



UHD-29VW

**4K 1-In-10-Out USB-C & HDMI™
Video Wall Controller (Audio Extract)**

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USER MANUAL

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Thank you for purchasing this product

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

Important Safety Note – Surge Protection Recommended

This product contains sensitive electronic components that may be damaged by electrical spikes, surges, lightning strikes, or static discharge. To protect and extend the service life of your equipment, we strongly recommend using a surge protection device.

Warranty Registration

Activate your warranty by registering your product at:

→ www.orei.com/register

Need Technical Support? We're Here to Help.

Our experienced Technical Support Team is available to answer your questions, offer expert advice, and help troubleshoot any issues to keep your project on track—on time and on budget.

Live Support Hours (US/Canada/Mexico):

🕒 Monday–Friday | 9:00 a.m. – 5:00 p.m. Central Time

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Send us an instant message—our team typically responds within moments during live support hours.

Introduction & Features

Introduction

UHD-29VW is a professional-grade video wall controller designed to route and distribute high-resolution digital content across multi-screen video wall displays. Featuring dual inputs—HDMI™ and USB-C—with support for resolutions up to 4K@60Hz, this device delivers exceptional video clarity and seamless integration.

Equipped with 10 HDMI™ outputs, the controller supports a wide range of video wall configurations including 2x1, 3x1, 4x1, 1x2, 1x3, 1x4, 2x2, 3x3, 2x4, and 2x5. It includes optical and 3.5mm analog ports, allowing flexible audio output options for enhanced AV integration. Built-in 180-degree image rotation and bezel compensation ensure optimal display alignment.

With simple control via front panel buttons, IR remote, or RS-232 commands, this plug-and-play unit requires no driver installation or software setup—making it ideal for digital signage, commercial installations, and control room environments.

Features

1. **HDCP 2.2 & DP 1.2a Compliant** – Ensures compatibility with the latest content protection and display standards.
2. **Dual Input Support** – Features both HDMI™ and USB-C inputs with support for 4K@60Hz video signals.
3. **10 HDMI™ Outputs** – Connects to up to 10 displays for flexible multi-screen configurations.
4. **Multiple Video Wall Modes** – Supports layouts including 2x2, 1x4, 4x1, 1x3, 3x3, 2x4, 2x5, and more.

Features & Package Contents

Features

5. **Audio Extraction** – Outputs audio via optical SPDIF and L/R analog ports for versatile sound system integration.
6. **Image Rotation** – Supports 180° screen rotation, ideal for bezel-less experience.
7. **Bezel Compensation** – Adjusts for display frame gaps to create seamless video wall alignment.
8. **Flexible Control Options** – Operate via front panel buttons, included IR remote, or RS-232 commands.
9. **Zero Configuration Required** – Plug-and-play operation with no software installation or setup needed.
10. **Output resolution is limited to 4K@30Hz and 1080p@60Hz.**

Package Contents

1.	UHD-29VW	1 pcs
2.	Remote	1 pcs
3.	IR Receiver Cable (1.5m)	1 pcs
4.	3pin-3.5mm Phoenix Connector (Male)	1 pcs
5.	Machine Screw (KM3*4)	4 pcs
6.	Mounting Ear	2 pcs
7.	Power Adapter	1 pcs
8.	User Manual	1 pcs

Specifications

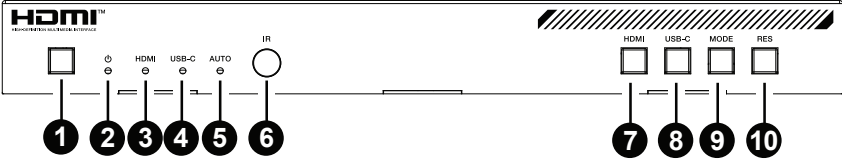
Technical	
HDMI™ Compliance	HDMI™ 2.0b
DP Compliance	DP1.4 ALT Mode
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
HDMI™ & USB-C Input Resolution	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x800p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1440x900p60Hz, 1440x1050p60Hz, 1600x1200p60Hz, 1920x1200p60Hz, 480i60, 480p60, 576i50, 576p50, 720p50/60Hz, 1080i50/60Hz, 1080p24/25/30/50/60Hz, 3840x2160p24/25/30/50/60Hz, 4096x2160p24/25/30/50/60Hz
HDMI™ Output Resolution	720P60Hz, 1080P60Hz, 4K30Hz, 1024x768P60Hz
IR Level	5Vp-p
IR Frequency	Fixed Frequency 38KHz
Color Depth	8-bit, 10-bit, 12-bit
Color Space	RGB_4:4:4, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0
HDMI™ & USB-C Audio Formats	LPCM 2.0/5.1, Dolby Digital/Plus/EX, DTS, DTS-EX, DTS-96/24
L/R Audio Formats	PCM 2.0
Optical Audio Formats	Dolby Digital/plus, DTS 5.1, PCM 2.0
ESD Protection	IEC 61000-4-2: ±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Connection	
Inputs	1× HDMI™ [Type A, 19-pin female] 1× USB-C [Type C, 24-pin female]
Outputs	10× HDMI™ [Type A, 19-pin female] 1× OPTICAL [S/PDIF] 1× L/R [3.5mm stereo mini jack]
Control	1× RS-232 [3pin-3.5mm phoenix connector] 1× IR EXT [3.5mm stereo mini-jack]

Specifications

Mechanical		
Housing	Metal Enclosure	
Color	Black	
Dimensions	L: 270mm / 10.63in W: 141mm / 5.55in H: 30mm / 1.18in	
Weight	935g / 2.06lbs	
Power Supply	Input: AC 100-240V 50/60Hz, Output: DC 12V/2.5A (US/EU standard, CE/FCC/UL certified)	
Power Consumption	9.5W (Max)	
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F	
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F	
Operating Humidity	20%~80% (Relative humidity, non-condensing)	
Storage Humidity	10%~90% (Relative humidity, non-condensing)	
Recommended HDMI™ Cable		
Video Resolution	4K60	1080P60
HDMI™ Cable Length (IN / OUT)	16ft / 5m	33ft / 10m
The use of “Premium High Speed HDMI™” cable is highly recommended.		

Operation Controls and Functions

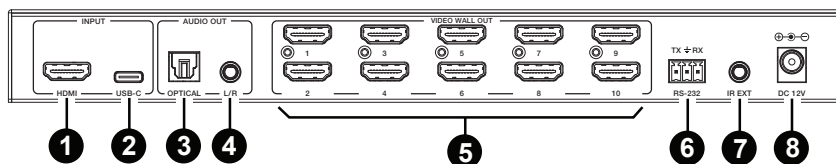
Front Panel



No.	Name	Function Description
1.	Power button	In shutdown/standby status, short press this button to power on; In power-on status, long press this button for 2-3 seconds to enter standby status.
2.	Power LED	The LED will light in green when the product is working normally, and red when the product is standby.
3.	HDMI LED	The green LED will light up when HDMI input is selected.
4.	USB-C LED	The green LED will light up when USB-C input is selected.
5.	AUTO LED	The green LED will light up when auto switching is enabled.
6.	IR window	IR signal receiving window.
7.	HDMI button	Press this button to select the HDMI input channel.
8.	USB-C button	Press this button to select the USB-C input channel.
9.	MODE button	Press this button to switch between the 15 video wall modes circularly.
10.	RES button	Press this button to switch between 720p, 1080p, 4K, and XGA resolutions for the HDMI outputs.

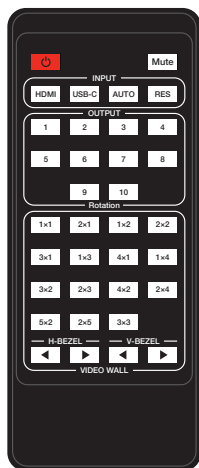
Operation Controls and Functions

Rear Panel



No.	Name	Function Description
1.	HDMI INPUT	Connect a media source device such as DVD player, streaming device, etc.
2.	USB-C INPUT	Connect a laptop or PC with a USB-C port that supports video output.
3.	OPTICAL AUDIO OUT	Connect an external audio device such as AVR, AMP, etc.
4.	L/R AUDIO OUT	Connect an external audio device such as Speakers, headphones, etc.
5.	VIDEO WALL OUT (1~10)	Connect a display device such as TV, Monitor, etc.
6.	RS-232	Connect to a PC or laptop to send RS-232 commands.
7.	IR EXT	Connect the included IR Receiver cable to control the device through the remote if the unit is behind a closed cabinet or out of line of sight.
8.	DC 12V	Connect the included power adapter.

Remote & IR Cable Pin Assignment



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

Mute: Press to mute the audio of HDMI, Optical and L/R audio output ports.

HDMI: Press to select the HDMI input channel.

USB-C: Press to select the USB-C input channel.

AUTO: Press to enable or disable the auto switching.

RES: Press this button to switch between 720p, 1080p, 4K, and XGA resolutions for the HDMI outputs.

Rotation 1~10: Press the corresponding number to rotate the image on display 180-degrees for a slimmer bezel. Press once again to switch it back to normal.

Splicing Modes:

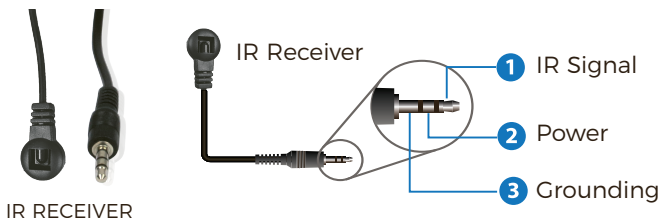
Press this button to switch between the 15 video wall modes circularly.

H-BEZEL & V-BEZEL ◀ ▶:

Press to adjust the bezels of the video wall.

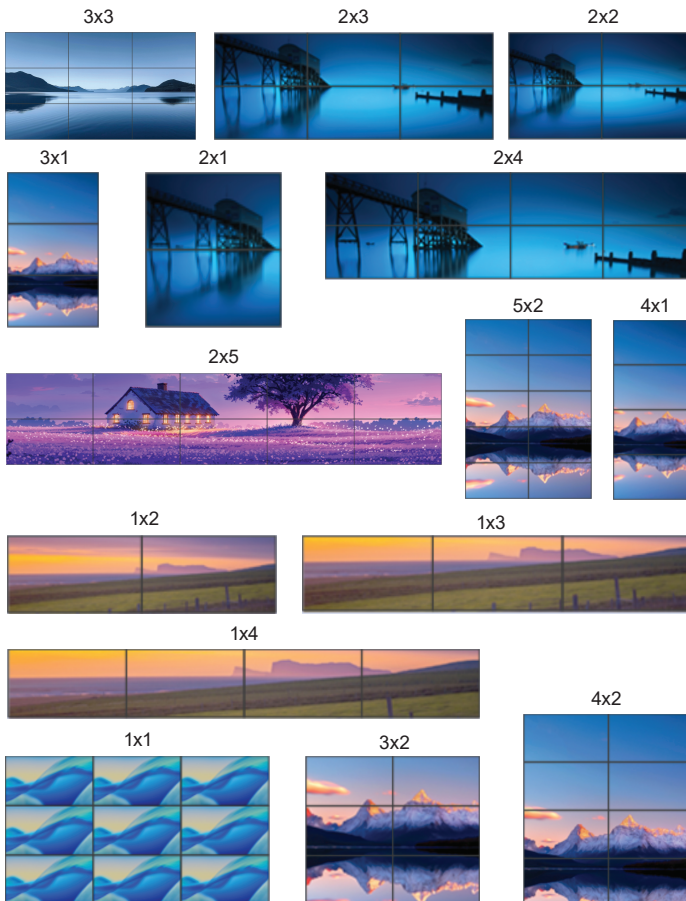
IR Cable Pin Assignment

IR Receiver pin's definition is as below:



Video Wall Modes

The device supports 15 video wall modes which can be selected through the front panel button, the remote or RS-232 commands.



Note: The unselected displays will display the video as normal.

RS-232 Commands

The product also supports RS-232 command control. Connect the RS-232 port of the product to a PC, and then open a Serial Command tool on PC to send ASCII command to control the device. The ASCII command list is shown as below.

ASCII Commands				
Serial port protocol: baud rate: 115200 (default) Data bits: 8 Stop bits: 1 Check bit: 0				
x - Parameter 1; y - Parameter 2				
Command	Function Description	Example	Feedback	Default
System Setting				
?	Get the list of all commands	?		
help	Get the list of all commands	help		
status	Get device current status	status	power on video wall mode : 1x1 output resolution : 3840x2160P@30Hz tv wall horizontal bezel: 0 tv wall vertical bezel: 0 output->hdmi in	power on video wall mode : 1x1 output resolution : 1920x1080P@ 60Hz tv wall horizontal bezel: 0 tv wall vertical bezel: 0 output->hdmi in
get model	Get device model	get model	HDC-TWB110	HDC-TWB110
get version	Get firmware version	get version	BOOT:V1.00.01 MCU: V1.00.01 FPGA: V1.00.01	BOOT:V1.00.01 MCU: V1.00.01 FPGA: V1.00.01
power on	Power on the device	power on	Power on System initializing... Initialization finished! BOOT:V1.00.01 MCU: V1.00.01 FPGA: V1.00.01	Power on

RS-232 Commands

Command	Function Description	Example	Feedback	Default
power off	Power off the device	power off	Power off	Power off
get power	Get current power state	get power	Power: on	Power: on
reboot	Reboot the device	reboot	Reboot... System initializing... Initialization finished! BOOT:V1.00.01 MCU: V1.00.01 FPGA: V1.00.01	
reset	Reset system settings to default	reset	Sure to reset system settings to default? Type "Yes" after next prompt to confirm...	
Input Setting				
set input x edid y	Set input (x=0-2) EDID (y=1-6) x=0: All Inputs x=1: HDMI Input x=2: USB-C Input y=1: 4K2K60_444, 2.0ch y=2: 4K2K60_444, 5.1ch y=3: 4K2K30_444, 2.0ch y=4: 4K2K30_444, 5.1ch y=5: 1080P, 2.0ch y=6: 1080P, 5.1ch	set input 0 edid 2	All input EDID: 4K60.5.1ch	4K2K60_444, 2.0ch
get input x edid	Get input (x=0-2) EDID mode x=0: All Inputs x=1: HDMI Input x=2: USB-C Input	get input 0 edid	HDMI in EDID: 4K60.5.1ch USB-C in EDID: 4K60.5.1ch	4K2K60_444, 2.0ch
set rx input x	Set RX input source (x=1-2) x=1: HDMI Input x=2: USB-C Input	set rx input 1	Output->HDMI in	Output->HDMI in
get rx input	Get RX input source	get rx input	Output->HDMI in	Output->HDMI in

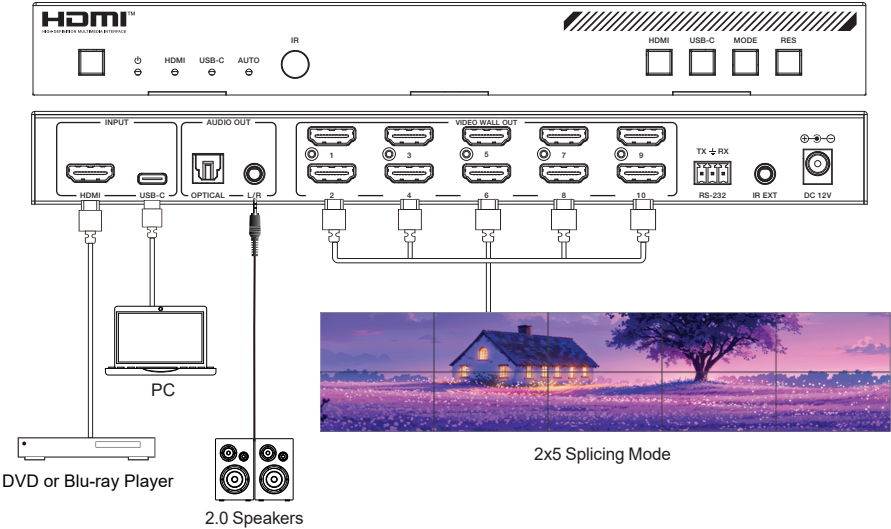
RS-232 Commands

Command Code	Function Description	Example	Feedback	Default
Video Wall Setting				
set tw mode x	Set tv wall display mode (x=1~15) x=1: 1x1 x=2: 2x1 x=3: 1x2 x=4: 2x2 x=5: 3x1 x=6: 1x3 x=7: 4x1 x=8: 1x4 x=9: 3x2 x=10: 2x3 x=11: 4x2 x=12: 2x4 x=13: 5x2 x=14: 2x5 x=15: 3x3	set tw mode 1	TV wall mode: 1x1	1x1
get tw mode	Get tv wall display mode	get tw mode	TV wall mode: 1x1	1x1
set tw h bezel -	Set tv wall horizontal bezel	set tw h bezel -	TV wall horizontal bezel: 0	TV wall horizontal bezel: 0
set tw h bezel +	Set tv wall horizontal bezel	set tw h bezel +	TV wall horizontal bezel: 1	TV wall horizontal bezel: 0
set tw h bezel x	Set tv wall horizontal bezel (x=0~10)	set tw h bezel 2	TV wall horizontal bezel: 2	TV wall horizontal bezel: 0
get tw h bezel	Get tv wall horizontal bezel	get tw h bezel	TV wall horizontal bezel: 0	TV wall horizontal bezel: 0
set tw v bezel -	Set tv wall vertical bezel	set tw v bezel -	TV wall vertical bezel: 0	TV wall vertical bezel: 0
set tw v bezel +	Set tv wall vertical bezel	set tw v bezel +	TV wall vertical bezel: 1	TV wall vertical bezel: 0
set tw v bezel x	Set tv wall vertical bezel (x=0~10)	set tw v bezel 2	TV wall horizontal bezel: 2	TV wall vertical bezel: 0
get tw v bezel	Get tv wall vertical bezel	get tw v bezel	TV wall vertical bezel: 0	TV wall vertical bezel: 0
get output res	Get output resolution	get output res	TV wall resolution: 3840x2160P@30Hz	

RS-232 Commands

Command Code	Function Description	Example	Feedback	Default
Video Wall Setting				
set output res x	Set output resolution (x=1~4) x=1: 1280x720@60Hz x=2: 1920x1080P@60Hz x=3: 3840x2160P@30Hz x=4: 1024x768P@60Hz	set output res 3	TV wall resolution: 3840x2160P@30Hz	1920x1080P@60Hz
set output auto switch mode y	Set output auto switch detection mode (y=1~2) y=1: Signal y=2: Source 5V	set output auto switch mode 1	HDMI outputs auto switch mode: signal	signal
get output auto switch mode	Get output auto switch detection mode	get output auto switch mode	HDMI outputs auto switch mode: signal	
set output y rotate x	Set output y rotate (y=1~10, x=0~1) x=0: Output 0° rotation x=1: Output 180° rotation y=1: Output 1 y=2: Output 2 y=3: Output 3 y=4: Output 4 y=5: Output 5 y=6: Output 6 y=7: Output 7 y=8: Output 8 y=9: Output 9 y=10: Output 10	set output 1 rotate 1	Output 1: 180° rotation	Output 1: 0° rotation
get output y rotation	Get output y rotate status (y=0~10)	get output 1 rotation	Output 1: 180° rotation	Output 1: 0° rotation
Audio Setting				
set output audio mute x	Set output audio mute on/off (x=0~1) x=0: Mute Off x=1: Mute On	set output audio mute 1	Output audio mute: on	Output audio mute: off
get output audio mute	Get output audio mute on/off	get output audio mute	Output audio mute: on	Output audio mute: off

Application Example



The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

FAQs & Troubleshooting

1. One or few of the displays are glitching OR No video output

- Try changing the HDMI cables.
- Check if the issue happens with either media source, HDMI and USB-C.
 - Try a lower resolution from the media source.
 - Try a different media source.

2. How do I rotate the top displays to reduce the bezels?

Press the corresponding number buttons on the remote to rotate the video 180-degrees.

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.

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