# HDBaseT™ EXTENDER

230ft/70m 4K UHD




**Vanco Part Number:**
**EVEXHDB1**

**HDBaseT® Extender**
**230ft/70m 4K UHD**

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 EVEXHDB1 extender set consists of a transmitter and receiver. HDMI signals are input into the transmitter and HDBaseT technology is used to transmit the audio/video signals to the receiver up to 70m via a single Cat5e/Cat6 cable for 1080p and 40m at 4K 60Hz. The receiver then outputs the HDMI signal to the display. The EVEXHDB1 also allows for bi-directional IR and power across the Cat5e/Cat6 cable. The extender set supports PoC, which can be used to power either end of the extender set off of a single power supply.

## HDBaseT™ Extender

### Part # EVEXHDB1

- Features HDBaseT™ Technology, optimized for whole-home or commercial distribution of uncompressed high-definition signals at more than twice the distance of standard HDMI cables without degradation
- HDBaseT Extender can connect uncompressed full HD digital video and audio through a single 230ft/70m Cat5e/Cat6 cable
- Features Power over Cable (PoC) Technology which transmits power over Cat5e/6, allowing for either Transmitter or Receiver to be powered without the use of a power supply. The result is an easy and flexible installation with low maintenance.
- Transmission Range: Extends 1080p resolutions up to 230ft (70m) over a single Cat5e/6 cable and 4K@60Hz, 4:2:0 color subsampling up to 131ft (40m)
- Bi-directional IR control
- High Bandwidth: 10.2 Gbps
- HDCP 2.2 compliant
- CEC Support
- Slim and compact design
- Power Supply: DC 12V
- Dimensions: 2.4" W x .9" H x 4.7" D

# SPECIFICATIONS

| | |
|---|---|
| Input Signal | TX: 1 HDMI,1 IR; RX: 1 IR, 1 RJ-45 |
| Input Connector | TX: HDMI female, 3.5mm mini jack; RX: 3.5mm mini jack; RJ-45 |
| Video Signal | HDMI1.4 |
| Audio | Digital audio, transmit through HDMI audio |
| Output | TX: 1 RJ-45, 1 IR; RX: 1 HDMI, 1 IR |
| Output Connector | TX: RJ-45., 3.5mm mini jack; RX: HDMI female 3.5mm mini jack |
| Video signal | HDMI1.4 |
| Transmission Mode | HDBaseT |
| Resolution Range | 800x600@60Hz~4K×2K |
| Transmission Distance | Maximum distance 230 ft. (70 m) |
| SNR | >70dB@ 100MHz-100M |
| Bandwidth | 10.2Gbps |
| THD | 0.005%@1KHz |
| HDMI Standard | Support HDMI1.4, and HDCP |
| Impedance | 75Ω |
| Temperature | 0~ 50 degrees C |
| Reference Humidity | 10% ~ 90% |
| Power Supply | DC 12V, 1A |
| Power Consumption | 9.6W |
| Weight | 0.28Kg 0.28Kg |
| HDMI Resolutions | 480I, 480P, 576I, 576P, 720P, 1080I, 1080P, 4Kx2K, 1080P 3D |
| DVI Resolutions | 640x480@60Hz, 640x480@72Hz, 640x480@75Hz, 800x600@60Hz, 800x600@72Hz, 800x600@75Hz, 1024x768@60Hz, 1024x768@70Hz, 1024x768@75Hz, 1280x720@60 Hz, 1280x1024@60Hz, 1280x1024@75Hz, 1600x1200@60Hz, 1920x1080@60Hz, 1920x1200@60Hz |

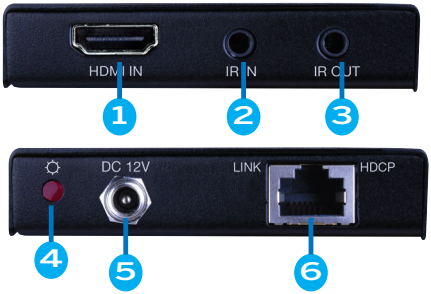
Note: HDBaseT Extender supports 4K&1080p 3D HDMI signal, please adopt quality HDMI cables compliant with HDMI1.4 for reliable transmission when using

# PACKAGE CONTENTS

- EVEXHDB1 (TX & RX)
- (1) IR Blaster (TX)
- (1) IR Receiver (RX)
- (1) DC 12V in line power supply
- Mounting Hardware
- Product Manual

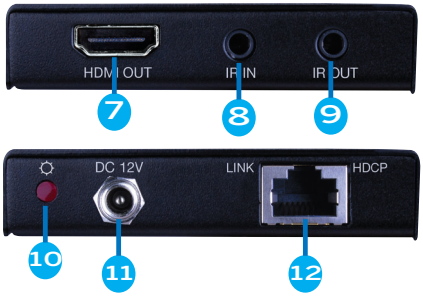
# PANEL DESCRIPTIONS

Transmitting Unit




1. HDMI IN: Connect to HDMI source.
2. IR IN: Connect to an IR receiver, the IR signal received from this port can only send out via HDBaseT Receiver.
3. IR OUT: Connect with IR emitter, the sent IR signals are received by HDBaseT Receiver.
4. Power Indicator: illuminate when power up
5. DC 12V: Connect with power supply, energize both TX and RX (PoC solution) synchronously.
6. HDBaseT OUT: Connect via 568B terminated CAT5e/ CAT6 cable.

Receiving Unit

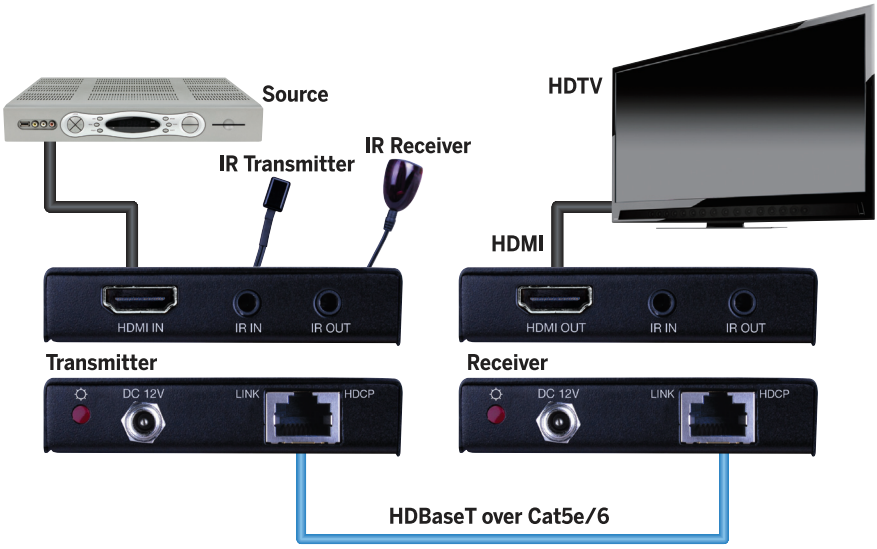



7. HDMI Out: Connect to HDMI display.
8. IR IN: Connect to an IR receiver, the IR signal received from this port can only send out via HDBaseT Transmitter.
9. IR OUT: Connect with IR emitter, the sent IR signals are received by HDBaseT Transmitter.
10. Power Indicator: illuminate when power up
11. DC 12V: Connect with power supply (POC Only 1 power supply needed)
12. HDBaseT IN: Connect via CAT5e/ CAT6 cable.

HDBaseT Extender features 2 indicators to show real-time operation information:

| *Indicator* | *Function* | *Details* |
|---|---|---|
| Yellow | Show input signal connection | Connected:<br>HDCP Compliant: Illuminate;<br>Not HDCP Compliant: Blink.<br>Disconnected: Off |
| Green | Indicate linking status of the transmitter and the receiverio | Connected: Illuminate<br>Disconnected: Off |

# CONNECTION DIAGRAM




# CONNECT AND OPERATE

1. Connect HDMI source (such as Blue-ray DVD) to HDMI In port of the transmitter with an HDMI cable.
2. Connect HDBaseT OUT port of the transmitter to the HDBaseT IN port of the receiver through a CAT5e/CAT6 cable.
3. Connect a HDMI display (such as HDTV) to the HDMI Out port of the receiver with HDMI cable.
4. When using the bi-directional IR control, do the following:
   a) Connect the IR emitter at either end to the IR OUT port on either the transmitter or the receiver.
   b) When using a powered IR receiver, connect via a 3.5 mm stereo plug to the IR IN on either the receiver or the transmitter.
5. Connect the DC 12V power adaptor to the power port of either the HDBaseT Transmitter or HDBaseT Receiver.

# USAGE PRECAUTIONS

1. System should be installed in a clean environment and has a prop temperature and humidity.
2. All of the power switches, plugs, sockets and power cords should be insulated and safety.
3. All devices should be connected before power on.
4. The Cat5e/Cat6 terminations for HDBaseT devices should be a straight-thru TIA/EIA T568B standard

# IR

IR PASS-THROUGH

The bi-directional IR system allows you to control the source that is connected to the extender unit, from the display; or the display from the source, not simultaneously. 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. This pigtail is placed at the display for controlling the source; or at the source for controlling the display.
2. The IR Blaster (IR TX) is what sends the IR signal to what you are intending to control, whether it's the source or the display. This pigtail is placed at the source; either pointed at the source, or placed on the front panel of the source, see below for placement tips. Or placed at the display to control the display from the source.







**To Control the Source:**

**1. Plug the IR TX/Blaster into the IR out Port on the Transmitter**

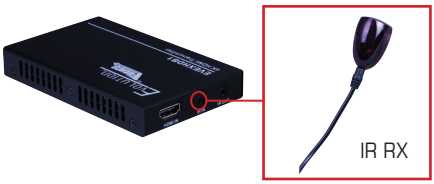



**2. Plug the IR Receiver into the IR In Port on the Receiver**




**To Control the Display:**

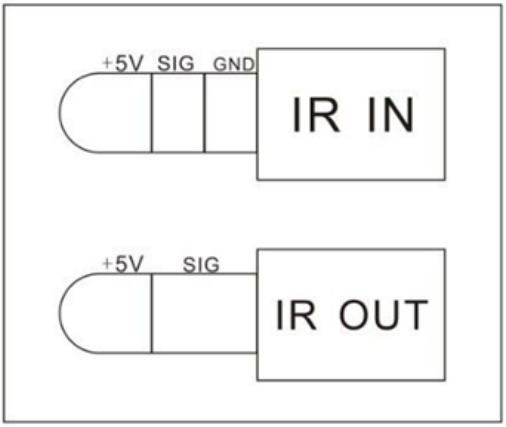
**1. Plug the IR Receiver into the IR In Port on the Transmitter**




**2. Plug the IR TX/Blaster into the IR Out Port on the Receiver**



Below is the voltage and pinout used for IR of the EVEXHDB1. Due to possible differences in 3rd party IR cables, please use the IR cables that came with the product.



# 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.




| Pin | TIA/EIA–568B Wire color |
|---|---|
| 1 | Orange/ White |
| 2 | Orange |
| 3 | Green/ White |
| 4 | Blue |
| 5 | Blue/ White |
| 6 | Green |
| 7 | Brown/ White |
| 8 | Brown |

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 EVEXHDB1 has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the EVEXHDB1 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.

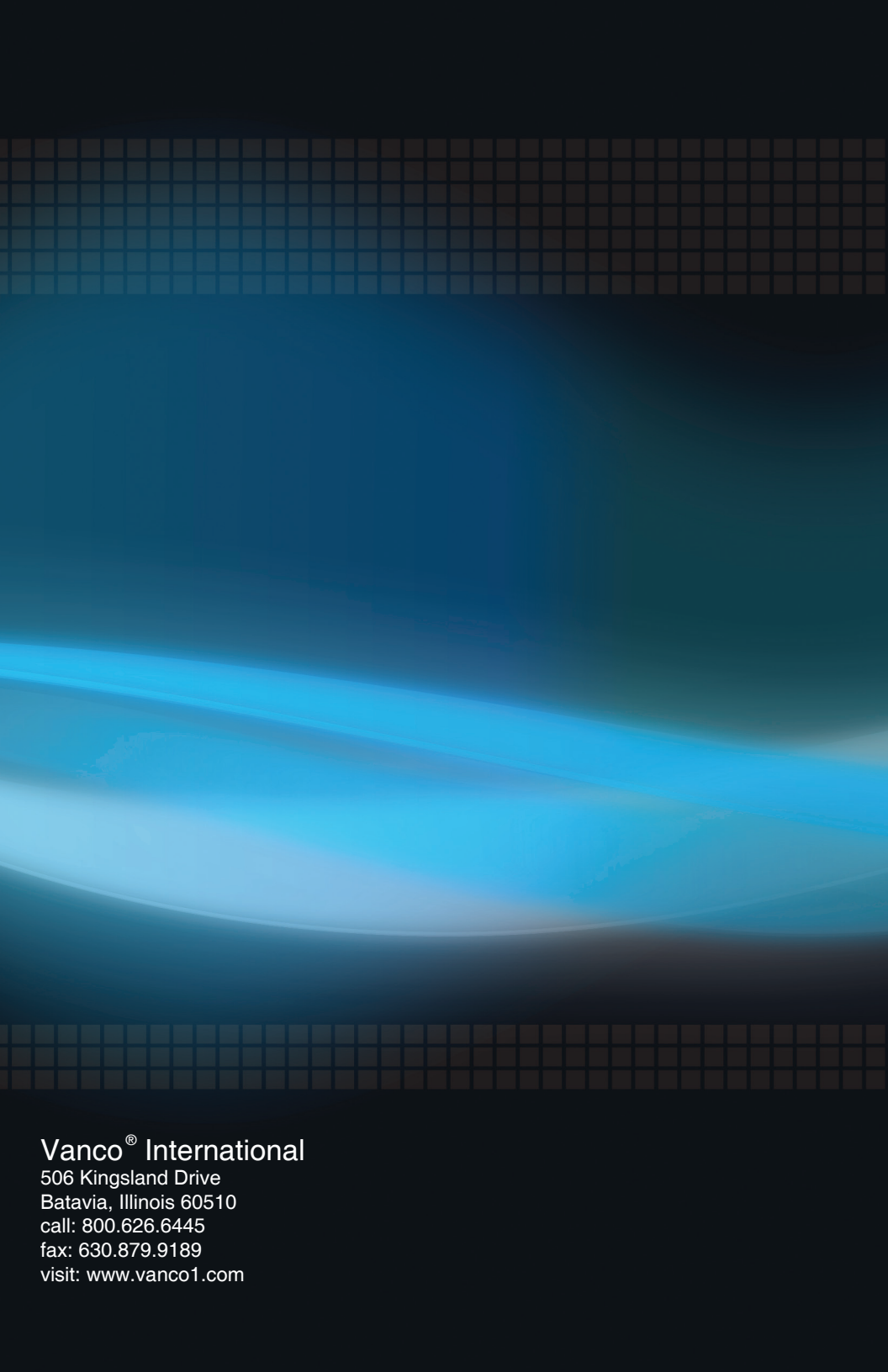
All active electronic products are 100% inspected and tested to insure highest product quality and trouble-free installation and operation. The testing process utilizes the types of high-definition sources and displays typically installed for entertainment and home theater applications.

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. 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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