

▶ HEX100ARC-KIT V2

User Manual

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

Introduction _____03

Features _____03

Panel Descriptions _____04

Terminating HDBaseT™ CAT Cable_____05

Understanding HDBaseT™ Status Lights_____05

Infrared Distribution_____06

Schematics_____07-08

Specifications_____09

Package Contents_____09

Maintenance_____09

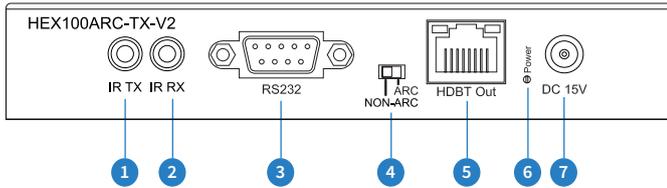
Introduction

Our Platinum Range of HDBaseT™ products offer the very best in performance and flexibility. The HEX100ARC-KIT-V2 extender set is an industry leading 4K HDBaseT™ solution delivering HDMI with HDCP 2.2 support, Bi-directional IR, RS-232 and PoC (Power over Cable) up to lengths of 100m over a single CAT cable. The HEX100ARC-KIT-V2 also provides enhanced features including HDMI loop-out on the Transmitter, ARC via HDMI, Analogue or Optical (S/PDIF), and an integrated 100BaseT 3-port Ethernet switch.

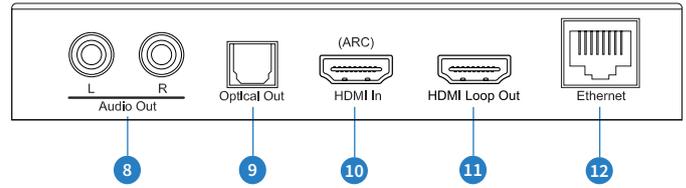
FEATURES:

- Advanced HDBaseT™ technology offering uncompressed video and audio with zero latency
- Extends HDMI (1080p) 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 1 x 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 maximum)
- Supports audio return to HDMI, Optical digital, and analogue L/R audio outputs (DAC PCM only)
- Supports bitstream passthrough of multichannel surround sound including object-based audio formats in line with HDMI specifications
- Integrated 3-port Ethernet switch (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 PoC (Power over Cable) to power extenders from either transmitter or receiver end
- HDCP 2.2 support

HEX100ARC-TX-V2

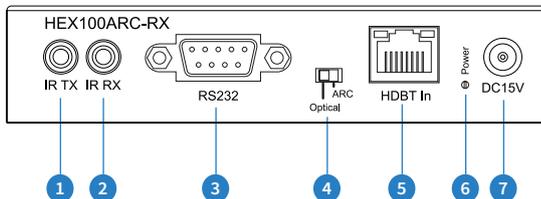


- 1 IR TX port - connect to Blustream 5V Emitter. Connection is used to control the local source device from Blustream IR receiver connected at the HEX100ARC-RX
- 2 IR RX port - connect to Blustream 5V IR receiver or IRCAB cable (when used with third party control processor). Connection is used extend IR over the HDBaseT™ signal to control devices located at the HEX100ARC-RX end
- 3 RS-232 port - bi-directional RS-232 with HEX100ARC-RX RS-232 port
- 4 Audio output selection switch - select between HDMI ARC and Optical audio breakout
- 5 HDBaseT™ output - RJ45 connector. Connect to HDBaseT™ input on HEX100ARC-RX
- 6 Power LED indicator
- 7 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 (PoC) feature

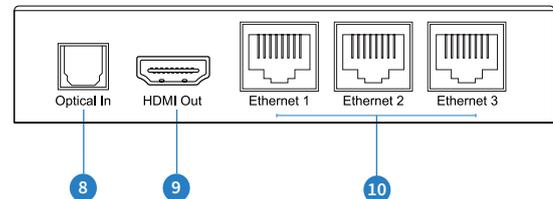


- 8 Analogue audio 2ch L/R output - connects to third party audio amplifier for audio breakout of Audio Return Channel from HEX100ARC-RX. **Note:** display audio format must be 2ch PCM
- 9 Optical audio output - TOSLINK audio output. Connects to local AV amplifier when using Audio Return Channel (ARC) feature
- 10 HDMI input - connect to the HDMI output of the local source device or Matrix output to be extended to the HEX100ARC-RX
- 11 HDMI output - loop-through of HDMI input signal. Used for connection to local display or to daisy-chain HDMI devices
- 12 Ethernet ports - RJ45 connector. Connect to local network switch to extend 10/100 network to HDBaseT™ Receiver Ethernet ports

HEX100ARC-RX



- 1 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
- 2 IR RX port - connect to Blustream 5V IR receiver. Connection is used to control sources devices located at the HEX100ARC-TX-V2 end
- 3 RS-232 port - bi-directional RS-232 with HEX100ARC-TX-V2 RS-232 port
- 4 Audio return selection switch - switch between ARC and TOSLINK (Optical) when using Audio Return feature
- 5 HDBaseT™ input - RJ45 connector. Connect to HDBaseT™ output on HEX100ARC-TX-V2
- 6 Power LED indicator
- 7 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 (PoC) feature

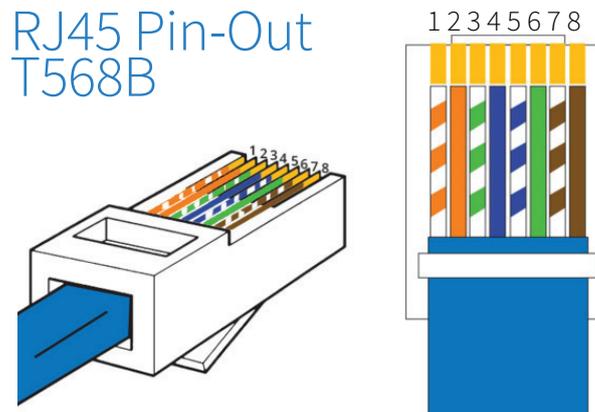


- 8 Optical audio input - TOSLINK audio input. Connects to the Optical output of the local display device for Audio Return feature
- 9 HDMI Output - connect to the HDMI input on local display device
- 10 Ethernet ports x 3 - RJ45 connectors. Connect to local network products to extend 10/100 network 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.



Understanding the HEX100ARC-KIT-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.

Blustream HEX100ARC-TX-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 a HDBaseT™ Receiver
- The HDMI link light will be off when there is no connection with a source device
- The HDMI link light will be on when there is an active connection with asource device

Blustream HEX100ARC-RX:

- The HDMI link light will be off when there is no connection with a display
- 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 Blustream Transmitter and HDBaseT™ 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 Blustream HDBaseT™ Receiver

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

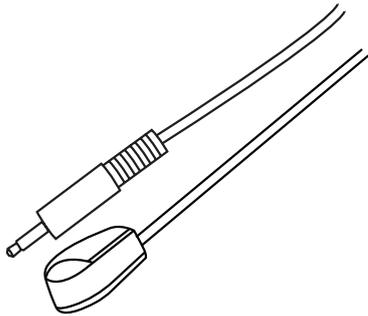
The Blustream range of HDBaseT™ products include multiple options for control and routing of IR.

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 supplied Blustream IRCAB cable for IR conversion.

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

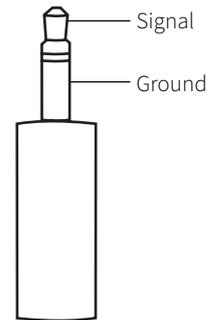
IR Emitter - IR1 & IR2 (IR2 sold separately)

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



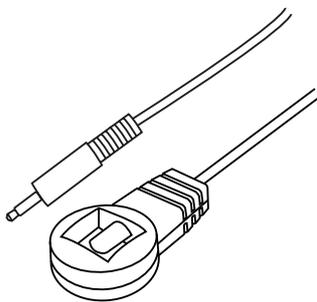
Infrared 3.5mm Pin-Out

IR Emitter - Mono 3.5mm.

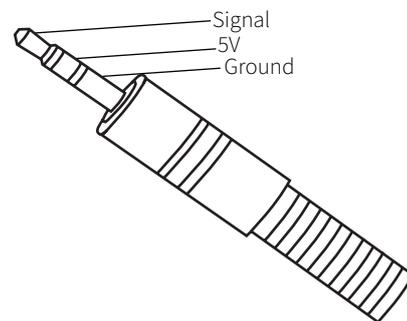


IR Receiver - IRR

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



IR Receiver - Stereo 3.5mm

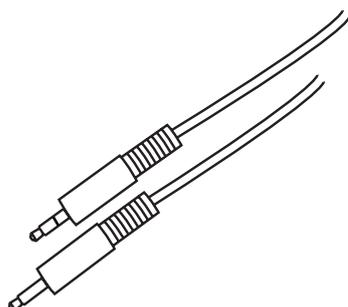


IR Control Cable - IRCAB (sold separately)

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.

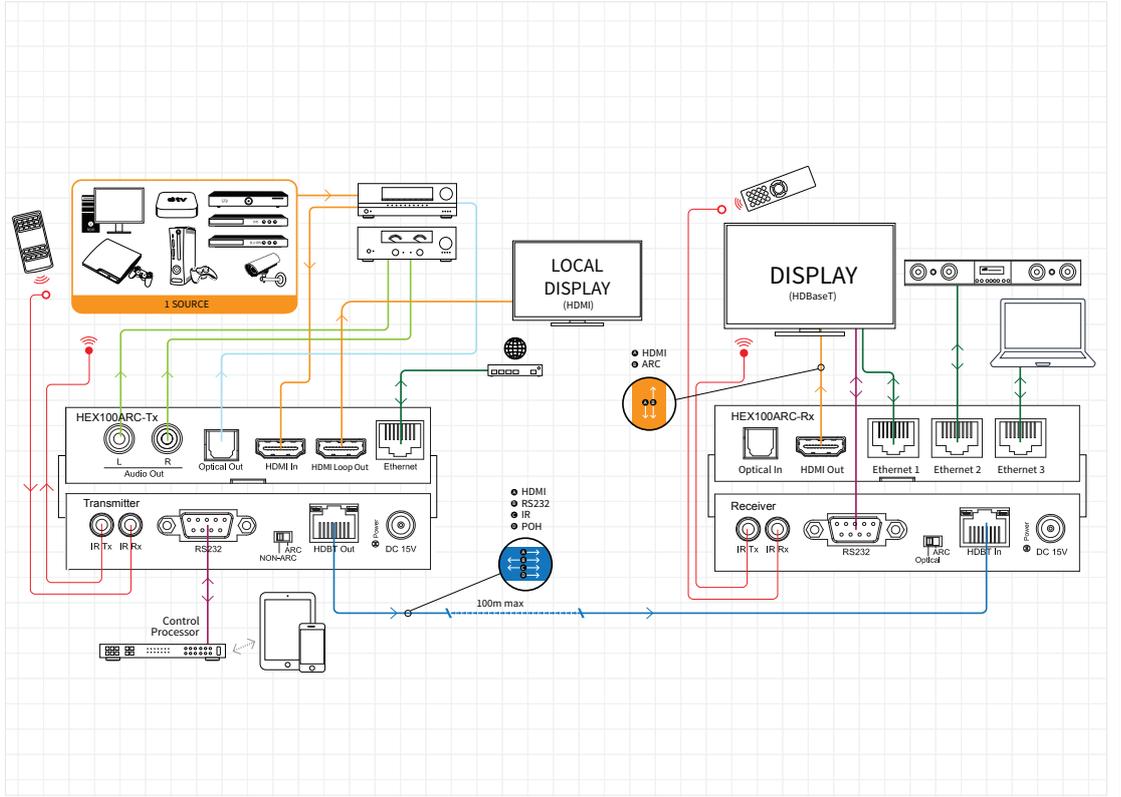


BLUSTREAM
Example Schematic
HEX100ARC-Kit-V2

TV AND AVR SUPPORT ARC

Position Switcher Mode Selection
 Transmitter: ARC
 Receiver: ARC

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

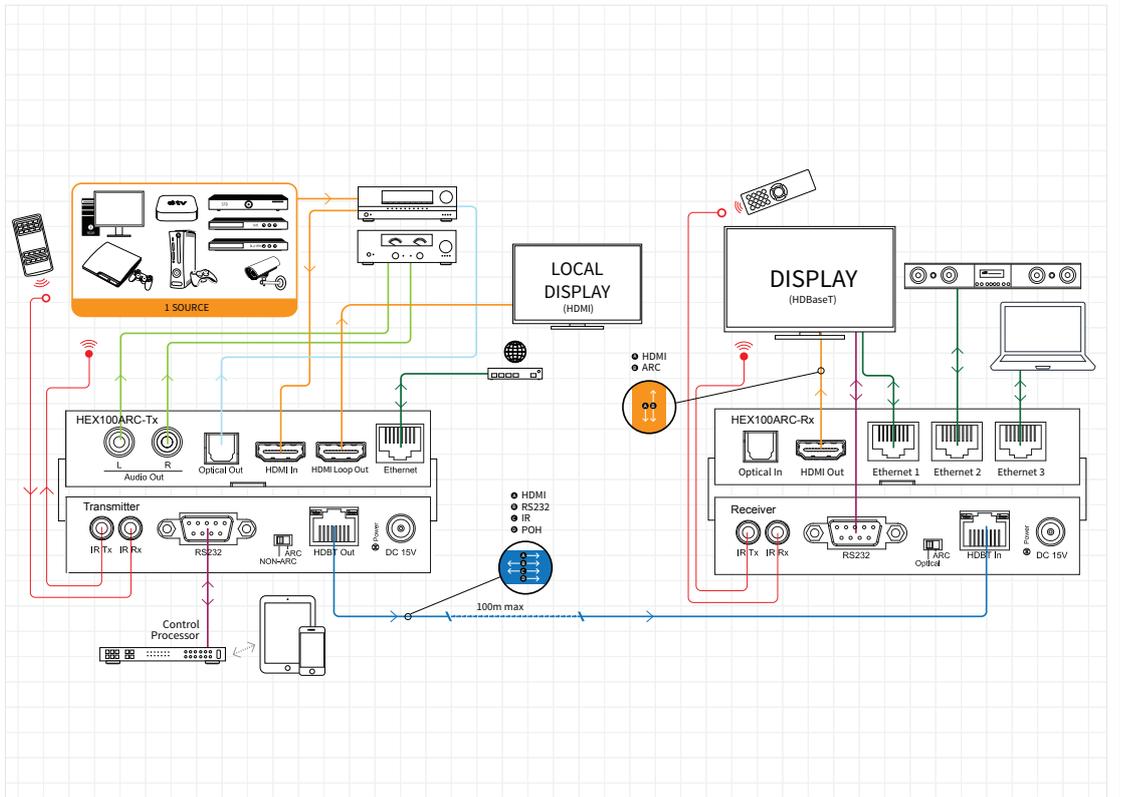


BLUSTREAM
Example Schematic
HEX100ARC-Kit-V2

TV WITH ARC, AVR WITHOUT ARC

Position Switcher Mode Selection
 Transmitter: NON-ARC
 Receiver: ARC

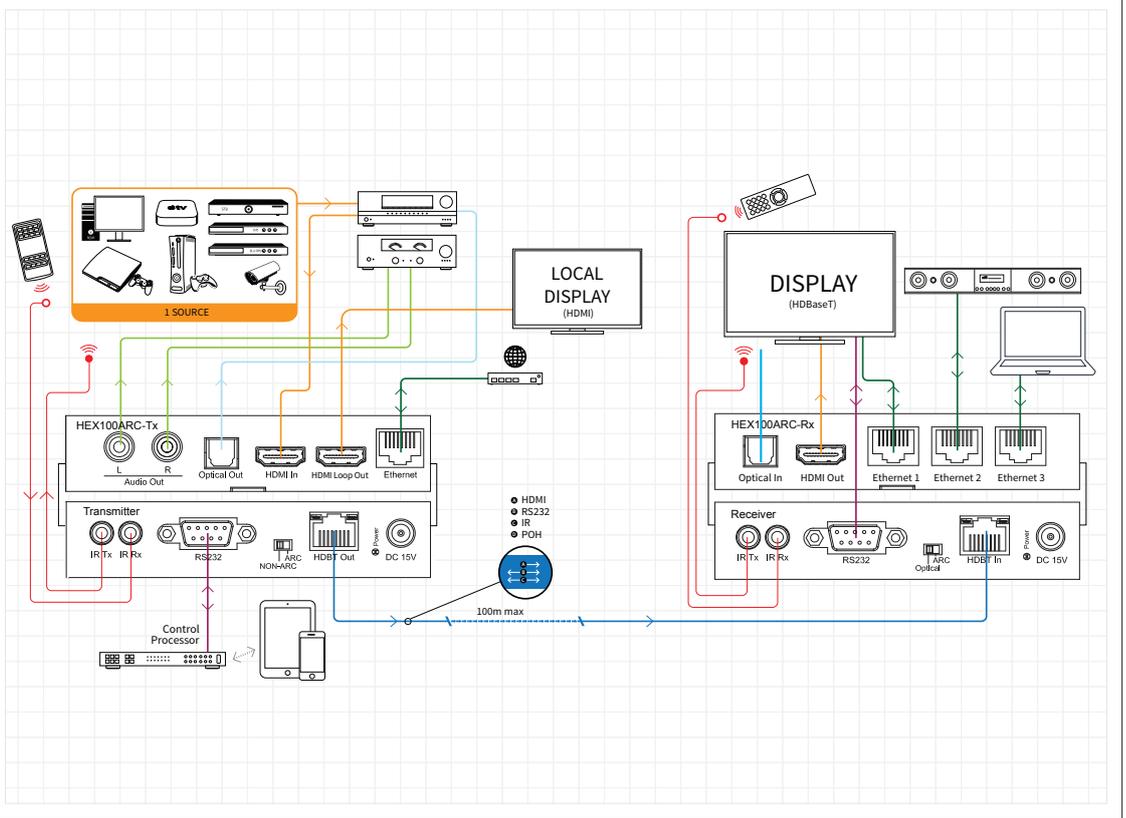
Legend:
 Cat 5/6
 Network Connection
 RS232
 HDMI
 Optical Digital Audio
 Stereo Audio
 IR Cable



BLUSTREAM
Example Schematic
HEX100ARC-Kit-V2

TV WITHOUT ARC, AVR WITHOUT ARC
RECOMMENDED CONNECTION SWITCHER MODE SELECTION
 Transmitter: HDMI-ARC
 Receiver: Optical

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



Specifications

HEX100ARC-TX V2

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

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

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

RS-232 Serial Port: 1 x DB 9 connector

Ethernet Port: 1 x RJ45, female

IR Input Ports: 1 x 3.5mm stereo jack

IR Output Ports: 1 x 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: 1 x 15V DC/2A

HEX100ARC-RX

Video Input Connectors: 1 x HDBaseT™ RJ45 connector

Video Output Connectors: 1 x HDMI Type A

Audio Input Connector: 1 x Optical (TOSLINK)

RS-232 Serial Port: 1 x DB 9 connector

Ethernet Ports: 3 x RJ45, female

IR Input Ports: 1 x 3.5mm stereo jack

IR Output Ports: 1 x 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
- 1 x HEX100ARC-RX
- 2 x Mounting Kits
- 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.



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