

HDMI[®] 2.0 Seamless Splicing Matrix User Manual

HDMI[®] 2.0 Seamless Splicing Matrix Packing List

The complete HDMI[®] 2.0 seamless splicing matrix consists of the following components:

- 1、One matrix switcher
- 2、One power cord
- 3、One power adapter
- 4、One RS 232 serial port cable
- 5、One infrared remote control
- 6、One ground wire

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 matrix switcher.

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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.

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Product overview

This device is the latest ultra-high-definition seamless solidification splicing matrix. It adopts a 4/8 in and 4/8 out design to add audio analysis, transmission, distribution, switching, and splicing functions. It adopts a button-type management design concept, equipped with signal resolution adjustment, signal type selection and adjustment functions, supports 4K, EDID, HDCP, automatic adaptive adjustment and analysis, supports seamless and fast switching functions, and has a strong cost performance, which further reflects its value. This matrix adopts electromagnetic protection design, which can effectively shield electromagnetic interference from the surrounding environment, thereby ensuring stable operation of the equipment.

HDMI® 2.0 seamless splicing matrix 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. The unique processing method 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® 2.0 seamless splicing matrix is mainly used in radio and television projects, multimedia conference halls, large-screen display projects, TV teaching, command and control centers and other places.

Product overview

- 1、Seamless instant switching, no black screen, blue screen, broken screen, or slow excessive animation during the switching process;
- 2、Support maximum resolution: 4K*2K@60HZ, 1080P@60HZ;
- 3、The full hardware architecture has no CPU and operating system, and the operation response speed is faster;
- 4、Supports 4K picture splicing mode and is compatible with the splicing processor function;
- 5、Compatible with the video wall splicing function, users can adjust the number of screen rows, columns, etc. in the control software or WEB, adjust the splicing mode they need, and realize free choice of splicing.
- 6、Supports embedding external analog audio into the HDMI signal stream to achieve audio embedding;
- 7、Supports audio separation, with AUDIO output port, which can be connected to an external power amplifier to realize audio de-embedding and audio separation of the original HDMI signal output;

- 8、Supports the analysis, distribution and switching of stereo audio of various video signals
- 9、It has 5 control methods: visual panel buttons, RS-232, infrared remote control, LAN, WEB and Android APP control, which can greatly improve work efficiency and is simple and fast to use.
- 10、Visual operation buttons, the input and output channel status can be visualized through the button indicators;
- 11、Supports browser web page control of harmonyOS, Linux, Windows, Apple IOS and other systems;
- 12、Each signal supports HDCP decoding, Blu-ray, and 3D;
- 13、The product has ESD electrostatic design inside, supports hot swapping, and the system is stable and reliable;
- 14、Broadcasting and television-level switching chip, image switching can be completed with a single chip, and the integration level is higher;
- 15、Supports EDID rewritable EDID adaptive function to better adapt to various on-site display devices and improve compatibility;
- 16、Intelligent EDID management can automatically configure the video resolution according to the connected monitor, and can output 4K and 1080P signals at the same time.
- 17、The software supports 16 built-in scene modes, and each channel has its own name. When saving, you can name each scene to later identify the settings of the video wall scene;
- 18、Supports automatic storage protection in power outage scenarios and automatic memory recovery function upon startup;
- 19、3D image frequency doubling repair, adjacent pixel repeat processing and 3D deinterlacing processing functions for image repair;
- 20、Supports frequency reduction and upscaling processing, adjacent pixel repair processing and blur processing to achieve image downconversion processing functions;
- 21、Long-term drive capability: The input is equipped with automatic equalization, which effectively reduces deterministic jitter caused by line transmission;
- 22、The output has adjustable gain mode so that the receiving end can still receive signals after long-term transmission. Using high-quality HDMI® 1.4 version cable, the input transmission distance can reach 20 meters, and the output transmission distance can reach 25 meters;
- 23、Support online network port upgrade of device firmware;
- 24、Supports overvoltage, overcurrent, overheating and overload protection to reduce the probability of equipment damage.
- 25、The host display adopts English high-resolution display and supports LOGO and model burning customization.

Technical Parameters

name	HDMI® 2.0 seamless splicing matrix		
model	4 IN 4 OUT	8 IN 8 OUT	16 IN 16 OUT
Display method	Customized splicing mode, copy mode, crossover mode		
Switching speed	Seamless second cutting ≤5ns (±1ns)		
Input interface	HDMI® *4 + 3.5MM*4	HDMI® *8 + 3.5MM*4	HDMI® *16 + 3.5MM*4
Output Interface	HDMI® *4 + 3.5MM*4	HDMI® *8 + 3.5MM*4	HDMI® *16 + 3.5MM*4
HDMI® compatible	HDMI® 2.0 (backwards compatible)		
HDCP compatible	HDCP 2.2 (backwards compatible)		
Control method	Visual buttons, RS232, LAN, Infrared remote control, WEB, Android APP, third party (central control)		
Controlling software	Professional control software		
RS-232	Baud rate: 115200, Data bits: 8, Stop bits: 1, No parity		
Video format	4K*2K@60Hz (4:4:4)		
Color space	RGB,YCbCr4:4:4/4:2:2		
Power supply	DC 12V 2A	DC 12V 4A	DC 12V 10A
Electrostatic protection	Human body model: ±8kV (air discharge) , ±4kV (contact discharge)		
high	1U		2U
shell material	Front panel (aluminum alloy) + body (iron)		

Interface display

4.1 4 IN 4 OUT interface display

Front panel interface display

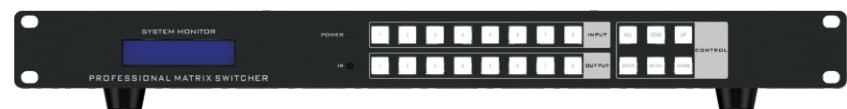


Rear panel interface display

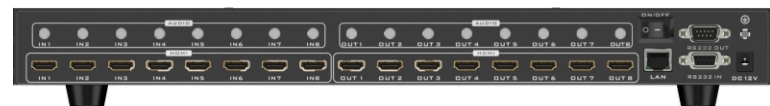


4.2 8 IN 8 OUT interface display

Front panel interface display

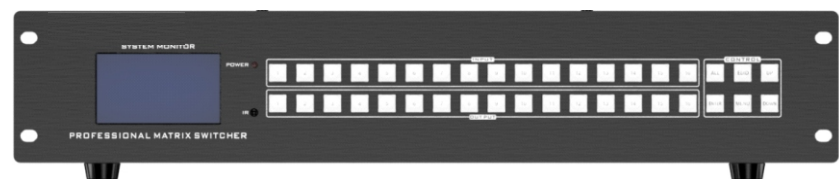


Rear panel interface display

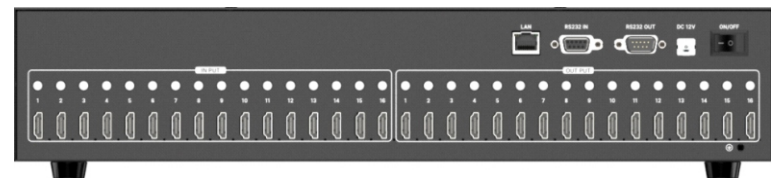


4.2 16 IN 16 OUT interface display

Front panel interface display

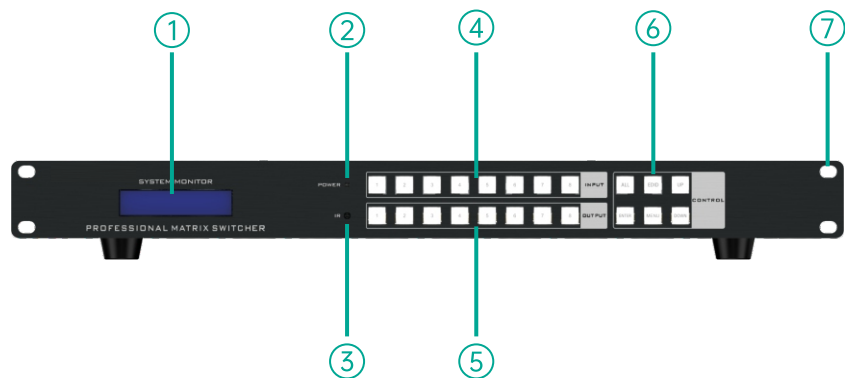


Rear panel interface display



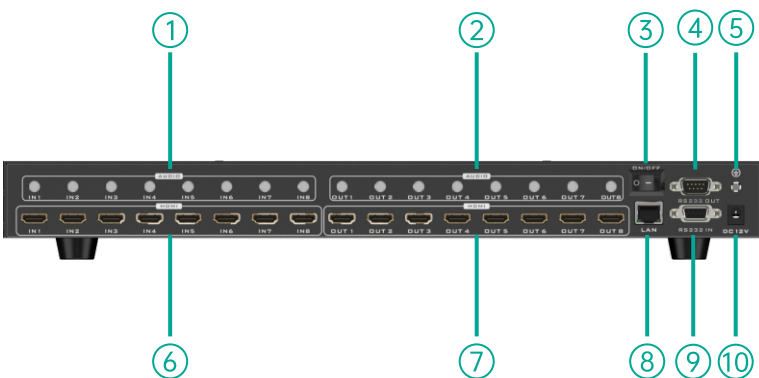
4.4 Interface description

Front panel interface description
(taking 8 in and 8 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 (1~8) keys	Input channel switching button
⑤	OUT PUT (1~8) keys	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

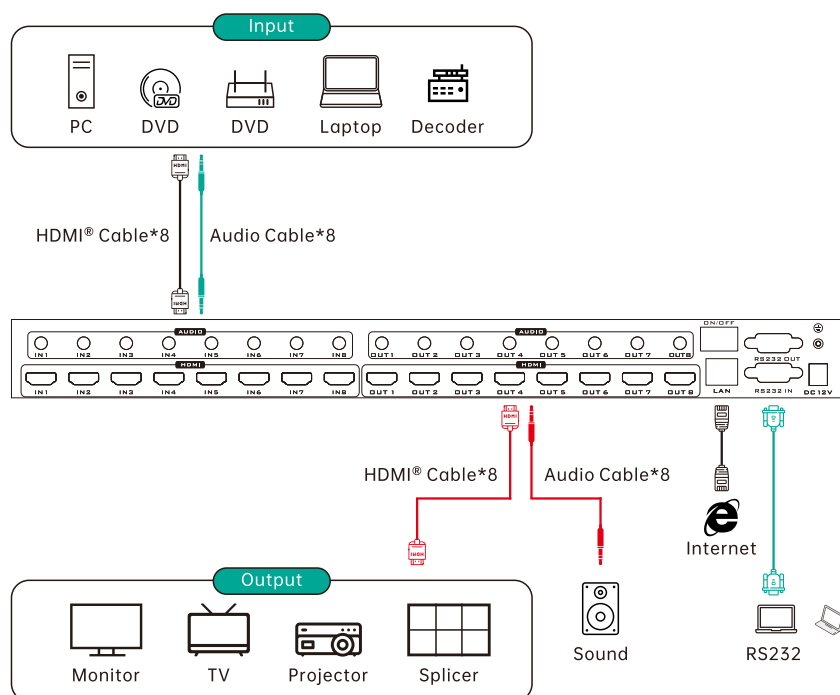
Rear panel interface description
(taking 8 in and 8 out as an example)



Serial number	name	illustrate
①	AUDIO (IN1~IN8)	3.5MM audio input port
②	AUDIO (OUT1~OUT8)	3.5MM audio output port
③	Power	Power on/off
④	RS232 OUT	RS232 output control port
⑤	Ground wire	Ground wire grounding identification
⑥	HDMI® (IN1~IN8)	HDMI® signal input interface
⑦	HDMI® (OUT1~OUT8)	HDMI® signal output interface
⑧	LAN	Network control port
⑨	RS232 IN	RS232 input control port
⑩	DC 12V	Power interface (supplying power to the matrix)

5、Diagram

(take 8x8 as an example)



6、Operation and Explanation

6.1 Panel Description

6.1.1 number key

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

6.1.2 function key

- 1、"ALL" means selecting all input or output ports
- 2、"EDID", press EDID, the key panel prompts the input source you can learn, you can select a certain road or all inputs to read. Internal EDID has multiple formats(UHD4K60, UHD4K30, HD12Lossless, HD12DolbyDTS, HD12Stereo3D, HD8Lossless, HD8DolbyDTS, HD8Stereo, OUT1~OUT8, USER1~USER5).

Examples

① Press EDID

EDID ADJUST
SELECT INPUT:

- ② To set EDID at an input port. Select 1-8 input buttons, appear on the left operating interface, press UP/DOWN to select the internal EDID and press Enter. At this time, the right interface appears.

INPUT PORT: X INPUT PORT: X
ELECT: NONE EDID DONE

- ③ To set the EDID of all input ports. Press ALL, the left interface appears, and select the internal EDID according to UP/DOWN. Press ENTER. At this time, the right operating interface appears.

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

3 "ENTER", confirm the command of the operation.
 4 "MENU", if the operation is wrong, press MENU, the LCD screen of the device can return to the main interface.

- ① Store Scene. Press MENU once, the following operating interface appears. The panel operation can save 16 modes (1-16), select UP/DOWN, and press Enter.

STORE SCENE :	STORE SCENE :
1	1 DONE

- ② Recall Scene. Press the MENU twice, and the following operation interface appears. The panel operation can call 16 modes (1-16), select UP/DOWN, and press Enter.

RECALL SCENE :	RECALL SCENE :
1	1 DONE

- ③ Scene Loop(At least 2 scenes should be selected). Press the MENU three times, the following operating interface appears. The preserved scenario, according to UP/DOWN, select the rotation to open or close.

SCENE Loop Enable

open

SCENE Loop Disable

close

- ④ Open/Close Beep. Press the MENU four times, and the following operating interface appears, and the beep is switched by UP/DOWN.

Beep Enable: Enable

open

Beep Enable: Disable

close

- ⑤ Back Light Time. Press MENU five times, and the following operating interface appears. You can set the display time of the LED display. Press UP/DOWN. LONG means that the light is on, 1MIN is 1 minute, 3MIN is 3 minutes, and 10MIN is 10 minutes.

Back light TIME LONG

- ⑥ Choose to enter audio, press the MENU six times, the following operating interface appears, select 1-8 input buttons ("x" to indicate 1-8), press UP/DOWN (HDMI means HDMI internal sound, EXTERNAL means external audio), press Enter and complete the audio settings.

Audio Embedded SELECT INPUT:

Audio Embedded	Audio Embedded
IN X→HDMI	IN X→EXTERNAL

- ⑦ Out Resolution. Press MENU seven times, appear the following operating interface, select 1-8 output buttons ("x" to indicate 1-8), press UP/DOWN(4K60-B, 4K60-A, 4096*2160P60, 4096*2160P30, 3840*2160P60, 3840*2160P30, 1600*900, 1600*1200, 1280*800, 1024*768, 1080P, 720P, 1366*768, 1280*1024, 480P), and press Enter.

OUT Resolution OUT Resolution
SELECT OUTPUT: X→4096x2160P60

- ⑧ One-to-One display mode. Press Menu eight times, the following operating interface appears, press Enter, all input channels and output channels correspond to display (For example, the first input channel is displayed in the first screen).

SWITCH O To O SWITCH O To O
DONE

- ⑨ Factory Reset. Press Menu nine times, the following operating interface appears, and press Enter to restore the factory settings.

FACTORY RESET

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

- ① Query the corresponding state of the current input and output.

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

- ② Query the corresponding input state ("Y" indicates that there is a signal source input, and "N" indicates that there is no signal source input).

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

- ③ Query the corresponding output status ("Y" indicates that the output is connected to display, "N" indicates that the output is not connected to display).

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

- ④ Query matrix IP address, default IP: 192.168.1.200

IP ADDRESS
192.168.1.200

- ⑤ Query sub-net mask

MASK
255.255.255.0

- ⑥ Query default gateway

GateWay
192.168.1.1

⑦ Query server port

Srever Port
8080

⑧ Query device version number (based on the actual factory version as the first)

FIRMWARE
01.00.0

6、Switch Operation

Example 1: Switch the first signal to the third output, the steps are as follows.

① Press the input channel "1"

SWITCH:
1→

② Press the output channel "3"

SWITCH: 1
→3

③ Press "ENTER"

SWITCH
DONE

Example 2: Switch the first signal to all outputs, the steps are as follows.

① Press the input channel "1"

SWITCH:
1→

② Press "ALL"

SWITCH: 1
→ALL

③ Press "ENTER"

SWITCH
DONE

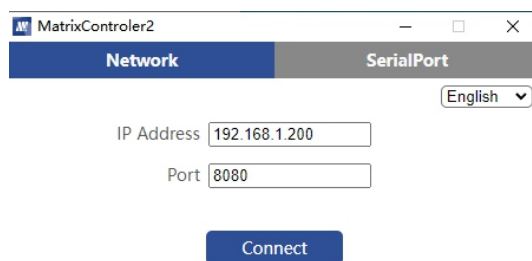
6.2 Serial Port, Network, Web Control Operation

6.2.1 Software Settings

Web control. The web control method is the latest and most convenient switching method. In a local area network, mobile phones, computers, and tablets can open the browser for control. Use the web control method and steps as follows.

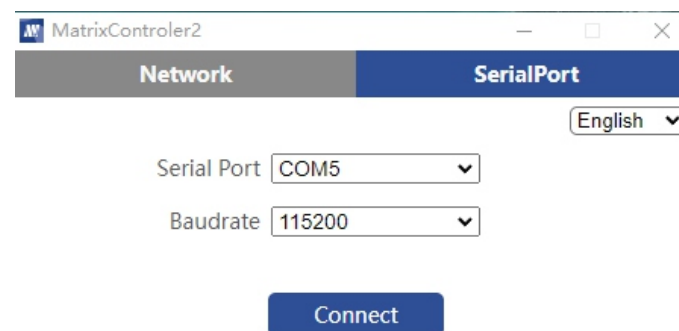
1. In a local area network, mobile phones and tablets are connected to WIFI, and the computer and matrix are connected to the same router or switch.
 2. Open the web browser of the mobile phone, tablet or computer, and enter the IP address of the matrix at the URL: 192.168.1.200 (the matrix IP address can be query by DOWN).
 3. Enter account number: admin, password: admin. Just log in. If the IP address of the router is not 192.168.1.xx, it is 192.168.2.XX, you need to modify the IP address of the matrix or the IP address of the Internet.
- ① Modify the IP address of the matrix. Use the serial port to connect to the "in" of the matrix, open the "MatrixControler2" software, modify the IP address to 192.168.2. XX, and then repeat the first step 1-3. Note that the modified IP address is not occupied in the local area network.
- ② Modify the IP address of the Internet. Take a router or switch, 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.
4. Double click "MatrixControler2" to open the application. The control type is divided into "Network and Serial Port", and the network default IP: 192.168.1.200.

Figure 1: network login interface



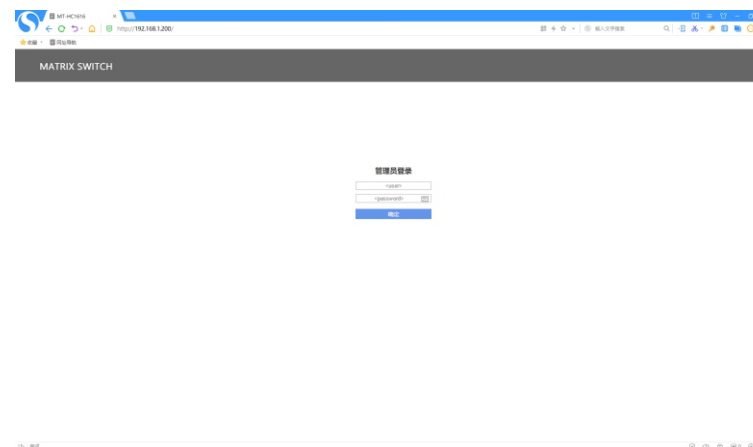
5. Click "Serial Port" to create a connection between matrix and software. Taking the serial port "COM5" as an example, the baud rate is 115200, click "Connection". At this time, the matrix will make a "drip" sound, indicating that the connection is successful, and if there is no sound, the connection fails.

Figure 2: serial port login interface



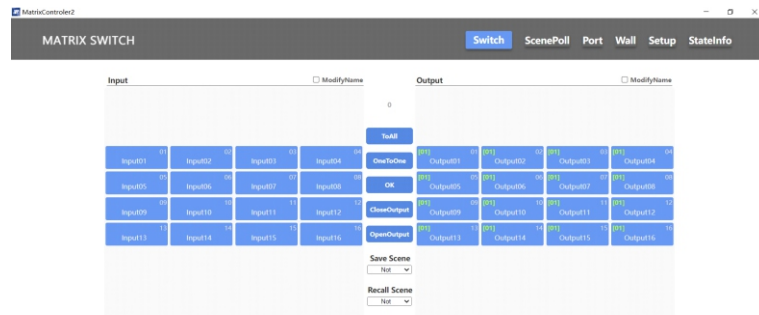
6. Web login, enter IP in the browser, enter the user name and password, and click enter. After the login is successful, you will enter the video switching interface.
User Name: admin Password: admin

Figure 3: web login interface



7. Switch interface: the main functions are switching, closing the output, opening the output, saving the scene, calling the scene, modifying the port name and so on.

Figure 4: Switch interface

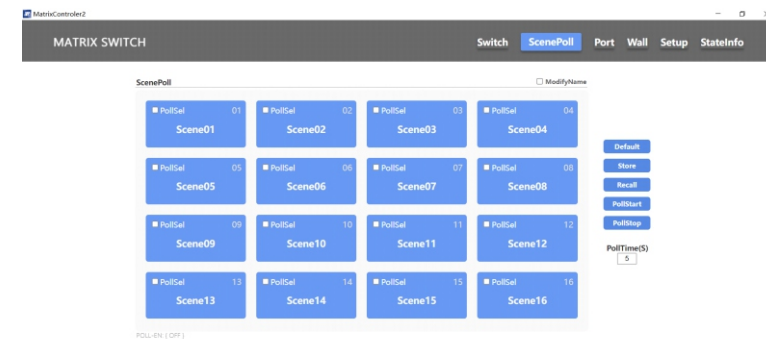


Function introduction:

- 7.1 The center text of the input port icon is the name, and the number in the upper right corner is the port number;
- 7.2 The center text of the output port icon is the name, the upper left corner is the corresponding switching input port (check the switching status here), and the upper right corner number is the port number;
- 7.3 Switching mode: Click [IN1] icon and [OUT1] icon, and then click [OK] will execute the IN1->OUT1 switching;
- 7.4 One-to-all: Clicking [IN1] icon and then [To All] will execute In1 switching to all outputs;
- 7.5 One to One: Clicking [One to One] will execute IN1->OUT1, IN2->OUT2, IN3->OUT3 etc.;
- 7.6 Close Output: Clicking [OUT1] and then clicking [Close Output], will execute the closing of OUT1 (at this time, the number in the upper right corner turns red for the off state);
- 7.7 Turn on the output: Click [OUT1] and then click [Open Output], it will execute to turn on the OUT1 (at this time the upper right corner of the number release red for the open state);
- 7.8 Save Scene: Select Save Scene [SCENE-01], it will execute to save the current switching state to the [SCENE-01].
- 7.9 Recall Scene: select Recall Scene [SCENE-01], will execute restore [SCENE-01] switching state;
- 7.10 Modify the name: click the [Modify Name] port in the input box, enter your modified name to complete the modification.

- 8: Scene Poll Interface: The main functions are Modify Name, Default, Save, Recall, Poll Start, Poll Stop, Poll Time and so on.

Figure 5: Scene Poll Interface

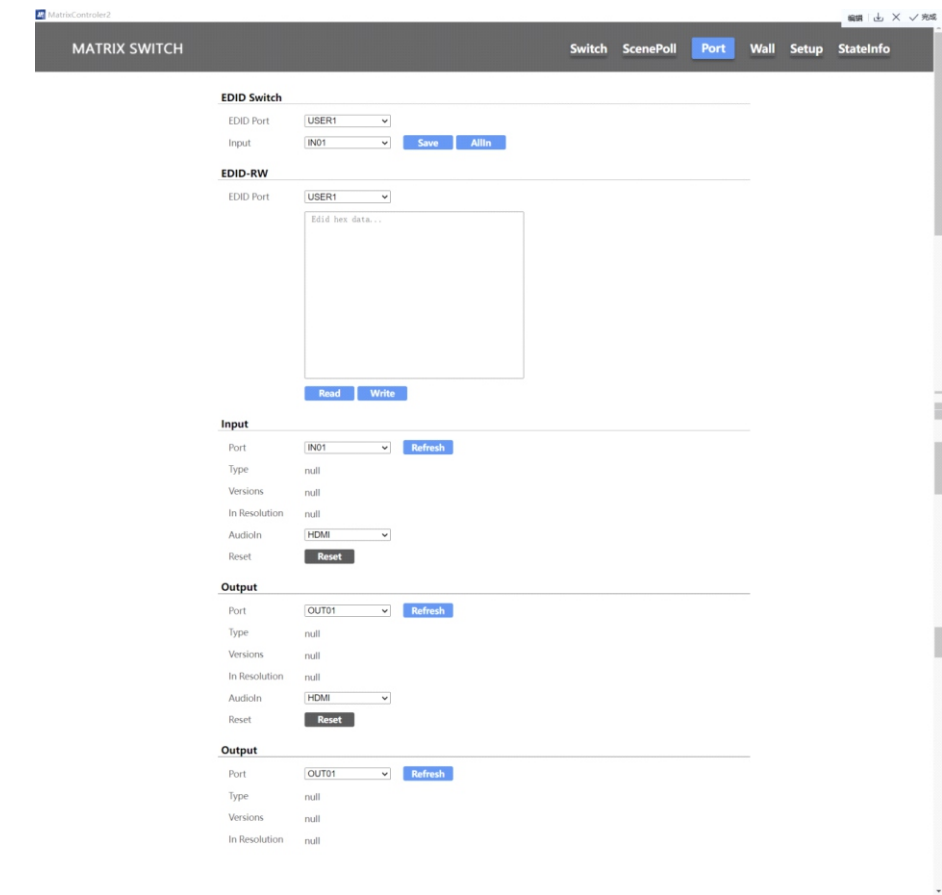


Func

- 8.1 Icon introduction: upper left corner can be selected for polling, upper right corner is the scene number, center is the scene name;
- 8.2 Modify name: click [Modify name] and then enter the modified name;
- 8.3 Default: Clicking [Default] will perform the restoration of all scene switching states (the default switching states are one-to-one);
- 8.4 Save: Click [Scene 1] and then click [Save], it will save the switching state to Scene 1;
- 8.5 Recall: Clicking [Scene 1] to check the state and then click [Recall] will execute the restore state to Scene 1;
- 8.6 Poll Start: Check [Scene Poll], then click [Poll Start] to poll the polling scenes in the checked order. Polling will be performed in the order in which they are checked;
- 8.7 Poll Stop: Click [Poll Stop] to stop the polling function;
- 8.8 Poll Time: Enter the polling time (the longest time is 1~9999 seconds), and the polling will be executed according to the time interval when starting polling.

9.Port setting interface: the main functions are EDID switching, EDID reading and writing, input setting, output setting and other related settings.

Figure 6: Port Setting Interface



Function Introduction:

- 9.1 EDID switch, select EDID [USER1~5\OUT1~8\built-in EDID], then select [IN01~N], click [Save], it will execute EDID switching to input port, if click [All In] it will execute switching to all inputs;
- 9.2 EDID read/write (EDID-RW), select EDID [USER1~5\OUT1~8\ 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:

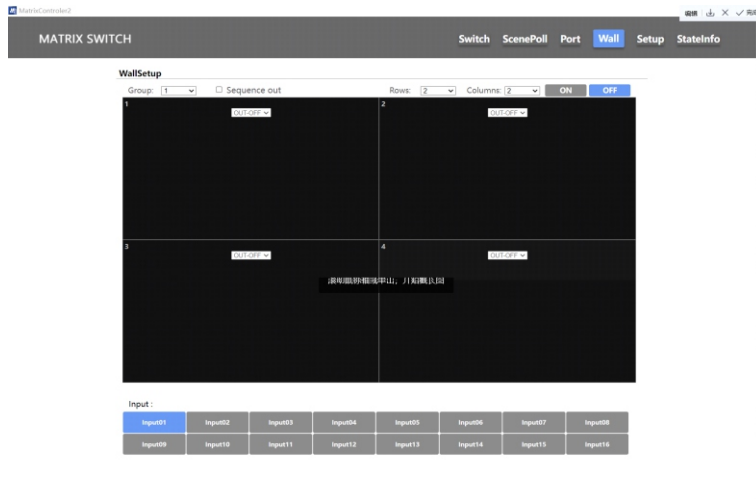
Note: The EDID reading and writing will change according to the change of product type/number of input channels/ user-defined/number of output channels/built-in EDID, and the following is take matrix 8x8 for reference.

No.	EDID Name	Function
1~8	IN01~8	EDID of input port
9~14	USER1~5	Saves user's EDID, user can save EDID here
15~23	OUT01~8	Reads EDID from corresponding 1-8 output
24	HD8Stereo	1920x 1080p_ 60HZ_ 8bit_ Stereo
25	HD8DOLBYDST	1920x 1080p_ 60HZ_ 8bit_ DolbyDTS
26	HD8LossLess	1920x1080p_ 60HZ_ 8bit_ Lossless
27	HD12Stereo3D	1920x1080p- 60HZ_ 12bit_ 3D_ Stereo
28	HD12Dolbydts3D	1920x1080p_ 60HZ_ 12bit_ 3D_ Dolby_ DTS
29	HD12Lossless3D	1920x1080p_ 60HZ_ 12bit_ 3D_ Loss_ less
30	UHD4K30	3840x2160p_30HZ_8bit
31	UHD4K60	3840x2160p_60HZ_8bit

- 9.3 Input settings: select the corresponding input port and the input audio (HDMI for selecting HDMI internal sound, EXT AUDIO for selecting external audio);
- 9.4 Output settings, select the corresponding output port, and then select the output resolution; the setting function also has brightness, contrast, saturation (drag the progress bar to adjust).

10. splicing settings interface (Wall setting): the main functions are splicing group, number of rows, number of columns, splicing mode, single-screen display, input switching and other functions.

Figure 7: splicing settings interface

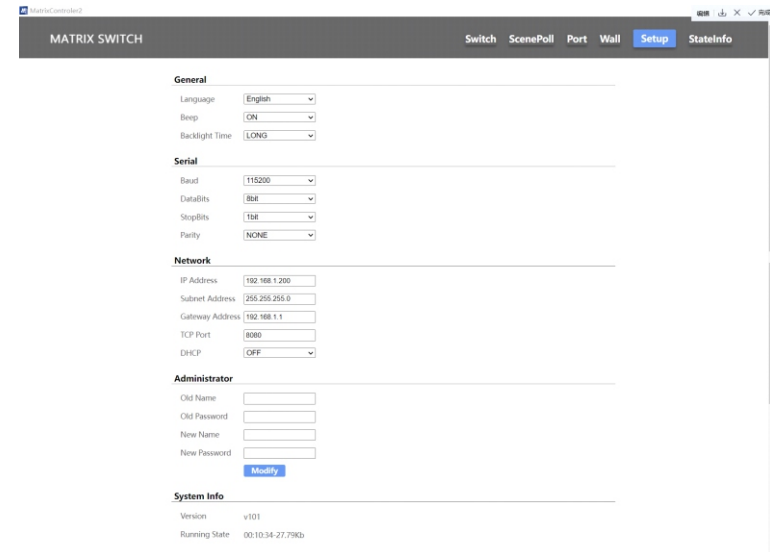


Function introduction:

- 10.1 splicing screen icon introduction: the upper left corner is the screen number and the center is the output port setting for the splice group;
- 10.2 splicing group: select the splicing group after all the functions are set for the current group, the maximum support for 8 splicing groups;
- 10.3 number of rows: choose to set the number of lines of the current group of screens, the maximum support for 8 lines;
- 10.4 the number of columns: choose to set the number of columns screen of the current group, the maximum support 8 columns;
- 10.5 Splice Mode: Click [Wall Setup] will perform setting splice group;
- 10.6 Single-screen display: click [Sequence out] will cancel the setup splicing group;
- 10.7 Input switching: click [IN-08], will perform IN-8 switch to the group splicing screen.

11. System setup interface, the main functions are general setup, serial communication, network communication, administrator, host information, enter factory setup and other functions..

Figure 8: Setup interface

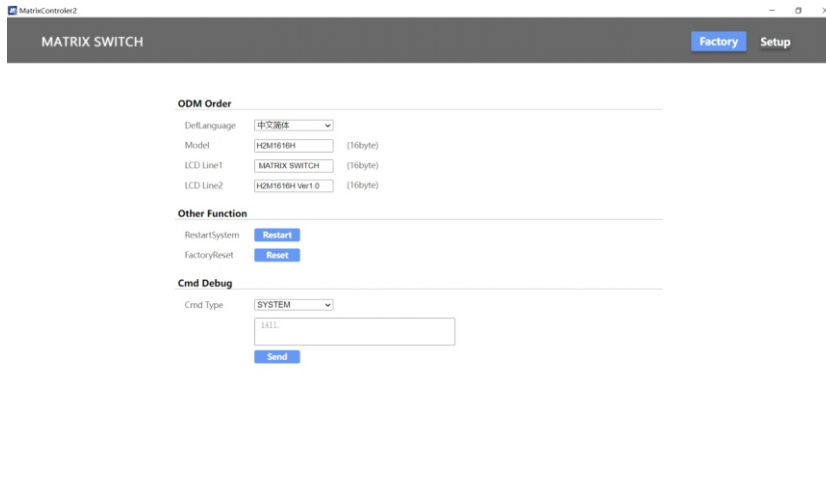


Function introduction:

- 11.1 General Settings: The main function items are Language, Buzzer Enable, LCD Backlight Time setting etc;
- 11.2 Serial communication: the main function items are baud rate, data bit, stop bit, check bit and other settings;
- 11.3 network communication: the main function items are IP address, sub-net address, gateway address, TCP port, automatically obtain IP, etc., directly enter the IP (click on the other location to cancel the focus) will be implemented to modify the modification is complete, you need to manually modify the browser access link;
- 11.4 Administrator: modify the login user name and password input is complete click [Confirm], will perform the modification;
- 11.5 Host information: check display software version and system operation status;
- 11.6 Factory settings: click [Running State] of System Info 5 times continuously, it will enter factory settings.

12. Factory setting. the main functions are default language, product model, LCD display setting, restart system, restore factory settings and other functions.

Figure 9: Factory setting interface



Function introduction:

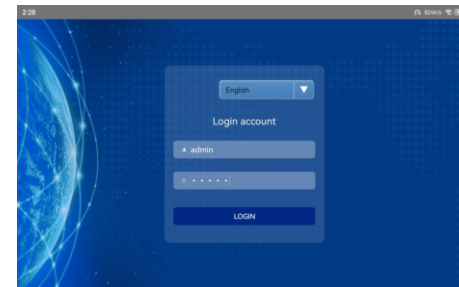
- 12.1 Default language, after setting the default language execution, it will be defaulted to this setting when restoring the factory settings;
- 12.2 product model, enter the product model (click other position to cancel the focus), will execute the modification;
- 12.3 LCD display settings, enter the first line and the second line display characters, will perform the modification;
- 12.4 Reboot system, click [Restart], the system will be restarted;
- 12.5 Reset factory settings, click [Reset], will perform the restoration of factory settings;

7 、 APP operation instructions

7.1 Install APP control software

Through WeChat or QQ and other ways to transfer APP control software download software "MatrixController2.apk" to the Android system on the tablet, run APP control software, after completing the installation of the control software icon will appear, open the software default account: admin, the default password: admin.

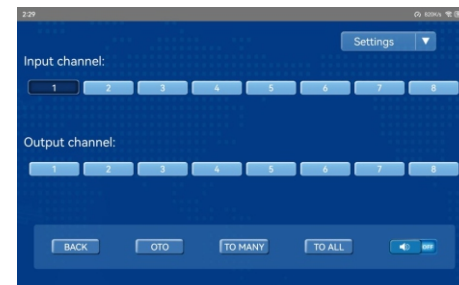
Figure 10: APP login interface



7.2 APP software operation

After entering the main interface, connect to the default IP of the host; after successful connection, the number of input and output channels of the current device will be displayed according to the information returned by the device, and the correspondence between input and output will be displayed after selecting the input channel.

Figure 11: Signal channel interface



1, one to one :

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

2, one to many:

Select the input channel, select multiple output channels, click the one-to-many button, you can set an input signal output through multiple output channels

3, one to all:

Select the input channel and click one to all buttons to set one input signal output to all output channels

4, Clear channel

Click the Back button to clear the display of the corresponding relationship between the input and output channels UI interface (without setting the display of the upper computer)

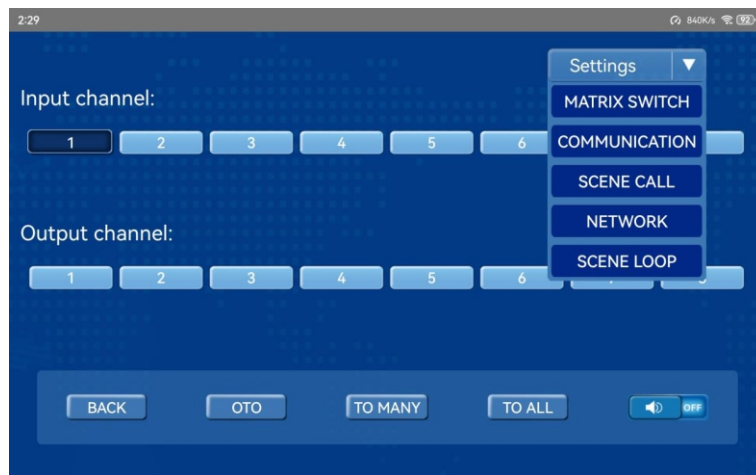
5, Sound Toggle

Click the sound button to set the buzzer switch of the upper computer

7.3 APP software Settings

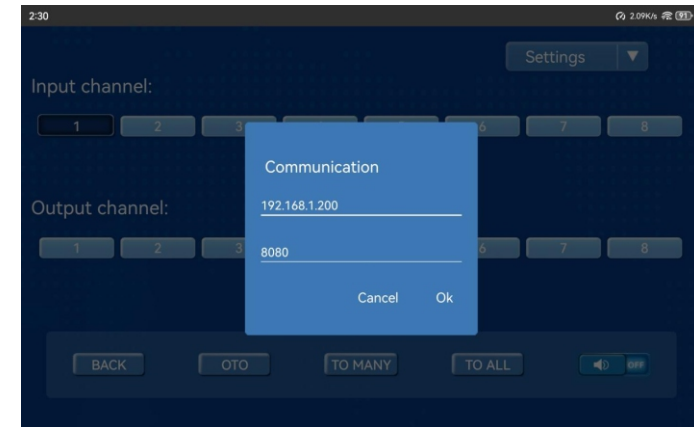
①、Click the matrix switch button to enter the main screen of matrix setting, as shown below

Picture 12: Matrix Setup main interface



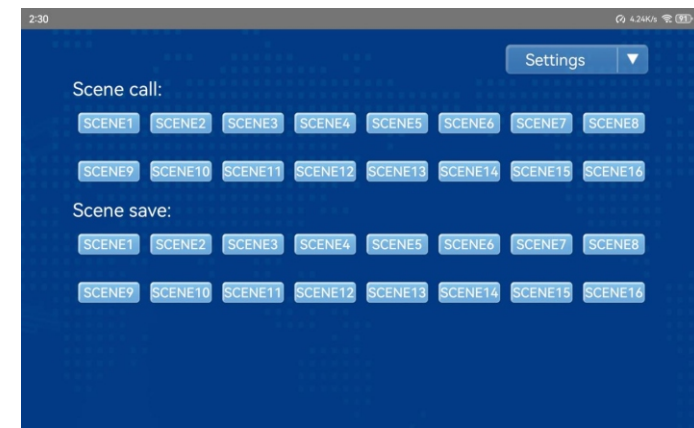
②、Click the communication Settings button to set the host ip address and port number to be connected, as shown below

Picture 13: Communication setup interface



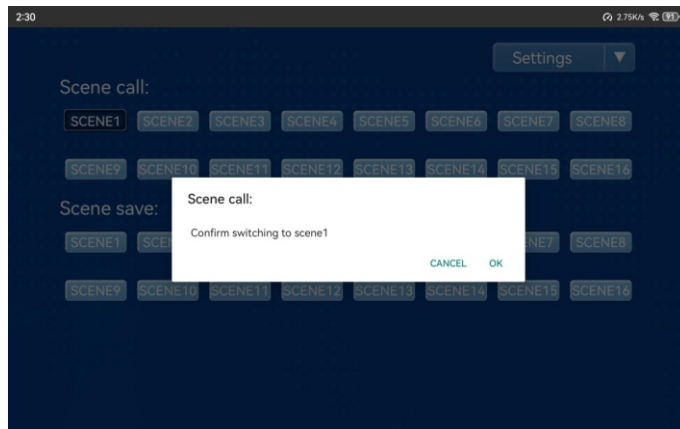
③、Click the Scene recall button, as shown below

Picture 14: Scene setup interface



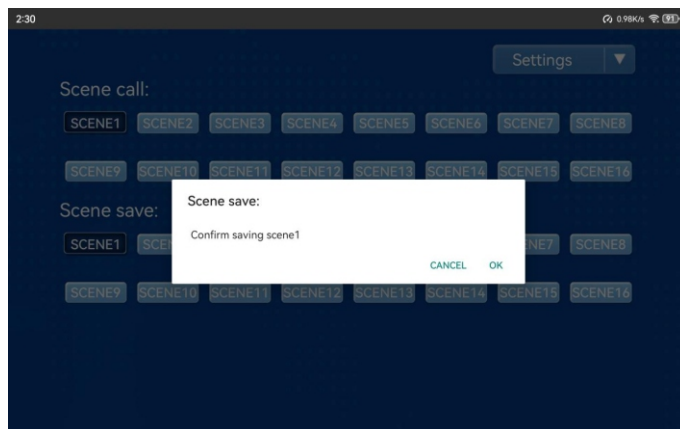
- ④、Click the scene recall list to call the selected scene, as shown below

Picture 15: Scene recall interface



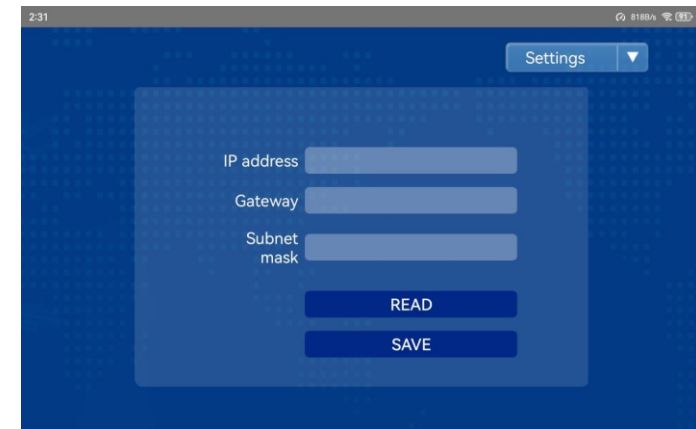
- ⑤、Click Save Scene list to save the current scene to the selected scene, as shown below

Picture 16: Save scene interface



- ⑥、Click the network parameter Settings, you can read and set the host computer network parameters, as shown below;

Picture 17: Network parameter setting interface



- ⑦、Click the scene polling button to set the scene and interval to be polled, as shown in the figure below

Picture 18: Scene polling Settings interface



8、IR remote control instructions

8.1 IR Remote control operation instructions



NO.	Name	Introduction
1		Power on/off key
2		mute key (Buzzer on/off key)
3	F1~F8 key	Reserved function key
4	SAVE key	Scene save key
5	RECALL key	Scene recall key
6	Up&down key	turn pages under the menu function
7	Left&right key	Reserved function key
8	OK key	Confirm operation
9	FUN key	Main menu function
10	CANCEL key	Return key
11	0~9 key	Number key
12	ALL key	execute switch all order
13	EDID key	EDID learning key

E.g:

- 1, One to One operation steps: 1--1--OK
 - 2, One to ALL operation steps: 1--ALL--OK
 - 3, Store scene mode operation steps: Save--up and down buttons (1-16 mode)--OK
 - 4, Operation steps of recalling scene mode: Recall--up and down buttons (1-16 mode)--OK
- EDID learning operation steps:
1. An EDID--number buttons (1-8)--up and down buttons to select mode--OK
 2. All EDID--ALL--up and down buttons to select mode--OK

8.2 Infrared code for the remote control

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 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、Control Protocol

Description of RS232 communication protocol and central control command code:

Adopt Straight-Through Wired Cable (if through the USB-RS232 conversion cable, it can be directly inserted into the matrix switch 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.
	Save[Y].	Turn on buzzer
	Beep OFF.	Turn off buzzer

Remarks:

- [x1], [x2], [x3], [x4] are the number of input and output channels, which are determined according to the controlled matrix switch. If the controlled matrix switch is an 8*8 matrix switch, their effective range is1-8. If it exceeds the range, it will be treated as a command input error, and the "[" and "]" in the command is not a sending character;
- The ending character of each instruction should not be missed, there is a "." at the end of each instruction, and all the punctuation marks are the English input method;

3. Letters are not case sensitive.

Examples of some instruction codes:

- ①.Switch the input of channel [x1] to all output channels: [x1]All.
Example: To switch the input of channel 3 to all output channels, enter'3All.'
- ②.Disable All outputs: [x0]All.
E.g.: Only input '0ALL'
- ③.[x1] output off: [x0]X[x1]
Example: To turn off output one, simply enter '0x1.'. If you need to turn off output one and output two at the same time Simply enter '0x1.0x2.'
- ④.Set to one-to-one correspondence for all channels: All[1].
Example: For example, a 8*8 matrix switch, after running, the status is: 1->1, 2->2, 3->3 8->8. Enter 'All1.' .
- ⑤.Video switching command: [x1]X[x2]
Example: To switch the 3rd input to the 5th output, you only need to input "3X5."; if you want to switch the 3rd input to 5 6 7 8 four-way output, you only need to enter "3X5&6&7&8."
- ⑥.Save the current state command: Save[Y].
Example: To save the current state to the 7th storage unit, input "Save7."
- ⑦.Recall the stored unit instruction: Recall[Y].
Example: To recall the state of the 7th storage unit and configure it as the input and output state of the matrix switch, just input "Recall7."
- ⑧.Turn on and turn off the buzzer:
Example: Beep ON., turn on the buzzer, you can hear the buzzer sound when switching
Beep OFF., turn off the buzzer, you will not hear the buzzer sound when Switching

10、Common faults and maintenance

- 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 information

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.