

Multi-Input HDBaseT Extender - 230 ft

STDHVHDBT



*actual product may vary from

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Transmitter diagram

Front view



1. Selected port LEDs
2. Input selection buttons
3. IR sensor

4. Function buttons
5. Remote output LED
6. Local output LED
7. Output buttons

Rear view



1. DC 12V power port
2. (Control) RJ11 serial jack
3. IR Out/In ports (not active)
4. HDMI output port
5. HDBaseT output port
6. Audio In 3.5mm port (for VGA)
7. VGA input port

8. DP input port
9. HDMI 1 input port
10. HDMI 2 input port
11. Mode switch
12. Auto Inventory EDID switch
13. EDID COPY button

Receiver diagram

Front view



1. HDMI output
2. Status LED

Rear view



1. DC power port
2. HDBaseT input port
3. Grounding bolt

Introduction

Package contents

- 1 x multi-input HDBaseT extender switch (transmitter)
- 1 x HDBaseT receiver
- 1 x IR remote control
- 1 x universal power adapter (NA, EU, UK, ANZ)
- 2 x mounting brackets
- 1 x RJ11-to-RS232 converter
- 1 x 5 ft [1.5 m] RJ11 cable
- 1 x 4 ft [1.2 m] RJ45 cable
- 8 x foot pads
- 1 x screw kit
- 1 x quick-start guide

Requirements

- Two HDMI video sources with cabling.
- One DisplayPort video source with cabling.
- One VGA video source with cabling.
- One remote HDMI display with cabling.
- A length of CAT5e or CAT6 cable running the distance between your transmitter and receiver.
- One local HDMI display with cabling (optional).

Preparing your site

1. Set up your local HDMI, DisplayPort and VGA video sources in your desired local location.
2. Set up your remote display in your desired location.

Notes:

- Ensure that the transmitter and receiver are located near an AC power outlet.
- Ensure all devices are powered off.

Installation

1. Connect each of your video sources to the input ports on the transmitter, using the required cabling (not included).
2. (Optional for local video output) connect an HDMI cable (not included) to your local HDMI display and to the transmitter's HDMI output port.
3. Connect the power adapter port on the extender switch to your AC outlet using the power adapter, and press the power button to power on the extender switch.
4. Connect an RJ45 terminated CAT5e or CAT6 cable to the HDBaseT output on the extender switch and to the HDBaseT input port on the receiver.

Important Notes:

- Use only the receivers included with this kit. The included HDBaseT receivers use 12V POC, mixing hardware with a different HDBaseT kit can damage your equipment.
 - Do not route the cable through any networking equipment.
5. Power up each of your devices. The image from your video source will now appear on your remote display (and local display, if connected in step 2).
 6. (Optional for serial control) connect the RJ11 cable (included) to the **(Control)** RJ11 serial jack on the extender switch and to the RJ11-to-RS232 serial converter. Then connect a 9-pin serial cable (not included) to the RJ11-to-RS232 converter and to 9-pin serial connector on your computer.

Note: The resolution performance of this extender switch will vary depending on the length of your cabling. Please review the chart below to determine the best solution for your setup. For best results, StarTech.com recommends shielded CAT6 cable.

Distance	Maximum resolution
35 m (115 ft.) or less	4K x 2K at 30 Hz
Up to 70 m (230 ft.)	1080p at 60 Hz

Operation

Mode selection and switch operation

This HDBaseT switch features multiple operating modes. Review the description and operating steps for each mode in this section, then use the **Mode switch** to set the HDBaseT switch to your desired operating mode.

Switch mode operation (1. Switch)

Switch mode enables you to switch between video sources by pressing the **Input selection** button that corresponds with your desired video source. The active selected port LEDs will light up indicating which port is selected.

Automatic mode operation (2. Auto)

Automatic mode enables the video converter switch to automatically select the most recently activated or connected video source. Connect a new device or turn on an already connected device to automatically switch video sources. The active selected port LEDs will light up indicating which port is selected.

Priority-A mode operation (3. Pri-A)

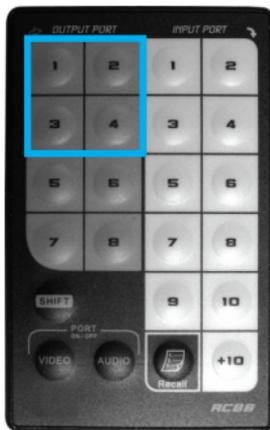
Priority-A mode prioritizes the HDMI #1, DisplayPort, VGA, and HDMI #2 input ports respectively. When you turn on a video source that is connected to a higher prioritized input port, that video source will automatically be selected. Turning off the device will automatically switch back to the lower prioritized video source.

Priority B mode operation (4. Pri-B)

Priority B mode prioritizes the HDMI #2, VGA, DisplayPort, and HDMI #1 input ports respectively. When you turn on a video source that is connected to a higher prioritized input port, that video source will automatically be selected. Turning off the device will automatically switch back to the lower prioritized video source.

Manual operation with remote control

1. Press buttons 1 through 4 on the right side of the IR remote control to switch between the HDMI #1, HDMI#2, DisplayPort, and VGA ports respectively.
2. The active selected port LEDs will light up on the extender switch, indicating which port is selected, and your desired video source will appear on the HDMI and HDBaseT displays.



VGA screen shifting

Screen shifting can move alignment of the VGA video output to the right or left of the monitor, depending upon your requirements.

1. Press and hold both of the Function buttons (Function+VGA) simultaneously for 2 seconds until the VGA input LED turns blue and flashes orange.
2. Press the left Function button (VGA) or right Function button to move the screen right and left respectively, depending upon your desired screen position.

Notes:

- The VGA port is the only video output that's affected.
- The switch will exit VGA screen shifting mode after being inactive for 20 seconds.
- The maximum number of adjustments is 50 steps (right and left in total).
- The switch will automatically retain your most recent setting.

Set EDID

When a video source is connected to a display, the display's EDID is communicated to the video source. The display's EDID is comprised of its video and audio capabilities. Displays sharing their EDID ensures optimal performance, by enabling the source to automatically align its video and audio settings to your display. Improper EDID can cause issues with your display.

As this switch enables you to connect two displays (one local, one remote) to your video sources, it's possible that each display will have a variance of audio and video capabilities.

To ensure optimal performance across both displays, this HDBaseT switch features EDID emulation and EDID copy. These features enable you choose which settings will best harmonize across both of your displays, to ensure optimal performance. Follow the below steps to emulate and/or copy EDID audio and video.

1. Determine whether your ideal setup will be based on emulating 1080p video and 2-channel audio across both displays, or sharing one of the displays video and/or audio capabilities across each attached display.

Note: You can copy EDID from either your local or remote display. However, you cannot copy audio from one and video from the other.

2. Set the **Auto Inventory EDID** switch to your desired setting based on your determination in step 1.

The **Auto Inventory EDID** switch lets you set whether you emulate (Auto) or copy (Inventory) your EDID settings.

Review the table below to determine what the switch should be set to.

Position	Video	Audio	EDID Status
1	Emulate (1080p)	Emulate (2-CH)	Emulates video and audio
2	Emulate (1080p)	Copy	Emulates video and copies audio
3	Copy	Emulate (2-CH)	Copies video and emulates audio
4	Copy	Copy	Copies video and audio

3. **If you intend to copy EDID from your remote display**, press and hold the **EDID copy** button for three seconds until the Remote LED flashes GREEN.

If you intend to copy EDID from your local display, press and hold the **EDID copy** button for six seconds until the Local LED flashes Green.

Manual operation with serial control

1. Configure the settings on your serial port according to the values shown below.

Baud Rate: 38400 bps

Data Bits: 8

Parity: NoneCE=

Stop Bits: 1

Flow control: None

2. Open your terminal software and configure it to communicate through the COM port that the switch is connected to. Pressing **? Enter** (or any non-valid command followed by Enter) in the terminal will list the below command readout.

```
CE=n,a1,a2 - Copy EDID to all input ports
n: Method. a1,a2: Options
1, Default EDID (1080p)
2, Copy from specified monitor a1
3, Make 1024 x 768 EDID
4, Make 1280 x 800 EDID
5, Make 1280 x 1024 EDID
6, Make 1360 x 768 EDID
7, Make 1400 x 1050 EDID
8, Make 1440 x 900 EDID
9, Make 1600 x 900 EDID
10, Make 1600 x 1200 EDID
11, Make 1680 x 1050 EDID
12, Make 1920 x 1080 EDID
13, Make 1920 x 1200 EDID
14, Make 1920 x 1440 EDID
15, Make 2048 x 1152 EDID
16, Make 2560 x 1440 EDID
17, Make 2560 x 1600 EDID
18, Make 3840 x 2160 EDID
19, Make 4096 x 2160 EDID
when n = 1:
a1,a2 not required
when n = 2:
a1: monitor index (1-2), a2: not required
when n = 3~max:
a1: video options
1, DVI 2, HDMI(2D) 3, HDMI(3D)
a2: audio options
1, LPCM 2 ch 8, DTS 5.1 ch
2, LPCM 5.1 ch 9, DTS HD 5.1 ch
3, LPCM 7.1 ch 10, DTS HD 7.1 ch
4, Dolby AC3 5.1 ch 11, MPEG4 AAC 5.1 ch
5, Dolby TrueHD 5.1 ch 12, 5.1 ch combination
6, Dolby TrueHD 7.1 ch 13, 7.1 ch combination
7, Dolby E-AC3 7.1 ch
AVI=n - AV Input Port (n: 1~max)
OLE - Output Local Enable (AV)
OLD - Output Local Disable (AV)
ORE - Output Remote Enable (AV)
ORD - Output Remote Disable (AV)
VS - View Settings
PI - Product Information
FACTORY - Reset as factory default setting
REBOOT - Reboot device
VL - VGA Horizontal Position Shift Left
VR - VGA Horizontal Position Shift Right
TI=n - Set Terminal Interface n: 0 - Human 167 - Machine
LCK=n - Lock / Unlock device n: 0 - Unlock 167 - Lock
```

You can enter each of these commands into your terminal and press **Enter** to control every faucet of the extender switch. A general description of each primary command is listed in the table below.

Primary command codes	Action	Value(s) required?
CE	Copies or emulates EDID to all connected video source devices.	Yes
AVI	Switches the selected inputs	Yes
OLE	Enables the local HDMI output	No
OLD	Disables the local HDMI output	No
ORE	Enables the remote video output	No
ORD	Disables the remote video output	No
VS	Displays various current settings for video inputs and outputs	No
PI	Displays transmitter product information	No
FACTORY	Restores factory settings	No
REBOOT	Reboots the transmitter	No
VL	Shifts VGA input screen left	No
VR	Shifts VGA input screen right	No
TI	Sets terminal mode for manual user commands or software commands	Yes
LCK	Locks and unlocks the switch	Yes

If the command requires a value, the command will be listed in your terminal readout with **=n** next to it and a brief explanation of how the value should be utilized.

If multiple values are required, the command is listed in your terminal readout with **=n,a1,a2**

If the command you're entering requires a single value, the command needs to be modified to **Command=Value1**.

If the command you're entering requires multiple values, the command needs to be modified to **Command=Value1,Value2** or **Command=Value1,Value2,Value3**.

For an example of a command that requires a single value.

The **AVI** command works to switch between which video source is outputted. The values of 1, 2, 3 and 4 represent the HDMI #1, HDMI#2, DisplayPort, and VGA ports respectively.

As a command example, to switch your video output to DisplayPort:

1. Type **AVI=3** into your terminal, and press **Enter** on your keyboard.
2. Whichever display is active will now output your DisplayPort source.

For an example of commands that require two and three values.

The **CE** command works to set EDID and may require up to three values depending upon your EDID requirements. The first value represents the method of EDID while the second and third values will change depending upon the method specified in the first value.

If you enter a value of 1 as your primary value, the switch will be set to emulate EDID with 1080p video and 2 channel audio. This setting does not require a second or third value.

If you enter a value of 2 as your primary value, EDID will be copied from either your local or remote displays, depending upon your secondary value. The secondary values 1 and 2 represent your remote and local displays respectively.

As an example, to copy EDID from your remote display.

1. Type **CE=2,1** into your terminal, and press **Enter** on your keyboard.
2. The switch will reboot and EDID will be copied from your remote display.

If you enter a value between 3 and 19 as your primary value, video EDID will be emulated based on the resolution that corresponds with the number you entered that's listed in your terminal readout. Emulating a specific resolution requires second and third values. The second value will depend on your video source type, enter 1, 2 or 3 representing DVI, 2D HDMI and 3D HDMI respectively, depending upon which type of video source you'd like to emulate. Your third value will define audio EDID. Enter the value that corresponds with the number you entered that's listed in your terminal readout

As an example, to emulate EDID for 2D HDMI with a 1920 x 1200 resolution and 7.1 channel audio.

1. Type **CE=3,2,13**, into your terminal, and press **Enter** on your keyboard.
2. The switch will reboot and EDID will be copied from your remote display.

Notes:

- Your video source must be connected to copied EDID from it. If there is no video source connected your terminal will report that the value you entered is invalid.
- There are several commands that will be listed in the terminal readout and are supported by the transmitter. However these commands will not impact the transmitter's operation. These commands are supported as a result of the same firmware being used on different devices. Supported commands that do not have an impact on the operation of the transmitter are: EQ, IVG, OVG, VDT, VMC, RCID. These commands have been removed from the terminal readout on page 8, in this manual.

LED indicators

The transmitter and receiver included in this kit each have LED indicators that light up with different colors to notify you of the device status. The table below lists the activity for each of these LEDs as well as the corresponding status.

Transmitter LEDs	Activity	Status
Selected port LEDs (HDMI 1, HDMI 2, DP, VGA)	Illuminates blue and flashes three times.	An active video source without HDCP is connected to the transmitter and that source is selected.
	Illuminates blue flashes once.	An active source without HDCP is connected to the transmitter but that source is not selected.
	Illuminates purple and flashes three times.	An active video source with HDCP is connected to the transmitter and that source is selected.
	Illuminates purple and flashes once.	An active source with HDCP is connected to the transmitter but that source is not selected.
	Illuminates blue and flashes red once.	The source is selected but an active video source is not connected.
	Illuminates blue and flashes orange.	VGA screen shifting is engaged.
Remote output LED	Illuminates blue.	The remote output is selected and a receiver is connected with a remote monitor attached.
	Illuminates blue and flashes once.	The remote output is selected and a remote receiver is connected. But there is no remote monitor detected.
	Illuminates blue and flashes purple once and red twice.	The remote output is selected and a receiver is connected with a remote without HDCP is attached.
Local output LED	Illuminates blue.	Local output is selected and a monitor with HDCP is detected.
	Illuminates blue and flashes purple once and red twice.	The local output is selected but no monitor is detected.
	Illuminates blue and flashes purple once and red twice.	The local output is selected and the monitor is detected without HDCP.

Receiver LEDs	Activity	Status
Status LED	Illuminates blue.	The receiver has an active link with the transmitter.
	Illuminates blue flashes red.	Receiver has power, but there is no active link with the transmitter.

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