4K 1x4 HDMI® Splitter

over Cat6 Cable with HDMI Loop-out

Vanco Part Number: EV4K7014

4K 1x4 HDMI® Splitter over Cat6 Cable with HDMI Loop-Out

EVOLUTION BY VANCO

ADVANCING DIGITAL CONNECTIVITY

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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 EV4K7014 is an HDMI splitter that allows one HDMI input to be split and sent to up to five displays simultaneously. With four outputs over UTP, and one output over HDMI, the EV4K7014 allows for a local display connected, or to daisy chain additional units to gain more outputs. The EV4K7014 includes four receivers (EV4K7014-RX) as a kit, which are PoE, which do not require any power supplies at the display end. Extends 4K@60Hz 4:4:4 with HDR10 and IR control up to 230ft/70m over a single Cat6 cable. IR accessories are included to allow IR pass through for controlling the source at each UTP display location. For splitting and distributing one single source to multiple displays, while extending over Cat6, the EV4K7014 is a great solution for any application with the ability to expand.

*NOTE - All specifications and ratings for the EV4K7014 have been tested and confirmed using Cat6 cabling. Cat6 or better is strongly recommended for optimum performance, achieve rated distance, and to maximize resolution capabilities of this product. Cat5e is not recommended and may not achieve distance and/or resolution expectations.

Evolution 4K 1x4 HDMI Splitter over Cat6 Cable with HDMI Loop-out

Part # EV4K7014

- Allows a single source to be split and extended to multiple displays
- Complete kit with (4) PoE Receivers included
- Features an additional HDMI output which can be used for a local display or to cascade to another splitter for a larger distribution system
- Transmission Range: Extends 4K@60Hz, 4:4:4 Chroma with HDR10 and IR up to 230ft/70m and 1080p up to 330ft/100m over a single Cat6 cable
- Features Power over Ethernet (PoE) Technology which transmits power over Cat6, allowing the receivers to be powered without connecting a power supply
- Latency under 30ms
- Supports bi-directional IR (20~60kHz) for source or display control
- IR accessories included allowing for source control from each UTP display location
- Features auto and manual EDID options for compatibility with source and displays
- Digital audio breakout on the receivers for source audio extraction
- HDCP 1.4/2.2 compliant
- Slim and compact design
- RS232 control of splitter
- Pure uncompressed 7.1 ch digital audio
- Supports DTS-HD and Dolby TrueHD high bit rate audio
- Splitter Dimensions: 14.3" L x 4.09 W x 0.9" H (264.40mm L x 104 mm W x 23.85mm H)
- Receiver Dimensions: 4.17" L x 3.8" W x 0.75" H (106 mm L x 99mm W x 19.20mm H)

SPECIFICATIONS

Power	12V, 3A power supply included
Dimensions	Splitter Dimensions: 14.3" L x 4.09 W x 0.9" H (264.40mm L x 104 mm W x 23.85mm H); Receiver Dimensions: 4.17" L x 3.8" W x 0.75" H (106 mm L x 99mm W x 19.20mm H)
Weight	Splitter: 1.4 lbs (640g); Receiver: 0.5 lbs (210g)
Resolution and Distance over Cat6	4K@60Hz, 4:4:4 Chroma and HDR10 up to 230ft/70m, 1080P@60Hz up to 330ft/100m
Audio Formats	PCM, Dolby True HD and DTS master
HDMI Interface Standard	HDMI 2.0b, HDCP 1.4/2.2
Remote IR	20~60KHZ wide frequency carrier
ESD Level	HBM +/- 4kv (contact discharge)
Temperature Range	0~60 degrees Celsius
(Operate), -20~70 degrees Celsius	
Compliance	FCC, CE, RoHS

PACKAGE CONTENTS

- (1) EV4K7014 1x4 Splitter
- (4) EV4K7014 PoE Receivers
- (1) IR Blaster
- (4) IR Receivers (display)
- (1) 3-pin terminal block (phoenix connector)
- (1) 12V/3A power supply
- (1) Set of mounting hardware and screws
- (1) Product Manual

PANEL DESCRIPTIONS

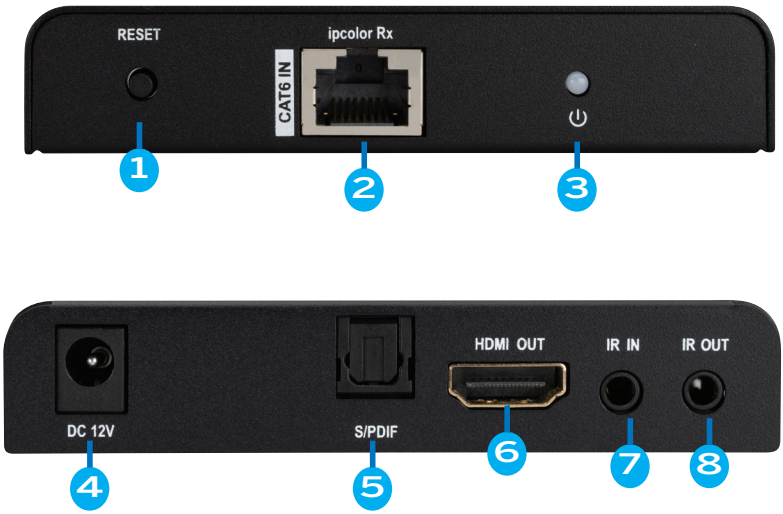
EV4K7014 Splitter

1. Power Indicator: Illuminates blue when the power is turned on
2. Reset Button: Reboots the splitter
3. IR IN: Connect the included IR Receiver (RX) to receive the IR signal from a remote
4. IR OUT: Connect the included IR Blaster (TX) and place at the source for IR control
5. RJ45 Output Ports: Connect to receivers with Cat6 cabling

   Note: Home-run cabling strongly recommended without any couplings, punch-downs, or patch panels; Cat5e not recommended
6. HDMI Output Port: Connect to an HDMI display, or connect to an additional EV4K7014 to cascade to create additional outputs
7. HDMI Input Port: Connect an HDMI source device
8. EDID Dip Switch: Set output compatibility resolution
9. RS-232 Port: Connects to control the splitter
10. Power: Connect the provided DC 12V/3A power adapter

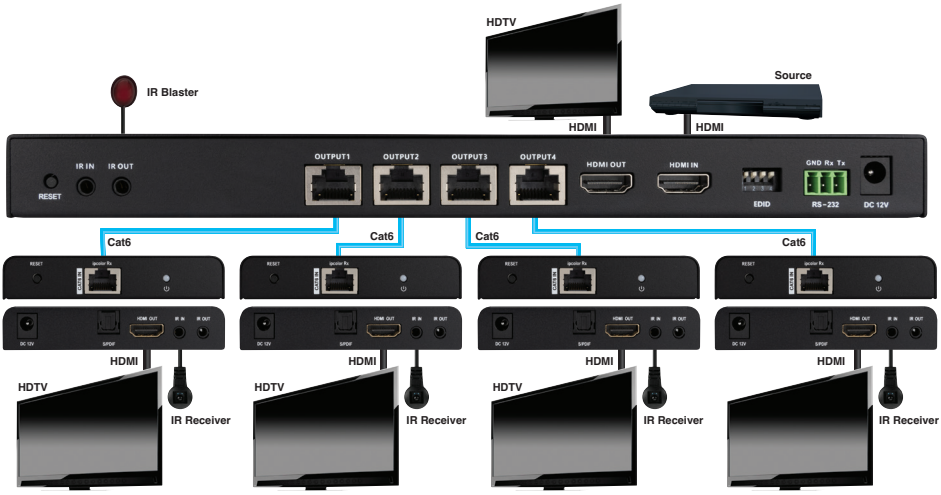
PANEL DESCRIPTIONS

EV4K7014 Receiver



1. Reset button: Reboots the receiver
2. Cat6 Input: Connect a single Cat6 with other end of cable connected to the splitter unit (home-run cabling strongly recommended without any couplings, punch-downs, or patch panels)
3. Power/Signal LED: When there is power and no HDMI source signal, the indicator will flash; when there is power and a source HDMI signal, the indicator will emit solid blue
4. DC 12V Port: No power supply needed, splitter will provide power over Cat6 (PoE) to the receiver units
5. S/PDIF OUT: Digital Optical Audio break out that will output source signal audio; connect to an external amplifier, soundbar, and/or audio distribution component
6. HDMI OUT: Connect a display such as an HDTV or HD Projector
7. IR IN: Connect the included IR Receiver (RX); see IR section for setup
8. IR OUT: Connect the included IR Blaster (TX); see IR section for setup

CONNECTION DIAGRAM



CONNECT AND OPERATE

1. Connect a source such as a Blu-Ray Player, game console, A/V Receiver, Cable or Satellite Receiver, etc. to the HDMI input
2. Connect the Cat6 runs (home run cabling recommended) to the UTP output(s); connect to the EV4K7014 RX Receivers
3. Connect displays such as an HDTV or HD Projector to the HDMI output of the EV4K7014 RX Receivers
4. (Optional) Connect a display such as an HDTV or HD Projector to the HDMI output of the EV4K7014; or connect an additional EV4K7014 to cascade to create additional outputs
5. For power, connect the provided power supply

EDID MANAGEMENT

There are 16 built-in EDIDs in the product, which can be adjusted via the DIP switches. The upward DIP switch indicates “1”, and the downward DIP switch indicates“0”. After the adjustment is made, power cycle the EV4K7014. View displays for changes.

Switch up for “1”

Switch down for “0”

Switch Status				EDID Information
1	2	3	4	
0	0	0	0	4K@60Hz 2CH
1	0	0	0	4K@60Hz 5.1CH
0	1	0	0	4K@60Hz 7.1CH
0	0	1	0	4K@60Hz HDR 7.1CH
0	0	0	1	4K@30Hz 2CH
1	1	0	0	4K@30Hz 5.1CH
1	0	1	0	4K@30Hz 7.1CH
1	0	0	1	4K@30Hz HDR 7.1CH
0	1	1	0	1080p@60Hz 2CH
0	1	0	1	1080p@60Hz 5.1CH
0	0	1	1	1080p@60Hz 7.1CH
1	1	1	0	1080i@60Hz 2CH
1	1	0	1	1080i@60Hz 5.1CH
1	0	1	1	1080i@60Hz 7.1CH

RS-232 CONTROL

The default configuration is as follows:

Baud rate: 9600, Data bits: 8, Stop bits: 1, Parity: 0

Control Commands	Function Descriptions	
ES XX On【Enter】	Turn on the network signal output port(s), choose from "01" to "04" (the network ports from right to left are: 01, 02, 03, 04.); "All" means all four ports	
ES XX Off【Enter】	Turn off the network signal output port(s), choose from "01" to "04" (the network ports from right to left are: 01, 02, 03, 04.); "All" means all four ports	
Reset【Enter】	Restart the device	
Recover【Enter】	Restore device factory settings	
Baud XX 【Enter】	Set the baud rate value: 9600 (default), 19200, 38400, 57600, 115200	
Examples of control commands are shown below:		
Control Command	ES 04 On【Enter】	
Function Description	Trun on network signal output port 04	
Return Values	Received successfully	ES 04 On OK
	Receive failed	ES 04 On FAIL
Control Command	ES All Off【Enter】	
Function Description	Turn off all the network signal output ports	
Return Values	Received successfully	ES All Off OK
	Receive failed	ES All Off FAIL
Control Command	Reset【Enter】	
Function Description	Restart the device	
Return Values	Received successfully	Reset OK
	Receive failed	Reset FAIL
Control Command	Baud 19200【Enter】	
Function Description	Set the baud rate value: 9600	

IR PASS-THROUGH

The IR system allows you to control the source that is connected to the splitter unit, from the display(s). The IR system also allows you to control the display(s) from the splitter location (see "To Control the Displays" section"). Additional IR receivers (EVIR4K70-RX) and IR blasters (EVIR4K70-TX) are sold separately.

To Control the Source:

1. Plug the IR blaster into the IR OUT port of the splitter unit; place blaster in front of the IR eye of the source

2. Plug the IR Receiver into the IR IN Port of the receiver unit; place receiver at or near display

To Control the Displays:

1. Plug the IR receiver into the IR IN port of the splitter unit; place receiver in a location where it can receive display IR commands

2. Plug the IR blaster into the IR OUT port of the receiver unit; place blaster in front of the IR eye of the display(s)

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.

Problems	Potential Causes	Solutions
Color losing or no video signal output in HDMI display	The connecting cables may not be connected correctly or may be broken	Check whether the cables are connected correctly and in working condition
	The display is not compatible with the present output resolution	Make sure the resolution of the display(s) is compatible with the present resolution
No HDMI signal output while local HDMI input is in normal working state	The connecting cables may not be connected correctly or it may be broken	Check whether the cables are connected correctly and in working condition
Splash screen in output devices	Poor quality of the connecting cable	Change for another cale of good quality
Static becomes stronger when connection the video connectors	Bad grounding	Check the grounding and make sure it is connected well

SAFETY AND NOTICE

The EV4K7014 has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment, the EV4K7014 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.

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.

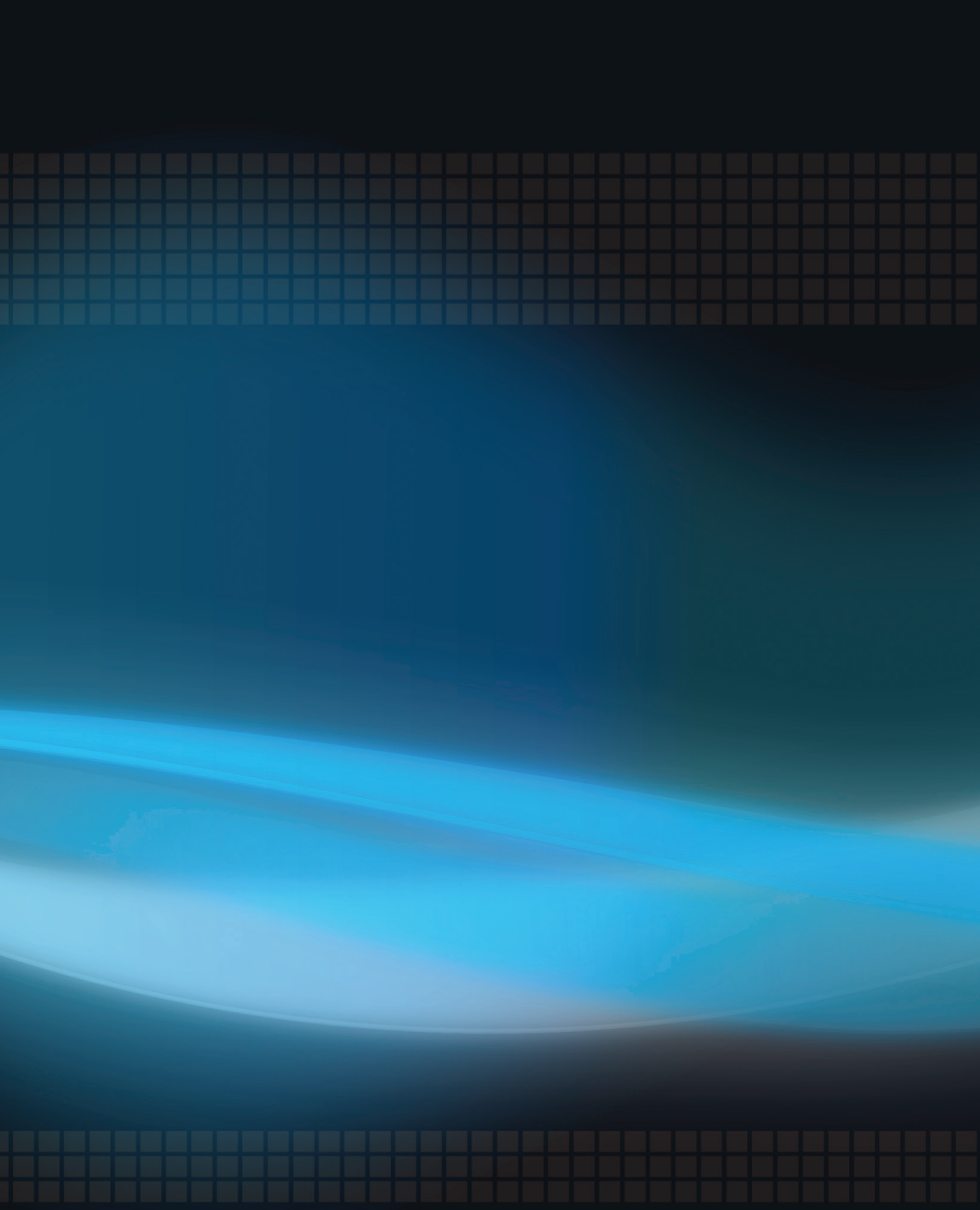
All active electronic products are 100% inspected and tested to insure highest product quality and trouble-free installation and operation. The testing process utilizes the types of high-definition sources and displays typically installed for entertainment and home theater applications.

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.

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.



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