

4K60 HDMI/USB-C 1x4 Video Wall Controller

Compact 4K Video Wall Processor with 8 Display Modes, Audio De-embedding & RS-232 Control

SKU: VW-HDUSBC1X4



Thank you for purchasing this product. Please read this manual thoroughly before installation and operation. Surge protection device recommended.

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1. Introduction

The KanexPro VW-HDUSBC1X4 is a versatile 18Gbps video wall controller designed for signal capturing, AD conversion, routing, and distributing all-format signals to a video wall (LCD displays) while maintaining true digital signal transmission. It features HDMI and USB-C input with resolution up to 4K@60Hz 4:4:4, and four HDMI outputs supporting 8 video wall splicing modes. Optical audio and L/R analog audio de-embedding outputs are also supported. The unit can be controlled via front panel buttons, IR remote, and RS-232 serial commands.

2. Features

- Accepts 4K@60Hz 4:4:4 input via HDMI 2.0b or USB-C with 18Gbps bandwidth and HDCP 2.2 compliance
- Distributes a single source across up to four HDMI displays in 8 video wall configurations: 1×1, 2×1, 3×1, 4×1, 1×2, 1×3, 1×4, and 2×2
- Horizontal and vertical bezel compensation (0–10 range) for seamless image alignment
- 180° image rotation per output channel for flexible display orientation
- Optical (S/PDIF) and analog L/R (RCA) audio de-embedding: Dolby Digital, DTS 5.1, LPCM up to 7.1 channels
- Full RS-232 ASCII command set (115200 baud) for third-party control system integration
- Six EDID modes per input for reliable source negotiation
- Compact metal enclosure (220×100×30 mm) with front-panel buttons, IR remote, and IR extender port
- Zero video and audio latency

3. Package Contents

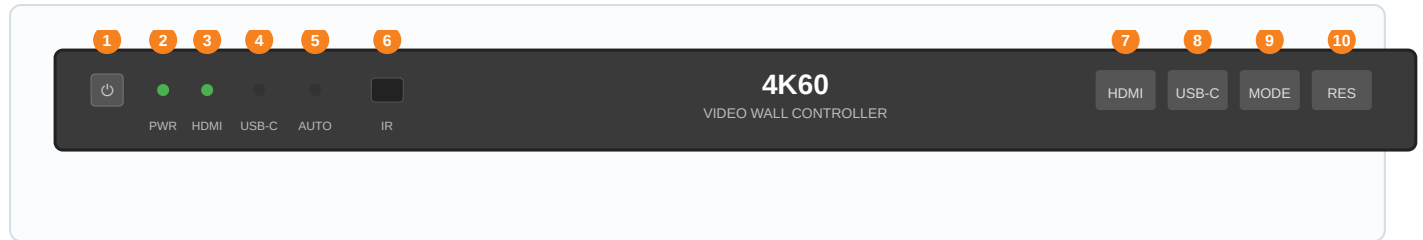
- 1× Video Wall Controller
- 1× 12V/1A Power Adapter
- 1× IR Remote Control
- 1× 5V IR Receiver Cable (1.5 m)
- 1× 3-pin 3.81mm Phoenix Connector (male)
- 4× Machine Screws
- 4× Rubber Feet
- 4× Screw Posts
- 1× User Manual

4. Specifications

SPECIFICATION	VALUE
Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18 Gbps
Video Resolution (Input)	Up to 4K@60Hz 4:4:4
Video Resolution (Output)	720p@60Hz, 1080p@60Hz, 4K@30Hz, 1024×768@60Hz (XGA)
Color Space	RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
Color Depth	8/10/12-bit
IR Level / Frequency	5Vp-p / 38 KHz
Audio (HDMI IN/OUT)	LPCM 2.0/5.1/7.1, Dolby Digital/Plus/EX, DTS, DTS-EX, DTS-96/24
Audio (L/R OUT)	PCM 2.0
Audio (Optical/S/PDIF)	Dolby Digital/Plus, DTS 5.1, PCM 2.0
Audio / Video Latency	No Latency
ESD Protection	±8kV (air-gap) & ±4kV (contact)
Connection	
Input Ports	1× HDMI [Type A, 19-pin], 1× USB-C [Type C, 24-pin]
Output Ports	4× HDMI [Type A, 19-pin], 1× Optical [S/PDIF], 1× L/R [RCA]
Control Ports	1× RS-232 [3-pin 3.81mm Phoenix], 1× IR EXT [3.5mm stereo]

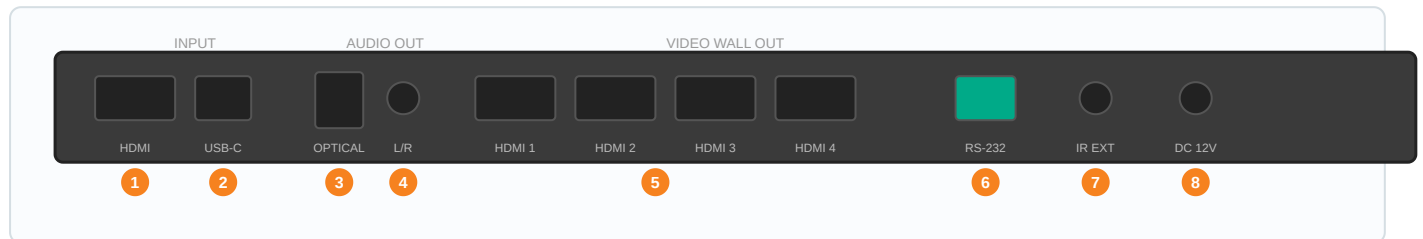
5. Operation Controls and Functions

FRONT PANEL



NO.	NAME	FUNCTION DESCRIPTION
1	Power Button	Press to power on from standby; press and hold 2–3 seconds to enter standby from power-on state.
2	Power LED	Green when operating normally; red on standby.
3	HDMI LED	Green when HDMI input is selected.
4	USB-C LED	Green when USB-C input is selected.
5	AUTO LED	Green when auto switching is enabled.
6	IR Window	IR signal receiving window for the remote control.
7	HDMI Button	Select HDMI input channel.
8	USB-C Button	Select USB-C input channel.
9	MODE Button	Cycle through the 8 splicing modes.
10	RES Button	Cycle the output resolution of all four HDMI outputs.

REAR PANEL



NO.	NAME	FUNCTION DESCRIPTION
1	HDMI INPUT	HDMI signal input port. Connect to an HDMI source device.
2	USB-C INPUT	USB-C signal input port. Connect to a USB-C source device.
3	Optical Audio Out	Optical audio output port. Connect to an audio amplifier or sound system.
4	L/R Audio Out	Analog audio output port (RCA). Connect to a speaker or amplifier.
5	Video Wall Out (HDMI 1–4)	Four HDMI signal output ports. Connect to TVs or displays.
6	RS-232	3-pin phoenix connector for serial control or firmware upgrade.
7	IR EXT	IR signal receiving port for 38KHz IR receiver cable. Use when the unit is in a closed area out of IR line of sight.
8	DC 12V	Connect to the included 12V/1A power adapter.

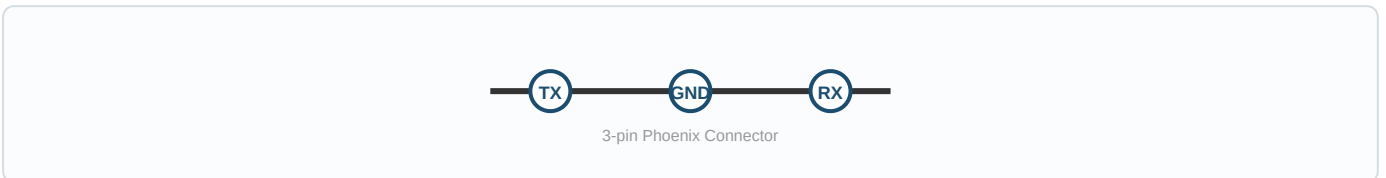


6. IR Remote

Power	Power on the device or set it to standby mode.
Mute	Turn off/on the audio output, including HDMI, optical, and L/R audio.
HDMI	Select HDMI input channel.
USB-C	Select USB-C input channel.
AUTO	Disable or enable input auto switching.
Rotation 1/2/3/4	Switch rotation angle between 0° and 180° for the corresponding output channel.
Resolution (720P/1080P/4K/XGA)	Switch the resolution for all 4 output channels simultaneously.
Video Wall Mode	Select from 8 splicing modes: 1×1, 2×1, 3×1, 4×1, 1×2, 1×3, 1×4, 2×2.
H/V-Bezel « »	Adjust the horizontal and vertical bezels of the splicing images.

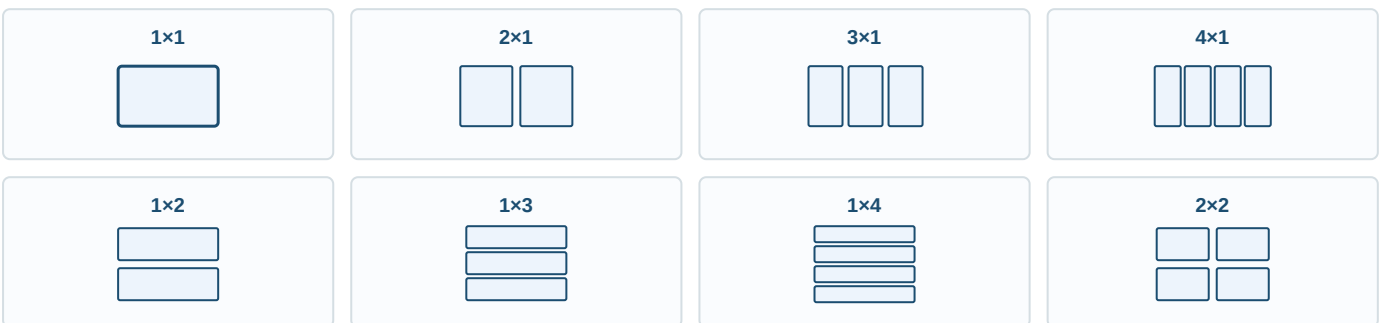
7. IR Cable Pin Assignment

The IR receiver cable uses a 3.5mm stereo mini-jack with the following pin assignment:



8. Video Wall

The video wall supports 8 splicing modes. Users can set display modes via front panel buttons, IR remote, and RS-232 commands.



Note: In video wall mode (except 1×1), only the screens selected to perform video wall splicing will display images. Their bezels can be adjusted using the H-Bezel and V-Bezel controls.



9. RS-232 Control Command

Serial port protocol: Baud rate: 115200 (default), Data bits: 8, Stop bits: 1, Parity: None.

Parameters: x = Parameter 1, y = Parameter 2, != Delimiter

SYSTEM SETTING

COMMAND	FUNCTION	EXAMPLE	FEEDBACK
help!	List all commands	help!	(lists all commands)
r status!	Get device current status	r status!	power, wall mode, resolution...
r type!	Get device model	r type!	1x4 video wall controller
r fw version!	Get firmware version	r fw version!	mcu fw version: x.xx.xx
s power z!	Power on/off (z=0 off, z=1 on)	s power 1!	power on... initialization finished!
r power!	Get current power state	r power!	power on / power off
s reboot!	Reboot the device	s reboot!	reboot... initialization finished!
s reset!	Reset to factory defaults	s reset!	reset to factory defaults...

INPUT SETTING

COMMAND	FUNCTION	EXAMPLE	FEEDBACK
s input x edid z!	Set input x EDID mode (x=0-2, z=1-6) x: 0=all, 1=HDMI, 2=USB-C z: 1=4K60 2.0ch, 2=4K60 5.1ch, 3=4K30 2.0ch, 4=4K30 5.1ch, 5=1080p 2.0ch, 6=1080p 5.1ch	s input 1 edid 1!	input 1 edid: 4k60, 2.0ch
r input x edid!	Get input x EDID mode (x=0-2)	r input 1 edid!	hdmi in edid: 4k60, 2.0ch
s output in source x!	Route input to output (x=1 HDMI, x=2 USB-C)	s output in source 1!	output->hdmi in
r output in source!	Get current input source	r output in source!	output->hdmi in



OUTPUT SETTING

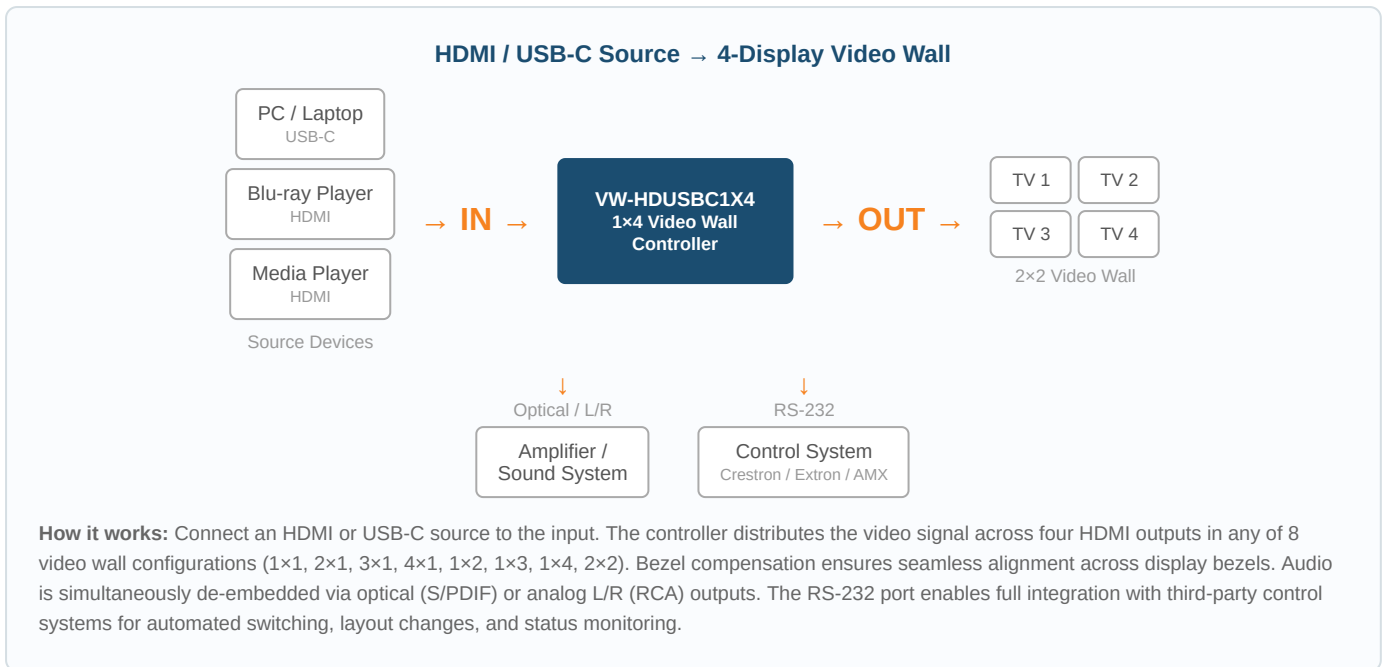
COMMAND	FUNCTION	EXAMPLE	FEEDBACK
s tw mode x!	Set video wall mode (x=1-8) 1=1x1, 2=2x1, 3=3x1, 4=4x1, 5=1x2, 6=1x3, 7=1x4, 8=2x2	s tw mode 1!	tv wall mode: 1x1
r tw mode!	Get video wall mode	r tw mode!	tv wall mode: 2x2
s tw h bezel +!	Increment horizontal bezel	s tw h bezel +!	tv wall horizontal bezel: (bezel+1)
s tw h bezel -!	Decrement horizontal bezel	s tw h bezel -!	tv wall horizontal bezel: (bezel-1)
s tw h bezel x!	Set horizontal bezel (x=0-10)	s tw h bezel 0!	tv wall horizontal bezel: 0
r tw h bezel!	Get horizontal bezel	r tw h bezel!	tv wall horizontal bezel: 0
s tw v bezel +!	Increment vertical bezel	s tw v bezel +!	tv wall vertical bezel: (bezel+1)
s tw v bezel -!	Decrement vertical bezel	s tw v bezel -!	tv wall vertical bezel: (bezel- 1)
s tw v bezel x!	Set vertical bezel (x=0-10)	s tw v bezel 0!	tv wall vertical bezel: 0
r tw v bezel!	Get vertical bezel	r tw v bezel!	tv wall vertical bezel: 0
s tw res x!	Set output resolution (x=1-4) 1=720p60, 2=1080p60, 3=4K30, 4=XGA	s tw res 2!	tv wall resolution: 1920x1080p60
r tw res!	Get output resolution	r tw res!	tv wall resolution: 1920x1080p60
s output y rotate x!	Set output rotation (y=1-4, x=0 or 1) x=0: 0°, x=1: 180°	s output 1 rotate 0!	output1: 0° rotation
r output y rotation!	Get output rotation (y=0-4, 0=all)	r output 0 rotation!	output1-4: 0° rotation
s output audio mute x!	Set audio mute (x=0 off, x=1 on)	s output audio mute 0!	output audio mute: off
r output audio mute!	Get audio mute status	r output audio mute!	output audio mute: off

Factory Default Settings

- HDMI input selected
- EDID: 4K60 4:4:4 2ch
- Audio mute: off
- Video wall mode: 1x1
- Output resolution: 1080p
- All HDMI outputs: no rotation (0°)
- H-Bezel = 0, V-Bezel = 0



10. Application Example



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