

DVDO



DVDO-HDBVM-POE-1

4K HDBaseT 2.0 Extender with USB 2.0

User Manual

Version: V1.0.0



Important Safety Instructions



1. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.



6. Clean this apparatus only with dry cloth.



2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated.



7. Unplug this apparatus during lightning storms or when unused for long periods of time.



3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.



8. Protect the power cord from being walked on or pinched particularly at plugs.



4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.



9. Only use attachments / accessories specified by the manufacturer.



5. Do not place sources of naked flames, such as lighted candles, on the unit.



10. Refer all servicing to qualified service personnel.

Table of Contents

Introduction	4
Overview	4
Features	5
Package Contents	5
Specifications	6
Panel Description	8
Transmitter	8
Receiver	9
Installation and Wiring	11
Installation	11
Wiring	11
RS232 Pass-Through	13
Warranty Terms and Conditions	15

Introduction

Overview

DVDO-HDBVM-POE-1 is a 4K HDBaseT 2.0 extender that transmits HDMI, analog stereo audio, power, RS232 and USB 2.0 up to 70m/230ft using a single Cat X cable.

With USB 2.0 pass-through and USB Host in TX, USB Devices in RX, it provides solutions where remote users want to control PC sources with keyboard and mouse, interactive display operation, data transmission or USB streaming device over distance is required. Additional features include bi-directional 3.5mm stereo pass-through.

With 48V PoH integrated inside, it just needs one power supply connected to TX to power both units. Its 12V power supply is secured with a screw-on connector to prevent the power being accidentally disconnected, with LED indication for visual power supply to units and signal status to show established connection between connected devices.

Features

- Via a Cat 6a/7 cable, transmits 4K@60Hz (YUV 4:2:0 color sub-sampling) up to 40m/131ft and 1080P@60Hz signal up to 70m/230ft.
- Via a Cat 5e/6 cable, transmits 4K@60Hz (YUV 4:2:0 color sub-sampling) signal up to 35m/115ft and 1080P@60Hz signal up to 60m/197ft.
- HDMI 1.4 with 4K@60Hz (chroma sub-sampling 4:2:0 8-bit only) and HDCP 2.2 compliant.
- One-way POH, TX (PSE) with PSU to power both TX and RX (PD).
- USB 2.0 pass-through, one USB Host built in TX and four USB Devices built in RX.
- High-speed USB 2.0 pass-through over HDBaseT up to 70m/230ft
- Bi-directional analog stereo audio, CEC pass-through and RS232 pass-through over HDBaseT.

Package Contents

Before you start the installation of the product, please check the package contents as below:

- DVDO-HDBVM-POE-1 (Transmitter Receiver Set) x 1
- DC 12V 2A Power Adapter (with US, UK, EU, AU Pins) x 1
- Phoenix Male Connector (3.5 mm, 3 pins) x 2
- Mounting Brackets (with Screws) x 4
- User Manual x 1

Specifications

Technical	
Input/Output Port	<p>Transmitter: 1 x HDMI IN, 1 x HDBT OUT, 1 x RS232, 1 x AUDIO IN, 1 x AUDIO OUT, 1 x USB HOST, 1 x DC 12V IN</p> <p>Receiver: 1 x HDBT IN, 1 x HDMI OUT, 1 x RS232, 1 x AUDIO IN, 1 x AUDIO OUT, 4 x USB DEVICE, 1 x DC 12V IN</p>
Input/Output Signal Type	<p>Transmitter: Input: HDMI 1.4 with 4K@60Hz 4:2:0 8bit, HDCP 2.2 Output: HDBT 2.0</p> <p>Receiver: Input: HDBT 2.0 Output: HDMI 1.4 with 4K@60Hz 4:2:0 8bit, HDCP 2.2</p>
Input Resolutions Support	<p>VESA: 800x600⁸, 1024x768⁸, 1280x768⁸, 1280x800⁸, 1360x768⁸, 1366x768⁸, 1440x900⁸, 1600x900⁸, 1600x1200⁸, 1680x1050⁸, 1920x1200⁸</p> <p>SMPT: 1280x720P^{1,2,3,4,5,6,7,8}, 1920x1080I^{6,8}, 1920x1080P^{1,2,3,4,5,6,7,8}, 3840x2160^{2,3,5,6,8}, 4096x2160^{2,3,5,6,8}</p> <p>1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = at 60 Hz</p> <p>NOTE: 4096x2160/3840x2160@50Hz/60Hz is based on chroma sub-sampling 4:2:0 8-bit only</p>
Output Resolution Support	<p>VESA: 800x600⁸, 1024x768⁸, 1280x768⁸, 1280x800⁸, 1360x768⁸, 1366x768⁸, 1440x900⁸, 1600x900⁸, 1600x1200⁸, 1680x1050⁸, 1920x1200⁸</p> <p>SMPT: 1280x720P^{1,2,3,4,5,6,7,8}, 1920x1080I^{6,8}, 1920x1080P^{1,2,3,4,5,6,7,8}, 3840x2160^{2,3,5,6,8}, 4096x2160^{2,3,5,6,8}</p> <p>1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = at 60 Hz</p> <p>NOTE: 4096x2160/3840x2160@50Hz/60Hz is based on chroma sub-sampling 4:2:0 8-bit only.</p>

Technical	
Input Video Level	0.5-1.0 V p-p
Input DDC Signal	5V p-p
Maximum Pixel Clock	340MHz
Audio Format	HDMI: Supports multi-channel audio formats, including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio and DTS:X AUDIO IN/OUT: Stereo

General	
Operating Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Humidity	10% to 90%, non-condensing
ESD Protection	Human-body Model: ±8kV (Air-gap discharge)/ ±4kV (Contact discharge)
Power Supply	DC 12V 2A
Power Consumption (Maximum)	≤12 W (pair)
Device Dimension (W x H x D)	Transmitter/Receiver: 210mm x 25mm x 90.2mm / 8.27" x 0.98" x 3.55"
Product Weight	Transmitter: 0.44kg/0.97lb Receiver: 0.46kg/1.01lbs

Transmission Distance

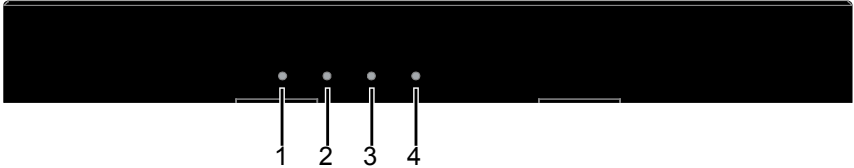
Note: We recommend the use of straight-through Category cables wired to T568B standard.

Cable Type	Range	Supported Video
Cat 5e/6	60m/197ft	1080p@60Hz, 36bpp
Cat 6a/7	70m/230ft	
Cat 5e/6	35m/115ft	4K@30Hz 4:4:4, 24bpp
Cat 6a/7	40m/131ft	4K@60Hz 4:2:0, 24bpp

Panel Description

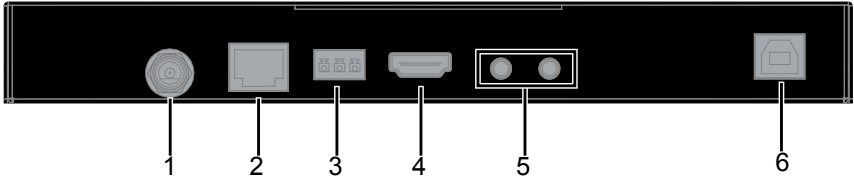
Transmitter

Front Panel



No	Name	Description
1	POWER LED	<p>On: The transmitter is powered on.</p> <p>Off: The transmitter is powered off.</p>
2	STATUS LED	<p>Blinking: The transmitter is working properly.</p> <p>Off: The transmitter is not working properly.</p>
3	HDCP LED	<p>On: HDCP protected content is being transmitted.</p> <p>Blinking: Non-HDCP protected content is being transmitted. This is normal and will not affect operation.</p> <p>Off: No content is being transmitted.</p>
4	LINK LED	<p>On: HDBT link is normal.</p> <p>Off/Blinking: No link or link error.</p>

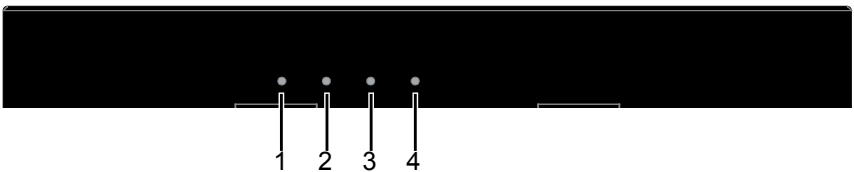
Rear Panel



No	Name	Description
1	DC 12V	Connect to the power adapter provided. With PoH function, the receiver can be powered by the transmitter.
2	HDBT OUT	Connect to HDBT IN port of receiver.
3	RS232	For RS232 pass-through.
4	HDMI IN	Connect to an HDMI source.
5	AUDIO	AUDIO IN: Connect to an audio source. AUDIO OUT: Connect to an audio receiver.
6	USB HOST	Connect to a USB-HOST device, such as a PC

Receiver

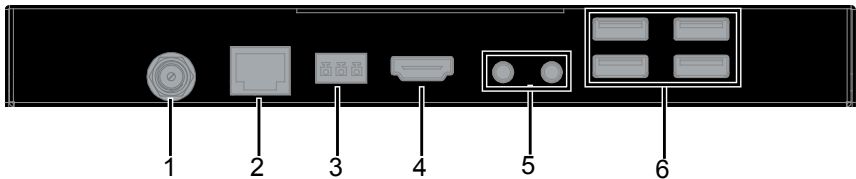
Front Panel



No	Name	Description
1	POWER LED	On: The receiver is powered on. Off: The receiver is powered off.
2	STATUS LED	Blinking: The receiver is working properly.

No	Name	Description
		Off: The receiver is not working properly.
3	HDCP LED	On: HDCP protected content is being transmitted. Blinking: Non-HDCP protected content is being transmitted. Off: No content is being transmitted.
4	LINK LED	On: HDBT link is normal. Off/Blinking: No HDBT link or link error.

Rear Panel



No	Name	Description
1	DC 12V	Connect to the provided DC 12V power adapter. With PoH function, the receiver can be powered by the transmitter.
2	HDBT IN	Connect to HDBT OUT port of transmitter
3	RS232	For RS232 pass-through.
4	HDMI OUT	Connect to an HDMI display.
5	AUDIO	AUDIO IN: Connect to an audio source. AUDIO OUT: Connect to an audio receiver.
6	USB DEVICE	Connect to USB devices such as keyboard, mouse, USB camera, etc.

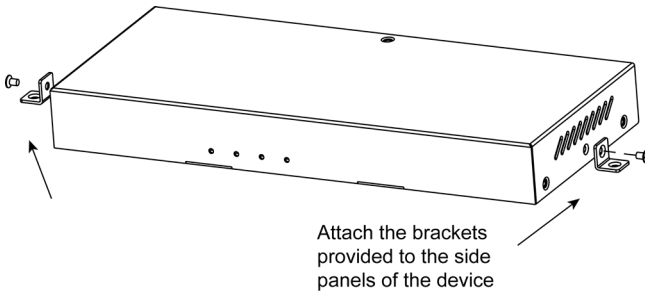
Installation and Wiring

Installation

Note: Before installation, please ensure the unit is disconnected from the power source.

Steps to install the unit in a suitable location:

1. Position and install the mounting brackets of the transmitter with the two mounting screws provided.



2. Repeat step 1 to install the receiver.
3. Mount and secure the transmitter and receiver to a surface or a suitable location respectively with screws (provided by others).

Wiring

Warnings:

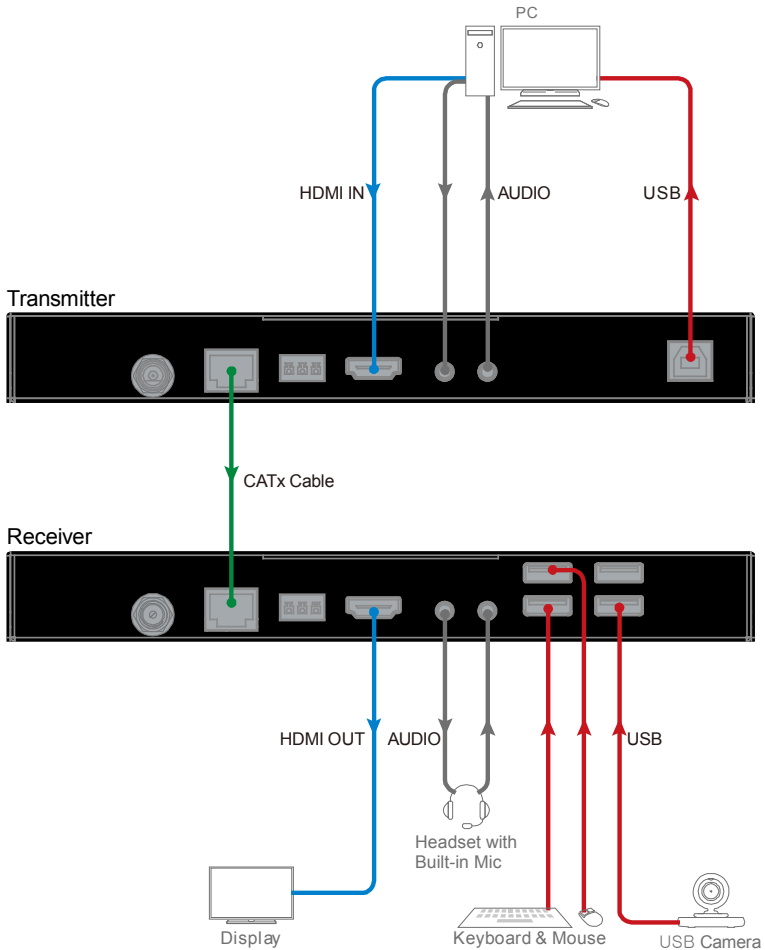
- Before wiring, disconnect the power from all devices.
- During wiring, connect and disconnect the cables gently.

Steps for device wiring:

1. Using quality HDMI cable, connect an HDMI source (such as Blu-ray, games console, satellite/cable TV, media server etc.) to HDMI IN of the Transmitter.
2. Connect a good quality, well-terminal Cat 5e/6/6a/7 cable between the HDBT OUT of the Transmitter to the HDBT IN of the Receiver.
3. Using quality HDMI cable, connect the HDMI display device (TV, LED/LCD display, projector, etc.) to the HDMI OUT of the Receiver.

4. Connect the included 12V power supply to the Transmitter. The PoH function carries power along the length of the cable one-way to power the Receiver. No additional power supply is required for the receiver.
5. Power on all devices.

When all is set, check the status of indicators on the front panel. Power and Link LEDs shall be static lights while Status LED should be blinking.



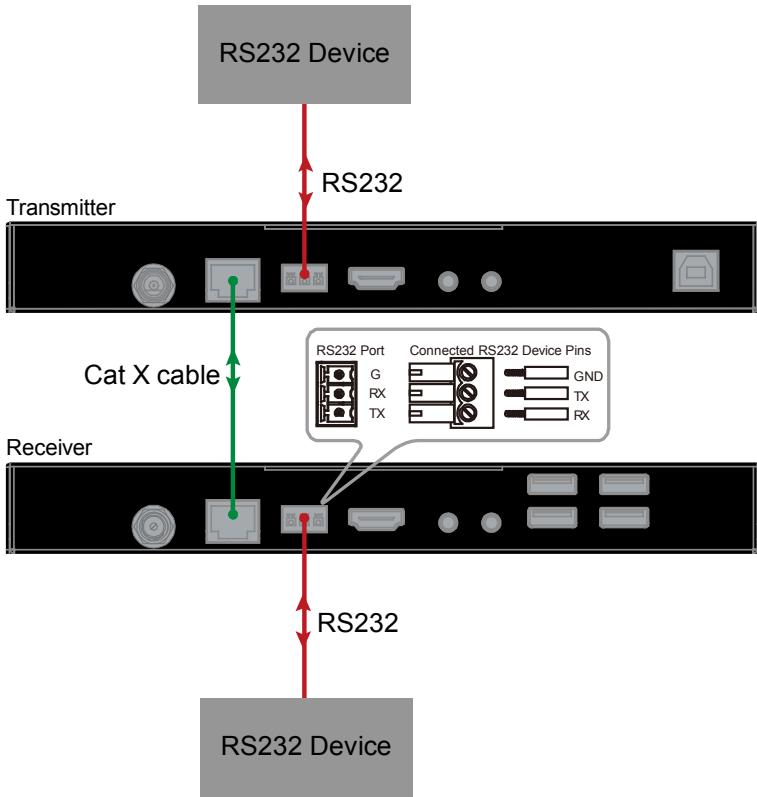
RS232 Pass-Through

RS232 port can be used for bi-directional RS232 signal pass-through between transmitter and receiver.

Steps to set up for RS232 Pass-Through:

1. Connect a RS232 Master (or Slave) Device to RS232 port of transmitter with a RS232 cable.
2. Connect a RS232 Slave (or Master) Device to RS232 port of receiver with a RS232 cable.
3. Connect HDBT OUT of the transmitter to HDBT IN of the receiver with a Cat 5e/6/6a/7 cable.

When all is set, RS232 signal can be passed through bi-directionally between two RS232 devices.



Warranty Terms and Conditions

For the following cases we shall charge for the service(s) claimed for the products if the product is still remediable and the warranty card becomes unenforceable or inapplicable.

1. The original serial number (specified by us) labeled on the product has been removed, erased, replaced, defaced or is illegible.
2. The warranty has expired.
3. The defects are caused by the fact that the product is repaired, dismantled or altered by anyone that is not from an authorized service partner. The defects are caused by the fact that the product is used or handled improperly, roughly or not as instructed in the applicable User Guide.
4. The defects are caused by any force majeure including but not limited to accidents, fire, earthquake, lightning, tsunami and war.
5. The service, configuration and gifts promised by salesman only but not covered by normal contract.
6. We preserve the right for interpretation of these cases above and to make changes to them at any time without notice.

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