DVDO

DVDO-Xtend-HDMI-USB

4K60 HDMI 100m Extender over HDBaseT with USB (Tx/Rx)

User Manual

Version v1.0

Preface

Read this user manual carefully before using the product. Pictures are shown in this manual for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference

Any changes or modifications not expressly approved by the manufacture would void the user’s authority to operate the equipment.

SAFETY PRECAUTIONS

To ensure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Table of Contents

1. Product Introduction

DVDO-Xtend-HDMI-USB is an HDBaseT based 4K HDMI Extender that can transmit uncompressed HDMI video, audio, USB 2.0 and control signals up to 100m/328ft over a single CAT5e/6 cable. The unidirectional PoC compliant extender comes with only one power supply, which means that the Receiver can be powered via Transmitter to save installers time and added cost to installing a power outlet. Ideally designed for smart displays and KVM solutions fitting digital signage markets.

1.1 Features

- Compatible with HDMI 1.4 and is backwards compatible with all previous HDMI standards (e.g. HDMI 1.4), delivers high-resolution AV signal (1080p 3D, 4K@60Hz)
- Support HDBT 2.0, transmit 1080p/4K signal up to 100m over single CAT6 cable
- EDID Pass-Thru
- HDCP 2.2 compliant
- Front panel status LEDs for power, HDBT link & HDCP
- USB & RS232 control
- Unidirectional PoC

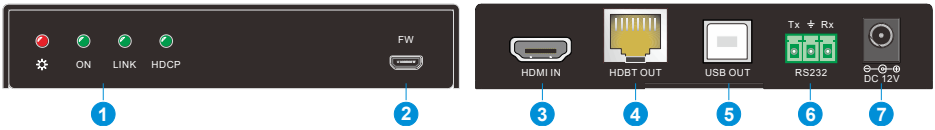
1.2 Packing List

- 1x Transmitter
- 1x Receiver
- 2x Transmitter Mounting Ears with 2 Screws
- 2x Receiver Mounting Ears with 2 Screws
- 4x Transmitter Plastic Cushions
- 4x Receiver Plastic Cushions
- 2x RS232 cables (3-pin to DB9)
- 1x Power Adapter (DC 12V 2A)
- 1x User manual

Note: *Please contact your distributor immediately if any damage or defect in the components is found.*

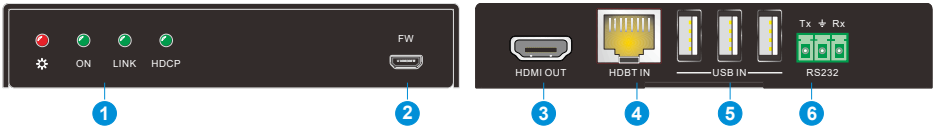
2. Panel Description

2.1 Transmitter



No.	Name	Description
①	Indicators	**Power**: • OFF: No power. • RED: DC power present.
		ON: Working status indicator. • OFF: Not operational. • Blinking GREEN: Normal operation.
		LINK: HDBT link status indicator. • OFF: No Link. • GREEN: Link successful. • Blinking GREEN: Link problem.
		HDCP: HDCP compliant indicator • OFF: No HDMI traffic (no picture). • GREEN: HDMI signal with HDCP. • Blinking GREEN: HDMI signal without HDCP.
②	FW	Micro USB port for firmware upgrade. Firmware updated need auxiliary equipment, please contact with our after-sales department for more details.
③	HDMI IN	Connects to HDMI source.
④	HDBT OUT	Connects to the **HDBT IN** port on rear panel of the Receiver via CAT5e/CAT6a cable, compliant with HDBT 2.0 and support unidirectional PoC to power the Receiver.
⑤	USB OUT	Type-B USB port, connects to PC to receive remote USB control
⑥	RS232	Serial port, connects to control device or device to be controlled, supports bi-directional RS232 control.
⑦	DC 12V	Connects to a DC 12V 2A power adapter.

2.2 Receiver



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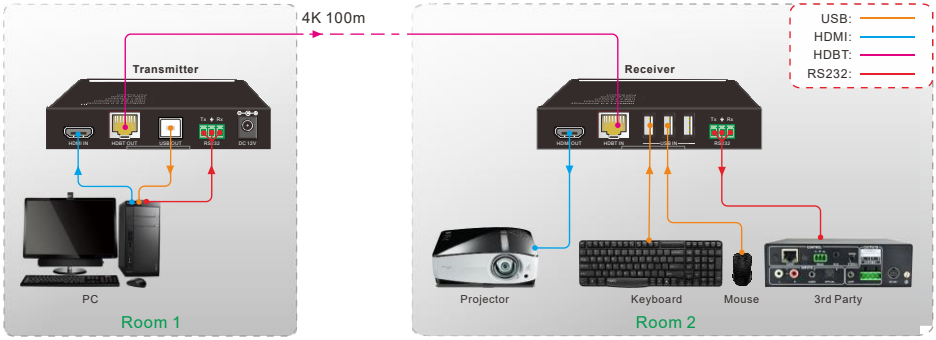
		HDCP: HDCP compliant indicator. • OFF: No HDMI traffic (no picture). • GREEN: HDMI signal with HDCP. • Blinking GREEN: HDMI signal without HDCP.
②	FW	Micro USB port, used for firmware update. Firmware updated need auxiliary equipment, please contact with our after-sales department for more details.
③	HDMI OUT	Connects to HDMI display.
④	HDBT IN	Connects to the **HDBT OUT** port on the Transmitter via CAT5e/ CAT6a cable, compliant with HDBT 2.0.
⑤	USB IN	Type-A USB ports, connects to mouse/ keyboard/ U-disk for remote USB access.
⑥	RS232	Serial port, connects to control device or device to be controlled, supports bi-directional RS232 control.

3. System Connection

3.1 Usage Precautions

- Make sure all components and accessories included before installation.
- System should be installed in a clean environment with proper temperature and humidity.
- All of the power switches, plugs, sockets, and power cords should be insulated and safe.
- All devices should be connected before power on.

3.2 System Diagram



3.3 Connection Procedure

Step1. Connect HDMI source (such as PC) to **HDMI IN** port of the Transmitter with an HDMI cable.

Step2. Connect **HDBT OUT** port of the Transmitter to **HDBT IN** port of the Receiver through a straight-thru CAT5e/CAT6 cable.

Step3. Connect a HDMI display to **HDMI OUT** port of the Receiver with HDMI cable;

Step4. When using the USB control, do the following:

1) Connect PC to the **USB OUT** port of Transmitter.
2) Connect Mouse/ Keyboard/U-disk to the **USB IN** port(s) of Receiver.

Step5. When using the bi-directional RS232 control, do the following:

1) Connect PC to the RS232 port at either the Transmitter or the Receiver.
2) Connect a third-party device (such as projector) need to be controlled to the RS232 port at the other end.
3) Send RS232 commands to control the third-party device. For more details about RS232 commands, please refer to the user manual for the third-party device.

Step6. Connect with DC12V power adaptor to the power port of Transmitter, the Receiver will be powered synchronously via PoC.

Note:

- *System Diagram shown in this manual is for reference only, more specific schemes depend on real-time applications.*
- *Connect HDBT ports via straight-thru CAT5e/6 cable with TIA/EIAT568B standard terminations at both ends.*
- *RS232 communication protocol: Baud Rate: 9600; data bit: 8; stop bit: 1; parity: none. HDBT Transceiver receives RS232 control from devices with various baud rate (2400, 4800, 9600, 19200, 38400, 57600, 115200).*
- *HDBT ports can work with our company's HDBT products that has same power supply solution.*

4. Specifications

Transmitter	
Input	(1) HDMI
Input Connector	(1) 19 pin type-A female HDMI
Output	(1) HDBT, (1) USB OUT
Output Connector	(1) RJ45, (1) Type-B USB
Control	(1) RS232
Control Connector	(1) 3-pin pluggable terminal block
Receiver	
Input	(1) HDBT, (1) USB IN
Input Connector	(1) RJ45, (1) Type-A USB
Output	(1) HDMI
Output Connector	(1) 19 pin Type-A female HDMI
Control	(1) RS232
Control Connector	(1) 3-pin pluggable terminal block
General	
HDMI Audio Format	Supports PCM, Dolby Digital, DTS, DTS-HD
HDMI Standard	1.4
HDCP	2.2
Transmission Distance	1080p/4K@60Hz≤100m (Cat6)
Video Resolution	Up to 4K@60Hz 4:2:0
Bandwidth	10.2Gbps
EDID Management	EDID Pass-Thru
Operation Temperature	-5 ~ +55℃
Storage Temperature	-25 ~ +70℃
Relative Humidity	10% ~ 90%
External Power Supply	Input:100V~240V AC; Output: DC 12V 2A
Power Consumption	18W(max)
Dimension (W*H*D)	4.5”x 0.86” x 3.74”/116 x 22 x 95 mm
Net weight	TX:197g; RX:198g

Note: *All nominal levels are at ±10%.*

5. Troubleshooting & Maintenance

Problems	Potential Causes	Solutions
No reaction to any operation, power indicator is off	Haven't been powered on	Insert power adapter to Transmitter
Abnormal indication of the status LEDs	Wrong specification of the power adapter	Change for DC 12V 2A power adapter.
Color lose or poor picture quality	Signal loss caused by long transmission distance beyond effective value	Make sure the connecting cable is within 100m and of good quality.
	Bad quality of the HDMI cable	Ensure the HDMI cables used at source, Transmitter, Receiver and display are properly connected and are of good quality
Cannot use the device	the device is broken	Send it to authorized dealer for repairing.

Note: *If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support.*

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