

# 8x8 HDMI 18Gbps Matrix with Audio De-embedded



**User Manual**

**VER 1.0**

## 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, lightning 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.....                       | 2  |
| 2. Features.....                           | 2  |
| 3. Package Contents.....                   | 2  |
| 4. Specifications.....                     | 3  |
| 5. Operation Controls and Functions.....   | 4  |
| 5.1. Front Panel.....                      | 4  |
| 5.2. Rear Panel.....                       | 5  |
| 6. Detail description of display mode..... | 6  |
| 7. Remote Control.....                     | 8  |
| 8. Web GUI User Guider.....                | 9  |
| 9. Application Example.....                | 12 |

# 1. Introduction

The 8x8 HDMI Matrix supports the transmission of video (up to 4K2K@60Hz YUV 4:4:4, 18Gbps, HDCP 2.2) and multi-channel digital audio from 8 HDMI sources to 8 HDMI displays. Audio de-embedded is supported from 8 HDMI output ports. Control is via button, IR, RS-232, LAN and Web GUI.

## 2. Features

- ☆ HDMI 2.0b, HDCP 2.2 and HDCP 1.4 compliant
- ☆ Up to 4K2K@60Hz (YUV 4:4:4) on all HDMI ports
- ☆ Supports pass-through audio up to 7.1 channels of High Definition audio (LPCM, Dolby TrueHD, and DTS-HD Master Audio)
- ☆ Audio de-embedded is supported via coax port
- ☆ HDR, CEC and smart EDID management supported
- ☆ Control is via on-panel Button, IR, RS-232, LAN and Web UI
- ☆ 1U rack mounted design with aluminum front panel

## 3. Package Contents

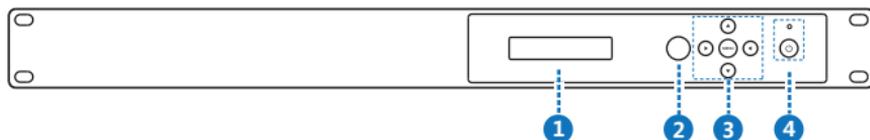
- ① 1x 8x8 HDMI Matrix
- ② 1x 12V/3A Locking Power Adaptor
- ③ 1x Remote Control
- ④ 1x Wideband IR Receiver cable
- ⑤ 1x RS-232 male to female serial cable
- ⑥ 1x User Manual

## 4. Specifications

| Technical             |                                                                                                                                    |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------|
| HDMI Compliance       | HDMI 2.0b                                                                                                                          |
| HDCP Compliance       | HDCP 2.2 and HDCP 1.4                                                                                                              |
| Video Bandwidth       | 18Gbps                                                                                                                             |
| Video Resolutions     | 4K2K@60Hz (YUV 4:4:4)                                                                                                              |
| Color Depth           | 8-bit, 12-bit                                                                                                                      |
| Color Space           | RGB, YUV4:4:4                                                                                                                      |
| HDMI Audio Formats    | LPCM, Dolby TrueHD, and DTS-HD Master Audio                                                                                        |
| ESD Protection        | Human-body Model :<br>±8kV (Air-gap discharge) , ±4kV (Contact discharge)                                                          |
| Connections           |                                                                                                                                    |
| Inputs                | 8x HDMI Type A [19-pin female]<br>1x LAN [RJ45, Control]<br>1x RS-232 [9-pin D-sub, Control]<br>1x IR EXT [3.5mm Stereo Mini-jack] |
| Outputs               | 8x HDMI Type A [19-pin female]<br>8x Audio Output [3.5mm Stereo Mini-jack]                                                         |
| Mechanical            |                                                                                                                                    |
| Housing               | Metal Enclosure                                                                                                                    |
| Color                 | Black                                                                                                                              |
| Dimensions            | 483mm (W)×253mm (D)×44.5mm (H)                                                                                                     |
| Weight                | 3.35kg                                                                                                                             |
| Power Supply          | Input: AC100~240V 50/60Hz, Output: DC12V/3A<br>(US/EU standards, CE/FCC/UL certified)                                              |
| Power Consumption     | 26.5W (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)                                                                                                         |

## 5. Operation Controls and Functions

### 5.1 Front Panel



| Number | Name                            | Function descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | OLED display                    | Display system status including input/output status, EDID management and matrix IP address.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2      | IR Window                       | IR receiver window, it receives IR remote control signal to control this device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3      | Left/Right/Up/Down/Menu Buttons | <p>After system power up, the OLED default displays the mapping of the input and output.</p> <p>A) On the initial OLED display, you can press the 'Left' or 'Right' button firstly to select the output port, then press the 'up' or 'down' button to select the input port, then press the 'Menu' button to confirm this operation.</p> <p>B) On the initial OLED display, you can press the 'Up' or 'Down' button to check each input EDID setting, pressing the 'Menu' button go back to the initial OLED display.</p> <p>C) On the initial OLED display, you can press 'Menu' button to operate the following functions by the combination of these five buttons, press 'Up' or 'Down' button to select function:</p> <ol style="list-style-type: none"><li>1. Select EDID: Press the 'Right' button, then press the 'Up' or 'Down' button to select EDID as showed in the below table. Once you complete EDID selection, press the 'Right' button then press the 'Left' or 'Right' button to select your chosen EDID to copy to which input port, press the 'Right' button to confirm this operation.</li><li>2. PTP Set: Press the 'Right' button to set PTP mode (point to point, means IN1-OUT A, IN2-OUT B, IN3-OUT C...).</li><li>3. Save Preset: Press the 'Right' button to save current configuration to preset, press 'Up' or 'Down' button to select storage location, press the</li></ol> |

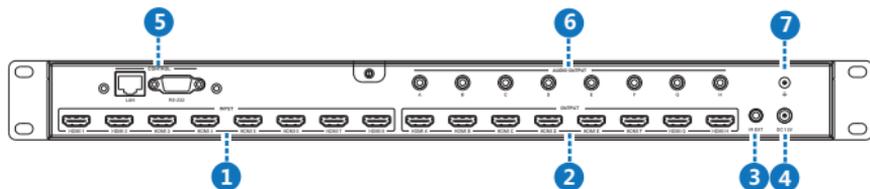
|   |                     |                                                                                                                                                                                                                                                                                                                           |
|---|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                     | <p>'Right' button to confirm this operation.</p> <p>4. Recall Preset: Press the 'Right' button to recall previous preset, press 'Up' or 'Down' button to select preset you want, press the 'Right' button to confirm this operation.</p> <p>5. View IP: Press the 'Right' button to check IP address and DHCP status.</p> |
| 4 | Power and Power LED | Long press this button to power on/off device. The LED will illuminate in green when power is on and show in red when this device is standby.                                                                                                                                                                             |

**The EDID table:**

| <b>EDID Mode</b> | <b>EDID Description</b> |
|------------------|-------------------------|
| 1                | 720P 2.0 CH             |
| 2                | 1080P 2.0 CH            |
| 3                | 1080P 5.1 CH            |
| 4                | 1080P 7.1CH             |
| 5                | 1080I 2.0 CH            |
| 6                | 1080I 5.1 CH            |
| 7                | 1080I 7.1CH             |
| 8                | 3D 2.0 CH               |
| 9                | 3D 5.1 CH               |
| 10               | 3D 7.1 CH               |
| 11               | 4K*2K@30 2.0 CH         |
| 12               | 4K*2K@30 5.1 CH         |
| 13               | 4K*2K@30 7.1 CH         |
| 14               | 4K60_420 2.0CH          |
| 15               | 4K60_420 5.1CH          |
| 16               | 4K60_420 7.1CH          |
| 17               | 4K*2K@60 2.0 CH         |
| 18               | 4K*2K@60 5.1 CH         |
| 19               | 4K*2K@60 7.1 CH         |
| 20               | Copy HDMI Out A         |
| 21               | Copy HDMI Out B         |
| 22               | Copy HDMI Out C         |
| 23               | Copy HDMI Out D         |
| 24               | Copy HDMI Out E         |

|    |                 |
|----|-----------------|
| 25 | Copy HDMI Out F |
| 26 | Copy HDMI Out G |
| 27 | Copy HDMI Out H |

## 5.2 Rear Panel



| Number | Name         | Function descriptions                                                                                                                                                                                |
|--------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | HDMI INPUT   | Connect to the HDMI input source devices such as a DVD player or Set-top Box.                                                                                                                        |
| 2      | HDMI OUTPUT  | Connect to the HDMI output source devices such as a TV player or monitor.                                                                                                                            |
| 3      | IR EXT       | If the front IR sensor of unit is obstructed or the unit is installed in a closed area out of infrared line of sight, the IR receiver cable can be inserted to this IR EXT port to extend IR signal. |
| 4      | DC 12V       | Plug the 12V/3A adapter to AC wall outlet for power supply.                                                                                                                                          |
| 5      | CONTROL      | LAN: connects to an active Ethernet link by an RJ-45 cable.<br>RS-232: Connect to a PC or control system by D-Sub 9-pin cable to control the matrix with RS-232 commands.                            |
| 6      | AUDIO OUTPUT | Connect to audio amplifiers or speakers.                                                                                                                                                             |
| 7      | GND          | Connect the GND port to the ground.                                                                                                                                                                  |

## 7. Remote Control



⏻ : Power on or set it to standby status.

**Input 1/2/3/4/5/6/7/8:** Press these button to select input signal source.

◀▶ : Press these button to select the last or the next input signal source.

**Output 1/2/3/4/5/6/7/8:** Press these button to select output signal source.

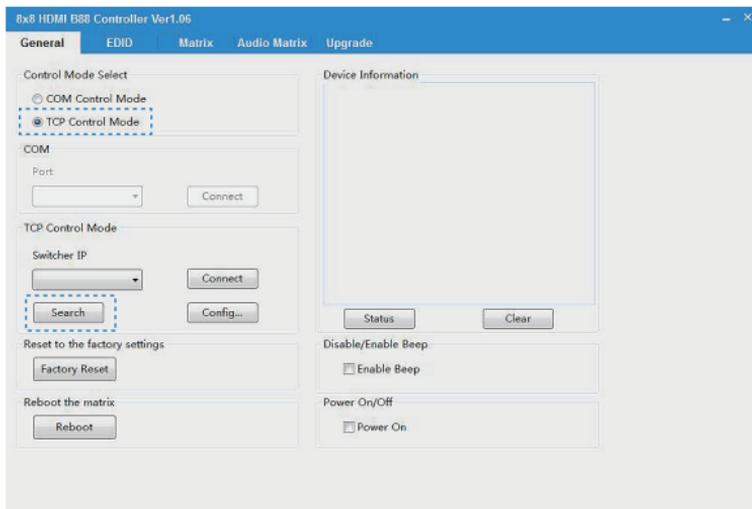
All: Press this button to select all output signal source simultaneously.

**Operating instructions:** User need select output button firstly and then select input button to select output display corresponding input signal source.

## 8. Web GUI User Guide

The Matrix can be controlled via Web GUI through LAN port. You must know current Matrix IP address. The static IP address is 192.168.1.100. You can connect PC Web GUI through dynamic IP address. Generally speaking, you can get IP address from two ways. The first way gets the IP address via PC Controller . The second way gets IP address via on-panel button. Then you should set the IP address to your PC or laptop or mobile device is within the same IP address segment with the Matrix. After above, you can enter the Matrix IP address in the web browser to access Web GUI.

**The first way:** The Matrix gets IP address via PC Controller. Firstly, opening Matrix PC Controller software, as following picture.



Selecting the “TCP Control Mode” port, then click the “Search” button. At this moment, you can get current IP address. You can set the IP address to your PC/laptop/mobile Internet Explorer and click “Search” to enter Web GUI page.

**The second way:** The Matrix gets IP address via on-panel button. On the initial OLED display, you can press “Menu” button enter to function page. Then press “Up” or “Down” button to select function. When select the “View IP” function, then press the “Right” button to check current IP address and DHCP status. At this moment, you can get current IP address. You can set the IP address to your PC/laptop/mobile Internet Explorer and click “Search” to enter Web GUI page. Press the “Left” button will back to function page.

## The Web GUI likes below:

### General page

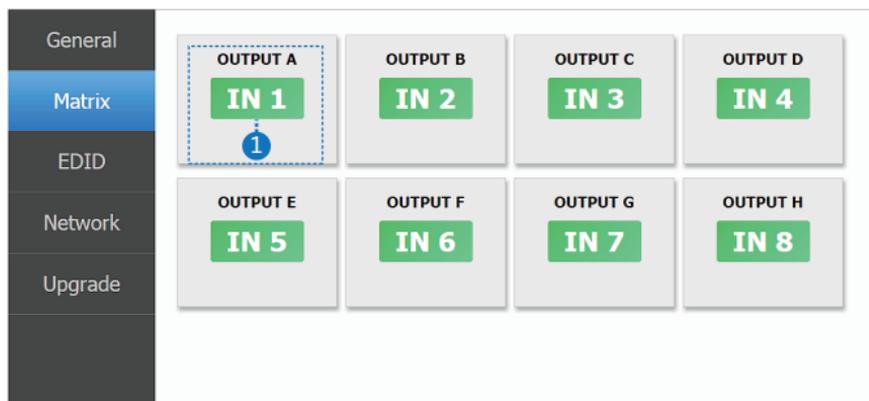
The screenshot displays the 'General' page of a web GUI. On the left is a navigation menu with 'General' selected. The main content area is titled 'Connection Status' and includes a 'Status' button (1). Below this is a table showing input and output port statuses (2). At the bottom are controls for Power (3), Beep (4), Reboot (5), and Factory Reset (6).

|        |  | 1   | 2  | 3   | 4  | 5   | 6  | 7   | 8  |
|--------|--|-----|----|-----|----|-----|----|-----|----|
| Input  |  | yes | no | yes | no | yes | no | yes | no |
|        |  | A   | B  | C   | D  | E   | F  | G   | H  |
| Output |  | yes | no | yes | no | yes | no | yes | no |

Power  Beep  Reboot Factory Reset

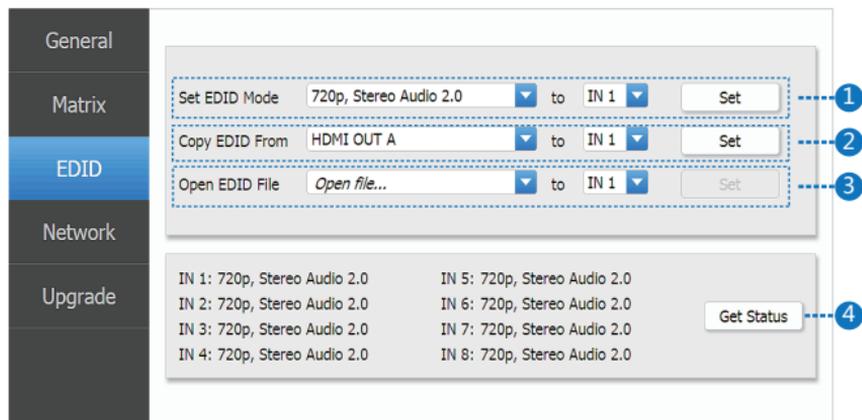
- ① Click this button to check current the Matrix connection status.
- ② Display currently the Matrix input and output port status. The “yes” have connected input or output source and “no” represent not connection.
- ③ Power switch. The Matrix will work when open this switch. Otherwise, the Matrix will standby.
- ④ Beep switch. Open this switch, press the Matrix on-panel button will have voice. Close this switch, it will mute.
- ⑤ Click this button will reboot device.
- ⑥ Click this button will set it to factory reset.

## Matrix page



① Select to the OUTPUT A input source. (Tab ① to other output port have similar function.)

## EDID page



- ① Select EDID mode to input source, then click “Set” button.
- ② Copy EDID from output display to input source, then click “Set” button.
- ③ Open EDID file to input source.
- ④ Display the input source EDID mode status.

## Network page

General

Matrix

EDID

**Network**

Upgrade

**Network Configuration** 1

DHCP  Net Status

IP 192 . 168 . 8 . 165

Subnet 255 . 255 . 255 . 0

Gate 192 . 168 . 8 . 1

Mac 7a . 20 . 0e . ca . 28 . 18

Save Changes

**Status Log** 2

-> DHCP OFF  
-> IP: 192.168.8.165  
-> Subnet: 255.255.255.0  
-> GateWay: 192.168.8.1  
-> Mac: 7a:20:0e:ca:28:18

Clear 3

### ① Network Configuration

DHCP switch, Net Status button: Obtain the network configuration information, including IP address, Subnet, Gate and Mac address, then click “Save Changes” button.

② Status Log: Display the Net configuration information.

③ Clear button: Click this button to clear the Status Log information.

## Upgrade page

General

Matrix

EDID

Network

**Upgrade**

**Upgrade** 1

Open Upgrade File Open file... Upgrade

① Open upgrade file, then click the “Upgrade” button.

# 9. Application Example

