



BRIGHTLINK PRO-V2-MIX 9*9/18*18/40*40/80*80

Professional Modular Matrix Switcher

Operation manual



Version: V1.01.01

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Safety Reminder



To protect the device and operating personnel from electrostatic discharge, you need to check and ensure that the device is grounding good before the device is powered on.

Please observe the following when you install, use, and maintain this equipment.

FAILURE TO DO SO CAN VOID YOUR WARRANTY



Make sure the device ground connection.

- Please use single-phase three wire system AC 220V power supply, and ensure all transmission system is grounding good.

- To protect operating personnel and the device , please turn off all power supplies and pull the plug before moving the device or doing some specific works witch need to be done when the electricity is turned off . Please turn off the main power switch on rainy days or when not in use for a long time.

- Please do not put anything upon the cables, or tread the cables .

- To avoid damaging the device , please turn off power supply before plugging cable into the device or pulling cable from device. The damage caused by plugging/ pulling cables without turning off power supply is outside the scope of the warranty.

- The power of the device gives out heat when it works, so it's necessary to keep the work environment ventilated to protect the device from the damage caused by overtemperature.

- Do not place the device in very cold or very hot places. Do not sprinkle any corrosive chemicals or liquid on or around the device.

- To avoid accident or any further damage ,non-professionals please do not dismantle or maintain the device without permission.

- Do not sprinkle any corrosive chemicals or liquid on or around the device.

1.Introduction

Introducing Brightlink's New PRO-V2 Seamless Modular Matrix Series with built in Video Wall Controller in our 9x9/18x18/40x40 & 80x80 case sizes.

Our PRO-V2 series is our professional grade enhanced HD & UHD modular hybrid matrix with support for resolutions up to 4k@60Hz / HDCP 2.2 as well as a built in video wall processor, POE for HDBaseT receivers, and real time monitoring of the matrix and input / output video signals. The plug- and play card design of our Brightlink PRO-V2 Matrix allows for flexible cross configurations of many different input / output types such as DP, HDMI, DVI,VGA,YP BPR,CVBS, 3G/HD/SD-SDI,IP streaming media etc. With the modular design and dual back up power supply and network cards these system are designed for environments that require zero down time and constant reliability.

2. Features

- Modular Design, with single and dual cards, allows for flexible configurations and easy cross mixing of signal types from the input to output channels.
- Supports fast seamless switching technology with no black screen or jitter.
- Available card types: HDMI, HDBaseT, DVI, CVBS, YPbPr, VGA audio, 3GSDI, fiber signal and H. 323.
- Support POC/POE function with HDBaseT cards - Receivers get their power from the matrix and don't need to be powered by the display.
- Front panel 7 inch high-definition color touch screen with real-time state feedback of output ports;
- Support equipment temperature monitoring & video port state monitoring
- Built in dual power supply & dual network card for redundancy allowing 24x7 uninterrupted operation
- Every channel supports color, brightness, resolution scaling, and several other image adjustments
- Supports touch screen, dual RS-232 & dual TCP/IP control;
- Supports fiber transmission technology with maximum transmission distance of 80 kilometers
- Each output channel allows 16 different types of common resolutions;
- Support intelligent EDID switching technology and HDCP management
- Support Deep Color 48/36/30/24-bit, YUV4:2:2/4:4:4
- Seamlessly connect to Distributed Network Matrix System, IP surveillance system;
- Supports TCP, UDP, IP, HTTP, NTP, RTP, IGMP, RTSP, RTCP network protocol;
-

3.Connection and operation

Note: do not operate on the matrix within 2 minutes of the start of the matrix!!!

1.Connect signal source such as blu-ray player、 game controller、 A/V receiver、 cables、 satellite receiver etc. to the HDMI input port of the matrix.

2.Connect the output port of the matrix to HD display or HD projector with HDMI input port.Notice:It's better to use High-Speed HDMI Cable when the transmission distance is too long.

3.Firstly power on the signal source, then the matrix(with power supply), finally devices connected to the output port .

4.Plug in power to each device in the same order .

5.If all devices are connected properly,every display device should display the specified signal to make sure the devices are normal.If one of the displays failed to receive signal correctly,enter the menu of display,adjust the resolution from MIN to MAX until the signal is displayed normally.A 24 Hz vertical refresh rate may work better than 60 Hz or higher.

The following diagram is S-Mix-Pro matrix switching system application:



4. Standard Packing list

Please check the outer package before using this product. Please contact us if the product is faulted or not intact. We will sincerely serve you according to relevant provisions.

NO.	Name	Quantity	Unit
1	BL-PRO-V2 MIX Matrix Host	1	pcs
2	Dryer 50g	1	pcs
3	AC power adapter	2	pcs
4	Certification	1	pcs
5	Warranty card	1	pcs
6	User manual	1	pcs

5.Specification

Model	BL-PRO-V2 9x9	BL-PRO-V218x18	BL-PRO-V2 40X40	BL-PRO-V2 80X80
Description	9 ways enhanced	18 ways enhanced	40 ways enhanced	80 ways enhanced
	HD modular matrix	HD modular matrix	HD modular matrix	HD modular matrix
Input/Output	9/9	18/18	40/20	80/40
Input / output mode	Support CVBS、YPbPr、VGA、HDMI、DVI、AUDIO、3GSDI、HDBaseT、Fiber、IPstreaming media			
Bandwidth	10.2 Gbps			
Serial control protocol	RS-232 (Baud rate: 115200 data bits: 8 stop bit:1: no parity)			
Serial port connector	9 pin D-sub(DE9F) jack 3=TX 2=RX 5=GND			
Network control protocol	TCP/IP			
Network connector	RJ45 connector 10/100Base-T Ethernet			
Color Space	Supports RGB444, YUV444, YUV422 color space, supports x.v.Color extended gamut standard			
Transmission Distance	HDBaseT technology transmitting 70M-100M (CATS6), H.264 technology transmitting more than 160 meters (CATS6), 2-80 km (single core single mode fiber); 30 meters (digital cable)			
Electrostatic protection	Human body discharge mode: 8kV (air gap discharge) + 4kV (contact discharge)			
Input voltage	100VAC~260VAC,50/60 Hz			

Operating temperature	0°C~40°C
Storage Temperature	-20°C~60°C

6. Description of operation and function

6.1 Description of front panel



Figure 6.1.1 BL-PRO-V2 MIX 99 front panel

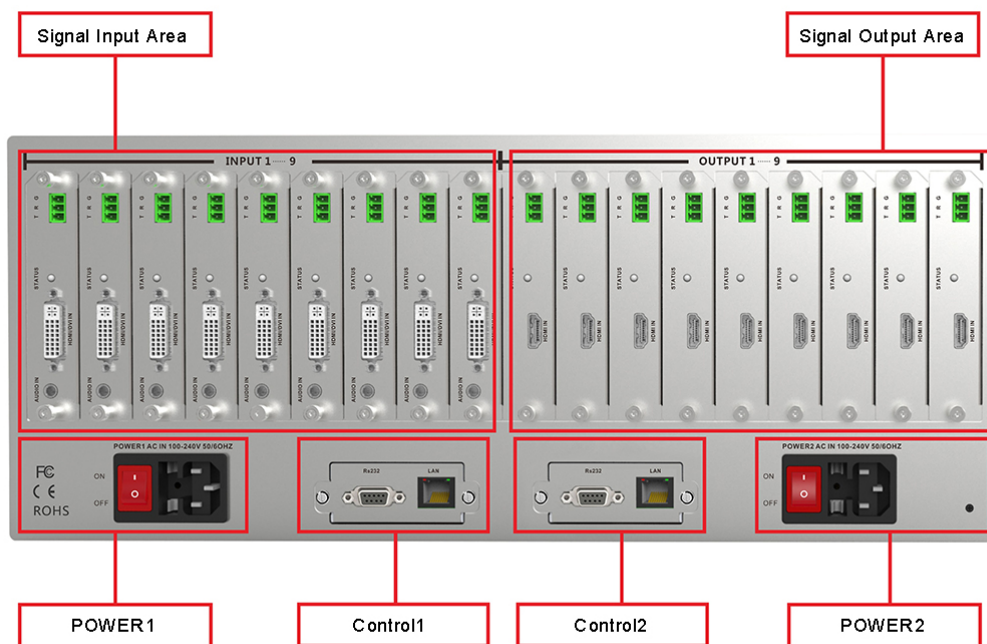


Figure 6.1.2 BL-PRO-V2-MIX 99 rear panel

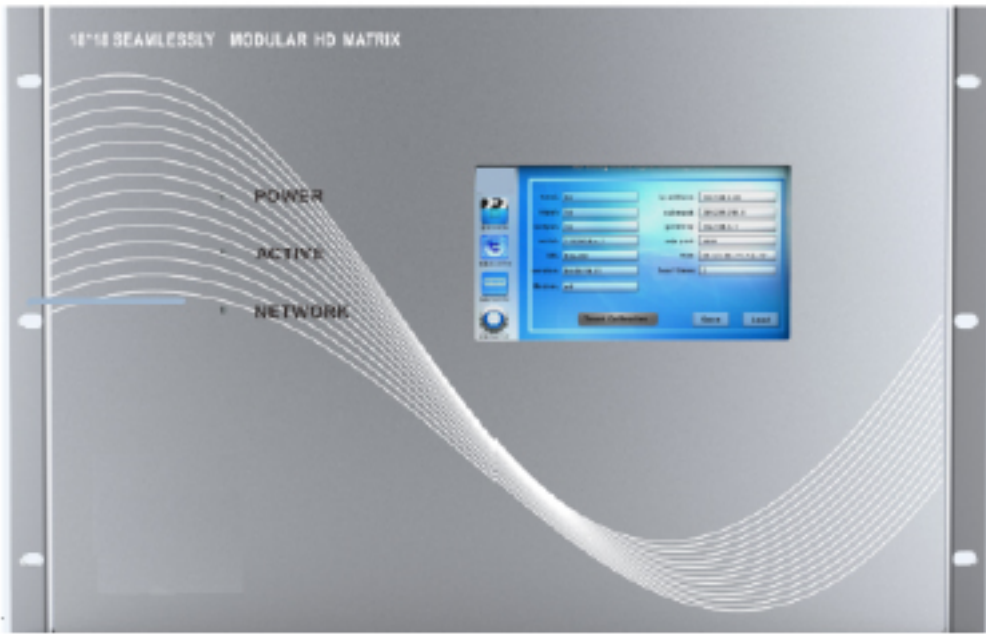


Figure 6.1.3 BL-PRO-V2-MIX-1818 front panel

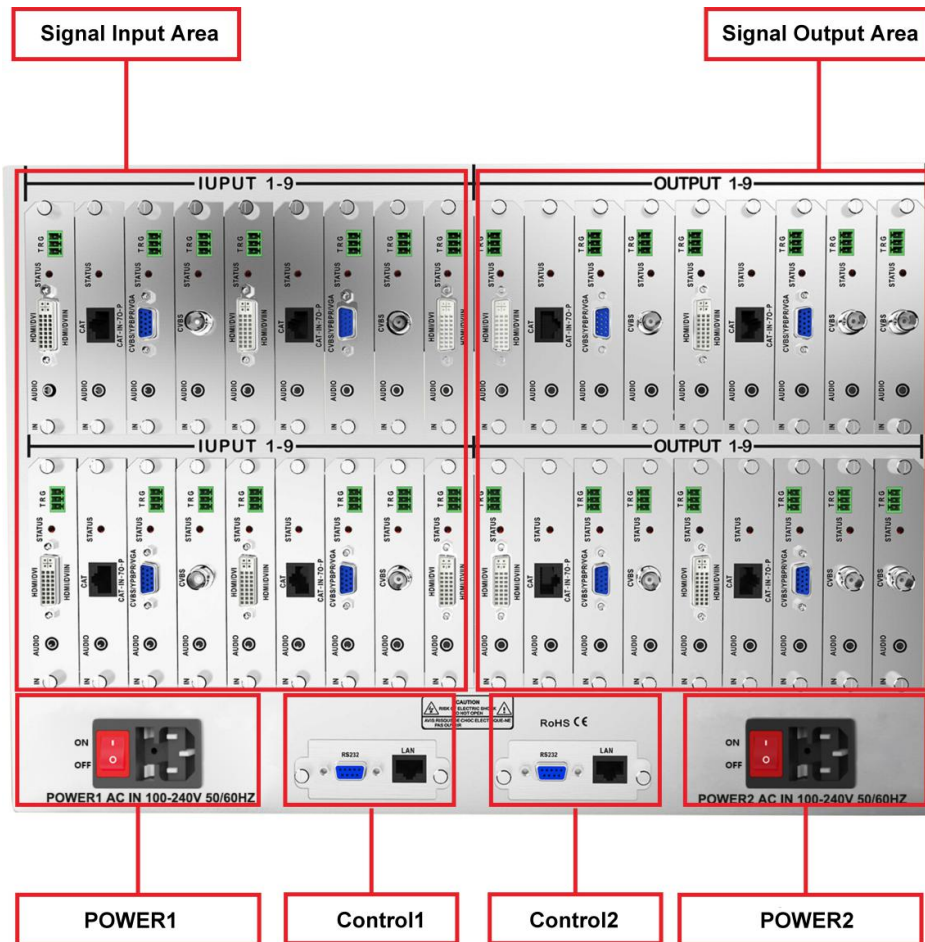


Figure 6.1.4 BL-PRO-V2-MIX 1818 rear panel

6.2 Touch screen control instructions

BL-PRO-V2-MIX series matrix can control the matrix through the front panel HD touch screen, which contains four operating interface, that is VIEW , SWITCH, SCENE, SETUP .

1. **VIEW** interface: as shown in Figure 6.2.1, this interface can show current input and output status of the matrix, the figure 6.2.1 says the current sixth input signal switching to output signal 02, 03, 04, 06, 07, 08, while the current input and output can be saved in the right side of the interface, it has 13 scenarios from 01 to 13 for users, select any number from 01 to 13 , click "SAVE" to save the scene (00 is the current real-time state of matrix , not optional).



Figure 6.2.1 VIEW interface

2. **SWITCH** interface: As shown in Figure 6.2.2. this interface mainly to switch video signals, figures below SWITCH-INPUT is the input signal selection area, SWITCH-OUTPUT is digital signal output selection region, the button on right side from top to bottom respectively is UnPickALL (choose all options), PickALL (cancel all options), Apply, Preview, Undo, Take, the specific switching steps are as follows:

First select the input signal, as shown in Figure 6.2.2 select the input signal "08", after selection the number is red, the input can only choose one, the output signal can be

selected more, as shown in Figure 6.2.2 it selected "06, 07, 08, 12" output signal, and then click "Apply ", and then click "Take" to complete the switch. As mentioned above, the "08" input signal can be switched to 08, 06,, 08, 12,, output signal.

When operation, click "UnPickALL (choose all options)", you can select all the output ports, click "PickALL (cancel all options), click" Preview "the current state of input and output, click" Undo "to undo the application.

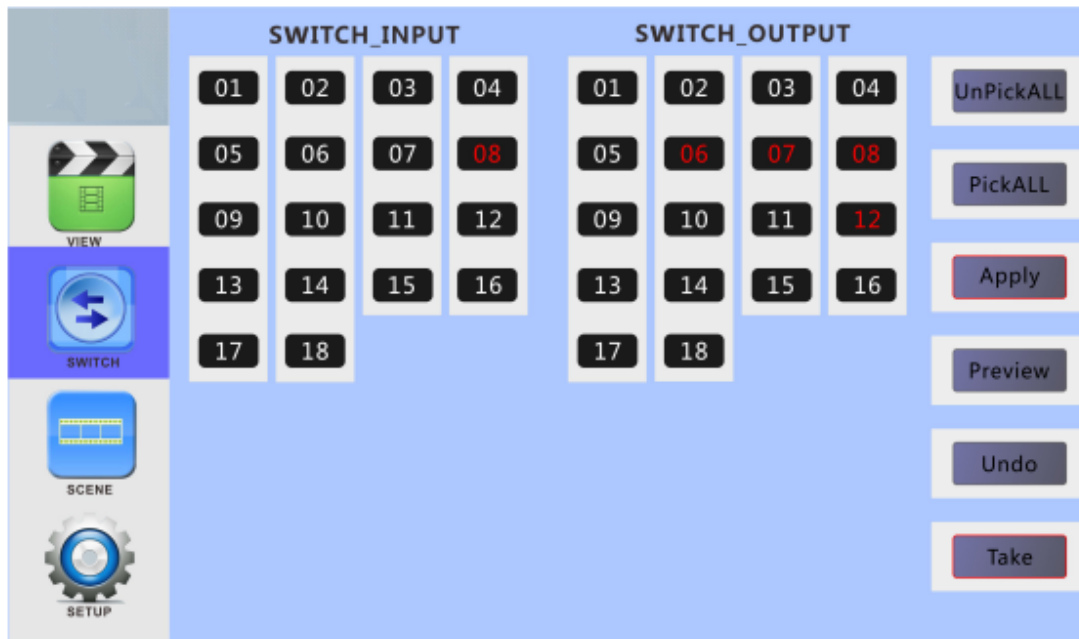


Figure 6.2.2 SWITCH interface

3.SCENE interface: As shown in figure 6.2.3, the interface can call all the scene saved before, select the 01~13 to call the scene, after selection, the screen will display the configuration of the current scene, click "Load" to call the selected scene (00 is the current input and output status of matrix, can not be selected), as shown below in the "Scene 2", click "Load" to call.

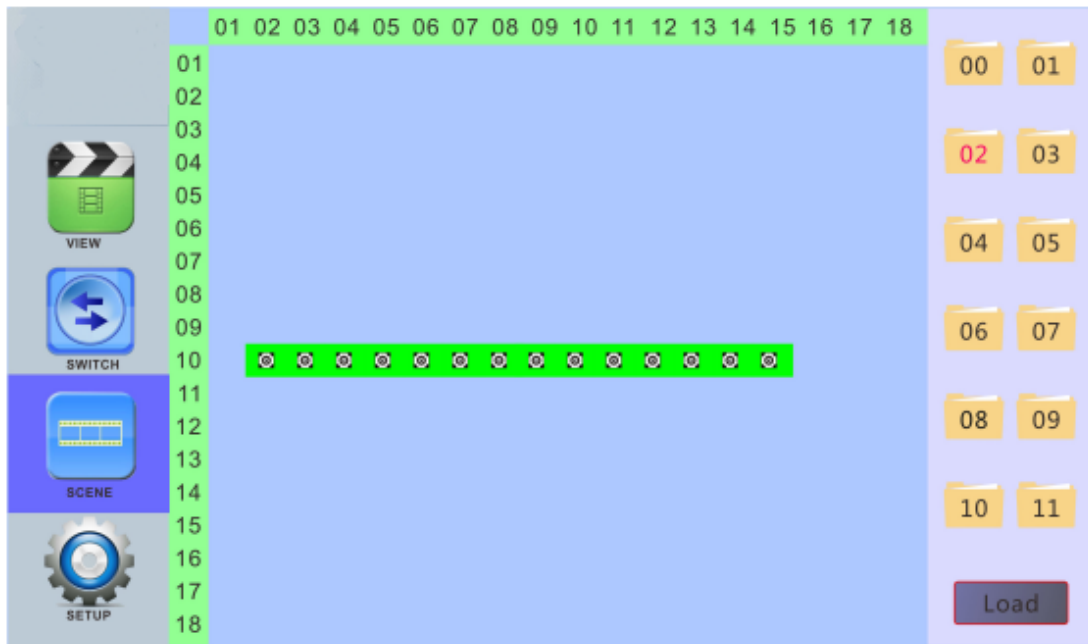


Figure 6.2.3 SCENE interface

4. **SETUP** interface: As shown in figure 6.2.4: this interface can set up buzzer on or off, video backup switch, IP address change, Chinese and English interface switching, etc.

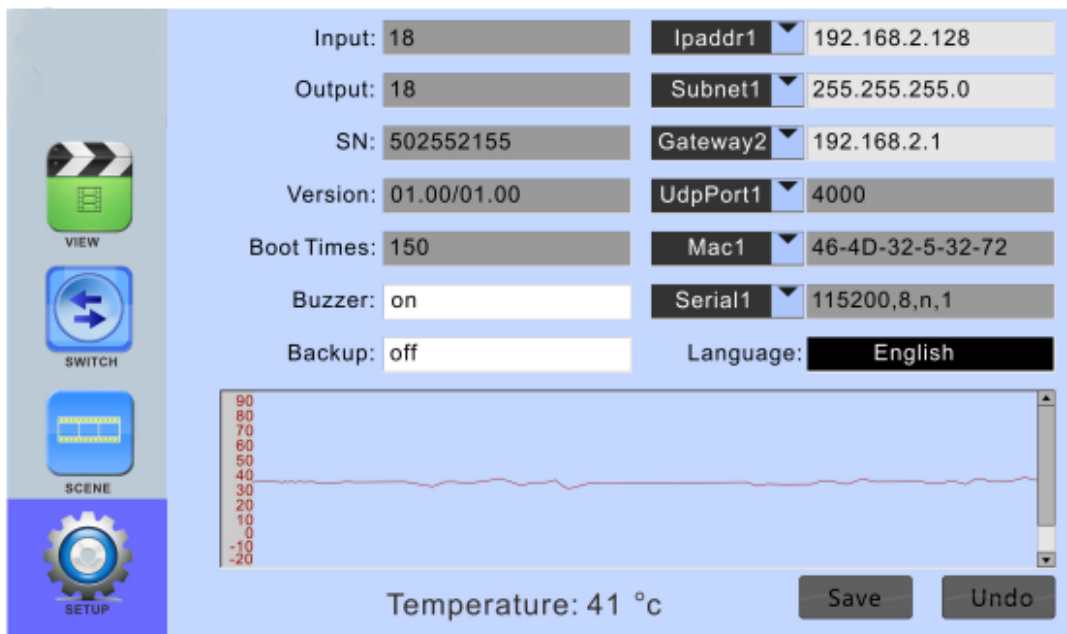


Figure 6.2.4 SETUP interface

Buzzer switch: click the white box next to the "Buzzer" , pop-up digital keyboard, enter the on/off, click "ENTER" and then "Save", you can close or open the buzzer, as shown below:

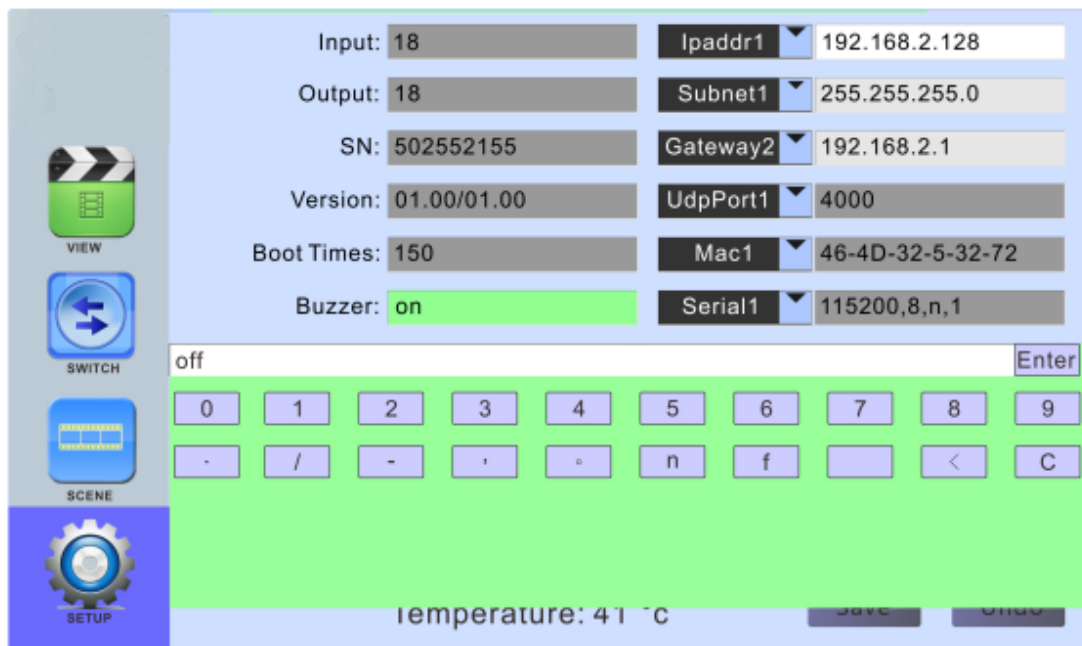


Figure 6.2.4.1 Turn on / off the buzzer

Video backup switch:the operation is similar with buzzer switch, click the white box next to the "Backup" , pop-up digital keyboard, enter the on/off, click "ENTER" and then click "Save" to save.

Video backup function: backup function exists in the input signal 1 with 2, 3 and 4 , the input signal 2 and 4 is the backup signal.

LAN port selection: matrix provides two LAN ports to control the matrix , click left arrow on "IPAddr1", you can choose "IPAddr1" or "IPAddr2" to control the matrix, after selection click "Save" to save, as shown in figure 6.2.4.2

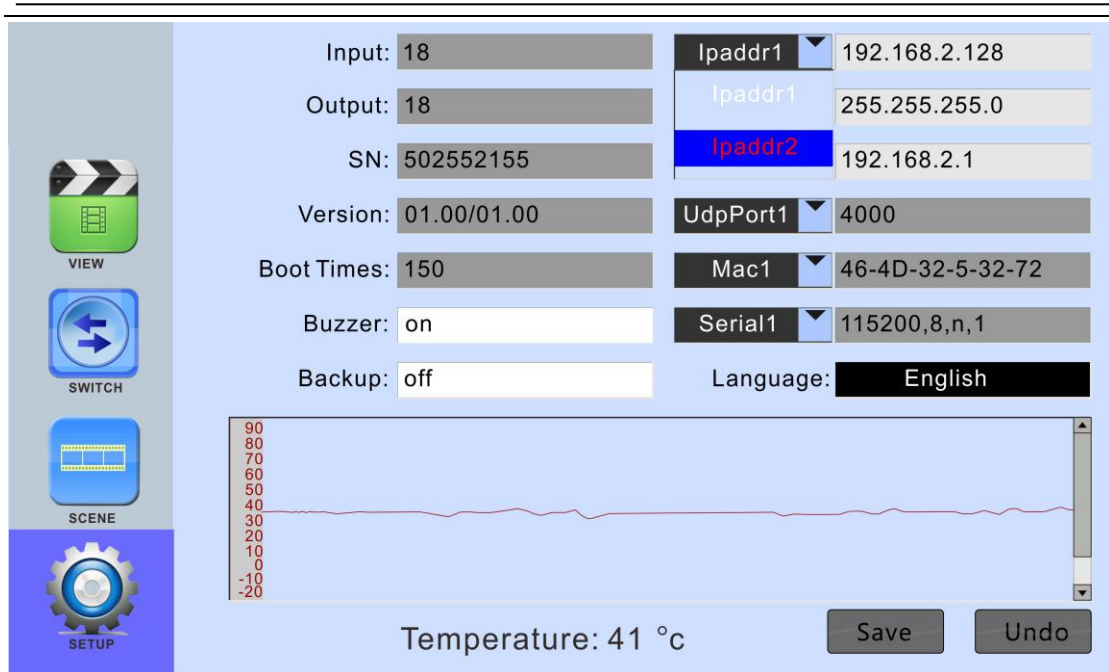


Figure 6.2.4.2 LAN port selection interface

IP address change: click the white box on the right side of "IPAddr1", pop-up digital keyboard, you can change the IP address, after the completion of the change, click "ENTER" and then click "Save" to save, as shown in figure 6.2.4.3

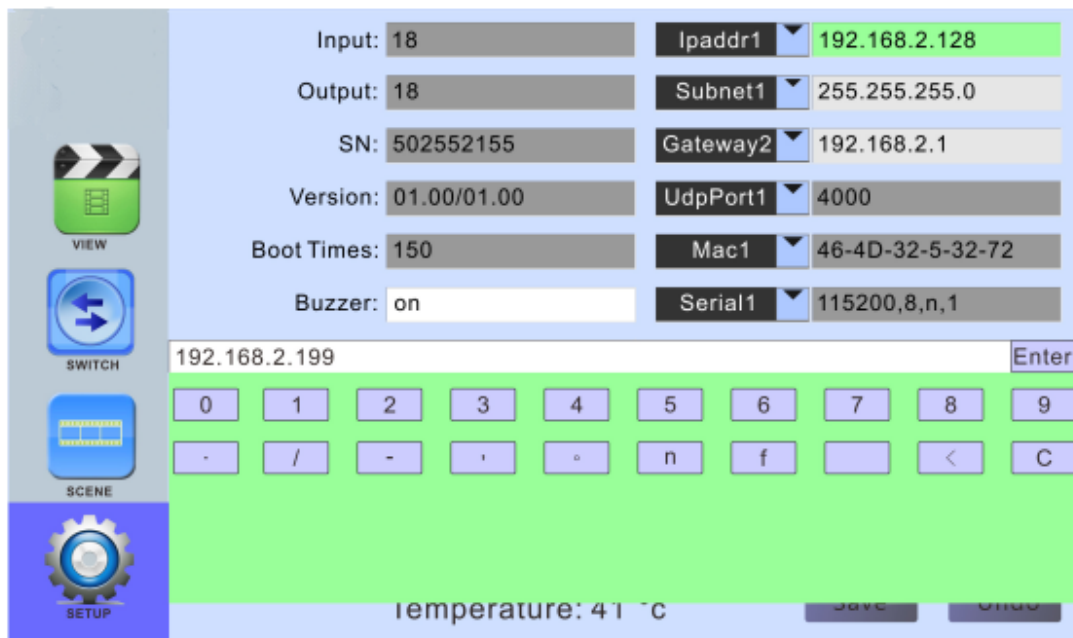


Figure 6.2.4.3: IP change

6.3 PC control software operation instructions

MIX- control software is a green software, do not need to install, double-click the main program to use. Through RS232 serial line or cable to connect to matrix and computer, through the MIX control software to control the matrix.

Note: please set the computer's IP and matrix's IP in the same segment. As follows:

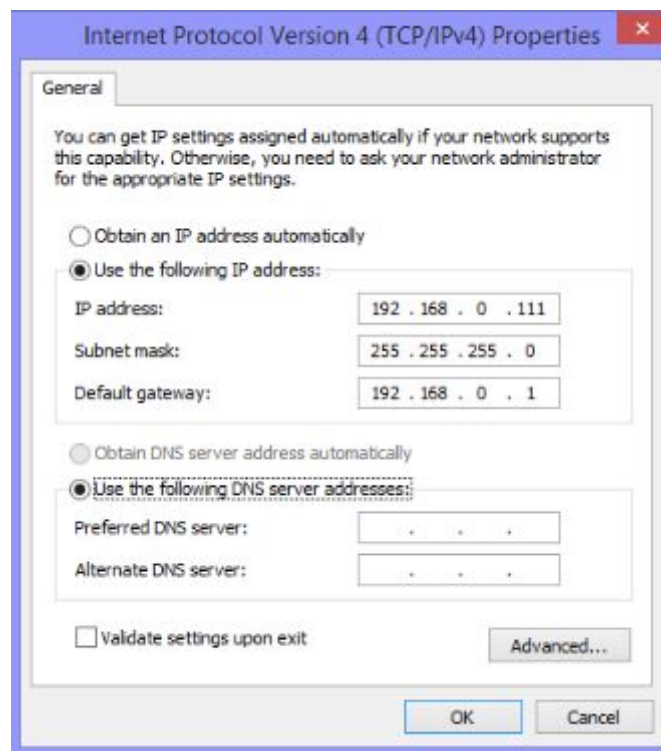


Figure 6.3.0 Computer IP changes

1) **Network connection:** use network cable to connect computer and matrix, double-click to open the control software, click "SETUP" button, input network address in the white box on the right side of the network address ([click on the touch screen "SETUP" button of matrix to view matrix network address](#)), then click the "network connection" button, when all the buttons at the bottom right corner are green, the connection is successful. At this point, click the "load" button on the interface to display some of the configuration of the matrix, as shown in Figure 6.3.1

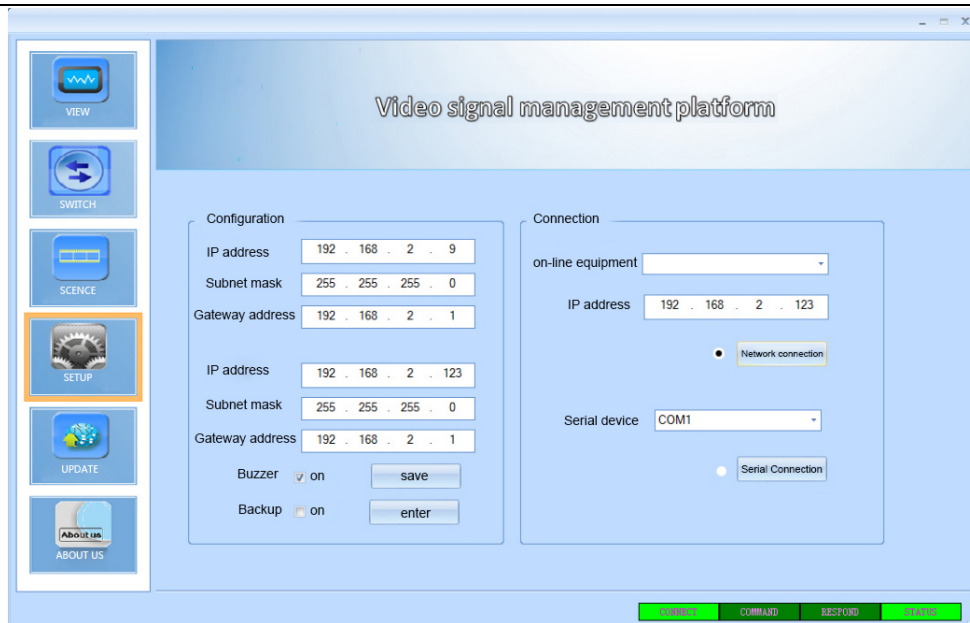


Figure 6.3.1 Network connection

2) **serial connection**: use direct serial lines to connect computer and matrix, double-click to open the control software, click "SETUP" button to determine COM ports, such as COM1, select "COM1" in serial device, click "serial connection", when the lower right corner of all the buttons shown in green, the connection is successful. At this point, click the "load" will display some of the matrix configuration, as shown in Figure 6.3.2

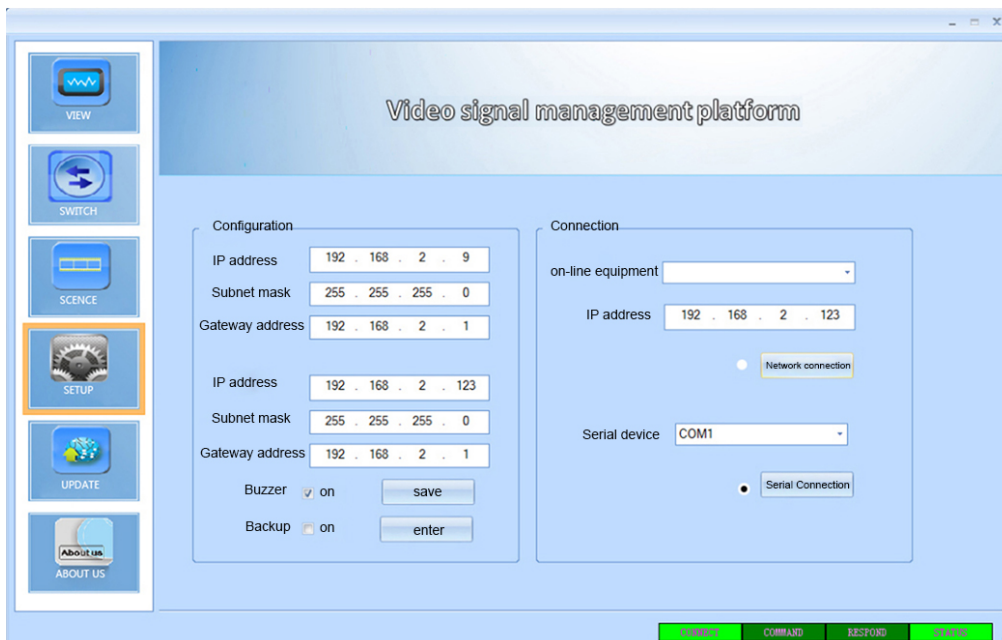


Figure 6.3.2 serial connection

3) change IP: when serial port or ethernet control connection is normal, enter the IP changed in the network address in configuration bar , click Save to change IP.

4 Buzzer on / off:when serial port or network port control connection is normal, click "open" button next to the buzzer can close or open it.

5)Open / close video backup: when serial port or network port control connection is normal,click the "open" button next to the video backup can close or open it.

6.4 Video switching operation

Click "SWITCH" to the switch interface, first select the input port, the selected input port will be displayed in the interface in the lower left corner, such as figure 6.4.1 selected input signal "18", the output can select multiple ports (selected port will be orange) as shown in the following selected "3, 4, 5, 6. After selection, click "APPLY" button, then click "TAKE" to achieve the corresponding switching operation.

Through the above steps, we can switch inputted signal "18" to the output port "3, 4, 5, 6" to output.



Figure 6.4.1 SWITCH interface

6.5 Operation of control, resolution, name change etc. of input / output cards.

1) **Input card**:double click the input signal in "SWITCH " interface, pop-up interface in figure 6.5.1 , in "control" column in which we can control the camera and other equipment connected to the card(**this function needs to ask suppliers for relevant information, command sent form see table 1**). The video control column can adjust the brightness and contrast of the input card, and the operation of the card reset. In the name column, we can enter a new name, and click "name" to change the name of the current input signal.

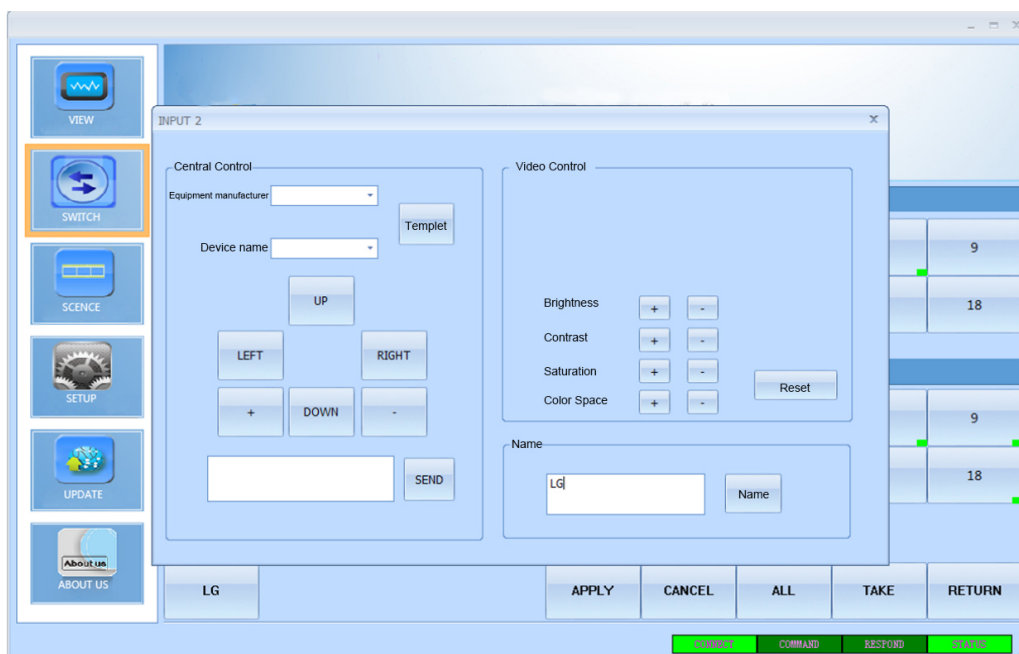


Figure 6.5.1 Input card central control, video control, name operation interface

2) **Output card**:double click the output signal in "SWITCH " interface, pop-up interface in figure 6.5.2 , in "control" column in which we can control the camera and other equipment connected to the card(**this function needs to ask suppliers for relevant information, command sent form see table 1**).In video control column we can choose various resolutions of the output card, adjust the brightness, contrast and saturation of the image.In the name column, we can enter a new name, and click "name" to change the name of the current input signal.

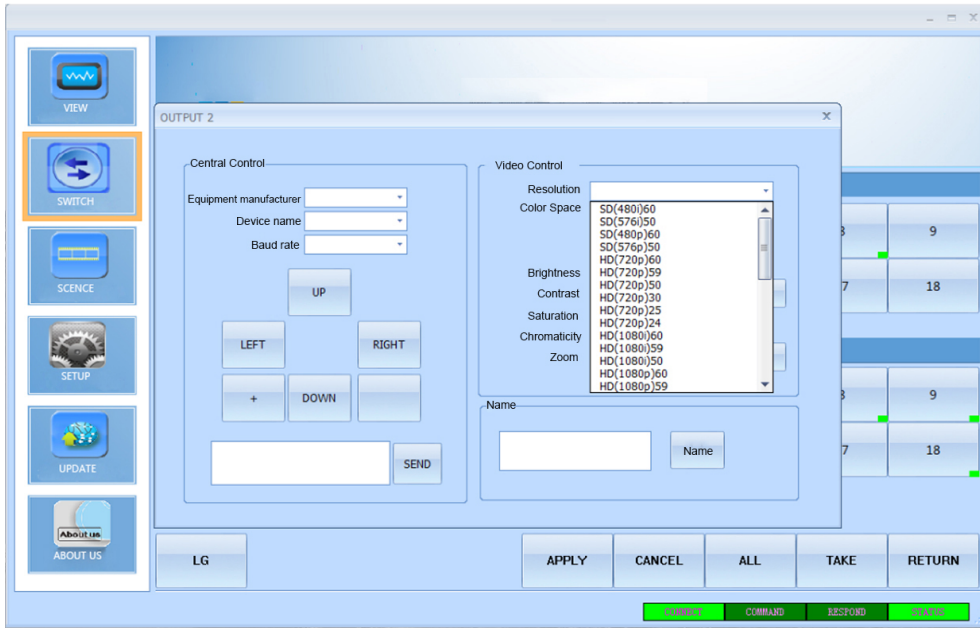


Figure 6.5.2 Output card central control, video control, name operation interface

6.6 Scene save operation

Click "VIEW" button, pop up interface as shown in figure 6.6.1, click on the right side the scene 1 ~ 12 you want to preserve in this interface , press "SAVE" button to save the current scene.

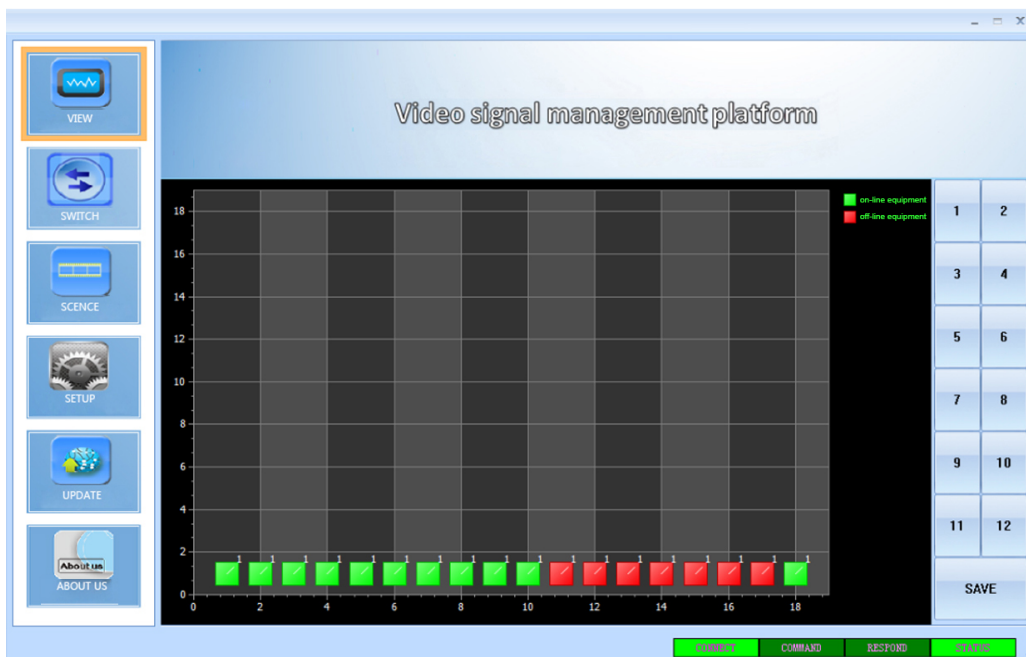


Figure 6.6.1 Scene save

6.7 Scene load

Click on the "SCENE" button, pop-up interface as shown in figure 6.7.1, call the scene in the right side of the screen, and can view the selected scene of the input and output in the interface, and finally click "Load" button to call the selected scene.



Figure 6.7.1 Scene load

6.8 External serial port command sending

External serial port command sending format is as follows (black character fixed, "parameters" in red characters means the string command to be send , "length" is the length of the string command, "packet length" is equal to "length" plus 12 then converted to hexadecimal)

synchrono us head (2BYTE)	packet length (2BYTE)	Packet count (2BYTE)	ways (1BYT E)	command (2BYTE)	length (2BYTE)	parameters (n BYTE)	CRC (1BYTE)
0x55 0x55	n+12	0x00 0x00	0x02	0x07 0x01	n	string command to be send	0x00

Command uses the hexadecimal calculation, such as to send a string command

"abcd123", the specific sending way is as follows:

synchrono us head (2BYTE)	packet length (2BYTE)	Packet count (2BYTE)	ways (1BYT E)	command (2BYTE)	length (2BYTE)	parameters (n BYTE)	CRC (1BYTE)
55 55	00 13	00 00	02	07 01	00 07	61 62 63 64 32 33 34	00

Tip: MIXL software can monitor the card intelligently ,the key marked with green squares in the interface means the corresponding input and output signal connected to card ,if use, click "CANCEL" to remove all the options, click the "ALL" select all output ports, click on the "RETURN" to withdraw the chosen

7.Communication protocol and control instruction code

Communication protocol: (Baud rate 115200, data bits 8, stop bit 1, no parity bit)

Type	control instruction	Functional description
Operating instructions	aXb.take.	Switch a channel input to b channel output
	aX1-b.take.	Switch a channel input to 1-b channel output
	aXb1,b2,b3.take.	Switch a channel input to b1,b2,b3 channel output
	a1Xb1.a2Xb2.a3Xb3.take.	Switch a1,a2,a3 channels input to corresponding b1,b2,b3 channels output
	Save[Y].	Save current scene to [Y], [Y] means number keys from 1 to 12
	Recall[Y].	recall the input/output switching saved in [Y], [Y] means number keys from 1 to 12
	Buzzer on..	Turn on buzzer
	Buzzer off.	Turn off buzzer

Remarks:

1. a represent input , b represent output,The subscript "1", "2", "3" in instruction are not input characters.Numerical range of a and b decided according to the matrix type. For example, S-Mix32*32 matrix has up to 32 input/output channels. Any channel out of range of 1-32 would be regarded as input error.

2、 Do not forget the last punctuation “.” . Every instruction ends with the punctuation “.” .

Punctuations are all English punctuations;

3、 Pay attention to the letter case. (Save/Recall/Buzzer These 3 words should be capitalized.)

Examples of some codes

1.Input “1X2.take.” to switch NO. 1 channel input to NO. 2 channel output;

2.Input“1X1-5.take.” to switch NO. 1 channel input to NO. 1-5 channels output.

3.Input “1X3,4,5.take.” to switch NO. 1 channel input to NO. 3,4,5 channel output;

4.Input “4X3.5X4.6X5.take.” to switch NO. 4,5,6 channel input to NO. 3,4,5 channel output;

5.Save current scene: Save[Y].

For example: Input “Save7.” to save the current scene to NO.7 storage unit.

6.Load the saved code: Recall[Y].

For example: Input “Recall7.” to load the scene saved in NO.7 storage unit.

7.Turn on and turn off the buzzer.

For example:

Buzzer on: The buzzer is turned on, and we hear buzzing when switching .

Buzzer off: The buzzer is turned off, and we hear no buzzing when switching .

8.Version and manufacture information

Description of version (Document number: DOC-*BL-PRO-V2-MIX-0001#)		
Date	Version number	Description
Nov.,2015	V1.01.01	First version