TX150CS
Quick Reference Guide

Introduction

Our Platinum Range of HDBaseT™ products offer the very best in performance and flexibility. The TX150CS is an industry leading HDMI 2.0 4K 60Hz 4:4:4 HDCP 2.2 HDBaseT™ transmitter utilising CSC technology. The TX150CS supports HDMI, Bi-directional IR and PoC up to lengths of 150m over a single CAT cable.

The TX150CS also provides enhanced features including ARC via HDMI or optical (S/PDIF), RS-232 pass through and 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
- Supports 4K 60Hz 4:4:4 UHD video up to 100m
- Extends HDMI 1080p video up to 150m (HDBaseT™ long-reach mode)
- Supports all industry standard video resolutions including VGA-WUXGA and 480i-4K
- HDMI re-clocking to help solve HDMI HDCP, compatibility and handshaking issues
- Supports ARC (Audio Return Channel) from connected display via HDMI or optical (S/PDIF) digital inputs (when used with compatible Blustream RX150CS Receiver or PLA88CS Platinum matrix)
- Supports bitstream passthrough of multichannel surround sound including object-based audio formats in line with HDMI specifications
- Bi-directional 100Mbps Ethernet pass through when used with Blustream RX150CS Receiver or PLA88CS Platinum matrix solution
- Bi-directional RS-232 pass through
- Bi-directional IR from all input and output locations
- Supports bi-directional PoC (Power over Cable) to power extender from either Matrix, transmitter or receiver end
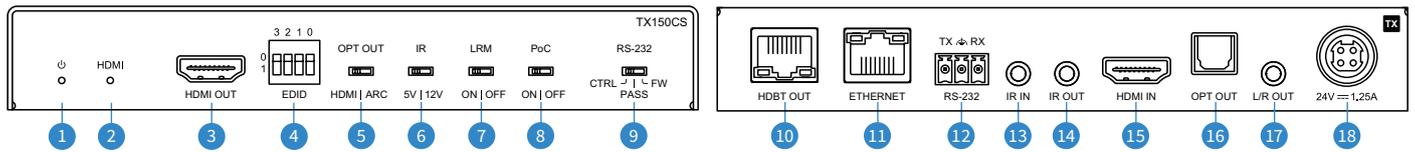- HDCP 2.2 support

TX150CS Panel Descriptions

❶ Power Status Indicator

❷ HDMI Output Status Indicator

❸ HDMI Output - Connect to local HDMI display

❹ EDID DIP switch (UP=0, DOWN=1)

❺ Opt Out Switch - Alters the optical output source:
HDMI - Takes optical source from HDMI input
ARC - Takes optical source from Audio Return Channel of connected RX150CS

❻ 5V / 12V IR Voltage Switch - select between 5V or 12V IR output voltage

❼ LRM Switch - HDBaseT™ Long Reach Mode On / Off.
Note: LRM should be enabled on Receiver to function

❽ Power over Cable (PoC) Switch (ON / OFF) - to enable / disable PoC being sent from the transmitter

❾ RS-232 Port Mode Switch - Select between firmware update mode or normal control passthrough mode

❿ HDBaseT™ Output - Connect to Matrix via CAT cable

⓫ Ethernet Connection - Connect to network / device for Ethernet LAN pass-through to / from Transmitter

⓬ RS-232 Port - 3-Pin Phoenix connector to pass bi-directional IR to / from the receiver

⓭ IR Input - Connect to Blustream 5V 3.5mm IR receiver

⓮ IR Output - Connect to Blustream 5V 3.5mm IR emitter

⓯ HDMI Input - Connect to HDMI source device

⓰ Optical (S/PDIF) Output - Connect to local audio amplification or distribution device

⓱ L/R Audio Output - Audio breakout of ARC audio signal from the Receiver (2ch PCM only)

⓲ 24V/1.25A DC Power Input 4-Pin DIN connector (sold separatley)

Advanced Functions

The TX150CS has been designed to partner with the RX150CS Receiver or the PLA88CS Platinum HDBaseT™ Matrix products and will transmit audio and video to these devices, as well as bi-directional IR and RS-232 control. Advanced functions such as ARC, CSC, Ethernet passthrough and Long Reach mode will only function with a compatible Matrix or Receiver product. The below chart outlines the Matrix products that support these advanced functions:

MATRIX / RECEIVER	CSC	ARC	ETHERNET	LONG REACH MODE
PLA88CS	Yes	No	Yes	Yes
RX150CS	Yes	Yes	Yes	Yes

ARC and Optical Audio Return

The TX150CS supports Audio Return from the Display back to the TX150CS when used with RX150CS. By definition, ARC (Audio Return Channel) and Optical Audio Return, will support up to a maximum of 5.1ch HD audio pass-through. For ARC via HDMI, CEC needs to be enabled on both the display and the AVR for the required communication to instigate the ARC channel to be opened. The TX150CS is transparent to this communication when in passthrough mode.

The TX150CS will also allow for Optical Audio Return to be sent across the HDBaseT™ link. Please ensure the correct settings on both the Transmitter and Receiver are selected for the required audio transmission method. For the TX150CS, this must be carried out via the RS-232 API command "OUT 00 ARC aa" where aa=01 is ARC from Optical, aa=02 is ARC from HDMI, and aa=03 is ARC passthrough (default) on the connected RX150CS. Please refer to the HELP command for further information on this API function.

The TX150CS also features an anlogue 2ch L/R audio breakout to output ARC audio from the display device connected at the Receiver.

Power Over Cable

The TX150CS supports 24V PoC (Power over Cable). To reduce the risk of damaging incompatible HDBaseT™ products, please check the connected HDBaseT™ device supports 24V PoC before powering this device on. The Blustream TX150CS HDBaseT™ Transmitter is recommended for use with the Blustream PLA88CS Matrix as all features are supported. Please ensure that PoC is enabled/disabled on the connected Matrix via one of the following methods (please refer to the Matrix user guide for further instructions):

1   Using Matrix web browser interface
2   Using Matrix Front Panel Meny System
3   Using API commands via Telnet / RS-232

Please note: when using the TX150CS with RX150CS, the default PoC status of RX150CS is off. You must send the API command "POC ON/OFF" to the RS-232 port of the RX150CS or command "OUT 00 POC ON/OFF" to RS-232 port of TX150CS to turn on/off the PoC of RX150CS.

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 (or better) cable for your installations, especially when running over longer distances, in areas of high EMI, or for 4K signal distribution.
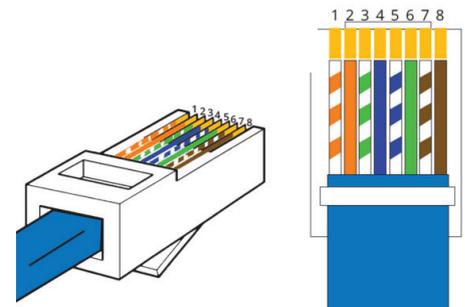
RJ45 Wiring - T568B

Understanding the HDBaseT™ Signal Status Lights

Blustream 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 with the HDBaseT™ link.

Understanding the Status Lights:

•   The HDMI status indicator light will be off when there is no connection with a source device
•   The HDMI status indicator light will be on when there is an active connection with a source device
•   The orange HDBaseT™ link light will be off when there is no CAT cable / active HDBaseT™ connection on the RJ45 HDBaseT™ output
•   The orange HDBaseT™ link light will blink if there is an unstable connection between the Transmitter and Receiver
•   The orange 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 Receiver
•   The green HDBaseT™ HDCP light will be off when no video signal is transmitted
•   The green HDBaseT™ HDCP light will flash when there is video signal without HDCP being transmitted
•   The green HDBaseT™ HDCP light will be on when there is video signal with HDCP being transmitted
•   The power link light will be off when no power is connected to the Transmitter, or to the connected Receiver unit
•   The power link light will be on when power is connected directly to the Transmitter or is being received from the Receiver unit

EDID DIP Switch Settings

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, ensuring the desired resolution of both video and audio are achieved. To configure the EDID for the HDMI input of the TX150CS, please use the settings below:

3	2	1	0	EDID Type
Combination of DIP positions				
0	0	0	0	1080p 60Hz 2.0ch
0	0	0	1	1080p 60Hz 5.1ch
0	0	1	0	1080p 60Hz 7.1ch
0	0	1	1	1080i 60Hz 2.0ch
0	1	0	0	1080i 60Hz 5.1ch
0	1	0	1	1080i 60Hz 7.1ch
0	1	1	0	4K 60Hz 4:2:0 2.0ch
0	1	1	1	4K 60Hz 4:2:0 5.1ch
1	0	0	0	4K 60Hz 4:2:0 7.1ch
1	0	0	1	4K 60Hz 4:4:4 2.0ch
1	0	1	0	4K 60Hz 4:4:4 5.1ch
1	0	1	1	4K 60Hz 4:4:4 7.1ch
1	1	0	0	DVI 1280x1024@60Hz
1	1	0	1	DVI 1920x1080@60Hz
1	1	1	0	DVI 1920x1200@60Hz
1	1	1	1	EDID Pass-through

```
    3 2 1 0
0 ┌─────────┐
1 │ ▯▯▯▯ │
  └─────────┘
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EDID
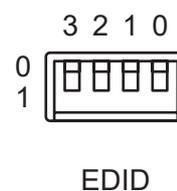
Specifications

TX150CS

- **Video Input Connectors:** 1 x HDMI Type A, female
- **Video Output Connectors:** 1 x HDBaseT™ RJ45,
    1 x HDMI Type A, female (loop)
- **Audio Output Connectors:** 1 x Optical Toslink (S/PDIF),
    1 x 3.5mm L/R analogue audio
- **RS-232 Port:** 1 x 3-pin Phoenix connector
- **Ethernet Port:** 1 x RJ45 connector
- **IR Input Port:** 1 x 3.5mm stereo jack
- **IR Output Port:** 1 x 3.5mm mono jack
- **Mounting Kit:** Included
- **Power Supply:** 24V/1.25A DC, 4-pin DIN connector (not included)
- **Casing Dimensions (W x D x H):** 164mm x 100mm x 25mm
- **Shipping Weight:** 0.6kg
- **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

TX150CS

- 1 x TX150CS Transmitter
- 1 x Mounting Bracket Set
- 1 x Quick Reference Guide

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.