



HDMI® 4x4 4K2K Compact Matrix Selector Switch

Vanco Part Number:
280564

Technical Support

www.vanco1.com • info@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.

FEATURES

The Vanco 280564 HDMI 4x4 Compact Matrix Selector Switch 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 duplicated on multiple displays, flexibility for the perfect solution. The 280564 is capable of up to 4K2K (2160p) Ultra High Definition resolution and HD multi-channel audio distribution with simple control using the front panel or remotely via IR Receivers at display locations. Also features EDID management, which allows and encourages source and display "handshake" for seamless integration. In addition, the 280564 is also equipped with RS-232 connectivity which allows for third party integration. For reliable, no-nonsense HDMI distribution and control on a budget, over short distances, the 280564 Matrix Selector Switch is a great choice for any application

HDMI® 4x4 Compact Matrix Selector Switch

Part # 280564

- Allows up to 4 HDMI sources to be distributed simultaneously to up to 4 displays
- Ultra HD capable Matrix Switcher providing a perfect solution for Home or Retail AV as well as Commercial and Hospitality Installations
- Features EDID management which supports default HDMI EDID and has the ability to learn the EDID of display equipment for any "handshake" issues
- HDCP Compliant
- Supports 4K2K (2160p @ 30 Hz) Ultra High Definition Resolution
- Supports HDMI Deep Color and 3D
- Supports 7.1 channel digital audio
- Wideband bi-directional IR pass-through (IR transmitters, IR Receivers and IR Remote Control Included)
- Equipped with RS-232 connectivity which allows for third party integration
- Compact design for easy installation with rack-mounting and wall-mounting design, rack mounting ear set included
- Power Supply: DC 12V
- Dimensions: 10.2" W x 1" H x 4.4" D

SPECIFICATIONS

HDCP Compliance.....	Yes
Video Bandwidth	Single-link 297MHz
Video Support	480i/480p/720p/1080i/1080p @60/2160p @30
48-bit color	
Audio Support	Surround Sound (up to 7.1 ch) or stereo digital audio and L-PCM at up to 192kHz, compressed audio (IEC 61937), DSD, DST, DTS and HBR
ESD Protection	+/- 8 kV (air-gap discharge) & +/- 4 kV (contact discharge)
PCB stack-up	4 layers
Input	4x HDMI / 1x RS-232 / 1x IR socket for IR receiver
Output.....	4x HDMI
HDMI connector	Type A 19 pin female
3.5mm connector	[System IR] Receives IR commands from remote control

MECHANICAL SPECS

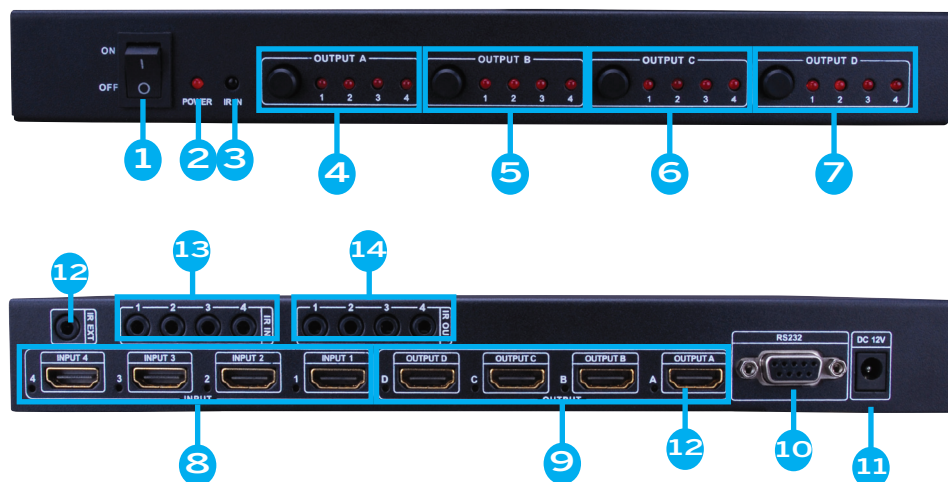
Housing	Metal enclosure
Power Supply	DC 12V, 2.5A
Power consumption.....	20 watts (max)
Operation temperature.....	32~104 °F
Storage temperature.....	-4 ~140 °F
Relative humidity	20~90 % RH (no condensation)

PACKAGE CONTENTS

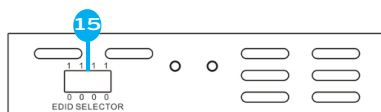
Before attempting to use this unit, please check the packaging and make sure the following items are contained in the shipping carton:

- (1) 280564 HDMI 4x4 Matrix Selector Switch
- (5) IR Receiver (RX)
- (4) IR Blaster (TX)
- (1) DC 12V, 2.5A power supply
- (1) Rack-mounting ear set
- (1) IR remote control
- (1) RS-232 serial cable
- (1) User Manual

PANEL DESCRIPTIONS



1. ON/OFF: Power ON/OFF switch
2. POWER: This red LED illuminates when the device is powered
3. IR EYE: IR eye which receives IR signals from included remote for matrix switching
4. OUTPUT A: Selects and displays which specific input is selected
5. OUTPUT B: Selects and displays which specific input is selected
6. OUTPUT C: Selects and displays which specific input is selected
7. OUTPUT D: Selects and displays which specific input is selected
8. INPUT PORTS: Inputs 1-4, LED light illuminates for each input when an active signal is being sent from the source to the matrix unit
9. OUTPUT PORTS: Outputs 1-4, LED light illuminates for each output when an active display is connected to the matrix unit
10. RS232: Port for use of PC control and EDID settings
11. 12V DC: Plug the 12V DC power supply into the unit and connect the adapter to AC wall outlet for power
12. IR EXT: Connect included IR RX receiver for extension, which receives IR signals from included remote for matrix switching
13. IR IN: Connect included IR RX pigtails, to be used at each display for matrix switching control and source control
14. IR OUT: Connect included IR TX pigtails, to be used at each source for source control
15. EDID Selector: Select HDMI output signal format via EDID Selector (located on the right side panel)



EDID

The EDID switch allows for EDID learning or to pre-set an EDID to encourage a “handshake” between the display and source.

The EDID learning function is only necessary whenever any display on the HDMI output port is not outputting audio and video properly. Because the HDMI source devices and displays may have various level of capability in playing audio and video, the general principle is that the source device will output the lowest standards in audio format and video resolutions to be acceptable among all HDMI displays connected. In this case, a 720p stereo HDMI signal output would be probably the safest choice. The EDID function can also force the matrix to learn the EDID of the lowest capable HDMI display among others to make sure all displays are capable to play the HDMI signals normally.

There are two methods for EDID Learning as shown below:

1. EDID Dip Switch Adjustment: Please see below for EDID settings via EDID Dip Switch
2. IR Remote Control: Please see below for OPERATION CONTROL – SOFTWARE CONTROL THROUGH RS-232

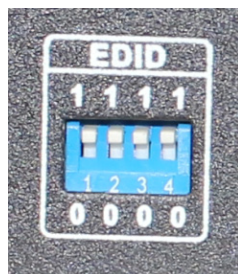
EDID Dip Switch Adjustment

To adjust EDID via Dip Switch, power off matrix unit and adjust to desired EDID setting on dip switch, then power the matrix unit on. There will be an audible beep sound confirming the changes.

EDID Settings:

There are 16 embedded default EDID settings as shown below:

Number	EDID Selector	EDID Description
1	0000	Auto mode (default)
2	0001	1080i, Stereo Audio 2.0
3	0010	1080i, Dolby/DTS 5.1
4	0011	1080i, HD Audio 7.1
5	0100	1080p, Stereo Audio 2.0
6	0101	1080p, Dolby/DTS 5.1
7	0110	1080p, HD Audio 7.1
8	0111	3D, Stereo Audio 2.0
9	1000	3D, Dolby/DTS 5.1
10	1001	3D, HD Audio 7.1
11	1010	2160p @ 30hz, Stereo Audio 2.0
12	1011	2160p @ 30hz, Dolby/DTS 5.1
13	1100	2160p @ 30hz, HD Audio 7.1
14	1101	1024x768 DVI
15	1110	1920x1080 DVI
16	1111	PC Software control mode



OPERATION CONTROL - IR REMOTE CONTROL

OUTPUT A: Pressing the 1\2\3\4 buttons will select input source to HDMI OUTPUT A, the LED will indicate the corresponding input source.

OUTPUT B: Pressing the 1\2\3\4 buttons will select input source to HDMI OUTPUT B, the LED will indicate the corresponding input source.

OUTPUT C: Pressing the 1\2\3\4 buttons will select input source to HDMI OUTPUT C, the LED will indicate the corresponding input source.

OUTPUT D: Pressing the 1\2\3\4 buttons will select input source to HDMI OUTPUT D, the LED will indicate the corresponding input source.



OPERATION CONTROL - SOFTWARE CONTROL THROUGH RS-232 OR TCP/IP

1. System Requirement

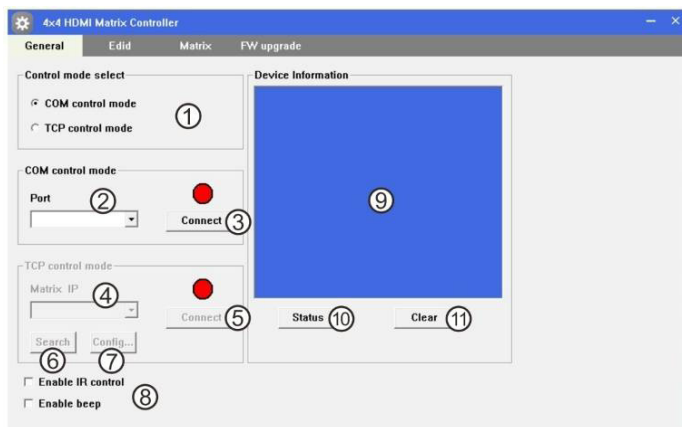
- 1) OS Information: MS WinXP/7
- 2) Baud rates: 9600
- 3) Software size: 3 MB
- 4) Minimum RAM requirement: 256 MB

Installation:

- Connect the PC and Matrix unit via the supplied RS-232 cable (Female to Female cable)
- Power up Matrix unit
- Double click MatrixController.exe icon to run it

OPERATION CONTROL - SOFTWARE CONTROL THROUGH RS-232

1. Controlling the Matrix unit

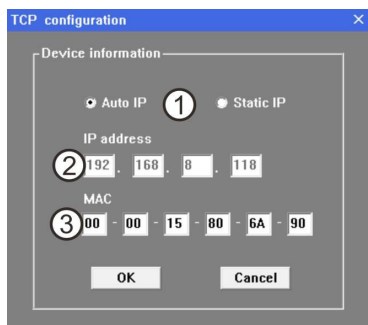


1. Select RS232 COM or TCP mode
2. Select RS232 COM port
3. Click to connect or disconnect PC and Matrix
4. Select Matrix IP
5. Connect to Matrix IP
6. Search Matrix IP
7. Configure Matrix IP and MAC
8. Enable or disable IR beep audible sound
9. Device information display area
10. Click to refresh device status: include device information displayed in #9 area and Input/Output Settings on "Matrix" page

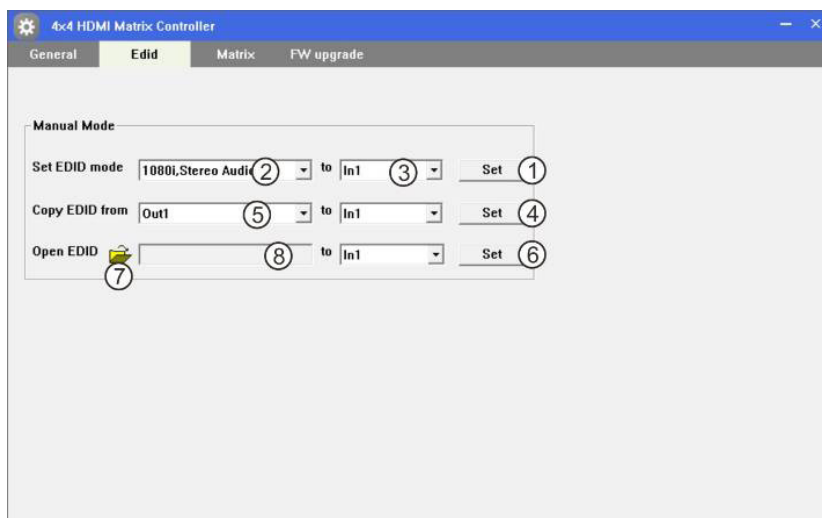
Configure TCP

After action #7 the following edit form will display shown below:

1. Select auto or static IP
2. Rewrite the Matrix IP
3. Rewrite the Matrix MAC

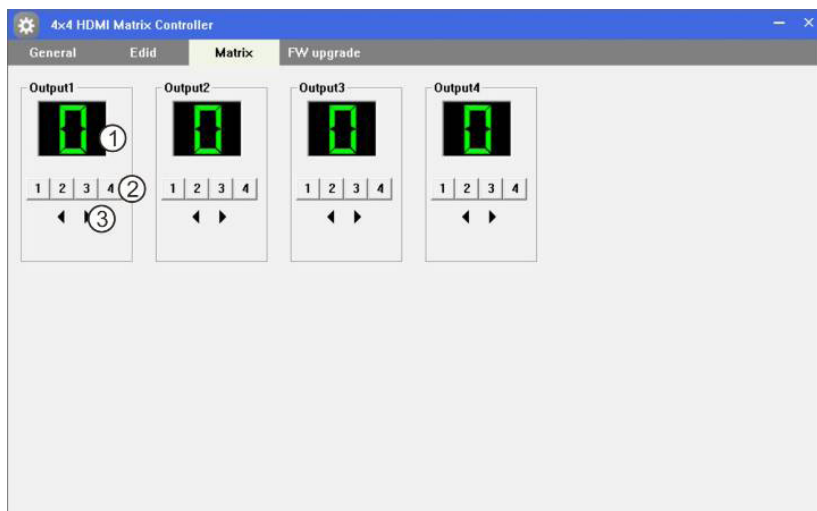


2. EDID



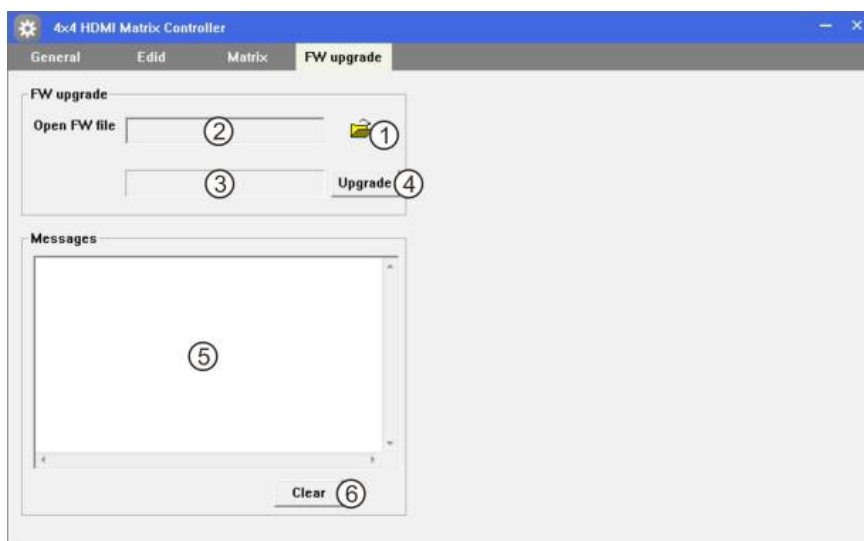
1. Set EDID mode for selected Input port or All Input ports, click "Set" button to complete action
2. Select EDID setting desired
3. Select Input port
4. Copy EDID from Output port to selected Input port or All Input ports, click "Set" button to complete action.
5. Select Output port
6. Download EDID content to selected Input port or All Input ports, click "Download" button to complete action.
7. Open EDID binary file
8. Display EDID binary file path

3. Matrix Switching Control via Software



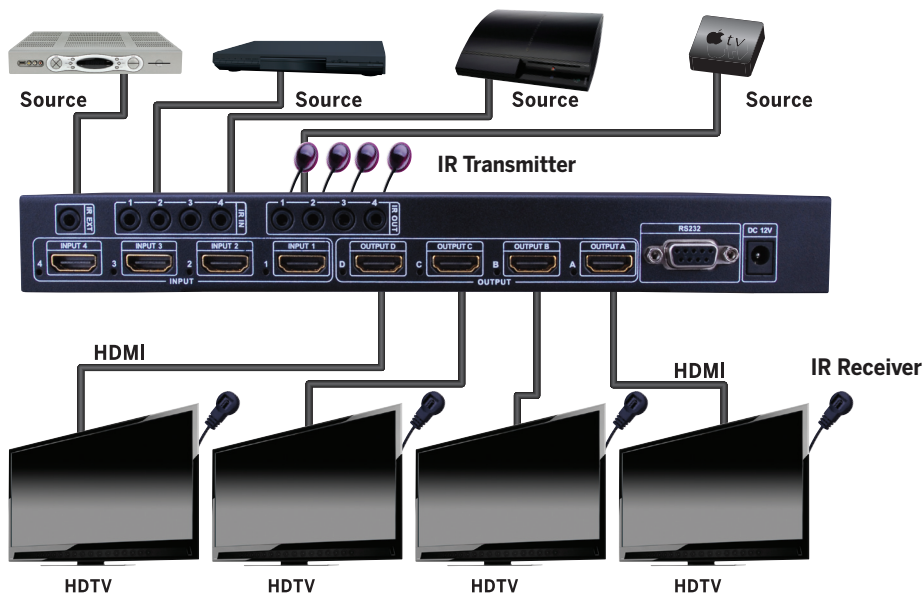
1. Displays which Input is selected for respective Output
2. Click to select Input for respective Output
3. Click to select previous or next Input for respective Output

4. Firmware Update



1. Click to open firmware file (file extension is ".fw")
2. Displays the firmware file path
3. Displays progress of the software update
4. Click to update the Matrix software
5. Displays messages of the software update
6. Clears the messages of the software update

CONNECT AND OPERATE



1. Connect up to 4 sources such as a Blu-Ray Player, game console, AV Receiver, Cable or Satellite Receiver, etc. to the HDMI inputs on the unit.
2. Connect the output HDMI ports, starting with output 1, to high-definition displays such as an HDTV or HD projector that has HDMI inputs. Note that high-speed HDMI cables are recommended for the distances that are required for each connection.
3. For power, plug in the source first, followed by the Matrix Selector Switcher (power supply included), followed by each output connected.
4. Power on each device in the same sequence.

At this point each display connected should display the assigned source (input 1 at default when powered on initially), scroll through each of the sources on each display to ensure everything is in working order. Use included IR remote at each display receiver to test switching function between sources and IR function itself. If a display is having difficulty receiving a signal, access the display's menu and adjust the resolution (lowest to highest until signal is displayed). A 24 Hz vertical refresh rate may work better than 60 Hz or higher. If the IR remote function is not responding, check the emitters to ensure they are placed correctly and are plugged into the correct IR jacks on the Matrix Selector Switcher unit.

IR

IR RECEIVER



IR BLASTER

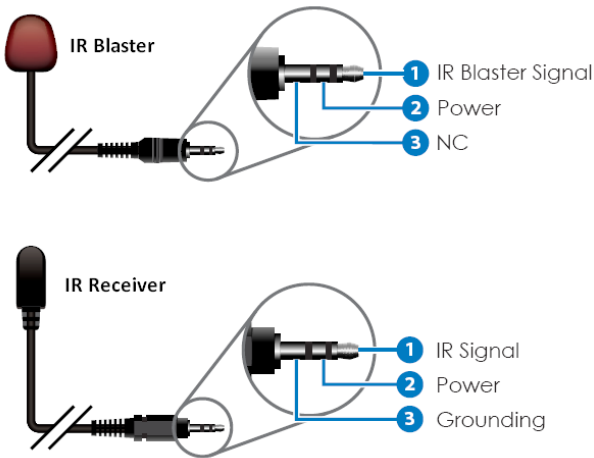


IR BLASTER

Plug IR Blaster into IR TX port of matrix unit (280564); place blaster in front of the IR eye of the corresponding source.

IR RECEIVER

Plug IR Receiver into IR RX port of matrix unit (280564); place receiver at or near corresponding display.



NOTICE

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. 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. 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 280564 has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the 280564 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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