

DVDO



DVDO-Xtend-TX100
3 x 1 HDBT Wall-plate Transmitter

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 6

 Specifications 7

 Panel Description 9

Installation and Wiring 11

Input Switching 13

API Command Control 14

DVDO Product Configuration Tool 16

Warranty Terms and Conditions 18

Introduction

Overview

This product is an HDBaseT 2.0 wall plate transmitter for HDMI inputs and HDBaseT 2.0 output. HDMI signals up to 4K@60 (YUV 4:2:0 color sub-sampling). It supports signal transmission up to 90m/300ft for 4K and 100m/330ft for 1080P via signal Cat 5e/6 cable, and supports signal transmission up to 100m/330ft for 4K and 1080P via single Cat 6a/7 cable.

With USB 2.0 pass-through, it provides solution where users want to control a remote server or connect to an electronic whiteboard. And additional analog audio pass-through allow the audio distribution to the receiver side.

The wall plate can be the central component of a small, automated AV system. Automatic display control turns-on the display automatically whenever a source is connected. When the source is removed, the display is turned off. Automatic input selection on the wall plate works by sensing the presence of any video signal. With automatic input selection, manual control systems can be eliminated. With 48V PoH integrated inside, it can be powered either by local power supply or remote HDBaseT receiver with PSE module.

Features

- Three HDMI inputs and one HDBT output
- Auto switching technology
- One-way analog audio pass-through from transmitter to receiver
- Via Cat 6/6a/7 cables, transmits 4K@60Hz (YUV 4:2:0 color sub-sampling) and 1080P@60Hz signals up to 100m/330ft
- Via Cat 5e cable, transmits 4K@60Hz (YUV 4:2:0 color sub-sampling) signal up to 90m/300ft, while 1080P@60Hz up to 100m/330ft
- HDMI with 4K@60Hz (Chroma sub-sampling 4:2:0 8-bit only) and HDCP 2.2 compliance
- Support Long Reach Mode function, extend 1080p@60Hz signal to 150m/493ft by API command
- High-speed USB 2.0, up to 480Mbps, pass through over HDBaseT up to 100m/330ft
- 2-Gang US Decora wall-plate
- With PoH support to be powered by any HDBaseT device with PSE module
- Firmware upgrade via Micro USB for easy filed service

Package Contents

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

- DVDO-Xtend-TX100 Transmitter x 1
- Phoenix Male Connector (2 Pins, 3.5mm) x 1
- USB B to USB A Cable x 1
- #6-32*20mm Screws, Silver x 4
- #6-32*7mm Screws, White x 4
- Wall Plate Plastic Panel (2-gang US) x 1

Specifications

| Technical | |
|-----------------------------------|---|
| Input/Output Port | 3 x HDMI IN, 1 x AUDIO IN, 1 x HDBT OUT, 1 x USB HOST (Type-B), 1 x Micro USB UPDATE, 1 x DC 12V (2 pins phoenix female connector) |
| Input/Output Type | Signal Input: HDMI with 4K@60Hz YUV 4:2:0, HDCP 2.2 Output: HDBT |
| Input/Output Resolution Supported | <p>VESA: 800x600⁸, 1024x768⁸, 1280x720⁸, 1280x768⁸, 1280x800⁸, 1280x960⁸, 1280x1024⁸, 1360x768⁸, 1366x768⁸, 1440x900⁸, 1600x900⁸, 1600x1200⁸, 1680x1050⁸, 1920x1080⁸, 1920x1200⁸, 2560x1440⁸, 2560x1600⁸,</p> <p>SMPTE: 3840x2160P^{2,3,5,8}(YUV4:2:0), 4096x2160P^{2,3,5,8}(YUV4:2:0) 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 = 60 Hz, 9 = 75 Hz</p> |
| Audio Format | <p>HDMI: Fully supports audio formats in HDMI 2.0 specification, including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio and DTS:X</p> <p>AUDIO IN: Stereo</p> |
| Maximum Pixel Clock | 297MHz |
| Control Method | Front panel buttons, API, USB |

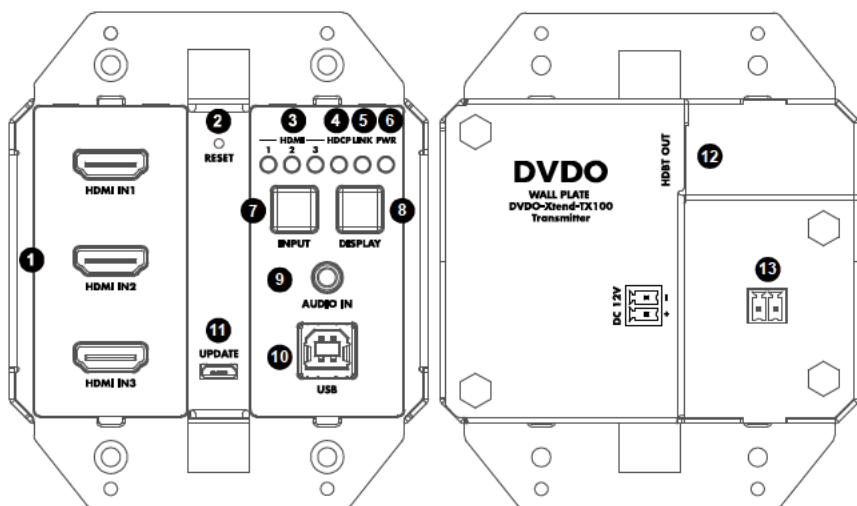
| General | |
|---------------------------------|--|
| Operating Temperature | 0°C to 45°C (32°F to 113°F) |
| Storage Temperature | -20°C to 70°C (-4°F to 158°F) |
| Humidity | 10% to 90%, non-condensing |
| ESD Protection | Human-body Model: ±8kV (Air-gap discharge)/ ±4kV (Contact discharge) |
| Power Supply | DC 12V |
| Power Consumption (Max) | 3.9W |
| Device Dimension (W x H x D) | 89.0mm x 38.4mm x 105.6mm/3.9" x 1.51" x 4.16" |
| Product Weight | 0.18kg/0.40lb |

Transmission Distance

Note: The use of T568B straight-through Category cables is recommended.

| Cable Type | Range | Supported Video |
|------------|-----------------------------------|---------------------------------------|
| Cat 5e | 100m/330ft | Up to 1080P@60Hz 36bpp |
| Cat 6/6a/7 | 90m/230ft | 1080P@60Hz 48bpp |
| | 100m/330ft | 1080P@60Hz 48bpp 4K@60 4:2:0 24bpp |
| HDMI | Input/Output: 15m/50ft | 1080P@60Hz 24bpp |
| | Input:5m/17ft Output: 10m/33ft | 4K@60Hz 4:2:0 24bpp |

Panel Description



| ID | Name | Description |
|----|---------------|--|
| 1 | HDMI IN (1~3) | Connect to HDMI source device. |
| 2 | RESET | Using a pointed stylus to hold down this button for three or more seconds to reboot the transmitter. |
| 3 | HDMI LED | ON: HDMI signal is being transmitted. OFF: No HDMI signal is being transmitted or HDMI signal is unstable. |
| 4 | HDCP LED | ON: HDCP protected content is being transmitted. Blinking: Non-HDCP protected content is being transmitted. OFF: No content is being transmitted. |
| 5 | LINK LED | ON: HDBT link is normal. OFF/ Blinking: No HDBT Link or link error. |
| 6 | Power LED | ON: The transmitter is powered on. OFF: The transmitter is powered off. |
| 7 | INPUT Select | Press this button to select the HDMI (1~3) source. |

| ID | Name | Description |
|----|--------------------------|--|
| | Button | |
| 8 | DISPLAY On/Off Button | <p>Press the button to activate between display on and display off functions alternatively.</p> <p>Note:</p> <ul style="list-style-type: none"> Once the device reboots or is restored to factory defaults, press this button for the first time, it will activate the display on function firstly; press for the second time, it will activate the display off function, and so forth. Display on/off is also available through API command control. |
| 9 | AUDIO IN | Connect to an audio input device. |
| 10 | USB | Connect to a USB HOST device. |
| 11 | UPDATE | Micro USB port for firmware upgrade and serial control. |
| 12 | HDBT OUT | Connect to an HDBT receiver. |
| 13 | DC 12V | Connect to DC 12V power supply with 2-pin phoenix male connector. |

Installation and Wiring

Warnings:

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

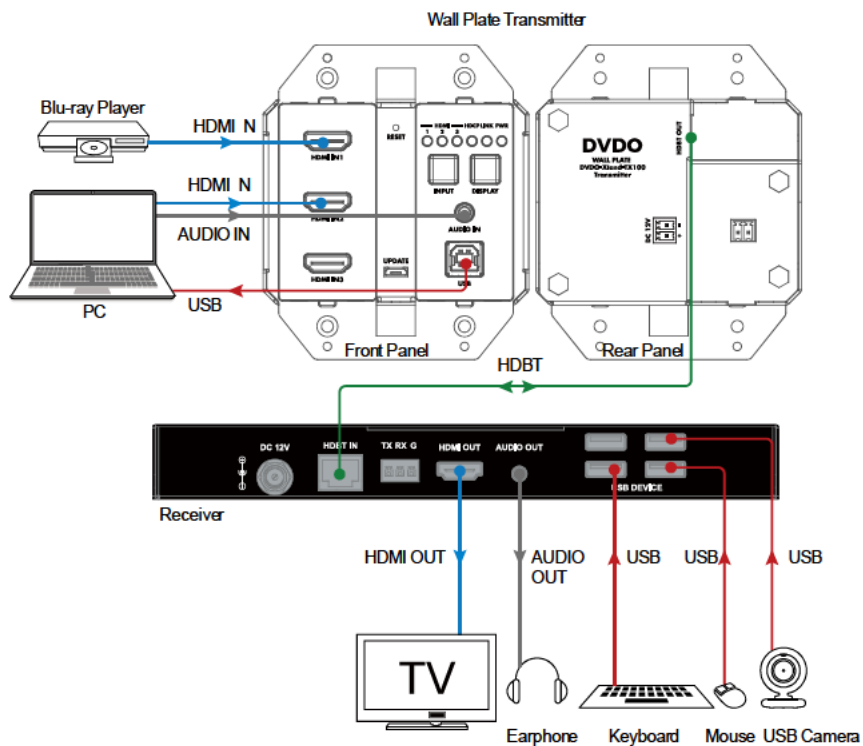
Steps for device wiring:

1. Connect HDMI sources (such as Blu-ray, DVD, HDD, camera, games console, Satellite/cable TV, computer, media server etc.) to the Transmitter.
2. Connect a good quality, well-terminal Cat 5e/6/6a/7 cable from the HDBT OUT port of the transmitter to HDBT IN Input of an HDBT Receiver with PSE module.

Note: 90m @4K or 100m @1080p video are maximum recommended transmission distances for this model and denotes perfect transmission conditions – including straight cable runs with no electrical interference, bends, kinks, patch panels or wall outlets.

If any of the above is a factor in your installation, transmission range may be affected – take care to avoid where possible.

3. Connect the USB port to the PC, at the same time connect the receiver's USB ports to USB devices (such as keyboard, mouse and interactive whiteboard) to realize the remote control.
4. Connect an HDMI display device (LED/LCD display or projector) to the HDMI OUT of your HDBT Receiver.
5. Connect for additional control options:
 - USB Control: Connect a host PC to USB B port on front panel of the transmitter, connect USB devices such as USB camera, keyboard, mouse to USB DEVICE ports of receiver, the USB devices can be connected to host PC.
 - API Command Control: Connect Micro USB B port to USB port of PC via the USB B to USB A cable. Or connect a control PC to the receiver. More information, see “API Command Control” section.
6. Power on the HDBT receiver which support PoH function, it will power to Transmitter.



Input Switching

The transmitter supports automatic switching and front panel button switching.

When it is powered on, automatic switching will function as follows:

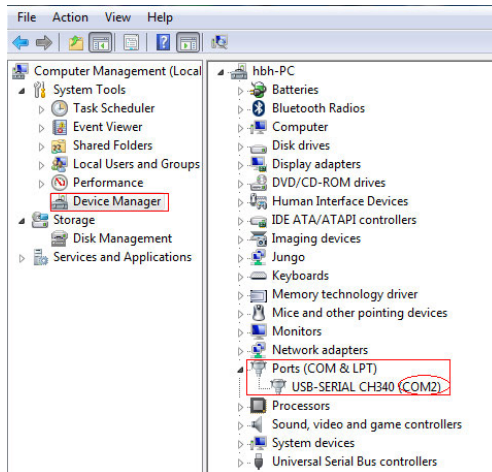
1. When HDMI sources are inserted, the switcher will follow the rule: last in, first out, switch to the latest connected source for output display.
2. When the HDMI source selected is removed, the switcher will switch to the active source with top priority for output display (Default priority: HDMI IN1>HDMI IN2>HDMI IN3).
3. The front panel SELECT INPUT button is used for selecting input source when HDMI video signals are valid.

Note: Automatic Switching function can only detect 5V of the input source device. If the selected HDMI source in standby mode provides a continuous 5V power output, the Automatic Switching function will not work, i.e. the switcher will not switch the input to other active sources. In this case, please turn off the standby source device selected or remove it from the switcher.

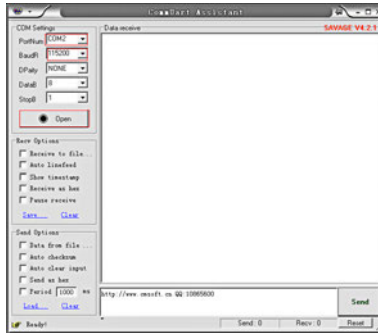
API Command Control

Users can control the device via sending API commands as well. Please refer to the following steps.

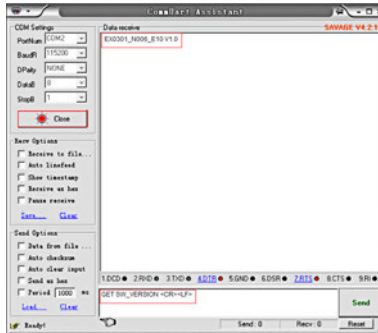
1. Connect the HDBT OUT of the transmitter to HDBT IN of receiver, the transmitter can be powered by receiver via Cat X cable.
2. Use the Micro USB-B to USB-A cable provided to connect the UPDATE port of the transmitter and your PC USB port. Or connect a PC to RS232 port of the connected receiver. It is ready for sending API commands.
3. Open your PC Device manager, find out the port, here is COM 2 as example.



4. Install serial tool to your local folder (Take "UartAssist" tool as an example).
5. Open the tool and type the port number COM 2 and Baud Rate 115200.



6. Click Open, the button will become red for operation.



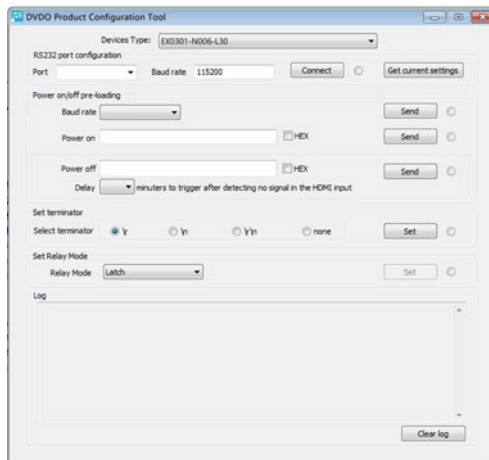
Type the commands in the data transmit window, for example “GET SW_VERSION”, click your PC Enter button and click the Uart Tool Send button, the Data receive window will show the response.

Note: More information please refer to the **API Command Set_DVDO-Xtend-TX100**.

DVDO Product Configuration Tool

The transmitter supports configuration through the “DVDO Product Configuration Tool”.

1. Connect the HDBT OUT of the transmitter and your receiver HDBT IN, the transmitter can be powered by receiver via Cat X cable.
2. Use the Micro USB-B to USB-A cable provided to connect the transmitter UPDATE port and your PC USB port. Or connect a PC to RS232 port of receiver.
3. Check which port on the computer the cable is connected to in the device manager.
4. Copy the “DVDO Product Configuration Tool” to local file.
5. Run the tool, and set the connection parameters correctly before sending any commands to the transmitter.



Select right port from the drop-down menu, and set the baud rate, then press Connect. Once connected you can set the RS232 output port commands and the relay mode.

Note: When connect the PC via UPDATE port of the transmitter, the Baud Rate is fixed according to the transmitter, and connect PC via RS232 port of Receiver, you can set baud rate.

“DVDO Product Configuration Tool” menus are described below:

- **Get current settings:** Get the current settings of the sink device.
- **Baud rate:** Choose the correct baud rate according to the device, then click “Connect” to connect with the sink device.

Note: This might be different than the setting of 115200 above and is determined by the sink device you are connecting to.

- **Power on:** Pre-load and store the command for “power on” to a sink device, then click “Send” to send and store it on the device.
- **Power off:** Pre-load and store the command for “power off” to a sink device, then click “Send” to send and store it on the device.

Note: If the sink device requires hex commands, make sure the Hex box is checked.

- **Delay:** Set delay time (1~30minutes) the sink device will power off automatically after it cannot detect the input signal, click “set” to take effect.
- **Set Terminator:** Select the command ending after each API command that you are sending from the transmitter or receiver to the sink device. Then click “Set” to take effect.
- **Set Relay Mode:** Set relay mode for the sink device.
Latch –relay closes and latches when it is triggered;
Momentary –only closes for a moment and then opens after it is triggered.
The pulse time can be set from 1 to 10 seconds, default setting is 3s.
Then click “Set” to take effect.

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.

DVDO
