface

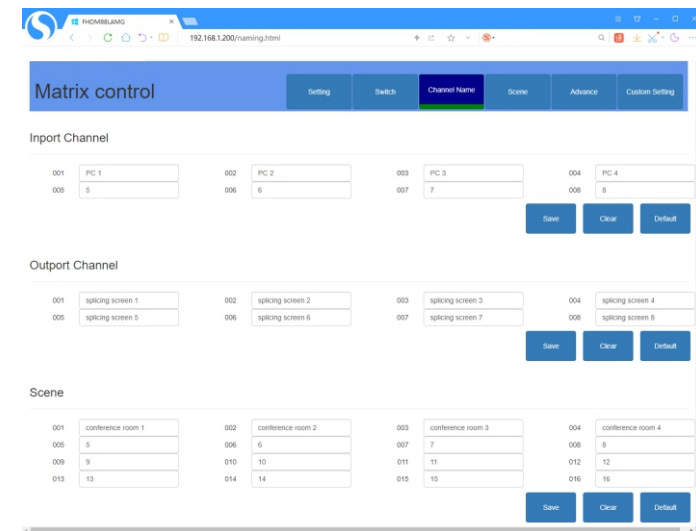
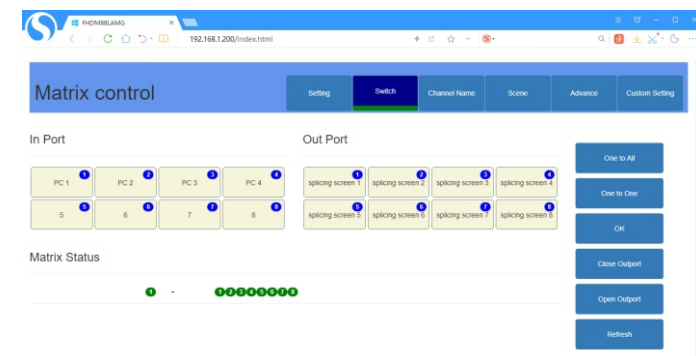


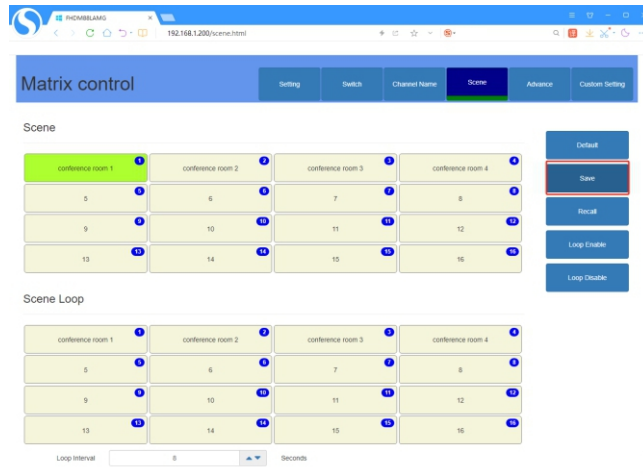
Figure 29: Channel naming interface



6.3.4 Scene operation

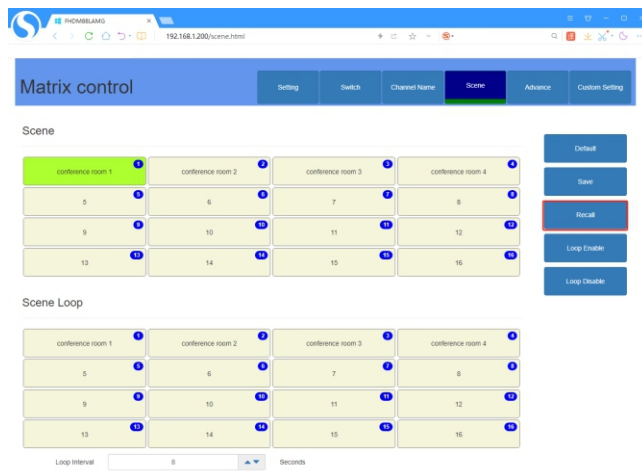
1. Save the scene: Save the current matrix state. For example, after switching input 1 to all output operations, click "Scene Mode" (taking saving in scene 1 as an example), click scene "1", and then click save. As shown below:

Figure 31: Saving the scene



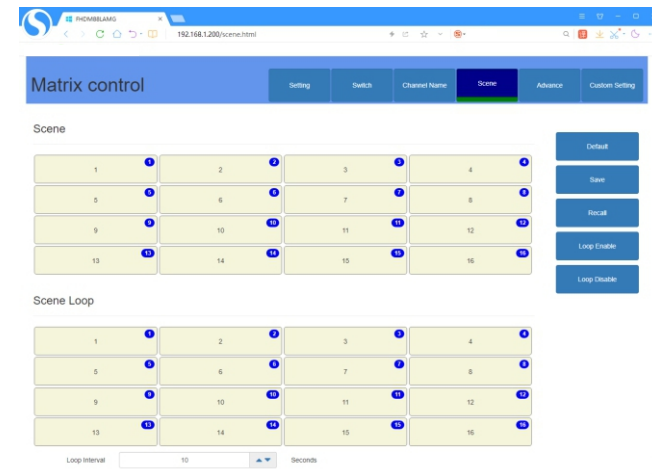
2. Call scene: To call the currently saved scene mode, click "Scene Mode" (take calling scene 1 as an example), click scene "1", and then click call. As shown below:

Figure 32: Calling scenario



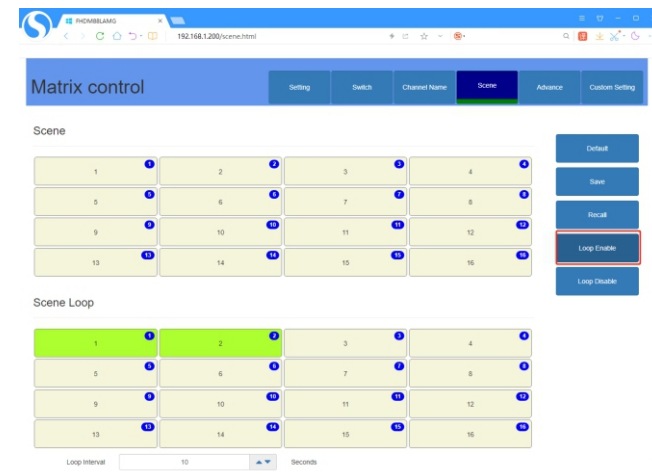
3. Restore the factory default scene mode: Click "Default" directly to restore the factory scene mode. As shown below:

Figure 33: Restore factory scene mode



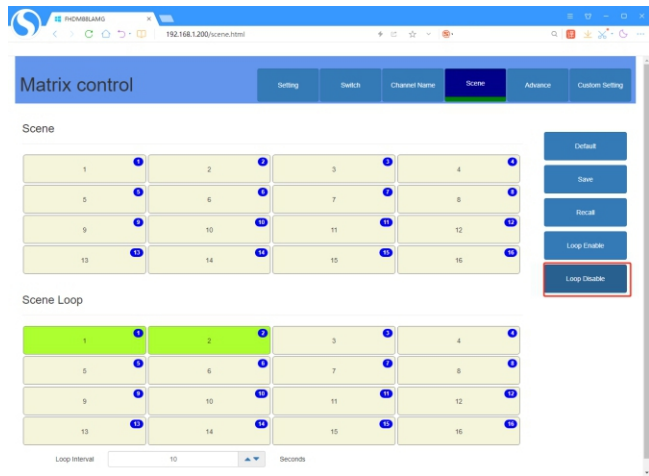
4. Polling setting: The currently saved scene modes are switched cyclically, and the maximum set time between the two modes is "9999" seconds. Taking the saved scene mode as an example, select "1.2.3.4" for polling switching, and set the time to 5 seconds.

Figure 34: Starting polling



5. Stop polling: Click "Stop Polling" to stop polling switching.

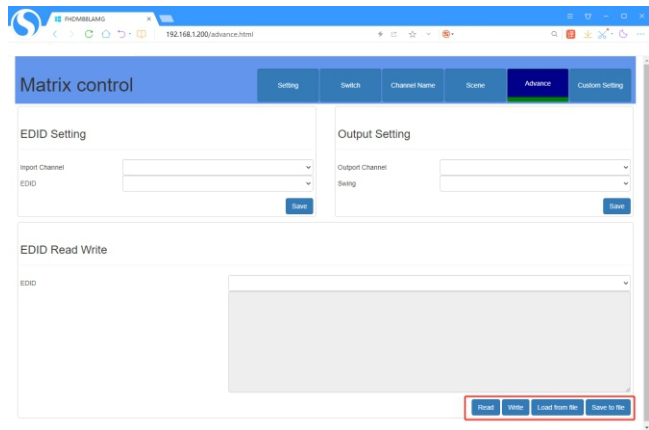
Figure 35: Stop polling



6.2.5 advanced settings

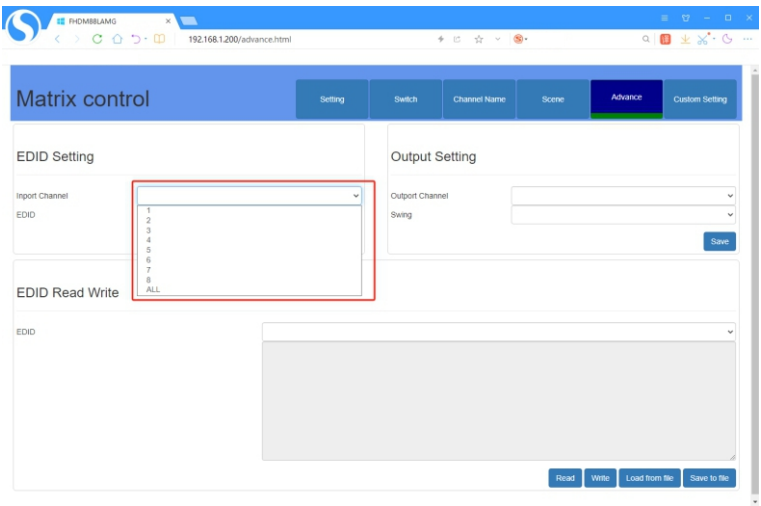
1. EDID setting (input source EDID that can be learned). EDID reading and writing (can read, write, import, save) as shown in the figure below:

Figure 36: EDID settings



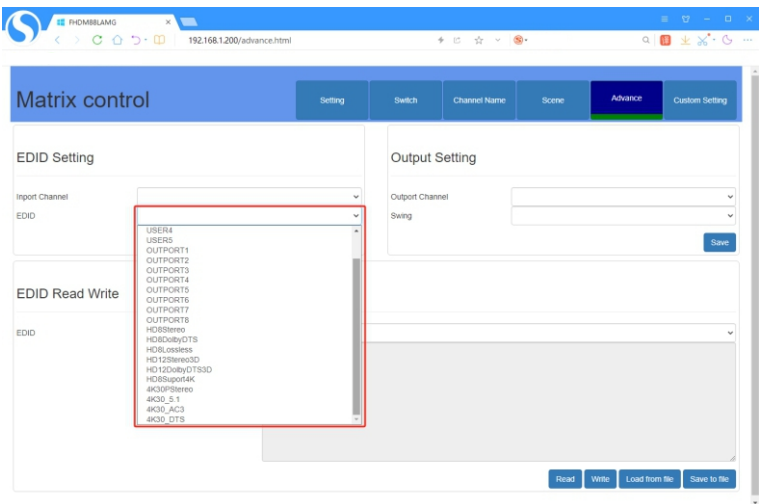
6、EDID settings: Select the EDID port that needs to be read, then select the required EDID and click "Save", as shown in the figure below:

Figure 37: EDID input port



7、The input port can be read for a certain channel. Click "All" to read all ports, as shown in the figure below:

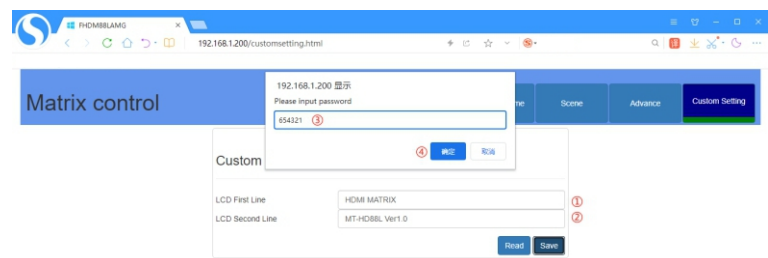
Figure 38: EDID reading and writing



6.3.6 Customer settings

1. According to customer needs, the information displayed on the LCD screen of the device can be modified. After modification, just click "Save". The password is "654321* as shown in the figure below:

Figure 39: Customer customization



7. Remote control instructions

7.1 Remote control operating instructions



serial number	name	illustrate
1		On/off function key
2		Mute button (turn on/off buzzer sound)
3	F1~F8 keys	Keep function keys
4	SAVE key	save scene key
5	RECALL key	Call scene key
6	Up and down keys	Page turning operation under menu function
7	left and right keys	Keep function keys
8	OK button	Confirm action
9	FUN key	Main menu function keys
10	CANCEL key	return key
11	0~9 keys	numeric keypad
12	ALL key	Execute all switching keys when switching
13	EDID key	EDID learning key

Remote control operation example

- ① One-on-one operation steps: 1→1→OK
- ② A pair of all operation steps: 1→ALL→OK
- ③ Save scene operation steps: Save→Up and down keys (1-16 mode)
→OK
- ④ Recall scene operation steps: Recall→up and down keys (1-16 mode)
→OK

EDID learning operation steps:

- ① Certain EDID→numeric keys (1-8)→up and down keys to select mode→OK
- ② All EDID→ALL→Use up and down keys to select mode→OK

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

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

8. Matrix control protocol

RS232 communication protocol and central control command code description:

Use direct connection cable (if USB-RS232 conversion cable is used, it can be directly inserted into the matrix serial port for control)

Communication protocol: (Baud rate 115200, stop bit 1, data bit 8, parity bit none)

type	Control instruction	Function description
Hold do refer to make	[x1]LL.	Switch the input of [x1] channel to the output of all channels
	[xO]ALL.	Turn off all outputs
	[xO]X[x1].	Output [x1] is closed
	ALL[1].	Set all channels to correspond one to one , such as: 1->1, 2->2, 3->3....
	[x1]X[x2].	Switch [x1] input to [x2] output
	[x1]X[x2]&[x3]&[x4].	Switch [x1] input to [x2], [x3], [x4] output
	Save[Y].	Save the current state to the [Y]th storage unit, [Y] is the 1-9 numeric key
	Recall[Y].	Save the current state to the [Y]th storage unit, [Y] is the 1-9 numeric key
	BeepON.	Turn on the buzzer
	BeepOFF.	Turn off the buzzer

Remark:

1. [x1], [x2], [x3], [x4] are the number of input and output channels, which are determined according to the controlled matrix. If the controlled matrix is an 8*8 matrix, their effective range is 1-10. If it exceeds the range, it will be treated as a command input error, and the " [" and "] " in the command are not sending characters ;
2. The ending character of each instruction cannot be missed. There is a "." at the end of each instruction. , punctuation marks are all punctuation marks in the English input method ;

3. Letters are not case-sensitive , and some instruction codes are illustrated with examples ;

- ①.Switch the input of [x1] channel to the output of all channels: [x 1] All .
Example : To switch the 3rd input to all output channels, enter '3 All. '
- ②.Turn off all outputs : [x0]All.
Example : Just enter '0All. '
- ③.The [x1]th output is closed : [x0]X[x1].
Example : If you need to turn off output 1, just enter '0x1.'. If you need to turn off output one and output two at the same time
Then just enter '0x1.0x2.'
- ④.Set to one-to-one correspondence for all channels : All[1].
Example : For example , a 16 * 16 HDMI matrix, after running, the status is:
1->1, 2->2, 3-> 3 , ... 16-> 16 , enter ' A ll1. '
- ⑤.Video switching command: [x1]X[x2].
Example : If you want to switch the 3rd input to the 5th output, you only need to enter "3X5.". If you want to switch the 3rd input to the four outputs 5, 6, 7, and 8, you only need to enter "3X5&6&7&8." ."
- ⑥.Save current status command: Save[Y].
Example : To save the current state to the 7th storage unit, enter "Save7."
- ⑦.Recall the stored unit instruction: Recall[Y].
Example : To call out the state of the 7th storage unit and configure it as the input and output state of the matrix, enter Just enter "Recall7."
- ⑧.turning on and off the buzzer
Example: BeepON., turn on the buzzer, and you can hear the buzzer sound when switching.
BeepOFF., turns off the buzzer, and you will not hear the buzzer sound when switching .

9. Common product faults and precautions

1. Signal interference is large: Check whether the signal connection cable and plug are in good condition, whether the cable meets the specification requirements, whether the system grounding is good, and whether the AC power ground wire system between devices is consistent.
2. When there is color loss or no video signal output, it may be that the connectors at both ends of the signal cable do not correspond well. Please check the cable connection.
3. When the serial port (referring to computer or central control serial port) cannot control the matrix, please check whether the port number of the software serial port is selected correctly.
4. When switching the matrix, the buzzer sounds, but there is no corresponding projection output:
 - ①. Check whether there is a signal at the corresponding input terminal. (can be tested with an oscilloscope or multimeter) If there is no information No. input, it is possible that the input wiring is broken or the connector is loose, just replace the wire;
 - ② Check whether there is a signal at the corresponding output terminal. (can be tested with an oscilloscope or multimeter) If there is no information No. output, it is possible that the output wiring is broken or the connector is loose, just replace the wire;
5. If the matrix input and output signals can be switched, but there is no beeping sound, it may be that you have turned off the buzzer sound.
6. If there is no display on the LED display and no response to operations, the power supply may be abnormal.
7. When connecting the connector, if you feel that the static electricity is strong, it is possible that the power ground wire is not connected to the ground. Please connect it properly, otherwise it will easily damage the host and shorten its life.
8. If the matrix panel buttons, serial port, and remote control cannot be controlled, the host may be internally damaged. Please send it to a professional for repair.
9. It is prohibited to place objects on power cords, signal lines, communication lines and other cables

10. After-sales service

10.1 Warranty information

The Company warrants that this product will be free from defects in workmanship and materials under normal use and service support for a period of one (1) year after purchase from the Company or its authorized distributors. If the product fails to work properly within the scope of the warranty within the valid warranty period, the company will choose and pay for the repair of the defective product or part, deliver 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 replaced products will become the property of the Company. Replacement products may be new or reconditioned. Any replacement or repaired product or part is warranted for ninety (90) days or the remainder of the original warranty, whichever is longer. The Company is not responsible for any software, firmware, information, or memory data contained in, stored in, or integrated with products returned by the customer for repair, whether or not during the warranty period.

10.1 Warranty information

The Company warrants that this product will be free from defects in workmanship and materials under normal use and service support for a period of one (1) year after purchase from the Company or its authorized distributors. If the product fails to work properly within the scope of the warranty within the valid warranty period, the company will choose and pay for the repair of the defective product or part, deliver 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 replaced products will become the property of the Company. Replacement products may be new or reconditioned. Any replacement or repaired product or part is warranted for ninety (90) days or the remainder of the original warranty, whichever is longer. The Company is not responsible for any software, firmware, information, or memory data contained in, stored in, or integrated with products returned by the customer for repair, whether or not during the warranty period.