4x4 Seamless HDMI Matrix Video Wall w/ Multiview Function

USER MANUAL

UHD-44MVW

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Table of Contents

Thank you for purchasing this product

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

Surge protection device recommended

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

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Introduction

The UHD-44MVW is a powerful matrix device that can take 4 inputs to 4 outputs and allows you to switch between them with ease. It supports resolutions up to 4K@60Hz with 18Gbps video bandwidth. The device features both Video Wall and Multiviewer functionality making it useful in a wide range of applications. It features 09 different Video Wall modes and 12 different Multiview modes. Optical and L/R outputs for audio extraction, and IR inputs & outputs for IR Matrixing. Versatile control through RS-232 or TCP/IP. This device is perfect for various commercial and personal applications.

Features & Package Contents

Features

1. HDMI 2.0 & HDCP 2.2 compliant
2. Video resolutions up to 4K@60Hz
3. 18Gbps video bandwidth
4. Features Video wall and Multiview functionality
5. 12 Multiview modes & 9 Video Wall modes
6. CEC Control & Advanced EDID management
7. Control via front panel, included remote, RS-232, and WebGUI
8. HDMI audio formats: LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio

Package Contents

1.	UHD-44MVW	1pcs
2.	12V/2.5A Locking Power Adapter	1pcs
3.	12V IR Wideband Receiver Cable (1.5m)	5pcs
4.	IR Blaster Cable (1.5m)	4pcs
5.	RS-232 Serial Cable (1.5m, male to female head)	1pcs
6.	5pin-3.81mm Phoenix Connector	4pcs
7.	3pin-3.81mm Phoenix Connector	4pcs
8.	Machine Screw	8pcs
9.	Mounting Ear	2pcs
10.	User Manual	1pcs

Specifications

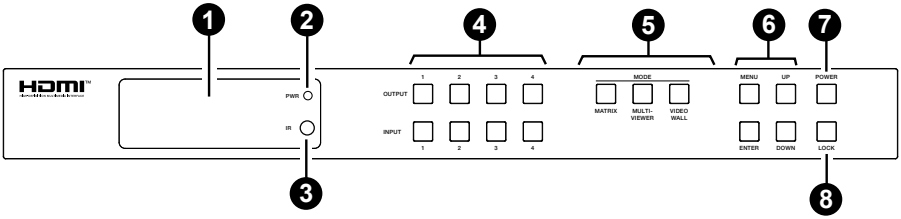
Technical	
HDMI Compliance	HDMI 2.0
HDCP Compliance	HDCP 2.2
Video Bandwidth	594MHz/18Gbps
Video Resolution	480i ~1080P@50/60Hz, 2K@24/30/60Hz, 4K@24/30/60Hz
IR Level	12Vp-p
IR Frequency	Wideband 20K-60KHz
Color Depth	8/10/12bit
Color Space	RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
HDMI Audio Formats	LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio
ESD Protection	IEC 61000-4-2: ±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Connection	
Inputs	4 × HDMI INPUT [Type A, 19-pin female] 4 × L/R AUDIO INPUT [3.81mm, 3pin Phoenix Connector]
Outputs	4 × HDMI OUTPUT [Type A, 19-pin female] 4 × OPTICAL AUDIO OUT [S/PDIF] 4 × L/R AUDIO OUT [3.81mm, 5pin Phoenix Connector]
Control	1 × TCP/IP [RJ45] 1 × RS-232 [D-Sub 9] 1 × IR EXT [3.5mm, Stereo Mini-jack] 4 × IR INPUT [3.5mm, Stereo Mini-jack] 4 × IR OUTPUT [3.5mm, Stereo Mini-jack]

Specifications

Mechanical			
Housing	Metal Enclosure		
Color	Black		
Dimensions	440mm [L] × 203mm [W] × 44.5mm [H]		
Weight	2.55kg / 5.62lbs		
Power Supply	Input: AC 100-240V 50/60Hz, Output: DC 12V/2.5A (US/EU standard, CE/FCC/UL certified)		
Power Consumption	25W (Max)		
Operating Temperature	32 - 104˚F / 0 - 40˚C		
Storage Temperature	-4 - 140˚F / -20 - 60˚C		
Relative Humidity	20 - 90% RH (no-condensing)		
Video Resolution	**4K60**	**4K30**	**1080P60**
HDMI Cable Length (HDMI IN / OUT)	5m/16ft	10m/32ft	15m/50ft
The use of “Premium High Speed HDMI” cable is highly recommended.			

Operation Controls and Functions

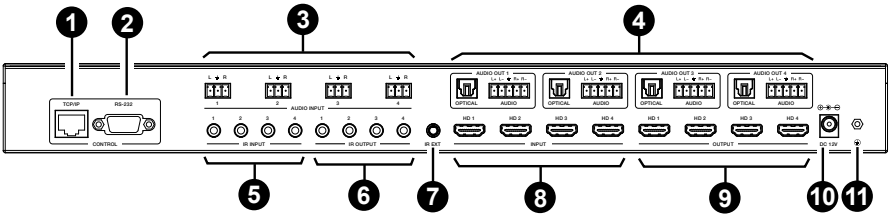
Front Panel



No.	Name	Function Description
1.	LCD screen	Displays the Matrix switching status, input/output routing, EDID, Baud rate, IP address, etc.
2.	POWER LED	The LED will light up green indicating stable power and light up red when on standby.
3.	IR	IR signal receiver. (Will only receive signals from the included remote)
4.	INPUT / OUTPUT buttons	Press the Output (1~4) button first and then the Input (1~4) button to route that input to that output.
5.	MODE	Press this button to switch between respective modes Matrix: Press the button to enter Matrix mode. Multiviewer: Press the button to enter the multiviewer mode. (The output buttons will be used as windows) Video Wall: Press the button to enter the Video wall mode. (The output buttons are used as groups)
6.	Menu / Enter / Up /Down	Press the Menu button to enter the menu. Press the up and down button to navigate within the menu and press Enter to select a menu item.
7.	Power button	Short press to wake up the device. Long press for 1 second to enter standby mode.
8.	Power button	Press this button to lock the front panel.

Operation Controls and Functions

Rear Panel



No.	Name	Function Description
1	TCP/IP	TCP/IP control port. Connect to a PC or router with a CAT cable.
2.	RS-232	Connect to a PC or control system by D-Sub 9-pin cable to transmit RS-232 commands.
3.	AUDIO INPUT (1~4)	L/R analog audio input port, connected to an analog audio input source such as DVD or Blu-ray Player. It follows HDMI input (1~4), and the embedded audio can not be extracted to audio out channel to output.
4.	AUDIO OUT (1~4)	**OPTICAL:** Optical audio output port, connected to an audio output device such as an audio amplifier.
		L/R AUDIO: Analog audio output port, supporting balanced audio output (with a maximum support of 2Vrms) and unbalanced audio output. Balanced connection method: L+, L-, ⏚ , R+, R- Unbalanced connection method: L+, ⏚ , R+
5.	IR INPUT (1~4)	Connect the IR Receiver cable
6.	IR OUTPUT (1~4)	Connect the IR Blaster cable
7.	IR EXTENSION	If the IR receiver window of the unit is blocked or the unit is installed in a closed area out of infrared line of sight, the IR receiver cable can be connected to the “IR EXT” port to receive the IR remote signal.
8.	HDMI INPUT ports (1~4)	Connect a media source device such as a DVD player, set-top box, etc.

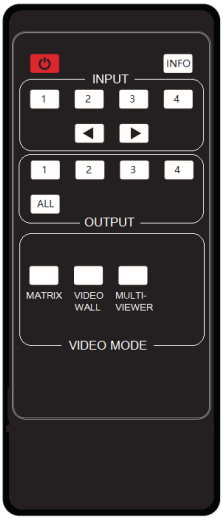
Operation Controls and Functions

No.	Name	Function Description
9.	HDMI OUTPUT ports (1~4)	Connect a display device such as a TV, monitor, etc.
10.	DC 12V	Power input port. Connected to the included power adapter.
11.	GND	Connect the housing to the ground.

Note:

1. You can restore the device to factory settings via the front panel, Web GUI, or RS-232 commands.
2. Power cut memory function is available except when in standby status and panel lock.
3. The RS-232 and WebGUI control will be available a few minutes later once the device is powered on.

IR Remote



⏻:
Power on the Matrix or set it to standby mode.

INFO:
Press to check the serial baud rate and IP address. It will be displayed in the top right corner of the screen, and disappear in five seconds.

INPUT 1/2/3/4:
Press these buttons to select input sources.

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

OUTPUT 1/2/3/4: Select the signal output channel.

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

Note: After the matrix is turned on, the ALL key is selected by default. For example, after turning on the matrix, if you press the INPUT 1 button, then the INPUT 1 signal will be output to all displays simultaneously.

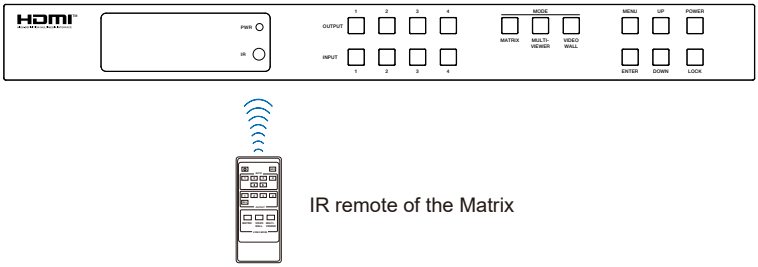
VIDEO MODE:
There are three video output modes: MATRIX, VIDEO WALL and MULTI-VIEWER. It will memorize the correspondence between the inputs and outputs and the configuration in which they are set in, in each mode on the Web page when you switched modes the last time.

Operation Instruction: You need to press the OUTPUT button first and then press the INPUT button to select the corresponding input source. For example, if you press OUTPUT-X (X means output button from 1 to 4, including the "ALL" button), then press INPUT-Y (Y means input button from 1 to 4) then the Y INPUT will be set to display on X OUTPUT.

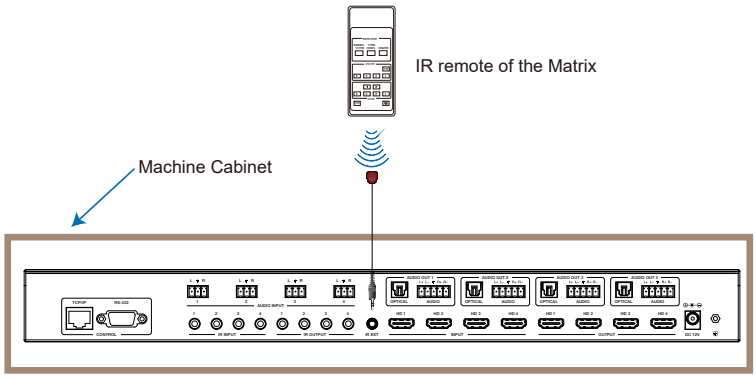
IR Remote

You can select the inputs and outputs by using the IR remote. There are two ways to receive the IR remote signal.

The first way: The IR window accepts the IR remote signal. Using the IR remote, the furthest distance is 8 meters when the IR remote is directly facing to the matrix, and 5 meters when the using angle is ± 45°. The diagram is shown as below:

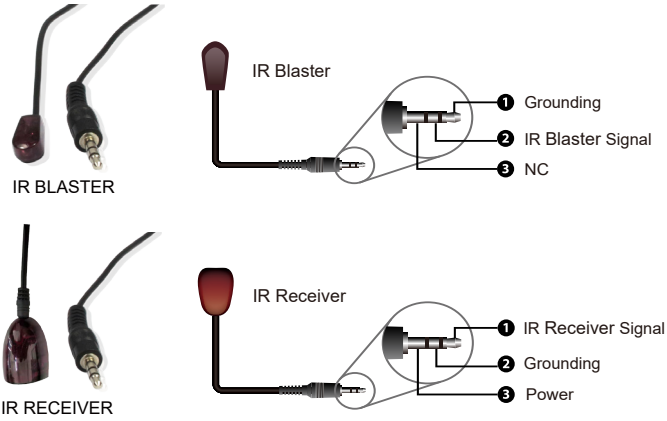


The second way: If the IR receiver window of the unit is blocked or the unit is installed in a closed area out of infrared line of sight, the IR receiver cable can be connected to the "IR EXT" port to receive the IR remote signal. The furthest distance of using the IR remote is 5 meters when the IR remote is directly facing the IR receiver head, and 3 meters when the using angle is ± 45°. The diagram is shown as below.



IR Pin Definition & IR Control System

IR Pin Definition



IR Control System

This product supports one-way IR control. When the matrix is connected to IR receiver cable and IR blaster cable, you can control the corresponding input source devices through IR signal transmission remotely at the side of display devices.

Four IR blaster cables connected to the IR outputs must be placed near the four HDMI input sources. Four IR receiver cables connected to the IR inputs must be placed near the display devices connected to the four HDMI outputs.

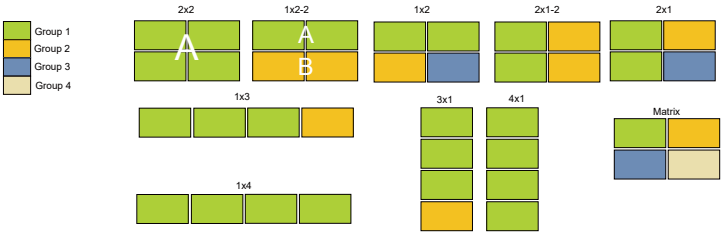
IR matrix follows the HDMI matrix. For example, if HDMI INPUT3 is selected for HDMI OUT1 to output, the signal of IR OUT3 near the HDMI INPUT3 is emitted to IR IN1 near the HDMI OUT1. Now you can use the IR remote of the DVD connected to HDMI INPUT3 to control it at the side of the TV connected to HDMI OUT1.

Similarly, if HDMI INPUT1 is selected for all HDMI OUT1/2/3/4 to output, the signal of IR OUT1 near the HDMI INPUT1 is emitted to IR IN1/2/3/4 near the four HDMI OUTs.

Video Wall & Multi-Viewer

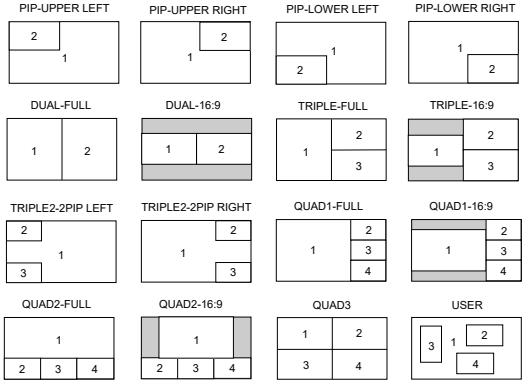
Video Wall

The matrix supports 10 categories of display modes as below. User can select display modes via front panel buttons, Web GUI, and RS-232 commands.



Multi-Viewer

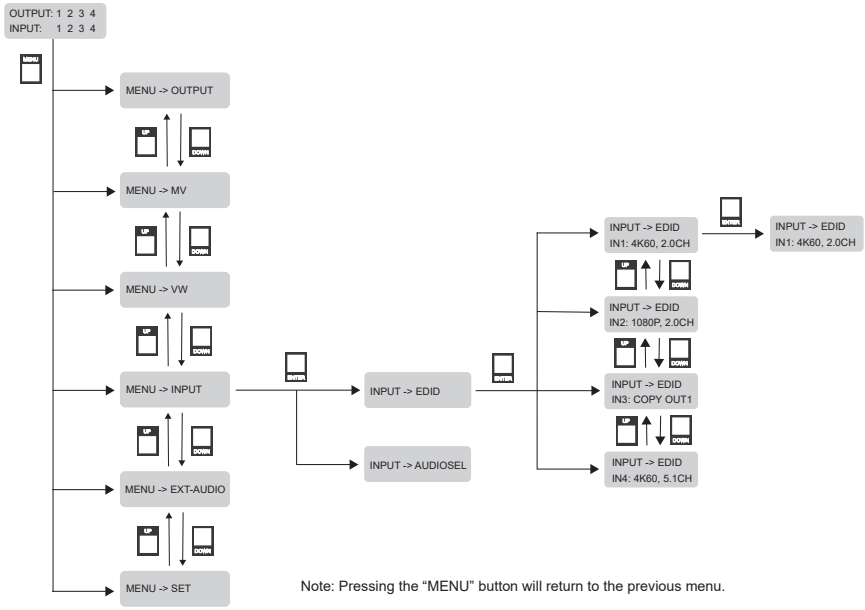
The matrix supports multiple display modes:
SINGLE, PIP, Dual, Triple 1, Triple 2, Triple 3, Quad 1, Quad 2, Quad 3, User 1, User 2, User 3.
Users can select different operations for different multiview modes as following:
SINGLE: Inputs selection
PIP: Inputs selection, Sub window size and position selection
Dual, Triple 1, Triple 2, Triple 3, Quad 1, Quad 2, Quad 3: Inputs selection, Display mode selection, Display aspect selection



EDID Management

This Matrix has 12 factory defined EDID settings, 2 user-defined EDID modes and 4 copy EDID modes. You can select defined EDID mode or copy EDID mode to input port through front panel buttons, RS-232 control or Web GUI.

On-panel button operation: On the initial LCD display screen, press “MENU” button to enter the first level menu, press “UP/DOWN” button to select INPUT, and then press the “ENTER” button. Now the EDID item appears. Press the “ENTER” button, and then press “UP/DOWN” button to select the EDID mode you need. Then press “ENTER” button to confirm this operation.

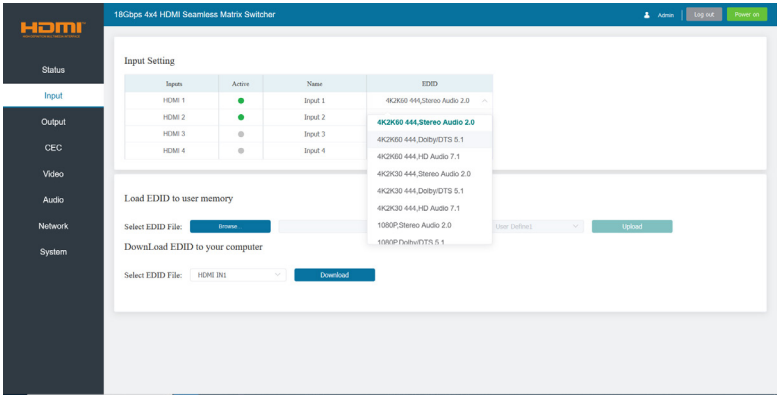


Note: Pressing the “MENU” button will return to the previous menu.

Web GUI Operation: Please Connect the Matrix to PC with a serial cable, then open a Serial Command tool on PC to send ASCII command “s input x EDID z!” to set EDID. For details, please refer to “EDID Setting” in the ASCII command list of “RS-232 Control Command”.

EDID Management

Web GUI Operation: Please check the EDID management in the “Input page” of “Web GUI User Guide”.



The defined EDID setting list of the product is shown as below:

EDID Mode	EDID Description	EDID Mode	EDID Description
1	4K60, 2.0CH	10	WUXGA, 2.0CH
2	4K60, 5.1CH	11	768P, 2.0CH
3	4K60, 7.1CH	12	XGA, 2.0CH
4	4K30, 2.0CH	13	USER1
5	4K30, 5.1CH	14	USER2
6	4K30, 7.1CH	15	COPY OUT1
7	1080P, 2.0CH	16	COPY OUT2
8	1080P, 5.1CH	17	COPY OUT3
9	1080P, 7.1CH	18	COPY OUT4

Web GUI User Guide

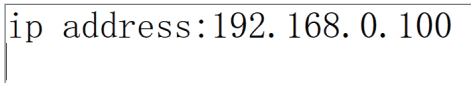
The Matrix can be controlled by Web GUI. The operation method is shown below:

Step 1: Get the current IP Address.

The default IP address is 192.168.0.100. You can get the current Matrix IP address in two ways:

The first way: You can get the IP address via the included remote. Pressing the INFO button on the IR remote will bring up the IP address and serial baud rate on the top right corner of the screen.

The second way: You can get the IP address via RS-232 control. Send the ASCII command " r ip addr!" through a Serial Command tool, then you'll get the feedback information as shown below:



IP:192.168.0.100 in the above figure is the current Matrix IP address (this IP address is variable, depending on what the specific machine returns).

For the details of RS-232 control, please refer to Page 33"**RS-232 Command**".

Step 2: Connect the TCP/IP port of the Matrix to a PC with a UTP Ethernet cable, and set the IP address of the PC to be in the same network segment with the Matrix.

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

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

Web GUI User Guide

Select the Language from the drop-down list to choose English or Simple Chinese. Select the Username from the drop-down list and enter the password. The default passwords are:

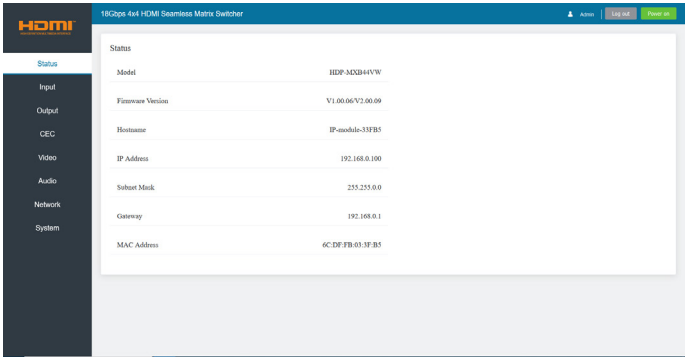
Username **User Admin**

Password **user admin**

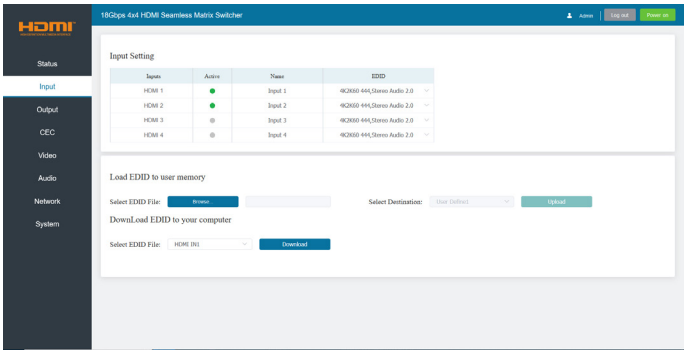
After entering the password, click the “LOGIN” button and the following Status page will appear.

■ Status Page

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



■ Input Page



You can do the following operations on the Input page:

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

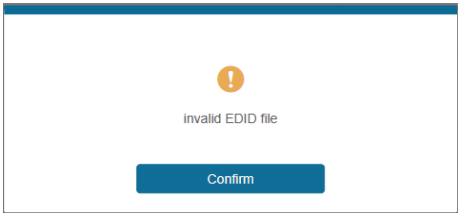
② **Active:** It indicates whether the channel is connected to a media source. It is green if connected, and gray if not connected.

③ **Name:** The input channel's name. You can modify it by entering the corresponding name (max length: 32 characters for English) in the input box.

④ **EDID:** You can set the current channel's EDID. Check the drop-down list to select other EDIDs.

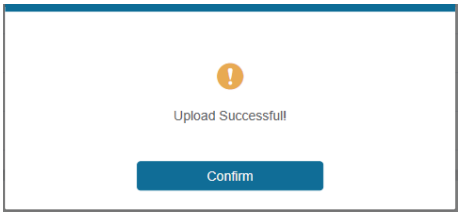
⑤ **Load EDID to user memory:** Set EDID for the User.

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



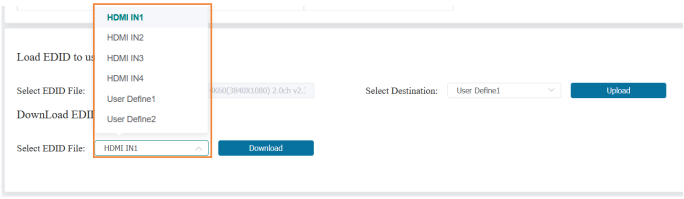
Make sure to select the correct file, then you can check the name of the selected file. Then select destination "User Define1/User Define2", and click "Upload".

After successful setting, it will prompt as follows:

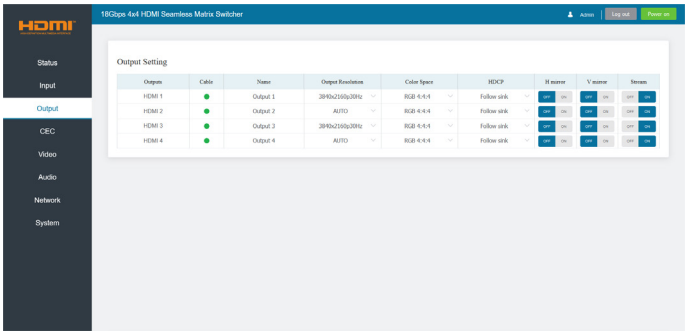


⑥ **Download EDID to your computer:**

If you want to download the existing EDID, click the drop-down box of “Select EDID File” to select the input channel you want, and then click “Download” to save the corresponding EDID file to your computer.



■ **Output Page**



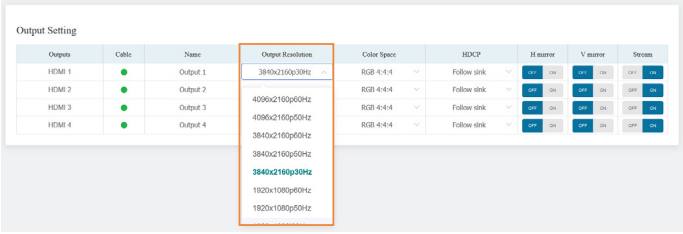
You can do the following operations on the Output page:

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

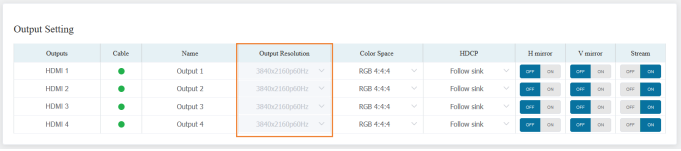
② **Cable:** It indicates the connection status of the output ports. When the output port is connected to the display, it shows green, otherwise, it shows gray.

③ **Name:** The current output channel’s name. You can modify it by entering the corresponding name (max length: 32 characters for English) in the input box.

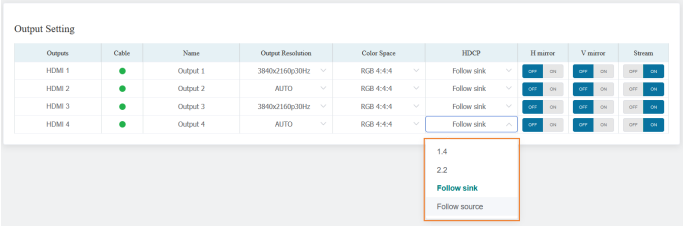
④ **Output Resolution:** Set the video resolution for current output. Click the dropdown menu and set the resolution you need. There are 16 options to select from.
If you select AUTO, it will output the proper video resolution according to the EDID of the display device.



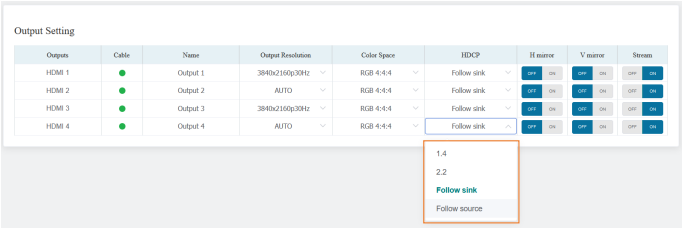
Note: Output resolution option is not available in video wall and multi-viewer mode.



⑤ **Color Space:** Set the color space for current output. Click the drop-down menu and set the Color Space as required. There are four options to select from.



⑥ **HDCP:** Set the HDCP version that the current output port supports.



There are four options to be selected:

· 1.4: HDCP 1.4 compliant.

· 2.2: HDCP 2.2 compliant.

· Follow Sink: HDCP version follows the corresponding display device.

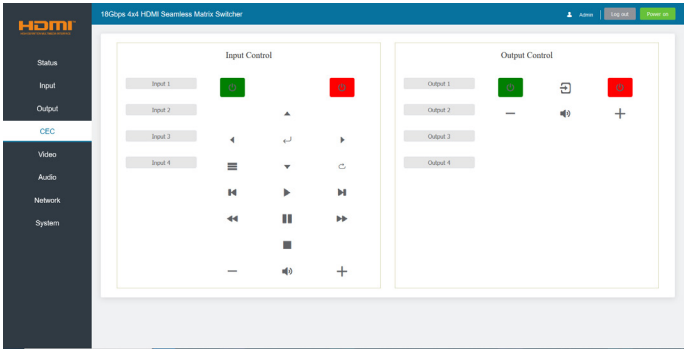
· Follow Source: HDCP version follows the assigned input source.

⑦ **H mirror:** Turn on/off the horizontal mirroring of the output signal.

⑧ **V mirror:** Turn on/off the vertical mirroring of the output signal.

⑨ **Stream:** Turn on/off the signal output stream of the output port.

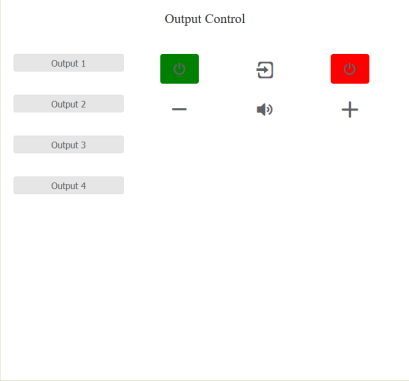
■ CEC Page



You can perform CEC management on this page. Inputs and Outputs can be controlled by clicking on the corresponding icons.

① **Input Control:** Select the input source on the left, and then click on the icons to power on, power off, return, switch, pause, fast-forward, rewind, mute, unmute, etc.

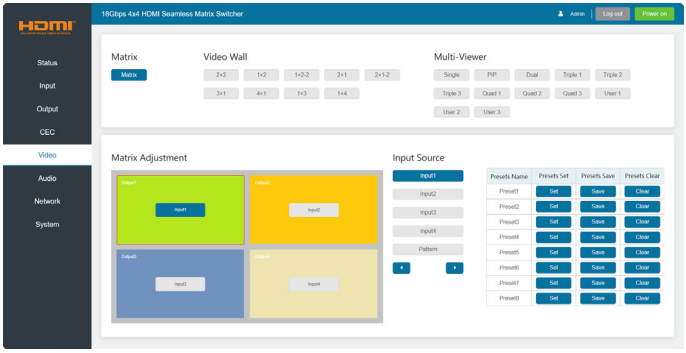
② **Output Control:** Select the output on the left, and then click on the icons to control the operation of the display, such as power on/off, volume +/-, etc.



■ Video Page

You can set the video mode on this page. There are three modes: Matrix, Video Wall and Multi-Viewer. In each mode, you can set, save and clear pre-set scenarios if needed, supporting up to 8 presets. The preset name can be modified (max length: 32 characters).

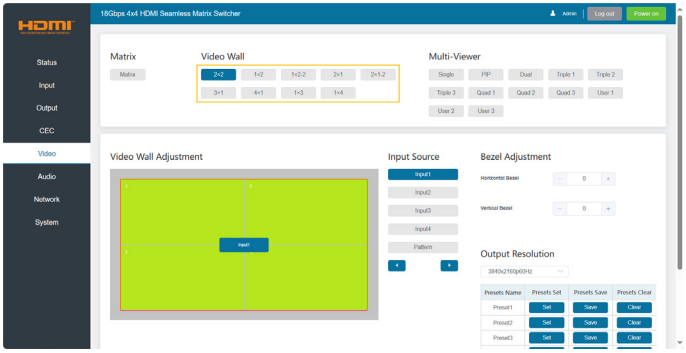
① **Matrix:** Click to select Matrix mode.



In matrix mode, you can select an output (1~4) first, and then select an input source (1~4) which will appear on the selected output area. One route of video output configuration is completed.

Note: You can drag and drop any input source on the right to the corresponding output easily and quickly.

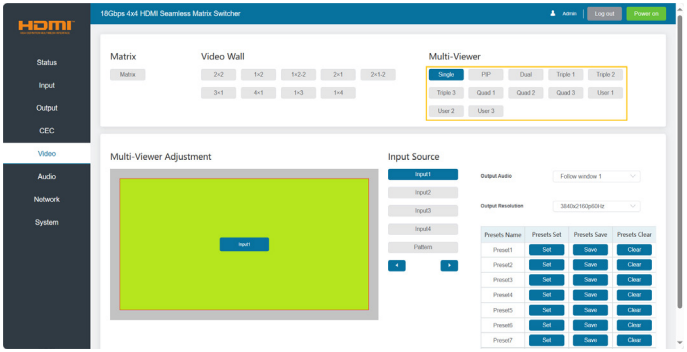
② **Video Wall:** Click the buttons to select a splicing screen mode. There are 9 modes to select from.



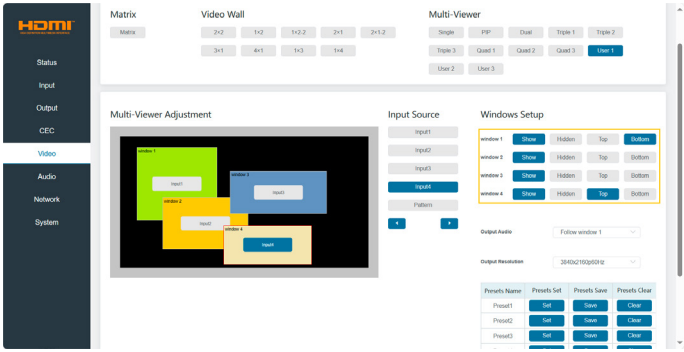
In video wall mode, you can select a window (1~4) first, and then select an input source (1~4) which will appear on the selected output area. Click +/- to adjust the corresponding Horizontal/Vertical Bezel (0-10). Set the output resolution for current output by clicking the drop-down list.

Note: You can drag and drop any input source on the right to the corresponding window easily and quickly.

③ **Multi-Viewer:** Click the buttons to select the multi-viewer display mode. There are 12 modes to select from.



In multi-viewer mode, all the four HDMI outputs display the same image from the HDMI IN you selected. You can select the input source which will appear on the corresponding window area. Then set the output resolution for current output by clicking the drop-down list. Output Audio can be selected to follow any input source or the corresponding window as required.

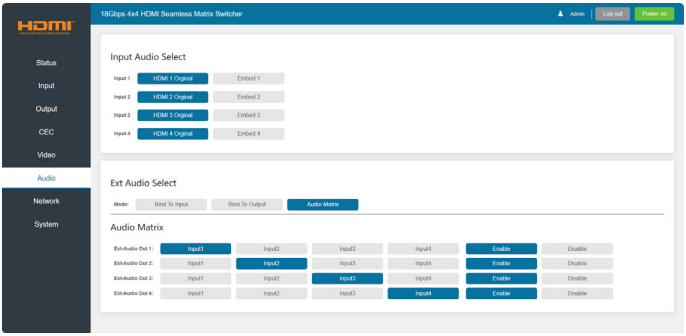


If a user-defined mode is selected, you can do the following operations:

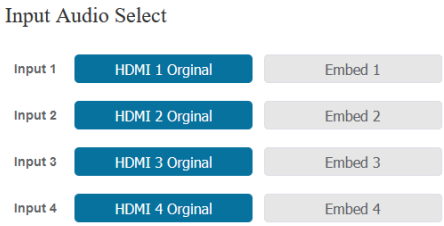
- The four windows are all displayed by default.
- Each window can be dragged and zoomed at will.
- Drag and drop the input source to any window.
- Click Windows Setup buttons to set the display of the corresponding window.
- The window will be maximized and placed on the top with double-clicking.

It will restore the previous status with double-clicking again.

■ Audio Page

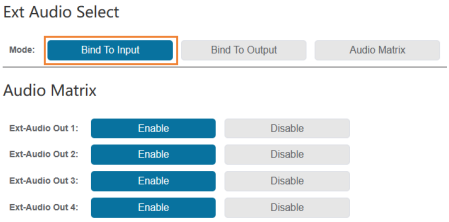


On the Audio page, you can select the input audio in Input Audio Select area, and set the ext-audio mode in Ext Audio Select area.

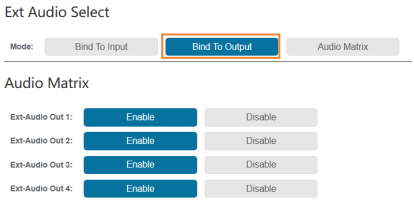


You can select any input audio source from an HDMI input internal audio or embedded audio. For example, if "HDMI 1 Original" is selected, the audio source is from the internal audio of HDMI Input 1; if "Embed 1" is selected, the audio source is from the Embed 1 audio. (The embed audio follows HDMI INPUT, and it will be embedded in HDMI INPUT to output.)

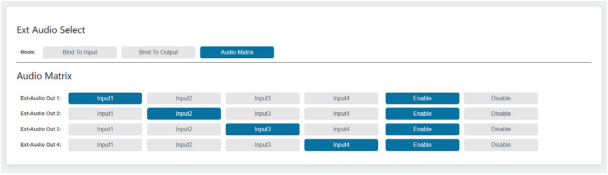
The ext-audio has three modes: Bind to Input, Bind to Output and Audio Matrix.
Note: The embedded audio can not be extracted to audio out channel to output.



Bind to Input: The AUDIO OUT (1~4) follows the HDMI INPUT (1~4). And there is a consistent one-to-one match between each HDMI input and audio output.
For example, the audio of AUDIO OUT 1 is from HDMI INPUT 1. The audio of AUDIO OUT 2 is from HDMI INPUT 2. The audio of AUDIO OUT 3 is from HDMI INPUT 3. The audio of AUDIO OUT 4 is from HDMI INPUT 4.
The audio out channel can be enabled or disabled if needed.

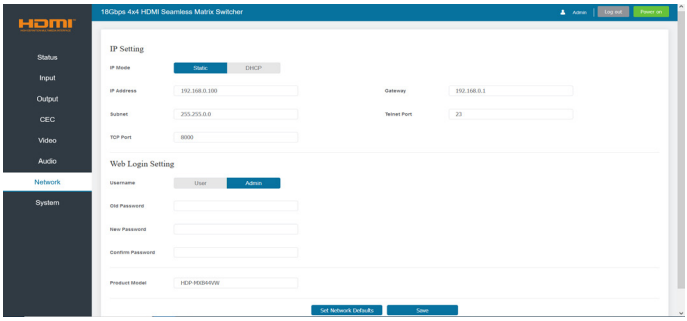


Bind to Output: The AUDIO OUT (1~4) follows the HDMI OUTPUT (1~4). For example, if HDMI INPUT 2 is assigned to HDMI OUTPUT 1, the audio of AUDIO OUT 1 is from HDMI INPUT 2; if HDMI INPUT 3 is assigned to HDMI OUTPUT 1, the audio of AUDIO OUT 1 is from HDMI INPUT 3.
The audio out channel can be enabled or disabled if needed.



Audio Matrix: You can select the audio of any HDMI input source for the corresponding ext-audio out.
The audio out channel can be enabled or disabled if needed.

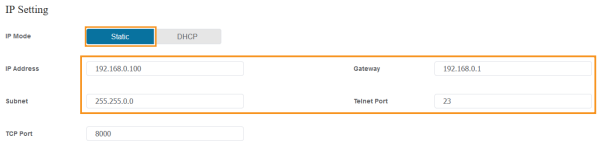
■ Network Page



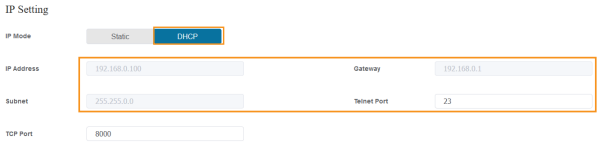
You can do the following operations on the Network page:

① **Modify Network Setting:**

Modify the IP Mode/IP Address/Gateway/Subnet Mask/Telnet Port as required, click “Save” to save the settings, and then it will come into effect.



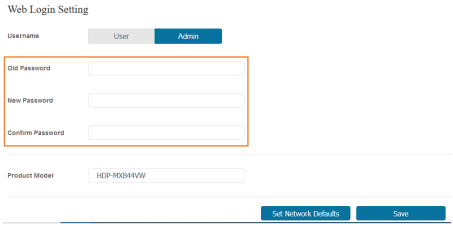
If the Mode is “Static”, you can set manually the IP Address/Gateway/Subnet/ Telnet Port as required.

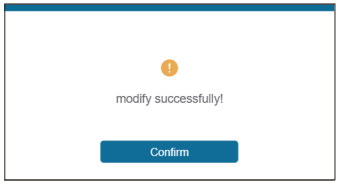


If the Mode is “DHCP”, it will search and fill the IP Address assigned by the router automatically. You can't modify it now.

② **Modify User Password:**

Click the “User” button, enter the correct Old Password, New Password, and Confirm Password, and then click “Save”. After successful modification, there will be a prompt, as shown in the following figure:

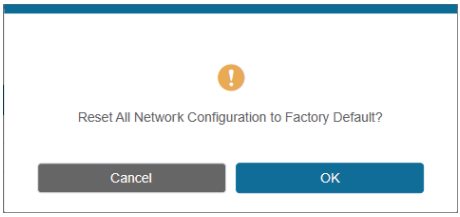




Note: Input rules for changing passwords:
(1) The password can't be empty.
(2) New Password can't be the same as Old Password.
(3) New Password and Confirm Password must be the same.

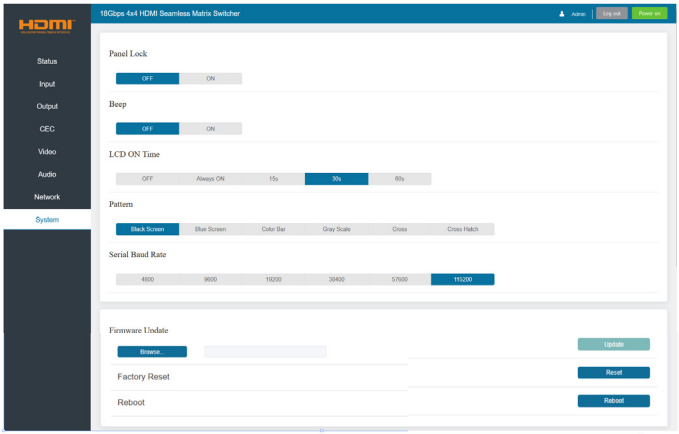
③ **Set the Default Network:**

Click "Set Network Defaults", there will be a prompt, as shown in the following figure:



Click "OK" to search the IP Address again. After searching is completed, it will switch to the login page, the default network setting is completed.

■ **System Page**



You can do the following operations on the System page:

① **Panel Lock:** Click "ON/OFF" to lock/unlock panel buttons. "ON" indicates that panel buttons are unavailable; "OFF" indicates panel buttons are available.

② **Beep:** Turn on/off the beep.

③ **LCD On Time:** You can set the display duration time (OFF/Always ON/15s/30s/60s).

④ **Pattern:** Click to select 6 patterns to test the display effect of the display device.

⑤ **Serial Baud Rate:** Click the value to set the Serial Baud Rate.

⑥ **Firmware Update:** Click "Browse" to select the update file, and then click "Update" to complete firmware update.

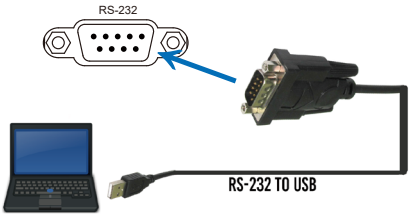
⑦ **Factory Reset:** Reset the unit to factory defaults by clicking "Reset".

⑧ **Reboot:** Reboot the unit by clicking "Reboot".

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

RS-232
Control Command

The product also supports RS-232 control. You will need a serial cable with RS-232 male head and DB9 transfer USB male head. The RS-232 head of the serial cable is connected to the RS-232 control port with DB9 at the rear of the Matrix, and the USB head of the serial cable is connected to a PC. The connection method is as follows:



Then open a Serial Command tool on the PC to send ASCII commands to control the product. The ASCII command list of the product is as below.

ASCII Command				
Serial port protocol. Baud rate: 115200, Data bits: 8bit, Stop bits:1, Check bit: 0				
x - Parameter 1, y - Parameter 2, z - Parameter 3, ! - Delimiter				
Command Code	**Function Description**	**Example**	**Feedback**	**Default**
System Setting				
help!	List all commands	help!		
r status!	Get device current status	r status!	get the unit all status: power, beep, lock, in/out connection, video/audio crosspoint, edid, scaler, network status	
r type!	Get device model	r type!	4x4 hdmi seamless matrix	
r fw version!	Get firmware version	r fw version!	mcu fw version: x.xx.xx web gui: x.xx.xx	
s power z!	Power on/off the device, z=0~1 (z=0 power off, z=1 power on)	s power 1!	power on system initializing... initialization finished! mcu fw version x.xx.xx	

RS-232
Control Command

Command Code	Function Description	Example	Feedback	Default
System Setting				
r power!	Get current power state	r power!	power on /power off	
s beep z!	Enable/disable buzzer function, z=0~1 (z=0 beep off, z=1 beep on)	s beep 1!	beep on beep off	beep off
r beep!	Get buzzer state	r beep!	beep on / beep off	
s lock z!	Lock/unlock front panel button, z=0~1 (z=0 lock off, z=1 lock on)	s lock 1!	panel button lock on panel button lock off	panel button lock off
r lock!	Get panel button lock state	r lock!	panel button lock on/off	
s lcd on time z!	Set lcd screen remain on time, z=0~4 (0:off 1:always, 2:15s, 3:30s, 4:60s)	s lcd on time 3!	lcd on 30 seconds	lcd on 30 seconds
r lcd mode!	Get the backlight status of lcd screen	r lcd mode!	lcd always on	
s logo1 **********!	Set the logo name displayed on the first line of lcd screen, the max character is 16	s logo1 Matrix Switch!	logo1:Matrix Switch	
s reboot!	Reboot the device	s reboot!	reboot... 4x4 hdmi seamless matrix system initializing... initialization finished! mcu fw version: x.xx.xx web gui: x.xx.xx	
s reset!	Reset to factory defaults	s reset!	reset to factory defaults 4x4 hdmi seamless matrix system initializing... initialization finished! mcu fw version: x.xx.xx web gui: x.xx.xx	
s save preset z!	Save preset z scenarios (z=1~8)	s save preset 1!	save to preset 1	
s recall preset z!	Call saved preset z scenarios (z=1~8)	s recall preset 1!	recall from preset 1	
s clear preset z!	Clear preset z scenarios (z=1~8)	s clear preset 1!	clear preset 1	
r preset z!	Get preset z information (z=1~8)	r preset 1!	video/audio crosspoint	

Command Code	Function Description	Example	Feedback	Default
Output Setting				
s display mode x!	Set output display mode (x=0~2) x=0 matrix mode x=1 video wall mode x=2 multi-viewer mode	s display mode 0!	display mode: matrix	matrix
r display mode!	Get output display mode	r display mode!	display mode: matrix	
r output y res!	Get output y resolution (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 1 res!	output 1 resolution: 3840x2160p60	
s output y res x!	Set output y resolution (y=0~4, x=1~16) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 1. 4096x2160p60, 2. 4096x2160p50, 3. 3840x2160p60, 4. 3840x2160p50, 5. 3840x2160p30, 6. 1920x1080p60, 7. 1920x1080p50, 8. 1920x1080i60, 9.1920x1080i50, 10. 1920x1200p60rb, 11.1360x768p60, 12.1280x800p60, 13.1280x720p60, 14.1280x720p50, 15.1024x768p60, 16. auto	s output 1 res 3!	output 1 resolution: 3840x2160p60	3840x2160p60

RS-232
Control Command

Command Code	Function Description	Example	Feedback	Default
Output Setting				
s output y csc x!	Set output y color space (y=0~4, x=1~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=1. rgb444 x=2. ycbcr444 x=3. ycbcr422 x=4. ycbcr420	s output 1 csc 1!	output 1 csc: rgb444	rgb444
r output y csc!	Get output y color space status (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 1 csc!	output 1 csc: rgb444	
s output y hdcp x!	Set output hdcp (y=0~4, x=1~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=1. hdcp 1.4 x=2. hdcp 2.2 x=3. follow sink x=4. follow source	s output 1 hdcp 1!	output 1 hdcp: hdcp 1.4	follow sink
r output y hdcp!	Get output y hdcp status (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 1 hdcp!	output 1 hdcp: hdcp 1.4	

Command Code	Function Description	Example	Feedback	Default
Output Setting				
s output y hmirror x!	Get output y h mirror (y=0~4, x=0,1) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=0. h mirror off x=1. h mirror on	s output 1 hmirror 1!	output1 h mirror on	output 1 h mirror off output 2 h mirror off output 3 h mirror off output 4 h mirror off
s output y vmirror x!	Set output y v mirror (y=0~4, x=0,1) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=0. v mirror off x=1. v mirror on	s output 1 vmirror 0!	output1 v mirror off	output 1 v mirror off output 2 v mirror off output 3 v mirror off output 4 v mirror off
r output y mirror!	Get output y mirror status (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 0 mirror!	output 1 h mirror on, v mirror off output 2 h mirror on, v mirror off output 3 h mirror on, v mirror off output 4 h mirror on, v mirror off	
s output y stream x!	Set output y stream enable/disable (y=0~4, x=0~1) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=0. stream disable x=1. stream enable	s output 1 stream 1!	output 1 stream: enable	enable
r output y stream!	get output y stream status (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 1 stream!	output 1 stream: enable	

RS-232
Control Command

Command Code	Function Description	Example	Feedback	Default
Output Setting				
s output bg x!	Set output no signal background display mode (x=1~6) x=1. black screen x=2. blue screen x=3. color bar x=4. gray scale x=5. cross x=6. cross hatch	s output bg 1!	output background: black screen	black screen
r output bg!	Get output no signal background display mode	r output bg!	output background: black screen	
EDID Setting				
s input x edid z!	Set hdmi input x edid mode (x=0~4,z=1~18) x=0. all input x=1. input1 x=2. input2 x=3. input3 x=4. input4 z=1. 4k60,2.0ch z=2. 4k60,5.1ch z=3. 4k60,7.1ch z=4. 4k30,2.0ch z=5. 4k30,5.1ch z=6. 4k30,7.1ch z=7. 1080p,2.0ch z=8. 1080p,5.1ch z=9. 1080p,7.1ch z=10. wuxga,2.0ch z=11. 768p, 2.0ch z=12. xga,2.0ch z=13. user1 z=14. user2 z=15. copy out1 z=16. copy out2 z=17. copy out3 z=18. copy out4	s input 1 edid 1!	input 1 edid:4k60,2.0ch	4k60,2.0ch

RS-232
Control Command

Command Code	Function Description	Example	Feedback	Default
EDID Setting				
r input x edid!	Get input x edid mode (x=0~4) x=0. all input x=1. input1 x=2. input2 x=3. input3 x=4. input4	r input 1 edid!	input 1 edid:4k60,2.0ch	
Video Matrix Setting				
s output y in source x!	Route input source to output y (y=0~4, x=1~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=1. input 1 x=2. input 2 x=3. input 3 x=4. input 4	s output 1 in source 1!	output1->input1	output1->input1 output2->input2 output3->input3 output4->input4
r output y in source!	Get output y selected input source (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 1 in source!	output1->input1	
Video Wall Setting				
s tw mode x!	Set tv wall display mode (x=1~9) x=1. 2x2 mode x=2. 2x1 mode x=3. 2x1-2 mode x=4. 1x2 mode x=5. 1x2-2 mode x=6. 3x1 mode x=7. 4x1 mode x=8. 1x3 mode x=9. 1x4 mode	s tw mode 1!	tv wall mode: 2x2	tv wall mode: 2x2
r tw mode!	Get tv wall display mode	r tw mode!	tv wall mode: 2x2	

RS-232
Control Command

Command Code	Function Description	Example	Feedback	Default
Video Wall Setting				
s tw h bezel x!	Set tv wall horizontal bezel (x=0~10,+,-)	s tw h bezel 0!	tv wall horizontal bezel: 0	tv wall horizontal bezel: 0
r tw h bezel!	Get tv wall row bezel	r tw h bezel!	tv wall horizontal bezel: 0	
s tw v bezel x!	Set tv wall vertical bezel (x=0~10,+,-)	s tw v bezel 0!	tv wall vertical bezel: 0	tv wall vertical bezel: 0
r tw v bezel!	Get tv wall vertical bezel	r tw v bezel!	tv wall vertical bezel: 0	
s tw group y input x!	Set tv wall group y display which source input (y=0~4, x=1~4) y=0. tv wall group all y=1. tv wall group 1 y=2. tv wall group 2 y=3. tv wall group 3 y=4. tv wall group 4 x=1. hdmi input 1 x=2. hdmi input 2 x=3. hdmi input 3 x=4. hdmi input 4	s tw group 1 input 1!	tv wall group 1 input: hdmi input 1	tv wall group 1 input: hdmi input 1
r tw group y source!	Get tv wall group y display which source input (y=0~4) y=0. tv wall group all y=1. tv wall group 1 y=2. tv wall group 2 y=3. tv wall group 3 y=4. tv wall group 4	r tw group 0 source!	tv wall group 1 input: hdmi input 1 tv wall group 2 input: hdmi input 2 tv wall group 3 input: hdmi input 3 tv wall group 4 input: hdmi input 4	
r tw res!	Get tv wall resolution	r tw res!	tv wall resolution: 3840x2160p60	3840x2160p60

Command Code	Function Description	Example	Feedback	Default
Video Wall Setting				
s tw res x!	Set tv wall resolution (x=1~15) 1. 4096x2160p60, 2. 4096x2160p50, 3. 3840x2160p60, 4. 3840x2160p50, 5. 3840x2160p30, 6. 1920x1080p60, 7. 1920x1080p50, 8. 1920x1080i60, 9. 1920x1080i50, 10. 1920x1200p60rb, 11. 1360x768p60, 12. 1280x800p60, 13. 1280x720p60, 14. 1280x720p50, 15. 1024x768p60	s tw res 3!	tv wall resolution: 3840x2160p60	3840x2160p60
Multi-viewer Setting				
r window y in!	Get windows y selected input source (y=0~4) y=0. window all y=1. window 1 y=2. window 2 y=3. window 3 y=4. window 4	r window in!	window 1 select hdmi 1	
s pip position x!	Set pip window position (x=1~4) 1. upper left 2. lower left 3. upper right 4. lower right	s pip position 3!	pip on upper right	pip on upper right
r pip position!	Get pip window position	r pip position!	pip on upper right	
s multiview x!	Set multi-viewer display mode(x=1~6) x=1. single x=2. pip x=3. dual x=4. triple x=5. quad x=6. user	s multiview 1!	single screen	single screen

RS-232
Control Command

Command Code	Function Description	Example	Feedback	Default
Multi-viewer Setting				
r multiview!	Get multi-viewer display mode	r multiview!	single screen	
s window y in x!	Select one input for one window for the current multiview mode (x=1~4, y=0~4) y=0. window all y=1. window 1 y=2. window 2 y=3. window 3 y=4. window 4 x=1. hdmi 1 x=2. hdmi 2 x=3. hdmi 3 x=4. hdmi 4	s window 1 in 1!	window 1 select hdmi 1	
s pip size x!	Set pip window size (x=1~3) 1. small 2. middle 3. large	s pip size 3!	pip size: large	pip size: large
r pip size!	Get pip window size	r pip size!	pip size: large	
s dual x mode!	Set dual windows display mode (x=1) 1. dual 1 mode	s dual 1 mode!	dual 1 mode	dual 1 mode
r dual mode!	Get dual windows display mode	r dual mode!	dual 1 mode	
s triple x mode!	Set triple windows display mode (x=1~3) 1. triple 1 mode 2. triple 2 mode (2pip-left) 3. triple 3 mode (2pip-right)	s triple 1 mode!	triple 1 mode	triple 1 mode
r triple mode!	Get triple windows display mode	r triple mode!	triple 1 mode	
s quad x mode!	Set quad windows display mode (x=1~3) 1. quad 1 mode 2. quad 2 mode 3. quad 3 mode	s quad 1 mode!	quad 1 mode	quad 1 mode
r quad mode!	Get quad windows display mode	r quad mode!	quad 1 mode	

Command Code	Function Description	Example	Feedback	Default
Multi-viewer Setting				
s aspect x!	Set windows display aspect ratio (x=1~2) 1. full screen 2. 16:9	s aspect 1!	aspect: quad 2 full screen	aspect: full screen
r aspect!	Get windows display aspect ratio	r aspect!	aspect: quad 2 full screen	
s user x mode!	Set user define windows display mode (x=1~3) 1. user 1 mode 2. user 2 mode 3. user 3 mode	s user 1 mode!	user 1 mode	user 1 mode
r user mode!	Get user define windows display mode	r user mode!	user1 mode	
s mv output audio x!	Set output audio source (x=0~4) 0. follow window 1 selected source 1. input 1 audio 2. input 2 audio 3. input 3 audio 4. input 4 audio	s mv output audio 0! s mv output audio 1!	output audio: follow window 1 selected source output audio: select input 1 audio	output audio: follow window 1 selected source
r mv output audio!	Get output audio source	r mv output audio!	output audio: follow window 1 selected source	
s mv res x!	Set multi-viewer resolution (x=1~15) 1. 4096x2160p60, 2. 4096x2160p50, 3. 3840x2160p60, 4. 3840x2160p50, 5. 3840x2160p30, 6. 1920x1080p60, 7. 1920x1080p50, 8. 1920x1080i60, 9.1920x1080i50, 10. 1920x1200p60rb, 11.1360x768p60, 12.1280x800p60, 13.1280x720p60, 14.1280x720p50, 15.1024x768p60	s mv res 3!	multi-viewer resolution: 3840x2160p60	3840x2160p60
r mv res!	Get multi-viewer resolution	r mv res!	multi-viewer resolution: 3840x2160p60	3840x2160p60

RS-232
Control Command

Command Code	Function Description	Example	Feedback	Default
Embedded Audio Setting				
s input x as z!	Set input x audio selected source hdmi or embed analog audio (x=0~4, z=0~1) x=0. all input x=1. input 1 x=2. input 2 x=3. input 3 x=4. input 4 z=0. hdmi original audio z=1. embed analog audio	s input 1 as 1!	input 1 select hdmi original audio	hdmi original audio
r input x as!	Get input x audio selected source hdmi or embed analog audio (x=0~4) x=0. all input x=1. input 1 x=2. input 2 x=3. input 3 x=4. input 4	r input 0 as!	input 1 select hdmi original audio input 2 select hdmi original audio input 3 select embed analog audio input 4 select embed analog audio	
Ext-audio Setting				
s output y exa x!	Set output y ext-audio enable/disable (y=0~4, x=0~1) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=0. ext-audio disable x=1. ext-audio enable	s output 1 exa 1!	output 1 ext-audio: enable	enable
r output y exa!	Get output y ext-audio enable/disable status. (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 1 exa!	output 1 ext-audio: enable	

Command Code	Function Description	Example	Feedback	Default
Ext-audio Setting				
s output exa mode x!	Set output ext-audio mode(x=0~2) x=0. bind to input mode x=1. bind to output mode x=2. matrix mode	s output exa mode 0!	output ext-audio moe: bind to input	bind to output
r output exa mode!	Get output ext-audio mode	r output exa mode!	output ext-audio moe: bind to input	
s output y exa in source x!	Route input source audio x to output ext-audio y (y=0~4, x=1~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=1. input 1 x=2. input 2 x=3. input 3 x=4. input 4	s output 1 exa in source 1!	output 1 ext-audio ->input 1	output 1 ext-audio->input 1 output 2 ext-audio->input 2 output 3 ext-audio->input 3 output 4 ext-audio->input 4
r output y exa in source!	Get output y ext-audio selected input source (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 0 exa in source!	output 1 ext-audio->input 1 output 2 ext-audio->input 2 output 3 ext-audio->input 3 output 4 ext-audio->input 4	
CEC Setting				
s cec in x on!	Set input x power on by cec, x=0~4(0=all input)	s cec in 1 on!	input 1 power on	
s cec in x off!	Set input x power off by cec, x=0~4(0=all input)	s cec in 1 off!	input 1 power off	
s cec in x menu!	Set input x open menu by cec, x=0~4(0=all input)	s cec in 1 menu!	input 1 open menu	
s cec in x back!	Set input x back operation by cec, x=0~4(0=all input)	s cec in 1 back!	input 1 back operation	
s cec in x up!	Set input x menu up operation by cec, x=0~4 (0=all input)	s cec in 1 up!	input 1 menu up operation	

RS-232
Control Command

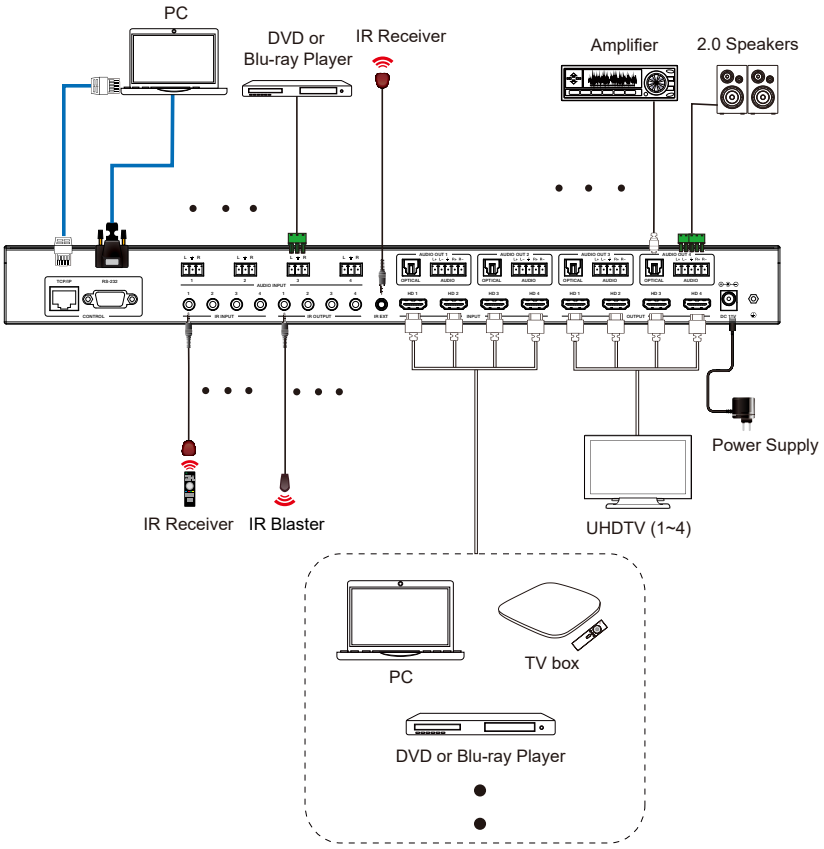
Command Code	Function Description	Example	Feedback	Default
CEC Setting				
s cec in x down!	Set input x menu down operation by cec, x=0~4(0=all input)	s cec in 1 down!	input 1 menu down operation	
s cec in x left!	Set input x menu left operation by cec, x=0~4(0=all input)	s cec in 1 left!	input 1 menu left operation	
s cec in x right!	Set input x menu right operation by cec, x=0~4(0=all input)	s cec in 1 right!	input 1 menu right operation	
s cec in x enter!	Set input x menu enter by cec, x=0~4(0=all input)	s cec in 1 enter!	input 1 menu enter operation	
s cec in x play!	Set input x play by cec, x=0~4(0=all input)	s cec in 1 play!	input 1 play operation	
s cec in x pause!	Set input x pause by cec, x=0~4(0=all input)	s cec in 1 pause!	input 1 pause operation	
s cec in x stop!	Set input x stop by cec, x=0~4(0=all input)	s cec in 1 stop!	input 1 stop operation	
s cec in x rew!	Set input x rewind by cec, x=0~4(0=all input)	s cec in 1 rew!	input 1 rewind operation	
s cec in x mute!	Set input x volume mute by cec, x=0~4(0=all input)	s cec in 1 mute!	input 1 volume mute	
s cec in x vol-!	Set input x volume down by cec, x=0~4 (0=all input)	s cec in 1 vol-!	input 1 volume down	
s cec in x vol+!	Set input x volume up by cec, x=0~4(0=all input)	s cec in 1 vol+!	input 1 volume up	
s cec in x ff!	Set input x fast forward by cec, x=0~4(0=all input)	s cec in 1 ff!	input 1 fast forward operation	
s cec in x previous!	Set input x previous by cec, x=0~4 (0=all input)	s cec in 1 previous!	input 1 previous operation	
s cec in x next!	Set input x next by cec, x=0~4 (0=all input)	s cec in 1 next!	input 1 next operation	
s cec hdmi out y on!	Set hdmi output y power on by cec, y=0~4 (0=all hdmi output)	s cec hdmi out 1 on!	hdmi output 1 power on	

Command Code	Function Description	Example	Feedback	Default
CEC Setting				
s cec hdmi out y off!	Set hdmi output y power off by cec, y=0~4 (0=all hdmi output)	s cec hdmi out 1 off!	hdmi output 1 power off	
s cec hdmi out y mute!	Set hdmi output y volume mute by cec, y=0~4 (0=all hdmi output)	s cec hdmi out 1 mute!	hdmi output 1 volume mute	
s cec hdmi out y vol-!	Set hdmi output y volume down by cec, y=0~4 (0=all hdmi output)	s cec hdmi out 1 vol-!	hdmi output 1 volume down	
s cec hdmi out y vol+!	Set hdmi output y volume up by cec, y=0~4 (0=all hdmi output)	s cec hdmi out 1 vol+!	hdmi output 1 volume up	
s cec hdmi out y active!	Set hdmi output y active source by cec, y=0~4 (0=all hdmi output)	s cec hdmi out 1 active!	hdmi output 1 active source	
Network Setting				
r ipconfig!	Get the current ip configuration	r ipconfig!	ip mode: static ip: 192.168.0.100 subnet mask: 255.255.255.0 gateway: 192.168.0.1 tcp/ip port=8000 telnet port=23 mac address: 00:1c:91:03:80:01	
r mac addr!	Get network mac address	r mac addr!	mac address: 00:1c:91:03:80:01	
s ip mode z!	Set network ip mode to static ip or dhcp, z=0~1 (z=0 static, z=1 dhcp)	s ip mode 0!	set ip mode:static. (please use "s net reboot!" command or repower device to apply new config!)	
r ip mode!	Get network ip mode	r ip mode!	ip mode: static	
s ip addr xxx.xxx.xxx.xxx!	Set network ip address	s ip addr 192.168.0.100!	set ip address: 192.168.0.100 (please use "s net reboot!" command or repower device to apply new config!) dhcp on, device can't config static address, set dhcp off first.	

RS-232
Control Command

Command Code	Function Description	Example	Feedback	Default
Network Setting				
r ip addr!	Get network ip address	r ip addr!	ip address:192.168.0.100	
s subnet xxx.xxx.xxx.xxx!	Set network subnet mask	s subnet 255.255.255.0!	set subnet mask: 255.255.255.0 (please use "s net reboot!" command or repower device to apply new config!) dhcp on, device can't config subnet mask, set dhcp off first.	
r subnet!	Get network subnet mask	r subnet!	subnet mask:255.255.255.0	
s gateway xxx.xxx.xxx.xxx!	Set network gateway	s gateway 192.168.0.1!	set gateway:192.168.0.1 (please use "s net reboot!" command or repower device to apply new config!) dhcp on, device can't config gateway, set dhcp off first.	
r gateway!	Get network gateway	r gateway!	gateway:192.168.0.1	
s tcp/ip port x!	Set network tcp/ip port (x=1~65535)	s tcp/ip port 8000!	set tcp/ip port:8000	
r tcp/ip port!	Get network tcp/ip port	r tcp/ip port!	tcp/ip port:8000	
s telnet port x!	Set network telnet port (x=1~65535)	s telnet port 23!	set telnet port:23	
r telnet port!	Get network telnet port	r telnet port!	telnet port:23	
s net reboot!	Reboot network modules	s net reboot!	network reboot... ip mode: static ip: 192.168.0.100 subnet mask: 255.255.255.0 gateway: 192.168.0.1 tcp/ip port=8000 telnet port=23 mac address: 00:1c:91:03:80:01	

Application Example



HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

FAQs & Troubleshooting

1. What type of HDMI cables should I use with this product?
We recommend you to use High-Quality HDMI cables under 30 feet.

2. Can I use this device to see 4 TVs as one large TV?
Yes, you can create a Video Wall setup using this device.

3. Can I use this device to show 4 different media sources on a single display, split into windows?
Yes, this model features Multiview functionality as well.

4. What is the maximum cable length of this device?
You can use high quality HDMI cables up to 30 feet with this device.

5. The device is locked in my A/V Closet, how can I control it using the IR Remote?
You can use the included IR Receiver cable, attach it to the IR EXT port on the unit and place the IR head outside the closet so that it faces the remote. Now you can simply face the remote toward the closet door and control the unit. For more information, refer to Page 12.

Still have some questions?

Please feel free to contact us at: info@orei.com. OR Fill out the form on the 'Contact Us' page on the website.

Our team will be more than happy to help you.

OREI Live Technical Support Hours

US team (US/Canada/Mexico): Monday-Friday, 9 a.m. - 6 p.m. Central Time

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4x4 Seamless HDMI Matrix Video Wall w/ Multiview Function

UHD-44MVW

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