HDMI® EXTENDER
over single Coax Cable

HDMI IN

Power
Signal DC/5V

COAX OUT

IR-TX IR-RX

MODE
OFF
ON

Vanco Part Number
EVEX2004

HDMI® Extender over
Single Coax Cable

EVOLUTION
BY VANCO
ADVANCING DIGITAL CONNECTIVITY

www.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.

INTRODUCTION

The Evolution by Vanco EVEX2004 HDMI Extender over Single Coax with Bi-directional IR extends high definition video and audio signals and IR, at a distance of up to 394ft/120m over RG6 coaxial cable, and 164ft/50m over RG59 coaxial cable. Features Bi-directional IR, which allows for control of the source or display. Also features EDID management, which allows and encourages source and display "handshake" for seamless integration. With just a single coaxial cable, high definition sources with HDMI outputs can be connected to high definition displays with HDMI inputs over long distances. DTS-HD or Dolby TrueHD audio, and HDCP is supported and compatible with the EVEX2004. Compact design with mounting ears included, for an easy and flexible installation. A great solution for applications which already have an existing coaxial cable in place.

The EVEX2004 includes two units: transmitting unit (EVEX2004-TX) and receiving unit (EVEX2004-RX). The transmitting unit is used to capture the HDMI input with IR signals and carries the signals via one coaxial cable. The receiving unit is responsible for equalizing the transmitted HDMI signal and reconstructing IR and serial control signals. The EVEX2004 offers the most convenient solution for HDMI extension over a single coaxial cable with long distance capability, and provides a solution in applications where additional cables cannot be installed.

HDMI® over Single Coax Extender
Part # EVEX2004

- Allows HDMI audio/video signals to be transmitted using a single coaxial cable
- Wide band Bi-directional IR system (20KHz to 60KHz) allowing for control of source or display
- Transmission Range: Extends 1080p resolution up to 394ft/120m over RG6 coaxial cable (dual and quad-shielded); Extends 1080p resolution up to 164ft/50m over RG59 coaxial cable
- Works with HDMI and HDCP compliant devices
- Supports up to 1080p High Definition resolution
- Compact design with mounting ears included, for an easy and flexible installation
- Supports up to 1080p/60 High Definition resolution
- EDID manual select control - Supports Copy EDID
- 7.1-channel audio supported
- Extends the transmission range up to 120m (394ft) from the HDMI sources under Full HD resolution (1080p60 24-bit color depth)
- Supports video resolutions 480i, 576i, 720p, 1080i, and 1080p
- Supports DTS-HD and Dolby TrueHD high bit rate audio
- Compact and wall mounting housing design for easy and robust installation
- Fully compatible with any Evolution by Vanco product
- Dimensions: 3.35" (85mm) W x 1.1" (28mm) H x 3.19" (81mm) D

SPECIFICATIONS

TECHNICAL SPECS

HDCP Compliance .... Yes

Video Bandwidth .... Single-link 225MHz [6.75Gbps]

Video Support .... 480i / 720p / 1080i / 1080p60 (Does NOT support 480p)

Audio Support .... Surround Sound (up to 7.1 ch) or stereo digital audio

Transmission Range .... HD [1080p 24-bit color] — up to 120m [394ft]

HDMI Equalization .... Auto

Input TMDS Signal .... 1.2 Volts (peak to peak)

Input DDC Signal... 5 Volts (peak to peak, TTL)

ESD protection .... (1) Human body model +/- 19kV (air-gap discharge) & (contact discharge) (2) Core chipset - +/- 8k V

PCB stack-up .... 6 layer board (impedance control - differential 100Ω, single 50Ω

Input .... (TX) 1xHDMI + 1x3.5mm; (RX) 1xBNC + 1x3.5mm

Output... (TX) 1xBNC + 1x3.5mm; (RX) 1xHDMI + 1x3.5mm

IR Remote Control .... Electro-optical characteristics: p = 25° / Carrier frequency: 20-60kHz

HDMI connector .... Type A 19 pin female

BNC connector .... 75Ω interlocking socket

3.5mm connector .... (TX and RX) IR Receiver/ IR blaster

MECHANICAL SPECS

Housing .... Metal enclosure

Fixedness... Wall-mounting case with screws

Power supply.. (2) 5V2A

Power consumption... 6 Watts

Operation temperature.. 32-104 degrees F

Storage temperature... -4 - 140 degrees F

Relative humidity .... 20-90% RH (no condensation)
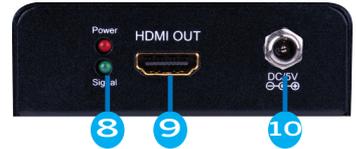
PACKAGE CONTENTS

- EVEX2004 (TX & RX)
- IR Blaster (TX)
- IR Receiver (RX)
- (2) DC 5V power supplies
- Rack-mounting ear set
- Product Manual

PANEL DESCRIPTIONS

Transmitting Unit

Receiving Unit

1.   HDMI IN: Connects to an HDMI source device with an HDMI male-to-male cable
2.   POWER/SIGNAL LED: Red light - POWER; Green light - SIGNAL ACTIVE
3.   5V DC: Connects to 5V DC power supply
4.   COAX OUT: Connects to a high standard coaxial cable using BNC connector
5.   IR Blaster (TX): Infrared 3.5mm socket for plugging in the extension cable of IR blaster
6.   IR Receiver (RX): Infrared 3.5mm socket for plugging in the extension cable of IR receiver
7.   EDID Dip Switch: See EDID section
8.   POWER/SIGNAL LED: Red light - POWER; Green light - SIGNAL ACTIVE
9.   HDMI OUT: Connects to an HDMI display with an HDMI male-to-male cable
10. 5VDC: Connects to a 5V DC power supply unit
11. IR Blaster: Infrared 3.5mm socket for plugging in the extension cable of IR blaster (TX)
12. IR Receiver: Infrared 3.5mm socket for plugging in the extension cable of IR receiver (RX)
13. COAX IN: Connect to a high standard coaxial cable using BNC connector

EDID

The EDID dip switch allows for EDID learning or to pre-set an EDID to encourage a "handshake" between the display and source.
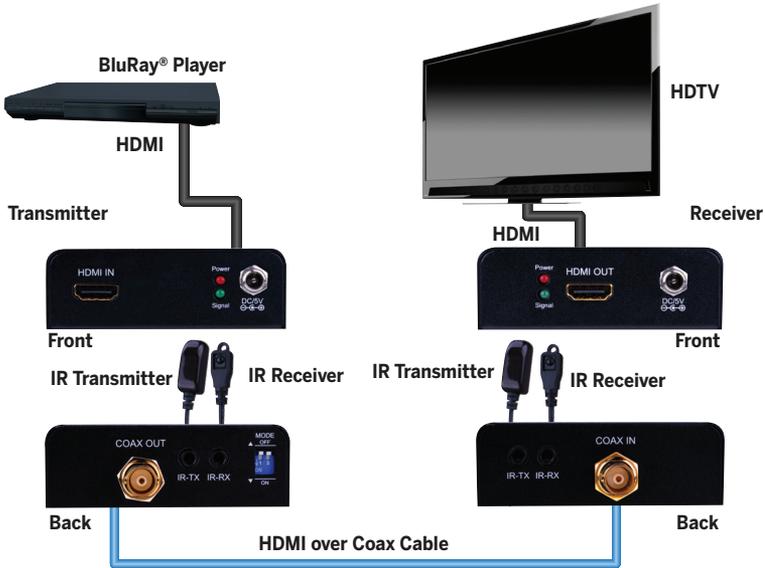
Pin #1	Pin #2	EDID feature
OFF ↑	OFF ↑	3G/HD/SD-SDI with multi-channel audio except DTS-HD Master & Dolby TrueHD
OFF ↑	ON ↓	3G/HD/SD-SDI With stereo PCM audio
ON ↓	OFF ↑	HD/SD-SDI With stereo PCM audio
ON ↓	ON ↓	EDID Learning Mode

Factory Default: OFF - OFF ↑ ↑

To set EDID:

1. Ensure all source and display components, including Transmitting unit (TX) and Receiving unit (RX) are powered off and HDMI cables are disconnected from extender unit.

2. Set EDID to position desired

3. Connect HDMI cables to extender unit (both TX and RX) from source and display

4. Power the Transmitting unit (TX), followed by the Receiving unit (RX)

5. Power the Source equipment, followed by the display equipment

CONNECTION DIAGRAM

BluRay® Player

HDMI

Transmitter

HDMI IN   Power   DC/5V
Signal

Front

IR Transmitter   **IR Receiver**

COAX OUT   MODE   OFF
IR-TX   IR-RX   ON

Back

HDTV

Receiver

HDMI

Power   HDMI OUT   DC/5V
Signal

Front

IR Transmitter   **IR Receiver**

COAX IN
IR-TX   IR-RX

Back

HDMI over Coax Cable

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 on the Transmitting unit.

2. Connect a display such as an HDTV or HD Projector to the HDMI output on the Receiving unit.

3. Connect a single RG6 or RG59 coaxial cable to the "COAX OUT" connector of the Transmitting unit, and then to the "COAX IN" connector of the Receiving unit.

4. For power, plug in the Transmitting and Receiving units with included DC 5V 2A power supplies.

5. Power on each device in the same sequence (receiver and transmitter will already be powered when either unit is plugged in.)

At this point the display connected should display the source signal connected to the extender set. If no signal is being displayed, check coax cables and connections. If a display is having difficulty receiving a signal, see EDID section and perform EDID learning or 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. Use the source remote at the receiver emitter to test IR functionality. 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 Extender set receiving and transmitting units.

IR PASS-THROUGH

IR Blaster TX   IR Receiver RX

IR BLASTER (TX)

To control the source: Plug IR Blaster into IR TX port of transmitter unit (EVEX2004-TX); place blaster in front of the IR eye of the source.

To control the display: Plug IR Blaster into IR TX port of receiver unit (EVEX2004-RX); place blaster in front of the IR eye of the display.

IR RECEIVER (RX)

To control the source: Plug IR Receiver into IR RX port of receiver unit (EVEX2004-RX); place receiver at or near display.

To control the display: Plug IR Receiver into IR RX port of transmitter unit (EVEX2004-TX); place receiver in position where it is able to receive remote signals.

1. IR Signal
2. Grounding

IR Blaster TX

1. IR Signal 20-60 kHz)
2. Grounding
3. Power

IR Receiver RX

NOTICE

1. Vanco HDMI and coaxial 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 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 coaxial cables utilized, the type of HDMI sources, and the type of HDMI display. For long extension applications, use RG6 coaxial cables.

4. This product utilizes BNC connection.

5. The quality of coaxial 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 coaxial cable utilized.

6. 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 EVEX2004 HDMI Extender over Single Coaxial with Bi-directional IR, has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the EVEX2004 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.
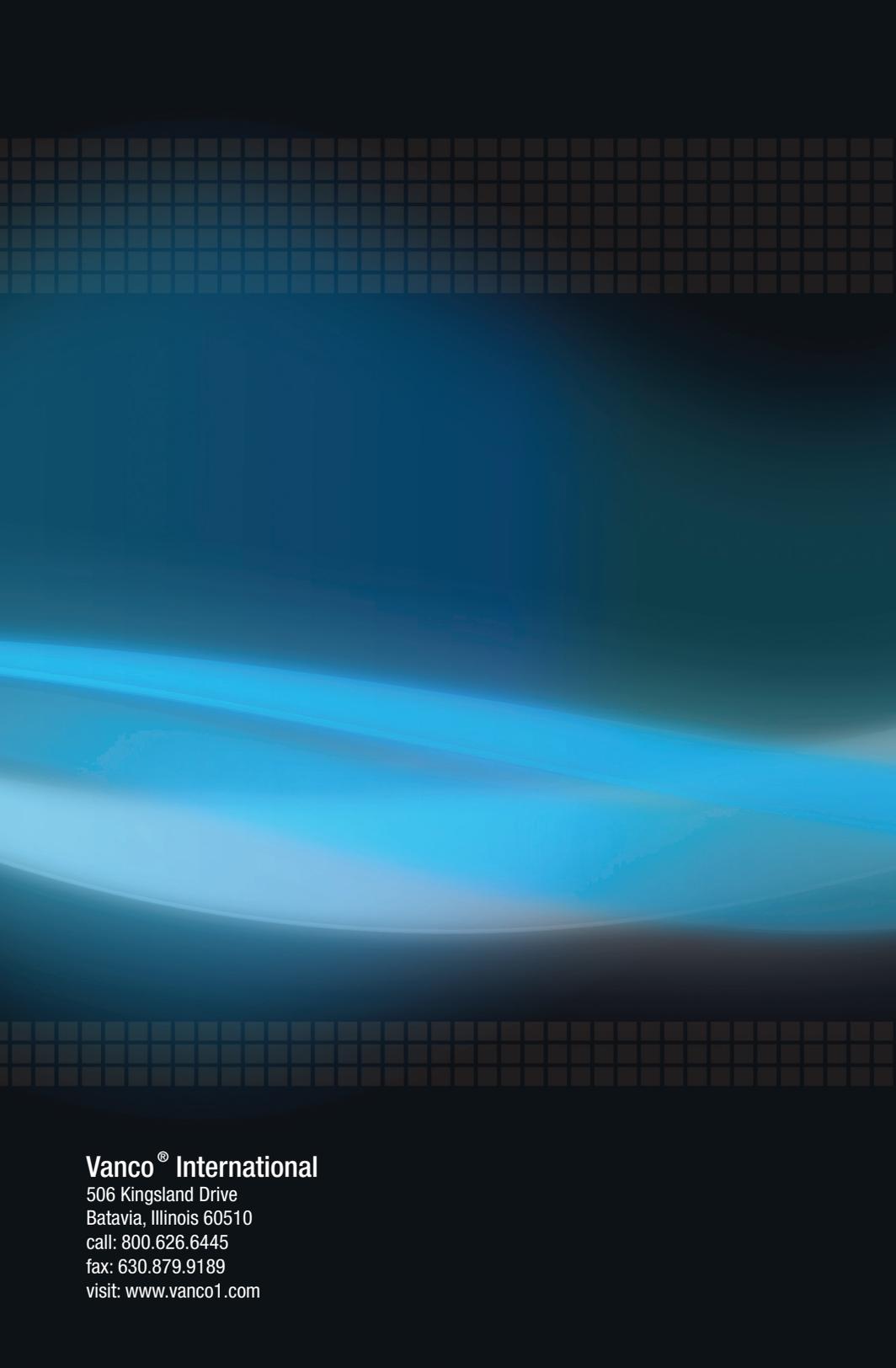
Please read this Instruction Manual prior to calling or installing this unit, since it will familiarize you with the capabilities of this product and its proper installation.

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.

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.

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