

User Manual

HDBaseT Wallplate Transmitter over Cat6/6A



Front View





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Back View

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INTRODUCTION

This HDBaseT transmitter switcher can extend two HDMI signals and one VGA signal inputs over a single Category 6/6A cable. This product offers RS-232 and Bi-directional power making any professional A/V set-up more efficient and easy to use. Uncompressed video and audio can be transmitted up to 230ft/70m. This design of HDBaseT[™] technology allows for full usage of HDMI and controls over 6/6A cable. This unit can be paired with any Panduit HDBaseT receiver product.

FEATURES

- HDMI 1.4b, HDCP 2.2 and EDID 1.4
- · Video resolutions up to 4K2K@30Hz
- Audio up to 7.1 channels of High Definition audio pass through (LPCM, Dolby TrueHD, and DTS-HD Master Audio).
- 10 bits HDR (High Dynamic Range) pass through
- · Supports HDMI High Bit Rate [HBR] audio pass through
- Power functionality is supported, either TX or RX is powered by a 24V@1 A power supply. Power consumption is less than 10W.

Package Contents

- HDBaseT 2-gang Transmitter 1PC
- 24V1A DC Power Supply 1PC
- 3pin Screw Terminal Plug 1PCS

TECHNICAL SPECIFICATIONS

Technical	
HDMI Compliance	HDMI 1.4b
HDCP Compliance	HDCP 2.2 and HDCP 1.4
Video Bandwidth	10.2Gbps
Video Resolutions (up to 40 meters)	up to 4K2K@50/60Hz(4:2:0),4K2K@30Hz,1080P@120Hz, and 1080P 3D@60Hz
Color Space	RGB, YCbCr 4:4:4, YCbCr 4:2:2
Color Depth	8-bit,10-bit, 12-bit
HDMI Audio Formats (Pass-through)	LPCM 2/5.1/7.1CH, Dolby Digital, DTS 5.1, Dolby Digital+, Dolby TrueHD, DTS-HD Master Audio, Dolby Atmos, DTS:X
ESD Protection	Human body model - +/- 8kV (air-gap discharge) & +/-4kV (contact discharge)
Category Cable Requirements	Category 6 UTP cable minimum for point to point connections and Category 6A UTP cable for cable bundles

Connections (Transmitter)			
Inputs	2x HDMI Type A [19-pin female]		
	1x VGA [DB15 VGA female]		
	1x AUDIO IN [3.5mm Stereo Mini-jack]		
	1x DC Power In		
Outputs	1x HDBaseT Out [RJ45]		
	1x RS-232 [Screw Terminal]		

Mechanical

Housing	2 Gang Wall Plate
Color	White
Dimensions	115.9mm [W] x 114.3mm [D] x 38.7mm [H]
Weight	220g
Power Supply	Input: AC100 - 240V 50/60Hz
	Output: DC 24V/1A (US/EU standards, CE/FCC/UL certified)
Power Consumption	6W (Max)
Operation Temperature	32 - 104 °F / 0 - 40 °C
Storage Temperature	-4 - 140°F / -20 - 60°C
Relative Humidity	20 - 90% RH (no condensation)



OPERATION CONTROLS AND FUNCTIONS

5.1 Transmitter Front and Rear Panel



- 1. HDCP LED: HDCP compliance indicator
 - **OFF:** HDMI input is not carrying HDCP content
 - ON: HDMI input is carrying HDCP content
- 2. LINK LED: HDBaseT Link status indicator
 - OFF: No connection between transmitter and receiver
 - **GREEN:** Transmitter and receiver are connected and communicating

3. VGA LED: VGA signal indicator

- **OFF:** There is no +5V HPD or VGA signal detected on input
- **GREEN:** VGA is active input and VGA signal is detected
- FLASHING: +5V HPD or VGA signal is detected
- 4. POWER LED: System power indicator.
- 5. VGA IN: VGA source input.
- 6. **AUDIO IN:** Connect with external audio source for VGA signal.



- 7. HDMI 1 LED: HDMI 1 signal indicator
 - **OFF:** There is no +5V HPD or HDMI signal detected on input
 - GREEN: HDMI is active input and HDMI signal is detected
 - FLASHING: +5V HPD or HDMI signal is detected
- 8. HDMI 1 IN: Connects to HDMI source device.
- 9. SOURCE: Press it to select one source.
- 10. HDMI 2 LED: HDMI 2 signal indicator
 - **OFF:** There is no +5V HPD or HDMI signal detected on input
 - **GREEN:** HDMI is active input and HDMI signal is detected
 - FLASHING: +5V HPD or HDMI signal is detected
- 11. HDMI 2 IN: Connects to HDMI source device.
- **12. HDBaseT OUT:** Connects to HDBaseT Receiver with a Cat5e/6/6a cable.
- **13. RS-232:** Connects to any devices with RS-232 port for RS-232 command transmission.
- **14. 24VDC (OPTIONAL):** Connects 24V/1A adapter to AC wall outlet for power supply.

RS232 COMMANDS

Action	Basic ASCII String	Variables	Example Settings	Example String	Example Response
Setup Baud Rate	>BR:a,b,p <cr></cr>	a = Baud rate (9600, 19200, 38400, 57600, 115200) b = bits p = parity (Even = E, Odd = O, None = N)	Set RS232 Baud Rate to 9600 with 8 bits and No Parity	>BR:9600,8,N <cr></cr>	(BR:9600,8,N)
Switching Inputs for Outputs	>SW:i <cr></cr>	i = input (V = VGA & Audio, H1 = HDMI IN 1, H2 = HDMI IN 2)	Switch to VGA > Audio Switch to HDMI1 Switch to HDMI2	> SW:V <cr> >SW:HI<cr> >SW:H2<cr></cr></cr></cr>	(VGA Active) (HDMI1 Active) (HDMI2 Active)
Query Active Signal	>SW <cr></cr>		Request the active source	?SW <cr></cr>	([Value] Active)
Setting the Select Button mode	>PB:a <cr></cr>	a = button status (0 = Disabled 1 = Enabled)	Enable Front Panel Button Disabled Front Panel Button	>PB:1 <cr></cr>	(Button Enabled) (Button Disabled)
Query Button Stratus	?PB <cr></cr>		Request Button Status	?PB <cr></cr>	(Button Status)
Query Firmware	?FW <cr></cr>		Request Firmware version	?FW <cr></cr>	(x.xx)
Factory Reset	>RESET <cr></cr>			>RESET <cr></cr>	(Reset Completed)
>-Command, ? - G <cr> = 0x0D Hex Note: The default of</cr>	uery, () - Response / 13 Decimal	e			

PREPARING RS232 CABLE

What you will need:

- · A two-conductor cable with ground terminated with DB9 connectors or not
- Wire strippers
- Screwdriver (flat head)
- 3.5mm captive screw connector with 3 positions (included with plate)
- Heat gun and heat shrink (optional)
- Multimeter (optional)See the Description 1

Depending on your setup, you will need an RS232 cable with terminal block on one end to connect to the unit and either another terminal block or DB9 on the other side. The focus of this section will be on terminating the terminal block side with the proper pinout because that is what is connected to the unit. The other end of the cable is dependent on what the unit is connecting too, but all the information in this section will help to get the proper pinout in any case. As a tip, if connecting to a computer without a serial port, a USB to serial port converter can be used to communicate with RS232.

If the cable is terminated on both sides, start by cutting off the end that will be used for connecting to the unit. Then, strip the outer jacket of the cable back by about 1 inch like what is shown in Step 1 below. Once the outer jacket is removed, you can optionally add heat shrink around the conductors and over the exposed drain wire like in the picture of step 2. Next, strip the ends of the conductors back about 3/16" in order to make good contact inside of the captive screw connector. The final step is to attach the captive screw connector to the end of the cable matching the conductors on the other side of the cable to what is shown in step 3, use the connectors shown in the following figure as a reference if using DB9 male or female. Test the conductors with a multimeter to confirm termination.



NOTE:

When using the device for pass-through, keep in mind that the side (either Tx or RX) that is connected to the device that the commands are getting sent to will require that the Tx and Rx pins get swapped around (serial null modem wiring). This means pin 2 of the DB9 connector will connect to the Rx pin of the HDBaseT device and pin 3 of the DB9 connector will connect to the HDBaseT device.

COMMUNICATING WITH RS232

RS232 commands can be sent to the unit using a computer or other RS232 devices. If using a computer, a serial program has to be used. The serial program can be a general purpose serial terminal like Termite from CompuPhase. Termite is a minimalistic, easy-to-use serial terminal that will do everything the unit requires from a serial terminal so this section of the manual will use it as an example to send commands from a computer. Open up termite to see the screen below:

From the main screen, open the settings menu to adjust the COM settings if needed. The default settings for the unit are 96008N1. To make sending commands easier, check the "Append CR-LF" setting so that the "<cr>" character does not have to be added to the RS232 commands listed in the command table of this manual. If the serial terminal program does not support this feature, the hexadecimal characters 0D can be added to the end of the command to get the same effect. If using default settings, the settings menu should look like the image on the left.

Using the RS232 command table from within this manual, enter a valid command in the text field at the bottom of the main menu and press enter. The sent command should show up in the dialogue window as well as a response from the unit. If you are not getting a response, check connections settings and the command that was entered.

The unit can also be used as RS232 pass-through, that is, commands can be sent to the receiver and then carried over the HDBaseT link and sent out of the receiver to control a device on the far end of the signal chain. When sending commands to the unit, all unrecognized commands and commands sent with different communication settings will be passed through to the receiver end of the signal chain. There is no need to match the communication settings of the unit to the communication settings of the device on the receiver end, if the pass-through function is only going to be used.





Termite 3.3 (by CompuPhase)	
COM6 9600 bps, 8N1, no handshake Settings	Clear About Clos
5W/V	
'GA Active)	

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CONNECTION DIAGRAM



WARRANTY

Please refer to Panduit.com for the latest warranty information on products

SAFETY INFORMATION

To reduce the risk of electric shock, do not expose this product to rain or moisture.

Do not modify the wall plug. Doing so will void the warranty and safety features.



If the wall plug does not fit into your local power socket, hire an electrician to replace your obsolete socket.



This equipment should be installed near the socket outlet and the device should be easily accessible in the case it requires disconnection.



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