

HDMI Matrix Switcher

User Manual

Model: HS04M

4 X 4 HDMI Matrix Switcher with Ethernet Control



Introduction

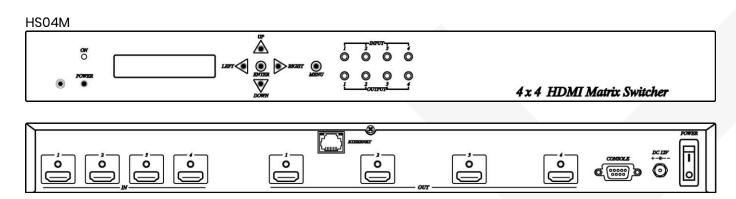
HS04M is a 4 x 4 HDMI matrix switch that allows you to route 4 HDMI sources to 4 HDMI displays. in addition, there are multiple control methods for you to effortlessly manage the matrix switch, including front panel buttons, IR remote, RS232, Ethernet, and Android/ iOS mobile APP.

It is a perfect solution for small to medium size conference rooms, home theater and so on.

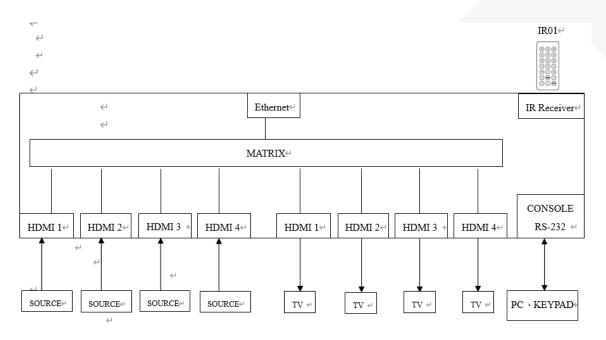
Features

- Resolution up to 1080p@60Hz.
- Rack mountable.
- Built-in LCM panel and LED indications.
- Managed via front panel buttons, IR remote, RS232, Ethernet, or mobile APP.

1. HS04M Panel View



2. HS04M Connection View



1

3. Keypad and LEDs

3.1 Back Panel Switch

POWER Light on Power on Light off Power off

3.2 Front LED Indication

ON	BLUE	Power on
	RED	Standby
	LED off	Power Off
INPUT 1, 2, 3, 4	BLUE LED off	Presence signal indication No signal incoming
OUTPUT 1, 2, 3, 4	BLUE LED off	HDMI output indications Output unlink

3.3 Standby Mode

The IR Remote only could control POWER on/off.

Front Button Function

Power Power on/standby
UP Up
DOWN Down
LEFT Left
RIGHT Right
ENTER Select confirm key
MENU Back to main menu

3.4 LCM Panel Function

Power on Main Screen

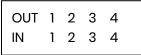
When the power is on and the main screen appears

4 X 4 HDMI MATRIX

^{*}When the sub-menu setting changed, press the ENTER key to complete the setting. If no press ENTER key, then the setting will be failed.

Channel Setting on Main Screen

The Matrix will jump to channel setting screen after 10 seconds, press the MENU key to enter the main.



Main MENU Option

- *1. SWITCH
- 2. MATRIX IR ID
- 3. ETHERNET
- 4. EDID
- 5. VERSION
- 6. KEYLOCK
- 7. SCENEE

Operation

- Press UP or DOWN key to move * to select an item for setting and press ENTER key to enter into subpage.
- In MENU you could use key 01~07 of IR remote control to select the functions.
- When the selected sub-page setting is completed, press the MENU button to return to the main page

4. LCM Main MENU Function Operation

4.1 Switch (Default: 1 2 3 4)

OUTPUT	1	2	3	4
INPUT	1	2	3	4

This function is used to switch the input/output port. Enter the SWITCH menu. Press the ENTER key, then the LCM second line INPUT will flash. Press LEFT or RIGHT button to select the output to be modified. Then press UP or Down button to select the input port. After that, press ENTER to confirm setting.

OUTPUT	1	2	3	4
INPUT	1	2	3	4

4.2 Matrix IR ID (Default IR ID: 4)

MATRIX IR ID 4

This function must be set to match the Matrix remote control IR01 with the matrix itself. A conflict with other devices remote control is avoided.

After entering MATRIX IR ID menu, press ENTER, the LCM LINE 1 number will flash. Then Press UP or DOWN button to select the number, and then press ENTER to confirm.

When finish MATRIX IR ID setting, MATRIX remote control IR01 must also set the same ID in order to operation in normal.

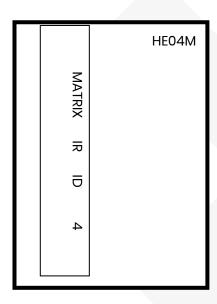
Remote IR ID setting mode: Press and hold the POWER button, then press the number button which can be set from 0 to 9, total 10 groups. (See 5.1)

These settings on IR01 remote control have to be done the first time you use the IR01 or when you change the batteries.

MATRIX IR ID 4







4.3 Ethernet

* IP Address Subnet Mask Gateway DHCP Client Media Type MAC Filter

IP Address: (Default: 192.168.0.200)

IP Address 192.168. 0.200

This function can be setup MATRIX host intranet "IP Address", press the ENTER, the left-most number of second row will flash, then press the UP or DOWN button to change the numbers, , press LEFT or RIGHT to move to another location, the move to a position number will flash, press ENTER to complete the setting.

Subnet Mask: (Default 255.255.255.0)

Subnet Mask 255.255.255.000

This function can be setup MATRIX host intranet "Subnet Mask", press the ENTER, the left-most number of second row will flash, then press the UP or DOWN button to change the numbers Press the ENTER, press LEFT or RIGHT to move to another location, the move to a position number will flash, press ENTER to complete the setting.

Gateway: (Default 192.168.0.1)

Gateway 192.168. 0. 1

This function can be setup MATRIX host intranet "Gateway", press the ENTER, the left-most number of second row will flash, then press the UP or DOWN button to change the numbers Press the ENTER, , press LEFT or RIGHT to move to another location, the move to a position number will flash, press ENTER to complete the setting.

DHCP Client: (Default Disable)

DHCP Client Disable

When DHCP Clients setup at "Enable", the MATRIX host will automatically get IP Address, Subnet Mask, Gateway, if setup at "Disable", the MATRIX Host IP Address need go through "ETHERNET" menu to set IP Address, Subnet Mask, Gateway, to press the ENTER, the second row will flash, then press the UP or DOWN to select DISABLE, ENABLE, then press ENTER to complete the setting.

Media Type: (Default 100M)

Media Type 100M

This function can be setup MATRIX host intranet "Media Type, press the ENTER, the second row will flash, then press the UP or DOWN button to select 10M, 100M, AUTO, press ENTER to complete the setting.

MAC Filter: (Default Disable)

MAC Filter can be setup with registered MAC Address in order to connect the MATRIX host Web UI, MAC Address required by the Web page to fill in, this function can only be setup at "DISABLE", "ENABLE", then to press the ENTER, the second row will flash, then press the UP or DOWN to select DISABLE, ENABLE, then press ENTER to complete the setting.

4.4 EDID (Default: LPCM-2CH)

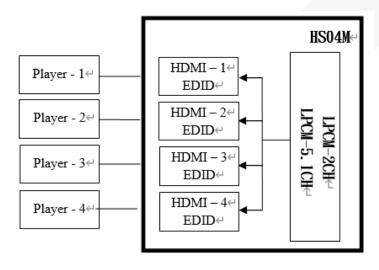
Because the player output display resolution will be based on TV EDID, this Matrix provides four default EDID modes: BUILD-IN MODE", "COPY MODE", "I. EDID MODE" and "PC EDID MODE".

BUILD-IN MODE COPY MODE

4.4.1 Build-in Mode

This mode supports video resolution 480p, 720p, 1080i / p at 24/50/60Hz, support LPCM two-channel audio and 5.1 channel . After enter BUILD-IN MODE menu, press UP or DOWN key to select LPCM-2CH or LPCM-5.1CH, then press ENTER to confirm setting.

LPCM-2CH LPCM-5.1CH

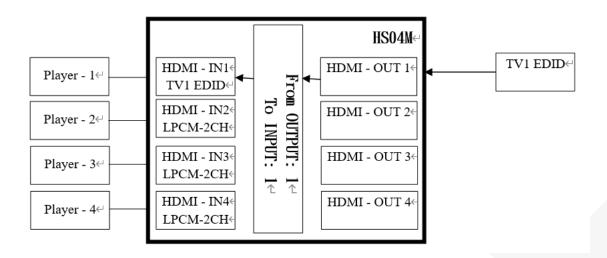


4.4.2 Copy Mode

To fully support the TV resolution and audio mode, the matrix provides "copy mode" to copy TV EDID for input source reference. When use the copy mode, recommend to copy the lowest resolution TV EDID. Otherwise, it may cause no picture display if the TV resolution is not able to support higher resolution.

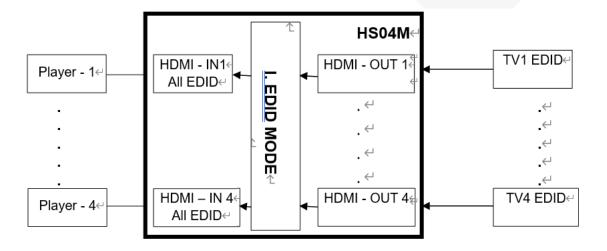
After entering COPY MODE menu, press UP or DOWN button to select the OUTPUT (1 to 4) and press ENTER, then press UP or DOWN button to select the INPUT (1 to 4 or ALL) and press ENTER to confirm. Only connected output will be shown in OUTPUT list.





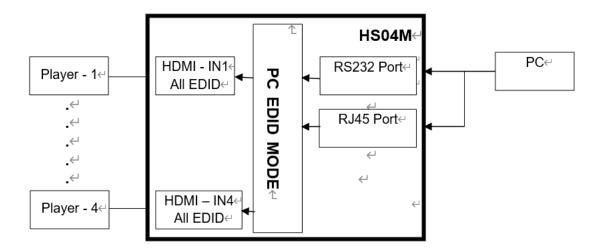
4.4.3 I. EDID Mode

In this mode MATRIX will integrate EDID from all HDMI OUTPUT to a greatest common factor resolution to all HDMI INPUT.



4.4.4 PC EDID Mode

In this mode you could upload EDID file from RS232 or RJ45 port of PC to MATRIX, please refer user manual of EDID Loader



4.5 Version

Display HE04M Matrix firmware version

4.6 Key lock

Panel button/IR remote lock function is to avoid any wrong button press. Under key lock mode press "POWER + MENU" to unlock

4.7 Scene

SCENE function provides 10 sets of channel setting to fast reload for different application.



LOAD

Reload saved scene, press UP or DOWN to select the number of setting ENTER to load. At main screen you could use IR01 remote button A for quick load function, button 1~0 to select port number to load.



SAVE

Save current channel setting, press UP or DOWN to select the number and ENTER to save. At main screen you could use IR01 remote button B for quick save function, button 1~0 to select port number to save.



5. Remote Control Function (IR01)



To command the matrix locally, setup the remote control IR01 ID with the same code of the Matrix (see 4.6). The default code is 4. (Power+4)

Warning

These settings have to be done the first time you use the IR01 or when you change the batteries.

IR ID setup

Press and hold POWER button, then press Number key.

Remote control button defines

[Symbol]		[Function Side]		
	Power	On/Standby(same as Matrix)		
	LEFT	Left (same as Matrix)		
	RIGHT	Right (same as Matrix)		
	UP	Up (same as Matrix)		
	DOWN	Down (same as Matrix)		

	ENTER	Confirm (same as Matrix)
MINT	MENU	Menu (same as Matrix)
A	Α	LOAD scene
B	В	SAVE scene
		Quick key 1
2		Quick key 2
3		Quick key 3
		Quick key 4
5		Quick key 5
6		Quick key 6
7		Quick key 7
		Quick key 8
9		Quick key 9
		Quick key 0, Turn off output

For example: to connect output port 1 to input port 4, press the quick key 1 (OUTPUT 1) and then press the quick key 4 (INPUT 4).

6. Remote Control Function

HS04M support RS232 and TCP/IP control by same command as below:

6.1 RS232 Console

Connect the RS232 CONSOLE port to the COM port of the host by an F/M RS232 straight cable (pin 2 to pin 2; pin 3 to pin 3; pin 5 to pin 5).

Communication format is 9600, 8, N, 1 (9600 bps, 8 data bits, no parity check, 1 stop bit)



^{*} Under using quick key operation, LCM screen will jump to the output / input setting page, it won't allow to use the front panel button to operate the HS04M Matrix.

For Ethernet TCP/IP (Winsock), default IP address is 192.168.0.200, Port: 47011.



6.2 Operation Instruction format

Command + 🗹 (Space) + Parameter + Enter

[Command]	[Description]
POWER∆[y]	Power on/off
TX[n]∆[n]	Set RXn to TXn
RX[n]∆[m,m,m,m]	Set RXn to multiple TXm,m,m,m
MATRIX_ID∆[p]	Set Matrix IR ID
EDID_COPY_[n]	Copy EDID from TX n
SAVE∆[n]	Save setting to #n
LOAD∆[n]	Load setting from #n
KEY∆[y]	Panel button& IR remote control Lock/Unlock
DHCP∆[y]	DHCP client on/off
IP_ADDRESS∆[x.x.x.x]	Set Matrix IP address
SUBNET_MASK \(\Delta(x.x.x.x) \)	Set Matrix subnet mask
GATEWAY∆[x.x.x.x]	Set Matrix gateway
MEDIA_TYPE∆[z]	Network speed select
MAC_FILTER∆[y]	Mac filter on/off
STATUS	Show connection status
VERSION	Show firmware version
HELP	Help

[Symbol]	[Parameter]
m	01~04, ff=ALL
n	00=off, 01~04=1~4
р	00~09=0~9
Х	0~255
у	00=off, 01=on
Z	00=auto, 01=10M, 02=100M

Example

- To route input 4 to output 1, send the following string. TX01\(^0.04Enter\)
- To route input 2 to all output, send the following string. RX02 \triangle ffEnter

- To route input 2 to output 1,2,4, send the following string. $RX02\Delta01,02,04Enter$
- To put in standby the matrix, send the following string. POWER \$\triangle\$00Enter

Commands are case insensitive.

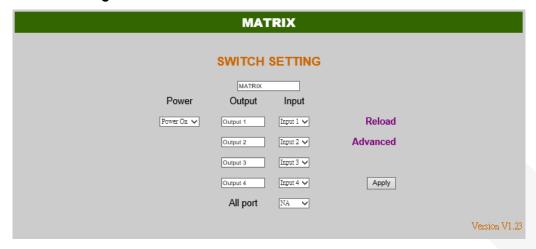
The Matrix will reply OK once string is correct, NG in case of incorrect string

7. Ethernet Control Function

Initial IP Configuration

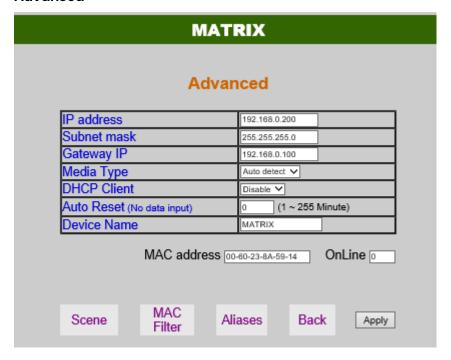
- 1. Setup MATRIX IP Address same as your PC with same domains. (Default 192.168.0.200)
- 2. MATRIX IP Address method, please refer to "ETHERNET" Chapter.
- 3. Input IP Address on a web page, you could link to the Web UI of the MATRIX host.
- 4. Web UI Operation

Switch Setting



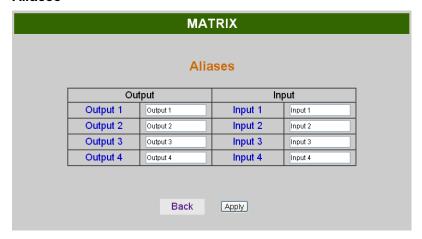
- Power: Control MATRIX power on and standby.
- Output: Display output 1~4, it can change the display name by the Aliases page.
- Input: Display input 1~4, this field is a drop down menu, this field is a drop-down menu, a drop-down menu include Input 1~4 and OFF, It can change the display name by the Aliases page.
- Reload: Get MATRIX host message.
- Advanced: Enter into the "Advanced" page.
- Apply: Complete the setting.
- All Port: Set all output from input 1~4 or off at once.

Advanced



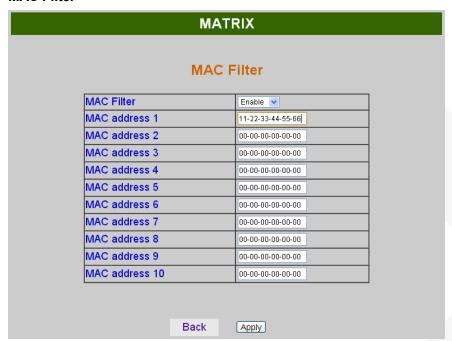
- IP address: Change IP address
- Subnet mask: Change Subnet mask
- Gateway IP: Change Gateway IP
- Media Type: Change 10 / 100 / Auto detect
- DHCP Client: When setup at Enable, the MATRIX host will automatically get IP Address, Subnet Mask, Gateway. If setup at Disable, the MATRIX host IP Address, Subnet Mask, Gateway need to set from Advanced page.
- Auto Reset: The terminal connection people will be 4 users on line at same time, this function could setup the linking time to avoid long time linking and other user cannot use. When over the setting link time, the terminal will automatically disconnect the link. (0: no time setup, 1 ~ 255 Minute time range that can be setup)
- Scene: Click to enter Scene setup page
- MAC Filter: Enter to MAC Filter to setup page
- Aliases: Enter to Aliases to setup page
- Device Name: Can change device name
- Back: Jump back SWITCH SETTING page
- Online: Terminal connection users display, the max. 4 users on line.

Aliases



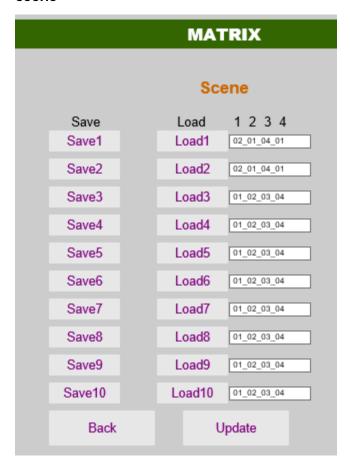
- Aliases page can change input/output name, enter Apply to finish the setting after change The new name will update and correspond to SWITCH SETTING page Output / Input.
- Press Back jump back to advanced page.

MAC Filter



- MAC Filter can be setup as registered MAC Address to link MATRIX host Web UI, the max. up to 10 groups MAC Address.
- After MAC Address fill in, select Enable and press Apply to complete the setting.
- Press Back jump to advanced page.

Scene



- Save: Save 10 set of channel settings.
- Load: Reload 1 of the channel settings.
- Update: Refresh the status of Load.
- Back: Back to Advanced page.

8. Android APP Function

APP name: Matrix Controller



System Requirement

Android 4.0 and up

Size: 1.2M

Language: English, Traditional Chinese, Simplified Chinese

Google Play Download Link

https://play.google.com/store/apps/details?id=sct.com.matrixcontroller

Google Play Download QR code



System Setting

Connect mobile phone to Wi-Fi and set the IP/ subnet mask same with matrix network segment Default IP address of 10 by 10 matrix is 192.168.0.10

Default IP address of 4 by 4 matrix is 192.168.0.200

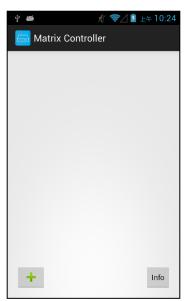
Default subnet mask is 255,255,255.0

You could also set to DHCP mode, please refer user manual

There are two ways to get the IP address of matrix:

- 1. Use APP function: Scan Device to get the IP address.
- 2. Use panel button or IR remote control by press [MENU], select to [ETHERNET] function and press [ENTER] to enter [IP Address] function than press [ENTER], it will show IP Address in the LCD panel of matrix.

Main Page

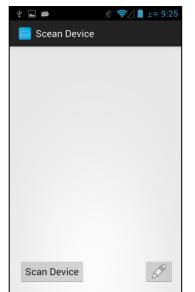


When first time enter the APP will see the main page

Bottom left $\lceil + \rfloor$ to add matrix

Bottom right 「Info」 to show information

Scan Device



Touch[+]button at main screen to enter[Scan Device]page

Touch bottom left \[\scan Device \] to start scan

Touch bottom right pen icon to input the IP address manually

Add Matrix



After scanning it will show all matrixes in the list Touch the IP in list to enter Add Device page



Enter the name of matrix then touch Add Device to finish setting Notice: Name should be unique, not allow duplicate.



It will show[+]icon in front of the IP address when finished



Return to main screen you will see the matrix which just add

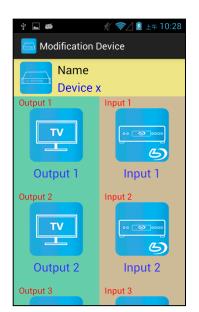
Modify Device



Press the matrix name to show pop-up dialog



Touch Modification to enter modification page.

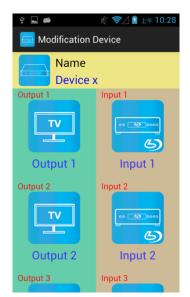


Yellow block shows matrix name and icon

Green block shows name and icon of output devices Brown block shows name and icon of input devices



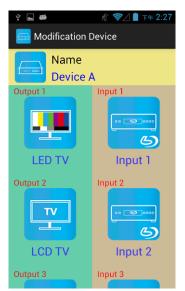
Touch yellow block to modify matrix name and icon Input the name and select the icon you prefer then touch \[Save \] to finish



Return to Modification page you will see the matrix have been changed



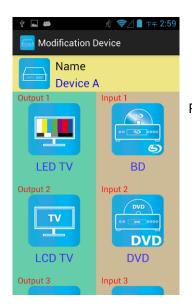
Touch green block to modify output name and icon Input the name and select the icon you prefer then touch Save to finish



Return to Modification page you will see the output have been changed



Touch brown block to modify input name and icon Input the name and select the icon you prefer then touch Save to finish



Return to Modification page you will see the input have been changed

Channel Switching mode (load scene, input selection, output selection)



Click device name in list to enter load scene page



Slide right from load scene page to enter input selection mode (as before)



Slide left from load scene page to enter output selection mode (support multiple selection)

Load scene

Modify scene name



Press scene column to show pop-up dialog to modify scene name



After modification touch \[\script{Save} \] to save scene name It will return to Load Scene page automatically.

Notice: Name should be unique, not allow duplicate or empty.

Read scene status



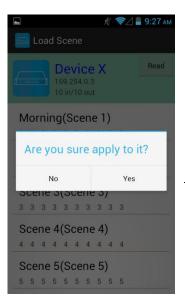
Touch top right \[\text{Read} \] to renew the scene status



It will show pop-up message 「Reading...」 After reading it will refresh scene status



Touch the column name to show pop-up dialog



Touch [Yes] to apply scene

Input Selection Mode



Top right[Refresh] to renew the status of matrix Below[Refresh] button to power on/off the matrix

The block under device are Output 1~ Output 10 (4 by 4 matrix only shows Output 1~Output 4)
Left side shows output device name
Right sideshows current input device name

Bottom left Save Scene to save the scenes



Touch output block to enter Channel Selection page

Touch input device to switch or ON/OFF icon to power on/off



It will return to Input Selection page after switching and you will see the input have been changed

Output Selection Mode



Top right [Refresh] to renew the status of matrix Below[Refresh] button to power on/off the matrix

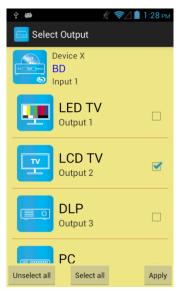
The blocks under device are Input 1~ Input 10 (4 by 4 matrix only shows Input 1~Input 4)

Left side shows input device name

Right side shows current output numbers of devices

Bottom left \subseteq Scene \rightarrow to save the scenes

Bottom right \subseteq Video off \rightarrow to turn off video output



Touch input block or Video off to enter Output Selection page

It will show connected output of current input



Bottom left[Unselect all]to clear all output box
Bottom center[Select all]to check all output box
Bottom right[Apply]to apply output setting

After touch 「Apply」 it will show pop-up message 「Apply...」

It will return to Input Selection page after switching and you will see the numbers of output have been changed

Save Scene



In Input or Output Selection page touch bottom left \subseteq Scene \rightarrow to enter Save Scene page

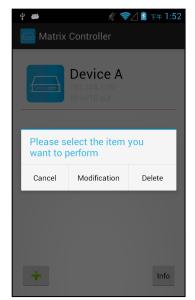


Touch the Scene column to show pop-up dialog



Touch \[\subseteq \text{Save} \] to save current channels setting for all output It will return to Save Scene page automatically.

Delete Matrix



Press the block of matrix in Controller page to show pop-up dialog then touch <code>[Delete]</code>



Touch Delete to delete the matrix

9. iOS APP Function

APP name: Matrix Controller



System Requirement

iOS 7.1 and up Size: 2.3M

Language: English, Traditional Chinese, Simplified Chinese

iTunes Download Link

https://itunes.apple.com/us/app/matrix-control/id904487754?l=zh&ls=1&mt=8

iTunes Download QR code



System Setting

Connect mobile phone to Wi-Fi and set the IP/ subnet mask same with matrix network segment Default IP address of 10 by 10 matrix is 192.168.0.10

Default IP address of 4 by 4 matrix is 192.168.0.200

Default subnet mask is 255.255.255.0

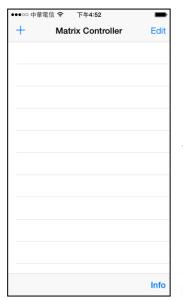
You could also set to DHCP mode, please refer user manual

There are two ways to get the IP address of matrix:

1. Use APP function: Scan Device to get the IP address.

2. Use panel button or IR remote control by press [MENU], select to [ETHERNET] function and press [ENTER] to enter [IP Address] function than press [ENTER], it will show IP Address in the LCD panel of matrix

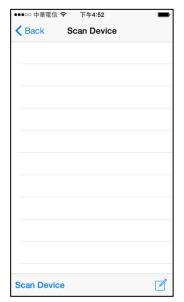
Main Page



When first time enter the APP will see the main page

Bottom left[+]to add matrix Bottom right[Info]to show information

Scan Device

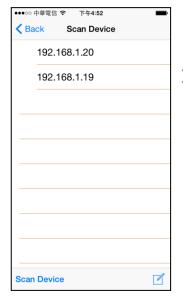


Touch[+]button at main screen to enter[Scan Device]page

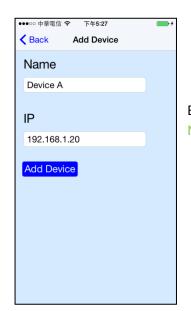
Touch bottom left \[\scan Device \] to start scan

Touch bottom right pen icon to input the IP address manually

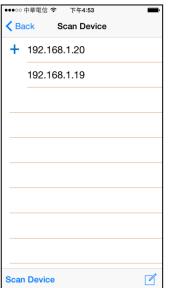
Add Matrix



After scanning it will show all matrixes in the list Touch the IP in list to enter Add Device page



Enter the name of matrix then touch Add Device to finish setting Notice: Name should be unique, not allow duplicate



It will show[+]icon in front of the IP address when finished

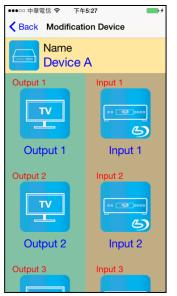


Return to main screen you will see the matrix which just add

Modify Device

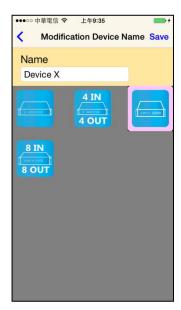


Touch the gear icon to enter Modification page

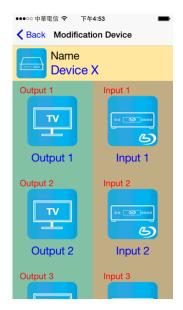


Yellow block shows matrix name and icon

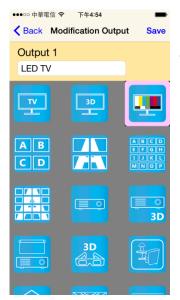
Green block shows name and icon of output devices Brown block shows name and icon of input devices



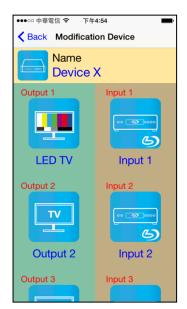
Touch yellow block to modify matrix name and icon Input the name and select the icon you prefer then touch Save to finish



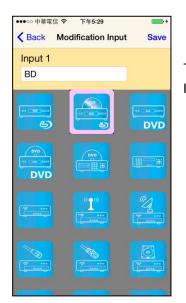
Return to Modification page you will see the matrix have been changed



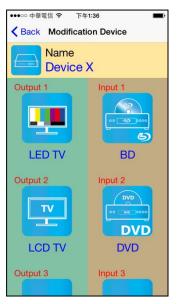
Touch green block to modify output name and icon Input the name and select the icon you prefer then touch Save to finish



Return to Modification page you will see the output have been changed



Touch brown block to modify input name and icon Input the name and select the icon you prefer then touch Save to finish



Return to Modification page you will see the input have been changed

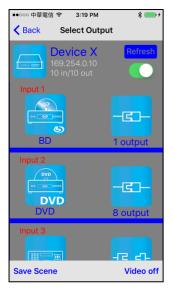
Channel Switching mode (load scene, input selection, output selection)



Click device name in list to enter load scene page



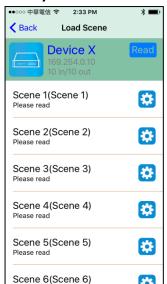
Slide right from load scene page to enter input selection mode (as before)



Slide left from load scene page to enter output selection mode (support multiple selection)

Load scene

Modify scene name



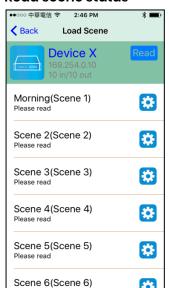
Touch the gear icon to enter modify scene name



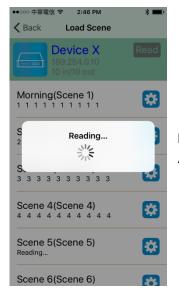
After modification touch \[\script{Save} \] to save scene name It will return to Load Scene page automatically.

Notice: Name should be unique, not allow duplicate or empty.

Read scene status



Touch top right \[\text{Read} \] to renew the scene status



It will show pop-up message 「Reading...」 After reading it will refresh scene status



Touch the column name to show pop-up dialog



Touch [Yes] to apply scene

Input Selection Mode



Top right[Refresh] to renew the status of matrix Below[Refresh] button to power on/off the matrix

The block under device are Output 1~ Output 10 (4 by 4 matrix only shows Output 1~Output 4)
Left side shows output device name
Right sideshows current input device name

Bottom left Save Scene to save the scenes



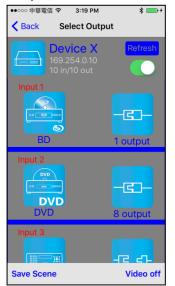
Touch output block to enter Channel Selection page

Touch input device to switch or ON/OFF icon to power on/off



It will return to Input Selection page after switching and you will see the input have been changed

Output Selection Mode



Top right \[\text{Refresh} \] to renew the status of matrix \[\text{Below} \[\text{Refresh} \] button to power on/off the matrix \]

The blocks under device are Input 1~ Input 10 (4 by 4 matrix only shows Input 1~Input 4)
Left side shows input device name
Right side shows current output numbers of devices

Bottom left \save Scene \rightarrow to save the scenes

Bottom right \subseteq Video off \rightarrow to turn off video output



Touch input block or Video off to enter Output Selection page

It will show connected output of current input

Back InChannel Selection

Device X
BD
Input 1

Apply...

DLP
Output 3

DLP
Output 4

Unselect all Select all Apply

Bottom left \[\text{Unselect all \] to clear all output box} \]
Bottom center \[\text{Select all \] to check all output box} \]
Bottom right \[\text{Apply \] to apply output setting} \]

After touch 「Apply」 it will show pop-up message 「Apply...」

It will return to Input Selection page after switching and you will see the numbers of output have been changed

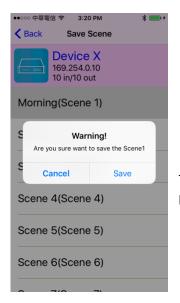
Save Scene



In Input or Output Selection page touch bottom left \[Save Scene \] to enter Save Scene page



Touch the Scene column to show pop-up dialog

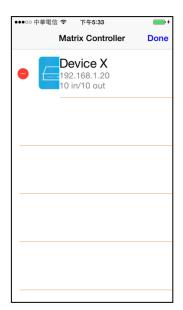


Touch \[\subseteq \text{Save} \] to save current channels setting for all output It will return to Save Scene page automatically.

Delete Matrix



Touch top right \(\text{Edit} \) button to enter delete mode



Touch [-]button in the left of matrix



Touch \[Delete \] to delete the matrix \[Touch top right \[Done \] to exit

Specification

ITEM NO.	HS04M			
	1130-HW			
Support				
Compliance	HDMI 1.4, HDCP, DVI, 3D			
Max. HDMI Resolution	1080p@60Hz 12bit			
Audio Format	LPCM 5.1CH			
RS232 Baud Rate	9600 bps			
IR Support	45°, 5M			
Ports & Interfaces				
Video Input	4 x HDMI Type A			
Video Output	4 x HDMI Type A			
Ethernet Interface	1 x RJ45			
RS232 Interface (Console)	1 x DB9 Female			
Power				
Power Supply	DC 12V 4.2A			
Power Consumption	2A			
Ambient Temperature				
Operation	0 to 55℃			
Storage	-20 to 85℃			
Humidity	up to 95%			
Physical Characteristics				
Dimensions	483 x 197 x 44mm			
Weight	2400g			

RoHS (€