

HDBaseT™ EXTENDER

with ARC and Digital Audio Breakout



**Vanco Part Number:
EVEXARC1**

**HDBaseT® Extender
with ARC and Digital
Audio Breakout**

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 EVEXARC1 HDBaseT Extender with ARC, bi-directional IR, digital audio breakout, and PoC, extends 1080p high definition video and audio signals up to 164ft/50m over a single Cat5e/6. Bi-directional PoC allows the EVEXARC1 to be powered off one power supply, with either the transmitter or receiver to be powered without the use of a power supply. For returning audio from the display, Audio Return Channel (ARC) is supported, carrying audio through the HDMI connection, or a SPDIF connection to breakout the audio. In addition, bi-directional IR pass-through allows for source and/or display control. For extending HDMI with ARC functionality over a single cable, the EVEXARC1 is a great solution for any smart TV application.

HDBaseT™ Extender with ARC and Digital Audio Breakout

Part # EVEXARC1

- Features the latest HDBaseT Technology – optimized for whole-home or commercial distribution of high definition signals at much greater distances of standard HDMI cables
- ARC functionality allows audio to be received from the HDMI port on the receiver unit to be sent to an amplifier via the optical audio breakout on the transmitter unit
- SPDIF digital audio breakout for any source components without ARC
- Transmission Range: Extends 1080p@60Hz up to 164ft/50m over a single Cat5e/6 cable
- Features bi-directional Power over Cable (PoC) which transmits power over Cat5e/6, allowing for either the transmitter or receiver to be powered without the use of a power supply
- Bi-directional IR pass-through for source and/or display control
- Supports PCM, Dolby True HD, and DTS-master formats
- Dimensions: 5.5"W x 2.6" H x 0.7" D

SPECIFICATIONS

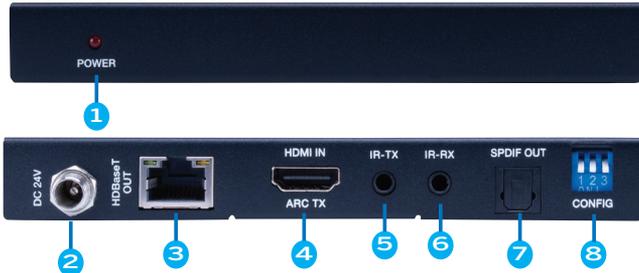
Interface (Transmitter)	HDMI input, IR output (3.5mm), IR input (3.5mm), RJ45 Ethernet interface, 24V Power Input, SPDIF Optical Audio Output
Interface (Receiver).....	HDMI output, IR output (3.5mm), IR input (3.5mm), RJ45 Ethernet interface, 24V Power Input
Video Bandwidth	Maximum TMDS clock frequency 165MHz, 4.95Gbps
Resolution and distance.....	1080P@60Hz up to 164ft (50m) Cat6; 720P/1080i up to 270ft (80m) Cat6
HDMI Interface Standard	HDMI 1.4
Remote IR.....	20-60Hz wide frequency carrier
ESD Level	HBM \pm 4 kV (Contact Discharge)
Operating Temperature.....	0~ 40 degrees C; 32~ 104 degrees F
Storage Temperature	-20~ 60 degrees C; -4~ 140 degrees F
Compliance	FCC; CE; RoHS

PACKAGE CONTENTS

- EVEXARC1 HDBaseT Extender
- IR Emitter
- IR Receiver
- 24V DC Power Supply
- Mounting Hardware
- Product Manual

PANEL DESCRIPTIONS

Transmitting Unit



1. Power Indicator
2. DC 24V: Connect the included power supply (PoC feature allows for either Transmitter or Receiver to be plugged into power)
3. HDBaseT Out: Connect a single Cat5e/6 that runs to the display location (home-run cable strongly recommended)
4. HDMI IN: Connect a source such as a Cable box, Blu-ray player, game console, PC, etc.
5. IR TX: Connect the included IR Transmitter (TX); see IR section for setup
6. IR RX: Connect the included IR Receiver (RX); see IR section for setup
7. SPDIF OUT: (Optical Out) Digital audio output, connect to an external amplifier or audio system using an optical audio cable
8. CONFIG: Dipswitches to set audio output for ARC, see ARC section for setup

ARC Setup (Configuring Dip Switch Settings)

The EVEXARC1 can pas-through ARC, which can be activated or deactivated. See below for dip switch settings. Please note that DOWN is ON.

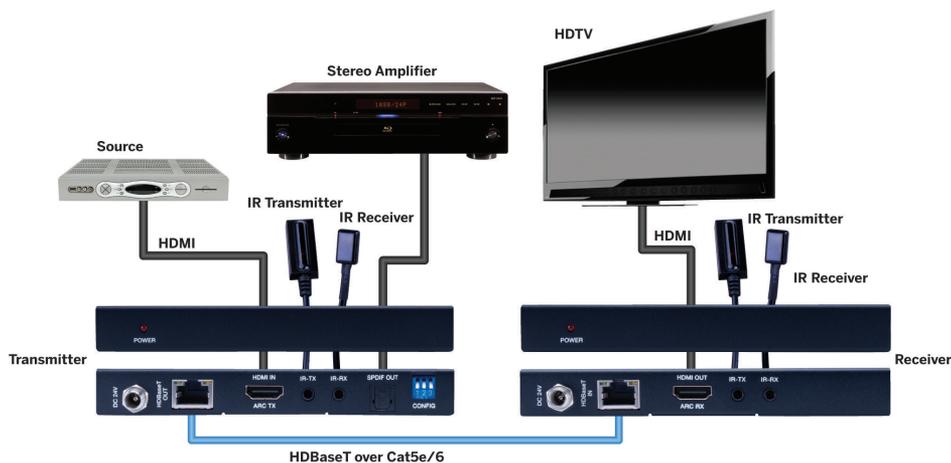
Dip Switch Number			CEC Function	ARC Function	Notes
1	2	3			
OFF	OFF	OFF	CEC bypass	ARC controlled by the source and settings	Default Settings; preferred setting if display and amplifier are the same brand or have the same ARC language
OFF	ON	OFF	CEC ON	OFF	ARC pass-through is off
OFF	ON	ON	CEC ON	ON	If the default setting does not produce audio, try this setting as this forces audio handshake

Receiving Unit



1. Power Indicator
2. DC 24V: Connect the included power supply (PoC feature allows for either Transmitter or Receiver to be plugged into power)
3. HDBaseT In: Connect a single Cat5e/6 that runs from the source location (home-run cable strongly recommended)
4. HDMI OUT: Connect a display such as an HDTV or HD Projector
5. IR TX: Connect the included IR Transmitter (TX); see IR section for setup
6. IR RX: Connect the included IR Receiver (RX); 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 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 Category 5e/6/7 up to 164ft/50m to the UTP output of the Transmitting unit, and the other end to the UTP input of the receiving unit
4. For power, plug in either the Transmitting unit or Receiving unit with the included power supply, opposite unit will not have to be plugged in as it features Power over Cable (PoC)
5. Power on each device in the same sequence (receiver and transmitter will already be powered when either unit is plugged in)
6. Optional: Connect a digital audio optical cable from the Transmitting unit via the SPDIF connection to an audio amplifier to break out the audio

At this point the display connected should display the source signal connected to the extender set. If no signal is being displayed, connect a shorter Cat5e/6 cable (jumper or patch cable). 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. 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

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 Emitter (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 Emitter into IR TX port of the transmitter unit; place transmitter in front of the IR eye of the source



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



To Control the Display:

1. Plug IR Emitter into IR TX port of the receiver unit; place transmitter in front of the IR eye of the display

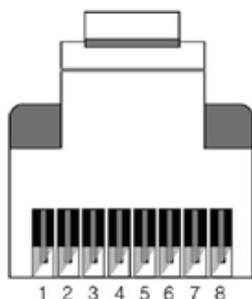


2. Plug IR Receiver into IR RX port of transmitter unit; place receiver in position where it is able to receive remote signals



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.



TIA/EIA-568B	
Pin	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.



Performance Guide for HDMI over Category Cable Transmission

Performance rating		Type of category cable		
Wiring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	***	****	*****
	Shielded (STP)	***	***	****
Stranded	Unshielded (UTP)	*	**	**
	Shielded (STP)	*	*	**
Termination		Please use EIA/TIA-568-B termination (T568B) at any time		

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 EVEXARC1 has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the EVEXARC1 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.

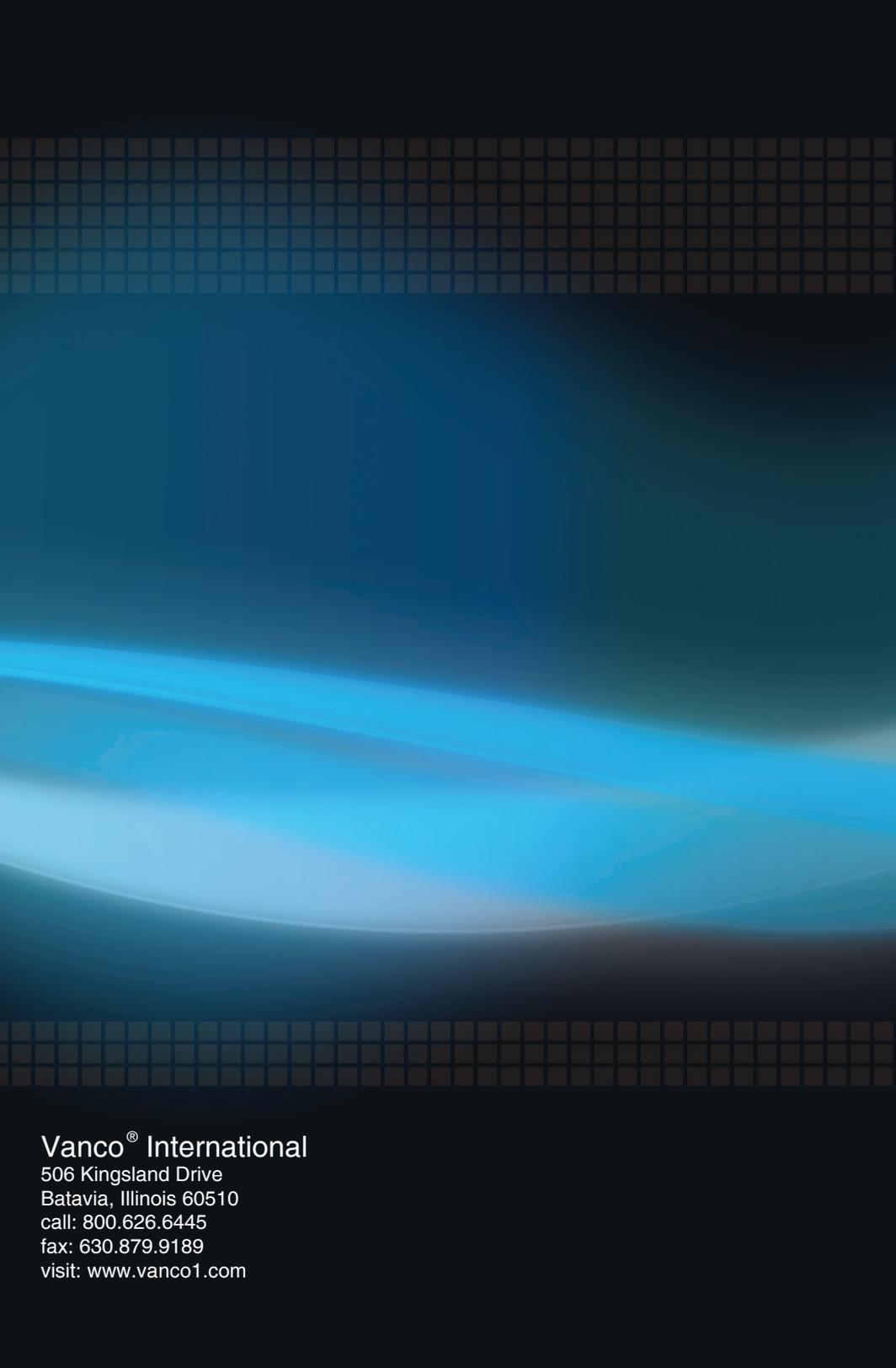
All active electronic products are 100% inspected and tested to insure highest product quality and trouble-free installation and operation. The testing process utilizes the types of high-definition sources and displays typically installed for entertainment and home theater applications.

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.

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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