HDMI® 4K2K Splitters

Vanco Part Number:
280708 (1x8)
280704 (1x4)
280702 (1x2)

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 280702, 280704, and 280708 HDMI Splitters allows for duplication of a single source to multiple displays, with the ability of controlling the source connected from each display remotely via IR. Have multiple displays split from a single source, flexibility by creating additional HDMI displays. The Vanco splitters are capable of up to 4K2K (2160p) Ultra High Definition resolution with simple plug and play installation, simply connect a source and the displays via HDMI. Fully cascadable so that multiple units can be combined to add additional display outputs to create an expanded distribution system. Also features EDID management, which allows and encourages source and display "handshake" for seamless integration. The result is a great solution for HDMI signal splitting, the Vanco HDMI splitters are a great choice for any application.
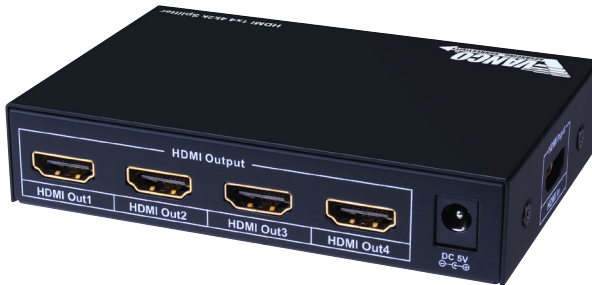
HDMI® 1x8 4K2K Splitter
Part # 280708

- Allows 1 HDMI source to be displayed on up to 8 HDMI displays

- Features EDID management which supports default HDMI EDID options or has the ability to copy the EDID of any display connected to the source for any "handshake" issues

- Supports 4K2K (2160p @30) Ultra High Definition resolution

- Full high definition resolution support: 2160p, 1080p, 1080i, 720p and other standard video formats

- Fully cascadable so multiple units may be combined to create an expanded distribution system

- Supports HDMI 36bit Deep Color and 3D

- Supports standard audio, DSD audio and HD (HBR) audio, 7.1 and 5.1 surround audio, Dolby digital ,Dolby True HD, DTS, and DTS Master audio

- Features dual band Super IR system for controlling source from any display connected (HDMI IR adapters (Part # 280703) and IR transmitters and receivers are sold separately (Part #s 280720, 280721))

- HDCP Compliant

- Compact design for easy installation

- Power Supply: DC 9V

- Dimensions: 12.5" (317mm) W x 1" (28mm) H x 6" (156mm) D

HDMI® 1x4 4K2K Splitter
Part # 280704

- Allows 1 HDMI source to be displayed on up to 4 HDMI displays

- Features EDID management which supports default HDMI EDID options or has the ability to copy the EDID of any display connected to the source for any "handshake" issues

- Supports 4K2K (2160p @30) Ultra High Definition resolution

- Full high definition resolution support: 2160p, 1080p, 1080i, 720p and other standard video formats

- Fully cascadable so multiple units may be combined to create an expanded distribution system

- Supports HDMI 36bit Deep Color and 3D

- Supports standard audio, DSD audio and HD (HBR) audio, 7.1 and 5.1 surround audio, Dolby digital ,Dolby True HD, DTS, and DTS Master audio

- Features dual band Super IR system for controlling source from any display connected (HDMI IR adapters (Part # 280703) and IR transmitters and receivers are sold separately (Part #s 280720, 280721))

- HDCP Compliant

- Compact design for easy installation

- Power Supply: DC 5V

- Dimensions: 4.4" (111mm) W x .9" (23.5mm) H x 3" (75mm) D

HDMI® 1x2 4K2K Splitter
Part # 280702

- Allows 1 HDMI source to be displayed on up to 2 HDMI displays

- Features EDID management which supports default HDMI EDID options or has the ability to copy the EDID of any display connected to the source for any "handshake" issues

- Supports 4K2K (2160p @30) Ultra High Definition resolution

- Full high definition resolution support: 2160p, 1080p, 1080i, 720p and other standard video formats

- Fully cascadable so multiple units may be combined to create an expanded distribution system

- Supports HDMI 36bit Deep Color and 3D

- Supports standard audio, DSD audio and HD (HBR) audio, 7.1 and 5.1 surround audio, Dolby digital ,Dolby True HD, DTS, and DTS Master audio

- Features dual band Super IR system for controlling source from any display connected (HDMI IR adapters (Part # 280703) and IR transmitters and receivers are sold separately (Part #s 280720, 280721))

- HDCP Compliant

- Compact design for easy installation

- Power Supply: DC 5V

- Dimensions: 4.4" (111mm) W x .9" (23.5mm) H x 3" (75mm) D

SPECIFICATIONS

HDCP Compliance .... Yes

Video Bandwidth .... Single-link 340 Mhz [10.2 Gbps]

Video Support .... 480i/480p/720p/1080i/1080p @60 36-bit/ 2160p @30 24-bit Deep Color

Audio Support .... Supports standard audio, DSD audio and HD (HBR) audio, 7.1 and 5.1 surround audio, Dolby digital, Dolby True HD, DTS, and DTS Master audio

ESD Protection .... ± 8kV (air-gap discharge) & ± 4kV (contact discharge)

Input .... 1x HDMI / 1x IR socket for IR transmitter

Output.. 2/4/8x HDMI / 2/4/8x IR socket for IR receivers

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 5V 2A for 280702 and 280704, 9V 2A for 280708; 100~240V

Operation temperature .... 32~104 °F

Storage temperature... -4 ~140 °F

Relative Humidity .... 5-90% 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) Splitter - 280702, 280704, or 280708
- (1) Power Supply - DC 5V 2A for 280702 and 280704, 9V 2A for 280708
- (1) User Manual

280708 PANEL DESCRIPTIONS

1. Power On/Off Switch

2. HDMI Output: LED Indicator Lights, Outputs 1-8

3. EDID DIP Switch: See EDID section for information on how to set EDID.

4. Micro USB for Firmware Updates

5. IR 3.5 jack - to connect Super IR Transmitter for IR Control (part # 280720, sold separately)

6. HDMI Input: LED Indicator Light

7. Reset Button

8. HDMI Outputs 1-8

9. HDMI Input
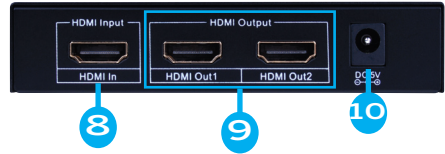
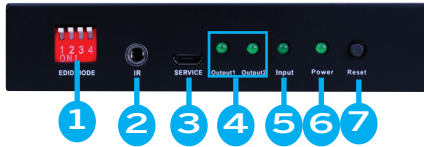10. Power Port for plugging in Power Supply

280704 PANEL DESCRIPTIONS

1. EDID DIP Switch: See EDID section for information on how to set EDID.

2. Micro USB for Firmware Updates

3. IR 3.5 jack - to connect Super IR Transmitter for IR Control (part # 280720, sold separately)

4. HDMI Input: LED Indicator Light

5. HDMI Output: LED Indicator Lights, Outputs 1-4

6. Reset Button

7. HDMI Outputs 1-4

8. Power Port for plugging in Power Supply

9. Note: HDMI Input: Located on side panel

280702 PANEL DESCRIPTIONS

1. EDID DIP Switch: See EDID section for information on how to set EDID.

2. IR 3.5 jack - to connect Super IR Transmitter for IR Control (part # 280720, sold separately)

3. Micro USB for Firmware Updates

4. HDMI Output: LED Indicator Lights, Outputs 1-2

5. HDMI Input: LED Indicator Light

6. Power LED Status Indicator Light

7. Reset Button

8. HDMI Input

9. HDMI Outputs 1-2

10. Power Port for plugging in Power Supply

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/or 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 splitter 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.

See dip switch positions on page 9 to adjust EDID, this can be adjusted while the unit is turned off or while turned on.

Note: The default factory setting is EDID mode 1, in this default setting; the splitter will detect the first HDMI output source's EDID setting and record it internally. If there is no display connected on output 1, the splitter will switch to EDID mode 4 for 280702, EDID mode 6 for 280704, or EDID mode 10 for 280708, when a display is connected, the splitter will then copy the display's EDID and copy, then send straight to the selected source.

DIP switch set to 0 = OFF

DIP switch set to 1 = ON

Each of the EDID settings listed in the tables on page 9 can be set while the splitter is turned ON or OFF, select the EDID setting based on the displays and source equipment that is connected to the splitter. Often times, going through each EDID is recommended until each display is functioning with the desired picture and audio quality.

280702

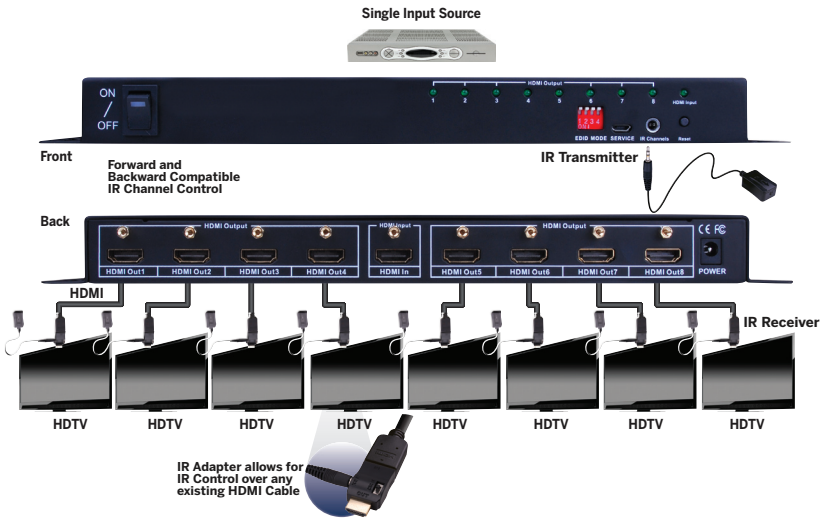| Mode	Dip Switch	EDID Info
Mode 1	0000	Copy EDID of HDMI Output 1
Mode 2	0001	Copy EDID of HDMI Output 2
Mode 3	0010	Fixed EDID: FULL HD (1080p/60hz) 24 bit, 2D video, 7.1ch audio
Mode 4	0011	Fixed EDID: FULL HD (1080p/60hz) 24 bit, 2D video, 2.0ch audio
Mode 5	0100	Fixed EDID: FULL HD (1080p/60hz) 36 bit, 2D video, 7.1ch audio
Mode 6	0101	Fixed EDID: FULL HD (1080p/60hz) 36 bit, 2D video, 2.0ch audio
Mode 7	0110	(1080p/30hz) (1080i/60hz) (720p/60hz) 24bit, 2D video, 7.1ch audio
Mode 8	0111	(1080p/30hz) (1080i/60hz) (720p/60hz) 24bit, 2D video, 2.0ch audio
Mode 9	1000	Fixed EDID: FULL HD (1080p/60hz) 24 bit, 3D video, 2.0ch audio

280704

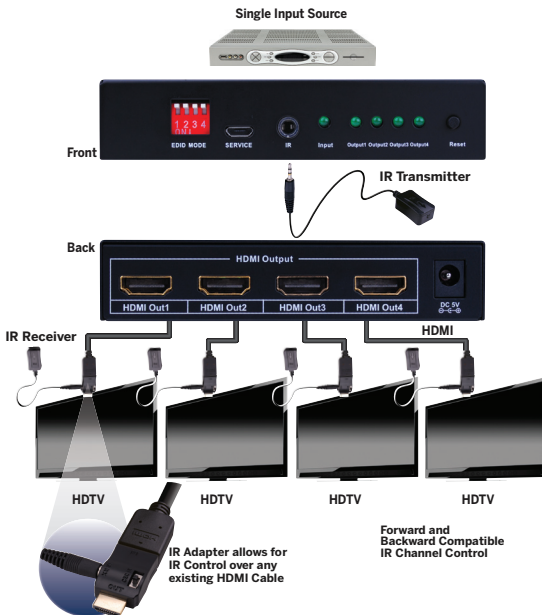| Mode	Dip Switch	EDID Info
Mode 1	0000	Copy EDID of HDMI Output 1
Mode 2	0001	Copy EDID of HDMI Output 2
Mode 3	0010	Copy EDID of HDMI Output 3
Mode 4	0011	Copy EDID of HDMI Output 4
Mode 5	0100	Fixed EDID: FULL HD (1080p/60hz) 24 bit, 2D video, 7.1ch audio
Mode 6	0101	Fixed EDID: FULL HD (1080p/60hz) 24 bit, 2D video, 2.0ch audio
Mode 7	0110	Fixed EDID: FULL HD (1080p/60hz) 36 bit, 2D video, 7.1ch audio
Mode 8	0111	Fixed EDID: FULL HD (1080p/60hz) 36 bit, 2D video, 2.0ch audio
Mode 9	1000	(1080p/30hz) (1080i/60hz) (720p/60hz) 24bit, 2D video, 7.1ch audio
Mode 10	1001	(1080p/30hz) (1080i/60hz) (720p/60hz) 24bit, 2D video, 2.0ch audio
Mode 11	1010	Fixed EDID: FULL HD (1080p/60hz) 24 bit, 3D video, 2.0ch audio

280708

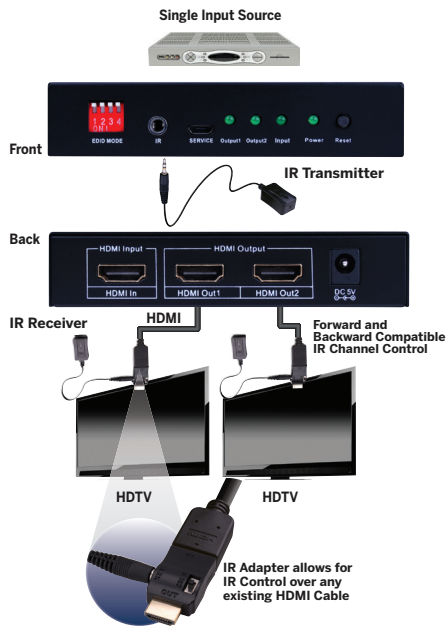| Mode	Dip Switch	EDID Info
Mode 1	0000	Copy EDID of HDMI Output 1
Mode 2	0001	Copy EDID of HDMI Output 2
Mode 3	0010	Copy EDID of HDMI Output 3
Mode 4	0011	Copy EDID of HDMI Output 4
Mode 5	0100	Copy EDID of HDMI Output 5
Mode 6	0101	Copy EDID of HDMI Output 6
Mode 7	0110	Copy EDID of HDMI Output 7
Mode 8	0111	Copy EDID of HDMI Output 8
Mode 9	1000	Fixed EDID: FULL HD (1080p/60hz) 24 bit, 2D video, 7.1ch audio
Mode 10	1001	Fixed EDID: FULL HD (1080p/60hz) 24 bit, 2D video, 2.0ch audio
Mode 11	1010	Fixed EDID: FULL HD (1080p/60hz) 36 bit, 2D video, 7.1ch audio
Mode 12	1011	Fixed EDID: FULL HD (1080p/60hz) 36 bit, 2D video, 2.0ch audio
Mode 13	1100	(1080p/30hz) (1080i/60hz) (720p/60hz) 24bit, 2D video, 7.1ch audio
Mode 14	1101	(1080p/30hz) (1080i/60hz) (720p/60hz) 24bit, 2D video, 2.0ch audio
Mode 15	1110	Fixed EDID: FULL HD (1080p/60hz) 24 bit, 3D video, 2.0ch audio

280708 CONNECTION DIAGRAM

Single Input Source

Front

Forward and
Backward Compatible
IR Channel Control

IR Transmitter

Back

HDMI

IR Receiver

HDTV   HDTV   HDTV   HDTV   HDTV   HDTV   HDTV   HDTV

IR Adapter allows for
IR Control over any
existing HDMI Cable

280704 CONNECTION DIAGRAM

Single Input Source

Front

IR Transmitter

Back

IR Receiver

HDMI

HDTV   HDTV   HDTV   HDTV

Forward and
Backward Compatible
IR Channel Control

IR Adapter allows for
IR Control over any
existing HDMI Cable

280702 CONNECTION DIAGRAM

Single Input Source

Front

IR Transmitter

Back

IR Receiver **HDMI**

Forward and Backward Compatible IR Channel Control

HDTV **HDTV**

IR Adapter allows for IR Control over any existing HDMI Cable

CONNECT AND OPERATE

1. Connect a single source such as a Blu-Ray Player, game console, A/V Receiver, Cable or Satellite Receiver, etc. to the HDMI input on the splitter.

2. Connect the HDMI displays to the output HDMI ports, using a high-definition display 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 splitter (power supply included), followed by the output displays connected.

4. Power on each device in the same sequence.

At this point each display connected should display the source that is connected, ensure each display is displaying A/V signals and verify everything is in working order. 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 IR jack correctly on the splitter.

IR

The Super IR system allows you to control the source that is connected to the splitter, from any display connected using the Super IR adapters at each display. There are two important things to note when setting up the IR system:

1. The IR Receiver (IR RX) is always what you point your remote at to send an IR signal. These pigtails are placed at each display and plugged into the Super IR adapter placed in between the HDMI cable and the display.

2. The IR Blaster (IR TX) is what sends the IR signal to your source. This pigtail is placed at the source, either pointed at the source, or placed on the front panel of the source using optional IR TX part # 280720EXT, see below for placement tips.

IR BLASTER (TX)

Plug IR Blaster into IR port on front panel of splitter unit; place blaster in front of the IR eye of the corresponding source.

There are (2) versions of the Super IR Blaster:

280720 - Super IR Transmitter

(blaster type, to be placed in front of source)

280720EXT - Super IR Transmitter with extension (small pigtail type, to be placed on front panel of source)

IR RECEIVER

Plug IR Receiver into IR Adapter (see below); place receiver at or near corresponding display.

280721 - Super IR Receiver (block type,

to be placed at display)
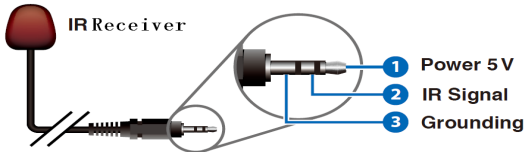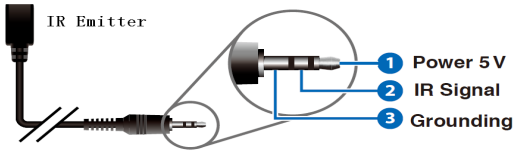
280721EXT - Super IR Receiver with extension (dome type, to be placed at display)
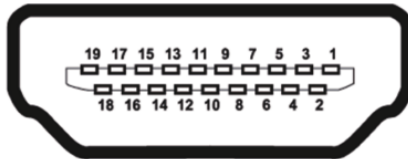
IR ADAPTER

The Super IR Adapter is needed for each display connected. Plug in the Super IR Adapter in between the HDMI cable and the display. The Adapter features a jack to plug in the Super IR Receiver. This allows the IR signal to travel through the HDMI cable, into the splitter, and then out of the IR Blaster.

280703 - Super IR Adapter

IR Emitter

1. Power 5 V
2. IR Signal
3. Grounding

IR Receiver

1. Power 5 V
2. IR Signal
3. Grounding

HDMI PIN DEFINITION »»

Type A (Receptacle) HDMI

Pin 1	TMDS Data2+	Pin 8	TMDS Data0 Shield	Pin 15	SCL
Pin 2	TMDS Data2 Shield	Pin 9	TMDS Data0–	Pin 16	SDA
Pin 3	TMDS Data2–	Pin 10	TMDS Clock+	Pin 17	DDC/CEC Ground
Pin 4	TMDS Data1+	Pin 11	TMDS Clock Shield	Pin 18	+5V Power
Pin 5	TMDS Data1 Shield	Pin 12	TMDS Clock–	Pin 19	Hot Plug Detect
Pin 6	TMDS Data1–	Pin 13	CEC		
Pin 7	TMDS Data0+	Pin 14	Reserved(N.C. on device)		

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 unit 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

This unit has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, this product 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