HDMI® 4x4 4K Matrix Selector Switch with HDR

Vanco Part Number:

HDMX4K44

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.

The Vanco HDMX4K44 4x4 Ultra Compact Matrix Selector Switch with IR and RS-232, allows 4 HDMI sources to be distributed to up to 4 displays simultaneously. Have multiple sources displayed simultaneously on any display or have a single source split to multiple displays, flexibility for the perfect solution. Equipped with HDMI 2.0, the HDMX4K44 is capable of transmitting 4K@60Hz, 4:4:4 Chroma Subsampling, and HDR. For control, the HDMX4K44 includes an IR remote control for IR switching, as well as RS-232 for third party integration in addition to manual controls. For reliable HDMI distribution with 4K and HDR in mind in an ultra compact form factor, the HDMX4K44 is a great choice for any application.

HDMI® 4x4 4K Matrix Selector Switch with HDR
Part # HDMX4K44

- Allows up to 4 HDMI sources to be distributed simultaneously to up to 4 displays
- Supports 4K@60Hz, 4:4:4 Chroma Subsampling, with HDR
- Supports both HDR10 and Dolby Vision
- HDCP 2.2 Compliant
- Supports Deep Color and 3D
- Supports Dolby Atmos/Dolby, DTS, PCM audio formats
- EDID adjustment via RS-232 or manually adjustable
- Control via RS-232, IR remote control, or manual control for switching
- Power Supply: 12V DC, 2.5A
- Dimensions: 5.9" W x 1.26" H x 4.37" D

SPECIFICATIONS

Video Bandwidth .... 18 Gbps (600 MHz)

Video Resolution 480i, 576i, 480p, 576p, 720p, 1080i, 1080p/60, 2160p/60

Input Ports .... 4×HDMI, 1×RS-232

Output Ports .... 4×HDMI

HDMI Connector .... Type A 19 pin female

Receiver Control Ports .... IR IN, IR OUT

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

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

Dimensions .... 5.9" W x 1.26" H x 4.37" D (150mm W x 32.2mm H x 111mm D)

Weight 585g

Chassis Material .... Metal

Silkscreen Color .... Black

Operating Temperature .... 0°C ~ 40°C / 32°F ~ 104°F

Storage Temperature .... -20°C ~ 60°C / -4°F ~ 140°F

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

Power Consumption .... 30W (max)/1W (Standby)

PACKAGE CONTENTS

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

- HDMX4K44 4x4 HDMI Matrix
- 12V/2,5A Power Adapter
- (1) HDMI Matrix IR Remote
- (1) RS-232 Cable
- Product Manual

PANEL DESCRIPTIONS
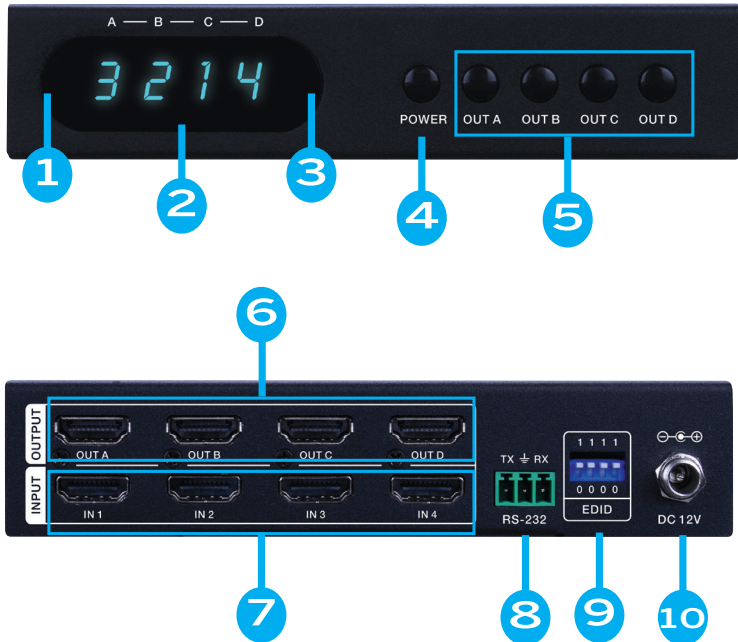
1. LED Power indicator
2. Input Information Display
3. IR Sensor – receives IR signal from included remote
4. Power Button
5. Output selection buttons – Push output buttons to switch sources sequentially, the Input Information display will display what input is selected
6. HDMI Outputs – connect display(s)
7. HDMI Inputs – connect source(s)
8. RS-232 port (includes phoenix connector)
9. EDID adjustment – see EDID section for necessary adjustments
10. DC 12V port – connect included power supply

EDID

Extended Display Identification Data, the EDID adjustment helps with any compatibility issues by manually selecting a combination of resolution and audio formats that the connected displays will accept.

The following table shows each combination based on the dip switch adjustments from left to right, see rear side of the HDMX4K44 for the EDID dip switches. Simply adjust to 0s and 1s for all four switches.

To make and EDID adjustment, power off the HDMX4K44, adjust the dip switches, and then power on the unit for changes to take effect. A successful adjustment will result in picture being displayed.

EDID Mode	EDID Description
0000	1080p, Stereo Audio 2.0
0001	1080p, Dolby/DTS 5.1
0010	1080p, HD Audio 7.1
0011	1080i, Stereo Audio 2.0
0100	1080i, Dolby/DTS 5.1
0101	1080i, HD Audio 7.1
0110	3D, Stereo Audio 2.0
0111	3D, Dolby/DTS 5.1
1000	3D, HD Audio 7.1
1001	4K2K30_444, Stereo Audio 2.0
1010	4K2K30_444, Dolby/DTS 5.1
1011	4K2K30_444, HD Audio 7.1
1100	4K2K60_444, Stereo Audio 2.0
1101	4K2K60_444, Dolby/DTS 5.1
1110	4K2K60_444, HD Audio 7.1
1111	EDID is controlled by the host computer

CONNECT AND OPERATE
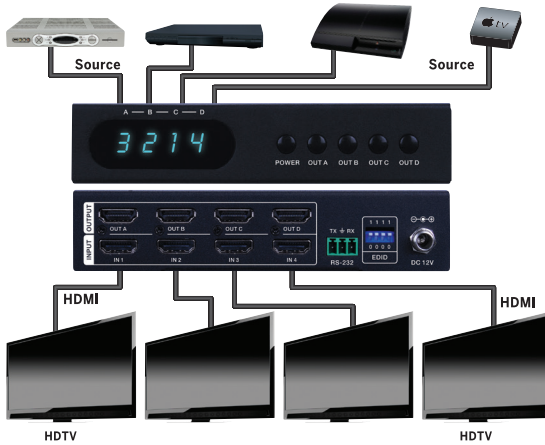
1. Connect up to 4 sources such as a Blu-Ray Player, game console, A/V Receiver, Cable or Satellite Receiver, etc. to the HDMI inputs on the unit

2. Connect up to 4 displays such as an HDTV, Projector, etc. to the HDMI outputs on the unit

3. OPTIONAL: Connect an RS-232 cable from the RS232 port on the matrix to a third party control system

4. Connect the included DC 12V Locking power supply

5. Power up the HDMX4K44 and then the components connected

REMOTE CONTROL

1. Power Button – Press to power on or off the unit

2. Input selections – Selects inputs for each of the outputs (A, B, C, and D

PC CONTROLLER USER GUIDE

The HDMX4K44 includes software that can be used for firmware updates, adjust EDID, and even switch the unit using an RS-232 connection to a PC or computer.

Software for the HDMX4K44 can be found on the product webpage on www.vanco1.com, and requires the included DB9 RS-232 connection to connect from a PC or computer to the matrix.

1. Connect a PC or Computer to the Matrix via the included RS-232 cable
2. Power up the matrix
3. Save software on the desktop
4. Run software by double clicking"4x4 HDMI matrix Controller.exe"

The following user interface will come up:

GENERAL TAB

This tab allows for customization of the matrix unit including disabling the beeping noise when switching, as well as functions to reboot and powering on/off unit.
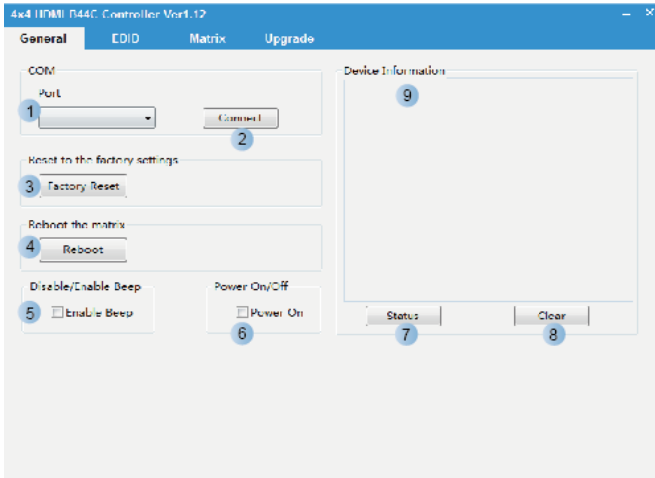
1. Select the RS-232 COM port (This can be found within your computer's Device Manager)
2. Connects the PC or computer to the matrix
3. Resets the unit to factory default settings
4. Reboots the unit
5. Enables or disables beeping sound when switching unit (check to enable)
6. Power On or Off the matrix unit, unchecking will put the unit into standby mode
7. Click to refresh device status
8. Click to clear device information
9. Device information display column

EDID TAB

There are three ways to adjust EDID within this tab: manually set EDID, Copy EDID from either input or output, and selecting an EDID file to load.
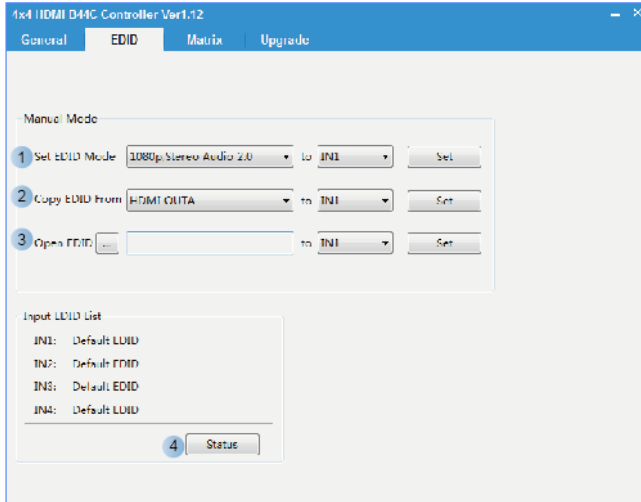
1. Manually selecting EDID – Select from a default list to apply to any input, then click on "Set" to set EDID
2. Copy EDID from Output to Input – Select the EDID of the display to copy to any input, then click on "Set" to apply changes
3. Open EDID – Load a saved EDID file and apply to any input, then click on "Set" to apply changes

MATRIX TAB

In addition to control the switching of the unit manually by front panel operation, and IR, using the included remote, this tab allows for switching via RS-232 from a PC or computer.
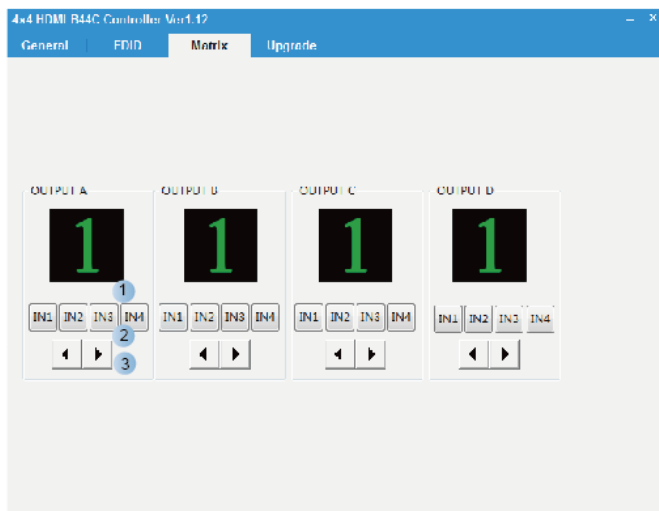
1. Status – shows which input is selected for each output
2. Input selection – simply click on any input (1-4) to switch matrix unit
3. Sequential input selection

UPGRADE TAB

This allows for any firmware update available on www.vanco1.com, under the "Product Downloads" tab. Vanco will release firmware updates as needed to correct any issues, or add any additional features. Download and save the firmware update file onto a PC or computer.
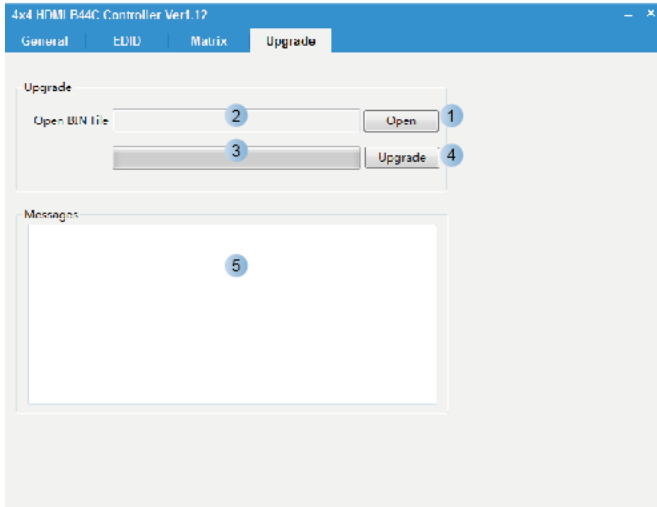
1. Click "Open" and select the firmware update file

2. This shows the file path to the firmware update file, ensure this is the correct file (ends in fw), selecting an incorrect file could cause issues

3. Displays progress of the firmware upgrade

4. Upgrade button – click to start firmware upgrade process after the correct file has been selected

5. Any important messages will display here

NOTICE

1. Vanco HDMI and Cat5e/6 cables are strongly recommended for use with this product to ensure best results.

2. Incorrect placement of IR Transmitter and Receiver may result in the failure of the IR extenders. Please check carefully before plugging in the IR extender to the respective IR sockets.

3. The transmission length is largely affected by the type of Cat5e/6 cables utilized, the type of HDMI sources, and the type of HDMI display. The testing result shows solid UTP cables (usually in the form of 300m (1,000ft) bulk cables) can transmit a lot longer signals than stranded UTP cables (usually in the form of fixed length patch cords). Shielded STP cables are better suited than unshielded UTP cables. A solid UTP Cat5e/6 cable shows longer transmission range than stranded STP Cat-6 cable. For long extension applications, use solid UTP/STP category cables.

4. EIA/TIA-568-B termination (T568B) for Cat5e/6 cables is recommended for better performance.

5. To reduce the interference among the unshielded twisted pairs of wires in Cat5e/6 cables, one can use shielded STP cables to improve EMI problems, which worsens in long cable transmission.

6. The quality of Cat5e/6 cables can have a major effect on how long the transmission limit can achieve and quality of picture, the actual transmission range is subject to the Cat5e/6 cable utilized. For the best results, Cat6 is recommended.

7. If your HDMI display has multiple HDMI inputs, it is found that the first HDMI input (HDMI input #1) generally can produce better transmission performance among all HDMI inputs.

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 (CEC). 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.

6. 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

The HDMX4K44 has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment, the HDMX4K44 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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