HDMI® 4x4 True 4K HDCP 2.2 Matrix

Vanco Part Number:

VAN4K44

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.

FEATURES

This is a high performance HDMI matrix with four HDMI inputs and 4 HDMI outputs as well as 4 digital and analog audio outputs. It allows any HDMI source (Blu-ray player, STB, etc.) to be shown on any of the 4 HDMI displays simultaneously up to 4K2K resolution and is capable of 3D and Deep Color video signals.This matrix is also compatible with displays and devices with Audio Return Channel (ARC) capabilities. ARC allows audio content from a display to be (such as a Smart TV) back to the matrix where the audio can then be extracted to an audio video receiver or amplifier. Any source is accessible at all times by any display using IR, RS232, or IP control platforms. Additional EDID management can be achieved using the RS232 connection and the interface to encourage device communication and compatibility for a seamless installation.

HDMI® 4x4 True 4K HDCP 2.2 Matrix
Part # VAN4K44

- Allows up to 4 HDMI sources to be distributed simultaneously to up to 4 displays

- Features 4 digital and analog audio outputs

- Ultra HD - Supports resolutions up to 4K2K @ 30 Hz, 24 bit color, 4:4:4 chroma or up to 4K2K @ 60 Hz, 12 bit color and 4:2:0 chroma

- Compatible with displays and devices with Audio Return Channel (ARC) capabilities

- ARC allows audio content from a display to be sent back to the matrix where the audio can then be extracted to an audio video receiver or amplifier

- Supports 4 Channels of ARC

- Control via manual, IR, RS232 and TCP/IP

- Additional EDID management can be achieved using the RS232 connection and the interface to encourage device communication and compatibility for a seamless installation

- HDCP 2.2 Compliant

- Deep Color Supported up to 48 bit

- Power Supply: 12V/2.5A DC power adapter

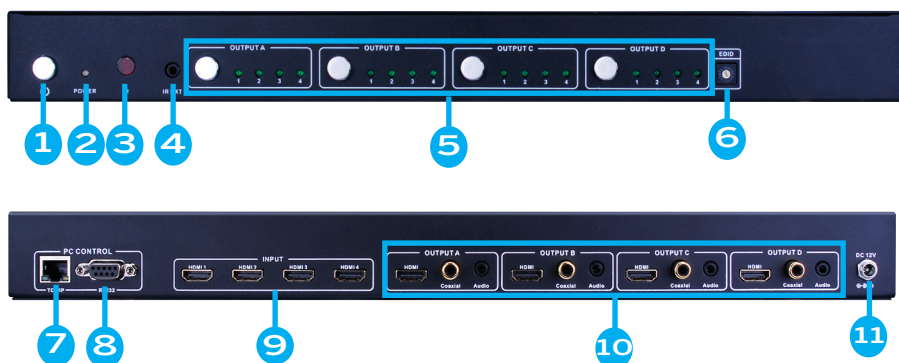- Dimensions: 17.3" W x 1.8" H x 4.3" D

SPECIFICATIONS

Inputs Ports .... 4 x HDMI (Female type)

Output Ports .... 4 x HDMI (Female Type), 4 x Digital Coaxial,
4 x 3.5mm Stereo Audio

Output Resolutions .... 480i ~ 1080p 50/60Hz, 4K2K@24/30,
4K2K@60 w/12bit 4:2:0

ESD Protection (Human Body Model) .... ± 8kV (Air-gap discharge), ± 4kV (Contact
discharge)

Power Supply .... 12 V/2.5 A (US/EU standards, CE/FCC/UL
certified)

Dimensions .... 17.3" W x 1.8" H x 4.3" D

Weight 1150g

Chassis Material   .... Metal

Silkscreen Color   .... Black

Operating Temperature .... 0 ℃~40 ℃/32 ℉~104 ℉

Storage Temperature   .... −20 ℃~60 ℃/−4 ℉~140 ℉

Relative Humidity   .... 20~90 % RH (non-condensing)

Power Consumption   .... 9 W

PACKAGE CONTENTS

Before attempting to use this unit, please check the packaging and make sure the following items are
contained in the shipping carton:

- (1) VAN4K44
- (1) IR Receiver (RX)
- (1) Remote Control
- (1) DC 12V, 2.5A power supply
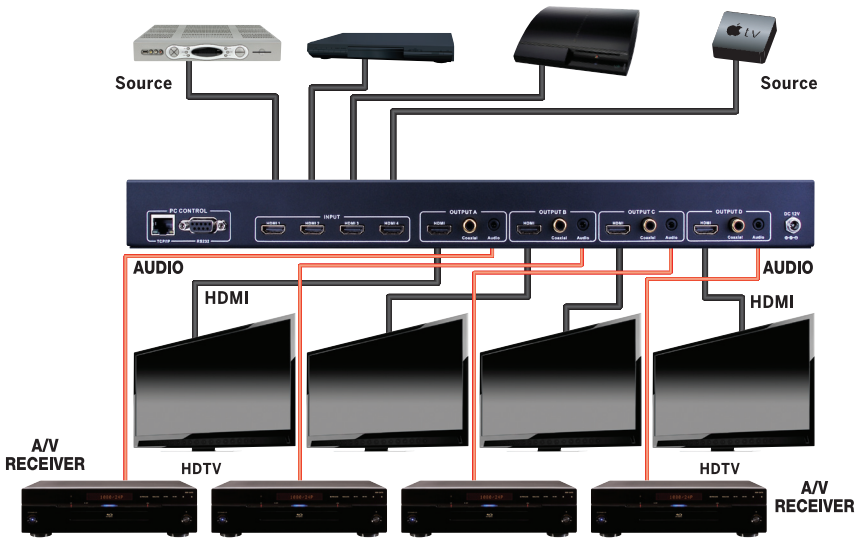- (1) RS232 Cable
- (1) User Manual

PANEL DESCRIPTIONS

1. ON/OFF: Power on/off Button

2. POWER LED: This LED illuminates when the device is connected with power supply

3. IR: Remote control receiver window

4. IR EXT: If the panel sensor is obstructed or the unit is installed in a closed area out of infrared line of sight, the IR RX receiver included can be inserted into the IR EXT port at the rear to extend the IR sensor range and enable local control of the matrix.

5. OUT A: This LED illuminates when the output A channel is selected to the corresponding input
OUT B: This LED illuminates when the output B channel is selected to the corresponding input
OUT C: This LED illuminates when the output C channel is selected to the corresponding input   OUT D: This LED illuminates when the output D channel is selected to the corresponding input

6. EDID Switch: See chart

7. TCP/IP: This port is the link for TCP/IP controls, connect to an active Ethernet link with an RJ45 terminated cable

8. RS232: Connect to a PC or control system with D-SUB 9-pin cable for the transmission for the RS-232 commands

9. Input: This slot is where you connect the HDMI source output from DVD, PS3, Set-top box or Notebook.

10. Output A, B, C, D: The HDMI is where you connect the HDTV or monitor with HDMI cable for input source display. The coaxial audio output is where you connect to the difital amplifier with coaxial cable. The audio output is where you connect to the speaker with earphone cable.

11. DC 12V: Plug the 12V 2.5 A DC power supply into the unit and connect the adaptor to AC wall outlet.

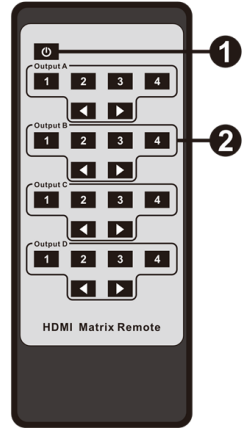| EDID MODE	EDID DESCRIPTION
0	1080p, 2 CH Audio
1	1080p, Dolby/DTS 5.1
2	1080p, HD Audio
3	1080i, 2 CH Audio
4	1080i, Dolby/DTS 5.1
5	1080i, HD Audio
6	3D, 1080p, 2 CH Audio
7	3D, 1080p, Dolby/DTS 5.1
8	3D, 1080p, HD Audio
9	4Kx2K 30, 2 CH Audio
A	4Kx2K 30, Dolby/DTS 5.1
B	4Kx2K 30, HD Audio
C	4Kx2K 60, 2 CH Audio
D	4Kx2K 60, Dolby/DTS 5.1
E	4Kx2K 60, HD Audio
F	RS232 Control Mode

CONNECT AND OPERATE

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. 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 cables or extenders (not included) to an HDMI equipped display

3. OPTIONAL: IF using the ARC feature of the matrix, make sure the ARC setting is selected within the provided matrix software and connect the COAXIAL audio output to your digital audio receiver/amplifier.

4. OPTIONAL: IF you do NOT wish to use ARC but would like to have audio for the output, connect either a COAXIAL cable for digital audio or a 3.5mm Stereo cable for analog audio output to your receiver or amplifier.

5. OPTIONAL: Connect the IR receiving extender to the IR EXT port on the matrix.

6. OPTIONAL: Connect an Ethernet cable from the TCP/IP port on the matrix to a local Area Network.

7. OPTIONAL: Connect an RS-232 cable from the RS232 port on the matrix.

8. Connect the DC 12V Locking power supply to the power receptacle on the matrix.

9. Connect the power supply to an available electrical outlet.

REMOTE CONTROL

1. POWER: Press this button to power on the matrix or set it to standby mode

2. OUTPUT A,B,C,D: Press IN1/IN2/IN3/IN4. Button will fast switch to select input source to HDMI OUTPUT A,B,C,D and the LED will indicate the corresponding input source. Press arrow buttons OUTPUT A, B, C, D will cycle from Input 1, 2, 3, 4.
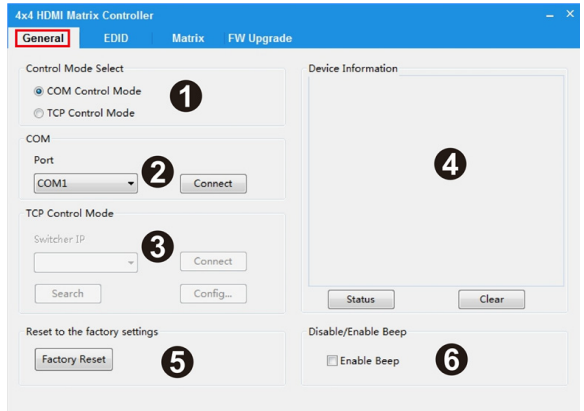
PC CONTROL

INSTALLATION

The PC controller is green software. Just use a cable to connect the pC via RS232 port and copy "4x4 HDMI Matrix Controller.exe" to PC to complete installation.

PREPARATION

1. Connect PC and multi-viewer by RS232 cable (headers of both sides of cable should be FEMALE)

2. Power-up Multi-viewer

3. Double click "4x4 HDMI Matrix Controller.exe" icon to run it.

1. Select RS232 COM or TCP mode

2. Select RS232 COM port

3. Select TCP/IP control

4. Click to refresh device status: include device information and Input/Output Settings on Matrix page

5. Click to reset to the factory settings
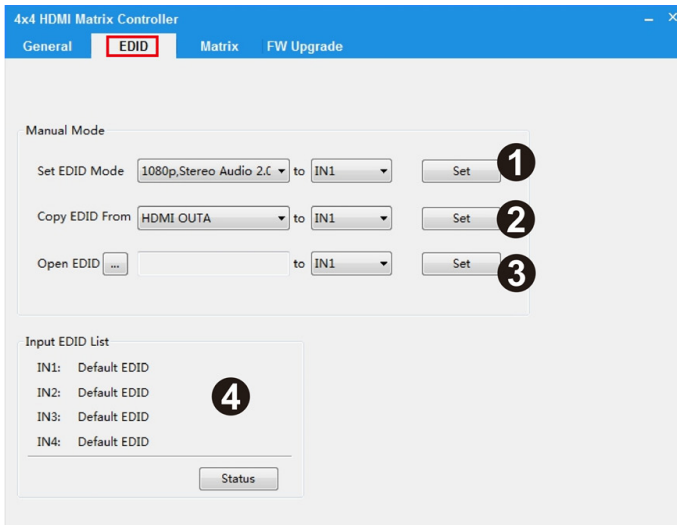
6. Enable or disable Beep

EDID

The controller has 3 methods to set the EDID mode: Manual Mode, Copy Mode, and Open EDID File Mode

1. Select the needed EDID to input port and click the set button. The EDID will write to the selected HDMI input ports.
2. Copy the selected HDMI output. Output EDID and click the set button to write to the selected HDMI input ports.
3. Open the user. Define EDID file and click the set button to write to the selected HDMI input ports.
4. Click the status button to refresh the input EDID status.

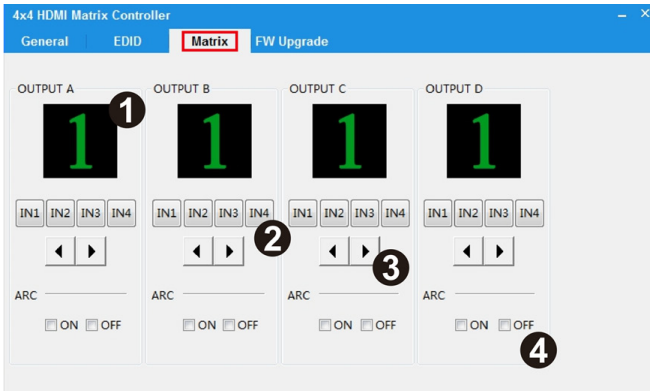NOTE: If you want to control the EDID by RS232 or TCP/IP port you must select the Matrix Panel EDID switch to F position.
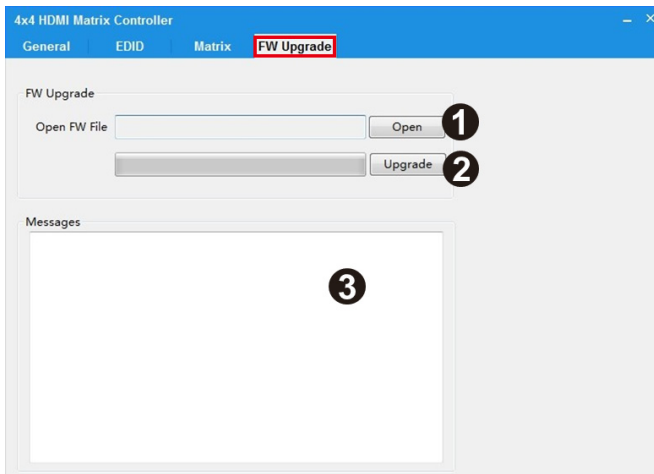
MATRIX PAGE

1. LED will display the input number for the respective output
2. Click to select the input port for the respective output port
3. Click to select the previous or next input port for the respective output port
4. Click to open or close output ARC function

NOTE: ARC Function: If you need to use ARC, you HDTV must support this function. When you open the ARC function the coaxial audio output of the matrix will output the HDTVs current display content audio signal. Otherwise it will output the selected HDMI source audio signal (DVD, Set-top-Box, etc.)

FIRMWARE UPGRADE

1. Click to open FW file (file extension is ".fw")
2. Click to upgrade the Matrix software
3. Display message will show status of the upgrade process

TROUBLE-SHOOTING

1. Vanco High Speed HDMI cables are strongly recommended for use with this product to ensure best results.

2. Incorrect placement of IR Blaster and Receiver may result in the failure of the unit. Please check carefully before plugging in the IR accessories into the respective IR sockets.

3. 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.

4. 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".

5. 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.

6. 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.

7. 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.

8. If you have problems with the IR control circuit, make sure that the IR RX pigtail is plugged into extender receiver and pointed at the display, and the IR TX pigtail is attached to the extender sender and pointed at the source.

SAFETY AND NOTICE

VAN4K44 has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the VAN4K44 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.

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.

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, glossary of terms, etc. please visit vanco1.com

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