



WyreStorm MX-1616-SCL Seamless Scaling Matrix Chassis User Manual

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MX-1616-SCL



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 16×16 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 16×16 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	By Default: 16x HDMI IN, 8x HDMI OUT, 8x HDBT OUT, 16x AUDIO OUT (3.5mm, 5-Pin) Main Board: 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 ⁸ , 1024x768P ⁸ , 1280x768P ⁸ , 1280x800P ⁸ , 1280x960P ⁸ , 1280x1024P ⁸ , 1360x768P ⁸ , 1266x768P ⁸ , 1440x900P ⁸ , 1600x900P ⁸ , 1600x1200P ⁸ , 1680x1050P ⁸ , 1280x720P ^{6,8} , 1920x1080P ^{6,8} , 1920x1200P ⁸ , 3840x2160P ^{2,3,5,6,8} , 4096x2160P ^{2,3,5,8} 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 Note: 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	HDMI IN/OUT: Fully supports audio formats in HDMI 2.0 specification, including PCM, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio, DTS:X AUDIO OUT: 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: ±8kV (air-gap discharge)/ ±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

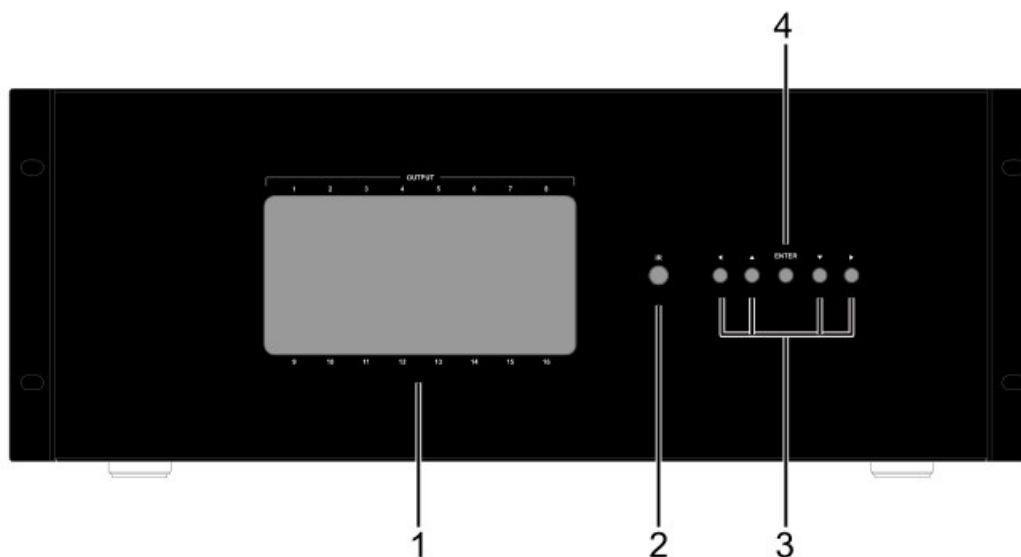
Transmission Distance

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

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

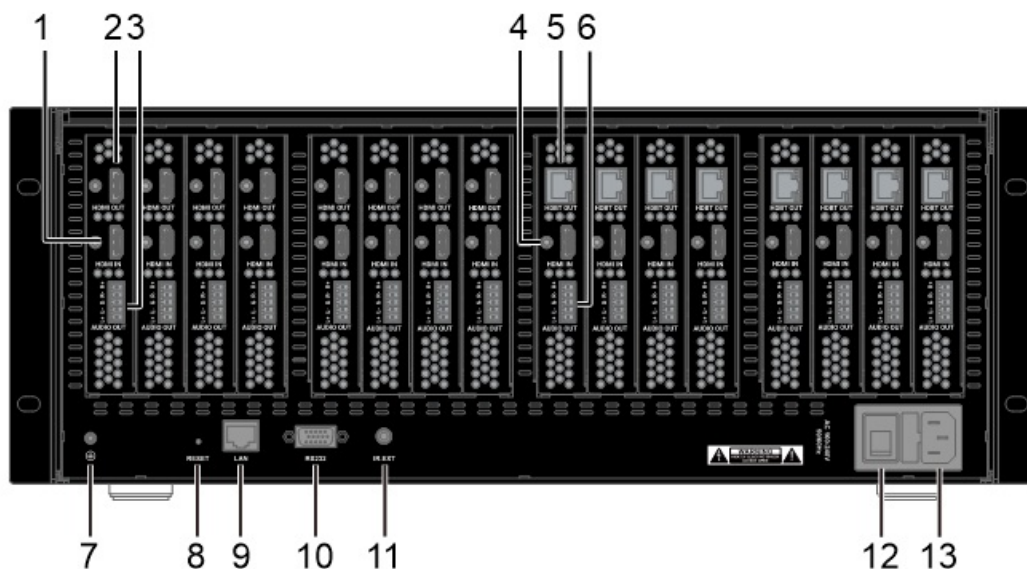
Panel Description

Front Panel



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

Rear Panel



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

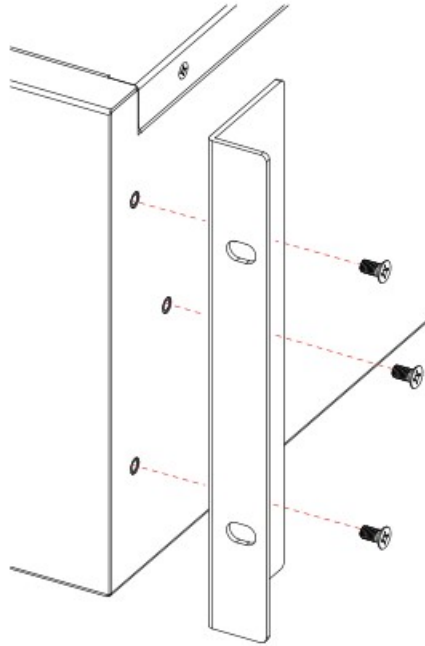
Installation

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.

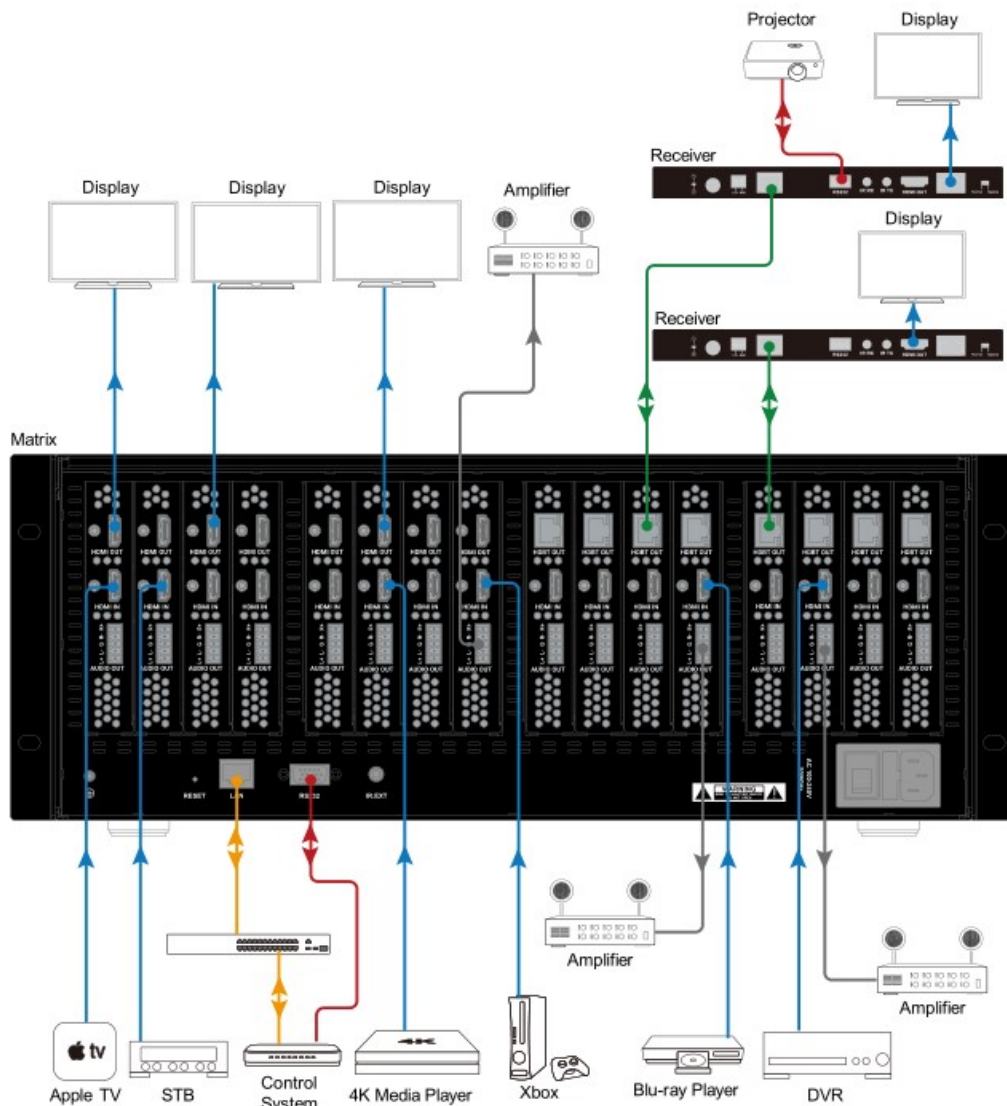
1. Connect HDMI source devices (such as Apple TV, STB, Xbox, Media Player, Blu-ray Player, DVR) to HDMI IN ports of matrix with HDMI cables.
2. Firmly connect display devices to HDMI OUT ports of the matrix, ensuring both source and display devices are compatible and correctly configured to accept the 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

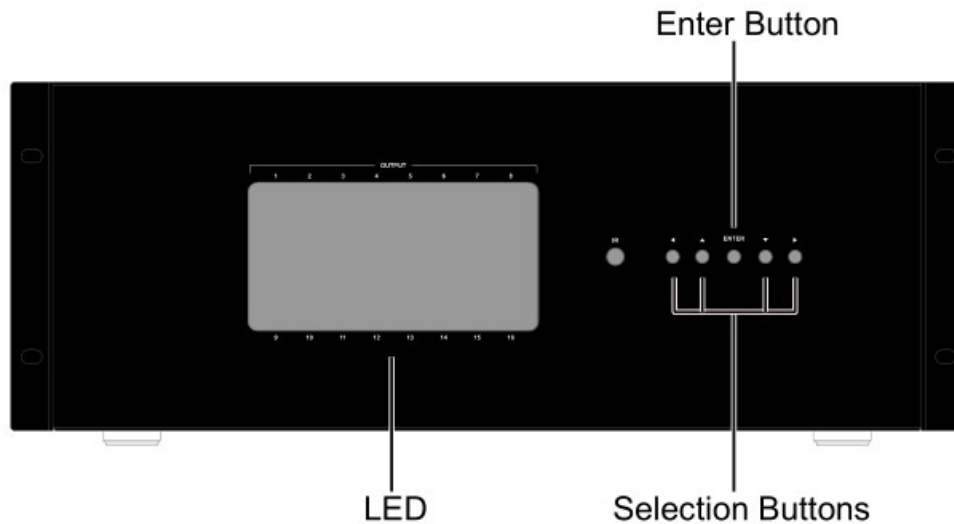
Users can control the device through front panel buttons, IR remote, RS232 (API Commands) and LAN (Web UI & Telnet).

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.

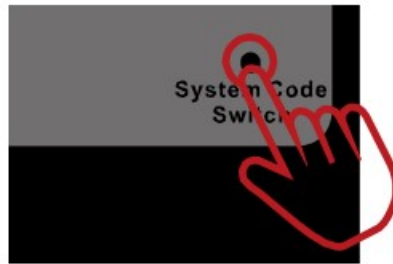
1. Press the output number users want to change on the OUTPUT zone of the remote.
2. Then press the corresponding input number users want to switch.
3. Press the previous button or next button to cycle through inputs from the input current selected.



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.

Matrix Control Login

User

Admin

Video Control

Audio Control

Alias Setting

Matrix Status

Video Setting

Advanced Setting

User Mode

Admin Login

▶ Video Matrix Control

▶ Video Presets

▶ Scaling

▶ HDMI A/V Mute

· 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

User

Admin

Admin Password:

Admin Login

Change Password

Please change your password to continue

Old Password

•••••

New Password

••••••••

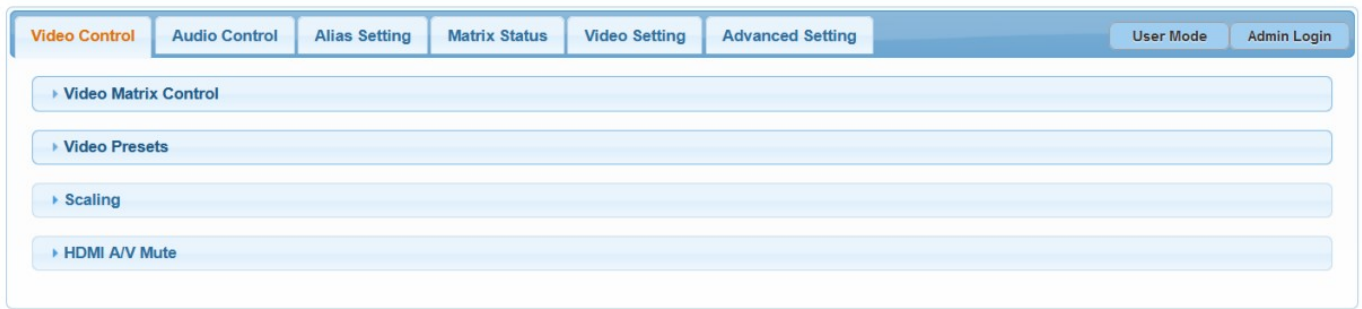
Confirm New Password

••••••••

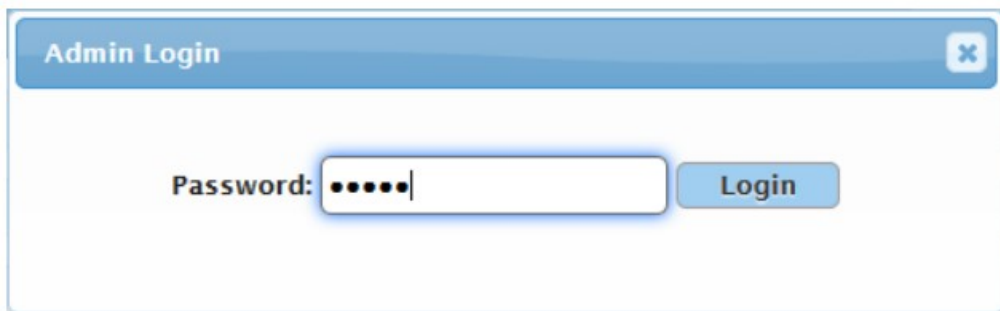
Note: Password length is 8-24 characters and must contain at least one lowercase case, one uppercase letter, one number and one special character.

Save

· 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.



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	Inp
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															
All Outputs															

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), $n = 1, 2, 3, 4 \dots 15, 16$.
- Video Detail: Click to view detailed information of input and output ports including status, resolution, framerate, etc., see following:

The screenshot shows a 'Video Details' window with two main sections: 'Input' and 'Output'. Each section has a 'Port' dropdown menu set to '1' and a 'Refresh' button. Below each dropdown, there are three columns of information: Status, Signal, Resolution, Frame Rate, Color Space, and Color Depth. The 'HDCP Version' is also listed at the bottom of each section.

Input		
Port	1	Refresh
Status	Connected	Signal
Frame Rate:	59	Color Space:
HDCP Version	hdc2.2	Resolution:

Output		
Port	1	Refresh
Status	Connected	Signal
Frame Rate:	60	Color Space:
HDCP Version	no hdcp	Resolution:

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

2. Video Preset

The screenshot shows a 'Video Presets' window with a grid of 20 presets, labeled Preset_1 through Preset_20. Each preset has a 'Save' button and a 'Load' button.

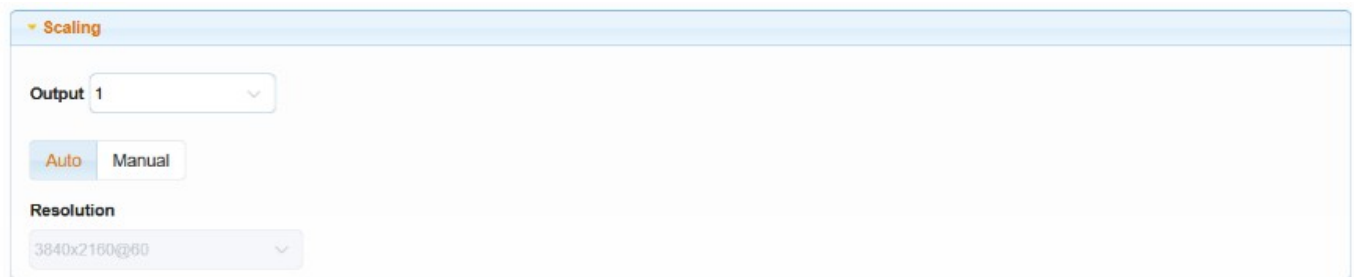
Video Presets			
Preset_1	Save	Load	Preset_2
Preset_5	Save	Load	Preset_6
Preset_9	Save	Load	Preset_10
Preset_13	Save	Load	Preset_14
Preset_17	Save	Load	Preset_18

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



▼ Scaling

Output 1 ▼

Auto Manual


Resolution

3840x2160@60 ▼

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



▼ HDMI A/V Mute

Output_1 OFF	Output_2 OFF	Output_3 OFF	Output_4 OFF
Output_5 OFF	Output_6 OFF	Output_7 OFF	Output_8 OFF
Output_9 OFF	Output_10 OFF	Output_11 OFF	Output_12 OFF
Output_13 OFF	Output_14 OFF	Output_15 OFF	Output_16 OFF

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

		In 1	In 2	In 3	In 4	In 5	In 6	In 7	In 8	In 9	In 10	In 11
Outputs/Inputs		DE-EMBED embed_1	DE-EMBED embed_2	DE-EMBED embed_3	DE-EMBED embed_4	DE-EMBED embed_5	DE-EMBED embed_6	DE-EMBED embed_7	DE-EMBED embed_8	DE-EMBED embed_9	DE-EMBED embed_10	DE-EMBED 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:

Audio Details

Input

Port 1

Refresh

Format:

NULL

Sampling Rate:

Output

Port 1

Refresh

Format:

NULL

Sampling Rate:

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

2. Audio Presets

Audio Presets

Preset_1	Save	Load	Preset_2	Save	Load	Preset_3	Save	Load	Preset_4	Save	Load
Preset_5	Save	Load	Preset_6	Save	Load	Preset_7	Save	Load	Preset_8	Save	Load
Preset_9	Save	Load	Preset_10	Save	Load	Preset_11	Save	Load	Preset_12	Save	Load
Preset_13	Save	Load	Preset_14	Save	Load	Preset_15	Save	Load	Preset_16	Save	Load
Preset_17	Save	Load	Preset_18	Save	Load	Preset_19	Save	Load	Preset_20	Save	Load

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 Input Naming

Input 1	Input_1	Input 2	Input_2	Input 3	Input_3	Input 4	Input_4
Input 5	Input_5	Input 6	Input_6	Input 7	Input_7	Input 8	Input_8
Input 9	Input_9	Input 10	Input_10	Input 11	Input_11	Input 12	Input_12
Input 13	Input_13	Input 14	Input_14	Input 15	Input_15	Input 16	Input_16

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

Save

Reset

▼ 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	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

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
Main Card

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

Card Status

Select Card
Card 1

Connection Status	Connected
H2X Card Type	HDMI IN
Communication Status	Good
Card Status	Good
Cable Connection Status	Input - Connected 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			
Input_7			
Input_10			
Input_13			
Input_16			

Copy

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

Fix

4K60 2CH PCM audio with SDR

4K60 2CH PCM audio with HDR

4K30 2CH PCM audio with SDR

4K30 2CH PCM audio with HDR

1080P60 2CH PCM audio with SDR

Other

EDID Write

Note: If DIP switch is 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	Read	Output_2	Read	Output_3	Read	Output_4	Read
Output_5	Read	Output_6	Read	Output_7	Read	Output_8	Read
Output_9	Read	Output_10	Read	Output_11	Read	Output_12	Read
Output_13	Read	Output_14	Read	Output_15	Read	Output_16	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	Display On	Display Off	ON	2
Output_2	HDMI	Display On	Display Off	ON	2
Output_3	HDMI	Display On	Display Off	ON	2
Output_4	HDMI	Display On	Display Off	ON	2
Output_5	HDMI	Display On	Display Off	ON	2
Output_6	HDMI	Display On	Display Off	ON	2
Output_7	HDMI	Display On	Display Off	ON	2
Output_8	HDMI	Display On	Display Off	ON	2
Output_9	HDBT	Display On	Display Off	ON	2
Output_10	HDBT	Display On	Display Off	ON	2
Output_11	HDBT	Display On	Display Off	ON	2
Output_12	HDBT	Display On	Display Off	ON	2
Output_13	HDBT	Display On	Display Off	ON	2
Output_14	HDBT	Display On	Display Off	ON	2
Output_15	HDBT	Display On	Display Off	ON	2
Output_16	HDBT	Display On	Display Off	ON	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

▼ HDCP Support

Input_1 <input type="checkbox"/>	Input_2 <input type="checkbox"/>	Input_3 <input type="checkbox"/>	Input_4 <input type="checkbox"/>
Input_5 <input type="checkbox"/>	Input_6 <input type="checkbox"/>	Input_7 <input type="checkbox"/>	Input_8 <input type="checkbox"/>
Input_9 <input type="checkbox"/>	Input_10 <input type="checkbox"/>	Input_11 <input type="checkbox"/>	Input_12 <input type="checkbox"/>
Input_13 <input type="checkbox"/>	Input_14 <input type="checkbox"/>	Input_15 <input type="checkbox"/>	Input_16 <input type="checkbox"/>

Note: HDCP support should remain enabled unless conflicts with HDCP are experienced like when connecting devices such as MacBooks to the input.

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

▼ Source/Zone User Restriction

All Outputs

<input checked="" type="checkbox"/> Input_1	<input checked="" type="checkbox"/> Input_2	<input checked="" type="checkbox"/> Input_3	<input checked="" type="checkbox"/> Input_4	<input checked="" type="checkbox"/> Input_5	<input checked="" type="checkbox"/> Input_6	<input checked="" type="checkbox"/> Input_7	<input checked="" type="checkbox"/> Input_8
<input checked="" type="checkbox"/> Input_9	<input checked="" type="checkbox"/> Input_10	<input checked="" type="checkbox"/> Input_11	<input checked="" type="checkbox"/> Input_12	<input checked="" type="checkbox"/> Input_13	<input checked="" type="checkbox"/> Input_14	<input checked="" type="checkbox"/> Input_15	<input checked="" type="checkbox"/> Input_16
<input checked="" type="checkbox"/> All							

Output_1

<input checked="" type="checkbox"/> Input_1	<input checked="" type="checkbox"/> Input_2	<input checked="" type="checkbox"/> Input_3	<input checked="" type="checkbox"/> Input_4	<input checked="" type="checkbox"/> Input_5	<input checked="" type="checkbox"/> Input_6	<input checked="" type="checkbox"/> Input_7	<input checked="" type="checkbox"/> Input_8
<input checked="" type="checkbox"/> Input_9	<input checked="" type="checkbox"/> Input_10	<input checked="" type="checkbox"/> Input_11	<input checked="" type="checkbox"/> Input_12	<input checked="" type="checkbox"/> Input_13	<input checked="" type="checkbox"/> Input_14	<input checked="" type="checkbox"/> Input_15	<input checked="" type="checkbox"/> Input_16
<input checked="" type="checkbox"/> All							

Output_2

<input checked="" type="checkbox"/> Input_1	<input checked="" type="checkbox"/> Input_2	<input checked="" type="checkbox"/> Input_3	<input checked="" type="checkbox"/> Input_4	<input checked="" type="checkbox"/> Input_5	<input checked="" type="checkbox"/> Input_6	<input checked="" type="checkbox"/> Input_7	<input checked="" type="checkbox"/> Input_8
<input checked="" type="checkbox"/> Input_9	<input checked="" type="checkbox"/> Input_10	<input checked="" type="checkbox"/> Input_11	<input checked="" type="checkbox"/> Input_12	<input checked="" type="checkbox"/> Input_13	<input checked="" type="checkbox"/> Input_14	<input checked="" type="checkbox"/> Input_15	<input checked="" type="checkbox"/> Input_16
<input checked="" type="checkbox"/> All							

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

▼ Long Cable Mode

All HDBT Output ☐ OFF

Note: With this mode enabled, source pixel clock will be limited to 148MHz (1080p/60Hz) and transmission distance will reach 140m/459ft.(Enable 1080p EDID when activated)

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 Control

API Command

Serial Command Routing

Channel: Baud Rate: Parity Bits: Terminator:

Command: ☐ HEX

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:

API Control

API Command

Log

Note: Please wait a few moments for log retrieval.

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 hdbtall off

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

DHCP

IP Address

169.254.1.1

Subnet Mask

255.255.0.0

Default Gateway

0.0.0.0

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.

5. Custom Web UI Logo

Custom Web UI Logo

Browse

Note: You must upload an image in PNG format with a resolution of 300x60 pixels.

Apply

This section allows users to create their own logo for the Web UI. To create customized Web UI logo: click “Browse” for the new logo file and choose “Apply”.

Note: The new logo used should be in PNG format and less than 300×60 pixels.

6. System Update

System Update

Browse

Note: Do not power off the matrix when updating.

Apply

This section allows users to upgrade all boards including web UI, main card and slave cards. Click “Browse” to upload an upgrade file and click “Apply” to start upgrading. The process will last about 1 hour, and after the upgrading is finished, the matrix will root automatically.

Note:

- Don't power off the matrix during the upgrading process.
- Please reboot the matrix manually after the upgrading process finishes.

7. System Version

System Version

Web UI (v1.0.6)

Main MCU (v1.6)

Slave MCU (v1.6 , v1.6 , v1.6 , v1.6 , v1.6 , v1.6 , v1.6 , v1.6 , v1.6 , v1.6 , v1.6 , v1.6 , v1.6 , v1.2 ,)

This section shows the current firmware version.

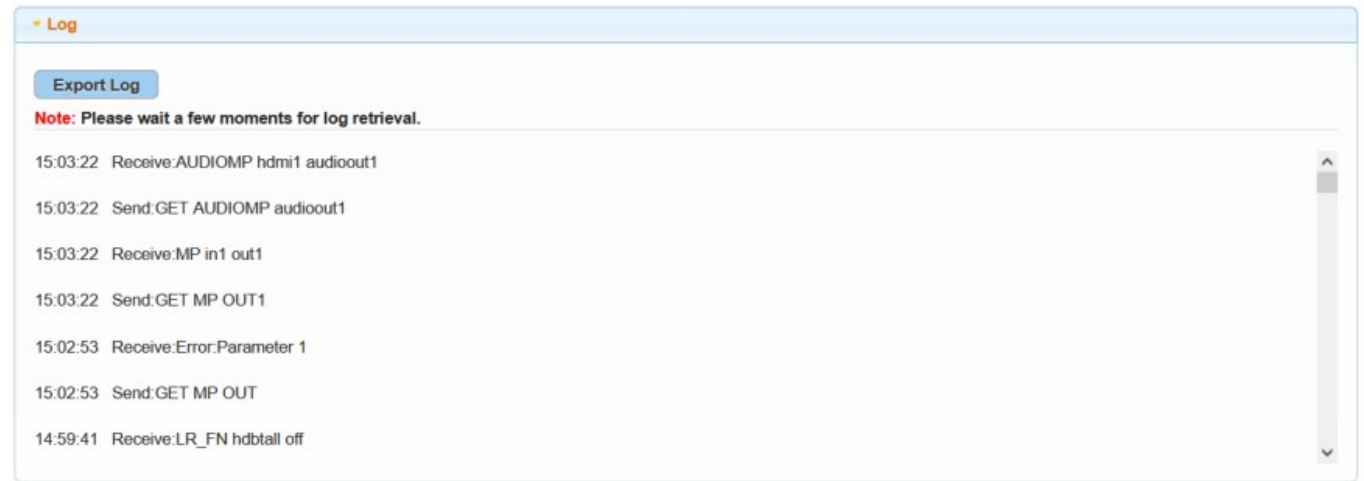
8. System

System

Reboot
Factory Reset

- Reboot: Click to reboot device.
- Factory Reset: Click to reset the device to factory default.

9. Log




This section shows the operation log and commands return.

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

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Documents / Resources

	<p>WyreStorm MX-1616-SCL Seamless Scaling Matrix Chassis [pdf] User Manual MX-1616-SCL Seamless Scaling Matrix Chassis, MX-1616-SCL, Seamless Scaling Matrix Chassis, Scaling Matrix Chassis, Matrix Chassis, Chassis</p>
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References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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