FLEX L (MINI) Family

HD Seamless Hybrid AV Matrix



User Manual

RGBlink®

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Thank you for choosing our product!
This User Manual is designed to show you how to use this product quickly and make use of all the features. Please read all directions and instructions carefully before using this product.

Declarations

FCC/Warranty

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference.

Guarantee and Compensation

RGBlink provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of guarantee. On receipt, the purchaser must immediately inspect all delivered goods for damage incurred during transport, as well as for material and manufacturing faults. RGBlink must be informed immediately in writing of any complains.
The period of guarantee begins on the date of transfer of risks, in the case of special systems and software on the date of commissioning, at latest 30 days after the transfer of risks. In the event of justified notice of compliant, RGBlink can repair the fault or provide a replacement at its own discretion within an appropriate period. If this measure proves to be impossible or unsuccessful, the purchaser can demand a reduction in the purchase price or cancellation of the contract. All other claims, in particular those relating to compensation for direct or indirect damage, and also damage attributed to the operation of software as well as to other service provided by RGBlink, being a component of the system or independent service, will be deemed invalid provided the damage is not proven to be attributed to the absence of properties guaranteed in writing or due to the intent or gross negligence or part of RGBlink.
If the purchaser or a third party carries out modifications or repairs on goods delivered by RGBlink, or if the goods are handled incorrectly, in particular if the systems are commissioned operated incorrectly or if, after the transfer of risks, the goods are subject to influences not agreed upon in the contract, all guarantee claims of the purchaser will be rendered invalid. Not included in the guarantee coverage are system failures which are attributed to programs or special electronic circuitry provided by the purchaser, e.g. interfaces. Normal wear as well as normal maintenance are not subject to the guarantee provided by RGBlink either.
The environmental conditions as well as the servicing and maintenance regulations specified in this manual must be complied with by the customer.

Operators Safety Summary

The general safety information in this summary is for operating personnel.

Do Not Remove Covers or Panels

There are no user-serviceable parts within the unit. Removal of the top cover will expose dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.

Power Source

This product is intended to operate from a power source that will not apply more than 230 volts rms between the supply conductors or between both supply conductor and ground. A protective ground connection by way of grounding conductor in the power cord is essential for safe operation.

Grounding the Product

This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective-ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Use the Proper Power Cord

Use only the power cord and connector specified for your product. Use only a power cord that is in good condition. Refer cord and connector changes to qualified service personnel.

Use the Proper Fuse

To avoid fire hazard, use only the fuse having identical type, voltage rating, and current rating characteristics. Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres

To avoid explosion, do not operate this product in an explosive atmosphere.

Installation Safety Summary

Safety Precautions

For all product installation procedures, please observe the following important safety and handling rules to avoid damage to yourself and the equipment.
To protect users from electric shock, ensure that the chassis connects to earth via the ground wire provided in the AC power Cord.
The AC Socket-outlet should be installed near the equipment and be easily accessible.

Unpacking and Inspection

Before opening product shipping box, inspect it for damage. If you find any damage, notify the

shipping carrier immediately for all claims adjustments. As you open the box, compare its contents against the packing slip. If you find any shortages, contact your sales representative. Once you have removed all the components from their packaging and checked that all the listed components are present, visually inspect the system to ensure there was no damage during shipping. If there is damage, notify the shipping carrier immediately for all claims adjustments.

Site Preparation

The environment in which you install your product should be clean, properly lit, free from static, and have adequate power, ventilation, and space for all components.

Chapter 1 Your Product

1.1 In the Box

1 × 1.5m Power Cable（AC 110V-240V, 50/60Hz）

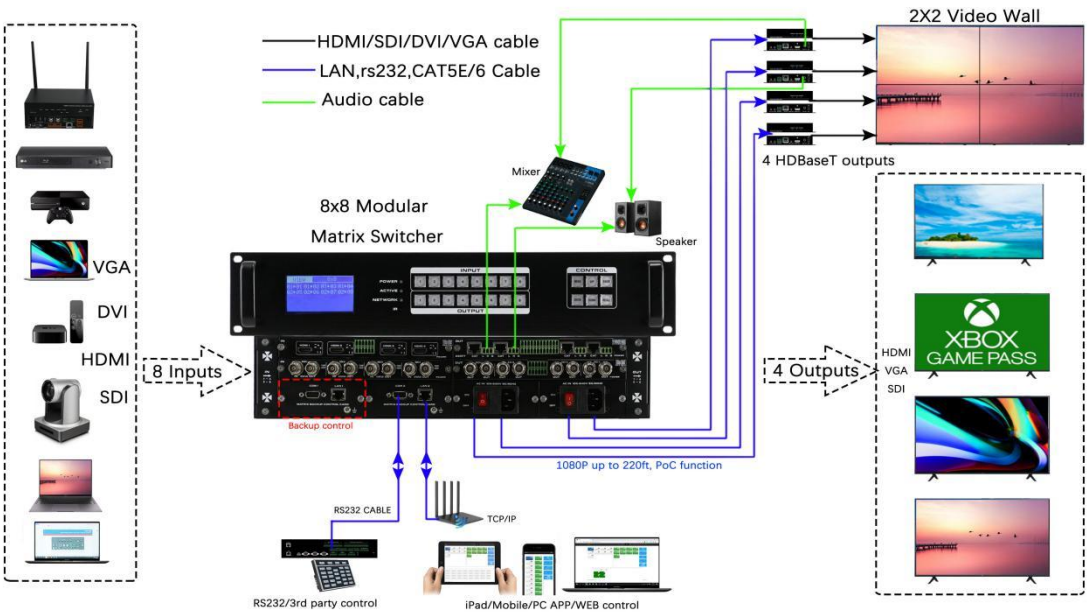
1.2 Product Overview

FLEX L(MINI) series are a modular matrix switchers, subject to the different model , with 2~40 input slots and 22~40 output slots, each slots support module with 4 ports, so it can support maximum from 8 inputs to 160 inputs and from 8 outputs to 160 outputs. The signals are including DVI, HDMI, HDBaseT, Fiber Optic, 3G-SDI, 12G SDI. Users are able to have mixed signals inputs and mixed signals outputs.

The single channel signal switching speed can reach 12.5Gbps, and the main board is using Four core four links processing technology, the switching ability speed can reach 32Gbps. With uncompressed transmission technology for the digital signal to make sure the image High fidelity output. Unique signal links shielding designing technology to make sure the signal completeness, the internal data switch has super strong capacity of resisting disturbance and long continuous and stable working ability. Supports 7*24 continuously working and with dual LAN and RS232 backup control, it’s convenient for users to control via PC, iPad, APP and the 3rd parties central control by the the RS232 control commands.

With the dual RS232 and LAN control, users also can simply set up and control the surrounding equipment, such as the projector, electric curtain and TVs.

This matrix switchers have been widely used in the conferencing, radio&television project, multimedia conferencing hall, large screen display project, television teaching, command control center and so on applications.



1.2.1 Product Features

- Modular designing chassis, with 8 input slots and 8 output slots
- Each input/output module support 4 inputs/4 outputs
- Supports 1080P, 4K30 and 4K60 modules for selections
- Supports DVI-I/ HDMI/ 3GSDI/ HDBaseT/ Fiber to mix input and output
- Support Video wall and seamless switching with the 1080P and 4K60 modules
- Support 3.5mm audio embedded and de-embedd function
- Support up/down scaling function via the DIP switch
- Support dual LAN and RS232 ports for backup control
- Front buttons with background lights, easier to operate at any time
- Support auto saving protection and auto recovery function while power cut

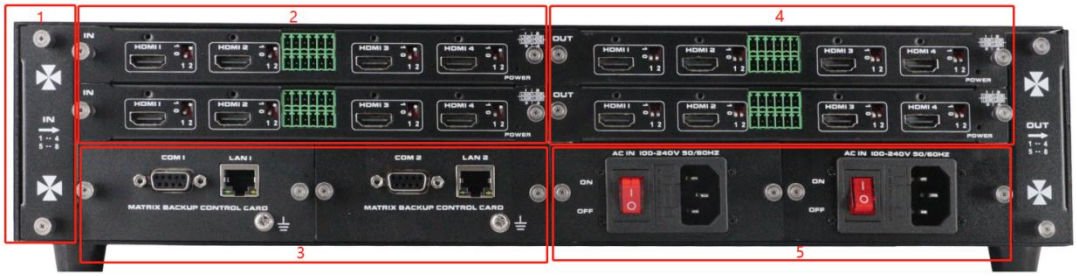
1.2.2 Front Panel



Name	Description
LCD Screen	Operation information real-time Display
POWER	light up after power on, it will light off after power off
ACTIVE	Flashing while using the buttons/ WEB switching successfully

IR	IR remote control	
OUTPUT	Input buttons with background light, from 1~8 input buttons	
INPUT	Output buttons with background light, from 1~8 output buttons	
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

1.2.3 Rear Panel

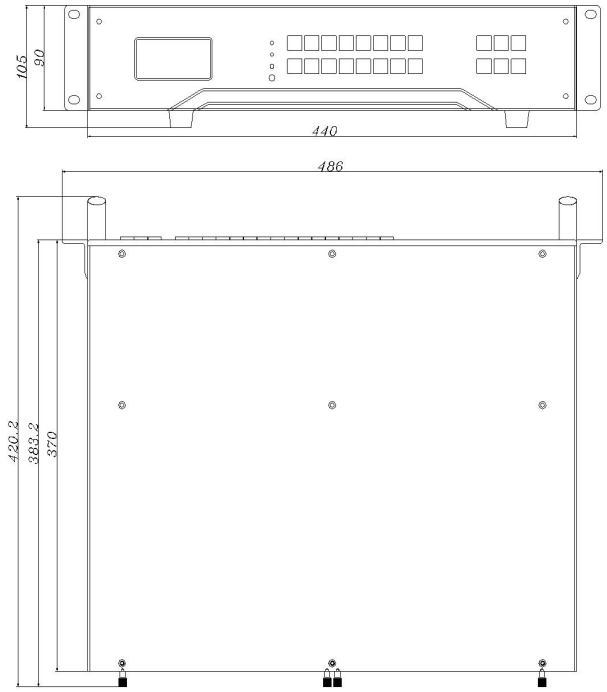


No.	Name	Description
1	Cooling fans	Modular cooling fans
2	Input slots	Total up to 18 input slots
3	Control card	Backup control ports: LAN1, COM1; LAN2, COM2
4	Output slots	Total up to 18 output slots
5	Power module	Redundant power supply

1.2.4 Dimensions

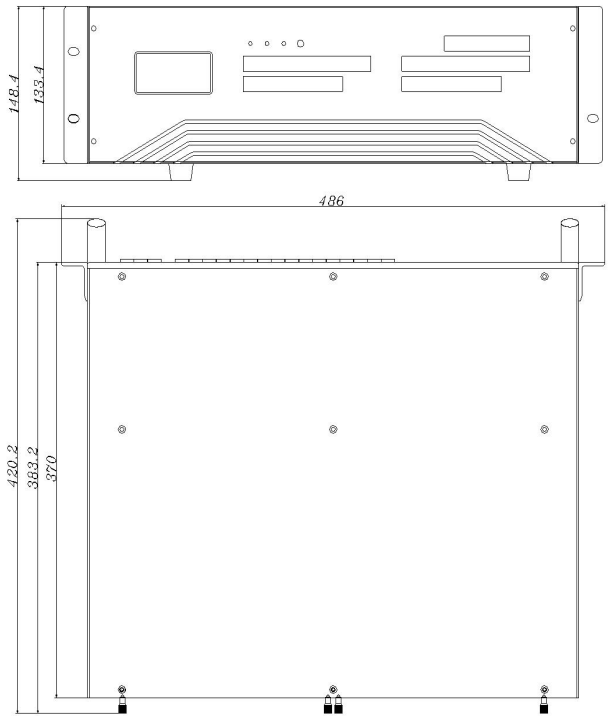
FLEX 08L(MINI)

486mm × 383.2mm × 90mm



FLEX 16L(MINI)

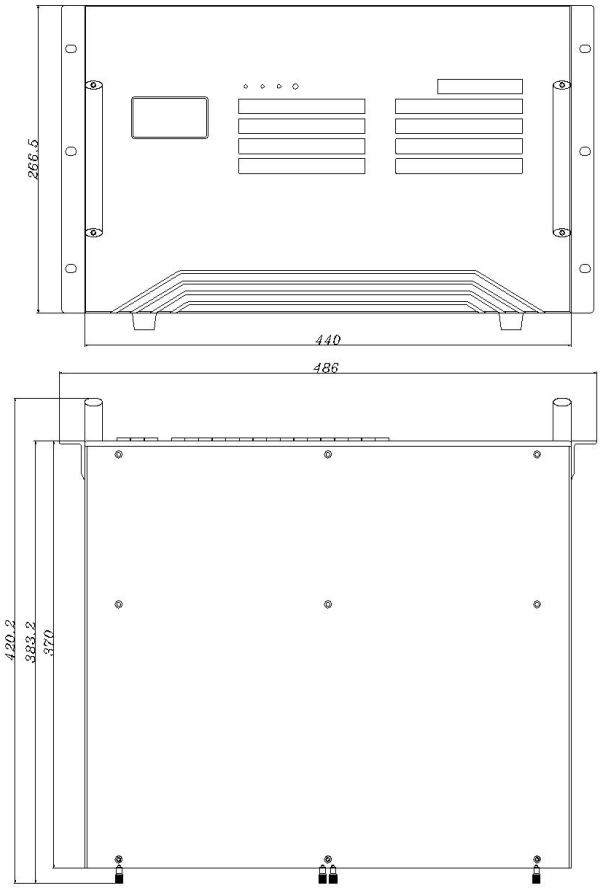
486mm × 383.2mm × 133.4mm



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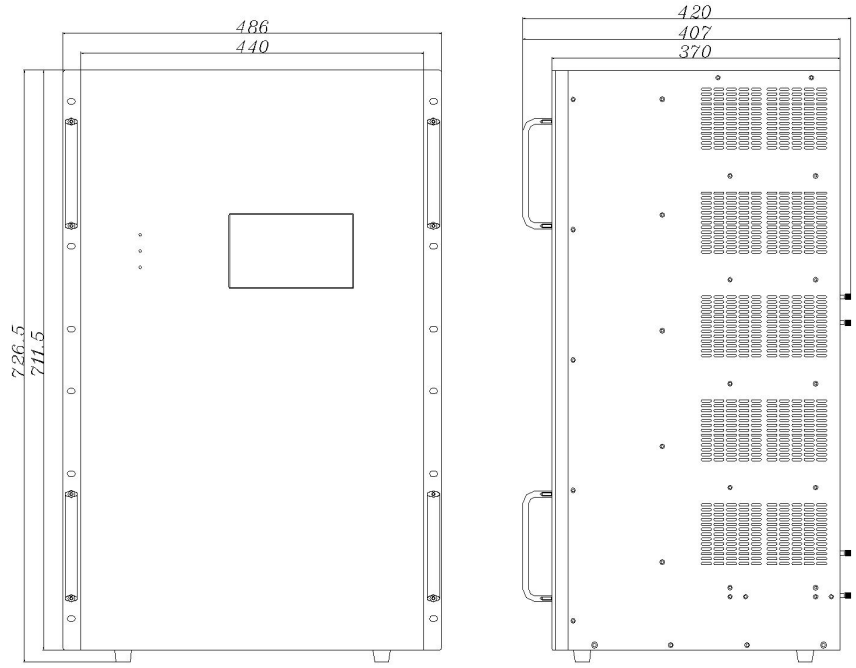
FLEX 36L(MINI)

486mm × 383.2mm × 266.5mm



FLEX 80L(MINI)

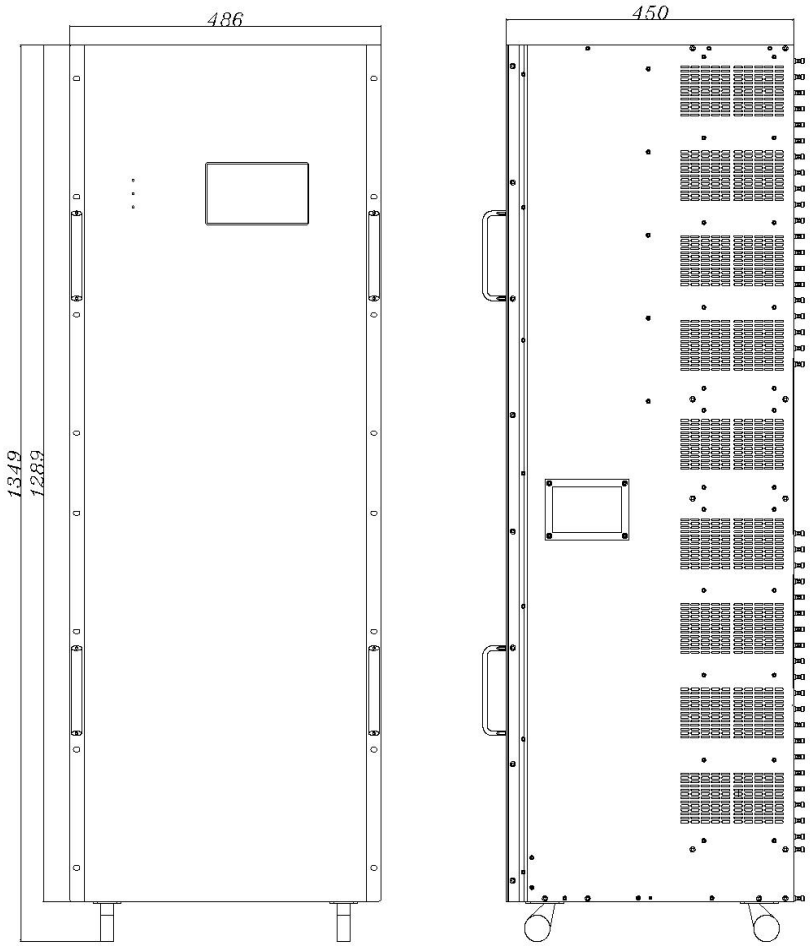
486mm × 383.2mm × 711.5mm



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FLEX 160L(MINI)

486mm × 450mm × 1289mm



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Chapter 2 Use Your Product

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.

2.1 Font buttons switching operation

2.1.1 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 8 input buttons, 8 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

2.1.2 Scene Operation

1. The system can save 40 scenes, after switching successfully in the SWITCH interface, press MENU button and switch to SCENE interface.
2. Enter the wanted scene save number (1~8), then press SAVE. If want to reload the saved scene, press the scene number and press RECALL button.

2.1.3 Setup Operation

1. First press MENU switch to SETUP interface, then continue next operation.
2. 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.

2.1.4 View Operation

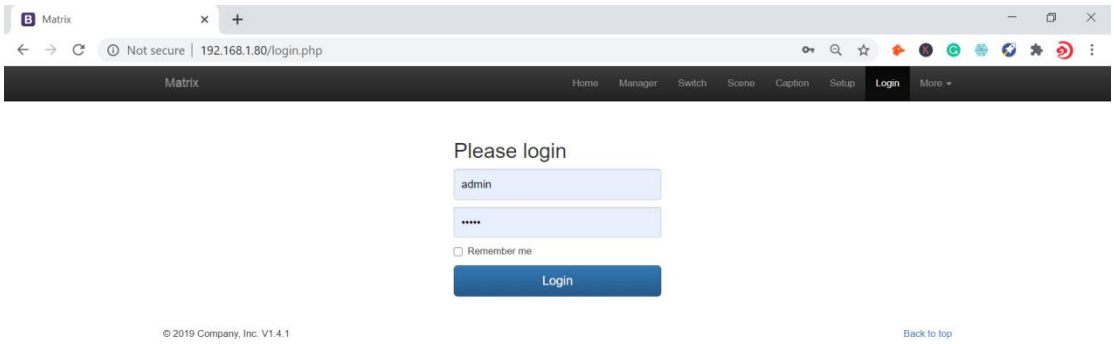
Via MENU button switch to VIEW interface, will display the current switching status

2.2 WEB Control

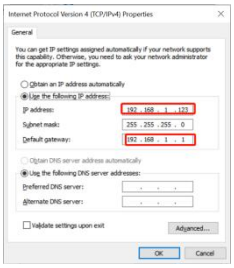
The default IP address are 192.168.0.80 (LAN1) and 192.168.1.80 (LAN2).

2.2.1 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:

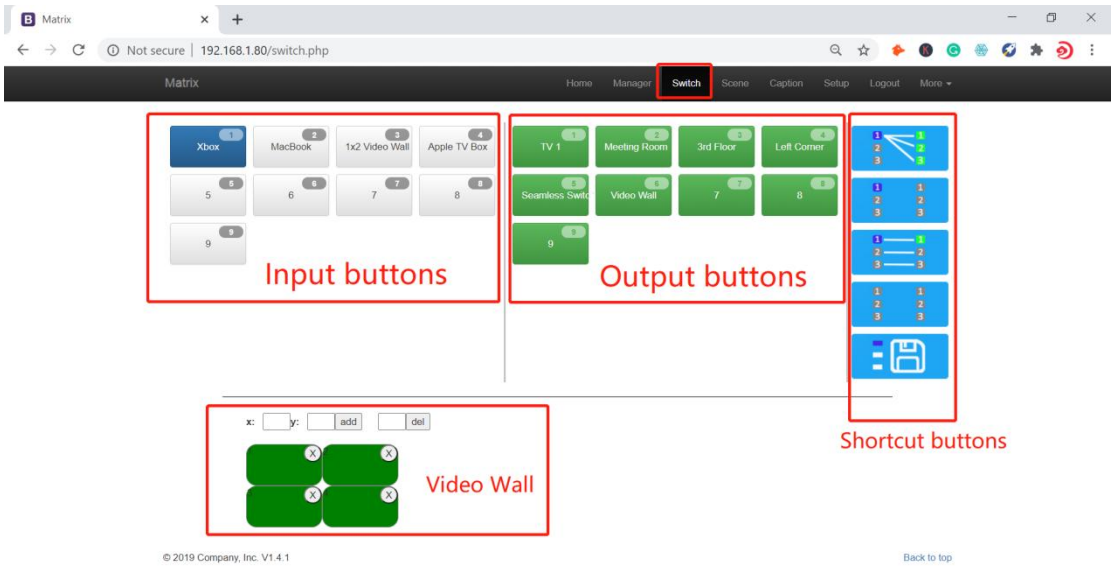


Note: The default user name and password is the same: admin, click login after entering. Please make sure the control PC is at the same IP segment.



2.2.2 Switch

Switch interface:



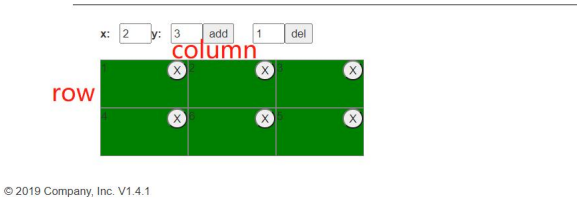
Users can do the input sources switching by clicking the Input buttons first, then pressing the Output buttons.

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

Users also can do the Video wall settings on the WEB GUI bottom by simply adding the x&y (x: for the rows; y: for column).

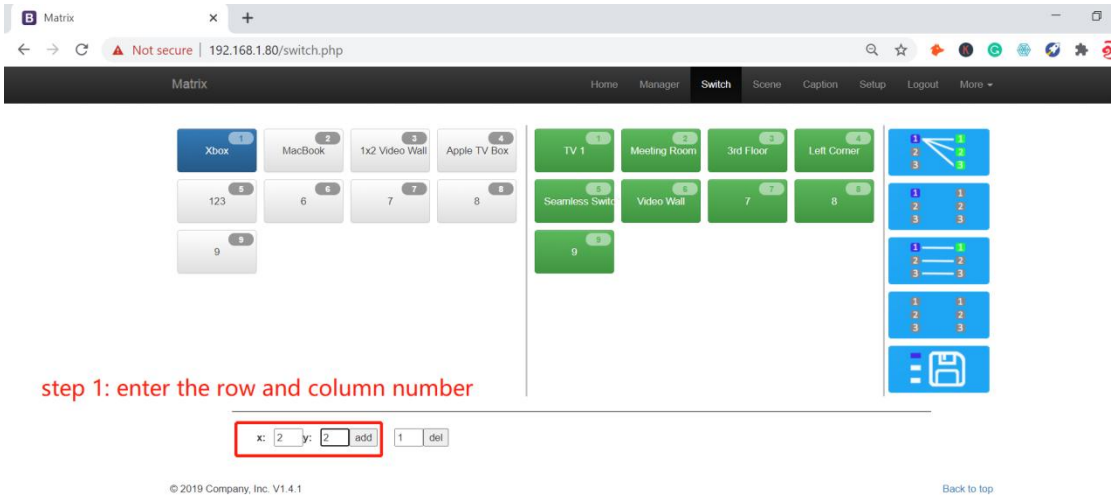


Note:

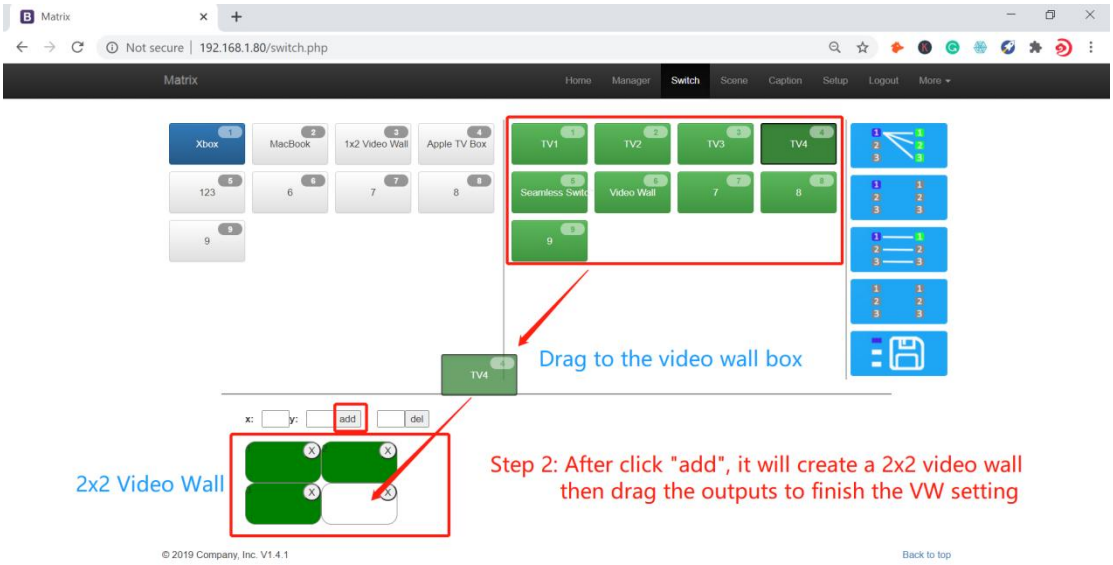
This video wall function only works with the 1080P HDMI/HDBaseT and 4K60 HDMI output card only.

Below the steps to create the video walls:

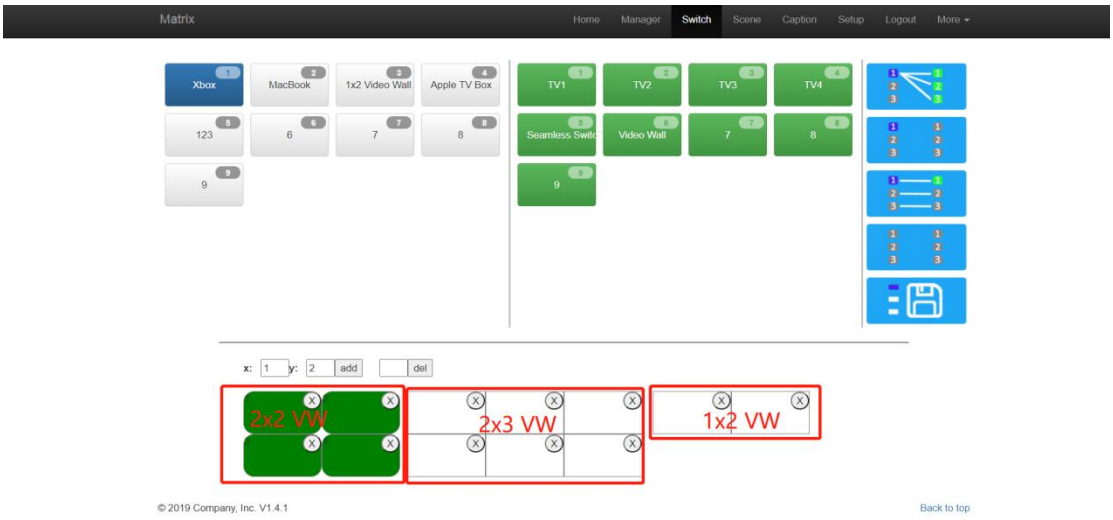
Step 1: Enter the video wall Row(x) and column(y) numbers, and then click “add”, example to create a 2x2:



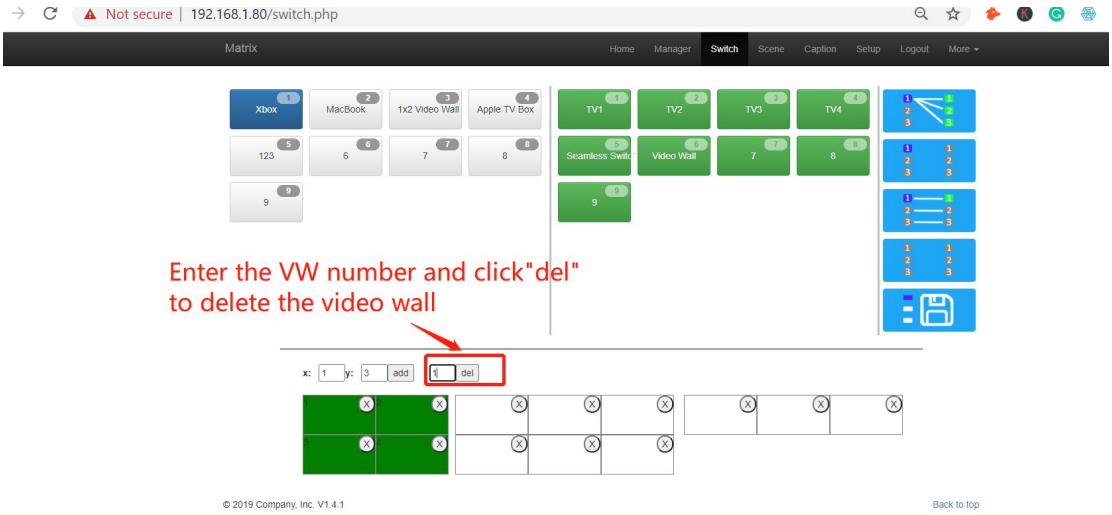
Step 2: Click “add” to create the 2x2 video wall, then drag the outputs to the video wall box.



Users can have multiple video walls by the same way to create, for the 9x9 matrix switcher, the video wall configuration will be limited to 9, it means the configuration could be 3x4 video wall.

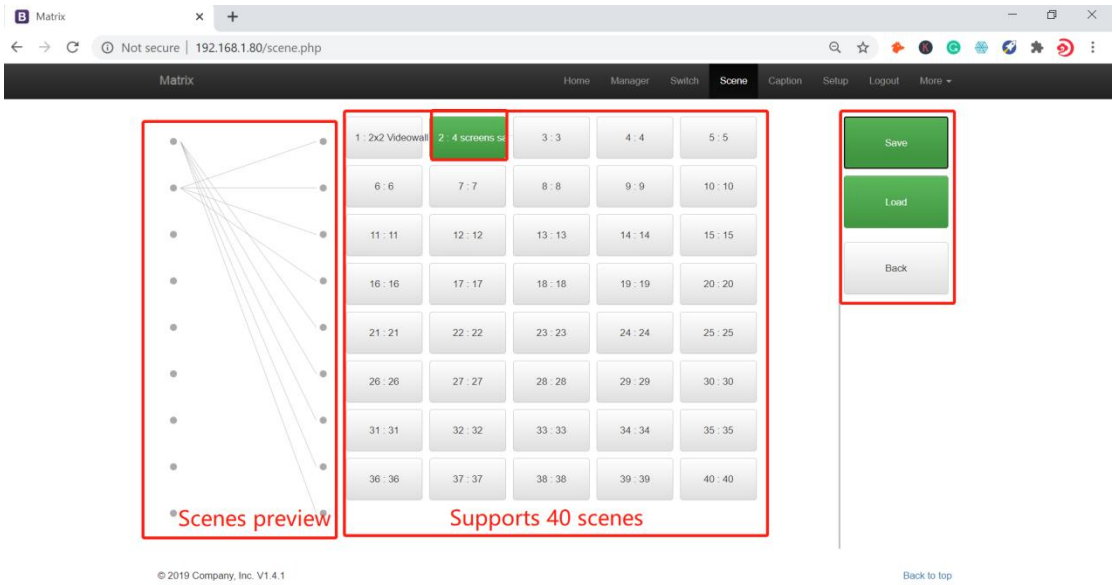


To delete the video wall, users will only need to enter the video wall number in the del box and click “del’.



2.2.3 Scene

Scene Interface:

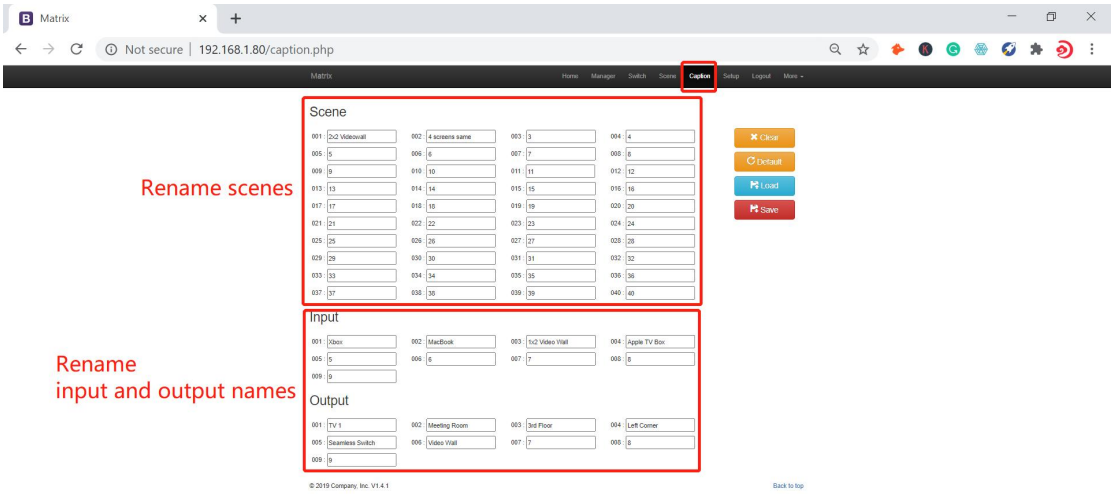


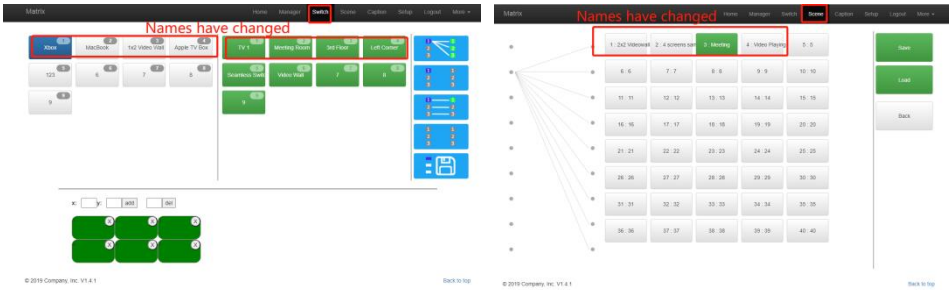
It can support 40 scenes in total, users can preview each scene switching status by clicking on any of the scene number. Click “Save” to save the switching status, and “Load” to recall the scenes. “Back” to return back to the switch interface.

2.2.4 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.

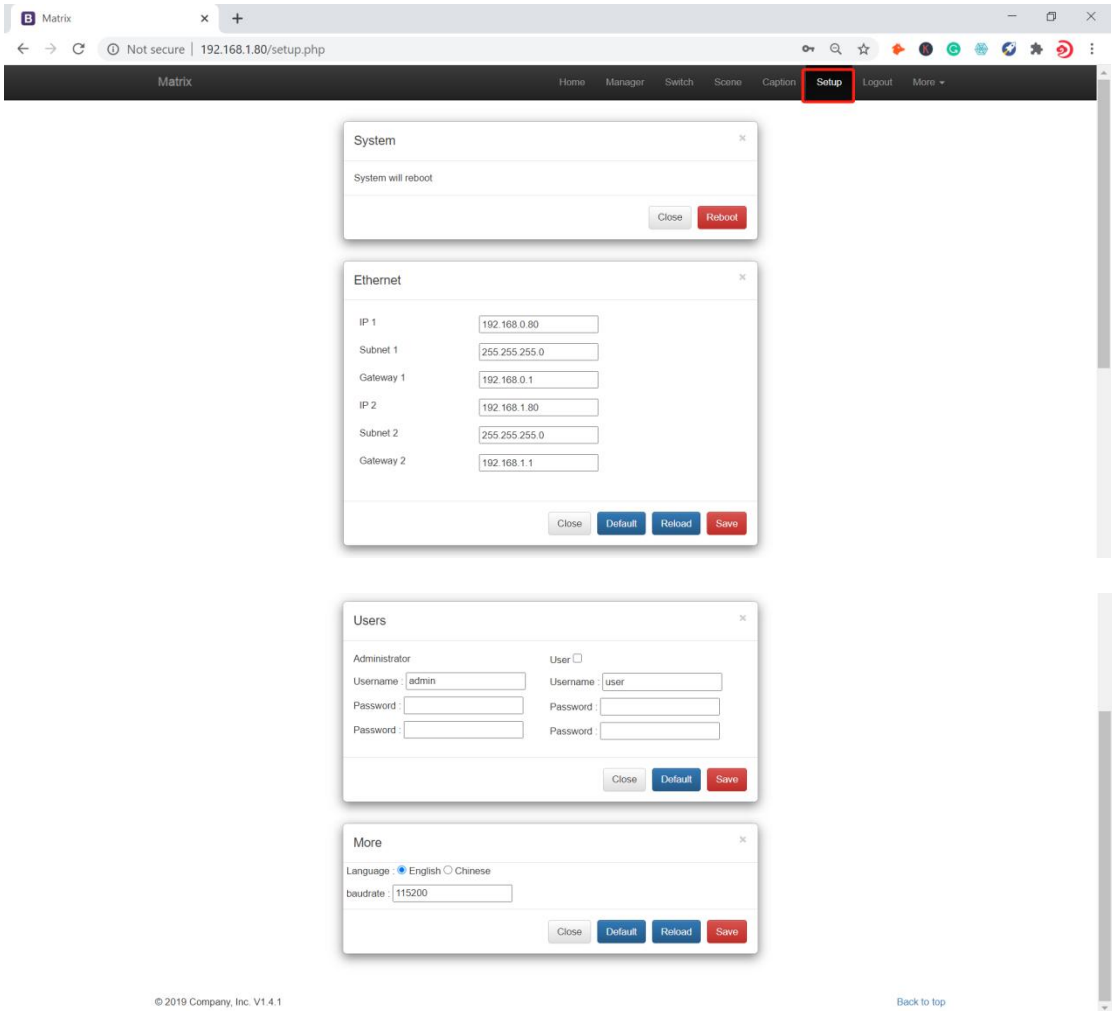




2.2.5 Setup

Setup interface:

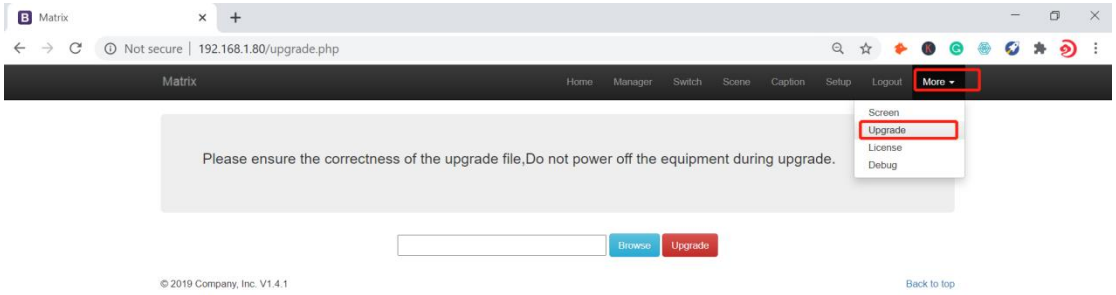
Users can reboot, change the IP address, set up the login user names, language and the RS232 baud rate settings here. After changed the IP address, will need to reboot the matrix switcher, then the new IP address will take effect.



2.2.6 More:

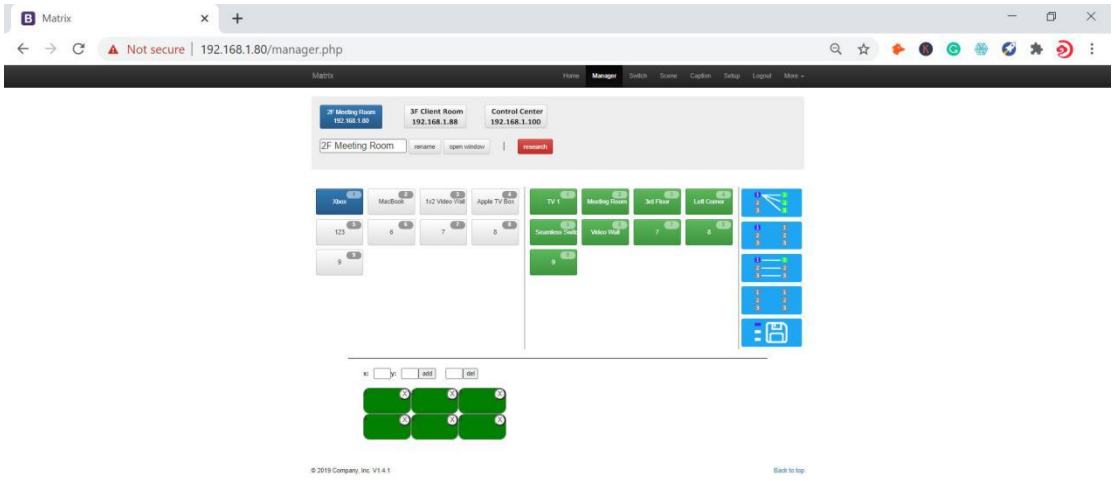
For the more interface, users mainly can do the firmware upgrade here.

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.



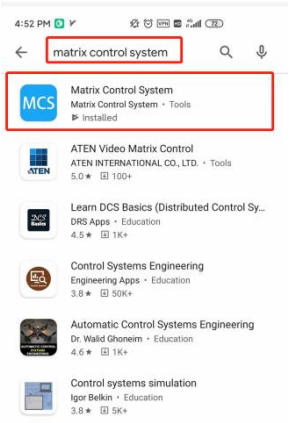
2.2.7 Manager

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.

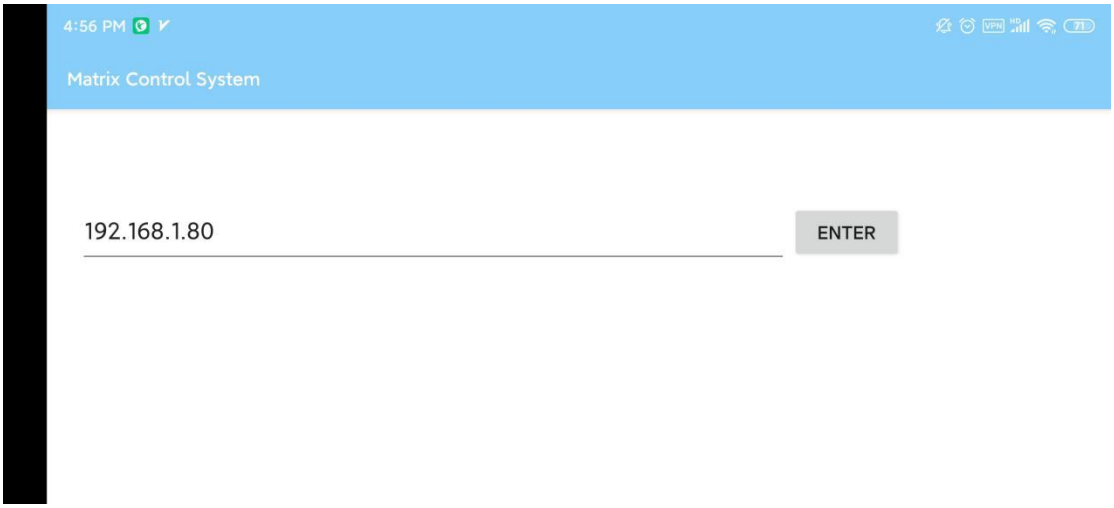


2.3 APP Control

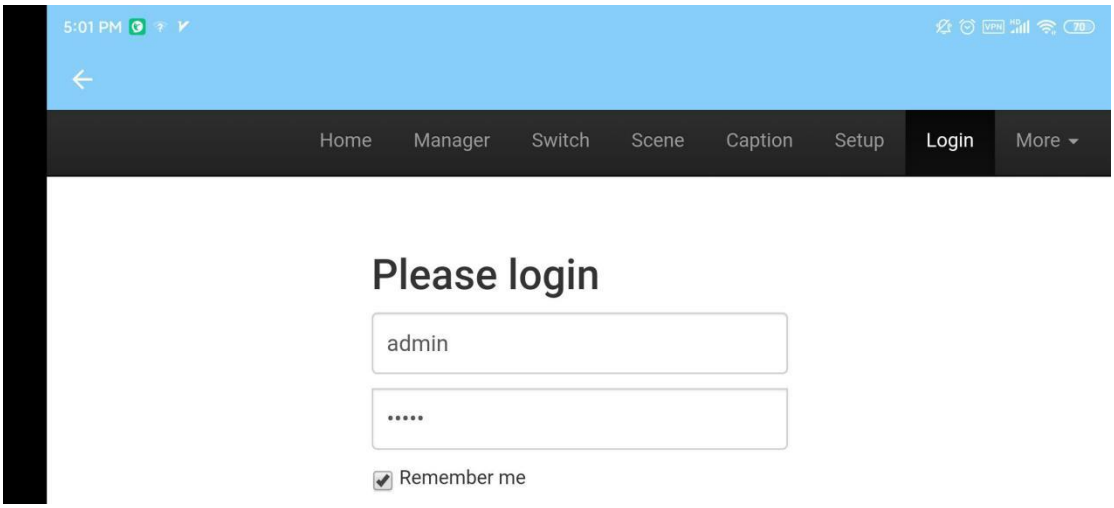
The matrix switchers also can support the iOS and Android APP control, users can search the keyword "Matrix Control System" in Apple store or the Google Play Store.



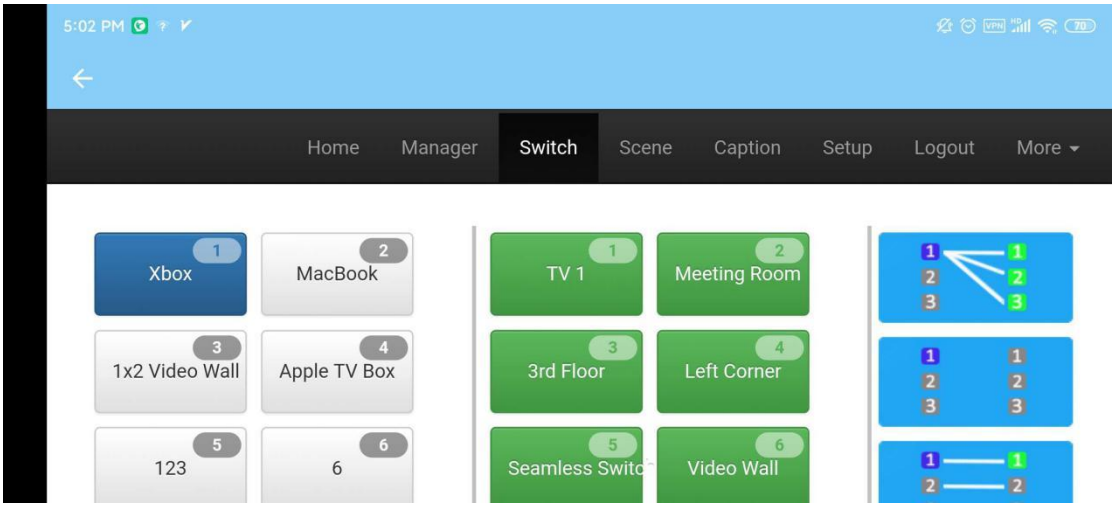
Step 1: Make sure the matrix well connected with the WIFI router, and the iPad/Android devices are connected to this same WIFI. Then open on the MCS(matrix control system) APP and Enter the IP address of the matrix switcher(the default IP addresses are: 192.168.0.80 or 192.168.1.80):



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:



2.4 IR Remote Control

*Please NOTE: The EDID is not functional on this IR remote control for this 9x9 Modular Matrix Switcher as it couldn't support the EDID management.

Inputs Switch:

number(1~9) ---> SWITCH ----> number(1~9) ---> ENTER

Eg: input 1 to output 1:

1--> SWITCH ----> 1 ---> ENTER

Inputs Switch to multiple outputs:

number(1~9) ---> SWITCH ---> number(1~9)-->ENTER--> number(1~9)--->ENTER

Eg: input 2 to output 1,2,3,9:

2 --> SWITCH --> 1 --> ENTER ----> 2 ---> ENTER ----> 3 ---> ENTER ----> 9 ---> ENTER

Scene Save(total 40 scenes):

number(0~9) ---> SAVE

Eg: Save the current switch to scene2:

2--> SAVE(The LCD Screen will show 2 saved)

Scene Recall(total 40 scenes):

number(0~9) ---> RECALL

Eg: Recall the scene10:

10 --> RECALL(The LCD Screen will show 10 loaded)



2.5 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

Notes:

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

Chapter 3 Ordering Codes

3.1 Product Codes

Product Codes	Items
710-0018-02-0	FLEX 08L(MINI)
710-0018-03-0	FLEX 16L(MINI)
710-0018-04-0	FLEX 36L(MINI)
710-0018-05-0	FLEX 80L(MINI)
710-0018-06-0	FLEX 160L(MINI)
790-0018-18-0	Quad HDMI Input Module
790-0018-20-0	Quad VGA Input Module
790-0018-22-0	Quad CVBS Input Module
790-0018-23-0	Quad 3G SDI Input Module
790-0018-24-0	Quad HDBaseT Input Module (70m)
790-0018-25-0	Quad HDBaseT Input Module (100m)
790-0018-26-0	Quad HDMI Output Module
790-0018-27-0	Quad DVI Output Module
790-0018-28-0	Quad VGA Output Module
790-0018-29-0	Quad CVBS Output Module
790-0018-30-0	Quad 3G SDI Output Module
790-0018-31-0	Quad HDBaseT Output Module (70m)
790-0018-32-0	Quad HDBaseT Output Module (100m)
790-0018-33-0	Quad 4K60 HDMI Input Module
790-0018-35-0	H.264/265 Decoding Module
790-0018-36-0	H.264/265 Encoding Module
790-0018-37-0	Quad 4K60 Split Screen Output Module
790-0018-38-0	Network Center Module
790-0018-43-0	Quad 1080P 150m HDBaseT Input Module
790-0018-44-0	Quad 1080P 150m HDBaseT Input Module
790-0018-45-0	Quad 4K60 12G SDI Input Module
790-0018-46-0	Quad 4K60 12G SDI Output Module
790-0018-47-0	Quad 4K60 40m HDBT Input Module
790-0018-48-0	Quad 4K60 70m HDBT Input Module
790-0018-51-0	Quad 4K60 Fiber Input Module (2km)
790-0018-53-0	Quad 4K60 HDMI Output Module
790-0018-54-0	Quad 4K60 40m HDBT Output Module

790-0018-55-0	Quad 4K60 70m HDBT Output Module
790-0018-56-0	Quad 4K60 Fiber Output Module (2km)
790-0018-57-0	Quad 1080P Universal Input Module
790-0018-58-0	Dual 3G SDI+Dual HDMI Input Module

Chapter 4 Appendix

4.1 Specification

Model		FLEX 08L(MINI)	FLEX 16L(MINI)	FLEX 36L(MINI)	FLEX 80L(MINI)	FLEX 160L(MINI)
Rack Units		2U	3U	6U	16U	29U
I/O Modules		8x8	16x16	36x36	80x80	160x160
Input Slots		2	4	9	20	40
Output Slots		2	4	9	20	40
Connectors	Input	*Optional*	HDMI Module	4 × HDMI-A		
			DVI Module	4 × DVI-I (兼容 DVI, VGA, YPbPr, CVBS)		
			VGA Module	4 × DB15		
			CVBS Module	4 × CVBS		
			3G SDI Module	4 × BNC(In /Loop)		
			12G SDIModule	4 × BNC		
			HDBaseT Module	4 × RJ45		
	Output	*Optional*	HDMI Module	4 × HDMI-A		
			DVI Module	4 × DVI-I (兼容 DVI, VGA, YPbPr, CVBS)		
			VGA Module	4 × DB15		
			CVBS Module	4 × CVBS		
			3G SDI Module	4 × BNC(Out/Loop)		
			12G SDIModule	4 × BNC		
			HDBaseT Module	4 × RJ45		
	Communication		LAN	2 × RJ45		
			RS232	2 × RJ11		
	Power			2 × IEC		
Performance	Input Resolution	HDMI 2.0				
		SMPTE	720p@50/60 | 1080p@50/60			
		VESA	1024×768@60 | 1366×768@60 | 1920×1200@60 | 3840×2160@50/60 | 4096×2160@30/50/60			
		3G SDI				
		SMPTE	720p@60 | 1080p@50/60			
		12G SDI				
		SMPTE	720p@24/25/30/50/60 | 1080i@50/59.94/60 | 1080p@24/25/30/50/60 | 2160p@24/25/29.97/30/50/59.94/60			

		DVI | VGA | HDMI 1.3 SMPTE 720p@60 | 1080p@50/60 VESA 1024×768@60 | 1360×768@60 | 1920×1200@60 CVBS 480i | 576p	
	Output Resolution	HDMI 2.0 SMPTE 720p@50/60 | 1080p@50/60 VESA 1024×768@60 | 1366×768@60 | 1920×1200@60 | 3840×2160@50/60 | 4096×2160@30/50/60	
		HDBaseT SMPTE 720p@50/60|1080p@30/50/60|2160p@30 VESA 800×600@60 | 1024×768@60 | 1280×720@60 | 1280×800@60 | 1280×1024@60 | 1360×768@60 | 1366×768@60 | 1440×900@60 | 1400×1050@60 | 1600×1200@60 | 1680×1050@60 | 1920×1080@60 | 1920×1200@60 | 3840×2160@30	
		3G SDI SMPTE 720p@24/25/30/50/60 | 1080i@50/59.94/60 | 1080p@24/25/30/50/60	
		12G SDI SMPTE 720p@24/25/30/50/60 | 1080i@50/59.94/60 | 1080p@24/25/30/50/60 | 2160p@24/25/29.97/30/50/59.94/60	
		DVI | VGA | HDMI 1.3 |CVBS	
		SMPTE 720p@24/25/30/50/60 | 1080p@24/25/30/50/60 VESA 800×600@60/75 | 1024×768@60 | 1280×720@24/25/30/50/60 | 1280×800@60 | 1280×1024@60 | 1360×768@60 | 1366×768@60 | 1400×1050@60 | 1440×900@60 | 1440×900@60 | 1600×1200@60 | 1680×1050@60 | 1920×1200@60	
	Standard Protocols	HDMI 2.0	
		SDI 3G	
		DVI 1.0	
		HDBaseT 1.0	
		VGA UXGA	
	Color Space	RGB444 | YUV444 | YUV422	
Power	Power Input	AC 180V-240V, 50/60HZ （注：海外版本输入电源为 AC 110V-240V, 50/60HZ）	
Working Environment	Operating Temperature	-0℃~50℃	
	Storage Temperature	-20℃~55℃	
Physical	Net Weight	FLEX 08L(MINI)	6kg

Parameters		FLEX 16L(MINI)	13kg
		FLEX 36L(MINI)	16.8kg
		FLEX 80L(MINI)	35kg
		FLEX 160L(MINI)	45kg
	Net Dimension	FLEX 08L(MINI)	486mm × 383.2mm × 90mm
		FLEX 16L(MINI)	486mm × 383.2mm × 133.4mm
		FLEX 36L(MINI)	486mm × 383.2mm × 266.5mm
		FLEX 80L(MINI)	486mm × 383.2mm × 711.5mm
		FLEX 160L(MINI)	486mm × 450mm × 1289mm

4.2 FAQ

1. 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 switcher 1, 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.

4.3 Revision History

Version	Time	ECO#	Description	Principal
V1.0	2025-09-09	0000#	Release	Alyssa

Chapter 5 Support

5.1 Contact us



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