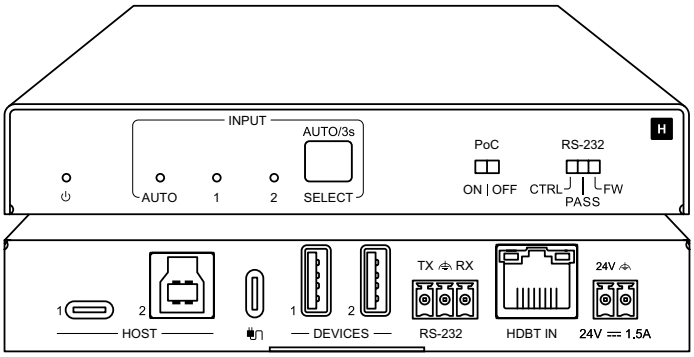
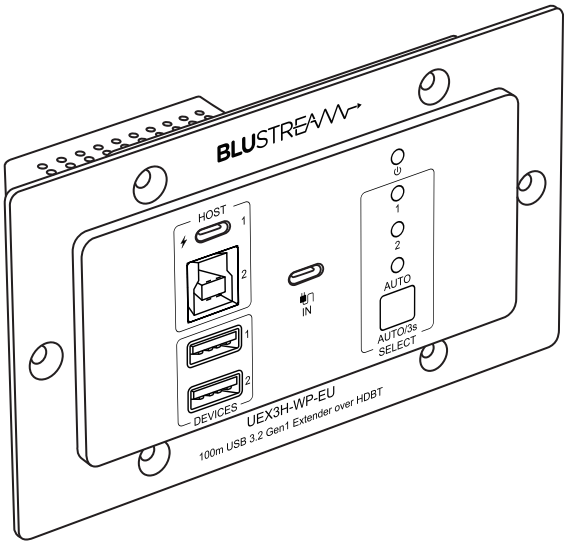
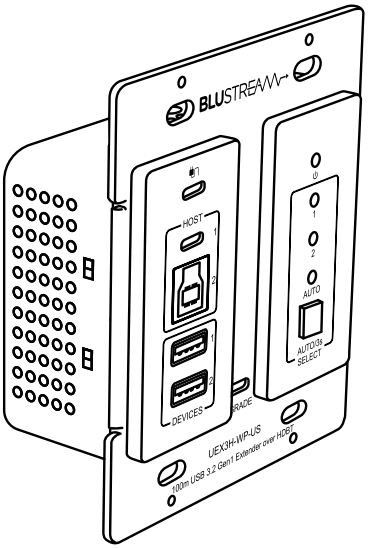






UEX3H / UEX3H-WP

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.

Contents

Introduction

The UEX3H family is a USB Host solution that utilises HDBaseT™ technology to allow for remote connectivity of USB 3.2 Gen1 Devices at distances of up to 100m / 328ft over a single CAT6A cable. This manual covers the UEX3H, UEX3H-WP-EU and UEX3H-WP-US versions.

The UEX3H products allow for 2 x USB Hosts to be switched between the 2 x local USB Devices as well as the Devices connected to a remote compatible Blustream USB HDBaseT Transmitter (Device) extender with support for a combined transmission data bandwidth of up to 5Gbps.

The UEX3H is backwards compatible with USB 2.0 and 1.1 devices, and utilises bi-directional Power over Cable (PoC) to power from either end of the HDBaseT link. The UEX3H supports both auto or manual Host selection, which can be controlled via front panel button, or RS-232 from 3rd party control solutions.

The UEX3H is ideal for applications requiring extension of USB 3.2 Gen1 conferencing cameras, video capture devices, flash/hard drives, KVM devices, audio devices, and other USB 3.2 Gen1 devices.

FEATURES:

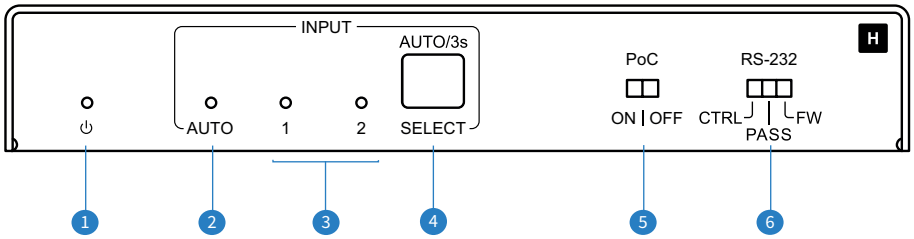
- USB 3.2 Gen1 HDBaseT™ Extender supporting 2 x USB Host devices and 2 x local USB Devices
- Supports USB 3.2 signal extension up to 100m / 328ft over HDBaseT™ *
- Backwards compatible with USB 2.0 & 1.1 devices
- Combined USB3.2 Gen1 data transfer rate up to 5Gbps *
- 1 x USB-A & 1 x USB-C port for connection to host devices with manual or auto switching
- 2 x USB-A ports for connection to local devices
- 1 x USB-C host charging port for connection of external power supply to power host device
- Provides up to 500mA combined power to USB devices (up to 500mA per single USB port)
- Configurable USB device power management via API commands
- Bi-directional PoC (Power over Cable) to power extenders from either the host or device unit (supports 12-48V PoC)
- Supports bi-directional RS-232 when used with compatible HDBaseT™ products
- PoC function can be enabled/disabled via dipswitch
- Simple plug and play, no driver installation or setup required

Compatible with Blustream UEX3D and UEX3D-WP

* Signal distribution bandwidth and distance are subject to length of device and host USB cables, and CAT cable type. It is recommended to use a minimum of CAT6A cabling.

Please note: this product is for USB 3.2 data transfer only, and does not support DP Alt Mode video pass-through

Front Panel Description - UEX3H



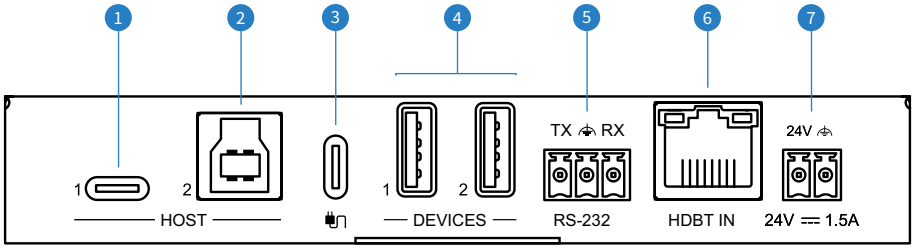
1. Power LED status - illuminates blue when the unit is powered
2. Auto Input Switching LED status - illuminates blue when the unit is in auto switching mode
3. Input LED - indicates which Host port is currently selected
4. Select button - switches between Host 1 and Host 2, press and hold for 3 seconds to toggle between Auto or Manual switching
5. PoC (Power over Cable) Switch (ON/OFF) - switch on when PoC is being used to or from the Device unit connected over the HDBaseT link, switch off when both HDBaseT units are being powered locally
6. RS-232 Switch:

   CTRL - use if sending RS-232 commands to control the switching of the Host inputs

   PASS - use when sending an RS-232 command to the RS-232 port on the Device side of the HDBaseT link

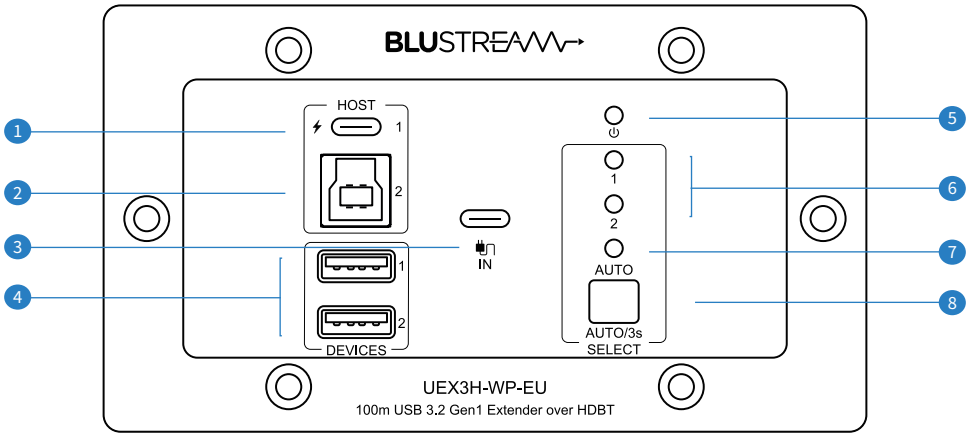
   FW - for firmware update

Rear Panel Description - UEX3H



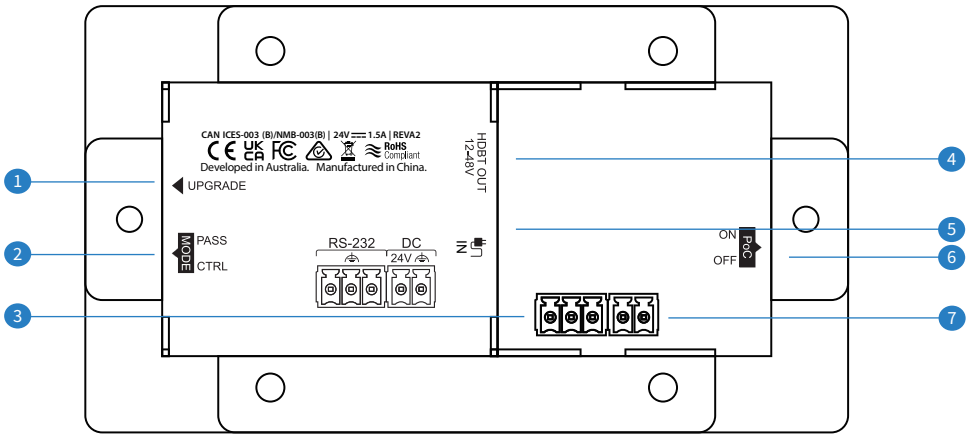
1. USB-C Host port - connect to Host device (i.e. laptop / PC)
2. USB-B Host port - connect to Host device (i.e. laptop / PC)
3. USB-C Power Insert port - connect to power supply for the Host connected to the USB-C Host port to pass-through charging power
4. Local USB-A Device ports - connect to local USB peripheral devices (USB3.2 Gen 1 - 5Gbps) - both ports can deliver 5V 0.5A power to local devices
5. RS-232 port - 3-pin Phoenix connection for RS-232 communication to unit for switching (when switch on front panel is set to CTRL), for RS-232 communication pass-through to unit on the end of the HDBaseT link (when switch on front panel is set to PASS), or to firmware udpate the unit (when switch on front panel is set to FW)
6. HDBaseT RJ45 - connect to UEX3D unit
7. Power connection - use 24V 1.5A power supply (supplied with UEX3D solutions) to power unit and remote HDBaseT unit when PoC switch is set to ON

Front Panel Description - UEX3H-WP-EU



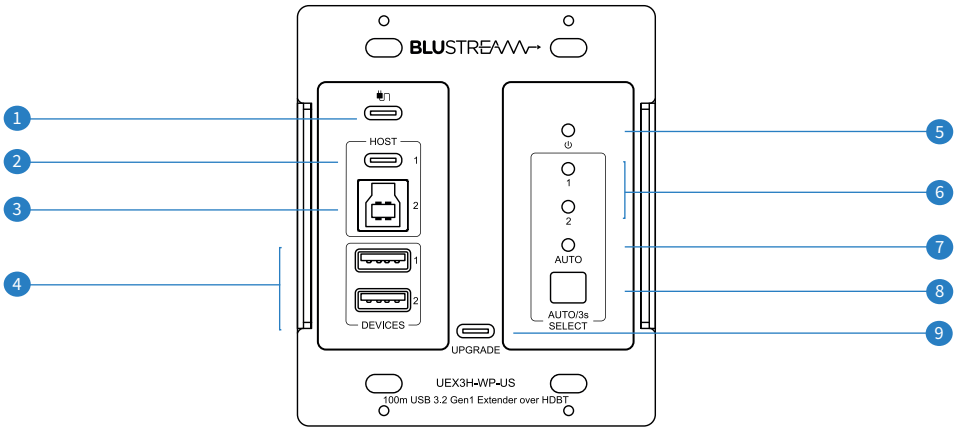
1. USB-C Host port - connect to Host device (i.e. laptop / PC)
2. USB-B Host port - connect to Host device (i.e. laptop / PC)
3. USB-C Power Insert port - connect to power supply for the Host connected to the USB-C Host port to pass-through charging power
4. Local USB-A Device ports - connect to local USB peripheral devices (USB3.2 Gen 1 - 5Gbps) - both ports can deliver 5V 0.5A power to local devices
5. Power LED status - illuminates blue when the unit is powered
6. Input LED - indicates which Host port is currently selected
7. Auto Input Switching LED status - illuminates blue when the unit is in auto switching mode
8. Select button - switches between Host 1 and Host 2, press and hold for 3 seconds to toggle between Auto or Manual switching

Rear Panel Description - UEX3H-WP-EU



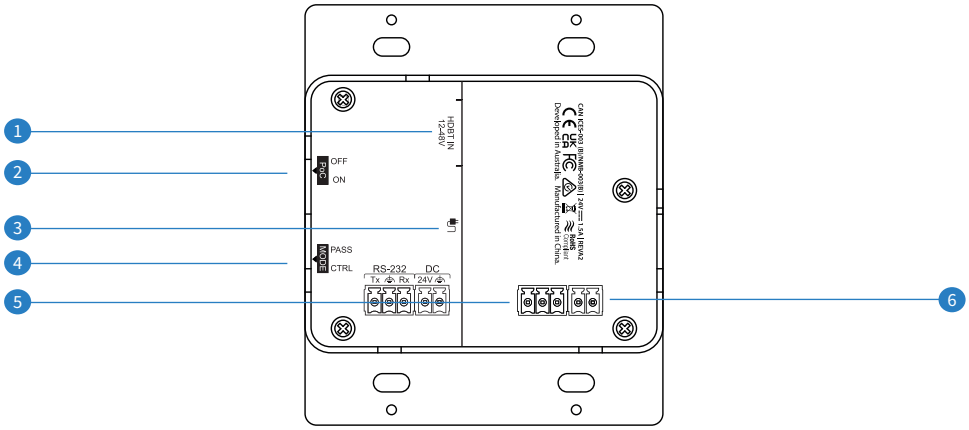
1. USB Upgrade - for firmware update of the unit
2. RS-232 Mode Switch
   PASS - use when sending an RS-232 command to the RS-232 port on the Device side of the HDBaseT link
   CTRL - use if sending RS-232 commands to control the switching of the Host inputs
3. RS-232 port - 3-pin Phoenix connection for RS-232 communication to unit for switching (when switch is set to CTRL), for RS-232 communication pass-through to unit on the end of the HDBaseT link (when switch is set to PASS)
4. HDBaseT RJ45 - connect to UEX3D unit
5. USB-C Power Insert port - connect to power supply for the Host connected to the USB-C Host port to pass-through charging power
6. PoC (Power over Cable) Switch (ON/OFF) - switch on when PoC is being used to or from the Device unit connected over the HDBaseT link, switch off when both HDBaseT units are being powered locally
7. Power connection - use 24V 1.5A power supply (supplied with UEX3D solutions) to power unit and remote HDBaseT unit when PoC switch is set to ON

Front Panel Description - UEX3H-WP-US



1. USB-C Power Insert port - connect to power supply for the Host connected to the USB-C Host port to pass-through charging power USB-C Host port - connect to Host device (i.e. laptop / PC)
2. USB-C Host port - connect to Host device (i.e. laptop / PC)
3. USB-B Host port - connect to Host device (i.e. laptop / PC)
4. Local USB-A Device ports - connect to local USB peripheral devices (USB3.2 Gen 1 - 5Gbps) - both ports can deliver 5V 0.5A power to local devices
5. Power LED status - illuminates blue when the unit is powered
6. Input LED - indicates which Host port is currently selected
7. Auto Input Switching LED status - illuminates blue when the unit is in auto switching mode
8. Select button - switches between Host 1 and Host 2, press and hold for 3 seconds to toggle between Auto or Manual switching
9. USB Upgrade - for firmware update of unit

Rear Panel Description - UEX3H-WP-US



1. HDBaseT RJ45 - connect to UEX3D unit
2. PoC (Power over Cable) Switch (ON/OFF) - switch on when PoC is being used to or from the Device unit connected over the HDBaseT link, switch off when both HDBaseT units are being powered locally
3. USB-C Power Insert port - connect to power supply for the Host connected to the USB-C Host port to pass-through charging power
4. RS-232 Mode Switch

   PASS - use when sending an RS-232 command to the RS-232 port on the Device side of the HDBaseT link

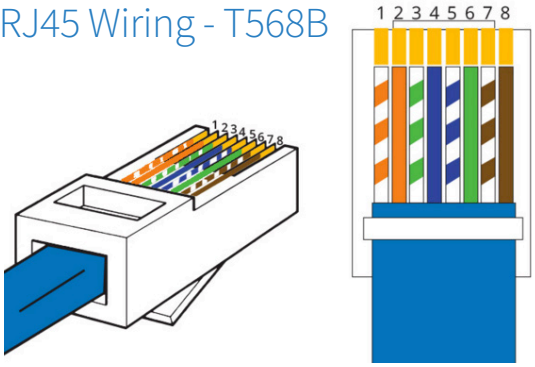
   CTRL - use if sending RS-232 commands to control the switching of the Host inputs
5. RS-232 port - 3-pin Phoenix connection for RS-232 communication to unit for switching (when switch is set to CTRL), for RS-232 communication pass-through to unit on the end of the HDBaseT link (when switch is set to PASS)
6. Power connection - use 24V 1.5A power supply (supplied with UEX3D solutions) to power unit and remote HDBaseT unit when PoC switch is set to ON

Terminating the Interconnecting HDBaseT CAT6A Cable

It is important that the interconnecting CAT cable between the Blustream USB 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. The technology in these products requires a minimum CAT6A cable for your installations, especially when running over longer distances, in areas of high EMI, or for full USB3.x data distribution.

RJ45 Wiring - T568B



Understanding the HDBaseT Signal Status Lights

The Blustream HDBaseT extender solutions include status LED indicators on the RJ45 HDBaseT connection to show if the connection is active and to help diagnose possible problems.

Understanding the Status Lights:

- The orange HDBaseT link light will be off when there is no CAT6A cable / active HDBaseT connection, or power to the unit
- The orange HDBaseT link light will blink if there is an unstable connection between the units either side of the link
- The orange HDBaseT link light will be lit when there is an active HDBaseT connection
- The green HDBaseT data light will be off when no data signal is present
- The green HDBaseT data light will be on when there is data signal being transmitted

USB Data Pass-through Capabilities

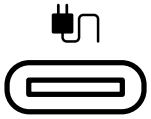
This USB extender over HDBaseT has been designed for the long range distribution of USB 3.2 Gen 1 data signals at up to 5Gbps to a remote location when using a compatible Blustream UEX 'Device' unit. These products are not capable of transmitting and receiving USB-C Video using DP Alt Mode from equipment such as laptops or tablets where the USB-C port is designed for video output.

Video that is passed over a USB connection from a VC device is an example of how USB data containing a video feed can be used with this product.

Please select a suitable USB cable that is capable of carrying the USB3.2 Gen 1 data speeds this product is able to distribute.

USB-C Power Pass-through Capabilities

These units feature a USB-C power pass-through connection, labelled as per the image adjacent. This port allows for the manufacturers power supply from the Host device to deliver the correct power requirements directly to the Host device whilst using the same port to transmit USB data.



We would only recommend connecting the original power supply for the delivery of power to the Host device connected into the USB-C Host connection to avoid damage to the UEX3H device, or the Host connected to the unit.

The wall plate versions of this product (UEX3H-WP-EU and UEX3H-WP-US) feature a USB-C power pass-through connection on both the front and back of the wall plate, which can be used as required for the installation.

Only one of these ports can be used at any time - please do not connect power to both ports simultaneously to avoid damage being caused to the unit, or the connected Host device on the USB-C connection.

Please note: power is not delivered to the USB-B connection from this pass-through port and is only for the USB-C Host device.

Specifications

- **HDBaseT Connector:** 1 x RJ45, female
- **USB Host Ports:** 1 x USB Type C female, 1 x USB Type B, female
- **USB Device Ports:** 2 x USB Type A, female
- **USB-C Charging Port:** 1/2 x USB Type C female (provides charging for USB-C Host)
- **Local power input:** 1 x 2-Pin Phoenix connector
- **Firmware Upgrade:** 1 x Micro-USB (wall plate versions only)
- **RS-232:** 1 x 3-Pin Phoenix connector
- **Power Supply:** 1 x 24V/1.5A DC (not supplied - supplied with the UEX3D device paired with these products)
- **Operating Temperature:** 32°F to 104°F (-5°C to +55°C)
- **Storage Temperature:** -4°F to 140°F (-25°C to +70°C)

UEX3H

Casing Dimensions (W x H x D):

265mm x 30mm x 152mm

(without connections)

265mm x 30mm x 157mm

(with connections)

UEX3H-WP-EU

Casing Dimensions (W x H x D):

136mm x 76mm x 46mm (without faceplate)

Faceplate Dimensions (W x H x D):

146mm x 86mm x 6mm

Mounting hole spacing:

UK 121mm CTC, EU 60mm CTC

Backbox Mounting Depth:

40mm (min), 47mm (recommended)

UK or EU double gang

UEX3H-WP-US

Casing Dimensions (W x H x D):

265mm x 30mm x 152mm (without faceplate)

Faceplate Dimensions (W x H x D):

146mm x 86mm x 6mm

Mounting hole spacing:

UK 121mm CTC, EU 60mm CTC

Backbox Mounting Depth:

40mm (min), 47mm (recommended)

UK or EU double gang

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

Package Contents

- 1 x UEX3H / UEX3H-WP-EU / UEX3H-WP-US
- 1 x RS-232 Control Cable (3-pin Phoenix to DB9)
- 1 x Magnetic faceplate (wall plate versions only)
- 1 x Quick reference card

Please note: the PSU for this unit is supplied within the compatible Blustream UEX3D product

Maintenance

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

RS-232 Host Switching Commands

The UEX3H products can be controlled via serial for Host switching.

The default RS-232 communication settings are:

Baud rate: 57600
Data bit: 8
Stop bit: 1
Parity bit: none

COMMAND	ACTION
? / HELP	Print help information
STATUS	Print system status and port status
KEY ON/OFF	Set System Key Control On Or Off
RESET	Reset System To Default Setting (Type 'Yes' To Confirm, Or Send Other Command To Discard)
RS232BAUD x	Set RS232 Baud Rate To x x = 1 - 2400, 2 - 4800, 3 - 9600, 4 - 19200, 5 - 38400, 6 - 57600 (Default), 7 - 115200
AUTO-SWITCHING ON/OFF	Set Auto-Switching Mode On/Off
HOST x FRALL	Set Device Connect From Host x x = 1 - Host1, 2 - Host 2
USBDPFH	Set USB Device Power Follow Host
RESET	Set USB Device Power Follow Host
USBDPON	Set USB Device Power Always On
USBDPOFF	Set USB Device Power Always Off

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.

CANADA, AVIS D'INDUSTRY CANADA (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003.

Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

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.

www.blustream.com.au
www.blustream-us.com
www.blustream.co.uk