

Expandable **4K** 2x4 HDMI® Video Wall Processor



**Vanco Part Number:
EVSP24VW**

**Expandable 4K 2x4
HDMI® Video Wall
Processor**

EVOLUTION
BY 

www.vanco1.com • 800.626.6445

DEAR CUSTOMER

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.

This product is 100% inspected and tested in the United States to verify
HDMI performance parameters.

WARNING

1. Do not expose this unit to water, moisture, or excessive humidity.
2. Do not install or place this unit in a built-in cabinet, or other confined space without adequate ventilation.
3. To prevent risk of electrical shock or fire hazard, due to overheating do not obstruct unit's ventilation openings.
4. Do not install near any source of heat, including other units that may produce heat.
5. Do not place unit near flames.
6. Only clean unit with a dry cloth.
7. Unplug unit during lightening storms or when not used for an extended period of time. A surge protector is strongly recommended.
8. Protect the power cord from being walked on or pinched, particularly at the plugs.
9. Use unit only with accessories specified by the manufacturer.
10. Refer all servicing to qualified personnel.

CAUTION

HDMI is a very complex technology requiring continuous authentication of the signal and the same video resolution and audio settings on all electronic equipment in the system. When there are multiple sources and displays, the video resolution and audio setting on all connected units must be adjusted to correspond with that of the display having the lowest video and audio capability.

INTRODUCTION

The Evolution by Vanco EVSP24VW 4K Video Wall processor allows a source signal to be displayed across multiple displays to create a video wall. Equipped with two HDMI 2.0 inputs to connect multiple sources, with four outputs to create a video wall out of the box in multiple configurations. Need to create a larger video wall? Not a problem, the EVSP24VW features HDMI loop-outs to daisy-chain multiple units together up to a 16x16 configuration! Also features audio options including Toslink digital audio output and balanced analog outputs, to break out into an amplifier or distributed audio system. Capable of passing 4K@60Hz with scaling, the EVSP24VW is the perfect video wall solutions for small and large applications.

Expandable 4K 2x4 HDMI Video Wall Processor

Part # EVSP24VW

- 4K 2x4 HDMI Video Wall Processor
- Allows for 16 rows and columns of displays in any video wall configuration up to 16x16
- Two HDMI loop-outs to cascade into other units for larger video walls or to monitor sources locally
- Two HDMI inputs allow for multiple source video wall configurations, or to switch one source across the entire video wall display
- Passes up to 4K@60Hz with HDR
- Able to scale output resolutions
- HDMI 2.0 and HDCP 2.2 compliant
- Customizable options for bezel adjustment
- Supports 180° screen rotation
- Able to be controlled over RS232 and TCP/IP via product software or 3rd party control systems
- Dimensions: 8.5" W x 5.7" D x 1.7" H

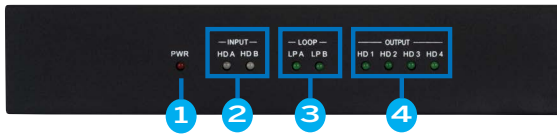
PACKAGE CONTENTS

- 2x4 Video Wall Processor
- 5-pin Phoenix Connector
- (2) 3-pin Phoenix Connector
- RS232-Phoenix Connector Adapter Cable
- Digital Audio Optical Adapter
- 12V/3A Power Supply
- Mounting brackets and screws
- Product Manual

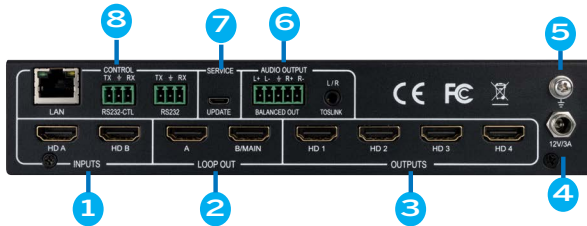
SPECIFICATIONS

HDMI Compliance	HDMI 2.0
HDCP Compliance	HDCP 2.2/1.4
RS-232	Baud rate: 57600, data bit: 8, Stop bit: 1, no parity
Input Video Formats	
4096x2160p 24/25/30/50/60Hz	
3840x2160p 24/25/30/50/60Hz	
1080p 24/25/30/50/60Hz	
1080i 50/60Hz	
1920x1200 60Hz	
1680x1050 60Hz	
1600x1200 60Hz	
1440x900 60Hz	
1400x1050 60Hz	
1366x768 60Hz	
1360x768 60Hz	
1280x1024 60Hz	
1280x960 60Hz	
1280x800 60Hz	
1024x768 60Hz	
1280x720p 50/60Hz	
Audio Format	2.0 channel, 5.1 channel, LPCM, Dolby, DTS
Housing	Metal Enclosure
Color	Black
Dimensions:	8.5" W x 5.7" D x 1.7" H
Weight	4.4 lbs
Supply Voltage	+12V/3A
Power Consumption	25W (max)
Operating Temperature	32 °F ~ 104 °F / 0°C ~ 40°C
Storage Temperature	-4 °F ~ 158 °F / -20°C ~ 70°C
Relative Humidity	10~50% RH (non-condensing)

PANEL DESCRIPTIONS

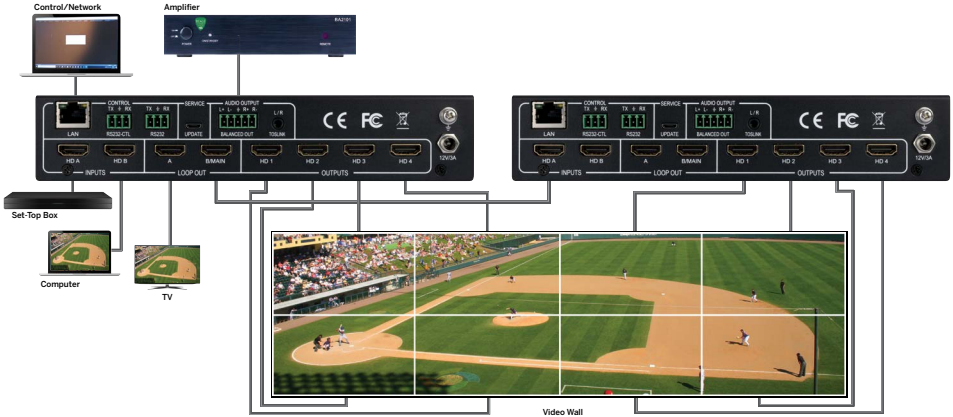


1. Power LED: Illuminates when the unit is powered on
2. Input LED: Illuminates when sources are connected and sending signal
3. Loop-out LED: Illuminates when connected to HDMI displays or additional EVSP24VW units
4. Output LED: Illuminates when HDMI displays are connected and powered on



1. HDMI Inputs: Connect HDMI sources (sources with conversion to HDMI may cause issues)
2. Loop-out ports: Connect HDMI displays to split out source signals, or connect additional EVSP24VW units to daisy-chain for larger video wall applications (using output "B/MAIN")
3. HDMI Outputs: Connect HDMI displays
4. 12V/3A: Connect the included power adapter
5. Ground
6. Audio Outputs:
 - TOSLINK output for both digital and analog output
 - 3.5mm connection for stereo LR output
 - Digital Optical using the included 3.5mm to SPDIF adapter
 - BALANCED OUT: Connected the included 5-pin phoenix connector, 20Hz ~ 20kHz, 1.5Vrms max
7. Service: Firmware update port, any firmware updates will be available on the product page under the "Downloads" tab on www.vanco1.com
8. Control:
 - RS232: Loop out RS232-CTL control command
 - RS232-CTL: External RS232 control
 - Baud Rate: 57600
 - Data Bits: 8
 - Parity: None
 - Stop Bits: 1
 - LAN: Network port for TCP/IP control. Connect to an active Ethernet link with an RJ45 cable for IP control

CONNECTION DIAGRAM



CONNECT AND OPERATE

1. Connect your sources such as a PC, Blu-Ray Player, game console, A/V Receiver, Cable or Satellite Receiver, etc. to either of the HDMI inputs on the unit
2. Connect HDMI displays to the HDMI output(s) of the unit
3. (OPTIONAL) Connect an additional EVSP24VW to the "LOOP OUT" port(s) to add more displays for a larger video wall setup (connect to "B/MAIN" loop-out port)
4. (OPTIONAL) Connect the analog or digital audio outputs to an amplifier or distributed audio system
5. (OPTIONAL) For control, the EVSP24VW includes software using the "LAN" port for TCP/IP control or "RS232-CTL" port for RS232 connection to a PC
 - a. For 3rd party control, the "RS232" port can be utilized, 3rd party drivers available within the "Downloads" tab for this product on www.vanco1.com

NOTE: software for the product can be found on the product page at www.vanco1.com

6. Connect the provided power supply to the EVSP24VW, power on the sources and displays

At this point the display(s) connected should display the source signal(s) connected to the unit. If no signal is being displayed, check all connections, source(s), display(s), and ensure the correct input is selected.

CONTROLLING THE EVSP24VW

Controlling the EVSP24VW is easy out of the box, with TCP/IP and RS232 control.

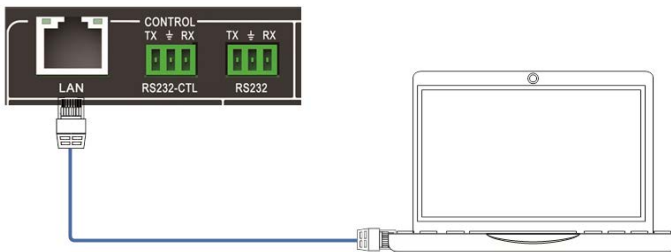
RS-232 Control Connection

Supports RS-232 control with a baud rate of 57600. Connect the RS232-CTL port of the EVSP24VW to a PC via a serial cable, as shown in the following figure:



Network Control Connection

Connect the LAN port of the EVSP24VW to a PC or network, as shown in the following figure:



Product Software

The EVSP24VW includes a product software that is downloadable on the product page, under "downloads" tab on www.vanco1.com. The product software includes a User Interface to control different functionalities including video wall format, input switching, resolution scaling, EDID, and more.

There are four tabs including Matrix Switch, Signal Setting, PQ (Picture Quality) and Position, and Video Wall modes for full control.

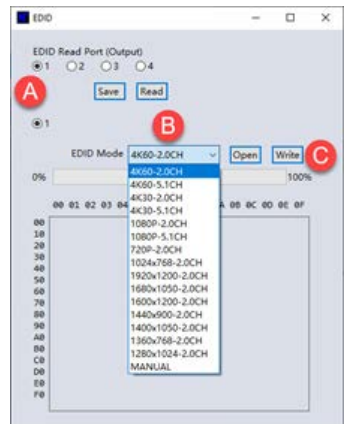


Switch Page - Used to switch between both HDMI inputs

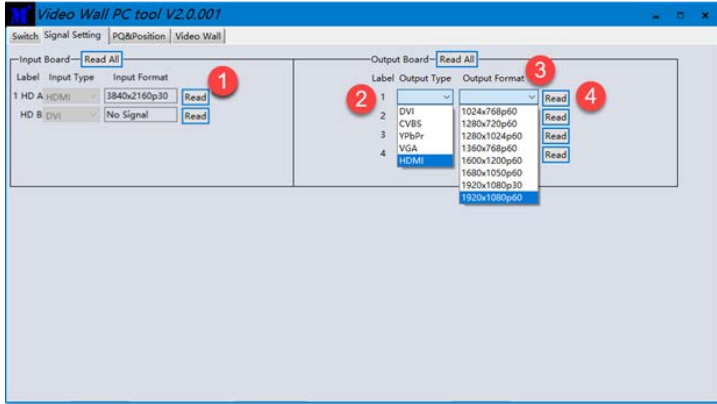
1. Select UART (with RS232 cable) or Network (with Cat5e/6 cable) to connect device (baud rate is 57600 bps)
 - If using UART/RS232 for control, select the COM PORT that is being used to connect and communicate to your computer, then click on DISCONNECT to CONNECT for communication
 - If using Network/IP for control, click on SEARCH DEVICE to ensure your device is found and can connect to the network, then click on DISCONNECT to CONNECT for communication
2. Select input ("HD A" or "HD B") for each individual HDMI output, allows to switch between sources
3. AllSet function: Allows either source to be sent to all displays
4. LOOP OUT: Select input source for B/MAIN output port. This is to be used for daisy-chaining additional EVSP24VW units to create a larger video wall application
5. AUDIO OUTPUT: Select which source the digital and analog audio outputs will breakout audio from, to connect to an amplifier or audio distribution system
6. Reset: Click to return to factory default settings
7. EDID Control: If any issues with video and audio on the display(s) connected, EDID can be adjusted to resolve these issues, simply click on the "EDID" button, and the following prompt window will display:

- a. Select the HDMI output to read and/or change the EDID of that output
- b. Select the EDID setting from the dropdown box that best matches the display connected to that output
- c. Click on "Write" to each HDMI input

NOTE: Once an EDID is set, it can be saved by clicking "Save" in step A. Furthermore, a saved EDID setting can be recalled by clicking on "Open" in step C, and writing to either HDMI input.



Signal Setting - Set the input and output resolutions, and scale each output



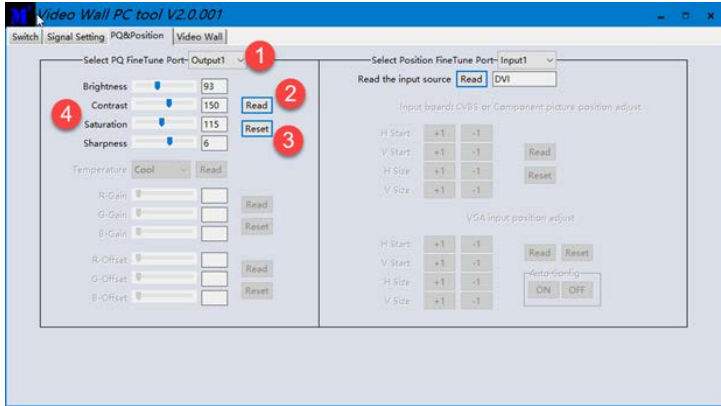
1. Click on "Read" to read the resolution of each input port
2. Select the type of signal for each output from the dropdown list
3. Select the resolution that best matches the display from the dropdown list, or choose a resolution to scale to
4. Click on "Read" to set the resolution on each output

Available output resolutions:

No.	Output Resolution Setting
1	3840x2160p 60Hz
2	3840x2160p 50Hz
3	3840x2160p 30Hz
4	3840x2160p 25Hz
5	1920x1200 60Hz
6	1920x1080p 60Hz
7	1920x1080p 50Hz
8	1600x1200 60Hz
9	1440x1050 60Hz
10	1366x768 60Hz
11	1360x768 60Hz
12	1280x1024 60Hz
13	1280x768 60Hz
14	1280x720p 60Hz
15	1280x720p 50Hz
16	1024x768 60Hz

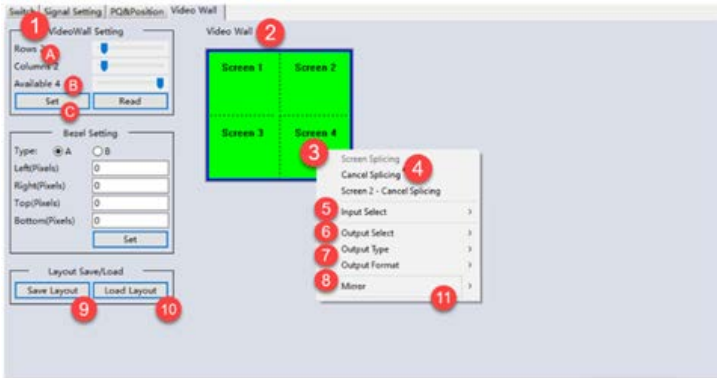
Note: 3840x2160 25/30Hz can only be used for standalone display, not for video wall mode.

Picture Quality (PQ) and Position - Adjust the picture settings for each output



1. Select the output to "fine tune"
2. Click "Read" to show the current output settings
3. Click "Reset" to return the output to factory default
4. Adjust and fine tune the video settings such as Brightness, Contrast, Saturation, and Sharpness

Video Wall - Setting up the Video Wall Configuration



1. Use the Video Wall Setting controls to change how the displays are arranged on the Video Wall page.
 - a. Adjust the Rows and Columns sliders to change the displayed screen arrangement to adjust the video wall configuration on the right hand side; this will display a "drag and drop" section with the appropriate video wall format
 - b. Change the "Available" slider to set how many outputs will be used for the Video Wall, the maximum number is based how many EVSP24VWs are connected. For instance two EVSP24VW units will have an available number of 8 displays/screens
 - c. Click the "Set" button to show the video wall configuration on the right hand side
2. Select the "Screen" to adjust which input should show on that screen (once the screen is selected, right click on the screen to input, output, and horizontal/vertical settings)

NOTE: The selected screens will be shown as bright blue. A video wall that is in use will be shown in bright green

3. Right click on the video wall configuration for additional menus
4. Select "Screen Splicing" from the menu to ENABLE the video wall mode. The selected screens will now be shown as bright green

NOTE: Right click and select CANCEL SPLICING to DISABLE the video wall

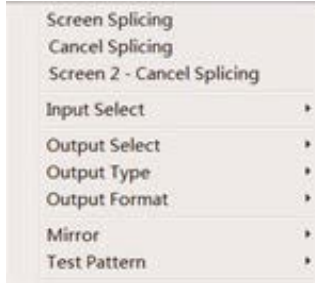
5. To change source being displayed on a specific display, right-click to open the pop-up menu and select the desired input from the "Input Select" menu option


NOTE: Repeating steps 2 ~ 5 above with a different set of outputs allows the creation of a second video wall. However, changing the Rows, Columns and Available sliders will automatically delete the current video wall set up when the "Set" button is clicked. The following example shows a more unusual video wall set-up of two video walls with two 2x1 configurations:

6. Select the output you would like to edit (only when the video wall is disabled)
7. Change the type of output used for the video wall
8. Change the format resolution for the display selected in the video wall
9. Save and name the layout of the video wall
10. Load a previously saved video wall layout
11. Mirror option allows you to change the orientation or "flip" the individual displays in the video wall

Video Wall Context Menu

Right clicking on any of the screen icons will display the following context menu:



Screen Stitching	This option connects the selected screens into a video wall configuration
Cancel Stitching	Return the Video Wall configuration to normal outputs
Screen x - Cancel Stitching	3840x2160p 30Hz 
Input Select	Use the sub-menu to select the input to display on the video wall or the secondary input image shown in the above example
Output Select	This option is only available for any screen that is not assigned to a video wall mode
Output Type	This option is only available for any screen that is not assigned to a video wall mode
Output Format	This option is only available for any screen that is not assigned to a video wall mode. It allows setting of the output resolution for the selected screen output
Mirror	Two sub options : OFF (default), ON (H+V Mirror) When select "ON", you can make 180° rotation with the selected screen
Test Pattern	When Test Pattern is enabled, the output will display Color Bar pattern

Bezel Setting

The Bezel Setting section allows the entry of values to compensate for the display bezel thickness. These values may be entered either as pixels (Type A) or as mm (Type B).

Type A Bezel Settings

The image size will be adjusted to allow for the number of pixels entered in each of the entry boxes. Click the "Set" button to view the effect of the new values.

Type B Bezel Settings

The image size will be adjusted to allow for the Inner and Outer display dimensions as entered in each of the entry boxes. Click the "Set" button to view the effect of the new values.

Bezel Compensation

The following images demonstrate the effect of not having bezel compensation and what a correctly configured bezel compensation settings should produce:



No Bezel Compensation



Correct Bezel Compensation

Layout Save/Load

The Save Scene/Layout and Load Scene/Layout buttons allow a video wall configuration to be saved or recalled at any time. Up to 10 configurations, each with their own name can be saved or recalled. When saving, each Scene can optionally be given a name to identify that video wall scene setup.

TROUBLE-SHOOTING

1. Best results are usually achieved when the source and display resolutions are the same. If resolutions differ, the extenders will try to adjust the signal to match the resolution of the HDTV with the lowest resolution. This will result in a picture with a lower resolution on the other HDTV sets.
2. If you do not get audio and video, access the "setup" menu on the TV to adjust the audio and video settings. If the HDMI control circuit cannot establish a handshake, then there usually will be no audio or video in addition to a blue or black screen with a statement similar to "this protocol not supported" or "weak signal".
3. If the above mentioned messages display, reset the receiver by disconnecting the power supply. You can also disconnect all of the HDMI and power cables, wait 15 minutes for any voltages to decay and then reconnect all of the cables.
4. If you are still encountering issues, attempt the "hot-plug concept. With all of the HDMI cables disconnected, turn on the source and plug in the HDMI cable into it's output, then power up the Vanco unit and plug the HDMI cable into it's input, finally turn on the display and plug the HDMI cable from the receiver into it. This activates all of the devices in corresponding order and results in a signal being plugged into a device that is on and will attempt to connect the signal.
5. Most of the major source and display manufacturers employ a proprietary control channel to communicate between devices from the same manufacturer. Sometimes this can interfere with the HDMI control circuit or the authentication of the signal. Call the manufacturer if you experience this issue. Sometimes a player, an audio/video receiver, or a cable/satellite box may not have the latest software update, usually this can be downloaded from the manufacturer's website.

SAFETY AND NOTICE

The EVSP24VW has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment, the EVSP24VW should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit.
- Always unplug the power to the device before cleaning

LIMITED WARRANTY

With the exceptions noted in the next paragraph, Vanco warrants to the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a period of two years from the date of purchase. Should this product, in Vanco's opinion, prove defective within this warranty period, Vanco, at its option, will repair or replace this product without charge. Any defective parts replaced become the property of Vanco. This warranty does not apply to those products which have been damaged due to accident, unauthorized alterations, improper repair, modifications, inadequate maintenance and care, or use in any manner for which the product was not originally intended.

Items integrated into Vanco products that are made by other manufacturers, notably computer hard drives and liquid crystal display panels, are limited to the term of the warranty offered by the respective manufacturers. Such specific warranties are available upon request to Vanco. A surge protector, power conditioner unit, or an uninterruptible power supply must be installed in the electrical circuit to protect against power surges.

If repairs are needed during the warranty period the purchaser will be required to provide a sales receipt/sales invoice or other acceptable proof of purchase to the seller of this equipment. The seller will then contact Vanco regarding warranty repair or replacement.

TECHNICAL SUPPORT

In case of problems, please contact Vanco Technical Support by dialing 1-800-626-6445. You can also email technical support issues to techsupport@vanco1.com.

When calling, please have the Model Number, Serial Number (affixed to the bottom of the unit) and Invoice available for reference during the call.

Please read this Instruction Manual prior to calling or installing this unit, since it will familiarize you with the capabilities of this product and its proper installation.

All active electronic products are 100% inspected and tested to insure highest product quality and trouble-free installation and operation. The testing process utilizes the types of high-definition sources and displays typically installed for entertainment and home theater applications.

For additional information, such as helpful installation videos, etc. please visit www.vanco1.com

LIABILITY STATEMENT

Every effort has been made to ensure that this product is free of defects. The manufacturer of this product cannot be held liable for the use of this hardware or any direct or indirect consequential damages arising from its use. It is the responsibility of the user and installer of the hardware to check that it is suitable for their requirements and that it is installed correctly. All rights are reserved. No parts of this manual may be reproduced or transmitted by any form or means electronic or mechanical, including photocopying, recording or by any information storage or retrieval system without the written consent of the publisher.

Manufacturer reserves the right to revise any of its hardware and software following its policy to modify and/or improve its products where necessary or desirable. This statement does not affect the legal rights of the user in any way.



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Revised July 2024