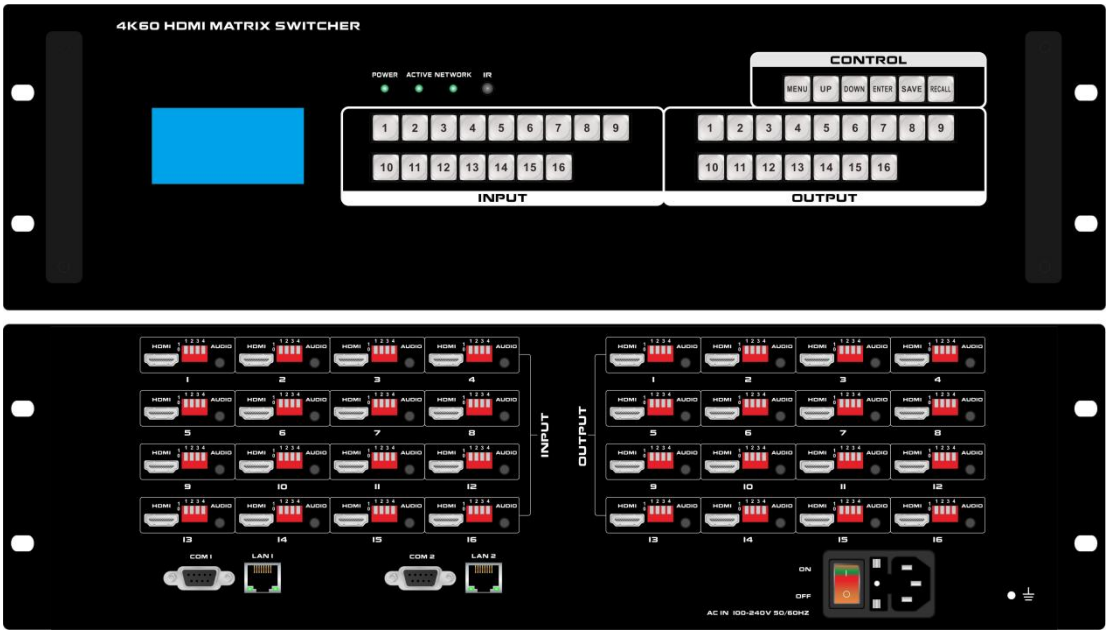
User Manual

KLQ-4KHMX1616

16x16 4K60 HDR HDMI2.0 Matrix Switcher with WEB GUI, APP control



Version: V22.10.13

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1. Product Introduction

This is a new fixed 4K60Hz HDMI matrix switcher with 16 HDMI input ports with 16* 3.5mm audio in and 16 HDMI output ports with 16* 3.5mm audio outs, the resolution can up to 4K60Hz and all ports are HDCP compliant. With the friendly user control methods: IR remote control, 2-key push front buttons with background blue light, WEB GUI, TCP/IP, RS232,UDP and the iOS/Android APP control, supports EDID management by the DIP switches, this matrix switcher can work with the Blu-Ray Players, Set-Top boxes, Home Theater, and game consoles etc HDMI input sources to route to the HDMI displays, it has been widely used in different audio visual applications.

2. Product Features

- 8 HDMI inputs with 8 audio in and 8 HDMI outputs with 8 audio outs
- Supports HDMI2.0, HDCP compliant
- The resolution can up to 4K@60Hz
- Deep Color support 48/36/30/24-bit
- Supports LPCM 7.1CH, Dolby Digital and DTS-HD Master Audio
- Supports EDID management by DIP switch
- Supports RS-232, UPD(4000) and TCP/IP(5000) Control protocols
- Supports 2-press push buttons control with blue lights
- Supports WEB GUI, APP, RS232, push-button, IR remote controls

3. Technical Datasheet

Description	16x16 HDMI 2.0 matrix switcher with audio
Input	16*HDMI, 16*3.5mm audio, 2*RS232, 2*LAN
Input	16*HDMI, 16*3.5mm audio
Control ports	RS-232, UPD(4000) and TCP/IP(5000) Control protocols
Resolution	480i, 576i, 480p, 576p, 720p, 1080i, 1080p@24/30/50/60Hz, 4K@30Hz, 4K@60Hz
Color Space	Support RGB444, YUV444, YUV422 , x.v.C standard color extension
Control	iOS/Android Apps, WEB GUI, RS232 & Front buttons with background light
Power	AC: 100V—240V 50/60Hz
Consumption	20W
Dimension	3U, 482*280*133(mm)
Weight	9kg

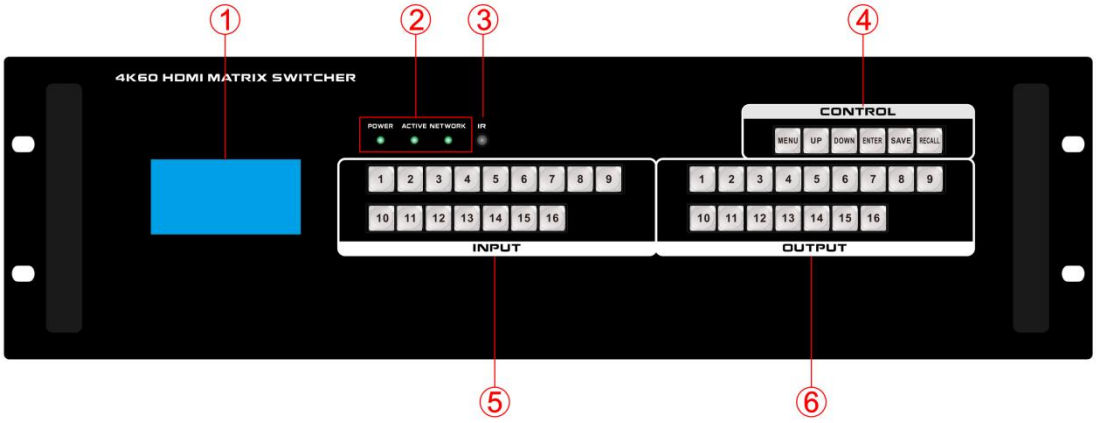
Work Temperature	0℃ ~40℃
Storage Temperature	-20℃ ~55℃

4. Packing Details

HDMI2.0 16x16 Matrix Switcher .....1 unit
Power cord .....1 pcs
IR Remote control.....1 pcs

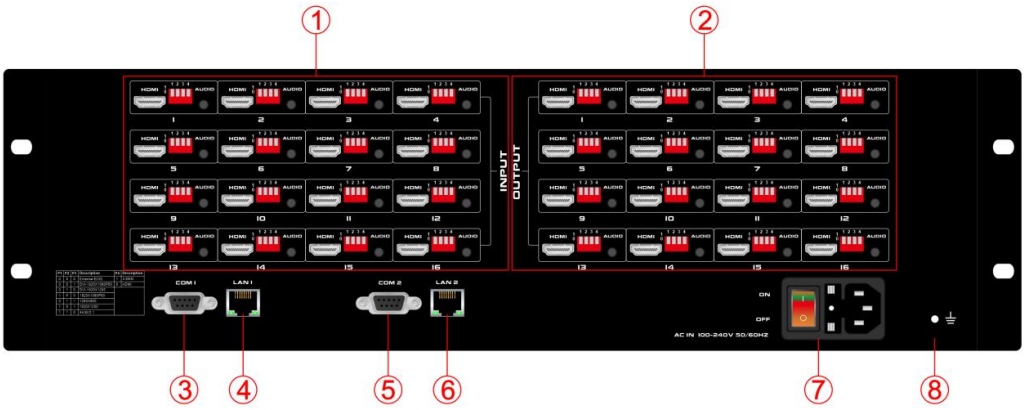
5. Panels

Front Panel



No.	Name	Description	
①	**LCD Screen**	Operation information real-time Display	
②	**POWER**	light up after power on, it will light off after power off	
②	**ACTIVE**	Flashing while using the buttons/ WEB switching successfully	
②	**NETWORK**	Network control indicator. The Network indicator blinks every time you perform an operation on the WEB page	
③	**IR**	IR remote control	
④	**CONTROL**	**MENU**	Select between View, Switch, Scene Save/ Recall and Setup
		UP	Upward and short cut button for switching to ALL outputs
		SAVE	For saving the scene or setup
		ENTER	Enter button
		DOWN	Downward and short cut button for canceling to ALL outputs
		RECALL	For recalling the saved scene
⑥	**INPUT**	Output buttons with background light, from 1~16 output buttons	
⑥	**OUTPUT**	Input buttons with background light, from 1~16 input buttons	

Rear Panel:



No.	Name	Description
①	Input Port	1-16 HDMI input ports
②	Output Port	1-16 HDMI output ports
③	RS232 Ports	Dual RS232 ports for 3rd parties control
④	LAN Ports	Dual LAN ports for WEB/TCP/IP control
⑤	RS232 Ports	Dual RS232 ports for 3rd parties control
⑥	LAN Ports	Dual LAN ports for WEB/TCP/IP control
⑦	Power Port	AC 220V-240V 50/60Hz
⑦	Power Switch	Power ON/OFF switch with light
⑧	Grounding	Grounding port

DIP switch for inputs:

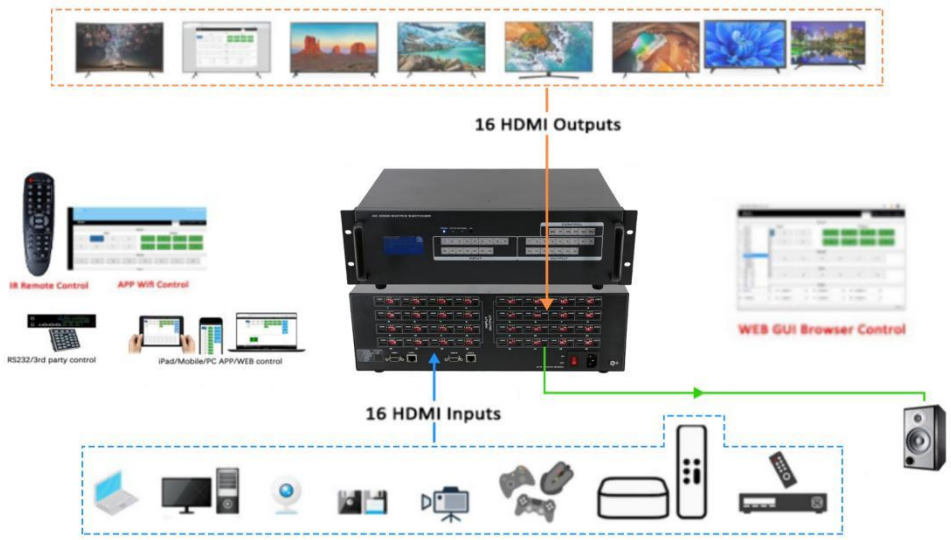
EDID management				Audio	
D1	D2	D3	Function	D4	Function
1	1	1	4k60	1	3.5MM
1	0	0	1080P2.1	0	HDMI
1	0	1	HDMI-1200		
0	1	1	1440*900		
0	0	1	DVI-1080		
0	1	0	DVI-1200		
1	1	0	4k2.1		
0	0	0	External EDID		

DIP switch for outputs:

Resolution Scaling			No functions	
D1	D2	Function	D3	D4
0	0	Resolution bypass	No functions	
0	1	Force the 4K30/50/60 resolution to 1080P30/50/60		

1	0	Force 4K50/60 420 resolution to 4K50/60 444	
1	1	Resolution bypass	

6. Equipment Connection Diagram



7. Equipment Operation and Instruction

The LCD display screen will light up after power and turned on. It shows the current operation status, press MENU button, it will keep recycling between VIEW, SWITCH, SCENE, SETUP four different interface. The default interface is VIEW.

7.1 Font buttons switching operation

7.1.1 Switching operation

Switching with industry 2-key fast switching, first press the input button and then select/press output button. Details are as follow:

- There are 16 input buttons, 16 output buttons. First press MENU to show SWITCH interface, then can continue the next switching step
- Press input number at the INPUT area, the input button will light up with blue light
- Then press output number at the OUTPUT area, and the output button will light up. Users also can press the UP button to realize 1 to ALL switching.
- If need to cancel switching, can press the button again to cancel. Users also can press the DOWN button to cancel all outputs

7.1.2 Scene Operation

- The system can save 40 scenes, after switching successfully in the SWITCH interface, press MENU button and switch to SCENE interface.
- Enter the wanted scene save number(1~16), then press SAVE. If want to reload the saved scene, press the scene number and press RECALL button
- Note: When the scene save/recall is made through the front button, the maximum number of save/recall is 16.

7.1.3 Setup Operation

- First press MENU switch to SETUP interface, then continue next operation
- Via SETUP, it can realize IP address changing, in SETUP interface can use UP/ DOWN button to position, enter the needed IP address from the left button side, then press SAVE button to save

7.1.4 View Operation

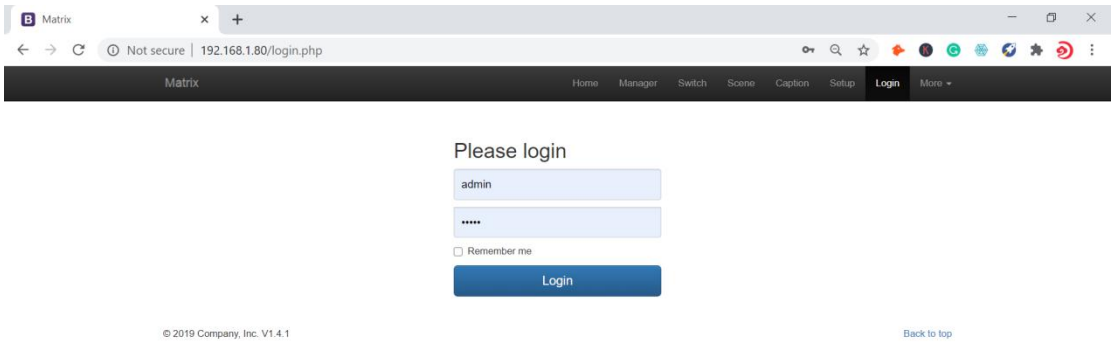
- Via MENU button switch to VIEW interface, will display the current switching status

7.2 WEB Control

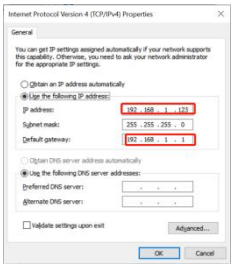
The default IP address are 192.168.0.80(LAN1) and 192.168.1.80(LAN2).

7.2.1 Login Operation

Accordingly to connected LAN port, enter the corresponding IP address, if using the LAN2, then enter 192.168.1.80 in the browse(Recommend with Google Chrome) as below:

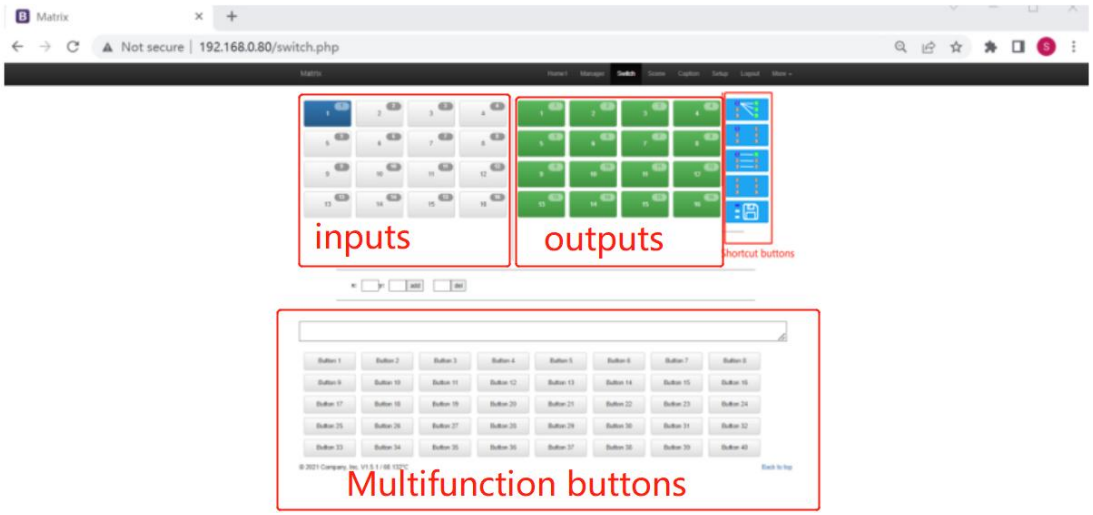


Note: The default user name and password is the same: admin, click login after entering. Please make sure the control PC is at the same IP segment.



7.2.2 Switch

Switch interface:



All input and output ports can be renamed,Multi-function buttons area, through simple Settings, can be controlled through the serial port peripheral devices, such as projector switch. No setting is the scene call shortcut button.

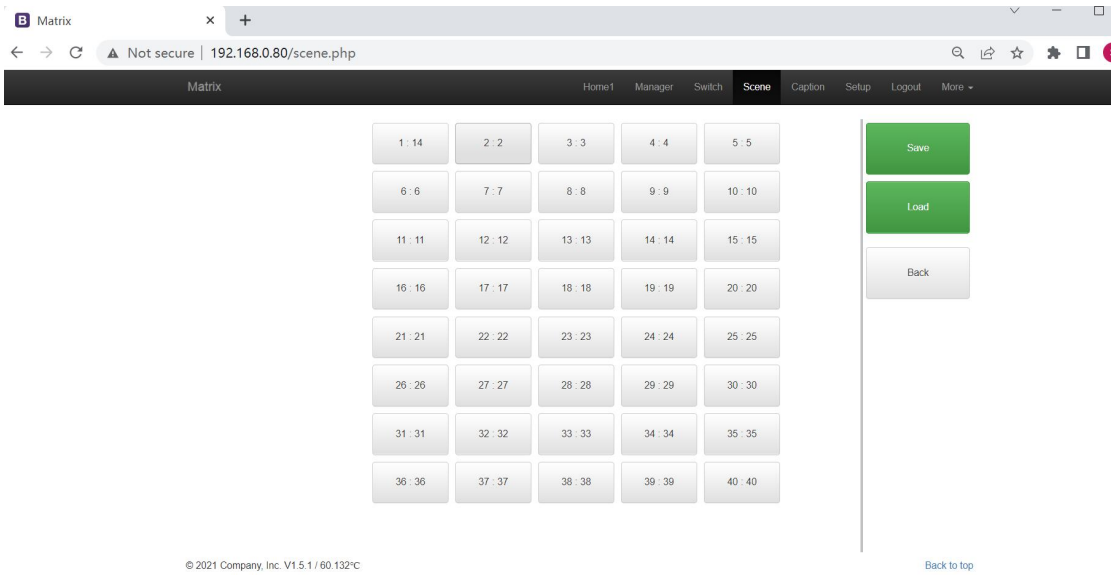
Users can do the input sources switching by clicking the Input buttons first, then pressing the Output buttons.

Or users can use the shortcut buttons on the right for the fast switching:

	Switch one input to all the outputs
	Close one input to all the outputs
	Switch all inputs on all outputs
	Close all inputs to all outputs
	Switch to the scenes Save and Recall interface

7.2.3 Scene

Scene Interface:

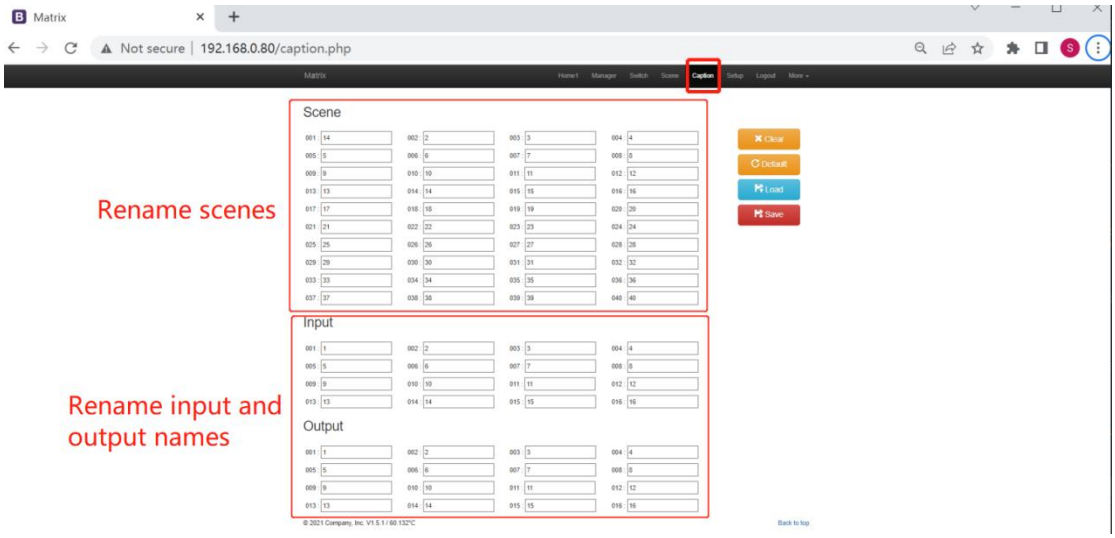


It can support 40 scenes in total, users can preview each scene switching status by clicking on any of the scene number. Click “Save” to save the switching status, and “Load” to recall the scenes. “Back” to return back to the switch interface. All scenes support to be renamed.

7.2.4 Caption:

For changing the input, output and scenes’ name

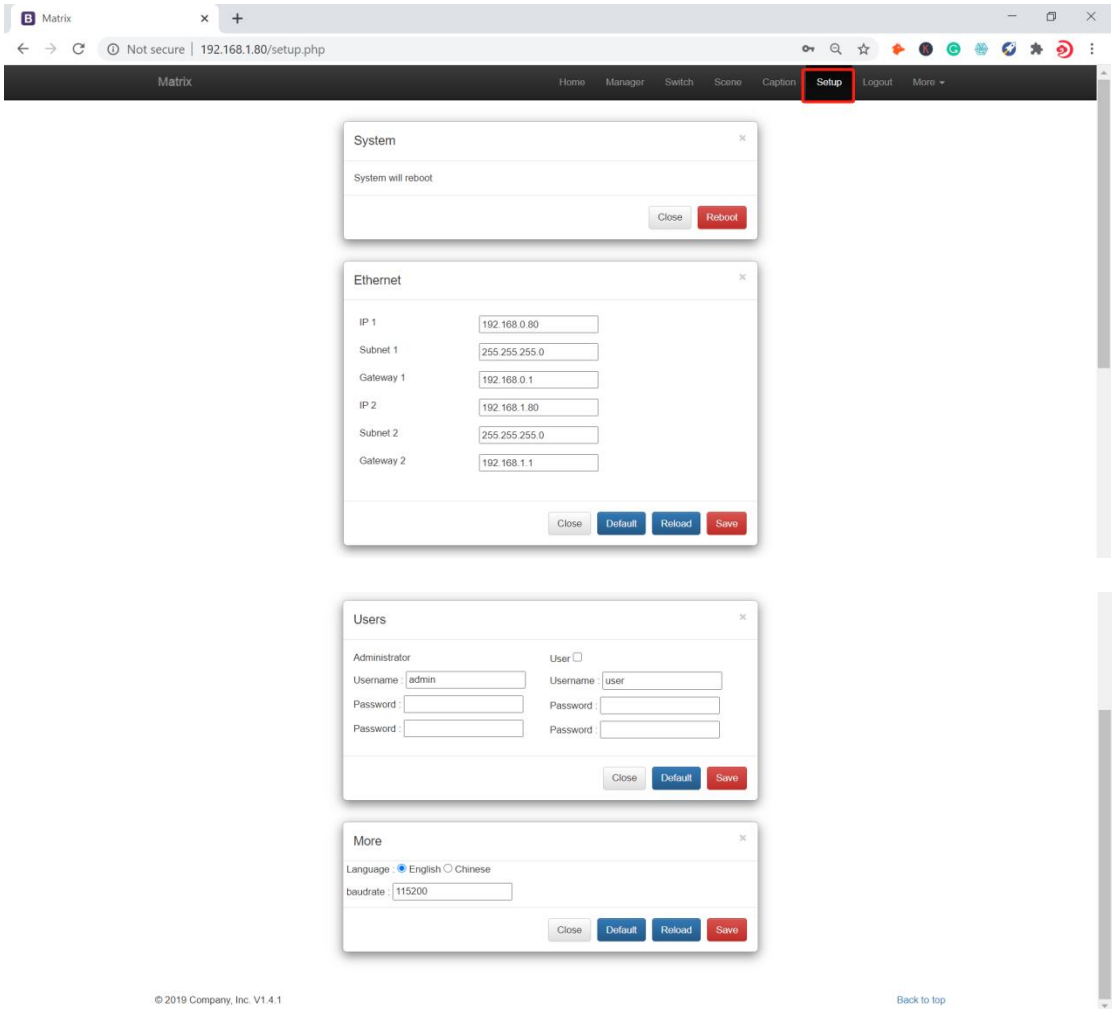
Users can rename the scenes, input and output names here, users can change all the names and then need to click the “Save” button on the right. After renamed the names, users will see the input, output and the scenes names have changed once click to the “Switch” and “Scenes” interface. With this renaming function, it can be easier for the users to know the sources and ends.



7.2.5 Setup

Setup interface:

Users can reboot, change the IP address, set up the login user names, language and the RS232 baud rate settings here. After changed the IP address, will need to reboot the matrix switcher, then the new IP address will take effect.



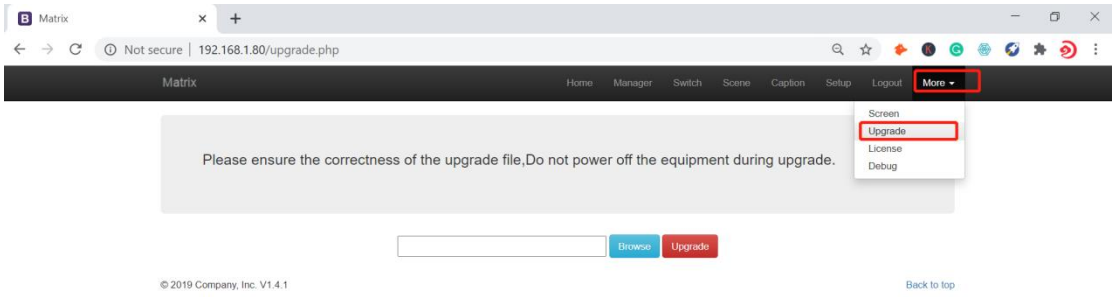
7.2.6 More:

For the more interface, users mainly can do the firmware upgrade here.

Screen is for the other matrix models which with the touch screen, so users can monitor the touch screen switching status.

For the upgrade, users need to check with the factory to get the firmwares, the firmware is ".zip" format.

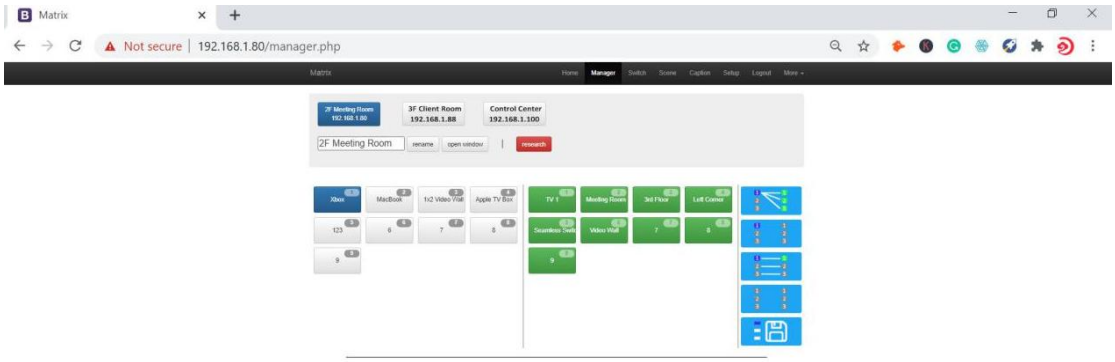
License and Debug is for factory engineering team to have the technical support.



7.2.7 Manager

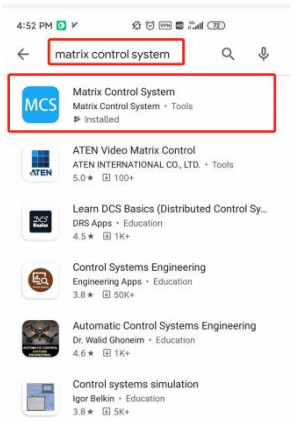
This Manager interface, it allows the users to manage at most 254 units of the matrices which are

installed at the same area network and at the same gateway but different IP addresses. As below are showing 3 matrices, users can rename each matrix and click button to do the switching or open in a new manage window.

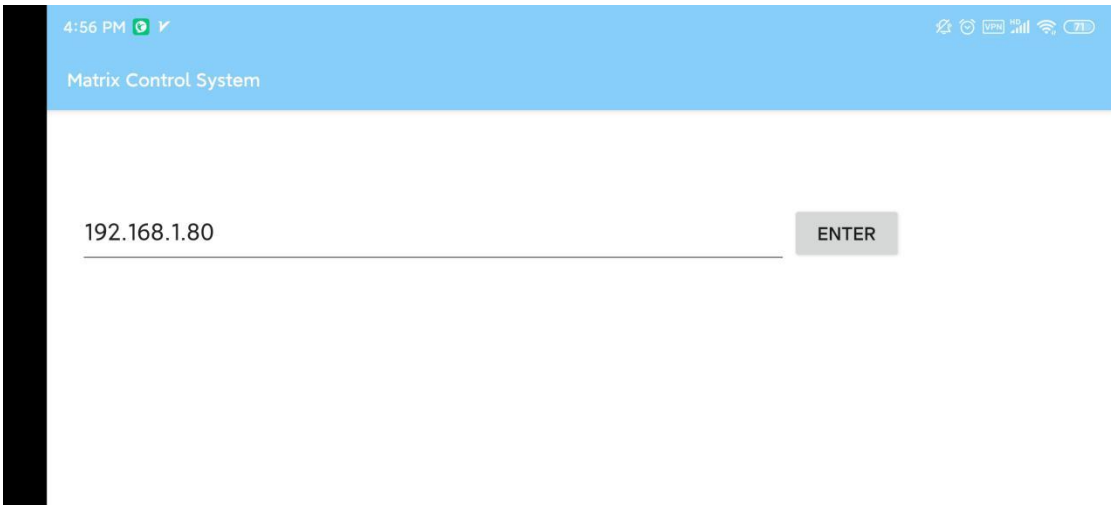


7.3 APP Control

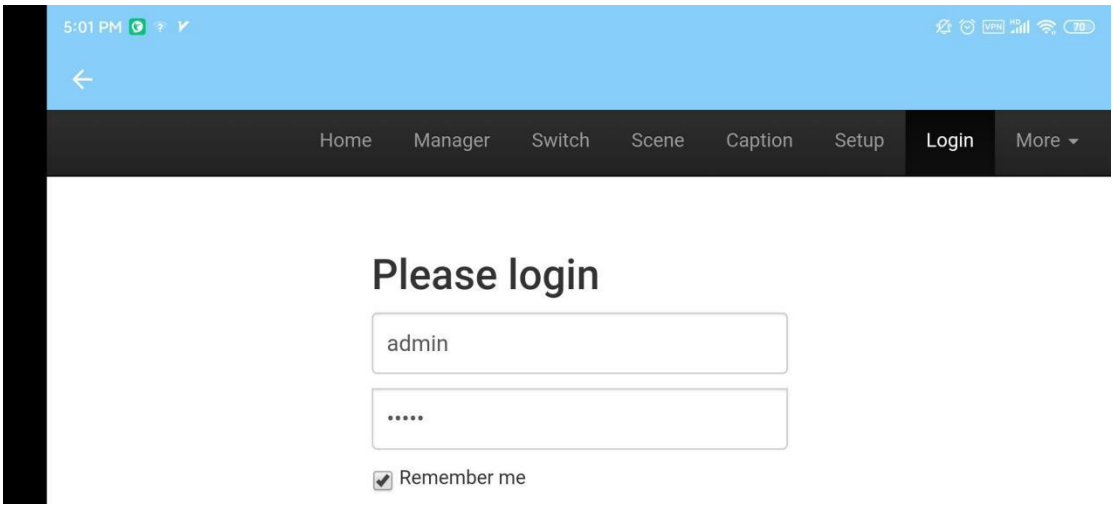
The matrix switchers also can support the iOS and Android APP control, users can search the keyword “Matrix Control System” in Apple store or the Google Play Store.



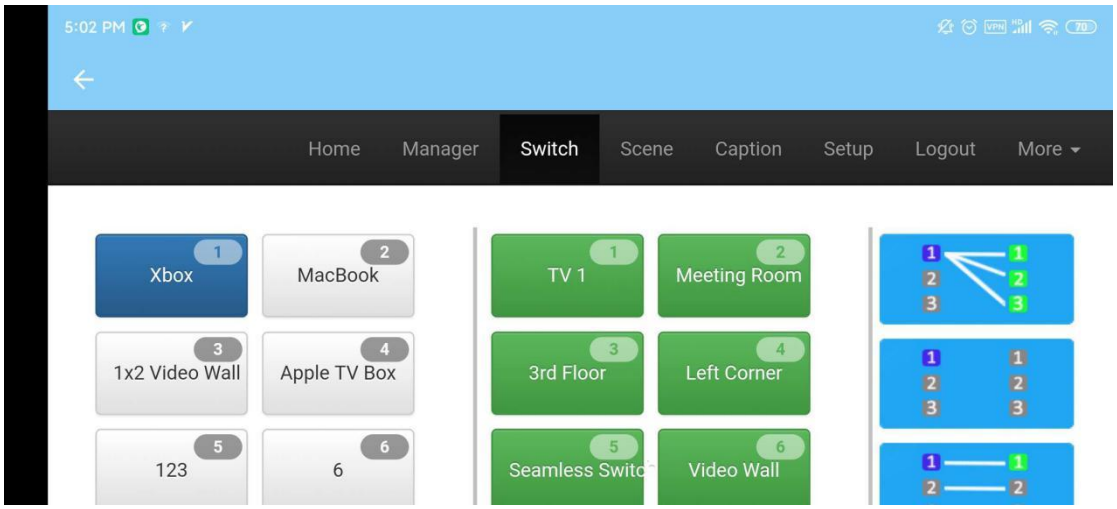
Step 1: Make sure the matrix well connected with the WIFI router, and the iPad/Android devices are connected to this same WIFI. Then open on the MCS(matrix control system) APP and Enter the IP address of the matrix switcher(the default IP addresses are: 192.168.0.80 or 192.168.1.80):



Step 2: After Enter the IP address, it will need to login, the default user name and password both are the admin:



Step 3: After log in successfully, users can do the same functions as the WEB GUI operation:



7.4 COM Control Commands

RS232 cable with straight-through connection(USB-RS232 can be used directly to control)

Communication protocol:

Baud rate: 115200

Data bit: 8

Stop bit: 1

Check bit: None

Commands	Explanation	Function description
YAll.	Y=1,2,3,4.....	Switch Input Y to all the outputs Eg. "**1ALL.**" means switch input 1 to all outputs
All1.	One to one	Switch all the channels to be one to one. Eg.1->1, 2->2, 3->3.....
YXZ.	Y=1,2,3,4..... Z=1,2,3,4.....	Switch Input Y to Output Z Eg. "**1X2.**" means switch Input 1 to output 2
YXZ&Q&W.	Y=1,2,3,4..... Z=1,2,3,4..... Q=1,2,3,4..... W=1,2,3,4.....	Switch Input Y to Output Z, Q, W Eg. "**1X2&3&4.**" means switch Input 1 to Output 2, 3, 4
SaveY.	Y=1,2,3,4.....	Save current status to scene Y Eg. "**Save2**." means saving current status to Scene 2
RecallY.	Y=1,2,3,4.....	Recall the saved scene Y Eg. "**Recall2**." means recall the saved Scene 2
BeepON.	Beep sound	Buzzer on
BeepOFF.		Buzzer off
Y?.	Y=1,2,3,4.....	Check the Input Y to outputs switching status Eg. "**1?.**" means to check Input 1 switching status

Note:

- Every command ends with a period "." and it can't be missing.
- The letter can be capital or small letter.
- Switch success will return as "OK", and failed will return as "ERR".

8. Remote Control

Source switching: Press input number---Press 'AUTO'----Then press output number-----ENTER

Eg, switch input 1 to output 1, INPUT1---AUTO----OUTPUT1---ENTER

Scene save: Press the number from INPUT----SAVE

Eg, save the current status to Scene 2, 2(from input section)---SAVE

Scene recall: Press the number from INPUT----RECALL

Eg, Recall the save Scene 2, 2(from input section)---RECALL



9. Trouble Shooting and Attention

No signal on the display?

- Make sure all the power code well connected
- Check the display switcher and make sure it's in good condition
- Make sure the the DVI cable between the device and display are short than 7 meters
- Reconnect the DVI cable and restart the system
- Make sure the signal sources are on
- Check the cables between the devices and displays are connected correctly.
- Dial the switcher 7 to 1, then dial the switcher1,2 and choose the corresponding inputs.
- Make sure the resolution less than WUXGA(1920*1200)/ 60HZ
- Make sure the display can support the output resolution.

10. After Sales

9.1 Warranty Information

The Company warrants that the process and materials of the product are not defective under normal use and service for 2 (2) year following the date of purchase from the Company or its authorized distributors.

If the product does not work within the guaranteed warranty period, the company will

choose and pay for the repair of the defective product or component, the delivery of the equivalent product or component to the user for replacement of the defective item, or refund the payment which users have made.

The replaced product will become the property of the Company.

The replacement product could be new or repaired.

Whichever is longer, any replacement or repaired of the product or component is for a period of ninety (90) days or the remaining period of the initial warranty. The Company shall not be responsible for any software, firmware, information, or memory data contained in, stored in, or integrated with the product repaired by the customer's return, whether or not during the warranty period.

9.2 Warranty limitations and exceptions

Except above limited warranty, if the product is damaged by over usage, incorrectly use, ignore, accident, unusual physical pressure or voltage, unauthorized modification, alteration or services rendered by someone other than the Company or its authorized agent, the company will not have to bear additional obligations. Except using the product properly in the proper application or normal usage