



# User Manual

v1.0.0

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## Overview

This product is a pre-configured 16 x 16 HDMI Seamless Matrix with HDMI 4K@60Hz (4:4:4) and HDCP 2.2 compatibility, allows 16 sources to be shown or switched to any of the 16 outputs simultaneously. Each video output has a 4K60 scaler built-in, and supports seamless switching with no black screen transition. Within the matrix, it supports two different cards to flexibly meet the requirements of any field application. It supports both HDMI output card for local displays and HDBT output card for remote displays. The matrix also supports 16x16 independent audio switching. It includes 16x de-embedded audio from 16x HDMI inputs. Each audio output port could be configured to independent switching or follow associated card video output.

The matrix can be controlled by front panel buttons, IR, RS232, and LAN (Telnet API and Web GUI). As a 4U stand-alone 16x16 HDMI matrix, the matrix offers the convenience of future-ready Ultra HD A/V switching and distribution solution, and the reliability of cutting-edge HDMI 2.0 and HDCP 2.2 compatibility.

The matrix is designed for commercial integrations such as mid-to-large meeting room spaces, university teaching spacing etc.

## Features

- Seamless switching up to 4K@60 across all video inputs and outputs.
- HDCP 2.2 and backwards compliant
- HDMI inputs and outputs support video up to 4K@60Hz (chroma sub-sampling 4:4:4 8bit only)
- Each output has a 4K60 scaler built-in with both auto and manual scaling.
- HDBT OUT supports transmitting 4K@60 4:2:0 8bit signal up to 70m/230ft, or 1080P signal up to 100m/330ft via Cat 5e/6 cable. Alternatively, it supports to transmit 4K@60 4:2:0 8bit signal and 1080P signal up to 100m/330ft via Cat 6a/7 cable.
- HDBT cards supports PoE (PSE) function, the matrix can supply power for the connected receiver.
- Supports 16 x 16 independent audio switching, each audio output can be configured in independent switching or follow video output.
- Support IR, RS232, Ethernet and LAN control with Telnet API and Web GUI.
- Supports CEC control sink for both HDBT outputs and HDMI outputs
- EDID management: Front panel buttons, API commands and Web GUI
- Supports source/zone user restriction.
- Supports RS232 routing, control any 3rd party device connected with the remote receiver through LAN port or RS232 port on the matrix.

## Package Contents

- 1x Matrix Switcher
- 1x AC Power Cord (US/UK/EU/AU)
- 1x IR Remote
- 1x IR Extension Cable
- 16x Phoenix Male Connector (3.5mm, 5 Pins)
- 1x USB-A to DB9 Cable
- 2x Mounting Brackets (with Screws)

## Specifications

### Technical

|                                   |   |
|-----------------------------------|---|
| Input/Output Ports                | <b>By Default:</b><br>16x HDMI IN, 8x HDMI OUT, 8x HDBT OUT, 16x AUDIO OUT (3.5mm, 5-Pin)<br><b>Main Board:</b><br>1x RS232, 1x LAN, 1x IR EXT., 1x AC 240V 50/60Hz IN, 1x RESET  |
| Input/Output Video Type           | HDMI 2.0 up to 4K@60Hz 4:4:4 8bit and HDCP 2.2  |
| Input/Output Resolution Supported | 800x600P <sup>8</sup> , 1024x768P <sup>8</sup> , 1280x768P <sup>8</sup> , 1280x800P <sup>8</sup> , 1280x960P <sup>8</sup> , 1280x1024P <sup>8</sup> , 1360x768P <sup>8</sup> , 1266x768P <sup>8</sup> , 1440x900P <sup>8</sup> , 1600x900P <sup>8</sup> , 1600x1200P <sup>8</sup> , 1680x1050P <sup>8</sup> , 1280x720P <sup>6,8</sup> , 1920x1080P <sup>6,8</sup> , 1920x1200P <sup>8</sup> , 3840x2160P <sup>2,3,5,6,8</sup> , 4096x2160P <sup>2,3,5,8</sup><br><br>1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = at 60 Hz, 9 = at 120 Hz<br><br><b>Note:</b> HDBT outputs port supports resolution up to 4K@60Hz 4:2:0 8bit, and HDMI output ports support resolution up to 4K@60Hz 4:4:4 8bit. |
| Audio Format                      | <b>HDMI IN/OUT:</b> Fully supports audio formats in HDMI 2.0 specification, including PCM, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio, DTS:X<br><b>AUDIO OUT:</b> PCM 2.0   |
| Maximum Data Rate                 | 18Gbps  |
| Control Method                    | Front Panel Buttons, IR Remote, RS232, LAN (Telnet & Web UI)  |

### General

|                          |  |
|--------------------------|--|
| Operating Temperature/RH | 0°C ~ 45°C (32°F ~ 113°F)  |
| Storage Temperature/RH   | -20°C ~ 70°C (-4°F ~ 158°F)  |
| Humidity                 | 10% ~ 90%, non-condensing  |
| ESD Protection           | Human-body model:<br>±8kV (air-gap discharge)/<br>±4kV (contact discharge) |
| Power Supply             | AC 240V 50/60Hz  |
| Power Consumption (max)  | 252.23W  |
| Dimensions (W x H x D)   | 440mm x 176mm x 382.7mm / 17.32" x 6.93" x 15.07"                          |
| Weight                   | Approx. 13.5KG (may vary, depend on slot cards being used)                 |
| Rack Space Required      | 4U   |

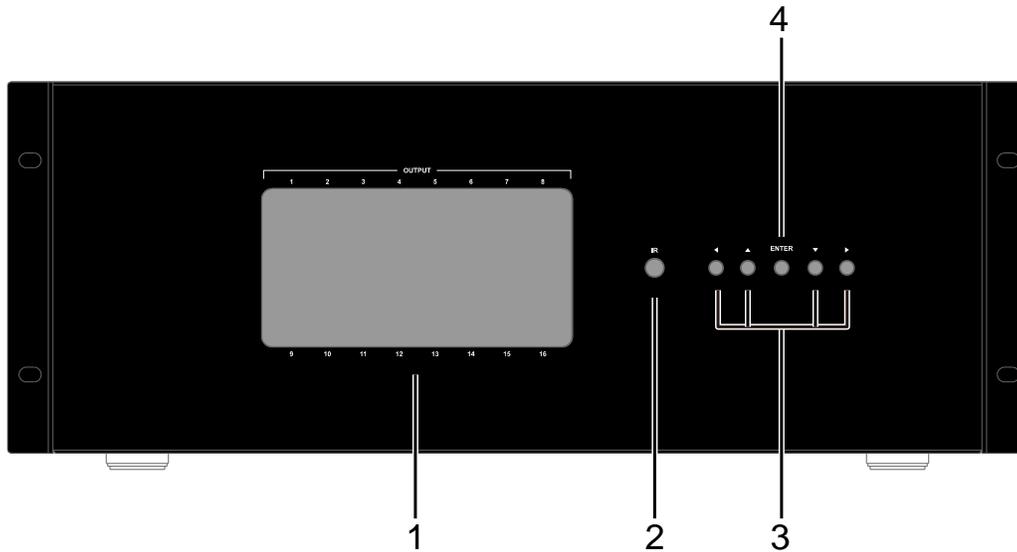
## Transmission Distance

**Note:** Straight-through category cable wired to T568B standard is recommended.

| Cable Type      | Range                               | Supported Video                            |
|-----------------|-------------------------------------|--|
| <b>Cat 5e/6</b> | 100m/330ft                          | 1080P@60Hz 36bpp                           |
|                 | 70m/230ft                           | 1080P@60Hz 48bpp<br>4K@30Hz 4:4:4 24bpp    |
| <b>Cat 6a/7</b> | 100m/330ft                          | 4K@60Hz 4:2:0 24bpp                        |
| <b>HDMI</b>     | Input: 15m/49ft<br>Output: 10m/16ft | 1080P@60Hz                                 |
|                 | Input/Output: 10m/33ft              | 4K@30Hz 4:4:4 24bpp<br>4K@60Hz 4:2:0 24bpp |
|                 | Input/Output: 5m/16ft               | 4K@60Hz 4:2:0 24bpp                        |

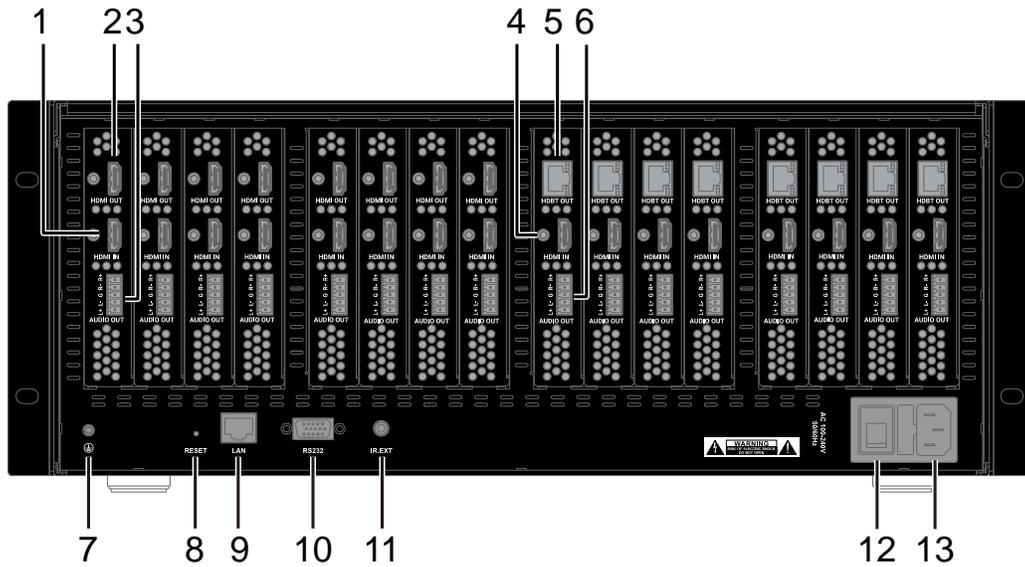
# Panel Description

## Front Panel



|   |                                 |  |
|---|---------------------------------|--|
| 1 | <b>Output Channel Indicator</b> | Displays the selected input source of each output channel.   |
| 2 | <b>IR Receiver Window</b>       | Accepts the remote control signal of this matrix only.   |
| 3 | <b>Navigation Button</b>        | Selects an output using the <b>left/right</b> selection button.<br>Selects an input using the <b>up/down</b> selection button.                         |
| 4 | <b>ENTER</b>                    | Press <b>Enter</b> button to confirm the output/input selection.<br><b>Note:</b> If the Enter button is not pressed the selection will not be changed. |

## Rear Panel



|    |                            |  |
|----|----------------------------|--|
| 1  | <b>HDMI IN</b>             | HDMI IN ports of TX-SCL-HDMI signal cards, connect to HDMI sources.  |
| 2  | <b>HDMI OUT</b>            | Connect to HDMI displays.  |
| 3  | <b>AUDIO OUT</b>           | AUDIO OUT ports of TX-SCL-HDMI signal cards, 5-pin phoenix connectors. Connect to audio receiver devices.  |
| 4  | <b>HDMI OUT</b>            | HDMI IN ports of TX-SCL-HDBT signal cards, connect to HDMI sources.  |
| 5  | <b>HDBT OUT</b>            | HDBT OUT ports of TX-SCL-HDBT signal cards, connect to HDBT IN ports of HDBT receivers (such as RX-70-4K). |
| 6  | <b>AUDIO OUT</b>           | AUDIO OUT ports of 006 signal cards, 5-pin phoenix connectors. Connect to audio receiver devices.          |
| 7  | <b>GND</b>                 | Ground.  |
| 8  | <b>RESET</b>               | Press the hole using a needle for about 10s to reset the matrix to factory defaults.                       |
| 9  | <b>LAN Port</b>            | Connects to an active IP network for control of matrix via LAN (Web UI & Telnet).                          |
| 10 | <b>RS232 Port</b>          | Connect to a RS232 device or a control system.   |
| 11 | <b>IR Ext. Port</b>        | Connect to the provided IR extension cable for IR signal reception to locally control the matrix.          |
| 12 | <b>Power Switch</b>        | Press to power on/off the matrix.  |
| 13 | <b>AC 100~240V 50/60Hz</b> | Connect to the provided power adapter.   |

## Installation

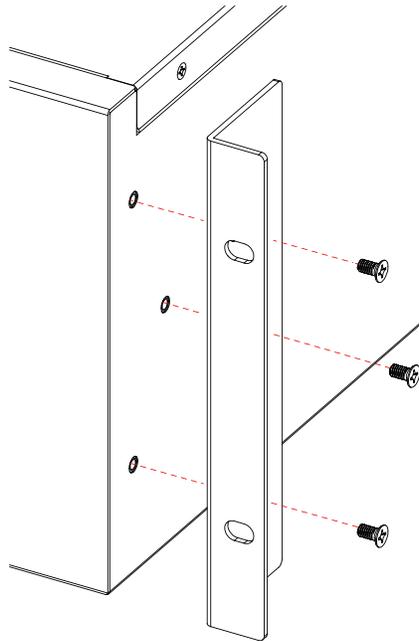
**Note:** Before installation, please ensure the device is disconnected from the power source.

The Matrix occupies 4U space and can be placed on a solid and stable surface or installed on a standard equipment rack.

Position and secure the rack mounting brackets to the panels on two sides with screws (four on each side) provided.

### Steps to install the device on a suitable location:

1. Attach the installation bracket to the enclosure using the screws provided in the package separately.
2. The bracket is attached to the enclosure as shown.



3. Repeat steps 1-2 for the other side of the unit.
4. Attach the brackets to the surface you want to hold the unit against using the screws (provided by others).

## Wiring Diagram

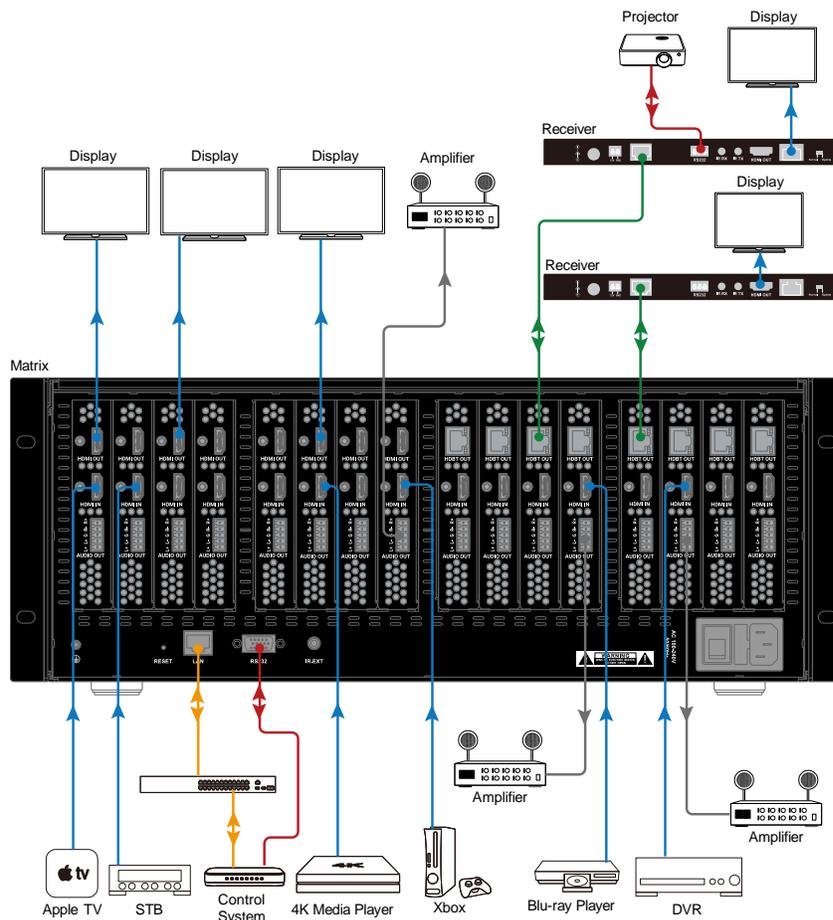
### Warnings:

- Before wiring, disconnect the power from all devices.
- During wiring, connect and disconnect the cables gently.

### Steps for device wiring:

By default, the matrix equips eight 005 cards and eight 006 cards. Each modular card is only factory installed. If maintenance is needed in projects, users need to open the chassis and take out the card, for replacement or upgrading.

1. Connect HDMI source devices (such as Apple TV, STB, Xbox, Media Player, Blu-ray Player, DVR) to HDMI IN ports of matrix with HDMI cables.
2. Firmly connect display devices to HDMI OUT ports of the matrix, ensuring both source and display devices are compatible and correctly configured to accept the signal.
3. Connect a good quality, well-terminated Cat 5e/6/7 cable with an RJ45 connector wired to T568B standard at both ends from the HDBT OUT ports of matrix to the HDBT IN ports of the HDBT receivers.
4. Connect HDMI OUT ports of the HDBT receivers (such as RX-70-4K) to the HDMI IN of the display devices.
5. Connect the AUDIO OUT ports of the matrix to audio receiver devices such as amplifiers.
6. Connect additional control options:
  - IR Remote Control: Point the provided IR remote at the IR window on front panel of the matrix directly or connect the provided IR extension cable to the IR EXT. port on the rear panel of the matrix, and point the provided IR remote at the IR receiver head of the extension cable.
  - RS232 Control: Connect the RS232 port of the matrix to an RS232 control device for API commands control.
  - LAN Control: Connect the LAN port of the matrix to the ethernet or to a PC for LAN Control.
7. Connect the matrix to the power source with the provided AC cable.
8. Power on all the devices.



## Control Operations

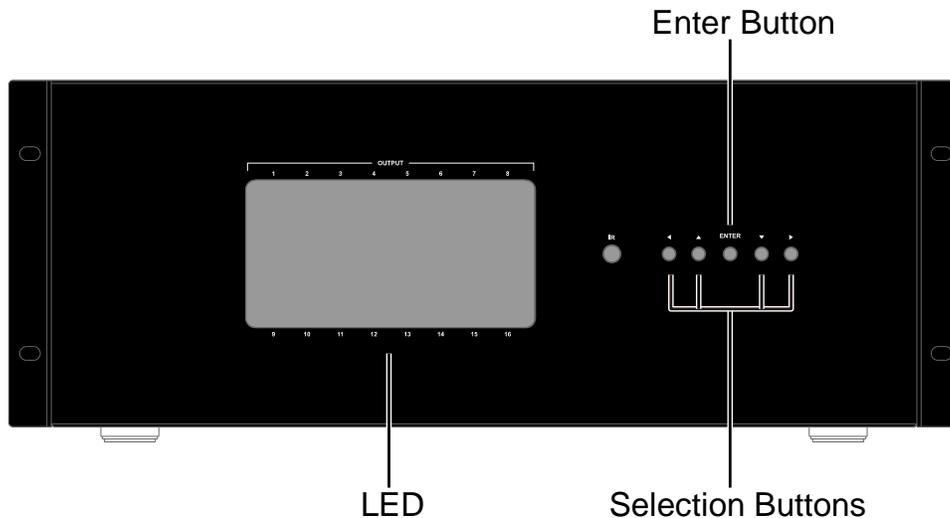
Users can control the device through front panel buttons, IR remote, RS232 (API Commands) and LAN (Web UI & Telnet).

### Front Panel Control

Basic switching of source inputs to output displays can be achieved via the front panel control of the matrix.

Power on the matrix, the front panel will flash as the matrix initials. When the display stops flashing, the matrix is ready to use.

1. Press the left arrow or right arrow button to select an output. When the selection is complete, the corresponding LED indicator blinks.
2. Press the up arrow or down arrow button to select an input.
3. Press the enter button to confirm the selection. After the selection takes effect, the LED stops blinking.

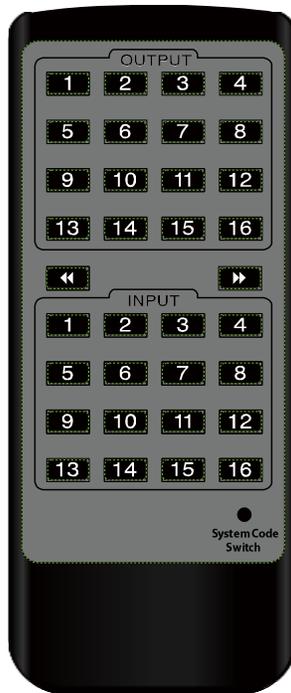


### IR Remote Control

**Note:** Ensure that the matrix remote is pointed directly at the IR receiver window or the IR extension cable head.

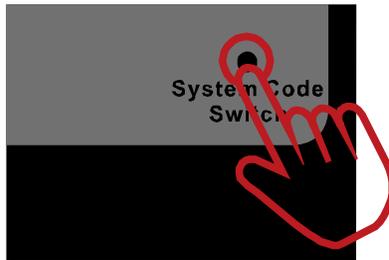
The provided IR remote can be used for controlling the matrix. Point the provided IR remote at the IR window on front panel of the matrix directly or connect the provided IR extension cable to the IR EXT. port on the rear panel of the matrix, and point the provided IR remote at the IR receiver head of the extension cable.

1. Press the output number users want to change on the OUTPUT zone of the remote.
2. Then press the corresponding input number users want to switch.
3. Press the previous button or next button to cycle through inputs from the input current selected.



### System Code Switch

The IR Remote provided with the Matrix is shipped in "00" IR system code. In the event that Remote's IR signal interferes with IR devices, e.g., TV, DVD player, the Remote can be switched to "4E" code by short pressing the System Code Switch on the Remote panel. At the same time, you may redefine the IR system code of the Matrix using the API command or Web UI.



## Command Control

Advanced users may need to control the device via API commands. Two methods are provided for controlling this device through API commands:

### 1. RS232

Connect a control PC to the RS232 port of the device. Before sending API commands to control the device, ensure the serial ports between this device and PC are configured correctly. A professional RS232 serial interface software (e.g., Serial Assist) may be needed as well.

| Parameters   | Value     |
|--------------|-----------|
| Baud Rate    | 57600 bps |
| Data Bits    | 8 bits    |
| Parity       | None      |
| Stop Bits    | 1 bit     |
| Flow Control | None      |

### 2. Telnet

Connect a control PC to the LAN port of the device. Before you intend to control the device through telnet API, you shall establish connection between this device and your computer.

The form of the command for telnet connection is: *telnet ip (port)*

- ip: The device's IP address.
- port: The device's port number, this is not required for some telnet client tools. The default port number is 23.

For example, if the device's IP address is 192.168.11.143, the command for telnet connection shall be the following:  
*telnet 192.168.11.143*

### 3. TCP & RS232 Routing

Both LAN port and RS232 port of the matrix support RS232 routing, which enable users to control the third-party devices connected with the RS232 ports of the receivers (connected with HDBT cards installed on the matrix).

Connect the PC to the same network with the matrix, or connect the PC to the LAN port (in this situation, please set the PC to the same network segment as the matrix)/RS232 port of the matrix. Select the controlled channel and set the corresponding parameters of the connected third-party devices, including baud rate, data bits, parity bits and terminator and send commands to control it through web UI, telnet or other PC configuration tools (such as serial port assistant). Detail information, please refer to "Advanced Settings" part in "Web UI Control" section or send API Command through telnet:

```
"{"SerialRouteChnList":[{"chn":1,"name":"","SerialPortInfo":{"BaudRate":57600,"DataBits":8,"ParityBits":0,"StopBits":1}},{"chn":2,"name":"","SerialPortInfo":{"BaudRate":57600,"DataBits":8,"ParityBits":0,"StopBits":1}}]"
```

(For detailed information, please refer to the separate document "API Command Set\_MX-1616-SCL").

**Note:** Please contact the manufacturer or supplier of the controlled third-party devices to get their own parameters and control commands.

Please obtain port number from the following table if needed:

| Port No. | RS232 Port  |
|----------|---|
| 5001     | RS232 port of the receiver connected with card 1  |
| 5002     | RS232 port of the receiver connected with card 2  |
| 5003     | RS232 port of the receiver connected with card 3  |
| 5004     | RS232 port of the receiver connected with card 4  |
| 5005     | RS232 port of the receiver connected with card 5  |
| 5006     | RS232 port of the receiver connected with card 6  |
| 5007     | RS232 port of the receiver connected with card 7  |
| 5008     | RS232 port of the receiver connected with card 8  |
| 5009     | RS232 port of the receiver connected with card 9  |
| 50010    | RS232 port of the receiver connected with card 10 |
| 50011    | RS232 port of the receiver connected with card 11 |
| 50012    | RS232 port of the receiver connected with card 12 |
| 50013    | RS232 port of the receiver connected with card 13 |
| 50014    | RS232 port of the receiver connected with card 14 |
| 50015    | RS232 port of the receiver connected with card 15 |
| 50016    | RS232 port of the receiver connected with card 16 |

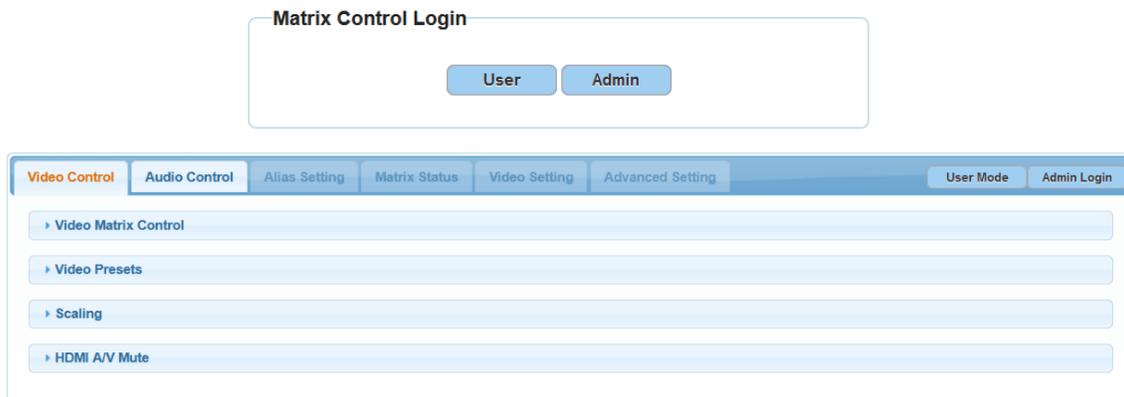
## Web UI Control

With a built-in Web UI, the device also supports web UI control through its own web UI. The Web UI can be accessed through a browser with latest version, e.g., Chrome, Firefox, Safari, Opera, IE, etc.

The default network mode of the device is DHCP, if not has DHCP server, the matrix supports for local 169.254 IP address.

### Get Access to the Web UI

1. Connect the LAN port of the device to the local area network, and connect your PC to the same network (ensure the local area network is connected with a DHCP server). Or connect the LAN port of the matrix to the PC directly, and set the PC to the same network segment as the matrix.
2. Use the tool (such as SmartSetGUI) to get IP address.
3. Input the IP address obtained in step 2 in your browser and press Enter. The following window will display.



- To implement basic video and audio control of the matrix, click "User" to login as User. When login as User, no password is required.

- If advanced setting is required, click “Admin” and enter “admin” (default password) to login as Admin.

**Matrix Control Login**

Admin Password:

**Change Password**

Please change your password to continue

Old Password

New Password

Confirm New Password

**Note:** Password length is 8-24 characters and must contain at least one lowercase case, one uppercase letter, one number and one special character.

- Input a new password in the dialog box and click “Save” to back to the login page and enter the new password to login the main page. The password shall be alphanumeric with 4 to 16 characters in length.

- In User mode, users can also click “Admin Login” on the upper right corner, then input the default password “admin” to enter the main page. When users first login web UI pages, the password is also needed to be changed firstly.

**Admin Login**

Password:

# Web UI Introduction

## Video Control

### 1. Video Matrix Control

Video Matrix Control

Video Details

| Outputs     | Inputs    | Input_1 | Input_2 | Input_3 | Input_4 | Input_5 | Input_6 | Input_7 | Input_8 | Input_9 | Input_10 | Input_11 | Input_12 | Input_13 | Input_14 | Input_15 | Input_16 |
|-------------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|----------|
| 1           | Output_1  | Working |         |         |         |         |         |         |         |         |          |          |          |          |          |          |          |
| 2           | Output_2  |         | Working |         |         |         |         |         |         |         |          |          |          |          |          |          |          |
| 3           | Output_3  |         |         | Working |         |         |         |         |         |         |          |          |          |          |          |          |          |
| 4           | Output_4  |         |         |         | Working |         |         |         |         |         |          |          |          |          |          |          |          |
| 5           | Output_5  |         |         |         |         | Working |         |         |         |         |          |          |          |          |          |          |          |
| 6           | Output_6  |         |         |         |         |         | Working |         |         |         |          |          |          |          |          |          |          |
| 7           | Output_7  |         |         |         |         |         |         | Working |         |         |          |          |          |          |          |          |          |
| 8           | Output_8  |         |         |         |         |         |         |         | Working |         |          |          |          |          |          |          |          |
| 9           | Output_9  |         |         |         |         |         |         |         |         | Working |          |          |          |          |          |          |          |
| 10          | Output_10 |         |         |         |         |         |         |         |         |         | Working  |          |          |          |          |          |          |
| 11          | Output_11 |         |         |         |         |         |         |         |         |         |          | Working  |          |          |          |          |          |
| 12          | Output_12 |         |         |         |         |         |         |         |         |         |          |          | Working  |          |          |          |          |
| 13          | Output_13 |         |         |         |         |         |         |         |         |         |          |          |          | Working  |          |          |          |
| 14          | Output_14 |         |         |         |         |         |         |         |         |         |          |          |          |          | Working  |          |          |
| 15          | Output_15 |         |         |         |         |         |         |         |         |         |          |          |          |          |          | Working  |          |
| 16          | Output_16 |         |         |         |         |         |         |         |         |         |          |          |          |          |          |          | Working  |
| All Outputs |           |         |         |         |         |         |         |         |         |         |          |          |          |          |          |          |          |

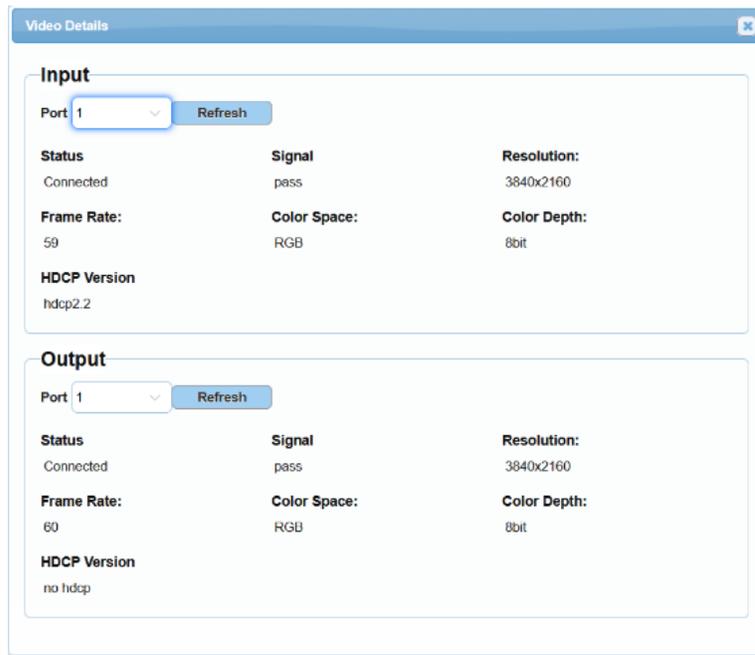
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Working Error Restriction

This section manages distribution of video input sources to output displays.

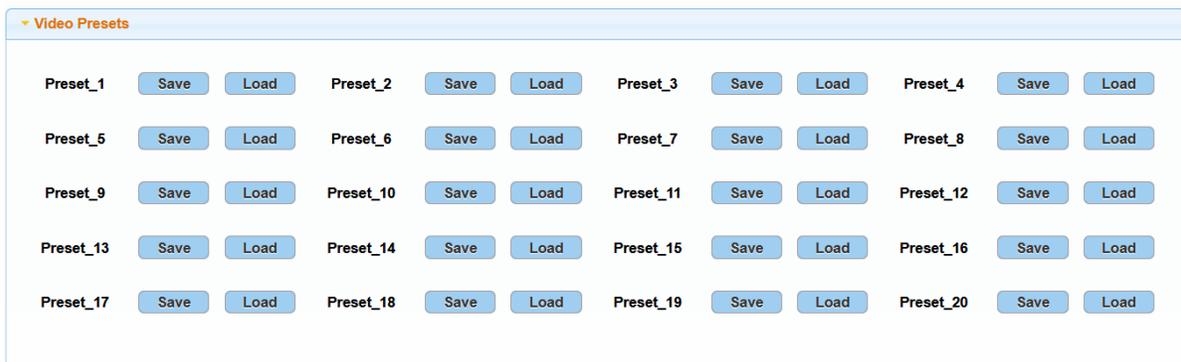
Click the button in the table to select the input for the output display (button turns from white to green once selection is done).

- All Outputs: Click to route INPUT (n) for all OUTPUTs.  
Default setting: Input 1 is routed to Output 1, ..., Input (n) is routed to Output (n), n = 1, 2, 3, 4...15, 16.
- Video Detail: Click to view detailed information of input and output ports including status, resolution, framerate, etc., see following:



- Input/Output: Select one port to check its video information.
- Refresh: Click to refresh the video information of the selected port.

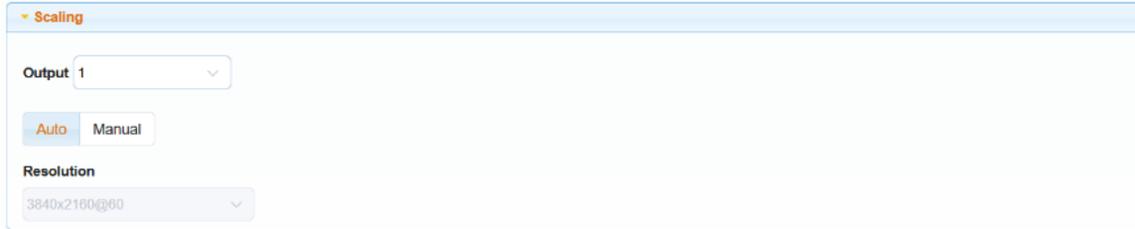
## 2. Video Preset



This section saves/loads the video input/output switch settings to or from the Matrix.

- Save: Settings in Video Matrix Control section are saved.
- Load: Preset already saved is loaded.

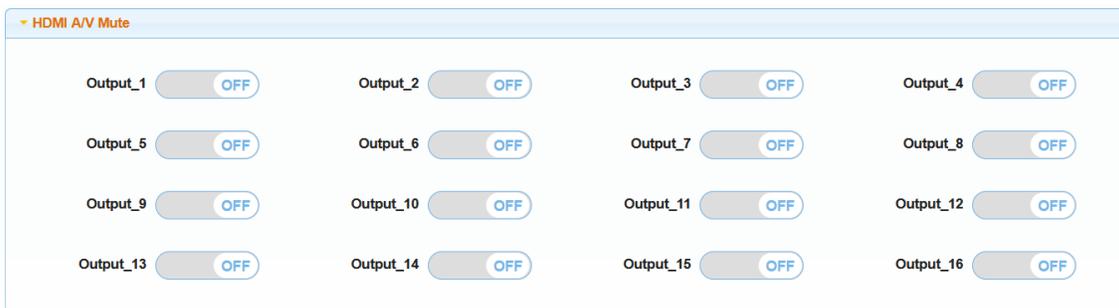
### 3. Scaling



This section manages scaler configurations for Output 1-16. Two operation options are provided for each output scaler.

- **Auto:** Select to automatically adapt to display EDID and resolution. E.g., If the display supports up to 4K@30Hz, the device will output signal with 4K@30Hz.
- **Manual:** Select a desired output resolution from the Resolution dropdown menu for the selected output port. Default setting: Auto.

### 4. HDMI A/V Mute



This section allows users to set output port to close.

- **ON:** The output port is enabled.
- **OFF:** The audio and video of the output port is muted. Default Setting: OFF.

## Audio Control

### 1. Audio Matrix Control

▼ Audio Matrix Control Audio Details

| Outputs/Inputs | In 1                | In 2                | In 3                | In 4                | In 5                | In 6                | In 7                | In 8                | In 9                | In 10                | In 11                |
|----------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|
|                | DE-EMBED<br>embed_1 | DE-EMBED<br>embed_2 | DE-EMBED<br>embed_3 | DE-EMBED<br>embed_4 | DE-EMBED<br>embed_5 | DE-EMBED<br>embed_6 | DE-EMBED<br>embed_7 | DE-EMBED<br>embed_8 | DE-EMBED<br>embed_9 | DE-EMBED<br>embed_10 | DE-EMBED<br>embed_11 |
| 1 Output_1     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 2 Output_2     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 3 Output_3     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 4 Output_4     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 5 Output_5     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 6 Output_6     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 7 Output_7     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 8 Output_8     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 9 Output_9     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 10 Output_10   |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 11 Output_11   |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 12 Output_12   |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 13 Output_13   |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 14 Output_14   |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 15 Output_15   |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| 16 Output_16   |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| All Outputs    |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |

■ Working    ■ Error

Independent switch mode: ON

**Note:** When switched off, audio zone outputs will follow video zone switching (source audio de-embed only).

This section manages distribution of audio input sources to audio outputs.

Click the button in the table to select the input for the audio output (button turns from white to green once selection is done).

- All Outputs:** Click to route INPUT (n) for all OUTPUTs.  
 Default setting: Input 1 is routed to Output 1, ..., Input (n) is routed to Output (n), n = 1, 2, 3, 4...15, 16.  
 Click the switch button to select the input audio for the audio receiver devices.  
 Independent switch mode: Click to set independent switch mode to on/off.

When it is set to on, users can select any audio input for each audio output manually by clicking this button. Any selection will be independent from the video switch setting. When it set to off, users cannot select audio input for audio output manually, since the route from audio input to output is subject to the video Matrix's route by default. The default setting is "ON".

- Audio Detail:** Click to view detailed information of input and audio output ports including Format and Sampling Rate, see following:



- Input/Output: Select one port to check its audio information.
- Refresh: Click to refresh the audio information of the selected port.

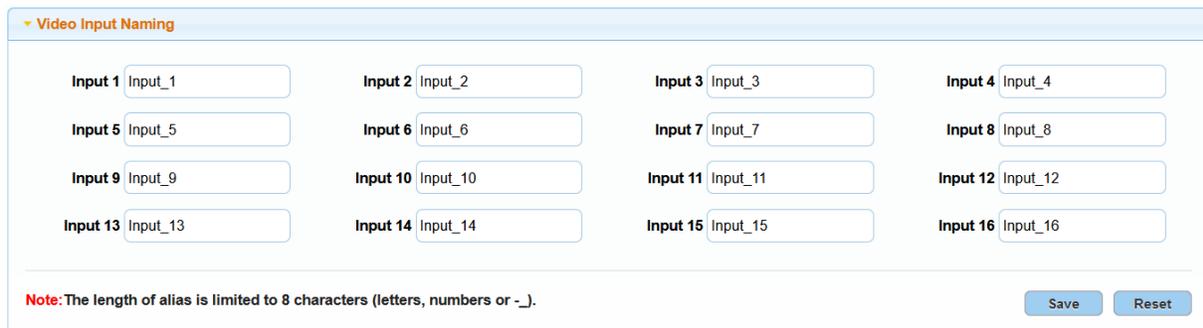
## 2. Audio Presets



This section saves/loads the audio input/output switch settings to or from the Matrix.

- **Save:** Settings in Audio Matrix Control section are saved.
- **Load:** Preset already saved is loaded.

## Alias Setting



▼ Video Zone Naming

|           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Output 1  | Output_1  | Output 2  | Output_2  | Output 3  | Output_3  | Output 4  | Output_4  |
| Output 5  | Output_5  | Output 6  | Output_6  | Output 7  | Output_7  | Output 8  | Output_8  |
| Output 9  | Output_9  | Output 10 | Output_10 | Output 11 | Output_11 | Output 12 | Output_12 |
| Output 13 | Output_13 | Output 14 | Output_14 | Output 15 | Output_15 | Output 16 | Output_16 |

Note: The length of alias is limited to 8 characters (letters, numbers or -\_).

Save

Reset

▼ Video Preset Naming

|           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Preset 1  | Preset_1  | Preset 2  | Preset_2  | Preset 3  | Preset_3  | Preset 4  | Preset_4  |
| Preset 5  | Preset_5  | Preset 6  | Preset_6  | Preset 7  | Preset_7  | Preset 8  | Preset_8  |
| Preset 9  | Preset_9  | Preset 10 | Preset_10 | Preset 11 | Preset_11 | Preset 12 | Preset_12 |
| Preset 13 | Preset_13 | Preset 14 | Preset_14 | Preset 15 | Preset_15 | Preset 16 | Preset_16 |
| Preset 17 | Preset_17 | Preset 18 | Preset_18 | Preset 19 | Preset_19 | Preset 20 | Preset_20 |

Note: The length of alias is limited to 10 characters (letters, numbers or -\_).

Save

Reset

▼ Audio Input Naming

DE-EMBED

|    |          |    |          |    |          |    |          |
|----|----------|----|----------|----|----------|----|----------|
| 1  | embed_1  | 2  | embed_2  | 3  | embed_3  | 4  | embed_4  |
| 5  | embed_5  | 6  | embed_6  | 7  | embed_7  | 8  | embed_8  |
| 9  | embed_9  | 10 | embed_10 | 11 | embed_11 | 12 | embed_12 |
| 13 | embed_13 | 14 | embed_14 | 15 | embed_15 | 16 | embed_16 |

Note: The length of alias is limited to 8 characters (letters, numbers or -\_).

Save

Reset

▼ Audio Zone Naming

|           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Output 1  | Output_1  | Output 2  | Output_2  | Output 3  | Output_3  | Output 4  | Output_4  |
| Output 5  | Output_5  | Output 6  | Output_6  | Output 7  | Output_7  | Output 8  | Output_8  |
| Output 9  | Output_9  | Output 10 | Output_10 | Output 11 | Output_11 | Output 12 | Output_12 |
| Output 13 | Output_13 | Output 14 | Output_14 | Output 15 | Output_15 | Output 16 | Output_16 |

Note: The length of alias is limited to 8 characters (letters, numbers or -\_).

Save

Reset

▼ Audio Preset Naming

|           |  |           |  |           |  |           |  |
|-----------|--|-----------|--|-----------|--|-----------|--|
| Preset 1  | <input type="text" value="Preset_1"/>  | Preset 2  | <input type="text" value="Preset_2"/>  | Preset 3  | <input type="text" value="Preset_3"/>  | Preset 4  | <input type="text" value="Preset_4"/>  |
| Preset 5  | <input type="text" value="Preset_5"/>  | Preset 6  | <input type="text" value="Preset_6"/>  | Preset 7  | <input type="text" value="Preset_7"/>  | Preset 8  | <input type="text" value="Preset_8"/>  |
| Preset 9  | <input type="text" value="Preset_9"/>  | Preset 10 | <input type="text" value="Preset_10"/> | Preset 11 | <input type="text" value="Preset_11"/> | Preset 12 | <input type="text" value="Preset_12"/> |
| Preset 13 | <input type="text" value="Preset_13"/> | Preset 14 | <input type="text" value="Preset_14"/> | Preset 15 | <input type="text" value="Preset_15"/> | Preset 16 | <input type="text" value="Preset_16"/> |
| Preset 17 | <input type="text" value="Preset_17"/> | Preset 18 | <input type="text" value="Preset_18"/> | Preset 19 | <input type="text" value="Preset_19"/> | Preset 20 | <input type="text" value="Preset_20"/> |

Note: The length of alias is limited to 10 characters (letters, numbers or -\_).

This section allows users to change the names of video input, video zone, video preset, audio input, audio zone and audio preset.

- **Save:** Click to save the name modification.
- **Reset:** Click to reset the name modification.

**Note:** The length of alias name is limited to 10 characters (letters, numbers or -\_).

## Matrix Status

This section allows users to check the connected cards (the figure above the page shows the connected cards), card status, and fan status.

### 1. Card Status

▼ Card Status

Select Card

|             |      |
|-------------|------|
| Card Status | Good |
|-------------|------|

▼ Card Status

Select Card

|                         |   |
|-------------------------|---|
| Connection Status       | Connected                                 |
| H2X Card Type           | HDMI IN                                   |
| Communication Status    | Good                                      |
| Card Status             | Good                                      |
| Cable Connection Status | Input - Connected<br>HDMI Out - Connected |

▼ Card Status

Select Card Card 14

|                         |                          |
|-------------------------|--------------------------|
| Connection Status       |                          |
| H2X Card Type           | HDBT IN                  |
| Communication Status    | Good                     |
| Card Status             | Good                     |
| Cable Connection Status | Input - Connected        |
|                         | HDBaseT Out – Connected  |
| HDBaseT Link Strength   | Output - Link Quality 10 |

This section allows users to select a card to check its status, including main card and inserted signal cards. As shown in the above pages.

- **Select Card:** Click to select card to check from the drop-down menu.

## 2. Fan Status

▼ Fan Status

|       |         |
|-------|---------|
| Fan 1 | working |
| Fan 2 | working |
| Fan 3 | working |
| Fan 4 | working |

This section allows users to check the status of the four fans of the matrix.

# Video Settings

## 1. EDID Preset

▼ EDID Preset

| Input    | Preset     | Input    | Preset     | Input    | Preset     |
|----------|------------|----------|------------|----------|------------|
| Input_1  | EDID Write | Input_2  | EDID Write | Input_3  | EDID Write |
| Input_4  | EDID Write | Input_5  | EDID Write | Input_6  | EDID Write |
| Input_7  | EDID Write | Input_8  | EDID Write | Input_9  | EDID Write |
| Input_10 | EDID Write | Input_11 | EDID Write | Input_12 | EDID Write |
| Input_13 | EDID Write | Input_14 | EDID Write | Input_15 | EDID Write |
| Input_16 | EDID Write | All      |            |          |            |

**Note:** If DIP switches on rear of unit are active, EDID adjustment via WebUI and front panel are deactivated.

This section allows users to access and configure EDID of every input port. Available EDID options are provided from the dropdown menu, click to select the desired option.

| Input           | Preset  | Input           | Preset          |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
|-----------------|---|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|--|--|
| Input_1         | EDID Write  | Input_2         | EDID Write      |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
| Input_4         | <div style="border: 1px solid #ccc; padding: 5px;"> <p>Copy</p> <table border="1"> <tr> <td>Copy From Out1</td> <td>Copy From Out2</td> <td>Copy From Out3</td> </tr> <tr> <td>Copy From Out4</td> <td>Copy From Out5</td> <td>Copy From Out6</td> </tr> <tr> <td>Copy From Out7</td> <td>Copy From Out8</td> <td>Copy From Out9</td> </tr> <tr> <td>Copy From Out10</td> <td>Copy From Out11</td> <td>Copy From Out12</td> </tr> <tr> <td>Copy From Out13</td> <td>Copy From Out14</td> <td>Copy From Out15</td> </tr> <tr> <td>Copy From Out16</td> <td></td> <td></td> </tr> </table> <p>Fix</p> <ul style="list-style-type: none"> <li>4K60 2CH PCM audio with SDR</li> <li>4K60 2CH PCM audio with HDR</li> <li>4K30 2CH PCM audio with SDR</li> <li>4K30 2CH PCM audio with HDR</li> <li>1080P60 2CH PCM audio with SDR</li> </ul> <p>Other</p> <ul style="list-style-type: none"> <li>EDID Write</li> </ul> </div> | Copy From Out1  | Copy From Out2  | Copy From Out3 | Copy From Out4 | Copy From Out5 | Copy From Out6 | Copy From Out7 | Copy From Out8 | Copy From Out9 | Copy From Out10 | Copy From Out11 | Copy From Out12 | Copy From Out13 | Copy From Out14 | Copy From Out15 | Copy From Out16 |  |  |  |  |
| Copy From Out1  |   | Copy From Out2  | Copy From Out3  |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
| Copy From Out4  |   | Copy From Out5  | Copy From Out6  |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
| Copy From Out7  |   | Copy From Out8  | Copy From Out9  |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
| Copy From Out10 |   | Copy From Out11 | Copy From Out12 |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
| Copy From Out13 |   | Copy From Out14 | Copy From Out15 |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
| Copy From Out16 |   |                 |                 |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
| Input_7         |   |                 |                 |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
| Input_10        |   |                 |                 |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
| Input_13        |   |                 |                 |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
| Input_16        |   |                 |                 |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |
|                 |   |                 |                 |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |  |  |  |  |

**Note:** If DIP switches on rear of unit are active, EDID adjustment via WebUI and front panel are deactivated.

▶ EDID Read

▶ CEC Control

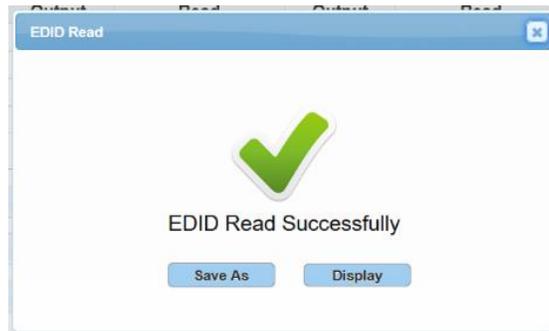
When select “EDID Write”, users can select an EDID file from local PC to write it to the corresponding input port.

## 2. EDID Read

| EDID Read |                                     |           |                                     |           |                                     |           |                                     |
|-----------|-------------------------------------|-----------|-------------------------------------|-----------|-------------------------------------|-----------|-------------------------------------|
| Output    | Read                                | Output    | Read                                | Output    | Read                                | Output    | Read                                |
| Output_1  | <input type="button" value="Read"/> | Output_2  | <input type="button" value="Read"/> | Output_3  | <input type="button" value="Read"/> | Output_4  | <input type="button" value="Read"/> |
| Output_5  | <input type="button" value="Read"/> | Output_6  | <input type="button" value="Read"/> | Output_7  | <input type="button" value="Read"/> | Output_8  | <input type="button" value="Read"/> |
| Output_9  | <input type="button" value="Read"/> | Output_10 | <input type="button" value="Read"/> | Output_11 | <input type="button" value="Read"/> | Output_12 | <input type="button" value="Read"/> |
| Output_13 | <input type="button" value="Read"/> | Output_14 | <input type="button" value="Read"/> | Output_15 | <input type="button" value="Read"/> | Output_16 | <input type="button" value="Read"/> |

This section allows users to read EDID of the outputs.

Read: Click to read the EDID of the corresponding output. When successfully read the EDID of the output:



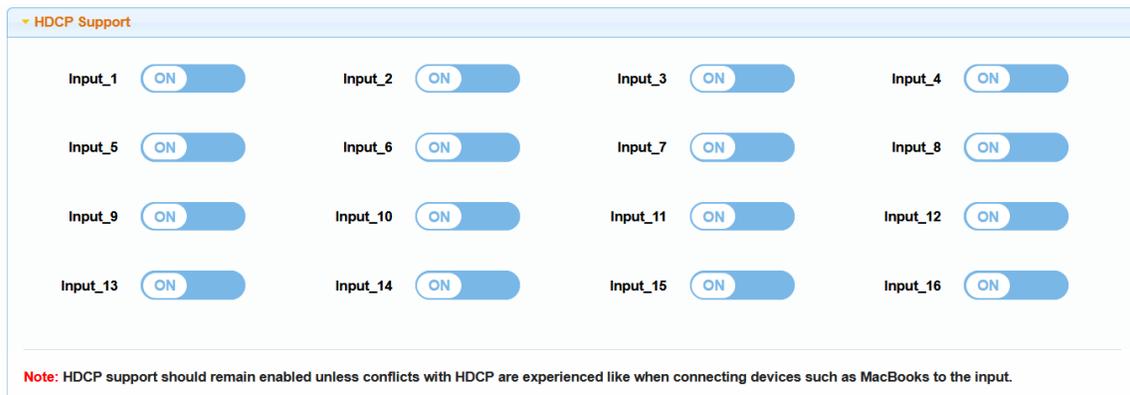
- **Save As:** Click to save the read EDID as a bin file to the local PC.
- **Display:** Click to display the data of the read EDID.

## 3. CEC Control

| Output    | Port | Manual                                    |  | Auto                                |                     |
|-----------|------|---|--|-------------------------------------|---------------------|
|           |      |   |  | On/Off                              | Delay Time(1~30min) |
| Output_1  | HDMI | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_2  | HDMI | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_3  | HDMI | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_4  | HDMI | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_5  | HDMI | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_6  | HDMI | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_7  | HDMI | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_8  | HDMI | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_9  | HDBT | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_10 | HDBT | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_11 | HDBT | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_12 | HDBT | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_13 | HDBT | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_14 | HDBT | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_15 | HDBT | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |
| Output_16 | HDBT | <input type="button" value="Display On"/> | <input type="button" value="Display Off"/> | <input checked="" type="checkbox"/> | 2                   |

- **Display On:** Click to power on the display connected to the output selected.
- **Display Off:** Click to power off the display connected to the output selected.
- **Auto On/Off:** Select to enable or disable CEC Auto Control.  
Default setting: Off
- **Auto Delay Time (1~30min):** Click the up/down arrow to set the time for the display to power off automatically when no signal is present. For example, if the time is set to 2 minutes, the output display will power off automatically when there's no signal at the display for 2 minutes.

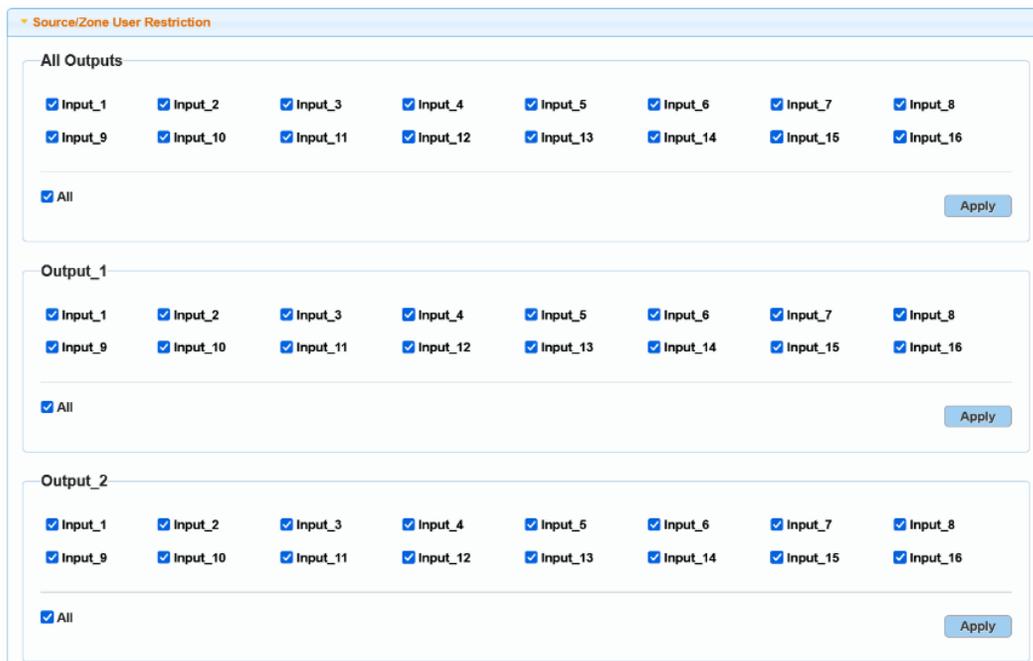
#### 4. HDCP Support



This section allows you to enable or disable HDCP encryption of each input port.

- **ON:** Select to enable HDCP encryption for the selected input port.
- **OFF:** Select to disable HDCP encryption for the selected input port.  
Default setting: ON

#### 5. Source/Zone User Restriction



This section allows users to set all video inputs restriction for all outputs (1-16).

- **All Outputs:** Uncheck the box in front of the corresponding input, this input source can't be selected by all outputs.
- **Output 1/2/.../15/16:** Uncheck the box in front of the corresponding input, this input source can't be selected by this corresponding output.
- **All:** Uncheck the box in front of "All", all inputs can't be selected by all outputs/the corresponding outputs.
- **Apply:** Click to perform the selection.  
Default: All inputs aren't restricted.

## Advanced Settings

### 1. Long Cable Mode

This section allows users to set long cable mode to on/off for all HDBT OUT.

If signal transmission quality is affected by a Cat 5e/6/6a/7 cable run reaching the maximum distance capacity, set Long Cable Mode to "ON", the matrix will attempt to improve transmission over the UTP in an effort to improve signal quality.

#### Note:

- When set the mode to enable, the pixel clock of source will be limited to 148MHz (1080p@60Hz), and the transmission distance will reach 140m/459ft (Enable 1080p EDID when activated).
- This mode should NOT be used as a general means to lengthen transmission distance, we recommend installers be aware of product specifications and use equipment best suiting the requirements of the project.

### 2. API Control

#### API Command

This section allows users to input and send API commands to the matrix. The return value will be displayed in "Log." Send: Click "Send" to send the input command to the matrix.

For example:

The screenshot shows two panels from a software interface. The top panel, titled 'API Control', contains a text input field with the text 'GET MP out1' and a blue 'Send' button to its right. The bottom panel, titled 'Log', features a blue 'Export Log' button at the top left. Below it is a red note: 'Note: Please wait a few moments for log retrieval.' The log area contains a list of entries with timestamps and messages: '15:03:22 Receive:MP in1 out1', '15:03:22 Send:GET MP OUT1', '15:02:53 Receive:Error:Parameter 1', '15:02:53 Send:GET MP OUT', and '14:59:41 Receive:LR\_FN hdbtall off'. A vertical scrollbar is on the right side of the log area.

## Serial Command Routing

This section allows users to set parameters for RS232 routing (from matrix LAN port to HDBT ports).

- **Channel:** Select remote RS232 gateway channel.
- **Baud Rate:** Select baud rate for the selected RS232 port.
- **Parity Bits:** Select parity bits for the selected RS232 port.
- **Terminator:** If commands in string format require a terminator, choose the appropriate terminator from the drop-down menu. The command in hex format doesn't require a terminator.

Explanation of the terminator:

- \r: Carriage Return<CR>
  - \n: Line Feed <LF>
  - \r\n: Carriage Return + Line Feed <CR><LF>
  - none: No terminator required.
- **Apply:** Click to perform the settings.
  - **Command:** Input command to control third-party device connected with the remote receiver RS232 port. If the command input is only available in Hex format, click the Hex checkbox and input the Hex command, then click the "SEND" button.

**Note:** The entered commands will only be sent to remote 3rd-party devices connected with the receivers. It needs to be supported by the 3rd-party device.

### 3. Change Admin Login Password

▼ Change Admin Login Password

Old Password

New Password

Confirm New Password

**Note:** Password length is 8-24 characters and must contain at least one lowercase letter, one uppercase letter, one number and one special character.

Save

This section allows users to change admin login password.

**Note:** Password length is 8-24 characters and must contain at least one lowercase letter, one uppercase letter, one number and one special character.

### 4. Network

▼ Network

IP Type

IP Address

Subnet Mask

Default Gateway

**Note:** LAN Module will automatically reboot after changing Network setting.

Apply

This section is to set between the static and dynamic IP address.

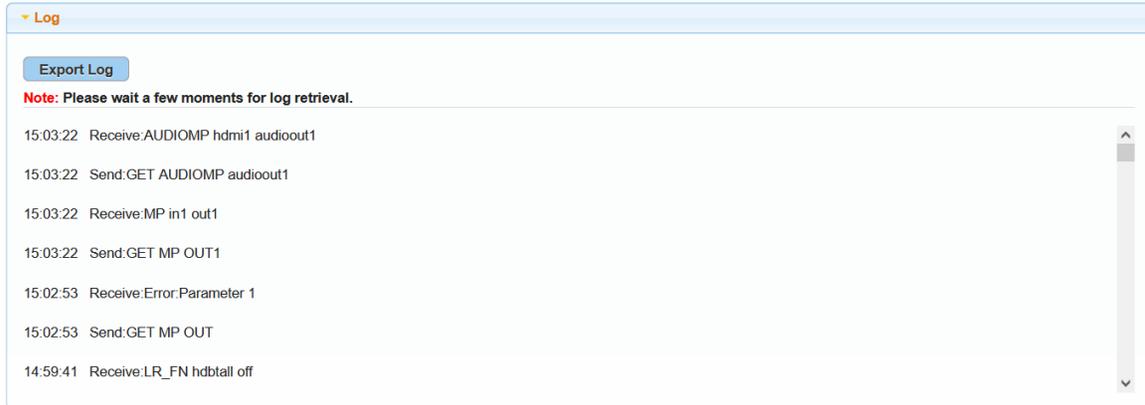
- **IP Type:**
  - **DHCP:** When enabled, the IP address of the Matrix is assigned automatically by the DHCP server connected.
  - **Static:** When enabled, you need to set up the IP address manually.Default setting: DHCP
- **Apply:** Click to save and perform the network setting.

**Note:**

- When DHCP server fails to assign an IP address, the IP Type will switch to AutoIP automatically, and the default IP address is 169.254.1.1.
- When "Static" is selected, please ensure your PC is in the same network segment as the matrix, i.e., the IP address of your PC should be set as 192.168.xxx.xxx.
- Please wait for 2-3 minutes for the matrix's LAN module to reboot and reconnect after the network setting is changed.



## 9. Log



The screenshot shows a web interface for viewing logs. At the top, there is a dropdown menu labeled 'Log'. Below it is a button labeled 'Export Log'. A red note reads: 'Note: Please wait a few moments for log retrieval.' The log entries are as follows:

| Time     | Event                           |
|----------|---------------------------------|
| 15:03:22 | Receive:AUDIOMP hdmi1 audioout1 |
| 15:03:22 | Send:GET AUDIOMP audioout1      |
| 15:03:22 | Receive:MP in1 out1             |
| 15:03:22 | Send:GET MP OUT1                |
| 15:02:53 | Receive:Error:Parameter 1       |
| 15:02:53 | Send:GET MP OUT                 |
| 14:59:41 | Receive:LR_FN hdbtball off      |

This section shows the operation log and commands return.

**Export Log:** Click to export the log file to local PC.