HEX100ARC-TX-V2

IR TX   IR RX   RS232   ARC   HDBT Out   DC 15V
                              NON-ARC

L   R   Optical Out   (ARC)   HDMI Loop Out   Ethernet
Audio Out   HDMI In

▶ HEX100ARC-KIT V2
User Manual

BLUSTREAM

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 Transmitter or Receiver units for any reason. Doing so will void the manufacturer's warranty.

Contents

Introduction

Our 2nd generation Range of HDBaseT products offer the very best in performance and flexibility. The HEX100ARC V2 extender set is an industry leading 4K HDBaseT solution delivering HDMI with HDCP 2.2 support, Bi-directional IR, RS232 and PoH (PoE) up to lengths of 100m over a single CAT cable. The HEX100ARC V2 also provides enhanced features including HDMI loop-out on the Transmitter, ARC via HDMI or Optical (S/PDIF) and an integrated 3-port Ethernet switch.
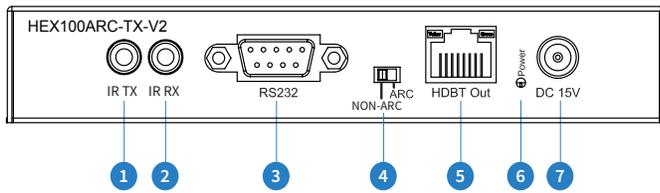
FEATURES:

- Advanced HDBaseT technology offering uncompressed video and audio with zero latency
- Extends HDMI up to a distance of 100m over single CAT cable
- Supports 4K UHD video up to 70m (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
- Supports 3D signal display
- Features 1x HDMI loop out for integrating local displays or cascading to multiple devices
- Supports ARC (Audio Return Channel) from display via HDMI and Optical digital inputs (ARC feature supports distance of up to 90m)
- Supports audio return to HDMI, Optical digital and analogue L/R audio outputs (DAC PCM only)
- Supports all known HDMI audio formats including Dolby TrueHD, Dolby Atmos, Dolby Digital Plus and DTS-HD Master Audio transmission
- Integrated 3-port Ethernet switch (10/100 LAN Serving)
- Bi-directional RS-232 pass through
- Bi-directional IR from all input and output locations
- Supplied with Blustream IR receiver and emitter
- Bi-directional PoH (Power over HDBaseT) to power extenders from either transmitter or receiver end
- HDCP 2.2 compliant

HEX100ARC-TX V2

HEX100ARC-TX-V2
IR TX   IR RX   RS232   ARC NON-ARC   HDBT Out   DC 15V
①   ②   ③   ④   ⑤   ⑥   ⑦

L   R
Audio Out   Optical Out   (ARC) HDMI In   HDMI Loop Out   Ethernet
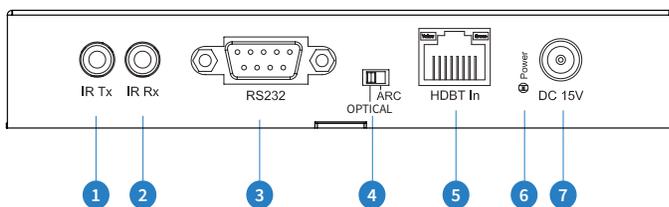⑧   ⑨   ⑩   ⑪   ⑫

❶ IR TX port - Connect to Blustream 5V Emitter. Connection is used to control the local source device from Blustream IR Receiver connected at the HEX100ARC-RX V2.

❷ IR RX port - Connect to Blustream 5V IR Receiver or IRCAB cable (when used with a third party control processor). Connection is used extend IR over the HDBaseT signal to control devices located at the HEX100ARC-RX V2 end.

❸ RS-232 port - Bi-directional RS-232 with HEX100ARC-RX V2 RS-232 port.

❹ ARC/Non ARC (Audio Return Channel) selection switch - Select between ARC or local HDMI input audio breakout for Analogue RCA 2ch output on the Transmitter. When ARC feature is used, selection between Optical and HDMI audio ARC is the via dip-switch on the HEX100ARC-RX V2 (see below).

❺ HDBaseT output - RJ45 connector. Connect to HDBaseT input on HEX100ARC-RX V2.

❻ Power LED indicator

❼ Power port - Connect Blustream 15V DC power supply only. Note - HDBaseT extender kit can be powered from either the Transmitter or Receiver by using the power over cable (POH) feature.
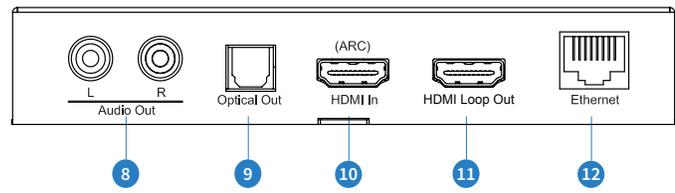
❽ Analogue audio 2ch L/R output - Connects to third party audio amplifier for audio breakout of either local HDMI or Audio Return Channel from HEX100ARC-RX V2. Note: Audio input format must be 2ch PCM.

❾ Optical audio output - TOSLINK audio output. Connects to local AV amplifier when using Audio Return Channel (ARC) feature.

❿ HDMI input - Connect to the HDMI output of the local source device or Matrix output to be extended to the HEX100ARC-RX V2.

⓫ HDMI output - Loop-through of HDMI input signal. Used for connection to local display or to daisy-chain HDMI devices.

⓬ Ethernet ports - RJ45 connector. Connect to local network switch to extend 10/100 network to HDBaseT Receiver Ethernet ports.

HEX100ARC-RX V2

IR Tx   IR Rx   RS232   ARC OPTICAL   HDBT In   DC 15V
①   ②   ③   ④   ⑤   ⑥   ⑦

HEX100ARC-RX-V2
Opitcal In   HDMI Out   Ethernet 1   Ethernet 2   Ethernet 3
⑧   ⑨   ⑩

❶ IR TX port - Connect to Blustream 5V Emitter. Connection is used to control the local display device from control processor or IR sensor located at the source/transmitter end.

❷ IR RX port - Connect to Blustream 5V IR Receiver Connection is used to control sources devices located at the HEX100ARC-TX V2 end.

❸ RS-232 port - Bi-directional RS-232 with HEX100ARC-TX V2 RS-232 port.

❹ Audio return selection switch - Switch between ARC and TOSLINK (Optical) when using Audio Return feature.

❺ HDBaseT input - RJ45 connector. Connect to HDBaseT output on HEX100ARC-TX V2.

❻ Power LED indicator

❼ Power port - Connect Blustream 15V DC power supply only. Note - HDBaseT extender kit can be powered from either the Transmitter or Receiver by using the power over cable (POH) feature.
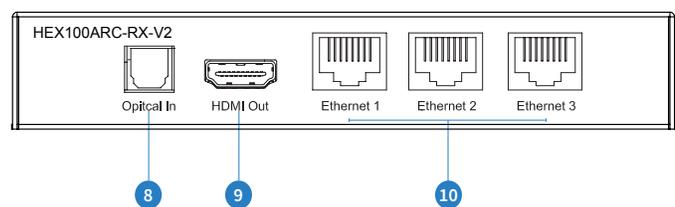
❽ Optical audio input - TOSLINK audio input. Connects to the Optical output of the local display device for Audio Return feature.

❾ HDMI Output - Connect to the HDMI input on local display device.

❿ Ethernet ports x3 - RJ45 connectors. Connect to local network products to extend 10/100 network from HDBaseT Transmitter.

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

1 2 3 4 5 6 7 8
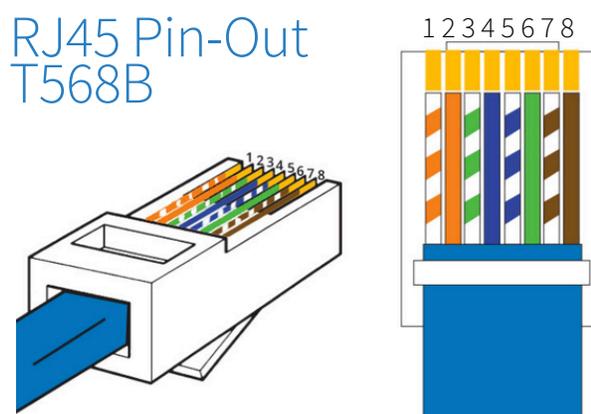
Understanding the HEX100ARC V2 HDBaseT status lights

The Blustream Matrix and 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 status lights:-

Blustream HEX100ARC-TX V2 & HEX100ARC-RX V2

- The Yellow HDBaseT status link light will be off when the output has been turned off or there is a problem with the HDBaseT output.
- The Yellow HDBaseT status link light will blink when the output is on and working
- The Green HDBaseT link light will blink if there is an unstable connection between the Blustream HDBaseT Transmitter and HDBaseT Receiver
- The Green HDBaseT link light will be lit when a there is an active HDBaseT Receiver connected to the Transmitter
- The Green HDBaseT link light will be off when a there is no connection with between the HDBaseT Receiver and Transmitter

    Blustream Support department are on hand to assist with signal distribution issues should they arise - please email us at one of the email addresses below

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 Blustream IRCAB cable for IR conversion (sold separately).

Each Blustream Matrix and HDBaseT receiver is supplied with all necessary IR hardware required and includes:
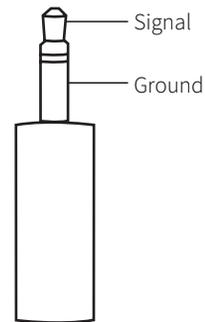
IR Emitter - IR1 & IR2 (IR2 sold separately)

Blustream 5V IR Emitter designed for discrete IR control of hardware
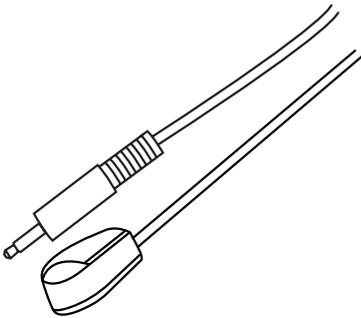
InfraRed 3.5mm Pin-Out

IR Emitter - Mono 3.5mm

Signal

Ground

IR Receiver - IRR

Blustream 5V IR receiver to receive IR signal and distribute through Blustream products
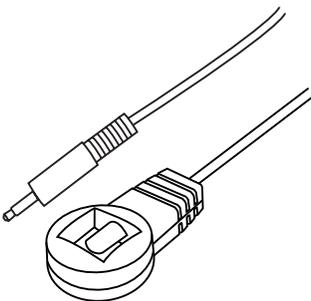
IR Receiver - Stereo 3.5mm

Signal
5V
Ground

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
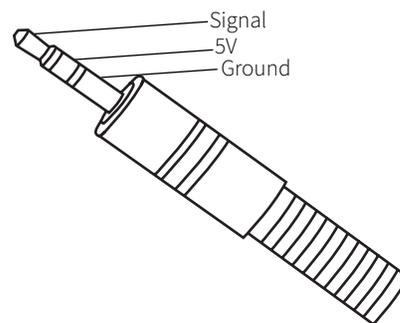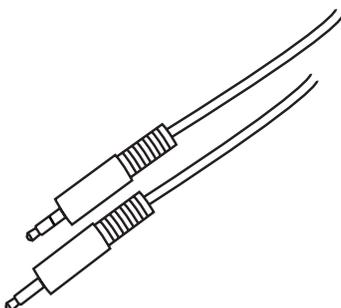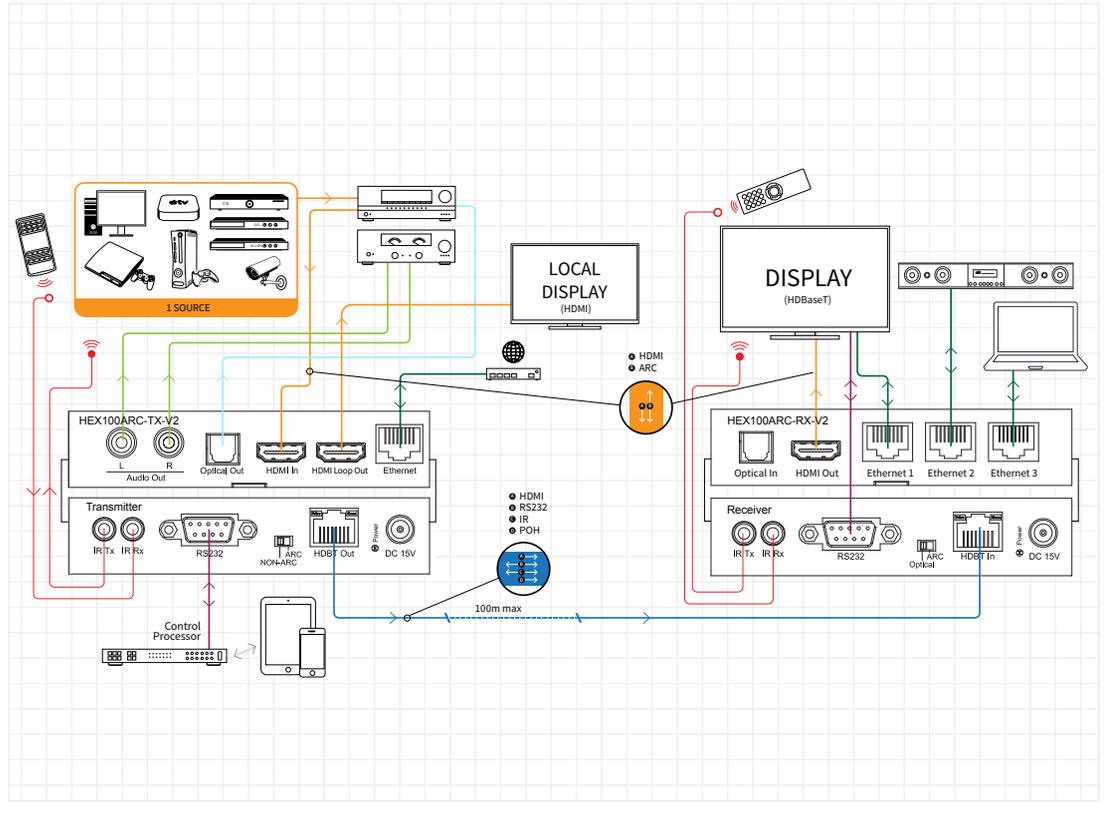**HEX100ARC-Kit-V2**

TV AND AVR SUPPORT ARC	
HEX100ARC	POSITION SWITCHER MODE SELECTION
Transmitter	ARC
Receiver	ARC

1 SOURCE

LOCAL DISPLAY
(HDMI)

DISPLAY
(HDBaseT)

HEX100ARC-TX-V2

L   R
Audio Out   Optical Out   HDMI In   HDMI Loop Out   Ethernet

Transmitter

IR Tx IR Rx   RS232   ARC NON-ARC   HDBT Out   DC 15V

Control Processor

- HDMI
- ARC

- HDMI
- RS232
- IR
- POH

HEX100ARC-RX-V2

Optical In   HDMI Out   Ethernet 1   Ethernet 2   Ethernet 3

Receiver

IR Tx IR Rx   RS232   ARC Optical   HDBT In   DC 15V

100m max

Cat 5/6
Network Connection
RS232
HDMI
Optical Digital Audio
Stereo Audio
IR Cable

BLUSTREAM

Example Schematic
HEX100ARC-Kit-V2

TV WITH ARC, AVR WITHOUT ARC	
HEX100ARC	POSITION SWITCHER MODE SELECTION
Transmitter	NON-ARC
Receiver	ARC

1 SOURCE

LOCAL DISPLAY
(HDMI)

DISPLAY
(HDBaseT)

HEX100ARC-TX-V2

L   R
Audio Out   Optical Out   HDMI In   HDMI Loop Out   Ethernet

Transmitter

IR Tx IR Rx   RS232   ARC NON-ARC   HDBT Out   DC 15V

Control Processor

- HDMI
- ARC

- HDMI
- RS232
- IR
- POH

HEX100ARC-RX-V2

Optical In   HDMI Out   Ethernet 1   Ethernet 2   Ethernet 3

Receiver

IR Tx IR Rx   RS232   ARC Optical   HDBT In   DC 15V

100m max

Cat 5/6
Network Connection
RS232
HDMI
Optical Digital Audio
Stereo Audio
IR Cable

BLUSTREAM

Example Schematic
HEX100ARC-Kit-V2

TV WITHOUT ARC, AVR WITHOUT ARC	
HEX100ARC	POSITION SWITCHER MODE SELECTION
Transmitter	NON-ARC
Receiver	Optical

Cat 5/6
Network Connection
RS232
HDMI
Optical Digital Audio
Stereo Audio
IR Cable

1 SOURCE

LOCAL
DISPLAY
(HDMI)

DISPLAY
(HDBaseT)

HEX100ARC-TX-V2

L   R
Audio Out   Optical Out   HDMI In   HDMI Loop Out   Ethernet

Transmitter

IR Tx   IR Rx   RS232   ARC
NON-ARC   HDBT Out   DC 15V

HDMI
RS232
IR
POH

100m max

Control
Processor

HEX100ARC-RX-V2

Optical In   HDMI Out   Ethernet 1   Ethernet 2   Ethernet 3

Receiver

IR Tx   IR Rx   RS232   ARC
Optical   HDBT In   DC 15V
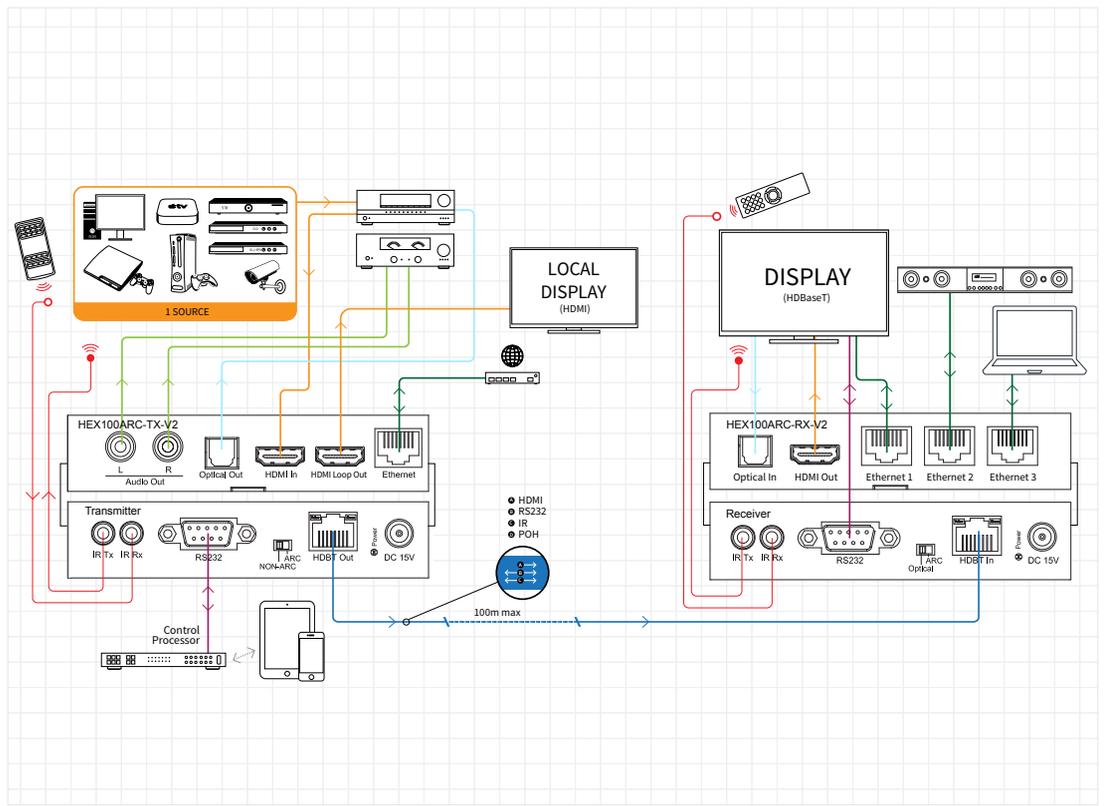
Specifications:

HEX100ARC-TX V2

Video Input Connectors: 1x HDMI Type A, 19-pin, female, locking

Video Output Connectors: 1x HDMI Type A, 1x HDBaseT™ RJ45 connector

Audio Output Connectors: 2x RCA (L/R) Analogue, 1x Optical (TOSLINK)

RS-232 serial port: 1x DB 9 connector

Ethernet port: 1x RJ45, female

IR Input ports: 1x 3.5mm stereo jack

IR Output ports: 1x 3.5mm mono jack

Dimensions (W x H x D): 143mm x 24mm x 134mm

Shipping Weight: 0.4Kg

Operating Temperature: 32°F to 104°F (0°C to 40°C)

Storage Temperature : -4°F to 140°F (-20°C to 60°C)

Power Supply: 1x 15V DC/2A

HEX100ARC-RX V2

Video Input Connectors: 1x HDBaseT™ RJ45 connector

Video Output Connectors: 1x HDMI Type A

Audio Input Connector: 1x Optical (TOSLINK)

RS-232 serial port: 1x DB 9 connector

Ethernet ports: 3x RJ45, female

IR Input ports: 1x 3.5mm stereo jack

IR Output ports: 1x 3.5mm mono jack

Dimensions (W x H x D): 114mm x 24mm x 134mm

Shipping Weight: 0.4Kg

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.*

Package Contents:

- 1 x HEX100ARC-TX V2
- 1x HEX100ARC-RX V2
- 1 x Mounting kit
- 1 x 15V/2A power supply
- 1 x IRR Blustream 5V IR receiver
- 1 x IR1 Blustream 5V IR emitter
- 1 x User manual

Maintenance

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

BLUSTREAM