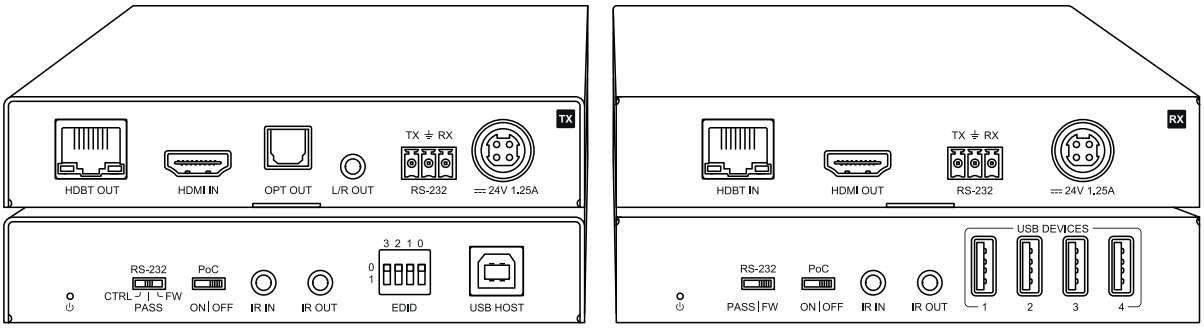
HEX70USB-KIT

Quick Reference Guide



Introduction

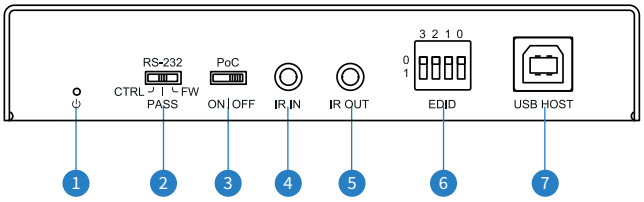
The HEX70USB-KIT 4K HDBaseT™ USB 2.0 extender set offers the very best in performance and flexibility, delivering HDMI, USB 2.0 extension, Bi-directional IR and RS-232, audio breakout and Bi-directional PoC up to lengths of 70m

FEATURES:

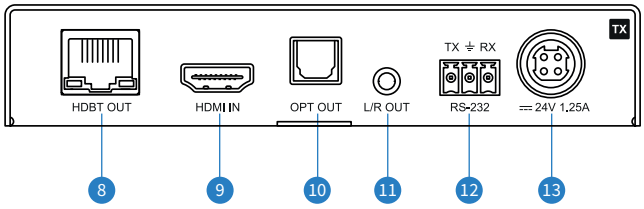
- Advanced HDBaseT™ technology offering uncompressed video and audio with zero latency
- Extends HDMI 1080p up to a distance of 70m over a single CAT cable
- Supports 4K UHD video up to 40m (3840 x 2160 @30Hz 4:4:4, 4096 x 2160 @24Hz 4:4:4, and 4K @60Hz 4:2:0)
- Supports all industry standard video resolutions including VGA-WUXGA and 480i-4K
- Features 4 x USB-Type A devices (RX) and 1x USB Type-B (TX) that support a combined data transmittion bandwidth up to 280Mbps
- USB type-A devices support 5V 500mA output per port
- Supports all known HDMI audio formats including Dolby TrueHD, Dolby Atmos, Dolby Digital Plus and DTS-HD Master Audio transmission
- Bi-directional IR pass-through
- Bi-directional RS-232 pass-through
- Supplied with Blustream IR receiver and emitter
- Supports bi-directional PoC (Power over Cable) to power extenders from either transmitter or receiver end
- HDCP 2.2 compliant with advanced EDID management

TX Panel Descriptions

Front



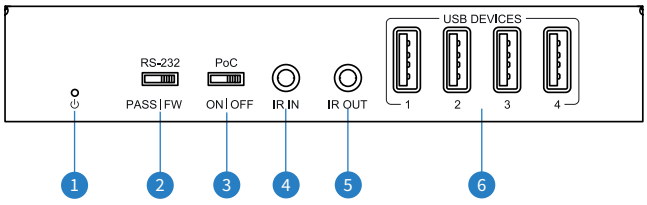
Rear



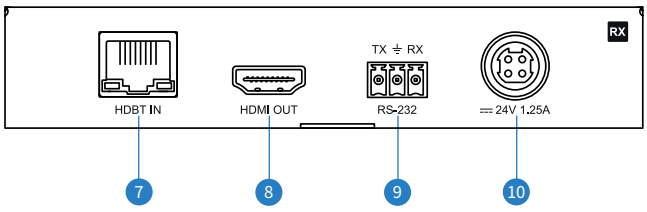
1. Power Status Indicator - illuminates when the device is powered on
2. RS-232 Selection Switch - select between serial pass-through, control of local device or firmware update mode
3. Power over Cable (PoC) Switch (ON / OFF) - to enable / disable PoC being sent from the transmitter
4. IR Input - connect to Blustream 5V 3.5mm IR receiver or from control processor
5. IR Output - connect to Blustream 5V 3.5mm IR emitter
6. EDID Management DIP Switches - See EDID Management section on next page
7. USB-B - connect to USB/KVM host device
8. HDBaseT™ Output - connect to the HDBaseT™ input port of the supplied HEX70USB-RX receiver
9. HDMI Input - connect to source device
10. Optical Output - connect to audio amplification or distribution device
11. L/R Output - connect to audio amplification or distribution device (supports 2ch PCM only)
12. RS-232 - 3-pin Phoenix connector for RS-232 pass through or control
13. 24V/1.25A DC power input 4-pin DIN connector

RX Panel Descriptions

Front



Rear

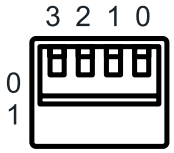


1. Power Status Indicator - illuminates when the device is powered on
2. RS-232 Selection Switch - select between serial pass-through, or firmware update mode
3. Power over Cable (PoC) Switch (ON / OFF) - to enable / disable PoC being sent from the receiver
4. IR Input - connect to Blustream 5V 3.5mm IR receiver
5. IR Output - connect to Blustream 5V 3.5mm IR emitter
6. USB-A (x4) - connect to USB/KVM devices (peripherals)
7. HDBaseT™ Input - connect to the HDBaseT™ output port of the supplied HEX70USB-TX transmitter
8. HDMI Output - connect to HDMI display
9. RS-232 - 3-pin Phoenix connector for RS-232 pass through
10. 24V/1.25A DC power input 4-pin DIN connector

EDID Management

EDID (Extended Display Identification Data) is a data structure that is used between a display and a source. This data is used by the source to find out what audio and video resolutions are supported by the display. By pre-determining the video resolution and audio format of the source and display device you can reduce the time needed for EDID hand shaking thus making switching quicker and more reliable.

To configure the global EDID for all inputs via the DIP switch, use the settings here:



3	2	1	0	EDID Type
Combination of DIP positions				
0	0	0	0	1080p 60Hz 2.0ch
0	0	0	1	1080p 60Hz 5.1ch
0	0	1	0	1080p 60Hz 7.1ch
0	0	1	1	1080i 60Hz 2.0ch
0	1	0	0	1080i 60Hz 5.1ch
0	1	0	1	1080i 60Hz 7.1ch
0	1	1	0	4K 60Hz 4:2:0 2.0ch
0	1	1	1	4K 60Hz 4:2:0 5.1ch
1	0	0	0	4K 60Hz 4:2:0 7.1ch
1	0	0	1	4K 30Hz 4:4:4 2.0ch
1	0	1	0	4K 30Hz 4:4:4 5.1ch
1	0	1	1	4K 30Hz 4:4:4 7.1ch
1	1	0	0	DVI 1920x1080@60Hz
1	1	0	1	DVI 1920x1200@60Hz
1	1	1	0	EDID Passthrough
1	1	1	1	Software Controlled EDID (set EDID via RS-232)

Terminating the Interconnecting HDBaseT™ CAT Cable

It is important that the interconnecting CAT cable between the Blustream HDBaseT products is terminated using the correct RJ45 pin configuration. The link CAT cable ***MUST*** be a 'straight' (pin-to-pin) CAT cable and it is advised that this is wired to the T568B wiring standard as this format is less prone to EMI (Electro-Magnetic Interference).

When installing CAT cables it is advised that you use the best possible CAT cable quality possible. HDMI distribution products will only work if used with CAT5e standard cable or above. Blustream recommends using a CAT6 (or better) cable for your installations, especially when running over longer distances, in areas of high EMI, or for 4K signal distribution.

Understanding the HDBaseT™ Signal Status Lights

The Blustream HDBaseT™ extender solutions include status LED indicators on both the Transmitter and Receiver products to show all connections are active and to help diagnose possible problems.

Understanding the RJ45 connector status lights on both TX and RX units

- The orange HDBaseT™ link light will be off when there is no CAT cable / active HDBaseT™ signal on the RJ45 HDBaseT™ connection
- The orange HDBaseT™ link light will blink if there is an unstable connection between the Transmitter and Receiver
- The orange HDBaseT™ link light will be lit when a CAT cable is connected to the HDBaseT™ RJ45 output on the Transmitter and an active connection is achieved with the input of the Receiver
- The green HDBaseT™ HDCP light will be off when no video signal is being transmitted between Transmitter and Receiver
- The green HDBaseT™ HDCP light will flash when there is video signal without HDCP being transmitted
- The green HDBaseT™ HDCP light will be on when there is video signal with HDCP being transmitted
- The power link light will be off when no power is connected to either the Transmitter or Receiver unit
- The power link light will be on when power is connected directly to either of the units and fed remotely to the other side of the link

Using USB / KVM Pass-through

The USB pass-through functionality of the HEX70USB-KIT is designed for KVM (keyboard / video / mouse) applications where USB data can be sent alongside the HDMI video and associated control built into the HDBaseT technology.

The combined data throughput of the HEX70USB-KIT is 280Mbps and may not be suitable for some applications like web-cameras at high-resolutions. The USB connection is transparent, therefore no drivers are required to be downloaded prior to use.

The 4 x USB Type A connections will also provide a maximum of 5V 0.5A power for peripheral devices.

Specifications

HEX70USB-TX

- **Video Input Connector:** 1 x HDMI Type A, female
- **Video Output Connector:** 1 x HDBaseT™ RJ45 connector
- **Audio Output Ports:** 1 x Optical (S/PDIF), 1 x 3.5mm L/R analogue audio
- **USB/KVM Port:** 1 x USB Type B
- **IR Input Port:** 1 x 3.5mm stereo jack
- **IR Output Port:** 1 x 3.5mm mono jack
- **RS-232 Serial Port:** 1 x 3-pin Phoenix connector
- **Casing Dimensions (W x D x H):** 135 x 105 x 25mm

HEX70USB-KIT

- **Power Supply:** 1 x 24V/1.25A DC, 4-pin DIN connector
- **Box Dimensions (W x D x H):** 166 x 144 x 125mm
- **Shipping Weight:** 1.5kg
- **Operating Temperature:** 32°F to 104°F (-5°C to +55°C)
- **Storage Temperature:** -4°F to 140°F (-25°C to +70°C)

HEX70USB-RX

- **Video Input Connector:** 1 x HDBaseT™ RJ45 connector
- **Video Output Connector:** 1 x HDMI Type A, female
- **USB/KVM Port:** 4 x USB Type A
- **IR Input Port:** 1 x 3.5mm stereo jack
- **IR Output Port:** 1 x 3.5mm mono jack
- **RS-232 Serial Port:** 1 x 3-pin Phoenix connector
- **Casing Dimensions (W x D x H):** 135 x 105 x 25mm

Package Contents

HEX70USB-KIT

- 1 x HEX70USB-TX and 1 x HEX70USB-RX
- 1 x 24V/1.25A DC Power Supply
- 1 x USB-A to USB-B Cable (1m)
- 1 x IRE1 Emitter
- 1 x IRR Receiver
- 1 x Serial Cable - DB9 to 3-pin Phoenix Connector
- 1 x 3-pin Phoenix Connector
- 2 x Mounting Kits
- 1 x Quick Reference Guide

NOTE: *Specifications are subject to change without notice. Weights and dimensions are approximate.*

Certifications

FCC NOTICE

This equipment 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 residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

CAUTION - changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CANADA, INDUSTRY CANADA (IC) NOTICES

This Class B digital apparatus complies with Canadian ICES-003.
Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CORRECT DISPOSAL OF THIS PRODUCT

This marking indicates that this product should not be disposed with other household wastes. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.