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1x4 HDBaseT Extender/ Splitter 4K
User's Guide

P/N:HDBaseT4P-4K

Thank you for purchasing from gofanco. Our products aim to meet all your connectivity needs wherever you go. For optimum performance and safety, please read the instructions carefully and keep this User's Guide for future reference. If you need more information about our products, please visit www.gofanco.com. For technical support, email us at support@gofanco.com. For drivers or manual download, please go to www.gofanco.com/download.

Important Safety Notices

Please read safety instructions carefully before installation and operation.

- Please pay close attention to all warnings and hints for this device

- Do not expose this unit to rain, heavy moisture, or liquid

- Do not put any items into the device or attempt to modify its operation

- Do not repair the device or open the enclosure without professional guidance to avoid electric shocks. Doing so may void your warranty

- Keep the product in a well-ventilated location to avoid damage from overheating

- Shut off power and make sure environment is safe before installation

- Do not plug the HDMI cables and IR cables in/out when the device is in use to avoid cable damage. Make sure they are plugged into the correct ports

- Use the included power adapter only. Make sure the specification matches if using 3rd-party DC power adapters

Introduction

The 1x4 HDBaseT Extender/Splitter 4K splits HDMI signals from a source device into 3 HDBaseT outputs plus one HDMI output.

Features

- Splits/extends HDMI signals to 4 displays simultaneously
- 3 HDBaseT outputs over CAT cables with 3 Receivers included and 1 HDMI output
- HDBaseT outputs support up to 230ft (70M) at 1080p & 130ft (40m) at 4K; HDMI output up to 26ft (8m)
- Compliant with HDMI 1.4 and HDCP 1.4/2.2. Supports up to 4K@60Hz YUV 4:2:0, 4K@30Hz YUV 4:4:4, and 1080p 3D
- Supports Power over Cable (PoC), allowing all HDBaseT Receivers to be powered by the Extender/Splitter over CAT cables
- Supports bi-directional IR extension, EDID management, firmware upgradable, and audio extraction

Installation Requirements

- HDMI source device (DVD player, set top box, PC, etc.)
- HDMI displays (SDTV/Monitor, HDTV/Monitor, projector, etc.)
- HDMI cables (not included)
- CAT cables (not included)

Package Contents

HDMI HDBaseT Extender/Splitter

- 1x 1x4 HDBaseT Extender/Splitter 4K
- 2x Mounting ears with 4 screws
- 4x Plastic cushions
- 1x IR receiver
- 1x IR emitter
- 1x 5-Pin Terminal block
- 1x Power adapter
- 1x User guide

HDBaseT Receiver
- 3x HDBaseT Receivers
- 3x IR receivers
- 6x Mounting ears with 6 screws

Product Layout

Figure 1: HDBaseT Extender/Splitter Front Panel Layout

| 1	Power LED	Off: No power On: Extender/Splitter is powered on
2	HDMI In LED	Off: No HDMI input signal detected On: HDMI input signal detected with HDCP Flashing: HDMI input signal detected with no HDCP
3	HDMI Out LED	Off: No HDMI output signal detected On: HDMI output signal detected with HDCP Flashing: HDMI output signal detected with no HDCP
4	EDID DIP Switch	Select between Lo-Res, Default, Hi-Res modes
5	Service	Micro USB port for firmware upgrade
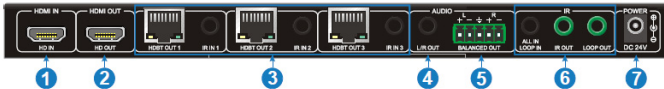
Figure 2: HDBaseT Splitter Rear Panel Layout

1	HDMI Input	Connects to an HDMI source device
2	HDMI Output	Connects to an HDMI display
3	HDBT Out (1-3)	Connects to the HDBT In of the Receiver unit
	IR In (1-3)	Connects to the IR Receiver Extension cable
4	L/R Out	3.5mm unbalanced Stereo audio output jack
5	Balanced Out	Balanced Stereo de-embedded audio output
6	All In/Loop In	IR Input routed to all HDBaseT IR outputs
	IR Out	Connects to IR Blaster Extension cable. Emits IR signals received from the HDBaseT Receiver
	Loop Out	3.5mm jack for connecting the IR LOOP IN port of the next Extender/Splitter for IR cascading
7	DC 24V	Connects to the included 24V power adapter

Figure 3: HDBaseT Receiver Layout

1	HDMI Out	Connects to an HDMI display
2	IR In	Connects to the IR Receiver Extension cable
3	IR Out	Connects to the IR Blaster Extension cable
4	DC 12V	12VDC power jack. Typically not needed, the receivers are powered over CAT cable by the Extender/Splitter using PoC
5	Power LED	Off: No power On: Powered on
6	HDBT In	Connects to the Extender/Splitter's HDBaseT Out using a CAT cable
		HDCP LED: On when video signal contains HDCP content, blinks when video signal is transmitted without HDCP
		Link LED: On when there is an HDBaseT link between the Extender/Splitter and Receiver

Hardware Installation

1. Power off all devices including your HDMI source and HDMI display(s).

2. Connect your HDMI source device to the HDBaseT Extender/Splitter's HDMI Input connector with an HDMI cable (HDMI cable not included).

3. Connect your CAT cables between the HDBaseT Extender/Splitter and HDBaseT Receivers.

4. Connect an HDMI display to the HDMI Output connector of the HDBaseT Extender/Splitter using an HDMI cable (HDMI cable not included).

5. Connect your HDMI display to the HDBaseT Receiver's HDMI Out connector with an HDMI cable (HDMI cable not included).

6. Optional: Connect the IR Receiver Extension Cable and the IR Blaster Extension Cable to the IR interface port. This connection is needed only if you need to control your HDMI devices from the remote location. See IR Control, on page 10 and 11, for proper IR connection.

7. Plug the included power adapter into the HDBaseT Extender/Splitter's Power Jack, then plug the power adapter into a reliable power outlet. **Note**: The HDBaseT Receivers do not need power adapters, they can be powered from the Extender/Splitter over CAT cable with PoC technology.

8. Power on your HDMI source device and HDMI display. The extender is ready for use.

Application Diagram

The application diagram shows the most typical input and output devices used with the Extender/Splitter.
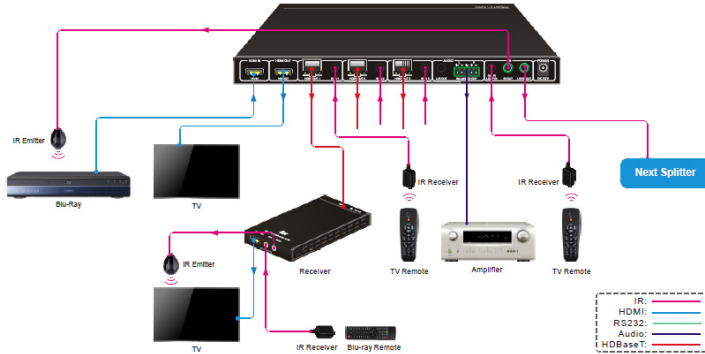

Figure 4: Application Diagram

CAT Cable Wiring

We suggest both RJ-45 connectors be wired identically using T568B wiring standard for the best performance and compatibility.

Both connectors must be wired identically, to T568B standard.

Note: You may use cat5e, cat6 UTP (cat6 preferred) in conjunction with the HDBaseT output; however for best performance use cat6a or cat7 (particularly in electrically noisy environments). The maximum distances & transmission performance for HDMI and HDBT may be compromised by cable quality, patch panels, poor termination, wall plates, cable kinks and electrical interferences. Generally ensure the cat cable is solid copper core of 23AWG (avoid CCA type), in one straight run (avoid/minimise patches) and avoid close proximity to any noisy electrical sources.

IR Control

Provides IR control of the connected devices. The IR feature is bidirectional so either the source device or the display device(s) can be remotely controlled.

Controlling the Display Device(s)

1. Connect an IR Receiver Extension Cable to the IR In port of the HDBaseT Extender/Splitter.
2. Connect an IR Blaster Extension Cable to the IR Out port on each HDBaseT Receiver.
3. Point the IR Blaster Extension Cable's IR eye in line with the display's IR window.
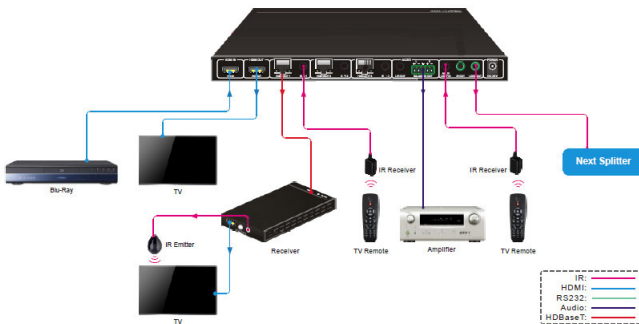

Figure 5: Display Device IR Control Connection Diagram

Controlling the Source Device

1. Connect an IR Blaster Extension Cable to the IR Out port of the HDBaseT Extender/Splitter.

2. Point the IR Blaster Extension Cable's IR eye in line with the source device's IR window.

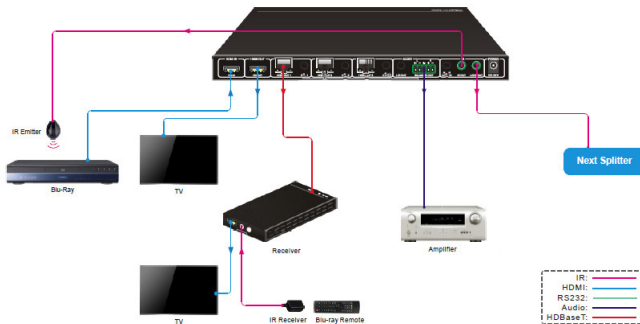3. Connect an IR Receiver Extension Cable to the IR In port on each HDBaseT Receiver.

Figure 6: Source Device IR Control Connection Diagram

Note:

The IR ALL IN / IR LOOP IN will relay the received IR signal to all the HDBaseT outputs whereas the IR IN connectors associated with each HDBaseT output will only relay the IR signal to its respective receiver. The IR LOOP IN can also be connected to the IR LOOP OUT of another Extender/Splitter when two or more units (up to a maximum of five) are connected in a cascade mode while using only a single IR detector at the start of the cascade connection.

The IR OUT connector will output the IR signals received from any of the HDBaseT receivers, so as to allow control of a source from any of the remote receivers.

EDID Management

EDID is used by the source device to match the video resolution to the connected display(s). The source device obtains its EDID from the 1st connected display as default setting. However, since displays with different capabilities are often connected to the splitter, the EDID DIP switch can be used to set the EDID to a fixed value to offer the best compatiblity accross all connected displays.

Front Panel EDID Switch

L. RES	The Extender/Splitter reads EDID from all connected displays, and then the source device will automatically use the EDID from the display with the lowest resolution
Default	The factory default EDID resolution is 4K@60Hz
H. RES	The Extender/Splitter reads EDID from all connected displays, and then the source device will automatically use the EDID from the display with the highest resolution

FAQ & Troubleshooting

Q: Poor video quality or no video signal on display:

A1: Check whether the HDMI cables are connected properly and are in good working condition.

A2: Make sure the resolution of the display is compatible with the splitter's resolution

Q: No HDMI signal output from the HDBaseT connectors while the local HDMI out port is working normally:

A1: Check whether the HDMI cables are connected properly and are in good working condition.

Q: Splash screen on the displays:

A1: Cause by damaged or low quality HDMI cables. Change to a higher quality HDMI cable.

Specifications

1x4 HDBaseT Extender/Splitter

Video Input	
Input	(1) HDMI
Input Connector	(1) Female type-A HDMI
HDMI Standard	Support 4K@60 4:2:0 & HDCP2.2 and is backward compatible with all previous standards.
Video Output	
Output	(1) HDMI, (3) HDBT
Output Connector	(1) Female type-A HDMI, (3) Female RJ45(with LED indicators)
Output Video Signal	HDMI, HDBaseT
HDMI Standard	Supports 4K@60 4:2:0 & HDCP1.4/2.2 and is backward compatible with all previous standards.
Video General	
Video Signal	HDMI (or DVI-D)
Transmission Distance	1080P@60Hz ≤ 70m,4Kx2K@60Hz ≤ 40m
Resolution	VESA and SMPTE 480P to 2160P (4K UHD) with 3D. (All resolutions to: 4096x2160P @60Hz 4:2:0 8bit, 3840x2160P @30Hz 4:4:4 8bit)All PC resolutions to 1920x1200
EDID Management	In-built EDID data and manual EDID management
Gain	0 dB
Bandwidth	10.2Gbit/s
Switching Speed	200ns (Max.)
Audio General	
Output Signal	Stereo audio in both balanced and unbalanced modes
Frequency Response	20Hz ~ 20KHz
Output Connector	(1) L&R (3.5mm stereo jack), (1) L+/L- & R+/R- Balanced stereo out (5 way screw terminal)
Controls	
Panel Control	Three position EDID mode switch
IR Control	(4) IR IN, (1) IR OUT (wideband carrier 28-60KHz)
IR Control Connectors	(5) 3.5mm jack sockets
General	
Power Supply	24V DC 2.71A
Power Consumption	14.4W with one receiver
Temperature	0 ~ +45°C
Reference Humidity	10 ~ 90%
Dimension (W*H*D)	260.0mm x 21.0mm x 100.0mm
Net weight	450g

HDBaseT Receiver

Input& Output	
Input	(1) HDBaseT
Input Connector	(1)Female RJ45 (with LED indicators)
Output	(1) HDMI
Output Connector	(1) Female type-A HDMI
IR Control	(1) R IN, (1) IR OUT (wideband carrier 28-60KHz)
IR Control Connectors	(2) 3.5mm jack sockets
General	
Resolution Range	All HDMI resolutions up to 4K×2K@60Hz 4:2:0 (or 30Hz 4:4:4)
Transmission Mode	HDBaseT
Transmission Distance	1080P@60Hz ≤70m,4Kx2K@60Hz ≤40m
Bandwidth	10.2Gbps
HDMI Standard	Support HDMI1.4 and HDCP1.4/2.2
Temperature	0 ~ +45℃
Humidity	10 ~ 90%
Power Supply	Powered by 4K HDMI to HDBaseT Splitter
Dimension (W*H*D)	74mm x16mm x 120mm
Net Weight	240g

Disclaimer

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