

HDMI® 4K 4x2 MATRIX

with Downscaling and ARC



**HDMI® 4K 4x2 Matrix
with Downscaling and
ARC**

**Part Number:
EVMX4K42**

EVOLUTION
BY  **VANCO**
ADVANCING DIGITAL CONNECTIVITY

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 EVMX4K42 4x2 Matrix with IR, ARC, automatic switching, and downscaling ability, allows 4 HDMI sources to be distributed to up to 2 displays simultaneously. Have multiple sources displayed simultaneously on any display or have a single source split to multiple displays, flexibility for the perfect solution. The EVMX4K42 is capable of transmitting 4K@60Hz, 4:4:4 Chroma Subsampling, and HDR. For control, the EVMX4K42 features multiple methods including simple control using the front panel buttons and IR using the provided remote. Able to downscale either output from 4K to 1080p, a perfect solution for multiple resolution displays, without downgrading the resolution on all outputs. Audio Return Channel (ARC) capable, passing audio from the connected displays, to the connected sources. Audio extraction is also built in, with both digital optical and analog outputs to interface with third party audio systems. For reliable HDMI distribution with 4K, downscaling, and breaking out audio in mind, the EVMX4K42 is a great choice for any application.

HDMI® 4K 4x2 Matrix with Downscaling and ARC

Part # EVMX4K42

- Allows up to 4 HDMI sources to be distributed simultaneously on 2 displays
- Supports up to 4K@60Hz and 4:4:4 chroma sampling
- Supports HDR10+ and Dolby Vision
- HDCP 2.2/1.4 compliant
- Downscales 4K to 1080p resolution
- Supports Audio Return Channel (ARC)
- Source Audio Extraction
- Digital and Analog audio outputs
- Features auto and manual source switching
- Manually adjustable EDID
- IR remote control and/or manual front panel control for switching

PACKAGE CONTENTS

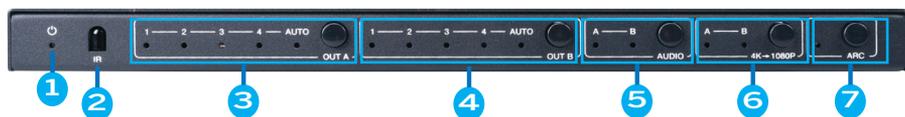
- EVMX4K42 HDMI 4K 4x2 Matrix Selector Switch
- Mounting Hardware
- IR Remote
- 12V/1A Power Supply
- Product Manual

SPECIFICATIONS

HDMI Compliance	HDMI 2.0
HDCP Compliance	HDCP 2.2 and HDCP 1.4
Video Bandwidth	18 Gbps
Video Resolution	Up to 4K2K@50/60Hz (YCbCr 4:4:4), 4Kx2K@30Hz
Color Space	RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
Color Depth.....	8-bit, 10-bit, 12-bit (1080P, 4K@30Hz, 4K@60Hz (YCbcr 4:2:0)); 8-bit (4K@60Hz (YCbcr 4:4:4))
HDMI Audio Formats.....	PCM 2.0/5.1/7.1CH, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD
Optical Audio Formats	PCM 2.0, Dolby Digital / Plus, DTS
L/R Audio Formats.....	PCM 2.0CH (Note: If ARC function is turned on, the audio port will be muted)
ESD Protection.....	Human-body Model: ±8kV (Air-gap discharge), ±4kV (Contact discharge)
Input Ports.....	4×HDMI Type A (19-pin female)
Output Ports	2×HDMI Type A (19-pin female); 1×L/R audio out (3.5mm Stereo Mini-jack); 1×OPTICAL audio out (S/PDIF)
Housing	Metal Enclosure
Color	Black
Dimensions	9.9" W x 4.1" D x 0.8" H
Weight	1.36 lbs
Power Supply	Input: AC100~240V 50/60Hz; Output: DC12V/1A
Power Consumption	3.8W (max)
Operating Temperature.....	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Relative Humidity.....	20°C ~ 90° RH (non-condensing)

PANEL DESCRIPTIONS

Front Panel



1. Power LED – Illuminates when the matrix unit is powered on
2. IR Sensor – Receives IR signal from included IR remote
3. Input selection buttons for Output A – Switches sources from 1-4
 - a. Press and hold button to activate Auto Switching
4. Input selection buttons for Output B – Switches sources from 1-4
 - a. Press and hold button to activate Auto Switching
5. Audio Extraction Selection – Breaks out the audio from either Output A or B
 - a. When ARC is activated, audio is extracted from either Output A or B, however only the digital optical audio port is active, the analog audio port will not output audio
6. Downscale Resolution Selection – downscales either Output A or B from 4K to 1080p
 - a. Ensure that this is activated for the 1080p display output, otherwise all outputs will choose lowest common resolution
7. ARC Activation – turns on Audio Return Channel (ARC) mode
 - a. Ensure that the display features ARC, and furthermore, that the HDMI port on the display that is connected to the switcher is the ARC port (you may have to activate ARC in the menu of the display)
 - b. Only the digital optical breakout will output, the analog audio port will not output audio

Rear Panel



1. HDMI Inputs – Inputs 1-4, connect source(s)
2. HDMI Outputs – Outputs 1-2, connect display(s)
3. Audio Breakouts:
 - a. Digital Audio is an optical/SPDIF connection
 - b. Analog Audio is a 3.5mm connection
4. EDID
 - a. AUTO – Selecting AUTO will automatically send EDID info to both outputs from whichever source is selected for both outputs, switch all sources to both outputs for automatic EDID learning
 - b. COPY – This copies the EDID info of Output A to the source selected for both outputs. Select the input that needs EDID adjustment, and then select COPY.
 - c. STD – Both outputs will be send an EDID format for 1080p
5. Service Port – Connect for any firmware updates
 - a. Any available firmware updates will be available on www.vanco1.com on the product page, under “Downloads”
6. Power Port – Connect the included 12V/1A power supply

IR REMOTE



	<p>Powers on the matrix switcher/Powers off the matrix switcher (goes into standby mode)</p>
<p>1/2/3/4</p>	<p>Selects the input (source) for either Output A or B</p>
	<p>Selects the input (source) left and right, sequentially, for either Output A or B</p>
<p>AUTO</p>	<p>Activates auto switching. The matrix switcher will automatically switch to any source input that is turned ON, in turn, the matrix switcher will automatically switch sources if the current source is powered OFF</p> <p><small>NOTE: The auto switching feature is based upon the 5V of power the source is sending to the matrix switcher. Some sources do not completely turn off (sleep), and still send 5V of power; in this case the matrix switcher will not automatically switch. Test by disconnecting the HDMI cable from the matrix switcher.</small></p>
<p>4K/HD</p>	<p>Activates the downscaling feature for either Output A or B. Downscales resolution from 4K to 1080p. Ensure that a 1080p display is connected before activating.</p>
<p>AUDIO</p>	<p>Activates Audio Return Channel (ARC) function. Press ARC button, then press the output button of which display you would like the audio to be extracted from. Ensure that the display features ARC, and furthermore, that the HDMI port on the display that is connected to the switcher is the ARC port (you may have to activate ARC in the menu of the display). Only the digital optical breakout will output, the analog audio port will not output audio.</p>

Connection Diagram

Source



HDTV

1. Connect up to 4 sources such as a Blu-Ray Player, game console, A/V Receiver, Cable or Satellite Receiver, etc. to the HDMI inputs on the unit
2. Connect up to 2 displays such as an HDTV, Projector, etc. to the HDMI outputs on the unit
3. OPTIONAL: Connect third party audio systems via Digital Optical/SPDIF or Analog 3.5mm audio outputs (ARC enabled will only output Digital Optical port)
4. Connect the included DC 12V/1A locking power supply
5. Power up the EVMX4K42 and then the components connected

Note: Ensure cabling is 2.0 compliant or HDMI certified for the best 4K resolution display. For audio outputs, connect amplifiers or components that are capable to decode HDMI audio to the SPDIF ports, otherwise there will be no audio output

Auto Switching

The EVMX4K42 features the ability to auto switch sources. To activate this feature, simply press and hold the OUT A/OUT B button on the front panel (or IR remote) until "AUTO" is illuminated. To deactivate, it is the same process until "AUTO" is no longer illuminated.

This is a convenient feature that automatically switches to an input source if that source is turned on, it also switches to another active source input if the current input is turned off. For example, if the matrix is switched to the Blu-ray player, and it is turned off, the matrix switcher will find the next source that is turned on, sequentially.

The EVMX4K42 senses if a source input is on by the 5V of power the source is sending, however keep in mind, this is dependent upon the source continuing or discontinuing to send the 5V signal. Unfortunately, some sources do not completely turn off, rather go to sleep or standby, continuing to send a 5V signal, and the matrix switcher does not know the source is actually turned off.

Audio Return Channel (ARC)

The EVMX4K42 features the ability to accept ARC signals from an ARC capable display. To ensure ARC functionality, the display has to feature ARC, and furthermore, the matrix switcher needs to be plugged into the HDMI port which is labeled ARC on the display. Additionally, some displays require you to activate this feature.

To activate this feature, press the ARC button on the front panel (or IR remote), and ARC will be illuminated on the front panel. On this mode, only the digital optical will be active. The ARC signal will not output to the connected sources via the HDMI inputs like an A/V Receiver would, instead it is broken out, or extracted via the digital optical/SPDIF port on the back of the matrix switcher.

Audio Extraction

Another term for this feature is audio breakout, or audio de-embedding. Either way, the EVMX4K42 allows you to connect an external amplifier or audio distribution product to get better sound than the speakers from a TV. The EVMX4K42 features both digital (optical/SPDIF) and analog (3.5mm) audio breakouts. Both connections will breakout audio from one HDMI output. Simply press the "AUDIO" button on the front panel to choose which output you would like to breakout audio from, the output (A or B) will illuminate. Note that only the digital optical/SPDIF.

Downscaling

So you've got an older 1080p TV you would like to still use along with your newer 4K TV. That is no problem with the downscaling ability of the EVMX4K42. Without this feature, your 4K source(s) would handshake with both TVs and would choose 1080p for both outputs. Why? The source(s) need to output a common resolution that all displays can handle, and since the 1080p TV cannot handle 4K, all outputs would be sent a 1080p signal, including the 4K TV. To activate this feature, press the downscaling button on the front panel (or 4K/HD on the IR remote) labeled "4K -> 1080p" and select which output has the 1080p display connected to. The output will illuminate.

Control

In addition to auto switching, there are a couple of ways to manually control the switching of sources. The front panel has a button for each output, to select the input. The included IR remote also gives the ability to switch sources either sequentially or choosing a specific input. Keep in mind, the EVMX4K42 needs to be exposed so that the IR remote can reach it, notice the IR sensor is on the front panel.

Need to hide the EVMX4K42? No problem, Vanco has many IR solutions that will repeat and extend IR signals so the matrix switcher can be hidden from plain site. Simply visit www.vanco1.com to see our IR distribution products.

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.

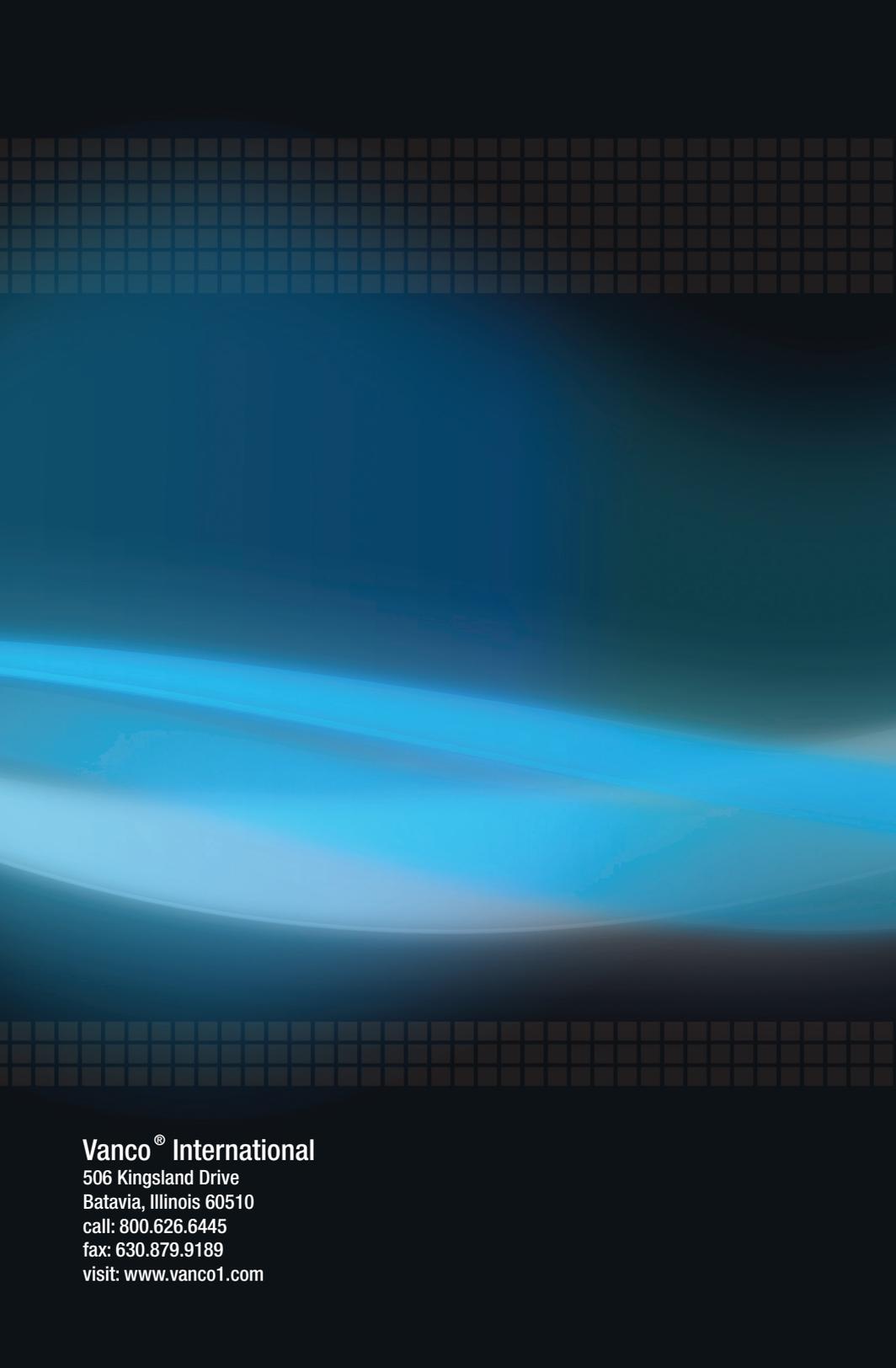
All active electronic products are 100% inspected and tested to insure highest product quality and trouble-free installation and operation. The testing process utilizes the types of high-definition sources and displays typically installed for entertainment and home theater applications.

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.

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