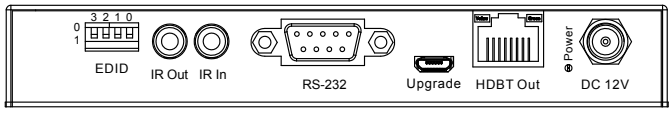
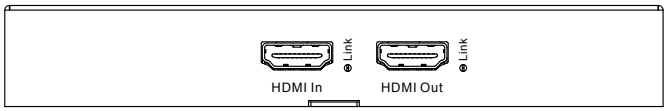
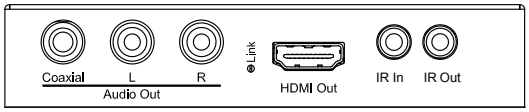






HEX70CS-KIT

User Manual

Introduction

Our HEX70CS-KIT HDMI 2.0 4K 60Hz 4:4:4 (18Gbps) HDCP 2.2 HDBaseT™ extender set offers market leading features and outstanding value utilising CSC technology. The product extends HDMI, Bi-directional IR & RS-232 and Bi-directional PoH (PoE) up to lengths of 70m (4K 40m). The Transmitter includes a HDMI loop-out for integrating local displays or cascading to multiple devices. The Receiver features simultaneous analogue stereo and digital coax audio breakout.

FEATURES:

- Advanced HDBaseT™ technology offering distribution of video and audio over a single CAT cable
- Advanced Color Space Conversion (CSC) supports HDMI 2.0 18Gbps specification including HDR
- Supports 4K 60Hz 4:4:4 UHD video up to 40m
- Extends HDMI 1080P video up to 70m
- Features 1x HDMI loop-out on HEX70CS-TX for integrating local displays or cascading to multiple devices
- Supports all industry standard video resolutions including VGA-WUXGA and 480i-4K
- Supports all known HDMI audio formats including Dolby TrueHD, Atmos and DTS-HD Master Audio transmission
- HDMI re-clocking on the HDBaseT™ Receiver to help solve HDMI HDCP, compatibility and handshaking issues
- HDMI audio breakout to analogue L/R audio and coaxial digital outputs concurrently
- Supports bi-directional RS-232 pass through
- Supports bi-directional IR pass through
- Supplied with Blustream 5V IR receiver and emitter
- Advanced EDID management
- HDCP 2.2 Support

Thank you for purchasing this product.

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Safety And Performance Notice

The transmission distances of HDMI over UTP cables are measured using TE CONNECTIVITY 1427071-6

EIA/TIA-568-B termination (T568B) of cables is recommended for optimal performance.

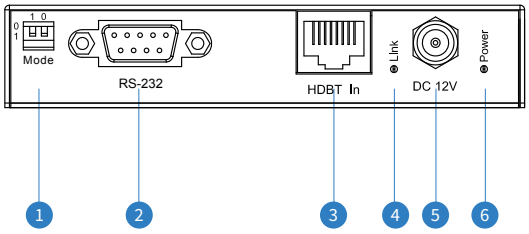
To minimise interference of the unshielded twisted pairs in the CAT5e/6 cable do not run the HDBaseT / Cat5e/6/6a cabling with or in close parallel proximity to mains power cables.

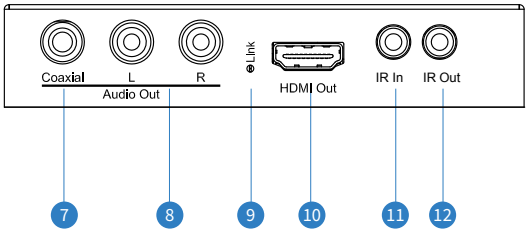
Do not substitute or use any other power supply other than the enclosed unit, or a Blustream approved replacement.

Do not disassemble either the Transmission or Receiver units for any reason. Doing so will void the manufacturer's warranty.

Contents

Panel Description HEX70CS-RX

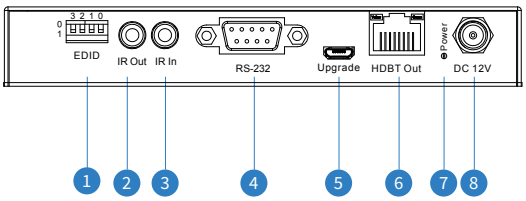


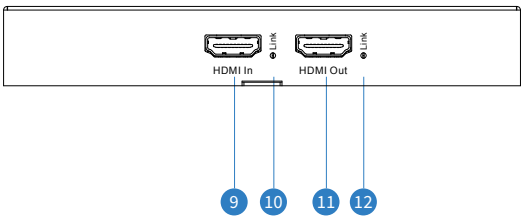


1. Mode dip-switch - To switch RS-232 serial port between pass-through and firmware update mode
2. RS-232 / serial connector
3. HDBaseT input
4. HDBaseT signal link indicator
5. DC 12V screw type connector
6. Power status indicator

7. Coaxial digital output - de-embedded from HDMI input
8. Analogue audio Left/Right output (3.5mm stereo jack de-embedded from HDMI input. Supports stereo 2CH PCM audio only
9. HDMI signal link indicator
10. HDMI Output
11. IR IN (to Blustream 5V 3.5mm IR receiver)
12. IR OUT (to Blustream 5V 3.5mm IR emitter)

Panel Description HEX70CS-TX





1. EDID DIP switch (UP=0, DOWN=1)
2. IR OUT (to Blustream 5V 3.5mm IR emitter)
3. IR IN (to Blustream 5V 3.5mm IR receiver)
4. RS-232 / Serial connector
5. USB Upgrade port - For future use
6. HDBaseT output
7. Power status indicator
8. DC 12V screw type connector

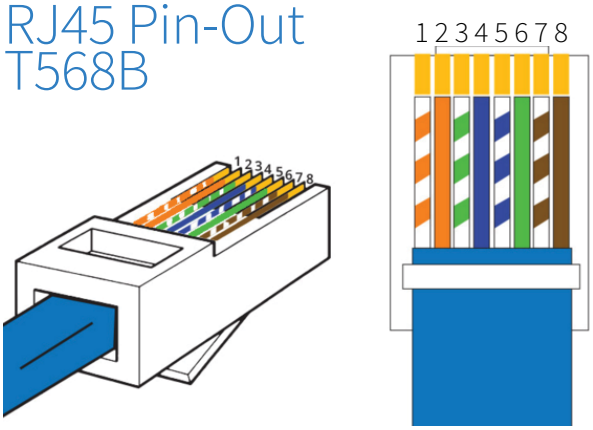
9. HDMI input
10. HDMI link indicator
11. HDMI output
12. HDMI link indicator

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 cable for your installations, especially when running over longer distances, in areas of high EMI, or with 4K signal distribution.

RJ45 Pin-Out T568B



Understanding the Transmitter/Receiver status lights

The Blustream HEX70CS-KIT 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.

Receiver:

- The HDMI signal link light will be off when there is no connection with a display/sink
- The HDMI link light will be on when there is an active connection with a display
- The HDBaseT link light will be off when there is no CAT cable/active HDBaseT connection on the RJ45 HDBaseT input
- The HDBaseT link light will blink if there is an unstable connection between the Transmitter and Receiver
- The 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 Receiver.

Transmitter:

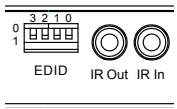
- The Input HDMI signal link light will be off when there is no connection with a source device
- The Output HDMI signal link light will be off when there is no connection with a display/sink
- The Input HDMI link light will be on when there is an active connection with a source device
- The Output HDMI link light will be on when there is an active connection with a display/sink
- The HDBaseT link light will be off when there is no CAT cable/active HDBaseT connection on the RJ45 HDBaseT output
- The HDBaseT link light will blink if there is an unstable connection between the Transmitter and Receiver
- The 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 Receiver

EDID Control

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.

Configuration of extender EDID settings can be achieved using the product dip-switches on the end of the HEX70CS-TX. EDID dip-switch settings are shown below.

Global EDID settings



Dip-switch position '0' = Off

Dip-switch position '1' = On

EDID Dip-switches

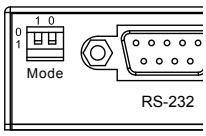
[DIP]=0000: HDMI 1080p@60Hz, Audio 2ch PCM
[DIP]=0001: HDMI 1080p@60Hz, Audio 5.1ch PCM/DTS/DOLBY
[DIP]=0010: HDMI 1080p@60Hz, Audio 7.1ch PCM/DTS/DOLBY/HD
[DIP]=0011: HDMI 1080i@60Hz, Audio 2ch PCM
[DIP]=0100: HDMI 1080i@60Hz, Audio 5.1ch PCM/DTS/DOLBY
[DIP]=0101: HDMI 1080i@60Hz, Audio 7.1ch PCM/DTS/DOLBY/HD
[DIP]=0110: HDMI 4K@60Hz 4:2:0+4K@30Hz 4:4:4, Audio 2ch PCM
[DIP]=0111: HDMI 4K@60Hz 4:2:0+4K@30Hz 4:4:4, Audio 5.1ch PCM/DTS/DOLBY
[DIP]=1000: HDMI 4K@60Hz 4:2:0+4K@30Hz 4:4:4, Audio 7.1ch PCM/DTS/DOLBY/HD
[DIP]=1001: HDMI 4K@60Hz 4:4:4, Audio 2ch PCM
[DIP]=1010: HDMI 4K@60Hz 4:4:4, Audio 5.1ch PCM/DTS/DOLBY
[DIP]=1011: HDMI 4K@60Hz 4:4:4, Audio 7.1ch PCM/DTS/DOLBY/HD
[DIP]=1100: DVI 1280x1024@60Hz, Audio None
[DIP]=1101: DVI 1920x1080@60Hz, Audio None
[DIP]=1110: DVI 1920x1200@60Hz, Audio None
[DIP]=1111: Software Control EDID

Mode Dip-switches (Receiver RS-232 function)

Mode dip-switch settings are used to alter the use of the RS-232 connection of the HDBaseT Receiver. The RS-232 connection can be used as bi-directional pass-through of serial commands between HDBaseT Transmitter and Receiver or for updating product firmware.

Configuration of Mode settings can be achieved using the product dip-switches on the end of the HEX70CS-RX. Mode dip-switch settings are shown below.

Mode settings (RS-232)



Dip-switch position '0' = Off

Dip-switch position '1' = On

MODE Dip-switches

[DIP]=00: Serial pass-through
[DIP]=01: Update HDBaseT firmware
[DIP]=10: Update MCU firmware
[DIP]=11: Dual mode - Serial pass-though and MCU firmware update

Infrared (IR) Distribution

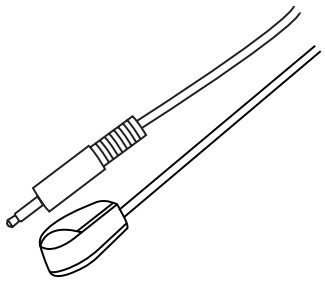
The Blustream range of HDBaseT products include multiple options for control and routing of IR.

IMPORTANT: Blustream Infrared products are all 5v and NOT compatible with alternative manufacturers Infrared solutions. When using third party 12v IR control solutions please use the optional Blustream IRCAB cable for IR conversion.

Each Blustream Matrix and HDBaseT receiver is supplied with necessary IR hardware required and includes:

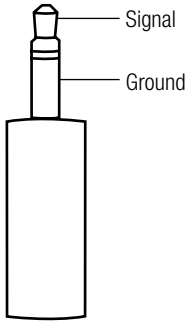
IR Emitter - IR1 & IR2 (IR2 sold separately)

Blustream 5V IR Emitter designed for discrete IR control of hardware



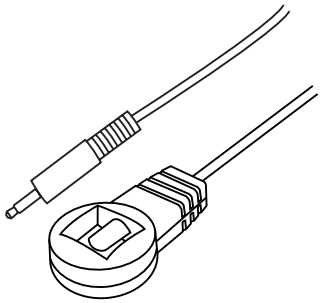
Infrared 3.5mm Pin-Out

IR Emitter - Mono 3.5mm

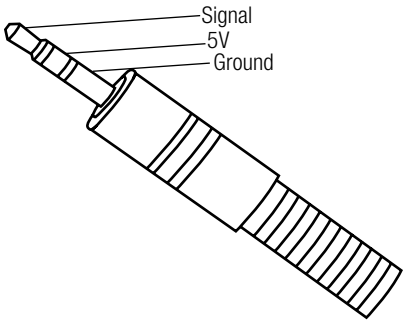


IR Receiver - IRR

Blustream 5V IR receiver to receive IR signal and distribute through Blustream products



IR Receiver - Stereo 3.5mm

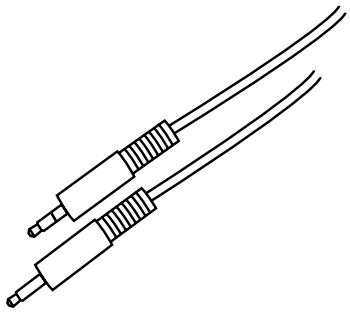


IR Control Cable - IRCAB (sold separately)

Blustream IR Control cable 3.5mm Mono to 3.5mm Stereo for linking third party control solutions to Blustream products.

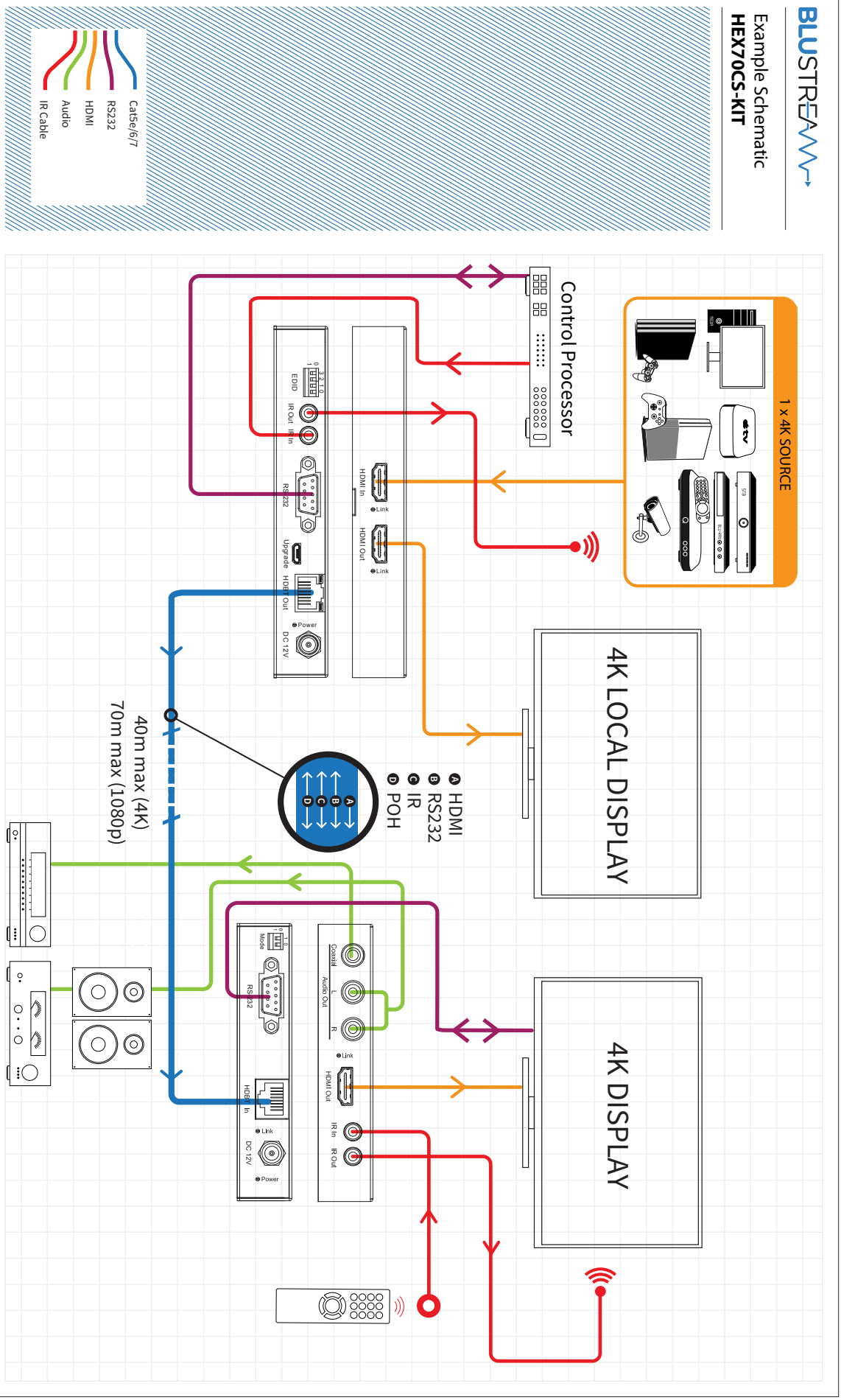
Compatible with 12v IR third party products.

Note: Cable is directional as indicated



BLUSTREAM

Example Schematic
HEX70CS-KIT



Specifications

HEX70CS-TX

- Video input: 1x HDMI Type A, female
- Video output: 1x HDBaseT RJ45 connector
- 1x HDMI Type A, female
- RS-232 serial port: 1x DB9 female connector
- IR input: 1x 3.5mm stereo jack
- IR output: 1x 3.5mm mono jack
- EDID DIP switch: 4-pin
- Mounting kit included
- Dimensions excl connections (W x D x H): 143mm x 134mm x 22mm
- Shipping weight (Kit): 0.5 kg
- Power: 12V/2A DC, screw type connector
- Operating temperature: 32°F to 104°F (0°C to 40°C)
- Storage temperature: -4°F to 140°F (-20°C to 60°C)

HEX70CS-RX

- Video input: 1x HDBaseT RJ45 connector
- Video output: 1x HDMI Type A, female
- Audio output: 1x 3.5mm L/R analogue audio & 1x digital coaxial (RCA)
- RS-232 serial port: 1x DB9 female connector
- IR input: 1x 3.5mm stereo jack
- IR output: 1x 3.5mm mono jack
- Mounting kit included
- Dimensions excl connections (W x D x H): 113mm x 124mm x 22mm
- Shipping weight (Kit): 0.4 kg
- Power: 12V/2A DC, screw type connector
- Operating temperature: 32°F to 104°F (0°C to 40°C)
- Storage temperature: -4°F to 140°F (-20°C to 60°C)

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

Package Contents

HEX70CS-KIT

- 1 x HEX70CS-TX and 1 x HEX70CS-RX
- 1 x 12V/2A DC power supply
- 1 x IR emitter (IRE)
- 1 x IR receiver (IRR)
- 2 x Mounting bracket sets
- 1 x Quick reference guide

HEX70CS-RX (when sold individually)

- 1 x HEX70CS-RX
- 1 x Mounting bracket set

Maintenance

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or benzene to clean this unit.

www.blustream.co.uk
www.blustream.com.au

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