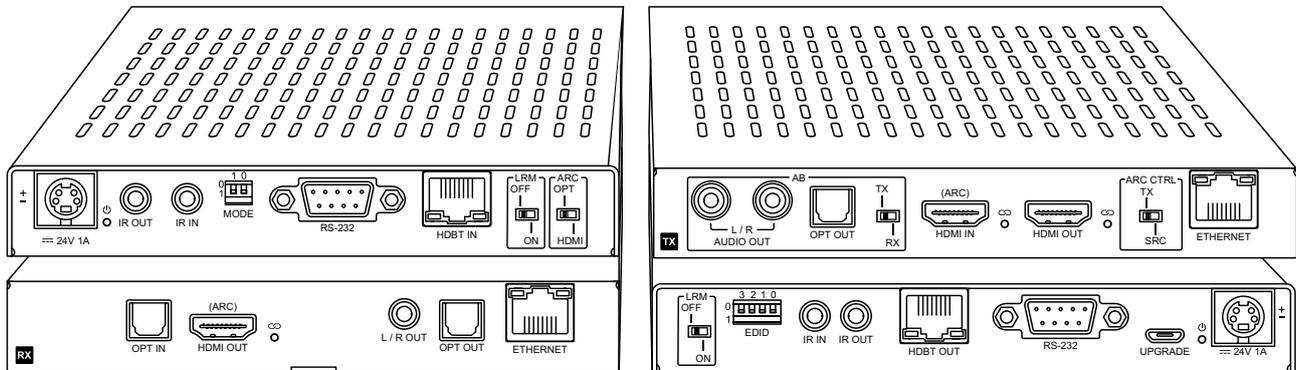# HEX150CS-KIT
Quick Reference Guide

Introduction

Our Platinum range of HDBaseT™ products offer the very best in performance and flexibility. The HEX150CS-KIT extender set is an industry leading HDMI 2.0 4K 60Hz 4:4:4 HDCP2.2 HDBaseT™ solution utilising CSC and Smart-Scale technology on the HDBaseT™ output. The HEX150CS-KIT supports HDMI, bi-directional IR, RS-232 and PoC (Power over Cable) up to lengths of 150m over a single CAT cable at 1080p using LRM (Long Range Mode), and 4K 60Hz 4:4:4 to 100m. The HEX150CS-KIT also provides enhanced features including ARC via HDMI or optical (S/PDIF) and 10/100 Ethernet pass through.
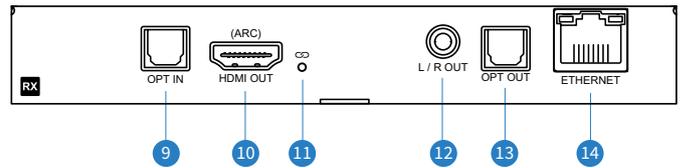
FEATURES:

- Advanced HDBaseT™ technology offering distribution of video and audio over a single CAT cable
- Advanced Colour Space Conversion (CSC) supports HDMI2.0 18Gbps specification including HDR
- Video down-conversion on outputs allowing a display only capable of supporting lower video resolutions (4K 60Hz 4:2:0 or 1080p) to receive 4K 60Hz 4:4:4 or 4K 60Hz 4:2:0 video content while still showing maximum original 4K UHD resolution on remaining video outputs
- Supports 4K 60Hz 4:4:4 UHD video up to 100m
- Extends HDMI 1080p video up to 150m (using HDBaseT™ LRM - Long Range Mode)
- Supports all industry standard video resolutions including VGA-WUXGA and 480i-4K
- HDMI re-clocking on the HDBaseT™ receiver to help solve HDMI HDCP, compatibility and handshaking issues
- Supports ARC (Audio Return Channel) from display via HDMI and optical digital inputs
- Supports audio return to HDMI, optical digital, and analogue L/R audio outputs (analogue output supports 2ch PCM only)
- Supports bitstream passthrough of multichannel surround sound including object-based audio formats in line with HDMI specifications
- 10/100BaseT Ethernet pass-through
- Bi-directional IR & RS-232 pass through
- Supplied with Blustream IR receiver and emitter
- Bi-directional PoC (Power over Cable) to power extenders from either transmitter or receiver end
- Advanced EDID management
- HDCP 2.2 support
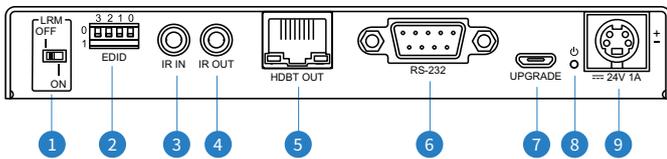
Panel Description HEX150CS-RX
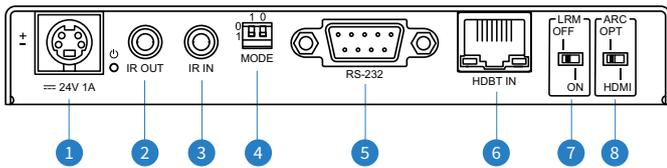
❶ DC 24V 1A 4-pin mini DIN connector

❷ IR OUT (to Blustream 5V 3.5mm IR emitter)

❸ IR IN (from Blustream 5V 3.5mm IR receiver)

❹ Mode dip-switch - To switch RS-232 serial port between pass-through and firmware update mode

❺ DB9 RS-232 / Serial connector

❻ HDBaseT™ input

❼ HDBaseT™ Long Range Mode (ON / OFF)*

❽ Audio return selection switch - Switch between HDMI ARC and TOSLINK (Optical) when selecting which audio source to return

❾ Optical audio input - TOSLINK audio input. Connects to the Optical output of the local display device for Audio Return feature

❿ HDMI Output - connect to HDMI (ARC) on display

⓫ HDMI signal link indicator

⓬ Analogue 2ch stereo audio output (3.5mm). Note: Audio input format must be 2ch PCM

⓭ Optical digital output - de-embedded from HDMI input

⓮ Ethernet port - RJ45. Connect to display to extend 10/100 network from Transmitter.

Panel Description HEX150CS-TX

❶ HDBaseT™ Long Range Mode (ON / OFF)*

❷ EDID DIP switch (UP=0, DOWN=1)

❸ IR IN (from Blustream 5V 3.5mm IR receiver)

❹ IR OUT (to Blustream 5V 3.5mm IR emitter)

❺ HDBaseT™ output

❻ DB9 RS-232 / Serial connector

❼ USB Upgrade port

❽ Power status indicator

❾ DC 24V 1A 4-pin mini DIN connector

❿ Analogue audio 2ch L/R output - Connect to third party audio amplifier for audio breakout of either local HDMI or Audio Return Channel from HEX150CS-RX. Note: Audio input format must be 2ch PCM

⓫ Optical TOSLINK audio output. Connects to local AV amplifier when using Audio Return Channel (ARC) or Local/Source HDMI audio breakout
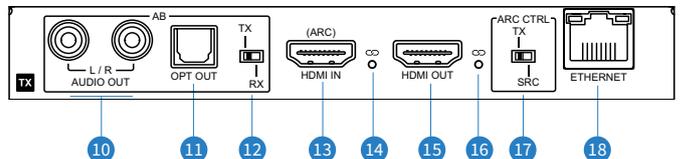
⓬ Audio Breakout TX/RX selection switch - Select TX for local HDMI input audio breakout for Analogue RCA 2ch output or Optical. Select RX for ARC audio breakout from RX

⓭ HDMI input - connect to HDMI (ARC) on AVR or source

⓮ HDMI input link indicator

⓯ HDMI loop-out - connect to display / sink device

⓰ HDMI loop-out link indicator

⓱ ARC CTRL - Select TX to allow ARC audio breakout without a local source connected to HDMI Input. Select Source to allow ARC to be returned via the source connected to the local HDMI Input

⓲ Ethernet port - RJ45. Connect to local network product to extend 10/100 network to Receiver

* HDBaseT LRM (Long Range Mode) is limited to 1080p resolutions only. LRM should only be enabled when CAT cable distance exceeds 100m.

Understanding the Transmitter/Receiver status lights

The Blustream HEX150CS-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™ RJ45 link light (orange) will be off when there is no CAT cable/active HDBaseT™ connection on the RJ45 HDBaseT™ input
- The HDBaseT™ RJ45 link light (orange) will blink if there is an unstable connection between the Transmitter and Receiver
- The HDBaseT™ RJ45 link light (green) will blink when a CAT cable is connected to the HDBaseT™ RJ45 input and an active connection is achieved with the Transmitter.

Transmitter:

- The Input HDMI signal link light will be off when there is no connection with a source device
- The Output HDMI-Loop 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-Loop link light will be on when there is an active connection with a display/sink
- The HDBaseT™ RJ45 link light (orange) will be off when there is no CAT cable/active HDBaseT™ connection on the RJ45 HDBaseT™ output
- The HDBaseT™ RJ45 link light (orange) will blink if there is an unstable connection between the Transmitter and Receiver
- The HDBaseT™ RJ45 link light (green) will blink when a CAT cable is connected to the HDBaseT™ RJ45 output and an active connection is achieved with the Receiver / Matrix.

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.

Configuration of extender EDID settings can be achieved using the product dip-switches of the HEX150CS-TX. EDID dip-switch settings are shown below:

Global EDID settings

Dip-switch position '0' = Off

Dip-switch position '1' = On
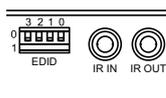
EDID Dip-switches

[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: EDID pass-through

Specifications

HEX150CS-TX

- **Video input:** 1x HDMI Type A, female
- **Video output**: 1x HDBaseT™ RJ45 connector
  1x HDMI Type A, female
- **Audio output:** 1x RCA stereo analogue output (L/R)
  1x S/PDIF Optical Toslink
- **RS-232 serial port:** 1x DB9 female connector
- **Ethernet:** 1x RJ45 connector (10/100BaseT)
- **Upgrade:** 1x Micro-USB 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):**
  156mm x 123mm x 23mm
- **Shipping weight (Kit):** 1.6kg
- **Power:** 24V/1A DC, 4-pin mini DIN 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)

HEX150CS-RX

- **Video input:** 1x HDBaseT™ RJ45 connector
- **Video output:** 1x HDMI Type A, female
- **Audio output:** 1x 3.5mm L/R analogue audio
  1x S/PDIF Optical Toslink
- **Audio input:** 1x S/PDIF Optical Toslink
- **RS-232 serial port:** 1x DB9 female connector
- **Ethernet:** 1x RJ45 connector (10/100BaseT)
- **IR input:** 1x 3.5mm stereo jack
- **IR output:** 1x 3.5mm mono jack
- **Mode DIP switch:** 2-pin
- **Mounting kit:** Included
- **Dimensions excl. connections (W x D x H):**
  148mm x 134mm x 23mm
- **Power:** 24V/1A DC, 4-pin mini DIN 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

HEX150CS-KIT

- 1 x HEX150CS-TX and 1 x HEX150CS-RX
- 1 x 24V/1A DC power supply
- 1 x IR emitter (IRE)
- 1 x IR receiver (IRR)
- 2 x Mounting bracket sets
- 1 x Quick Reference Guide

Maintenance

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

For the full Blustream HEX150CS-KIT User Manual please visit the download area of our website.

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.