



EVMX42MV Quick Start Guide

4K 4x2 Seamless Audio and Video Matrix with Multiview

Safety Instructions

For optimum performance and safety, please read these instructions carefully before use and keep this manual for future reference. Please have the part number, serial number, and invoice available when requesting support.

- To prevent electric shock, please ensure that all apparatus is properly grounded.
- Place the device in a well-ventilated area, do not block any ventilation openings.
- Do not expose this apparatus to rain or place it near water. Any liquid that goes into the apparatus may cause a failure, fire, or electric shock.
- Do not place the device on an uneven or unstable surface. The device may fall resulting in a malfunction.
- Never insert anything metallic into the open parts of this apparatus. This may cause a danger of electric shock.
- If a third-party power supply is used, please ensure that the power supply specifications meet the product requirements.

Introduction

The Evolution by Vanco EVMX42MV 4x2 HDMI Matrix allows up to four HDMI sources to be distributed up to two displays with full seamless switching flexibility. The EVMX42MV features the ability of passing 4K@60Hz resolution and 4:4:4 chroma subsampling with HDR. Multiple sources can be displayed independently on either, or both displays. Users can display one, two, three, or all four sources at once using any of the eight different built-in display modes. Audio can be set to any source in multiview mode, with the ability of breaking out audio with analog and digital connections. With the ability to control switching via the front panel, IR, RS-232, and TCP/IP, along with an easy and intuitive user interface, the EVMX42MV is a great solution for digital signage, sports bars, collaboration spaces, and more.

Product Features

- Supports 4K@60Hz, 4:4:4 Chroma with HDR
- Delivers signals from up to 4 sources independently to 2 displays
- Multiview mode allows for multiple sources to be displayed on one screen
- 8 different modes for customized multi-view applications
- Each output is fully independent and can display different sources even in multiview mode
- Seamless switching and routing of audio and video
- Analog and digital audio breakouts
- Controllable via front panel, IR, RS-232 and TCP/IP
- Easy and intuitive user interface for setup and to control switching
- HDMI 2.0 and HDCP 2.3 compliant
- Rack mountable design

Packaging Contents

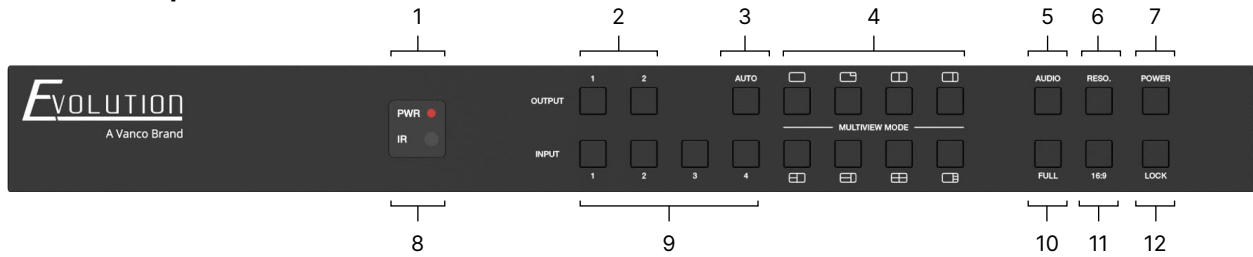
- (1) EVMX42MV 4K 4x2 Seamless Audio and Video Matrix with Multiview
- (1) IR remote
- (1) IR receiver
- (1) 12V/2.5A locking power supply
- (1) RS232 DB9 male to female cable
- (2) Rack mounting ears
- (8) Mounting screws
- (1) Quick start guide

Product Specifications

Technical		
HDMI compliance	HDMI 2.0b	
HDCP compliance	HDCP 2.2 / 1.x	
Video bandwidth	18Gbps	
Video resolution	Up to 4K2K@60 4:4:4	
IR frequency	38KHz	
Color space	RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0	
Color depth	8/10/12-bit	
Audio formats	HDMI	PCM2.0/5.1/7.1CH, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio
	Analog	3.5mm L/R: PCM2.0
	Optical fiber	PCM2.0/5.1/7.1CH, Dolby Digital/plus, DTS 5.1
ESD protection	Human body model	±8kV (air-gap discharge) & ±4kV (contact discharge)
Connections		
Input	4x HDMI input (Type A, 19-pin female)	
Output	2x HDMI out (Type A, 19-pin female)	
	2x L/R dual-RCA	
	2x SPDIF optical	
Control	1x TCP/IP RJ45	
	1x RS232 DB9	
	1x IR extension (3.5mm stereo jack)	

Mechanical	
Housing	Metal enclosure
Color	Black
Weight	2.23kg / 4.9lbs
Dimensions	440mm x 203mm x 44.5mm / 17.32" x 8.00" x 1.75"
Power supply	Input: AC100-240V (50/60Hz)
	Output: DC 12V/2.5A, CE/FCC/UL PSU
Power consumption	Full Load: 22W
	No Load: 9.6w
	Standby Mode: 1.44W
	0-40° C / 32-104° F
Operating temp.	20-90% RH (no-condensing)
Relative humidity	20-90% RH (no-condensing)

Panel Descriptions



Front Panel

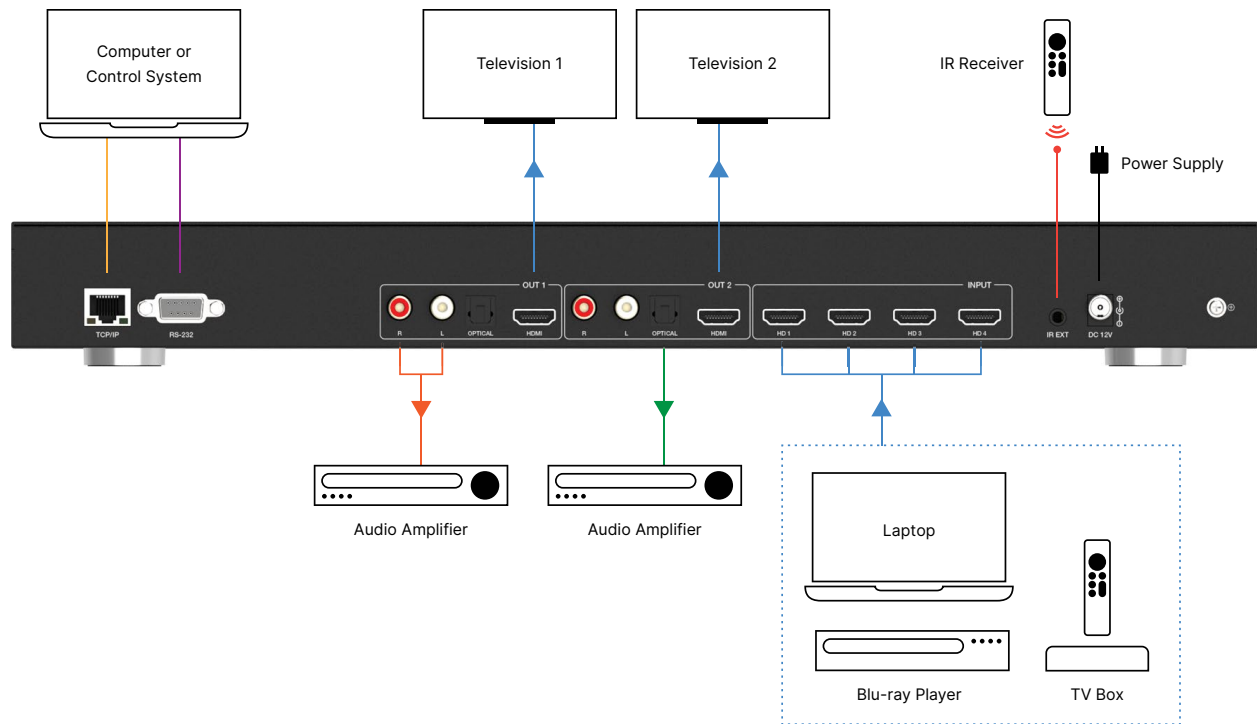
1	Power LED	Emits green when the product is on and active, and red when the product is in standby mode.
2	Output 1/2 Buttons	Output Channel Selection Buttons. Press OUTPUT 1/2 button to select output channel 1 or 2
3	AUTO Button	<p>Turns on/off the input auto switching function (only available in single display mode).</p> <p>When ON, the latest active inserted HDMI input source will be displayed automatically. Alternatively, if the current source selected is powered off or disconnected, the matrix unit will automatically switch to the next source that is sending signal, sequentially.</p> <p>Note that this is dependent on the 5V of power that HDMI sources send, some sources do not stop sending signal when in sleep mode.</p> <p>When OFF, switching can only occur using front panel, IR, RS232, or IP commands.</p>
4	Multi-view Mode Buttons	Press to switch to the corresponding display modes: Single/PIP/Dual 1/Dual 2, Triple 1, Triple 2, Quad 1/ Quad 2
5	Audio Button	Audio source selection button toggles through the active sources and embeds audio from that source to the output.
6	Resolution Button	Press OUTPUT # + AUDIO + INPUT #
		Sets the output resolution of a selected output.
		<p>Short press: This will toggle through the output resolutions available. Press OUTPUT # + RESO.</p> <p>Long press: Automatically have the selected output resolution to 720P@60Hz. Press OUTPUT # + RESO. (hold for 3 seconds and release).</p>
7	Power Button	Short press to power on the device. Long Press to enter Standby Mode
8	IR Window	Receives IR signal for remote control
9	INPUT 1/2/3/4	Input source selection buttons
10	Full Button	Sets the display aspect ratio to full screen when using Dual 1, Dual 2, Triple 1, Triple 2, and Quad 2 display modes. Press OUTPUT # + FULL
11	16:9 Button	Sets the display aspect ratio to 16:9 when using Dual 1, Dual 2, Triple 1, Triple 2, and Quad 2 display modes. Press OUTPUT # + 16:9
12	LOCK Button	Press to lock/unlock the front panel buttons



Rear Panel

1	TCP/IP Port	Ethernet port to connect to network, computer, or control system
2	RS232 Port	RS232 serial control port to connect to a computer or control system
3	OUT 1 Ports	L/R: PCM 2.0 analog audio output OPTICAL: Optical digital audio output HDMI: HDMI 1 output
4	OUT 2 Ports	L/R: PCM 2.0 analog audio output OPTICAL: Optical digital audio output HDMI: HDMI 2 output
5	HD 1/2/3/4 INPUT Ports	HDMI source signal input ports
6	IR EXT Port	Receives remote IR signals using the provided IR receiver cable
7	DC 12V	Connect the included DC 12V/2.5A power supply for power
8	Grounding Port	Connecting the chassis of the unit to a ground.

Connection Diagram



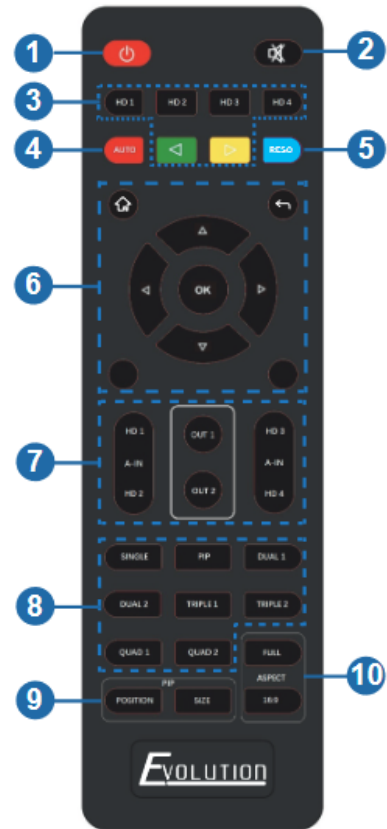
1. Connect sources such as a Blu-ray player, game console, A/V receiver, etc. to the HDMI inputs on the unit. Insert and extract cables carefully with the power switched off. Connecting and disconnecting while the unit is powered can result in damage to circuitry.
2. Connect the HDMI outputs that go to the displays.
3. OPTIONAL: Connect the provided IR RX cable to extend the IR receiving capabilities.
4. OPTIONAL: Connect an Ethernet cable from the TCP/IP port on the matrix to a Local Area Network, or RS232 to the RS232 port on the matrix for communication and control.
5. OPTIONAL: Connect audio outputs to de-embed, and route audio.
6. Connect the power cable to the power receptacle port on the matrix.
7. Connect power supply to an available electrical outlet and power on the device to test.

IR receiver pin's definition is as below:



IR Remote

1. Power button: press this button to power on the matrix switcher or set it to standby mode.
2. Mute button: press this button to mute/unmute the audio
3. HD 1/2/3/4: press these buttons to select the input source in single screen display mode.
 ◀▶: press these buttons to circularly select the last or next input source in single screen display mode.
4. AUTO: Input source auto switching function button, functioning the same as the AUTO button on the front panel.
5. RESO: Output resolution switching button. This button functions as the same as the RESO button on the front panel.
6. 🏠: Press this button to enter the OSD menu of the selected HDMI OUT port, and set the corresponding function by pressing ▲ / ▼ / ◀ / ▶ / OK button.
 ⬅️: Press this button to exit the OSD settings layer by layer.
7. HD 1/2/3/4 (A-IN): Audio source selection buttons. Press these buttons to select the corresponding audio source from HDMI INPUT 1/2/3/4. (The output audio follows the video source by default.)
 OUT 1/2: Press OUT 1/2 button to enter the OSD menu of the HDMI OUT 1/2 port, and set the corresponding function by pressing ▲ / ▼ / ◀ / ▶ / OK button.
8. Multiview buttons: Press these buttons to select the required multiview display mode (SINGLE/PIP/DUAL 1/ DUAL 2/TRIPLE 1/TRIPLE 2/QUAD 1/ QUAD 2)
9. PIP settings
 POSITION: Press this button to set the position of WIN 2 in PIP mode.
 SIZE: Press this button to set the size of WIN 2 in PIP mode.
10. Aspect ratio settings
 FULL: Press this button to set the windows display aspect ratio to be full screen for Dual 1/ Dual 2/ Triple 1/ Triple 2/ Quad 2 display mode.
 16:9 Press this button to set the windows display aspect ratio to be 16:9 for Dual 1/ Dual 2/ Triple 1/ Triple 2/ Quad 2 display mode.



EDID Settings

Select the following modes via OSD menu navigation (USER is USER 1).

No.	EDID Mode	No.	EDID Mode
1	4K60-2.0CH	11	1680x1050-2.0CH
2	4K60-5.1CH	12	1600x1200-2.0CH
3	4K60-7.1CH	13	1440x900-2.0CH
4	4K30-2.0CH	14	1360x768-2.0CH
5	4K30-5.1CH	15	1280x1024-2.0CH
6	4K30-7.1CH	16	1024x768-2.0CH
7	1080P-2.0CH	17	720P-2.0CH
8	1080P-5.1CH	18	AUTO
9	1080P-7.1CH	19	USER
10	1920x1200-2.0CH		

User can select following EDID modes via RS-232 commands or Web UI.

No.	EDID Mode	No.	EDID Mode
1	4K60-2.0CH	11	1680x1050-2.0CH
2	4K60-5.1CH	12	1600x1200-2.0CH
3	4K60-7.1CH	13	1440x900-2.0CH
4	4K30-2.0CH	14	1360x768-2.0CH
5	4K30-5.1CH	15	1280x1024-2.0CH
6	4K30-7.1CH	16	1024x768-2.0CH
7	1080P-2.0CH	17	720P-2.0CH
8	1080P-5.1CH	18	AUTO
9	1080P-7.1CH	19	USER 1
10	1920x1200-2.0CH	20	USER 2
		21	USER 3

Scaling

The switcher supports multiple resolution video inputs up to 3840x2160@60 and supports multiple audio formats (PCM2.0/5.1/7.1CH, Dolby Digital/Plus/ EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio) pass-through function via HDMI cable.

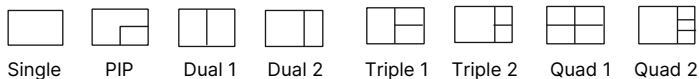
The switcher supports the following video output resolutions:

No.	Output Resolution	No.	Output Resolution
1	4096x2160p 60Hz	8	1920x1080p 60Hz
2	4096x2160p 50Hz	9	1920x1080p 50Hz
3	3840x2160p 60Hz	10	1360x768p 60Hz
4	3840x2160p 50Hz	11	1280x800p 60Hz
5	3840x2160p 30Hz	12	1280x720p 60Hz
6	3840x2160p 25Hz	13	1280x720p 50Hz
7	1920x1200p 60Hz RB	14	1024x768 60Hz
		15	AUTO

Multiview Modes and Operation

The EVMX42MV supports eight different multiview display modes:

- Single/PIP (Picture In Picture)/Dual 1/Dual 2/Triple 1/Triple 2/Quad 1/Quad 2
- Select different operations for different multiview modes as follows:
- Single: Displays one source at a time
- PIP (Picture In Picture): Displays a main source, with a secondary source in a smaller window that can be placed in multiple locations
- Dual 1, Dual 2, Triple 1, Triple 2, Quad 1, Quad 2: Displays multiple sources in the following formats.



Multiview display modes can also be set via RS-232 and TCP/IP commands, OSD menu navigation and/or Web GUI.

Output	Resolution	3840x2160p60	4096x2160p 60Hz 4096x2160p 50Hz 3840x2160p 60Hz 3840x2160p 50Hz 3840x2160p 30Hz 3840x2160p 25Hz 1920x1200p60Hz RB 1920x1080p 60Hz 1920x1080p 50Hz 1360x768p 60Hz 1280x800p 60Hz 1280x720p 60Hz 1280x720p 50Hz 1024x768 60Hz
	VKA	BLACKSCREEN	BLACKSCREEN, BLUESCREEN
	ITC	OFF	ON, OFF
Multiview	Single	Input select	HDMI1, HDMI2, HDMI3, HDMI4
	PIP	Win1 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win2 Select	HDMI1, HDMI2, HDMI3, HDMI4
		PIP Position	Right Bottom, Right Top,
			Left Bottom, Left Top
	PIP Size	Small, Middle, Large	
	PBP	Win1 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win2 Select	HDMI1, HDMI2, HDMI3, HDMI4
		MODE	1, 2
		Aspect	Full, 16:9
	3 x WIN	Win1 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win2 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win3 Select	HDMI1, HDMI2, HDMI3, HDMI4
		MODE	1, 2
		Aspect	Full, 16:9
	4 x WIN	Win1 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win2 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win3 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win4 Select	HDMI1, HDMI2, HDMI3, HDMI4
		MODE	1, 2
		Aspect	Full, 16:9

AUDIO	Audio Select	WIN1	WIN1, HDMI1, HDMI2, HDMI3, HDMI4
	AUDIO-MUTE	OFF	ON, OFF
System	EDID	4K60-2.0	4K60-2.0, 4K60-5.1CH, 4K60-7.1CH, 4K30-2.0CH, 4K30-5.1CH, 4K30-7.1CH, 1080P-2.0CH, 1080P-5.1CH, 1080P-7.1CH, 1920×12002.0CH, 1680×1050- 2.0CH, 1600×1200-2.0CH, 1440×900 -2.0CH, 1360×768-2.0CH, 1280×1024-2.0CH, 1024x 768-2.0CH, 720P-2.0CH, AUTO, USER1
	Baud rate	115200	115200, 57600, 38400,
			19200, 9600
	Reset	Reset	Reset
	FW Version		Read only

Browser Base User Interface

The matrix can be controlled using a browser-based graphical user interface (GUI).

The default IP address is 192.168.0.100

If the IP address is changed, it is important to record the new IP address, if it cannot be located, the IP address can be found using RS-232 control by using the Vanco Serial Tool found on the Vanco website (<https://www.vanco1.com/faq/>), and send the ASCII command " r ipconfig!" (no quotes). The feedback information as shown:

```
IP Mode: DHCP
IP:192.168.62.109
Subnet Mask:255.255.255.0
Gateway:192.168.62.1
TCP/IP port:8000
Telnet port:23
Mac address:6c-df-fb-0c-b3-8e
```

Step 1: Connect the TCP/IP port of the matrix to a PC with an UTP cable, and set the IP address of the PC to be in the same network segment as the switcher.

Step 2: Input the current IP address of switcher into the browser on the PC to enter Web GUI page.



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



Select the Username from the list and enter the password. There are 2 different logins based on admin access (full access), and user access (source switching without advanced audio/video settings and setup). The default credentials are:

ADMIN (full access)

Username: Admin

Password: admin

USER (limited access)

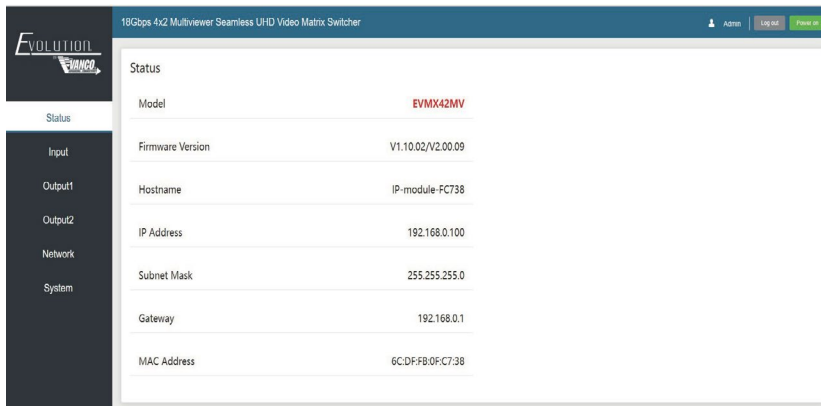
Username: User

Password: user

Select the language from the list, and click the "LOGIN" button or tap the "ENTER" button.

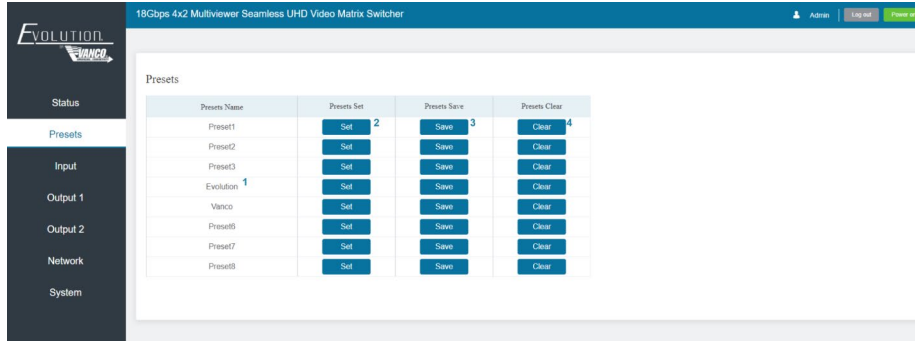
Status Page

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



Presets

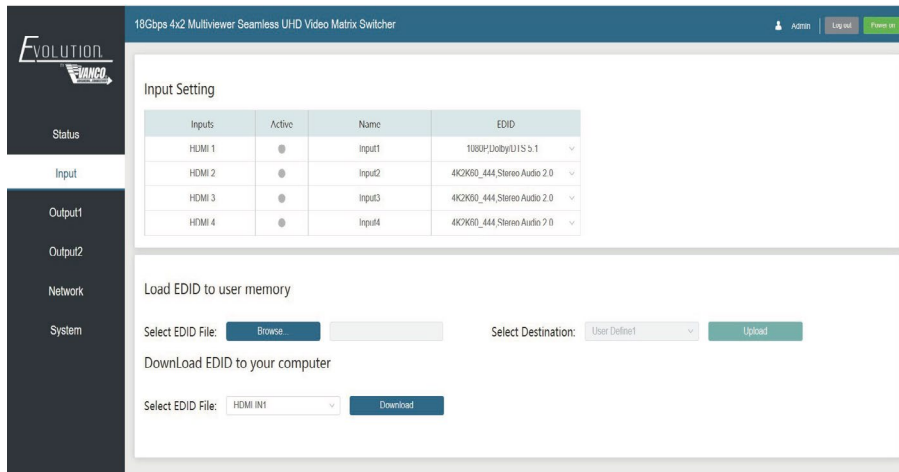
1. Click to type in a custom name for the preset
2. Sets and recalls the preset
3. Saves the current matrix configuration
4. Clears and resets the preset



Input Page

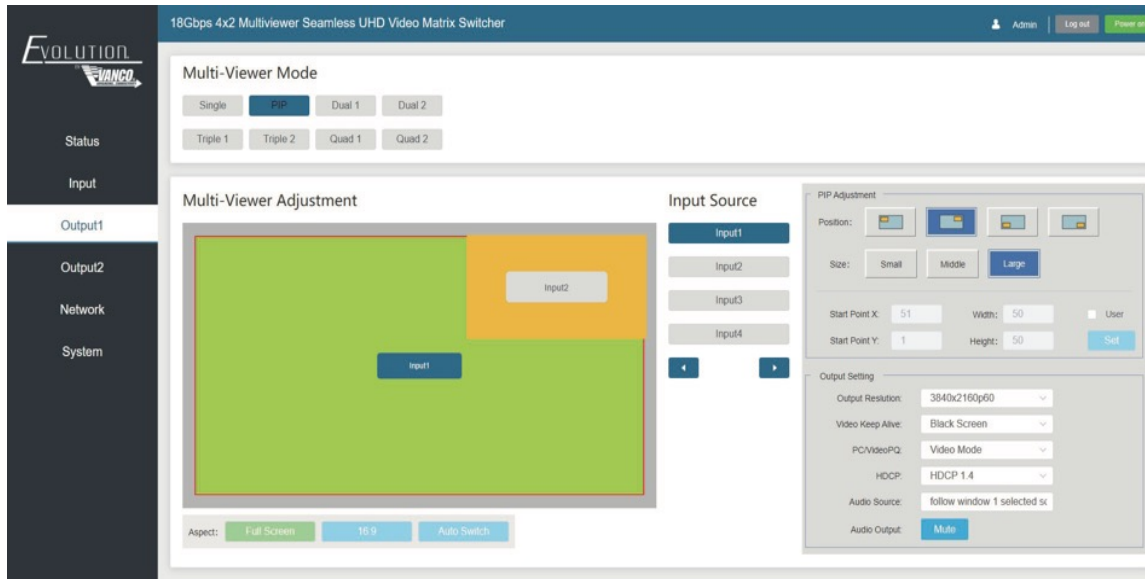
The Input Page allows for changes and setup of EDID for each of the HDMI source inputs.

1. Inputs: Input channel of the device.
2. Active: It indicates whether the channel is connected to a signal source.
3. Name: The input channel's name. Input names can be changed by entering the corresponding name (max length: 12 characters) in the input box .
4. EDID: Click the drop-down list to set the current channel's EDID setting.
5. Load EDID to user memory: Set EDID for the User. Click the "Browse" button, then select the bin file. If the wrong EDID file is selected, an error message will prompt you to load the correct file.
6. Download EDID to your computer: To download the existing EDID settings, click the drop-down box of "Select EDID File" to select the input channel, then click "Download" to save the corresponding EDID file to a computer.



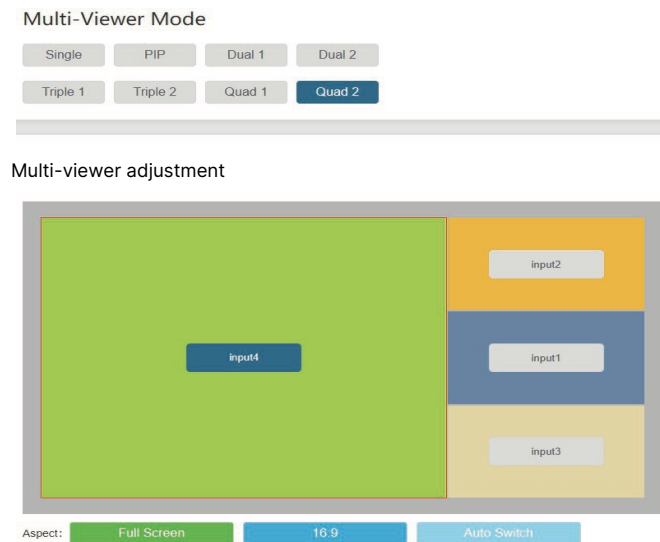
Output 1/2 Page

Multiview display modes can be set for HDMI OUT 1/2 on the corresponding Output 1/2 page. There are eight modes available: Single, PIP, Dual 1, Dual 2, Triple 1, Triple 2, Quad 1, Quad 2.



Multi-Viewer Mode:

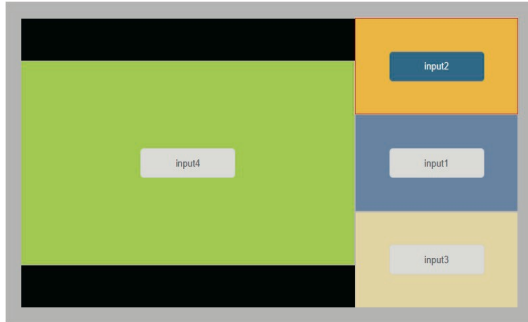
Click the multiview mode button to select the required mode, then the selected mode will be displayed on the Multi-Viewer Adjustment interface, as shown in the figure below.



- Multi-Viewer Adjustment: Display the input source and multiview display mode.
- Auto Switch: Click this button to turn on/off the input source auto switching function (only available in single screen display mode). When the function is turned on, the button displays in green. When the function is turned off, the button displays in blue.
- Full Screen: Press this button to set the windows display aspect ratio to be full screen for Dual 1/Dual 2/Triple 1/Triple 2/Quad 2 display mode.



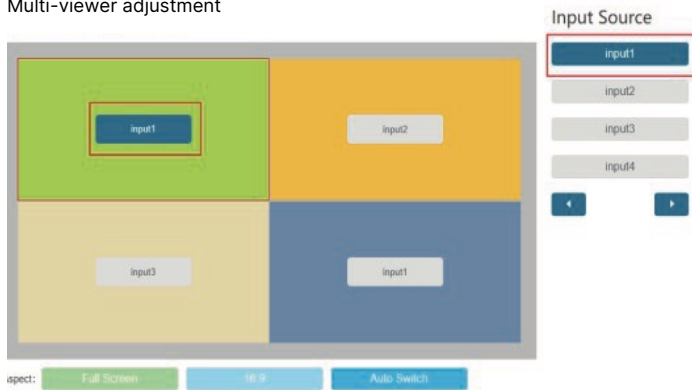
16:9: Press this button to set the windows display aspect ratio to be 16:9 for Dual 1/Dual 2/Triple 1/Triple 2/Quad 2 display mode.



Input Source

Select the input signal source. Select the window in “Multi-Viewer Adjustment” first, and then then “Input 1/2/3/4”.

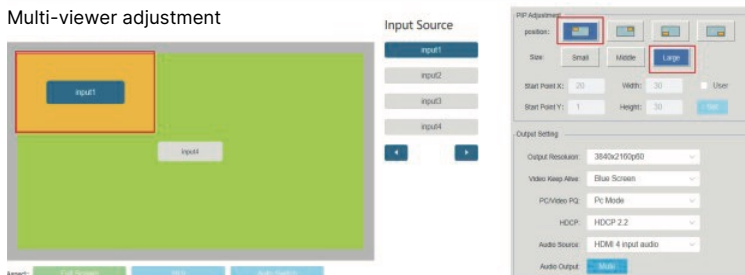
Multi-viewer adjustment



PIP adjustment:

In the PIP mode, you can switch the position and size of the PIP and set the user-defined PIP

Multi-viewer adjustment



User

In the PIP (Picture In Picture) mode, check the User box to enter the user-defined mode, then set the Start Point X, Start Point Y, Width and Height to customize the size and location of the secondary source. After setting, click Set button to confirm the setting and take effect.

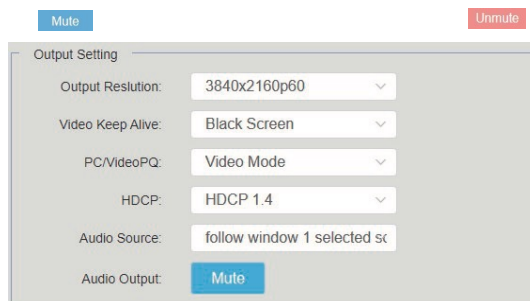


Note:

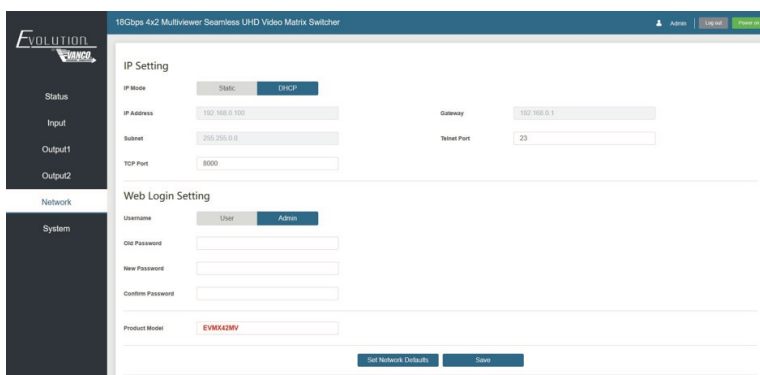
1. The value of Start Point X, Start Point Y, Width and Height should not be empty and only supports integer.
2. The value of Start Point X/Y must range from 1 to 100. (3) Start Point X plus Width less than or equal to 100. Start Point Y plus Height less than or equal to 101.

Output setting: Click the drop-down list to set the output resolution, video keep active, PC/Video PQ, HDCP and audio source.

Audio Output: Click the button to mute/unmute the audio. The button displays in blue in mute state, and pink in unmute state.



Network Page



Modify Network Setting:

Modify the IP Mode/IP Address/Gateway/Subnet/Telnet Port, click “Save” to save the settings.

IP Setting

IP Mode: Static DHCP

IP Address: Gateway:

Subnet: Telnet Port:

TCP Port:

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

IP Setting

IP Mode: Static DHCP

IP Address: Gateway:

Subnet: Telnet Port:

TCP Port:

If the IP Mode is “DHCP”, the unit will automatically be assigned an IP address by the local network.

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:

Web Login Setting

Username: User Admin

Old Password:

New Password:

Confirm Password:

Product Model:

modify successfully

Note: Input rules for changing passwords:

1. The password cannot be empty
2. New Password cannot be the same as Old Password
3. New Password and Confirm Password must be the same

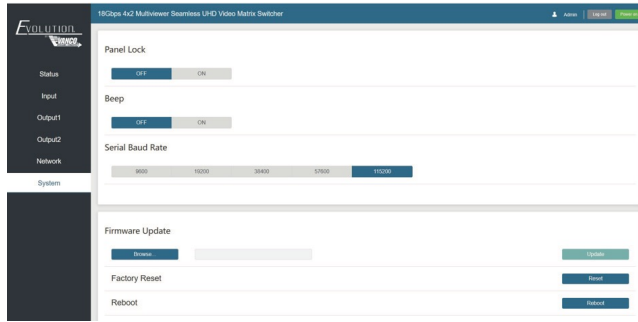
Set the Default Network:

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

Reset All Network Configuration to Factory Default?

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



1. Panel Lock: Click to lock/unlock panel buttons. "ON" indicates that panel buttons are unavailable; "OFF" indicates panel buttons are available.
2. Beep: Click to turn on/off the beep.
3. Serial Baud Rate: Click the value to set the Serial Baud Rate.
4. Firmware Update: Click "Browse" to select the update file, then click "Update" to complete firmware update.
5. Factory Reset: Reset the unit to factory defaults by clicking "Reset".
6. Reboot: Reboot the unit by clicking "Reboot".

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

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 10 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.

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. For additional information, please visit www.vanco1.com.

Technical Support

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

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 part number, serial number (affixed to the bottom of the unit) and invoice available for reference during the call.

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.

Vanco Tech Support

Phone: 1-800-626-6445

Email: techsupport@vanco1.com

Web: www.vanco1.com

Please have the part number, serial number, and invoice available when requesting support.

