HDMI Matrix Switcher Series

ITEM NO.: HS04M 4 x 4 HDMI Matrix Switcher

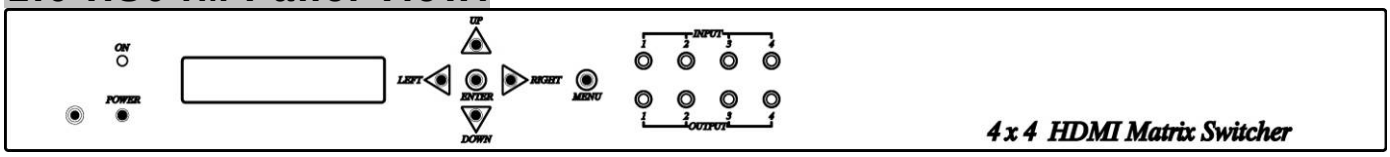
HS04M 4x4 HDMI Matrix Switch allows you to route 4 HD sources to any 4 HD displays! The **4x4 HDMI Matrix switch** is a complete HD routing solution for whole home HDTV systems. It provides **3D support, Full 1080P,** and is **1 RU Rack** mountable for professional installations. In addition, the **HS04M** allows for effortless control of up to 4 devices through Ethernet control, Android App Control, IR remote control, RS-232 and the front panel.

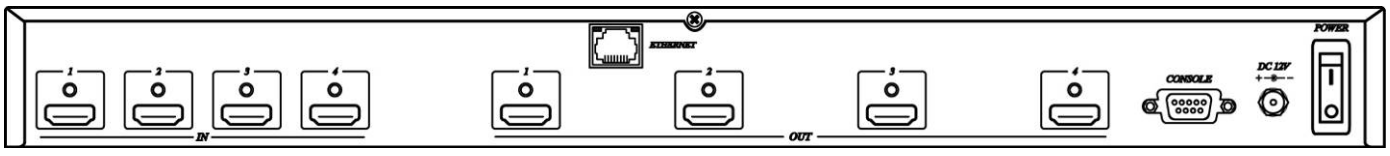
Features:

- Connect up to 4 HDMI source to 4 x HDMI display monitors.
- HDMI 1.4 with 3D, HDCP & DVI Compliant.
- High definition video up to 1080p@60Hz@12bits.
- Easy to use front panel control of switching or using the included remote control.
- Built in Ethernet Control and Android App Control.
- Built in RS232 console port to select input/output.
- Input/Output status could be displayed at front panel LCM & LED.

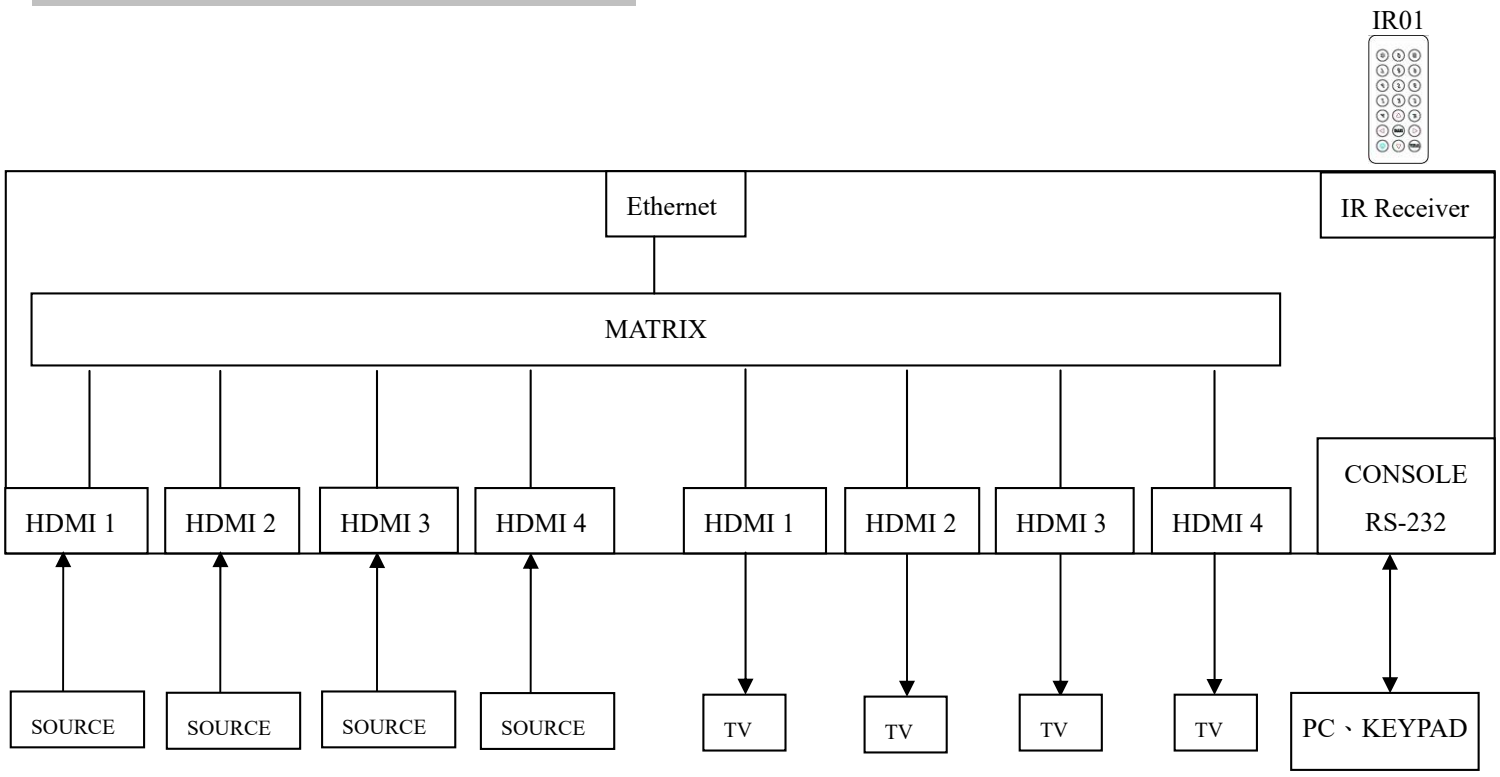
- **Optional Model:**
  RC04: 4 x 4 Keypad remote control (select HE04M input/output)

1.0 HS04M Panel View:





2.0 HS04M Connection View:



3.0 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	Presence signal indication
	LED off	No signal incoming
OUTPUT 1, 2, 3, 4	BLUE	HDMI output indications
	LED off	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

*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.

3.4 LCM Panel Function:

Power on Main Screen

When the power is on and the main screen appears

4 X 4 HDMI MATRIX

Channel Setting on Main Screen

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

OUT	**1**	**2**	**3**	**4**
IN	**1**	**2**	**3**	**4**

Main MENU Option:

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

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

4.0 LCM Main MENU Function Operations:

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.

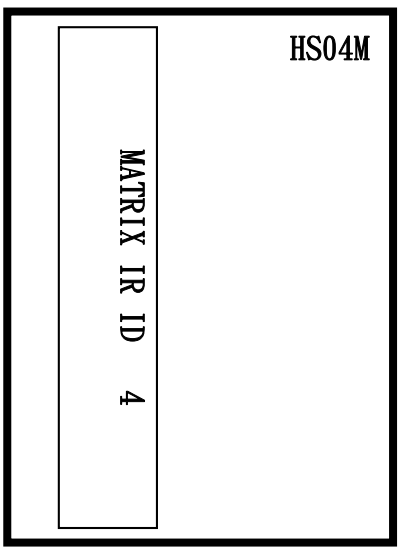
After entering MATRIX IR ID menu, press ENTER, the LCM LINE 1 number will flash. Then Press UP or DOWN button to select the number, and then press ENTER to confirm.

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

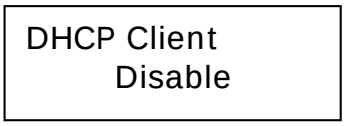
This function can be setup MATRIX host intranet “Subnet Mask”, press the ENTER, the left-most number of second row will flash, then press the UP or DOWN button to change the numbers Press the ENTER, , press LEFT or RIGHT to move to another location, the move to a position number will flash, press ENTER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

Gateway: (Default 192.168.0.1)

Gateway 192.168. 0. 1

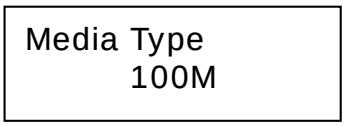
This function can be setup MATRIX host intranet “Gateway”, press the ENTER, the left-most number of second row will flash, then press the UP or DOWN button to change the numbers Press the ENTER, , press LEFT or RIGHT to move to another location, the move to a position number will flash, press ENTER to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

DHCP Client: (Default Disable)



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)



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)

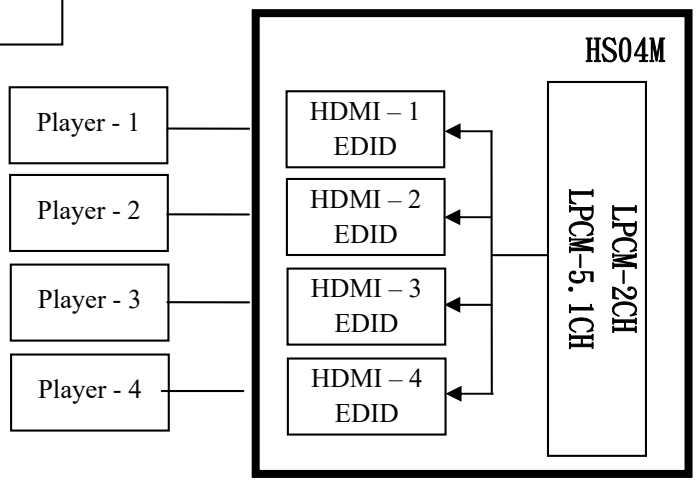
Because the player output display resolution will be based on TV EDID, this Matrix provides four default EDID modes:" BUILD-IN MODE", "COPY MODE", "I. EDID MODE" and "PC EDID MODE".

```
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 2 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
```



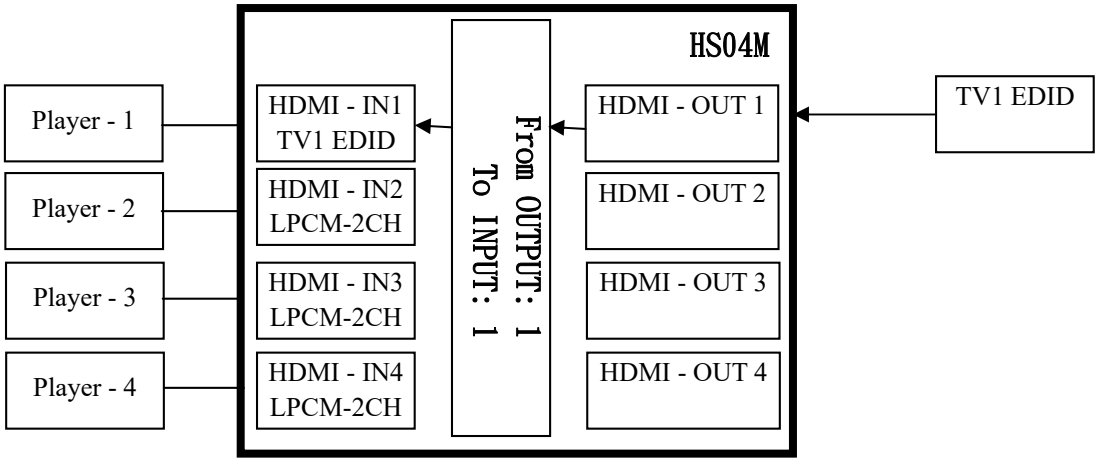
4.4.2 COPY MODE：

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 copying 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.**

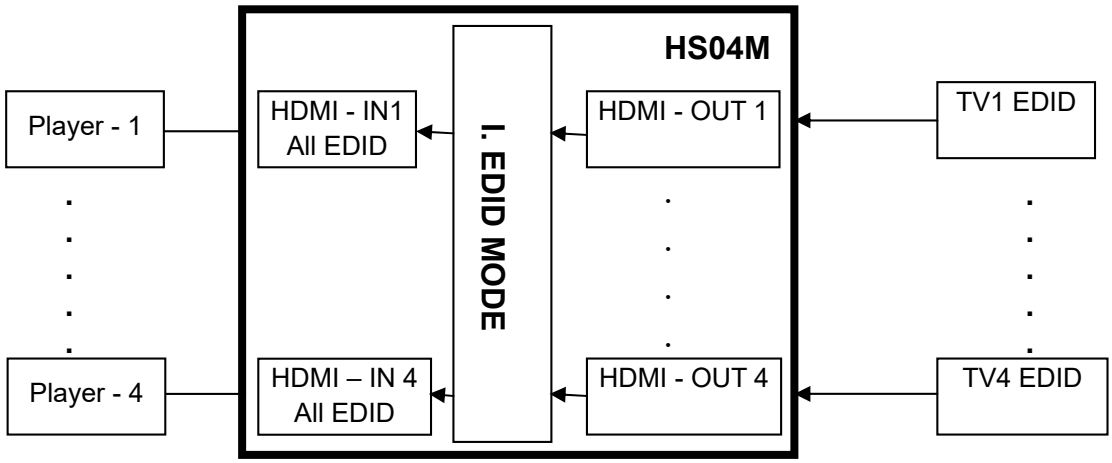
```
COPY MODE
From OUTPUT : 1
```

```
COPY MODE
To INPUT : 1
```



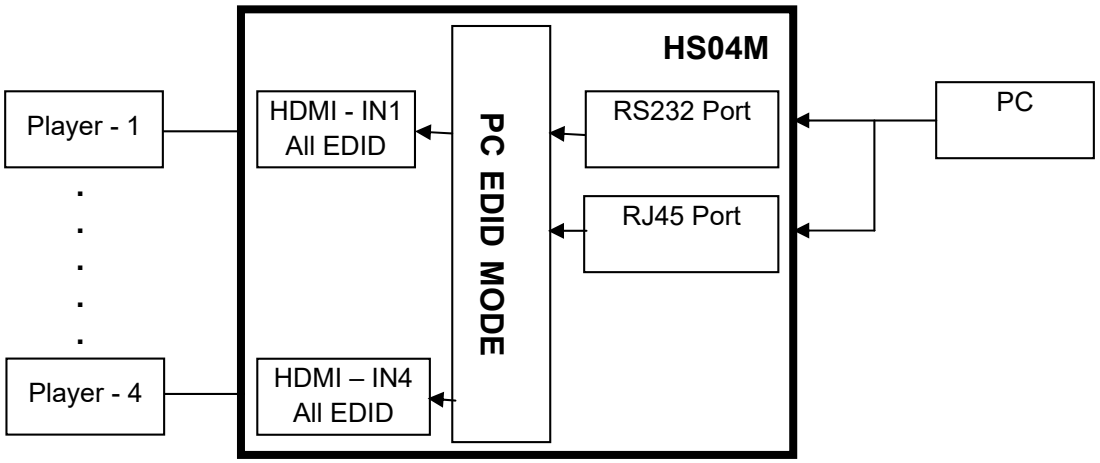
4.4.3 I. EDID MODE

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 HS04M Matrix firmware version

4.6 KEYLOCK :

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

4.7 SCENE :

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

LOAD **SAVE**

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.

LOAD 1 **1 2 3 4 5 6 7 8 9 10**

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.

SAVE 1

5.0 Remote Control Function (IR01):

5.1 To command the matrix locally, setup the remote control IR01 ID with the same code of the Matrix (see 4.2). The default code is 4. (Power+4)

5.2 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 define:

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)
MENU	menu (same as Matrix)
A	LOAD scene
B	SAVE scene
	Quick key1
	Quick key2
	Quick key3

Quick key4

Quick key5

Quick key6

Quick key7

Quick key8

Quick key9

Quick key10, 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).

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

6.0 Remote Control Function：(CONSOLE)

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

6.1

For RS232 CONSOLE:

Connect the RS232 CONSOLE port to the COM port of the host by a 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)

For Ethernet TCP/IP(Winsock)
Default IP address: 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△[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
p	00~09=0~9
x	0~255
y	00=off, 01=on
z	00=auto, 01=10M, 02=100M

Example:

-To route input 4 to output 1, send the following string:

TX01△04Enter

-To route input 2 to all output, send the following string:

RX02△ffEnter

-To route input 2 to output 1,2,4, send the following string:

RX02△01,02,04Enter

-To put in standby the matrix, send the following string:

POWER△00Enter

Commands are **case insensitive**.

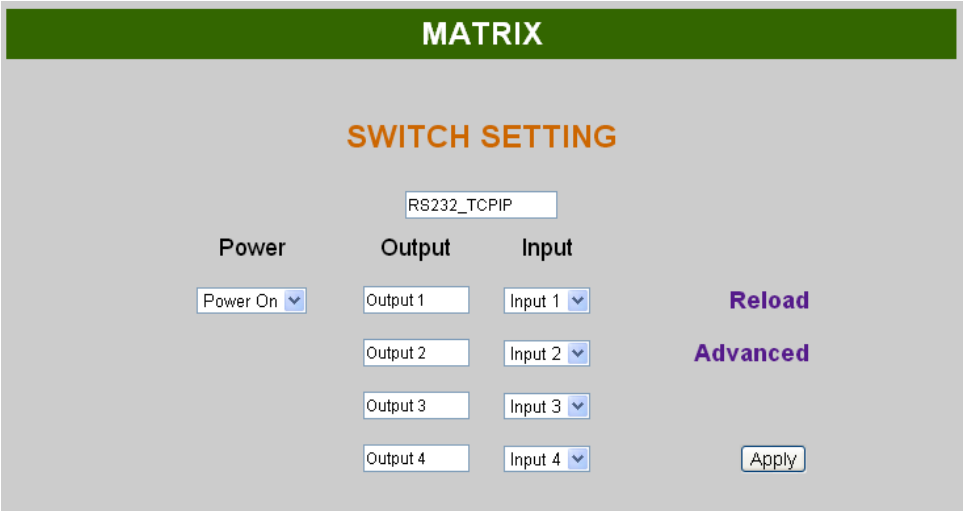
The Matrix will reply **OK** once string is correct, **NG** in case of incorrect string

7. Ethernet Control Function:

Initial IP Configuration

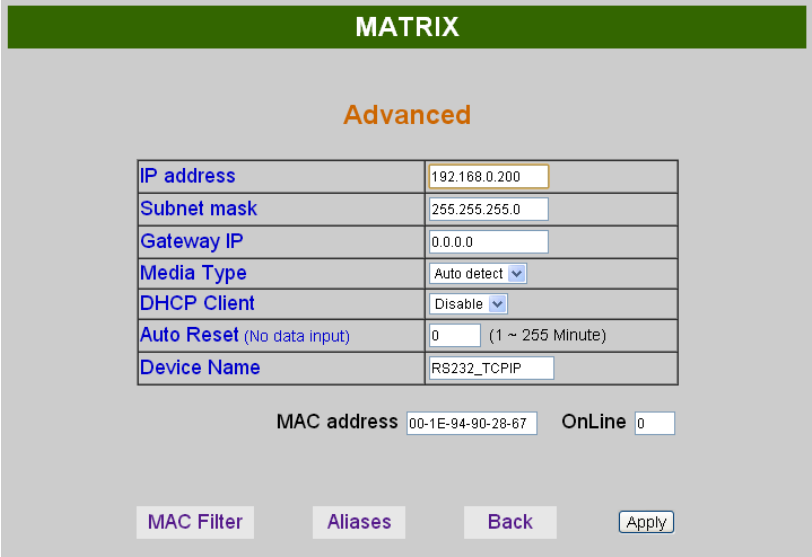
1. Setup MATRIX IP Address same as your PC with same domains.(Default 192.168.0.200)
   MATRIX IP Address method, please refer. to “ETHERNET” Chapter
2. Input IP Address on a web page, you could link to the Web UI of the MATRIX host.
3. Web UI Operation :

SWITCH SETTING:



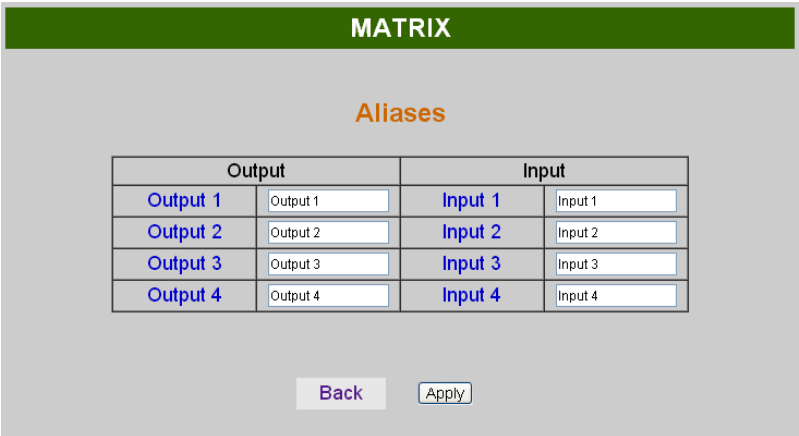
- **Power** : Control MATRIX power on and standby.
- **Output** : Display output 1~4, it can change the display name by the Aliases page.
- **Input** : Display input 1~4, this field is a drop down menu, this field is a drop-down menu, a drop-down menu include Input 1 ~ 4 and OFF, It can change the display name by the Aliases page.
- **Reload** : Get MATRIX host message.
- **Advanced** : Enter into the “Advanced” page.
- **Apply** : Complete the setting

Advanced:



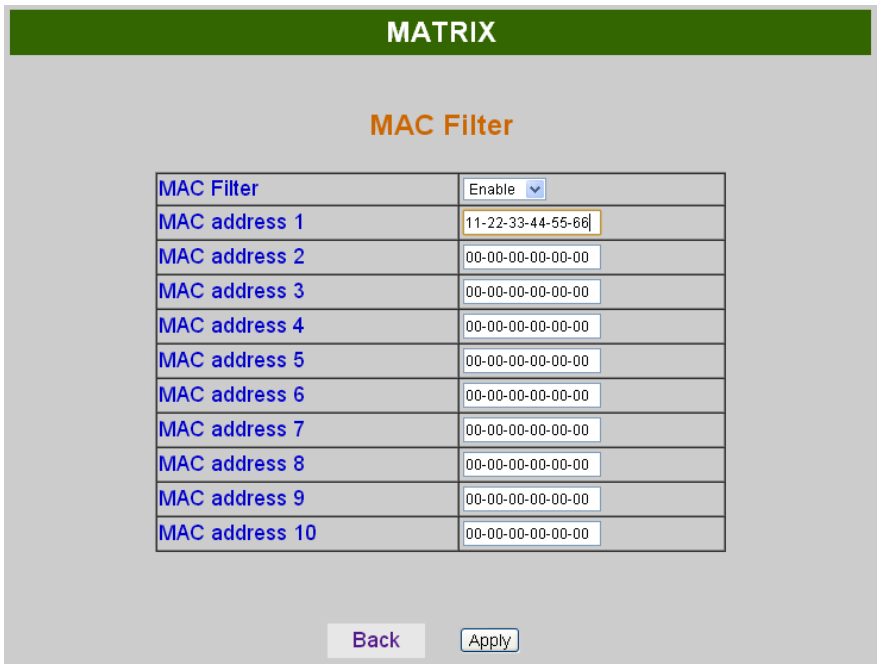
- **IP address** : Change **IP address**
- **Subnet mask** : Change **Subnet mask**
- **Gateway IP** : Change **Gateway IP**
- **Media Type** : Change **10 / 100 / Auto detect**
- **DHCP Client** : When setup at **Enable,** the MATRIX host will automatic get **IP Address、Subnet Mask、Gateway,** If setup 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 can not used. 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)
- **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:



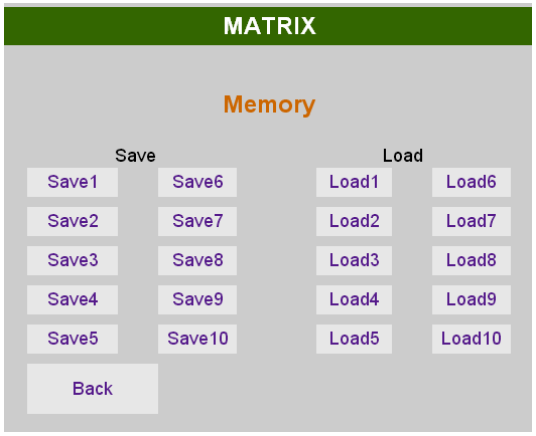
- **Aliases** page can change input/output name, enter **Apply to finish the setting after change The new name will update and correspond to SWITCH SETTING** page **Output / Input.**
- Press Back jump back to **advanced** page.

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.

MEMORY:



- **Save** : Save 10 set of channel settings
- **Load** : Reload 1 of the channel settings
- **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

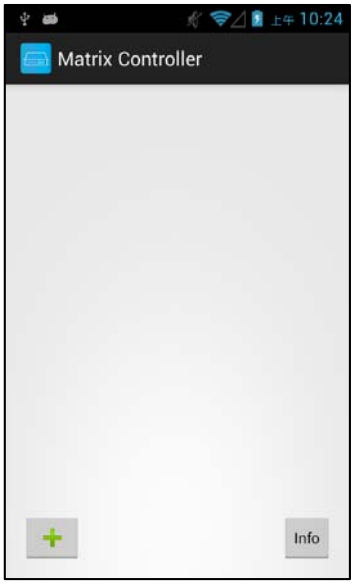
You could also set to DHCP mode, please refer user manual

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:

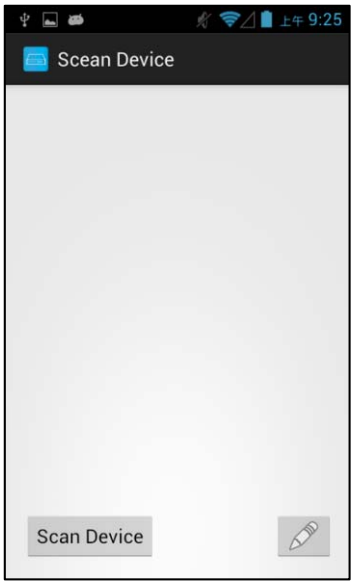


When first time enter the APP will see the main page

Bottom left「+」to add matrix

Bottom right「Info」to show information

Scan Device



Touch「+」button at main screen to enter「Scan Device」page

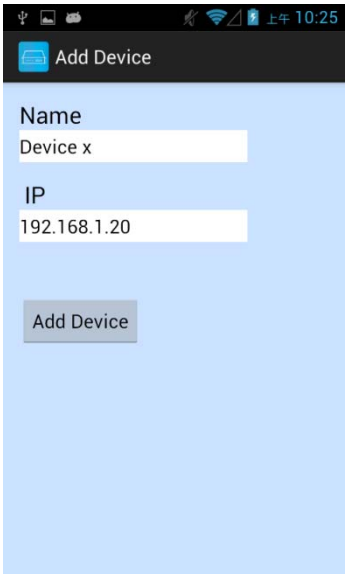
Touch bottom left「Scan Device」to start scan

Touch bottom right pen icon to input the IP address manually

Add Matrix

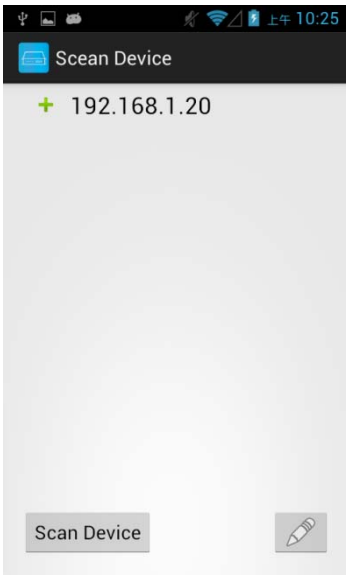
After scanning it will show all matrixes in the list

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

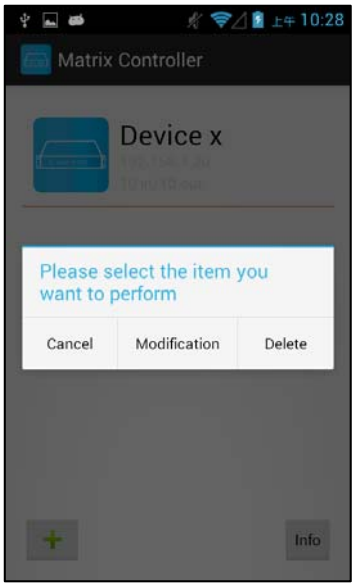


It will show「+」icon in front of the IP address when finished

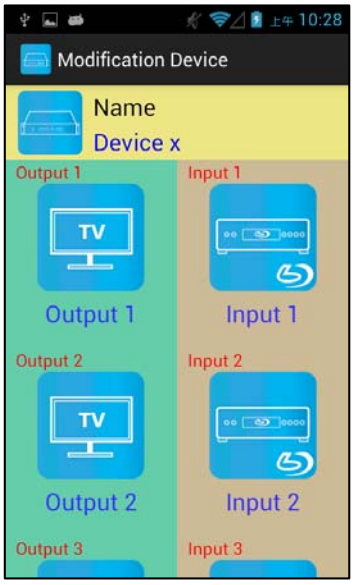
Return to main screen you will see the matrix which just add

Modify Device

Press the matrix name to show pop-up dialog

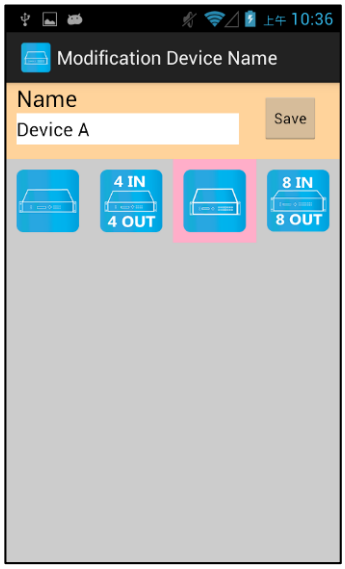


Touch「Modification」to enter modification page.

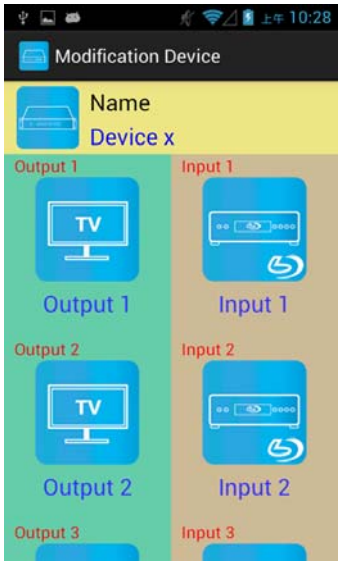


Yellow block shows matrix name and icon

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

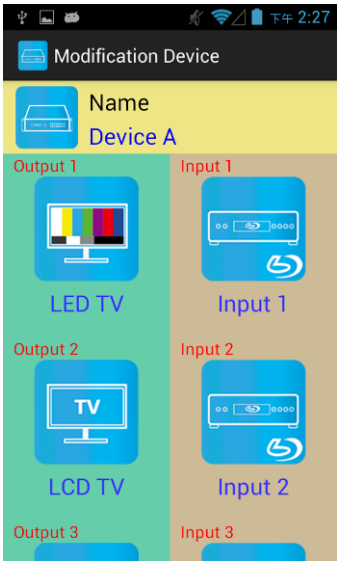


Touch yellow block to modify matrix name and icon
Input the name and select the icon you prefer then touch「Save」to finish

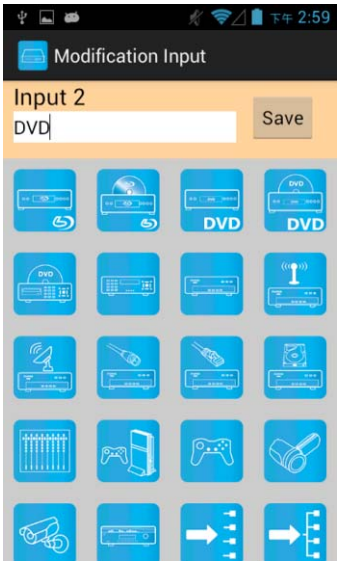


Return to Modification page you will see the matrix have been changed

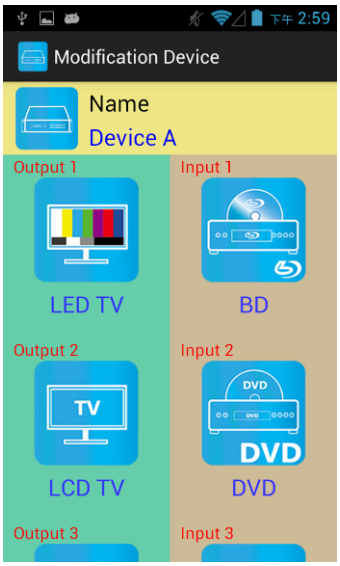
Touch green block to modify output name and icon
Input the name and select the icon you prefer then touch「Save」to finish



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

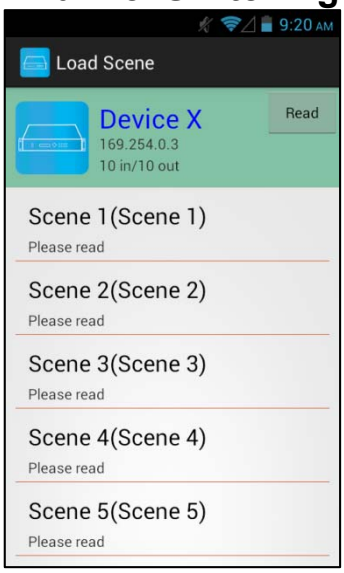


Touch brown block to modify input name and icon
Input the name and select the icon you prefer then touch「Save」to finish



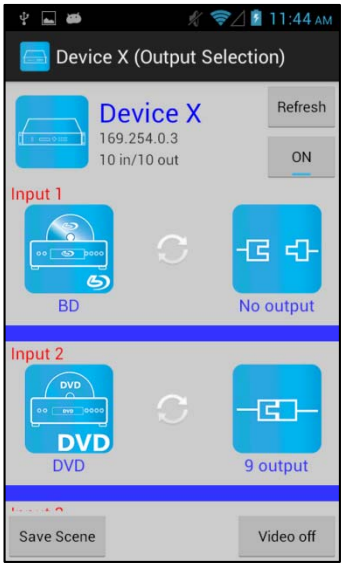
Return to Modification page you will see the input have been changed

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



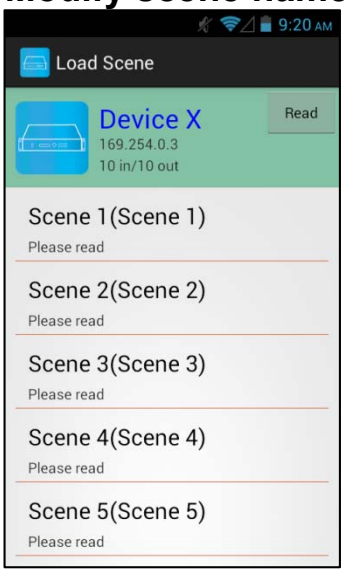
Click device name in list to enter load scene page

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

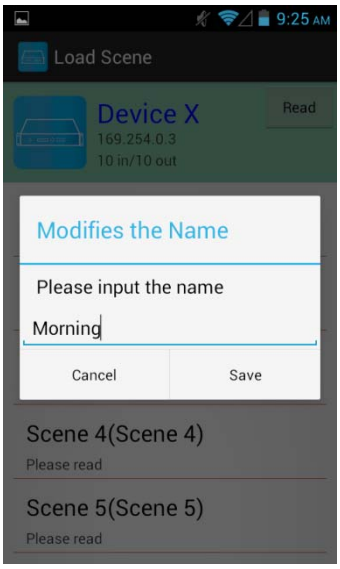


Slide left from load scene page to enter output selection mode (support multiple selection)

Load scene
Modify scene name



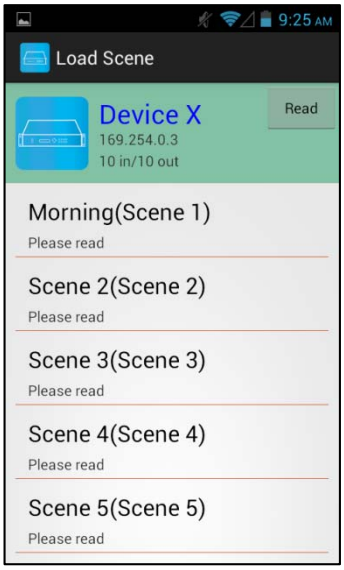
Press scene column to show pop-up dialog to modify scene name



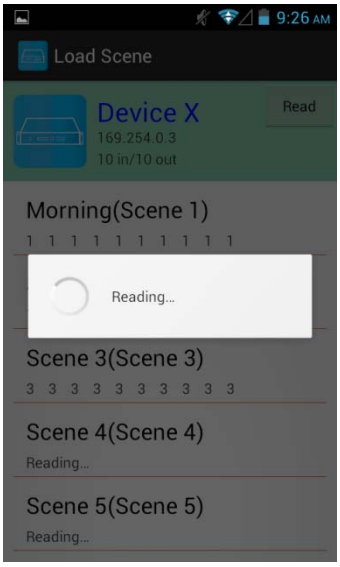
After modification touch 「Save」to save scene name
It will return to Load Scene page automatically.

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

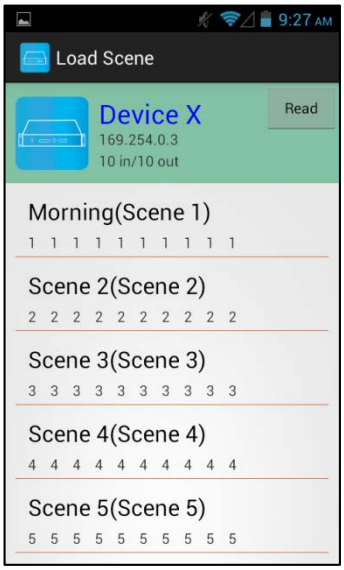
Read scene status



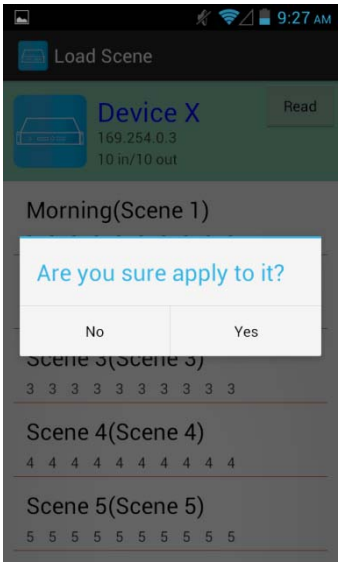
Touch top right 「Read」to renew the scene status



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

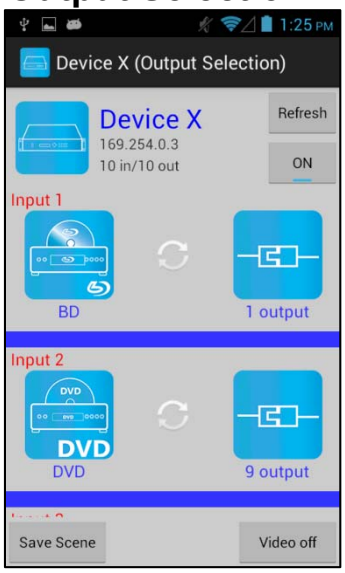
Bottom left「Save Scene」to save the scenes

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



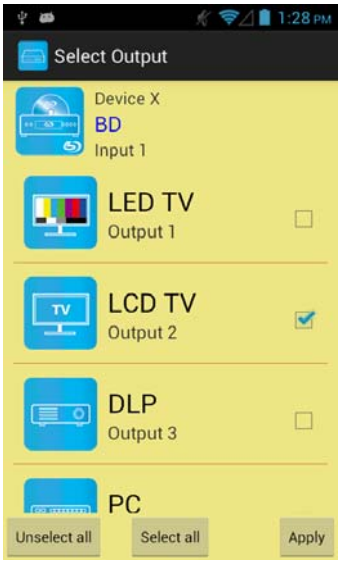
Top right 「Refresh」to renew the status of matrix

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「Save Scene」to save the scenes

Bottom right「Video off」to turn off video output



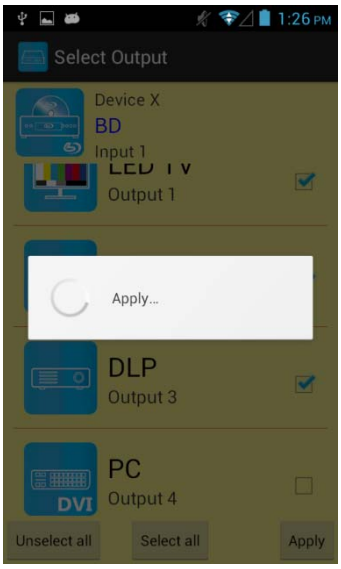
Touch input block or「Video off」to enter Output Selection page

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

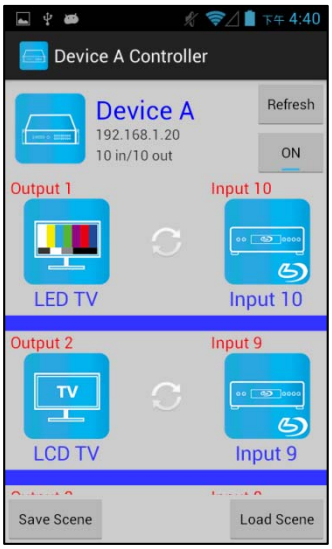
Bottom right「Apply」to apply output setting



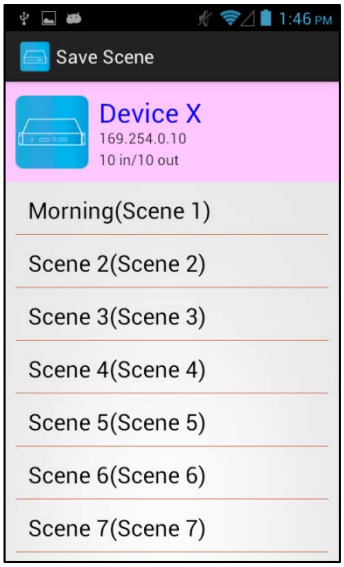
After touch 「Apply」 it will show pop-up message 「Apply…」

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

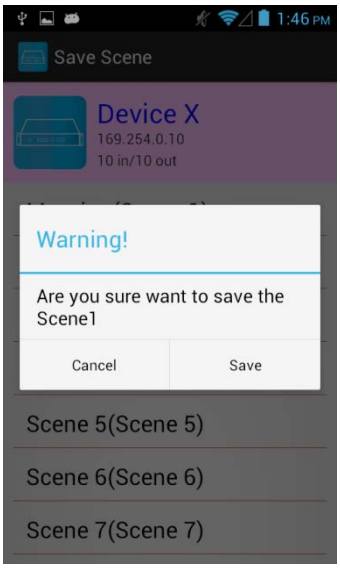
Save Scene



In Input or Output Selection page touch bottom left「Save Scene」to enter Save Scene page

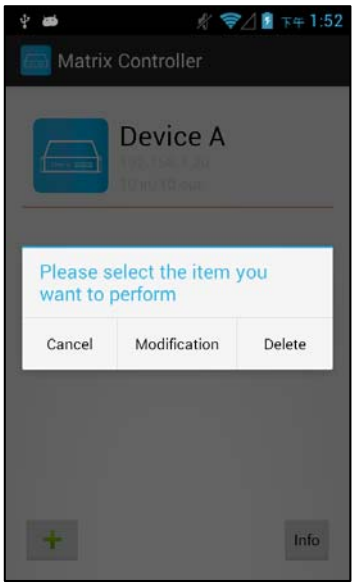


Touch the Scene column to show pop-up dialog

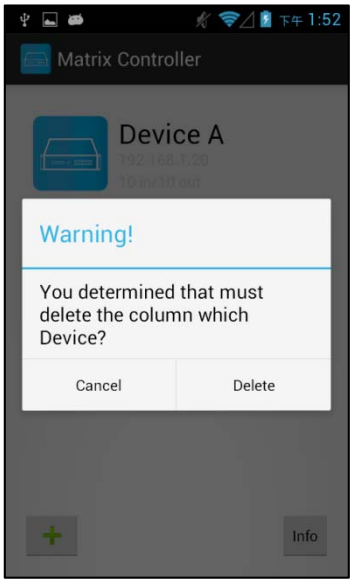


Touch 「Save」to save current channels setting for all output
It will return to Save Scene page automatically.

Delete Matrix



Press the block of matrix in Controller page to show pop-up dialog then touch 「Delete」



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

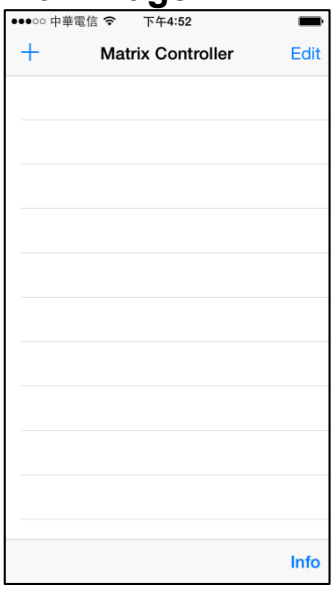
You could also set to DHCP mode, please refer user manual

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:

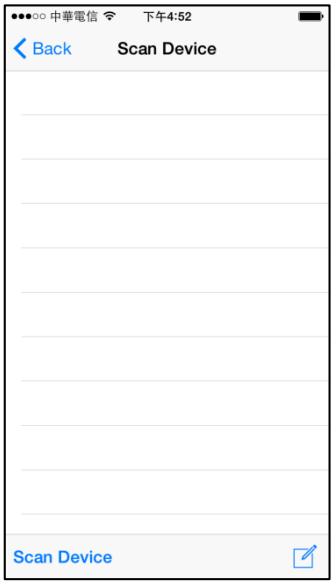


When first time enter the APP will see the main page

Bottom left「+」to add matrix

Bottom right「Info」to show information

Scan Device

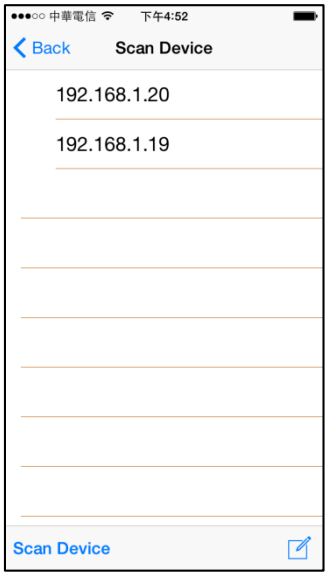


Touch「+」button at main screen to enter「Scan Device」page

Touch bottom left「Scan Device」to start scan

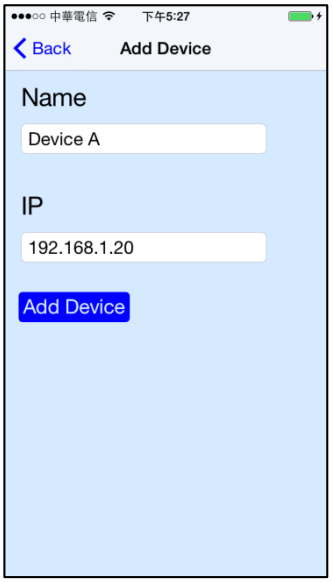
Touch bottom right pen icon to input the IP address manually

Add Matrix



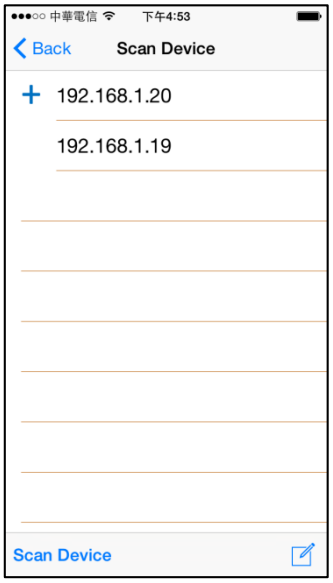
After scanning it will show all matrixes in the list

Touch the IP in list to enter「Add Device」page

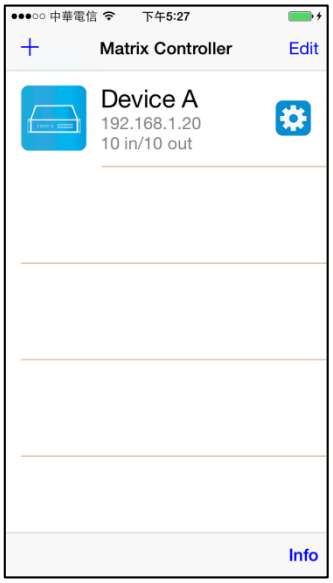


Enter the name of matrix then touch「Add Device」to finish setting

Notice：Name should be unique, not allow duplicate

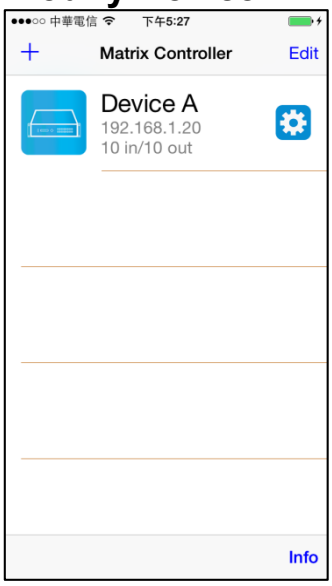


It will show「+」icon in front of the IP address when finished

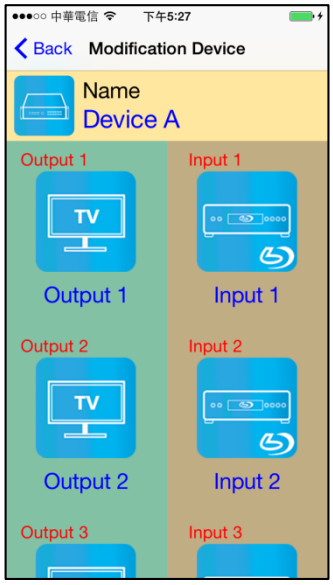


Return to main screen you will see the matrix which just add

Modify Device

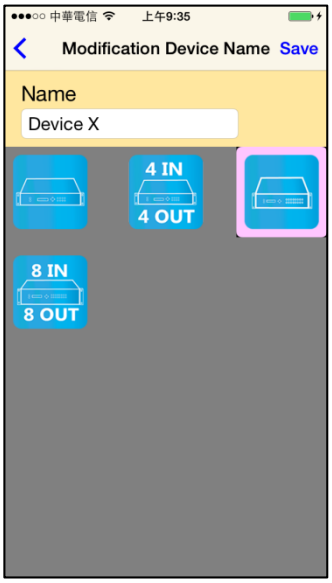


Touch the gear icon to enter Modification page



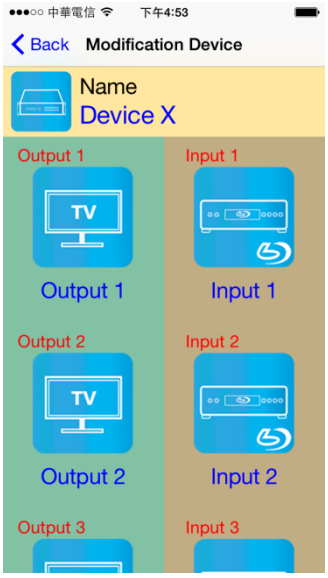
Yellow block shows matrix name and icon

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

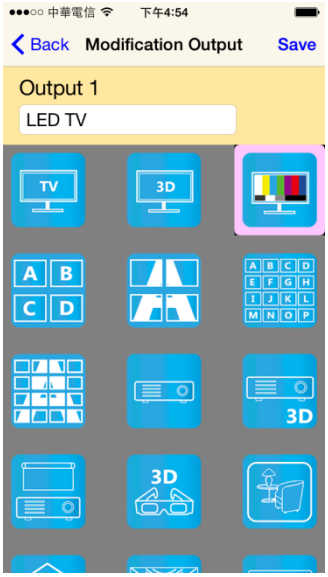


Touch yellow block to modify matrix name and icon

Input the name and select the icon you prefer then touch「Save」to finish

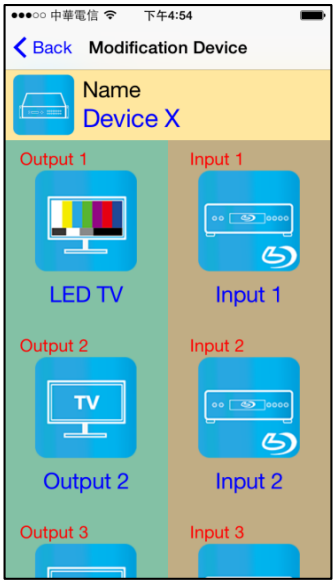


Return to Modification page you will see the matrix have been changed

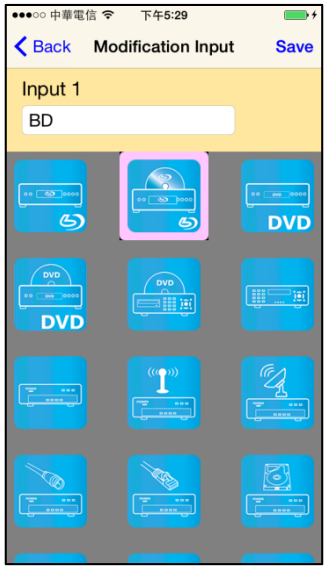


Touch green block to modify output name and icon

Input the name and select the icon you prefer then touch「Save」to finish

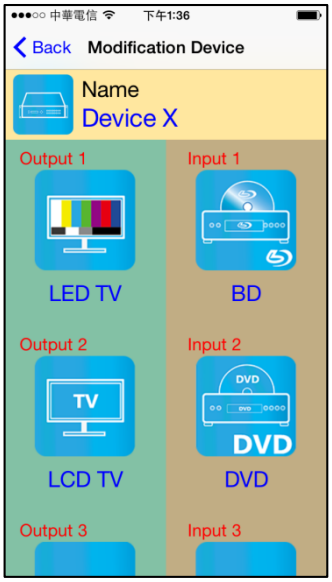


Return to Modification page you will see the output have been changed



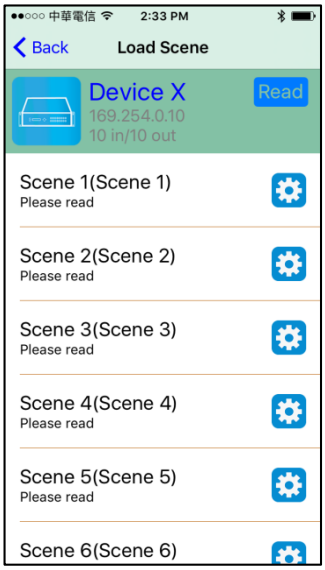
Touch brown block to modify input name and icon

Input the name and select the icon you prefer then touch「Save」to finish

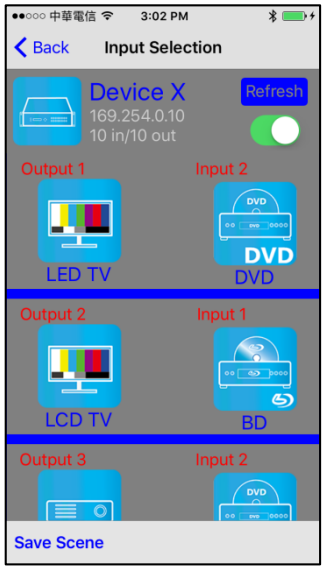


Return to Modification page you will see the input have been changed

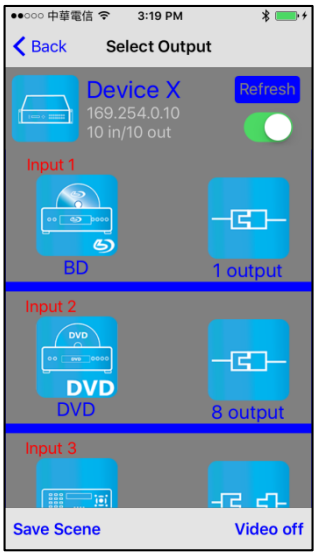
Channel Switching mode (load scene, input selection, output selection)



Click device name in list to enter load scene page

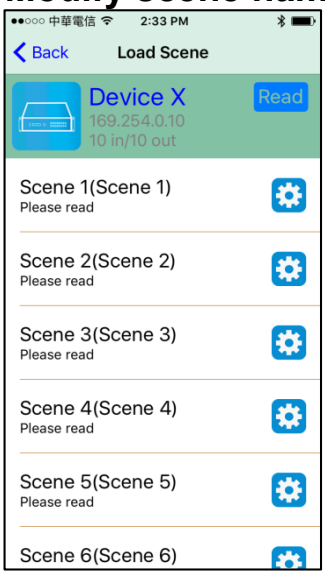


Slide right from load scene page to enter input selection mode (as before)

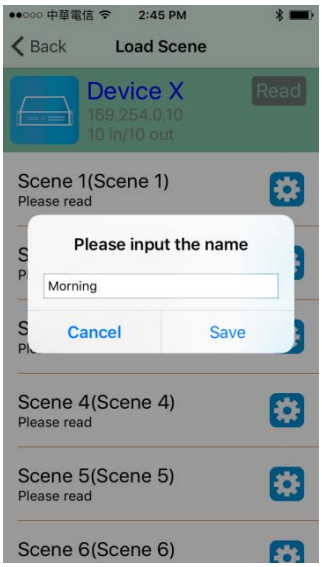


Slide left from load scene page to enter output selection mode (support multiple selection)

Load scene
Modify scene name



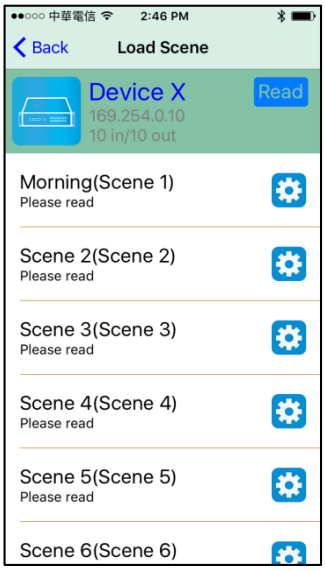
Touch the gear icon to enter modify scene name



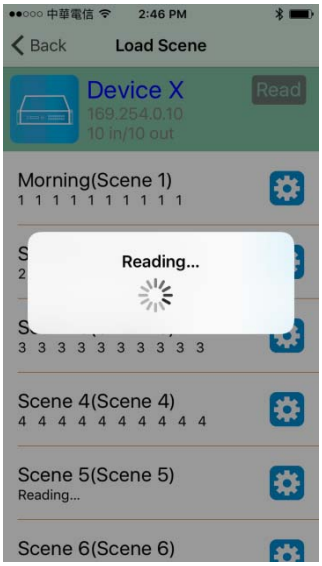
After modification touch 「Save」to save scene name
It will return to Load Scene page automatically.

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

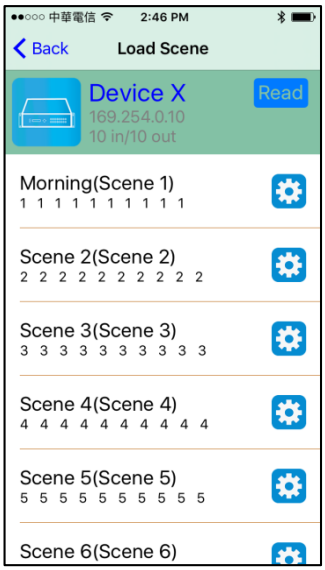
Read scene status



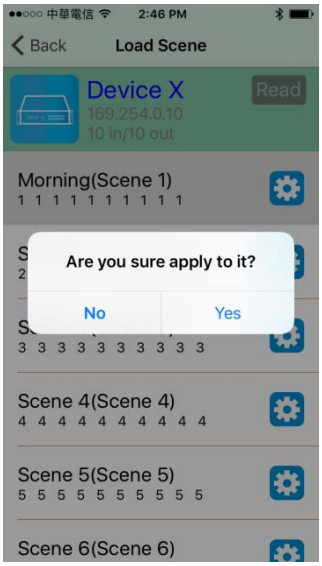
Touch top right 「Read」to renew the scene status



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

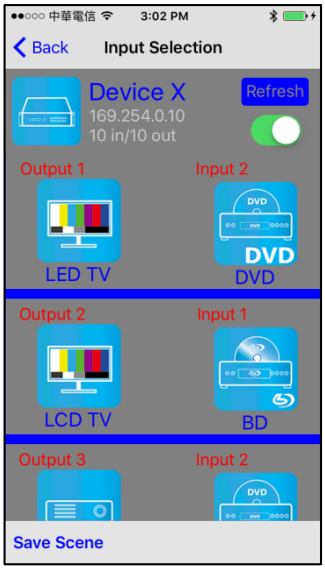


Touch the column name to show pop-up dialog



Touch 「Yes」to apply scene

Input Selection Mode



Top right「Refresh」to renew the status of matrix

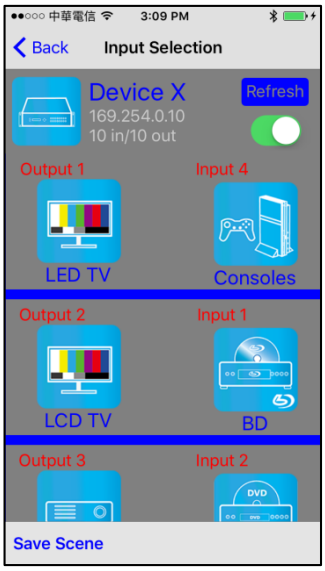
Below「Refresh」button to power on/off the matrix

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

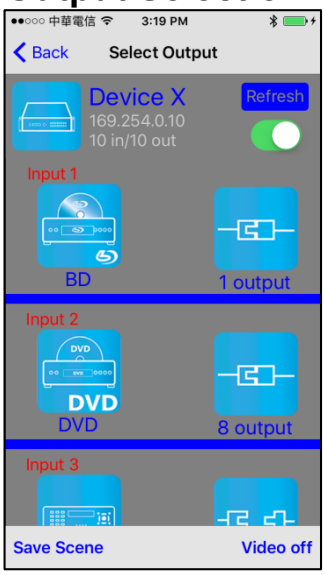
Touch output block to enter Channel Selection page

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「Save Scene」to save the scenes

Bottom right「Video off」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

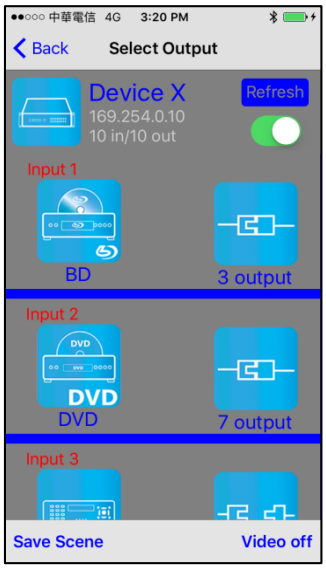
Bottom center「Select all」to check all output box

Bottom right「Apply」to apply output setting

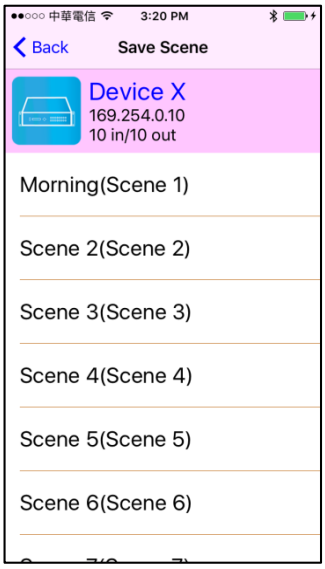
After touch 「Apply」 it will show pop-up message 「Apply…」

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

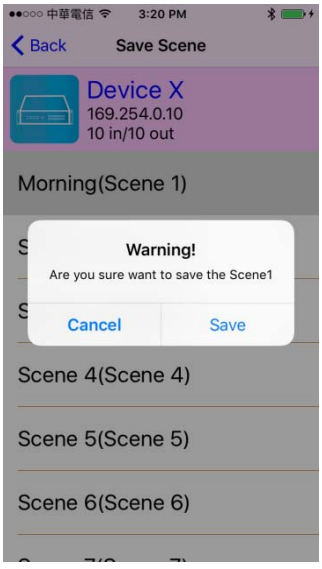
Save Scene



In Input or Output Selection page touch bottom left「Save Scene」to enter Save Scene page

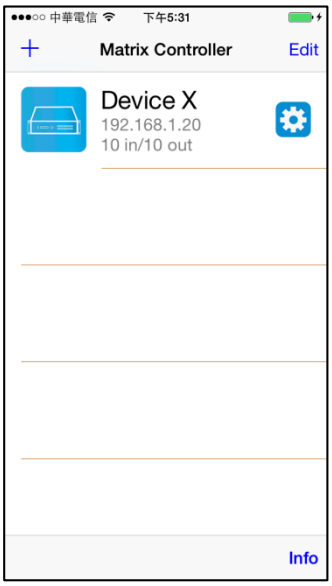


Touch the Scene column to show pop-up dialog

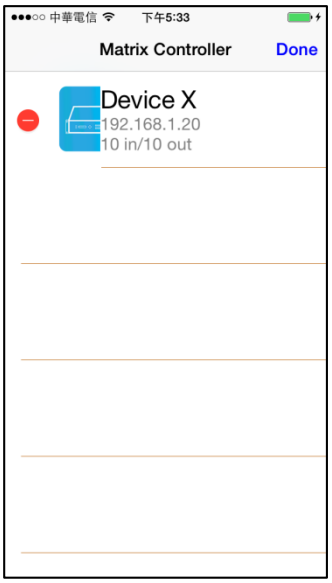


Touch 「Save」to save current channels setting for all output
It will return to Save Scene page automatically.

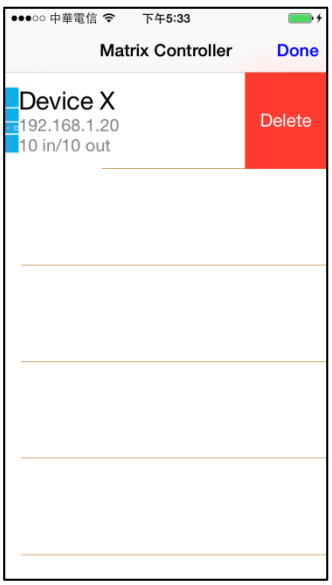
Delete Matrix



Touch top right「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
HDMI Resolution	1080p @ 60Hz 12bit，3D
Video Input Interface	HDMI Type A x 4
Video Output Interface	HDMI Type A x 4
RS-232 Input/Output Interface	DB9 x 1(CONSOLE)
IR Receive Angle	± 45 degree
IR Receive Distance	5M
Power Adapter	DC 12V 4.2A
Power Consumption	2A
Temperature	Operation: 0 to 55℃, Storage: -20 to 85℃, Humidity: up to 95%
Dimension mm	483 x 197 x 44
Weight g	2400

RoHS CE FC

Rev. A V1.19