Labgear

HD2-M88K

User Guide

18Gbps 8x8+8 HDMI Matrix
up to 70m over CAT6/7 with IR control & POC

HDMI
HIGH DEFINITION MULTIMEDIA INTERFACE

| 18.0 Gbps | 4K2K @60Hz | 4K@60Hz 70m | 4:4:4 Lossless | V2.0b HDMI | V2.2/1 HDCP |

Thank you for purchasing this product

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Table of Contents

1. Introduction

The 18Gbps 8x8 HDMI Matrix can connect 8 HDMI sources to 16 displays. It features eight HDMI outputs and each HDMI output is mirrored to provide a CAT-Cable output which runs simultaneously. It supports the transmission of video (resolution is up to 1080p Full HD and 4Kx2K@60Hz 4:4:4) and supports HD digital audio formats such as LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio. The Matrix can be used for multi-room connectivity, and the HDMI signals can be extended up to 230ft/70m via connecting a CAT Receiver to each of the CAT-Cable outputs. The Matrix supports one-way IR matrix function. Besides, it can be controlled via front panel buttons, IR remote, RS-232, LAN, and Web GUI.

2. Features

☆ HDMI 2.0b and HDCP 2.2/1.x compliant
☆ Video resolution up to 4K2K@60Hz (YUV 4:4:4) on all HDMI & CAT ports
☆ 8 HDMI inputs, 8 HDMI & CAT mirrored outputs
☆ HDMI ports support 18Gbps lossless compressed video bandwidth
☆ HDR, HDR10, HDR10+, Dolby Vision, HLG are supported
☆ CAT output can extend the transmission distance up to 230ft/70m via a single CAT6 cable
☆ HDMI audio pass-through up to 7.1CH HD audio (LPCM, Dolby TrueHD and DTS-HD Master Audio)
☆ Advanced EDID management and CEC control are supported
☆ 12V POC on all CAT ports
☆ Support one-way IR matrix function
☆ Control via front panel buttons, IR remote, RS-232, LAN and Web GUI

3. Package Contents

① 1 x 18Gbps 8x8 HDMI Matrix
② 8 x CAT Receivers
③ 9 x Matrix IR Remotes
④ 1 x 12V5A Power Supply
⑤ 1 x RS-232 Serial Cable (1.5 meters, DP9 female head to 3 pin Phoenx connector)
⑥ 8 x IR Blaster Cables (1.5 meters)
⑦ 9 x IR Receiver Cables (1.5 meters)
⑧ 8 x Machine Screw (KM3*6)
⑨ 18 x Mounting Ears (Matrix and Receiver)
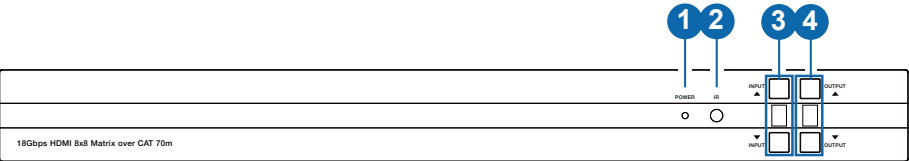⑩ 1 x User Manual

4. Specifications

Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2/1.x
Video Bandwidth	18Gbps
Video Resolution	Up to 4K2K@50/60Hz (4:4:4)
Color Space	RGB 4:4:4, YCbCr 4:4:4/4:2:2/4:2:0
Color Depth	8-bit, 10-bit, 12-bit (1080p@60Hz) 8-bit (4K2K@60Hz YUV4:4:4) 8-bit, 10-bit, 12-bit (4K2K@60Hz YCbCr 4:2:2/4:2:0）
HDR	HDR10, HDR10+, Dolby Vision, HLG
HDMI Audio Formats	LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, Dolby Digital Plus (DD+), DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X
Transmission Distance	230ft / 70m (via a single CAT6 cable)
ESD Protection	Human-body Model: ±8kV (Air-gap discharge) , ±4kV (Contact discharge)
Connection	

Matrix	Inputs: 8 x HDMI Type A [19-pin female]
	Outputs: 8 x HDMI Type A [19-pin female]
	            8 x CAT port [RJ45]
	Controls: 1 x TCP/IP [RJ45]
	            1 x RS-232 [3-pin phoenix connector]
	            8 x IR OUT [3.5mm Stereo Mini-jack]
	            1×IR EXT [3.5mm Stereo Mini-jack]

CAT Receiver	Inputs: 1x IR IN [3.5mm Stereo Mini-jack] 1x CAT port [RJ45] Output: 1x HDMI Type A [19-pin female] Control: 1x SERVICE [Micro USB, Update port]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	Matrix: 440mm (W) × 250mm (D) × 44.5mm (H) Receiver: 61mm (W) x 88mm (D) x 18mm (H)
Weight	Matrix: 3.2kg, Receiver: 155g
Power Supply	Input: AC 100 - 240V 50/60Hz Output: DC 12V/5A (US/EU standards, CE/FCC/UL certified)
Power Consumption	50W (Max)

Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F		
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F		
Relative Humidity	20~90% RH (non-condensing)		
Resolution / Cable length	**4K60 - Feet / Meters**	**4K30 - Feet / Meters**	**1080P60 - Feet / Meters**
HDMI IN / OUT	16ft / 5M	32ft / 10M	50ft / 15M
The use of "Premium High Speed HDMI" cable is highly recommended.			

5. Operation Controls and Functions

## 5.1 Matrix Panel

Front Panel

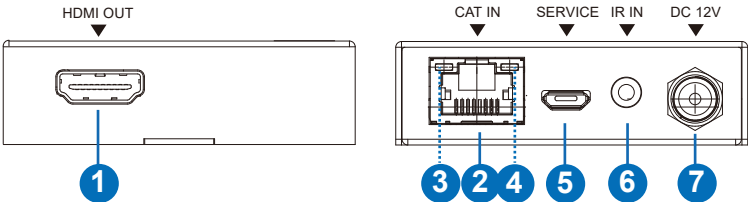| No.	Name	Function Description
1	Power LED	The LED will illuminate in green when the Matrix is working normally, and red when the Matrix is on standby.
2	IR Window	IR receiver window, it only receives the IR remote signal from this Matrix.
3	INPUT ▲ / ▼ buttons	Short press the INPUT ▲ / ▼ button to circularly select HDMI signal input channel 1~8, then the input Nixie tube will display the corresponding input channel number. Long press the INPUT ▲ button for 3 seconds, the Matrix enters the standby mode. Then short press the INPUT ▲ button to turn on the Matrix.
4	OUTPUT▲ / ▼ buttons	Short press the OUTPUT ▲ / ▼ button to circularly select HDMI signal output channel 1~8 / A (A indicates all output channels), then the output Nixie tube will display the corresponding output channel number. Long press the OUTPUT ▲ and ▼ button at the same time for 10 seconds, the Nixie tube displays "FC" and flashes 5 seconds for 1HZ, then the Matrix will restore to factory default setting (including IP address and other configuration).

Input and output switching operation:
First press the OUTPUT ▲ / ▼ button to select HDMI signal output channel 1~8 with the input Nixie tube showing the corresponding number, then press the INPUT ▲ / ▼ button to select HDMI signal input channel 1~8 with the output Nixie tube showing the corresponding number. After two Nixie tubes flash 3 times, the input signal will be switched to the output channel successfully, and two Nixie tubes show "0A". If you select the output channel A, then select HDMI signal input channel 1~8, the input 1~8 source signal will be output to all display devices.

Rear Panel
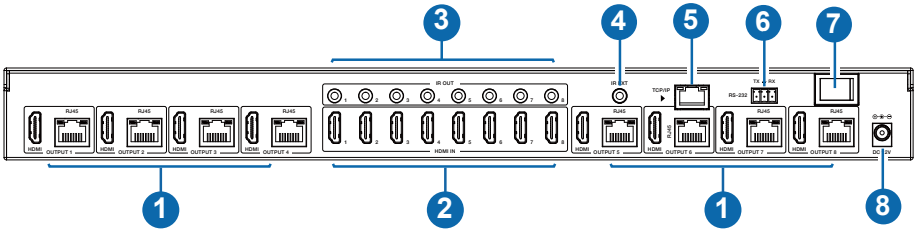
No.	Name	Function Description
1	OUTPUT 1-8 ports	HDMI signal output ports, connected to HDMI display devices such as TV or monitor with HDMI cable.
		CAT mirrored output ports, connected to CAT Receivers with CAT cable.
2	HDMI IN 1-8 ports	HDMI signal input ports, connected to HDMI source device such as DVD or PS4 with HDMI cable.
3	IR OUT 1-8 ports	Connect with IR blaster cable, the IR signal is from the "IR IN" port of the CAT Receiver.
4	IR EXT	Connect with IR receiver cable.
5	TCP/IP port	The link port for TCP/IP control. Connect to an active Ethernet link with an RJ45 cable.
6	RS-232	RS-232 command control port, connected to a PC or control system with a D-Sub 9-pin cable to control the Matrix.
7	Power switch	Press the switch to power on/off the Matrix.
8	DC 12V	DC 12V power input port.

5.2 CAT Receiver Panel

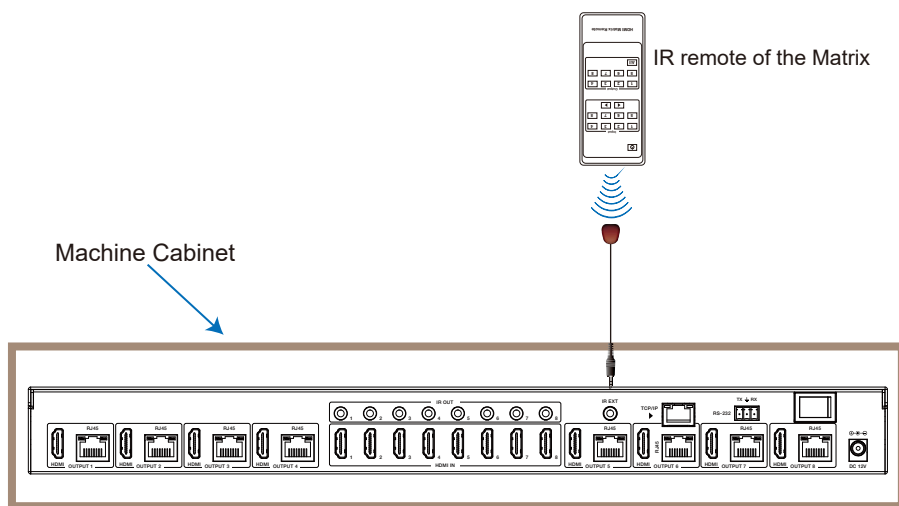| No.	Name	Function Description
1	HDMI OUT	HDMI signal output port, connected to HDMI display device such as TV or Projector with an HDMI cable.
2	CAT IN	Connect to the CAT OUTPUT port on the Matrix with a CAT cable.
3	Power Indicator Lamp (Green)	When the receiver is powered on, the power indicator lamp will be on.
4	Data signal Indicator Lamp (Orange)	When there is signal transmission between the Matrix and the receiver, the lamp will be on.
5	SERVICE port	Used for firmware update.
6	IR IN	Connect with the IR Receiver cable. The IR signal will send to the IR OUT port of the Matrix.
7	DC 12V	Plug DC 12V/2.5A power supply into the unit and connect the adapter to an AC outlet. (Note: The CAT receiver also can be powered by the Matrix via a CAT cable.)

6. IR Remote
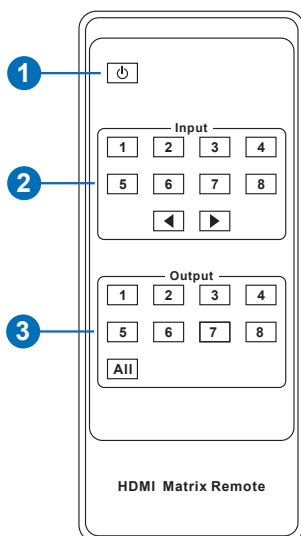
① **Power button:** Power on the Matrix or set it to standby mode.

② **Input 1/2/3/4/5/6/7/8:** Select the signal input channel.

◀ ▶ : Select the last or next signal input channel.

③ **Output 1/2/3/4/5/6/7/8:** Select the signal output channel.

All: Select all output channels simultaneously. For example, when you press the "All" button and then press input "1" button, at this time the input "1" source will be output to all display devices.

Operation instruction: You need to press the output button firstly, and then press input button to select the corresponding input source. For example,
Press Output-X
(X means output button from 1 to 8 , including "All" button)
Then press Input-Y
(Y means input button from 1 to 8)

The Matrix supports selecting input and output channel by using the IR remote. There are two ways to receive the IR remote signal.
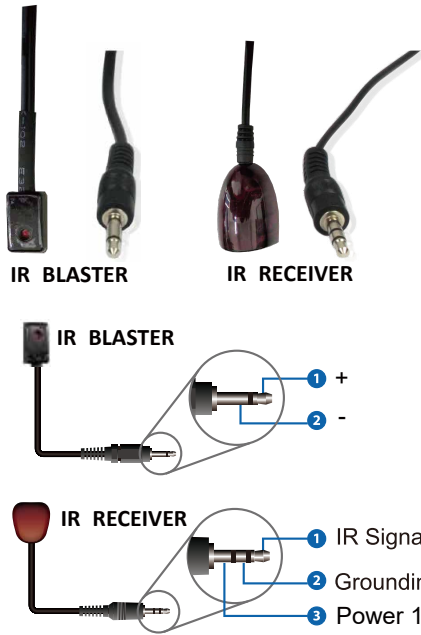
The first way: The IR window accepts the IR remote signal. When using the IR remote, the furthest distance is 7 meters and the angle is ± 45°. The diagram is shown as below:

IR remote of the Matrix

The second way: If the IR receiver window of the Matrix is blocked or the Matrix is installed in a closed area out of infrared line of sight, the IR receiver cable can be inserted to the "IR EXT" port to receive the IR remote signal. The furthest distance of using the IR remote is 7 meters and the IR remote is directly faced to the IR receiver head. The diagram is shown as below.

IR remote of the Matrix

Machine Cabinet

7. IR Cable Pin Assignment

IR BLASTER **IR RECEIVER**

IR BLASTER

1 +
2 -

IR RECEIVER

1 IR Signal
2 Grounding
3 Power 12V

8. IR Control System

The product supports one-way IR matrix function. When Matrix is connected to CAT Receiver through CAT6 cable, you can control the input source device (local end) by the IR control signal from the CAT receiver (remote end). IR signal follows video switch to change.

For example, the HDMI output signal on the CAT Receiver 4 is from the HDMI IN 4 port, so IR input signal of the CAT Receiver 4 will emit to IR OUT 4 port of the Matrix. The HDMI output signal on the CAT Receiver 6 is from the HDMI IN 6 port. Then, IR input signal of the CAT Receiver 6 will emit to IR OUT 6 port of the Matrix etc. The IR OUT signal of the Matrix depends on your IR remote of source device. Please see the following connection diagram.
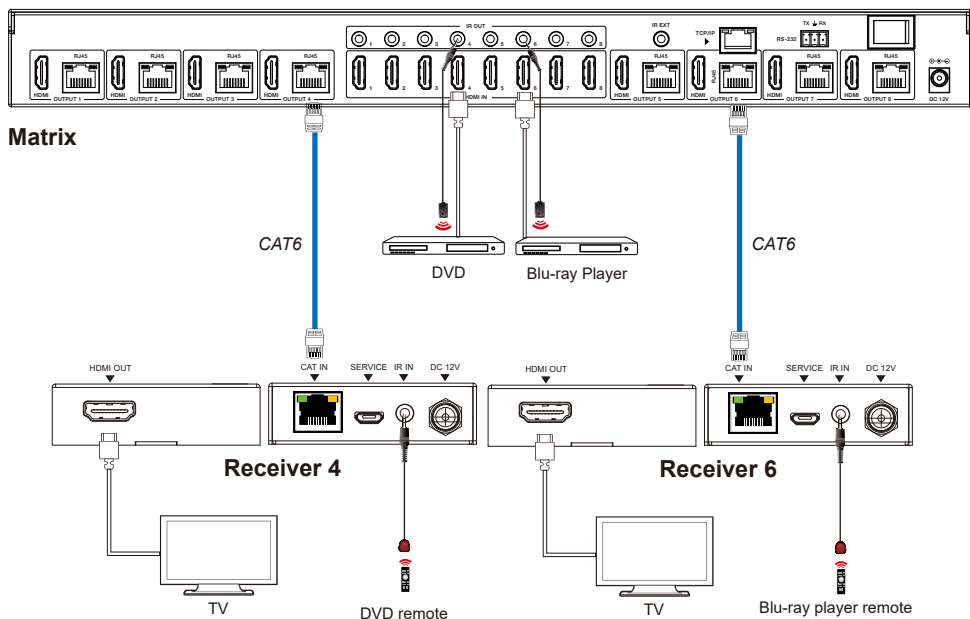
Matrix

CAT6   DVD   Blu-ray Player   *CAT6*

HDMI OUT   CAT IN   SERVICE   IR IN   DC 12V   HDMI OUT   CAT IN   SERVICE   IR IN   DC 12V

Receiver 4   **Receiver 6**

TV   DVD remote   TV   Blu-ray player remote

Figure 1: IR connection diagram

9. EDID Management

This Matrix has 21 factory defined EDID settings, 2 user-defined EDID modes and 16 copy EDID modes. You can select defined EDID mode or copy EDID mode to input port through RS-232 control or Web GUI.

RS-232 control operation: Connect the Matrix to PC with a serial cable, then open a Serial Command tool on PC to send ASCII command "s edid in x from z!" to set EDID. For details, please refer to "EDID Setting" in the ASCII command list of "10. RS-232 Control Command".

Web GUI Operation: Please check the EDID management in the "Input page" of "10. Web GUI User Guide".
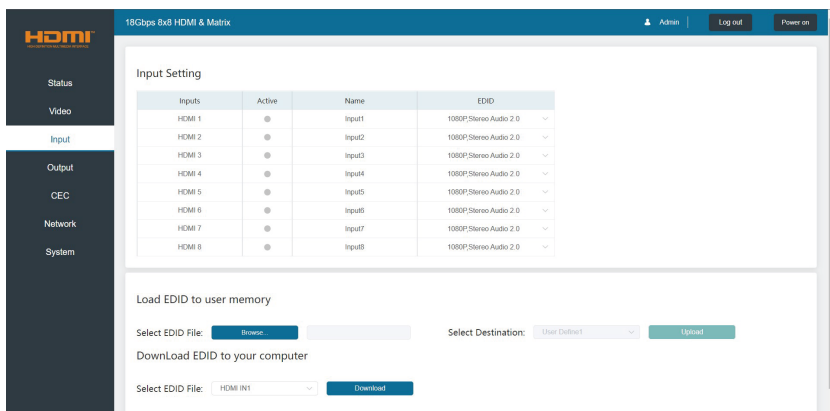
The defined EDID setting list of the product is shown as below:

EDID Mode	EDID Description
1	1080p, Stereo Audio 2.0
2	1080p, Dolby/DTS 5.1
3	1080p, HD Audio 7.1
4	1080i, Stereo Audio 2.0
5	1080i, Dolby/DTS 5.1
6	1080i, HD Audio 7.1
7	3D, Stereo Audio 2.0
8	3D, Dolby/DTS 5.1
9	3D, HD Audio 7.1
10	4K2K30_444, Stereo Audio 2.0
11	4K2K30_444, Dolby/DTS 5.1
12	4K2K30_444, HD Audio 7.1
13	4K2K60_420, Stereo Audio 2.0
14	4K2K60_420, Dolby/DTS 5.1
15	4K2K60_420, HD Audio 7.1
16	4K2K60_444, Stereo Audio 2.0
17	4K2K60_444, Dolby/DTS 5.1
18	4K2K60_444, HD Audio 7.1
19	4K2K60, Stereo Audio 2.0 HDR
20	4K2K60, Dolby/DTS 5.1 HDR
21	4K2K60, HD Audio 7.1HDR
22	USER1
23	USER2
24	copy from hdmi output 1
25	copy from hdmi output 2
26	copy from hdmi output 3
27	copy from hdmi output 4
28	copy from hdmi output 5
29	copy from hdmi output 6
30	copy from hdmi output 7
31	copy from hdmi output 8
32	copy from cat output 1
33	copy from cat output 2
34	copy from cat output 3
35	copy from cat output 4
36	copy from cat output 5
37	copy from cat output 6
38	copy from cat output 7
39	copy from cat output 8

10. Web GUI User Guide

The Matrix can be controlled by Web GUI. The operation method is shown as below:

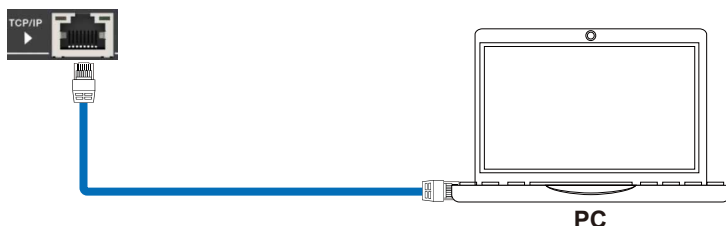**Step 1:** Get the current IP Address.

The default IP address is 192.168.1.100. You can get the current Matrix IP address via RS-232 control. Send the ASCII command " r ipconfig!" through a Serial Command tool, then you'll get the feedback information as shown below:


```
IP Mode: DHCP
IP:192.168.2.209
Subnet Mask:255.255.255.0
Gateway:192.168.2.1
TCP/IP port=8000
Telnet port=23
Mac address:6C:DF:FB:07:1C:E2
```

IP:192.168.2.209 in the above figure is the current Matrix IP address (this IP address is variable, depending on what the specific machine returns).

For the details of RS-232 control, please refer to "11. RS-232 Control Command".

Step 2: Connect the TCP/IP port of the Matrix to a PC with an UTP cable (as shown in the following figure), and set the IP address of the PC to be in the same network segment with the Matrix.

PC

Step 3: Input the current IP address of Matrix into your browser on the PC to enter Web GUI page.

http://192.168.1.100

After entering the Web GUI page, there will be a Login page, as shown below:

Select the Username from the list and enter the password. The default passwords are:

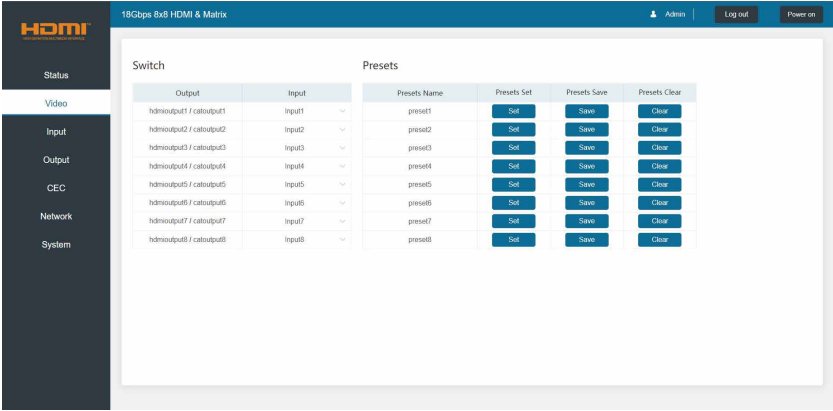| Username	**User**	**Admin**
Password	**user**	**admin**

After entering the password, click the "LOGIN" button and the following Status page will appear.

■ Status Page

The Status page provides basic information about the product model, installed firmware version and the network settings of the device.
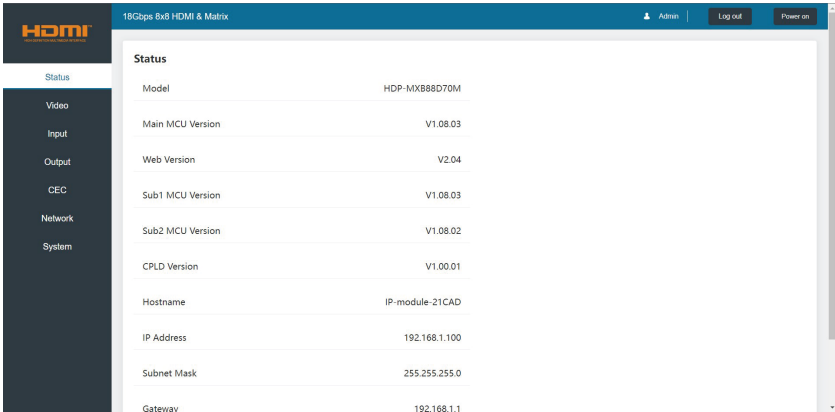
## ■ Video Page

You can do the following operations on the Video page:

① **Output:** The current device's OUTPUT port. You can select signal source for it.

② **Input:** You can click the drop-down menu to select signal source for the corresponding OUTPUT port .

③ **Presets Name:** You can name the current scene with maximum length of 12 characters (Chinese name is unsupported).

④ **Presets Set:** You can restore the settings of the last saved audio-video matrix switching relationship.

⑤ **Presets Save:** You can save audio-video matrix switching relationship.

⑥ **Presets Clear:** You can clear the saved audio-video matrix switching relationship.

■ Input Page
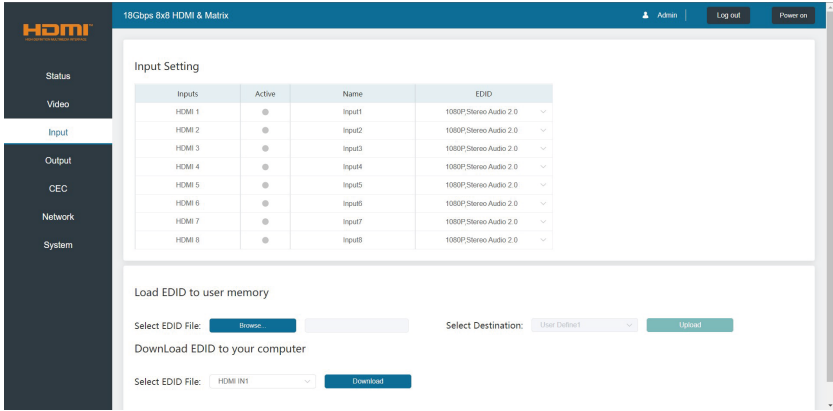


You can do the following operations on the Input page:

① **Inputs:** Input channel of the device.

② **Active:** It indicates whether the channel is connected to a signal source.

③ **Name:** The input channel's name. You can modify it by entering the corresponding name (max length: 12 characters) in the input box (Chinese name is unsupported).

④ **EDID:** You can set the current channel's EDID. The specific operation is as follows:

Set EDID for the User

Click the "Browse" button, then select the bin file. If you select the wrong EDID file, there will be a prompt, as shown in the following figure:
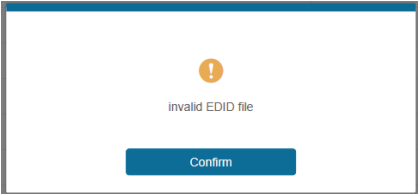

Make sure to select the correct file, then you can check the name of the selected file. Select "User 1" or "User 2", then click "Upload". After successful setting, it will prompt as follows:
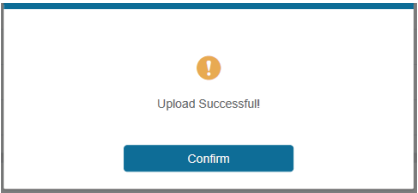
Download the EDID File for the Corresponding Input Channel

Click the drop-down box of "Select EDID File" to select the corresponding input channel. Then click "Download" to download the corresponding EDID file.

■ Output Page
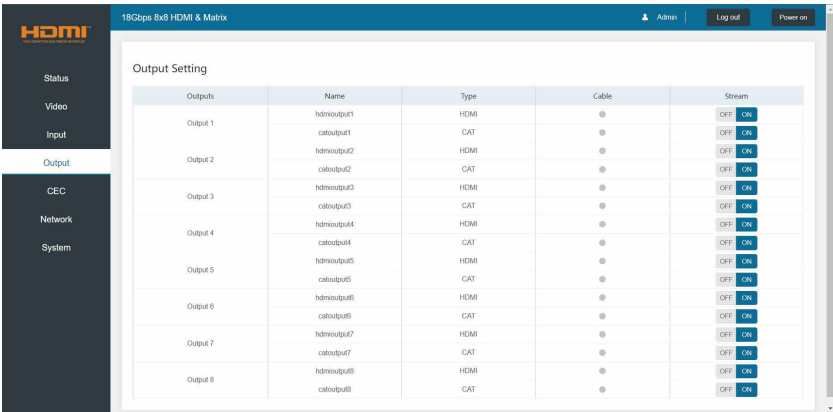
You can do the following operations on the Output page:

① **Outputs:** Output channel of the device.

② **Name:** The current output channel's name. You can modify it by entering the corresponding name (max length: 12 characters) in the input box (Chinese name is unsupported).

③ **Type:** The current output channel's type (HDMI or CAT).

④ **Cable:** It indicates the connection status of output ports. When the output port is connected to the display, it shows green, otherwise, it shows gray.

⑤ **Stream:** Turn on/off the output stream.

■ CEC Page
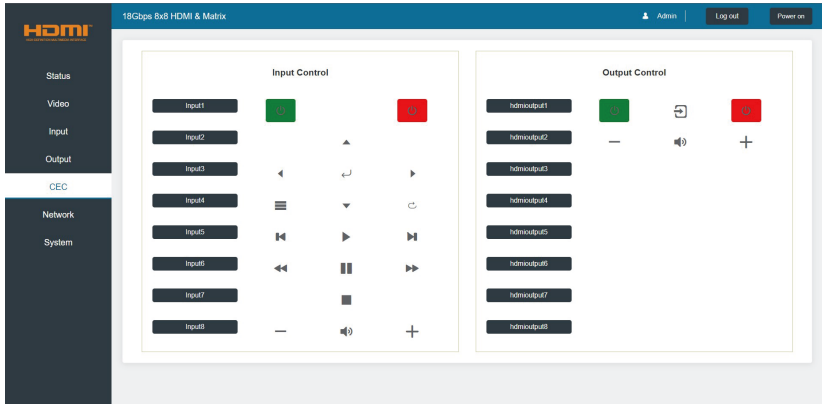
You can perform CEC management on this page:

① **Input Control:** You can control the operation of each input source by pressing the icons on the page. (You can control multiple inputs simultaneously.)

② **Output Control:** You can control the operation of each display, such as power on/off, volume +/-, active source switching. (You can control multiple outputs simultaneously.)

■ Network Page
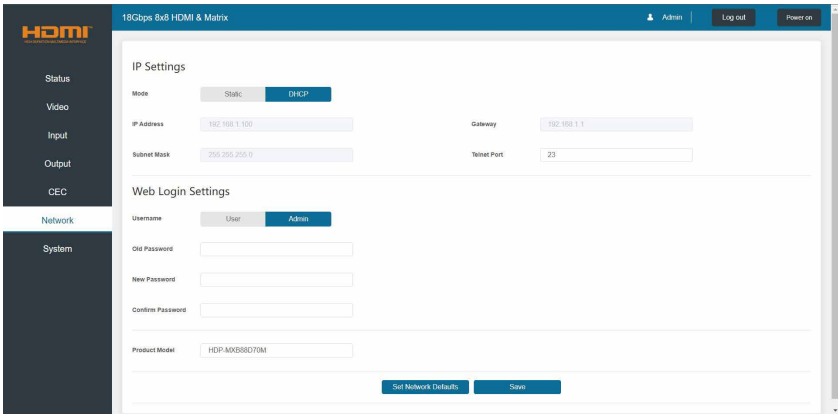
Set the Default Network

Click "Set Network Defaults" button, there will be a prompt, as shown in the following figure:
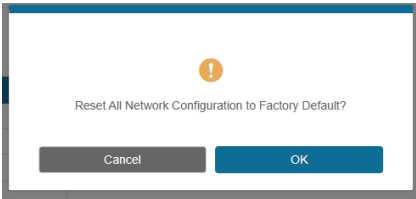
Click "OK" to search the IP Address again, as shown in the figure below.

After searching is completed, it will switch to the login page, the default network setting is completed.

Modify User Password

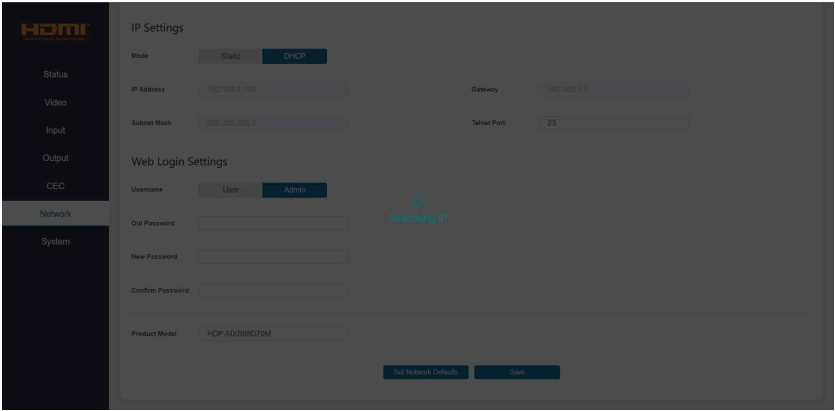Click the "User" button, enter the correct Old Password, New Password, and Confirm Password, then click "Save". After successful modification, there will be a prompt, as shown in the following figure:
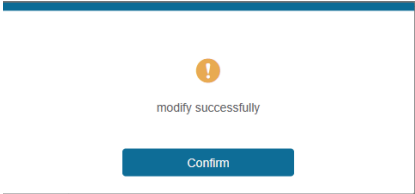
Note: Input rules for changing passwords:
(1) The password can't be empty.
(2) New Password can't be the same as Old Password.
(3) New Password and Confirm Password must be the same.

Modify Network Setting

Modify the Mode/IP Address/Gateway/Subnet Mask/Telnet Port as required, click "Save" to save the settings, then it will come into effect.
After modification, if the Mode is "Static", it will switch to the corresponding IP Address;
if the Mode is "DHCP", it will automatically search and switch to the IP Address assigned by the router.
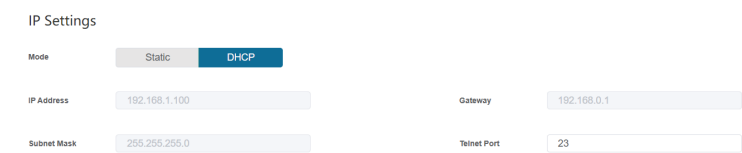
■ System Page
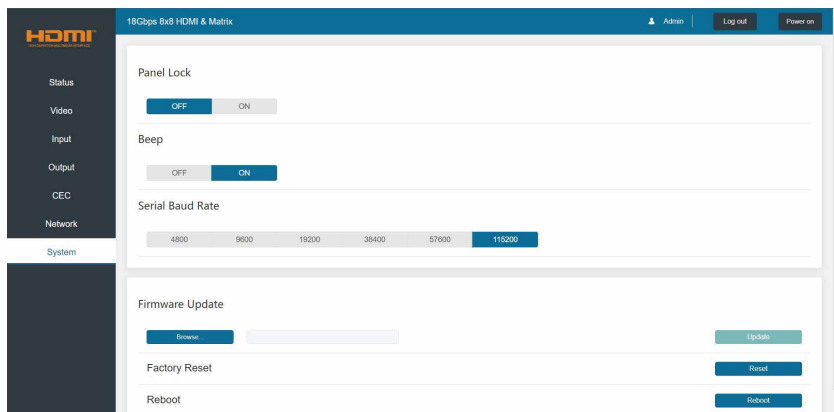
① **Panel Lock:** Click to lock/unlock panel buttons. "On" indicates that panel buttons are unavailable; "Off" indicates panel buttons are available.

② **Beep:** Click to turn on/off the beep.

③ **Serial Baud Rate:** Click the value to set the Serial Baud Rate.

④ **Firmware Update:** Click "Browse" to select the update file, then click "Update" to complete firmware update.

⑤ **Factory Reset:** You can reset the machine to factory defaults by clicking "Reset".

⑥ **Reboot:** You can reboot the machine by clicking "Reboot".

Note: After reset/reboot, it will switch to the login page.

11. RS-232 Control Command

The product also supports RS-232 control. Connect the RS-232 port of the Matrix to a PC with the included RS-232 serial cable. The RS-232 phoenix connector is connected to the Matrix, and the DP9 female head of the serial cable is connected to the RS-232 male head of an RS-232 to USB cable, while the USB head of the RS-232 to USB cable is connected to the PC. The connection method is as follows:
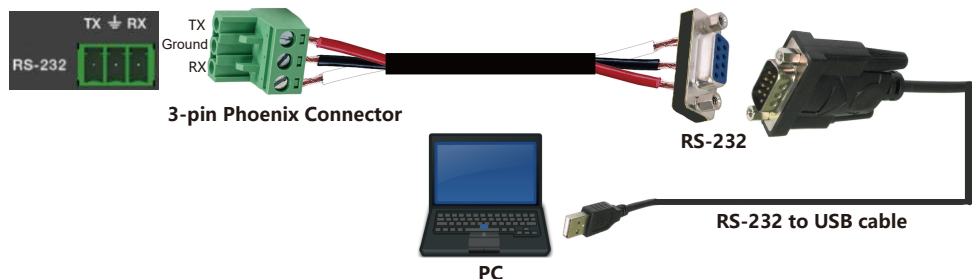

3-pin Phoenix Connector

RS-232

RS-232 to USB cable

PC

Then, open a Serial Command tool on PC to send ASCII command to control the Matrix. The ASCII command list about the product is shown as below.

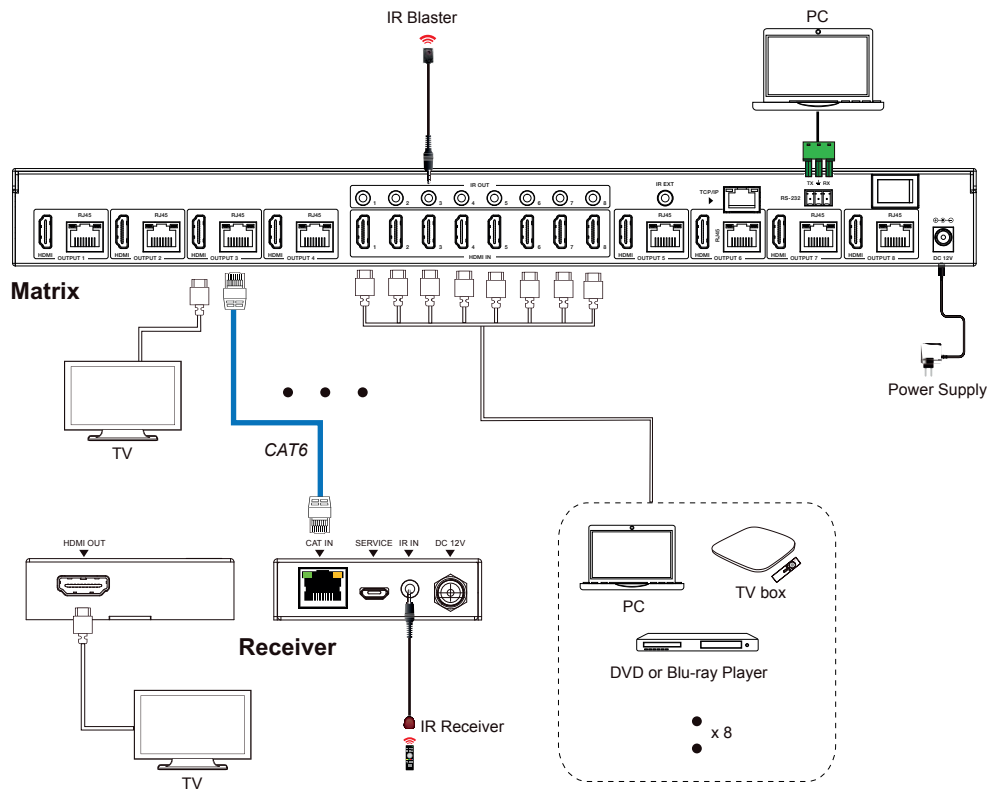| ASCII Command				
Serial port protocol: Baud rate: 115200 (default), Data bits: 8bit, Stop bits:1, Check bit: 0 TCP/IP protocol port: 8000				
x - Parameter 1 y - Parameter 2 ! - Delimiter				
Command Code	**Function Description**	**Example**	**Feedback**	**Default Setting**
Power				
s power z!	Power on/off the device,z=0~1 (z=0 power off, z=1 power on)	s power 1!	Power on System Initializing... Initialization Finished! FW version x.xx.xx	power on
r power!	Get current power state	r power!	power on/power off	
s reboot!	Reboot the device	s reboot!	Reboot... System Initializing... Initialization Finished! FW version x.xx.xx	
System Setup				
help!	List all commands	help!		
r type!	Get device model	r type!	HDP-MXB88D70M	
r status!	Get device current status	r status!	Get the unit all status: power, beep, lock, in/ out connection, video/ audio crosspoint, edid, scaler,hdcp, network status	
r fw version!	Get Firmware version	r fw version!	MCU BOOT:Vx.xx.xx MCU APP :Vx.xx.xx WEB GUI :Vx.xx	

Command Code	Function Description	Example	Feedback	Default Setting
r link in x!	Get the connection status of the x input port, x=0~8(0=all)	r link in 1!	hdmi input 1: connect	
r link out y!	Get the connection status of the y output port, y=0~8(0=all)	r link out 1!	hdmi output 1: connect	
s reset!	Reset to factory defaults	s reset!	Reset to factory defaults System Initializing... Initialization Finished! FW version x.xx.xx	
s beep z!	Enable/Disable buzzer function, z=0~1(z=0 beep off, z=1 beep on)	s beep 1!	beep on beep off	beep on
r beep!	Get buzzer state	r beep!	beep on / beep off	
s lock z!	Lock/Unlock front panel button, z=0~1 (z=0 lock off,z=1 lock on)	s lock 1!	panel button lock on panel button lock off	panel button lock off
r lock!	Get panel button lock state	r lock!	panel button lock on/off	
s save preset z!	Save switch state between all output port and the input port to preset z, z=1~8	s save preset 1!	save to preset 1	
s recall preset z!	Call saved preset z scenarios, z=1~8	s recall preset 1!	recall from preset 1	
s clear preset z!	Clear stored preset z scenarios, z=1~	s clear preset 1!	clear preset 1	
r preset z!	Get preset z information, z=1~8	r preset 1!	video/audio crosspoint	
s baud rate xxx!	Set the serial port baud rate of RS02 module, z=(115200,57600, 38400,19200,9600,4800)	s baud rate 115200!	Baudrate:115200	
r baud rate!	Get the serial port baud rate of RS02 module	r baud rate!	Baudrate:115200	
s id z!	Set the control ID of the product, z=000~999	s id 888!	id 888	0
Output Setting				
s in x av out y!	Set input x to output y, x=1~8, y=0~8(0=all)	s in 1 av out 2!	input 1 -> output 2	ptp
r av out y!	Get output y signal status y=0~8(0=all)	r av out 0!	input 1 -> output 1 input 2 -> output 2 ... input 8 -> output 8	
s hdmi y stream z!	Set hdmi output y stream on/off, y=0~8(0=all) z=0~1(0:disable,1:enable)	s hdmi 1 stream 1! s hdmi 0 stream 1!	Enable hdmi output 1 stream Disable hdmi output 1 stream Enable hdmi all outputs stream Disable hdmi all outputs stream	enable
r hdmi y stream!	Get hdmi output y stream status, y=0~8(0=all)	r hdmi 1 stream!	Enable hdmi output 1 stream	
s cat y stream z!	Set cat output y stream on/off, y=0~8(0=all) z=0~1(0:disable,1:enable)	s cat 1 stream 1! s cat 0 stream 1!	Enable cat output 1 stream Disable cat output 1 stream Enable cat all outputs stream Disable cat all outputs stream	enable

Command Code	Function Description	Example	Feedback	Default Setting
r cat y stream!	Get cat output y stream status, y=0~8(0=all)	r cat 1 stream!	enable cat output 1 stream	
s cat y dsc mode z!	set cat output y port dsc mode status y=0~8(0=all) z=1~3 (1=Cat cable distance normal Mode, 2= Cat cable distance 35M Mode, 3= Cat cable distance 70M Mode)	s cat 1 dsc mode 2!	cat out 1 dsc mode 2	Cat cable distance 35M Mode(35M)
r cat y dsc mode!	Get dsc mode of cat out y, y=0~8(0=all)	r cat 1 dsc mode!	cat out 1 dsc mode 2	
EDID Setting				
s edid in x from z!	Set input x EDID from default EDID z, x=0~8(0=all),z=1~39 1. 1080p,Stereo Audio 2.0 2. 1080p,Dolby/DTS 5.1 3. 1080p,HD Audio 7.1 4. 1080i,Stereo Audio 2.0 5. 1080i,Dolby/DTS 5.1 6. 1080i,HD Audio 7.1 7. 3D,Stereo Audio 2.0 8. 3D,Dolby/DTS 5.1 9. 3D,HD Audio 7.1 10. 4K2K30_444,Stereo Audio 2.0 11. 4K2K30_444,Dolby/DTS 5.1 12. 4K2K30_444,HD Audio 7.1 13. 4K2K60_420,Stereo Audio 2.0 14. 4K2K60_420,Dolby/DTS 5.1 15. 4K2K60_420,HD Audio 7.1 16. 4K2K60_444,Stereo Audio 2.0 17. 4K2K60_444,Dolby/DTS 5.1 18. 4K2K60_444,HD Audio 7.1 19.4K2K60_444,Stereo Audio 2.0 HDR 20.4K2K60_444,Dolby/DTS 5.1 HDR 21.4K2K60_444,HD Audio 7.1 HDR 22. USER1 23. USER2 24. copy from hdmi output 1 25. copy from hdmi output 2 26. copy from hdmi output 3 27. copy from hdmi output 4 28. copy from hdmi output 5 29. copy from hdmi output 6 30. copy from hdmi output 7 31. copy from hdmi output 8 32. copy from cat output 1 33. copy from cat output 2 34. copy from cat output 3 35. copy from cat output 4 36. copy from cat output 5 37. copy from cat output 6 38. copy from cat output 7 39. copy from cat output 8	s edid in 1 from 1! s edid in 0 from 1!	input 1 EDID:1080p, Stereo Audio 2.0 all inputs EDID:1080p, Stereo Audio 2.0	1080p, Stereo Audio 2.0
r edid in x!	Get EDID status of the input x, x=0~8(0=all input)	r edid in 0!	input 1 EDID: 4K2K60_444,Stereo Audio 2.0 input 2 EDID: 4K2K60_444,Stereo Audio 2.0 input 3 EDID: 4K2K60_444,Stereo Audio 2.0 input 4 EDID: 4K2K60_444,Stereo Audio 2.0 input 5 EDID: 4K2K60_444,Stereo Audio 2.0 input 6 EDID: 4K2K60_444,Stereo Audio 2.0 input 7 EDID: 4K2K60_444,Stereo Audio 2.0 input 8 EDID: 4K2K60_444,Stereo Audio 2.0	

Command Code	Function Description	Example	Feedback	Default Setting
r edid data hdmi y!	Get the EDID data of the hdmi output y port，y=1~8	r edid data hdmi 1!	EDID: 00 FF FF FF FF FF FF 00 ………. hdmi output 1: disconnect	
CEC Setting				
s cec in x on!	set input x power on by CEC, x=0~8(0=all input)	s cec in 1 on!	input 1 power on	
s cec in x off!	set input x power off by CEC, x=0~8(0=all input)	s cec in 1 off!	input 1 power off	
s cec in x menu!	set input x open menu by CEC, x=0~8(0=all input)	s cec in 1 menu!	input 1 open menu	
s cec in x back!	set input x back operation by CEC, x=0~8(0=all input)	s cec in 1 back!	input 1 back operation	
s cec in x up!	set input x menu up operation by CEC, x=0~8(0=all input)	s cec in 1 up!	input 1 menu up operation	
s cec in x down!	set input x menu down operation by CEC, x=0~8(0=all input)	s cec in 1 down!	input 1 menu down operation	
s cec in x left!	set input x menu left operation by CEC, x=0~8(0=all input)	s cec in 1 left!	input 1 menu left operation	
s cec in x right!	set input x menu right operation by CEC, x=0~8(0=all input)	s cec in 1 right!	input 1 menu right operation	
s cec in x enter!	set input x menu enter operation by CEC, x=0~8(0=all input)	s cec in 1 enter!	input 1 menu enter operation	
s cec in x play!	set input x play by CEC, x=0~8(0=all input)	s cec in 1 play!	input 1 play operation	
s cec in x pause!	set input x pause by CEC, x=0~8(0=all input)	s cec in 1 pause!	input 1 pause operation	
s cec in x stop!	set input x stop by CEC, x=0~8(0=all input)	s cec in 1 stop!	input 1 stop operation	
s cec in x rew!	set input x rewind by CEC, x=0~8(0=all input)	s cec in 1 rew!	input 1 rewind operation	
s cec in x mute!	set input x volume mute by CEC, x=0~8(0=all input)	s cec in 1 mute!	input 1 volume mute	
s cec in x vol-!	set input x volume down by CEC, x=0~8(0=all input)	s cec in 1 vol-!	input 1 volume down	
s cec in x vol+!	set input x volume up by CEC, x=0~8(0=all input)	s cec in 1 vol+!	input 1 volume up	
s cec in x ff!	set input x fast forward by CEC, x=0~8(0=all input)	s cec in 1 ff!	input 1 fast forward operation	
s cec in x previous!	set input x previous by CEC, x=0~8(0=all input)	s cec in 1 previous!	input 1 previous operation	
s cec in x next!	set input x next by CEC, x=0~8(0=all input)	s cec in 1 next!	input 1 next operation	
s cec hdmi out y on!	set hdmi output y power on by CEC, y=0~8(0=all hdmi output)	s cec hdmi out 1 on!	hdmi output 1 power on	
s cec hdmi out y off!	set hdmi output y power off by CEC, y=0~8(0=all hdmi output)	s cec hdmi out 1 off!	hdmi output 1 power off	
s cec hdmi out y mute!	set hdmi output y volume mute by CEC, y=0~8(0=all hdmi output)	s cec hdmi out 1 mute!	hdmi output 1 volume mute	
s cec hdmi out y vol-!	set hdmi output y volume down by CEC, y=0~8(0=all output)	s cec hdmi out 1 vol-!	hdmi output 1 volume down	
s cec hdmi out y vol+!	set hdmi output y volume up by CEC, y=0~8(0=all output)	s cec hdmi out 1 vol+!	hdmi output 1 volume up	
s cec hdmi out y active!	set hdmi output y active source by CEC, y=0~8(0=all output)	s cec hdmi out 1 active!	hdmi output 1 active source	

Command Code	Function Description	Example	Feedback	Default Setting
Network Setting				
r ipconfig!	Get the Current IP Configuration	r ipconfig!	IP Mode: Static IP: 192.168.1.72 Subnet Mask: 255.255.255.0 Gateway: 192.168.1.1 TCP/IP port=8000 Telnet port=10 Mac address: 6C:DF:FB:0D:59:74	
r mac addr!	Get network MAC address	r mac addr!	Mac address: 00:1C:91:03:80:01	
s ip mode z!	Set network IP mode to static IP or DHCP, z=0~1 (z=0 Static, z=1 DHCP)	s ip mode 0!	Set IP mode:Static (Please use "s net reboot!" command or repower device to apply new config!)	
r ip mode!	Get network IP mode	r ip mode!	IP Mode: Static	
s ip addr xxx.xxx.xxx.xxx!	Set network IP address	s ip addr 192.168.1.100!	Set IP address: 192.168.1.100 (Please use "s net reboot!" command or repower device to apply new config!) DHCP on, Device can't config static address, set DHCP off first.	
r ip addr!	Get network IP address	r ip addr!	IP:192.168.1.100	
s subnet xxx.xxx.xxx.xxx!	Set network subnet mask	s subnet 255.255.255.0!	Set subnet Mask address:255.255.255.0 (Please use "s net reboot!" command or repower device to apply new config!) DHCP on, Device can't config subnet mask, set DHCP off first.	
r subnet!	Get network subnet mask	r subnet!	Subnet Mask: 255.255.255.0	
s gateway xxx.xxx.xxx.xxx!	Set network gateway	s gateway 192.168.1.1!	Set gateway: 192.168.1.1 Please use "s net reboot!" command or repower device to apply new config! DHCP on, Device can't config gateway, set DHCP off first.	
r gateway!	Get network gateway	r gateway!	Gateway:192.168.1.1	
s tcp/ip port x!	Set network TCP/IP port (x=1~65535)	s tcp/ip port 8000!	Set TCP/IP port:8000	
r tcp/ip port!	Get network TCP/IP port	r tcp/ip port!	TCP/IP port:8000	
s telnet port x!	Set network telnet port (x=1~65535)	s telnet port 23!	Set Telnet port:23	
r telnet port!	Get network telnet port	r telnet port!	Telnet port:23	
s net reboot!	Reboot network modules	s net reboot!	Network reboot… IP Mode: Static IP: 192.168.1.72 Subnet Mask: 255.255.255.0 Gateway: 192.168.1.1 TCP/IP port=8000 Telnet port=10 Mac address: 00:1C:91:03:80:01	

12. Application Example

IR Blaster

PC

Matrix

TV

CAT6

Power Supply

Receiver

HDMI OUT

CAT IN   SERVICE   IR IN   DC 12V

PC

TV box

DVD or Blu-ray Player

x 8

IR Receiver

TV

HIGH-DEFINITION MULTIMEDIA INTERFACE

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13. Troubleshooting

Please make sure ALL HDMI and ethernet cable connections are made BEFORE powering the the transmitter unit. Similarly if you need to change connections switch off or disconnect the power to the transmitter and make your connection changes. Once changes are complete reconnect or switchback on the power to the Transmitter unit.

PLEASE NOTE: To ensure the optimum transmission of video/audio signals and power, connection cables always use genuine CAT6, CAT6a or CAT7 Ethernet cable to connect the Matrix to the receivers and Premium certified 4K HDMI cables to connect source and display equipment.

For further information or any queries please contact
Technical Support:
www.labgear.co.uk/support

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