



# BLUSTREAM HEX70HDK-KIT Multi Format HDBaseT CSC Extender Set User Guide

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**BLUSTREAM HEX70HDK-KIT Multi Format HDBaseT CSC Extender Set**



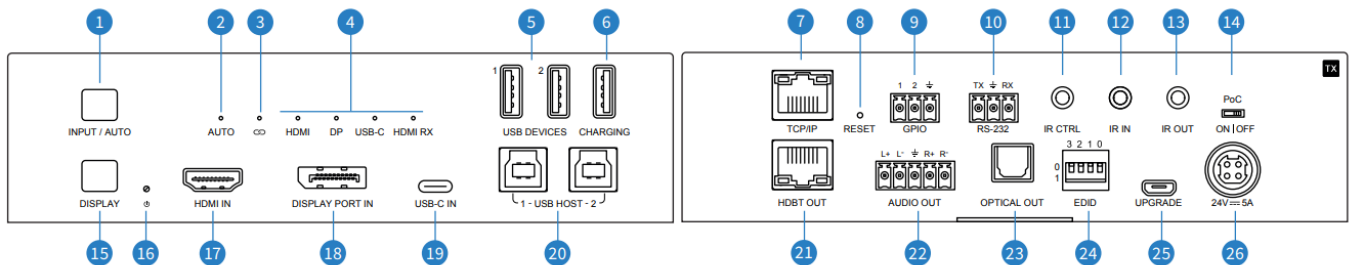
## Introduction

The HEX70HDK-KIT extender set is an industry-leading HDMI2.0 4K 60Hz 4:4:4 (18Gbps) HDCP2.2 HDBaseT™ multi-format solution utilising CSC technology to deliver HDMI, USB-C and DisplayPort™ up to lengths of 40m at 4K 60Hz 4:4:4 (1080p to 70m) over a single CAT cable. The HEX70HDK-KIT provides enhanced features including local HDMI input on the HDBaseT™ Receiver for additional source input, web-GUI for control and configuration, auto display control, audio breakout, and bi-directional IR pass-through. The HEX70HDK-KIT also features control via front panel, IR, RS-232 and TCP/IP, and advanced EDID and HDCP management.

## FEATURES

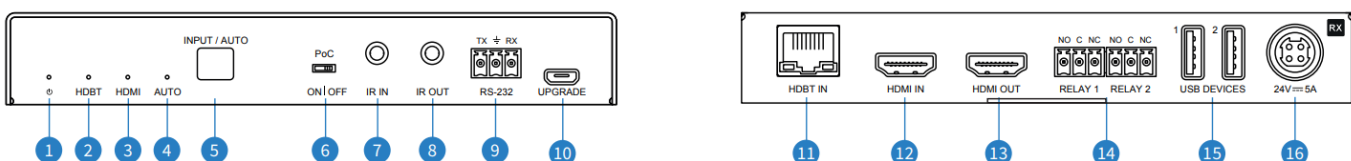
- Advanced HDBaseT™ technology offers the distribution of video and audio over a single CAT cable
- Advanced Colour Space Conversion (CSC) supports HDMI2.0 18Gbps specification including HDR
- Features 1x HDMI, 1x USB-C and 1x DisplayPort™ input on the HDBaseT™ Transmitter with manual or auto source selection
- Features 1x local HDMI input on the HDBaseT™ Receiver for connection of a source local to the display
- Supports 4K 60Hz 4:4:4 UHD video up to 40m
- Extends HDMI 1080p up to a distance of 70m over a single CAT cable
- Supports all known HDMI audio formats including Dolby Atmos, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio transmission
- Supports USB Type C up to 4K UHD 60Hz 4:4:4 DP1.2 with 60W charging capability\*
- Supports DisplayPort™ up to 4K UHD 60Hz 4:4:4 DP1.2
- Audio breakout to analogue L/R audio and Coaxial digital (S/PDIF) outputs concurrently\*\*
- Bi-directional IR pass-through
- Auto display on/off feature allowing control of display at the HDBaseT™ Receiver via CEC or RS-232
- Web interface module for control and configuration of HEX70HDK-KIT
- Control via front panel, IR, RS-232 and TCP/IP
- Advanced EDID and HDCP management
- USB-C video support is limited to 4K 60Hz 4:2:0 when the charging feature is activated by the source device
- Analogue audio breakout supports 2ch PCM only

## TX Panel Descriptions



1. Input / Auto Select Button – Press to change source, hold for 3 seconds to enable/disable auto signal since switching
2. Auto Switching Status LED
3. Remote (RX) HDBaseT™ Link Status LED
4. Source Input Status LED – Illuminates when the corresponding source device is connected
5. USB Device Inputs – Connect to local USB peripherals
6. USB Charging Input – Allows charging of USB devices only (2A)
7. TCP/IP (RJ45) – Connect to LAN for TCP/IP control Default IP of the HEX70HDDUK-KIT is 192.168.0.200
8. Reset Switch – Press and hold for 10 seconds to factory reset unit
9. GPIO Port – 3-pin Phoenix connector for input sense / output relay / contact closure control of 3rd party devices
10. RS-232 – 3-pin Phoenix connector for RS-232 pass-through, or device control by RS-232 commands
11. IR Control Port (to Blustream 5V 3.5mm IR receiver or IR control device)
12. IR In (to Blustream 5V 3.5mm IR receiver)
13. IR Out (to Blustream 5V 3.5mm IR emitter)
14. Power over Cable (PoC) switch (ON / OFF) – to enable / disable PoC being sent or received
15. Display Button – Press to trigger the output on/off sequence
16. Power Status LED
17. HDMI Input Connect to source equipment
18. DisplayPort™ Input Connect to source equipment
19. USB-C Input Connect to source equipment (supports 60w charging)
20. USB Host Inputs Connect to Host PC connected to corresponding video input
21. HDBaseT™ Output
22. Audio Output Balanced/unbalanced 2ch analogue audio out
23. Optical Output Connect to audio amplification or distribution device
24. EDID DIP Switch (UP=0, DOWN=1)
25. USB Upgrade Port
26. Power Port Use included 24V/5A DC adaptor to power the device.

## RX Panel Descriptions



1. Power Status LED

2. HDBaseT™ Link Status LED
3. Local (RX) HDMI Source Status LED
4. Auto Switching Status LED
5. Input / Auto Select Button – Press to change source, hold for
6. 3 seconds to enable / disable auto signal sense switching
7. Power over Cable (PoC) switch (ON / OFF) – to enable / disable PoC being sent or received
8. IR In (to Blustream 5V 3.5mm IR receiver)
9. IR Out (to Blustream 5V 3.5mm IR emitter)
10. RS-232 – 3-pin Phoenix connector for RS-232 pass-through, or device control by RS-232 commands
11. USB Upgrade Port
12. HDBaseT™ Input
13. HDMI Input Connect to local HDMI source device
14. HDMI Output Connect to HDMI display device
15. Relay Contacts 3-pin Phoenix connector to allow relay control of a device such as a projector screen
16. USB Device Inputs Connect to local USB peripherals
17. Power Port Use included 24V/5A DC adaptor to power the device.

## **RS-232 Configuration & Control**

The RS-232 ports can be used for configuration/control of the product, as well as pass-through of RS-232 commands between the serial ports of the HEX70HDUK-TX and RX. By default, the transmitter unit is allocated for control and feedback of switching, however, this can be changed to the receiver if required.

The default RS-232 communication settings are

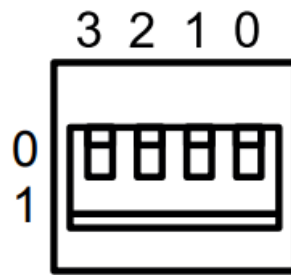
- **Baud Rate:** 57600
- **Data Bit:** 8
- **Stop Bit:** 1
- **Parity Bit:** none

For the complete RS-232 and TCP/IP command list please see the HEX70HDUK-KIT User Manual – available to download from the Blustream website.

## **EDID Control**

EDID (Extended Display Identification Data) is a data structure that is used between a display and a source to negotiate the best audio and video resolutions that are supported in the system. A global EDID of the HEX70HDUK-KIT can be configured using a combination of DIP switch settings (see below) or via TCP/IP, RS-232 or web-GUI.

### **Global EDID Settings**



EDID

- **DIP switch position '0':** Off / Up
- **DIP switch position '1':** On / Down

#### EDID DIP Switches

- **[DIP] = 0000:** HDMI 1080p @60Hz, Audio 2ch PCM (default)
- **[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, Audio 2ch PCM
- **[DIP] = 0111:** HDMI 4K @60Hz 4:2:0, Audio 5.1ch PCM/DTS/DOLBY
- **[DIP] = 1000:** HDMI 4K @60Hz 4:2:0, 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 1920×1080 @60Hz, Audio None
- **[DIP] = 1101:** DVI 1920×1200 @60Hz, Audio None
- **[DIP] = 1110:** EDID Passthrough
- **[DIP] = 1111:** Software Controlled EDID (set EDID via web-GUI, TCP/IP, RS-232)

#### Web-GUI Control

The HEX70HDUK-KIT features an in-built web GUI which can be used for control and configuration of the product.

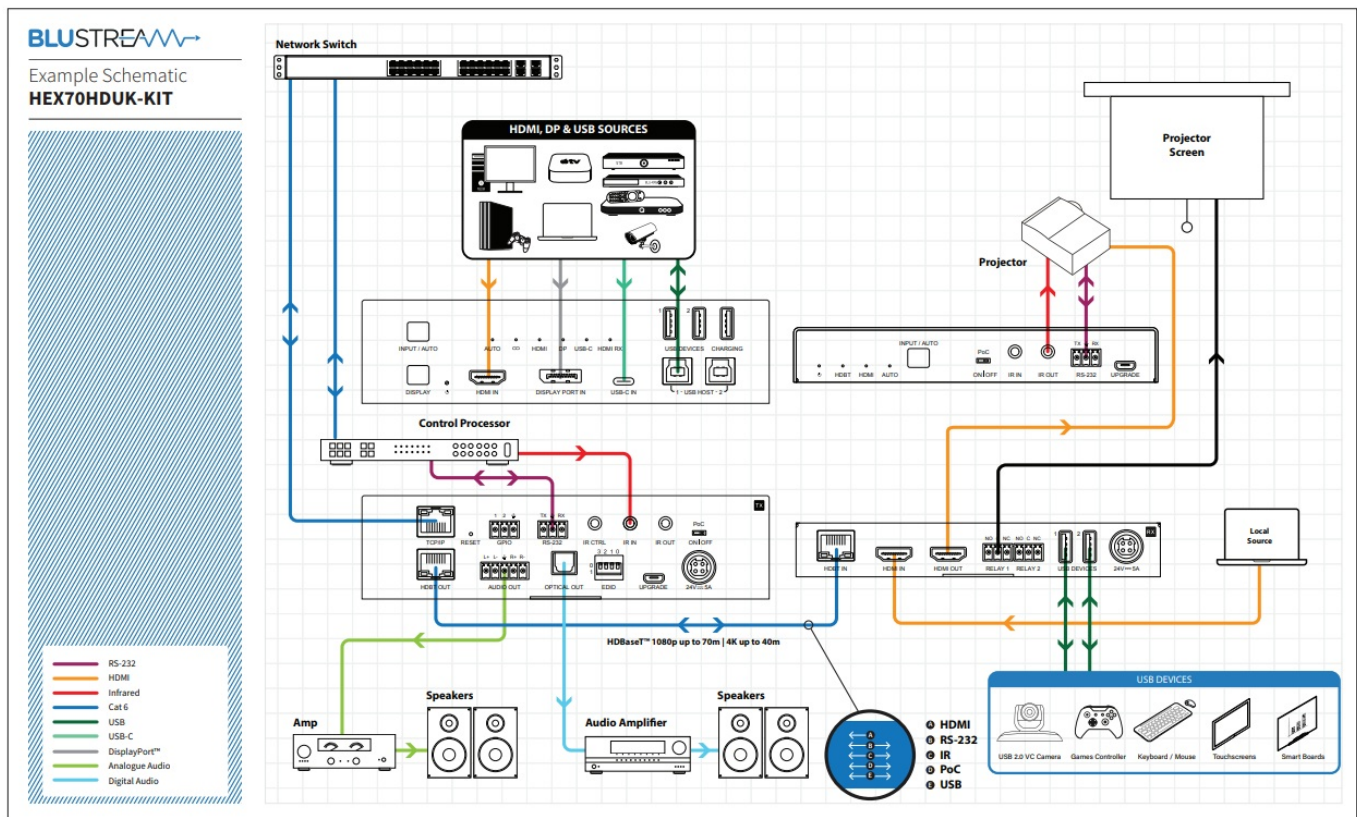
- **Default Username is:** blustream
- **Default Password is:** 1234
- **The Default IP Address is:** 192.168.0.200

For further information please see the HEX70HDUK-KIT User Manual – available to download from the Blustream website.

#### Auto On / Off Display Control

The HEX70HDUK-KIT can be programmed to automatically power on/off a display connected to the HDBaseT™ receiver output via CEC, RS-232 or Relay. Please refer to the HEX70HDUK-KIT User Manual – available to download from the Blustream website for more details.

## Schematic



## Specifications

### HEX70HDUK-TX

- **Video Input Connectors:** 1 x HDMI Type A, 19-pin, female; 1 x USB Type C; 1 x DisplayPort™
- **Video Output Connectors:** 1 x HDBaseT™ RJ45 connector
- **RS-232 Serial Port:** 1 x 3-pin Phoenix connector
- **TCP/IP Control:** 1 x RJ45, female
- **IR Input Ports:** 2 x 3.5mm stereo jack
- **IR Output Port:** 1 x 3.5mm mono jack
- **USB Ports:** 3 x USB Type-A, 2 x USB Type-B
- **EDID:** 4-pin DIP switch
- **Product Upgrade:** 1 x Micro USB, female
- **Local Power Input:** 1 x 24V/5A 4-pin DIN connector
- **Casing Dimensions (W x H x D):** 183mm x 44mm x 173mm

### HEX70HDUK-KIT

- **Operating Temperature:** 32°F to 104°F (-5°C to +55°C)
- **Storage Temperature:** -4°F to 140°F (-25°C to +70°C)
- **Packaging Dimensions:** 400mm x 230mm x 110mm

- **Shipping Weight:** 3.6kg
- **Power Supply:** 24V/5A DC

#### HEX70HDUK-RX

- **Video Input Connectors:** 1 x HDMI Type A, 19-pin, female; 1 x HDBaseT™ RJ45 connector
- **Video Output Connectors:** 1 x HDMI Type A, 19-pin, female
- **Audio Output Connectors:** 5-pin Phoenix connector (2ch balanced / unbalanced analogue audio); 1 x RCA (S/PDIF)
- **RS-232 Serial Port:** 1 x 3-pin Phoenix connector
- **Relay Control:** 2 x 3-pin Phoenix connectors
- **IR Input Port:** 1 x 3.5mm stereo jack
- **IR Output Port:** 1 x 3.5mm mono jack
- **USB Ports:** 2 x USB Type-A
- **Product Upgrade:** 1 x Micro USB, female
- **Local Power Input:** 1 x 24V/5A 4-pin DIN connector
- **Casing Dimensions (W x H x D):** 155mm x 24mm x 155mm

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

### Package Contents

#### HEX70HDUK-KIT

- 1 x HEX70HDUK-TX
- 1 x HEX70HDUK-RX
- 1 x 24V/5A DC Power Supply
- 1 x USB-A to USB-B cable
- 1 x IR Emitter
- 1 x IR Receiver
- 1 x RS-232 Control Cable
- 2 x Mounting Kits
- 1 x Quick Reference Guide

### Acknowledgements

DisplayPort™ and the DisplayPort™ logo are trademarks owned by the Video Electronics Standards Association (VESA®) in the United States and other countries.

### 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 the 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.

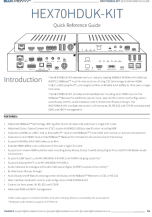
## CORRECT DISPOSAL OF THIS PRODUCT

This marking indicates that this product should not be disposed of 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.

## Contact

- [support@blustream.com.au](mailto:support@blustream.com.au)
- [support@blustream-us.com](mailto:support@blustream-us.com)
- [support@blustream.co.uk](mailto:support@blustream.co.uk)

## Documents / Resources

	<p><b><a href="#">BLUSTREAM HEX70HDUK-KIT Multi Format HDBaseT CSC Extender Set</a></b> [pdf] User Guide HEX70HDUK-KIT Multi Format HDBaseT CSC Extender Set, HEX70HDUK-KIT, Multi Format HDBaseT CSC Extender Set, Format HDBaseT CSC Extender Set, HDBaseT CSC Extender Set, CSC Extender Set, Extender Set</p>
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## References

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