



AV Connectivity, Distribution And Beyond...

**VIDEO WALLS VIDEO PROCESSORS
VIDEO MATRIX SWITCHES
EXTENDERS SPLITTERS WIRELESS
CABLES & ACCESSORIES**

HDBaseT HDMI CAT5/6/7 Extender with POE/LAN/RS-232/ Bi-directional IR



Model #: HBT-C6POE-SET

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Product Application & Market Sectors



Corporate



House Of Worship



Military



Residential



Education



Industrial



Medical



Aviation



TABLE OF CONTENTS

1.	GETTING STARTED	1
1.1	IMPORTANT SAFEGUARDS.....	1
1.2	SAFETY INSTRUCTIONS	1
1.3	REGULATORY NOTICES FEDERAL COMMUNICATIONS COMMISSION (FCC)	2
2.	INTRODUCTION	3
2.1	PACKAGE CONTENTS	4
2.2	BEFORE INSTALLATION.....	5
2.3	CABLE SPECIFICATIONS	5
3.	APPLICATION DIGRAM	6
4.	PANEL DESCRIPTION.....	7
4.1	INPUT PANEL (Transmitter, HBT-C6POE-S) Front.....	7
4.2	INPUT PANEL (Transmitter HBT-C6POE-S) Rear.....	7
4.3	INPUT PANEL (Receiver, HBT-C6POE-R) Front.....	8
4.4	INPUT PANEL (Receiver HBT-C6POE-R) Rear	8
5.	IR CABLE DEFINITION.....	9
6.	INSTALLATION (HBT-C6POE-SET).....	10
7.	GENERAL TROUBLESHOOTING.....	12
8.	SPECIFICATIONS	13



SECTION I: GETTING STARTED

I.1 IMPORTANT SAFEGUARDS

Please read all of these instructions carefully before you use the device. Save this manual for future reference.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
 - Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
 - Repair or attempted repair by anyone not authorized by us.
 - Any damage of the product due to shipment.
 - Removal or installation of the product.
 - Causes external to the product, such as electric power fluctuation or failure.
 - Use of supplies or parts not meeting our specifications.
 - Normal wear and tear.
 - Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

I.2 SAFETY INSTRUCTIONS

The HBT-C6POE-SET HDBaseT HDMI CAT5/6/7 Extender set has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the HBT-C6POE-SET should be used with care. Read the following safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.




- ⚠ Do not dismantle the housing or modify the module.
- ⚠ Dismantling the housing or modifying the module may result in electrical shock or burn.
- ⚠ Refer all servicing to qualified service personnel.
- ⚠ Do not attempt to service this product yourself as opening or removing housing may expose you to dangerous voltage or other hazards
- ⚠ Keep the module away from liquids.
- ⚠ Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- ⚠ Have the module checked by a qualified service engineer before using it again.
- ⚠ Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.



1.3 REGULATORY NOTICES FEDERAL COMMUNICATIONS COMMISSION (FCC)

This equipment has been tested and found to comply with Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Any changes or modifications made to this equipment may void the user's authority to operate this equipment.

Warning symbols	Description
	<p>ONLY USE THE PROVIDED POWER CABLE OR POWER ADAPTER SUPPLIED. DO NOT TAMPER WITH THE ELECTRICAL PARTS. THIS MAY RESULT IN ELECTRICAL SHOCK OR BURN.</p>
	<p>DO NOT TAMPER WITH THE UNIT. DOING SO WILL VOID THE WARRANTY AND CONTINUED USE OF THE PRODUCT.</p>
	<p>THE VIDEO BOARDS ARE VERY SENSITIVE TO STATIC. PLEASE ENSURE IF RACK MOUNTED OR INSTALLED ON A SURFACE, IT SHOULD BE IN A GROUNDED ENVIROMENT.</p>

	<p>⚠ WARNING</p> <p>Read & understand user guide before using this device.</p> <p>Failure to follow the proper installation instructions could result in damage to the product and preventing expected results.</p>
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2. INTRODUCTION

The Avenview HBT-C6POE-SET HDBaseT Extender set CAT5/6/7 with POE, Bi-Directional IR, RS232 and Ethernet has been designed to extend High Definition video and multi-channel digital audio formats to any HD Monitor.

Video Signals: 4K2K@30 (Ultra HD), 3D, 8/10/12 Deep Color, and Full HD 1080p@60 Hz/36-bit color depth.

Audio signals: Lossless Multi-channel audio formats (DTS-HD Master Audio, Dolby TrueHD).

Data Signals: Bi-Directional IR signals 30 KHz to 50 KHz over CAT5/6.

The HBT-C6POE-SET includes two (2) units: Sending unit (TX) HBT-C6POE-S and Receiving unit (RX) HBT-C6POE-R with one (1) UTP output port which allows the user to extend video and audio up to 100m (330ft). The HBT-C6POE-SET also allows bi-directional IR control of the source connected to the unit from the users IR remote control at the monitor side.

The bonus features with this device it can be powered by the 24V from the TX PoE (Power over the CATx cable to the RX) also Internet (100Mbps Ethernet service when connected to a Router). These features has been added to this unit to give the installer and user a complete solution with the new trends in online streaming, network connected devices and new demand in Smart TV, Ultra HD monitors and content.

- Input: HDMI with 3D & 4Kx2K, 1080p, HDCP and DVI compliant
- Video bandwidth: From 300MHz / 9 Gbps
- Pc resolutions: Up to VGA to WUXGA
- HD resolutions: Up to 4Kx2K (3840x2160@30Hz and 4096x2160@24Hz) 1080p (1920x1080@60Hz)
- Audio supported: LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio
- Audio transmission: (32-192kHz sample rate)
- Supports: CEC bypass
- Distance: Up to 100 meters through CAT6e/6a/7 cables
- Ethernet transmission: Rate up to 100Mbps
- Uncompressed video: 1080p, 60 Hz, 36-bit
- Service: USB for Manufacturer USE ONLY
- 3D support: Follow by Display / TV's EDID
- 5Play™ convergence: HDMI, LAN, PoE & Bi Directional Control (IR & RS-232)

NOTE:

- The PoE function is designed for powering compatible Receiver units only.
- The non-PoE Receivers has to be powered with a power supply.
- Receivers (Rx) from different manufactures would not be compatible.
- Displaying HDMI 4Kx2K resolution would require the standard 4Kx2K HDMI cable and display for accurate results.



2.1 PACKAGE CONTENTS

Before you start the installation of the converter, please check the package contents.

1	<p>HBT-C6POE-SET INCLUDES</p> <p>HBT-C6POE-S (TX)</p> <p>HBT-C6POE-R (RX)</p>	
2	<p>POWER ADAPTER (24V/1.25A DC)</p> <p>X 1</p>	
	<p>IR EXTENDER</p> <p>X 1</p>	
	<p>IR BLASTER</p> <p>X 1</p>	
	<p>USER'S MANUAL</p> <p>X 1</p>	











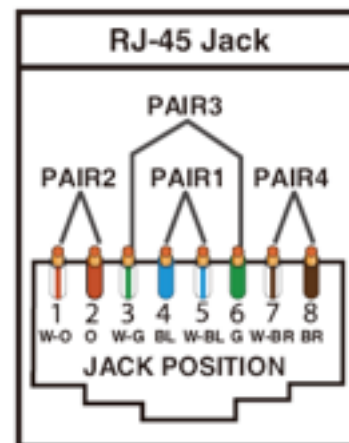
2.2 BEFORE INSTALLATION

- Put the product in an even and stable location. If the product falls down or drops, it may cause an injury or malfunction.
- Don't place the product in too high temperature (over 50°C), too low temperature (under 0°C) or high humidity.
- Use the DC power adapter with correct specifications. If inappropriate power supply is used then it may cause a fire.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.

2.3 CABLE SPECIFICATIONS

CABLE TYPE	RANGE	VIDEO DATA RATE	SUPPORTED VIDEO
CAT5e/6/7	100 m	<=5.3 Gbps (HD Video)	Up to 1080p, 60Hz, 36bits, 3D (Data rates lower than 5.3 Gbps or below 225 MHz TMDS clock).
	70m	>5.3 Gbps (Ultra HD Video)	4K2K, 30Hz video formats

Data Link TIA/EIA-568-B		
PIN	Color	Function
1	 W-O	TX0-
2	 O	TX0+
3	 W-G	TX1-
4	 BL	TX2-
5	 W-BL	TX2+
6	 G	TX1+
7	 W-BR	TXC-
8	 BR	TXC+



HBT-C6POE-SET

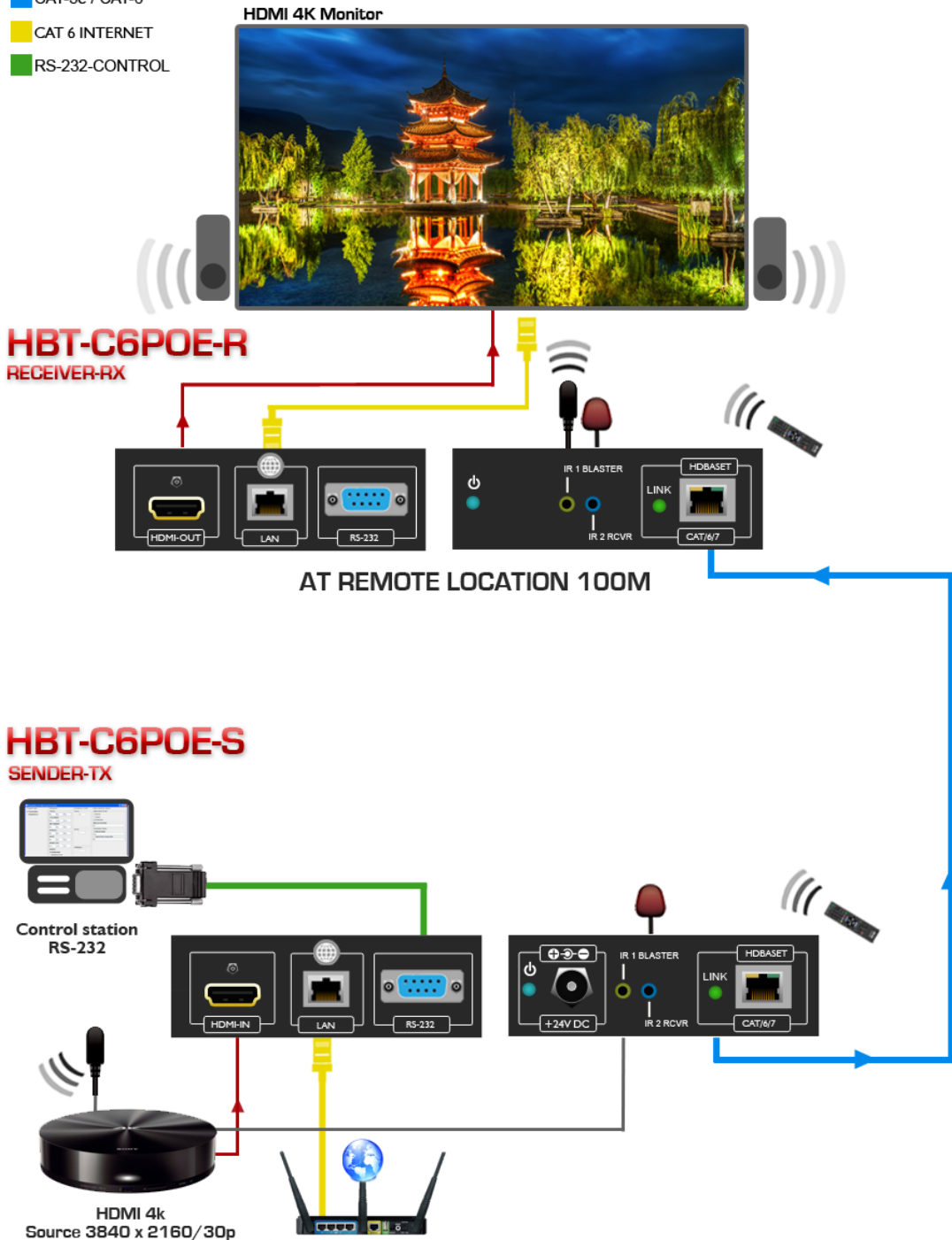
CABLE INDEX

- Input / Output
- CAT-5e / CAT-6
- CAT 6 INTERNET
- RS-232-CONTROL

Application Diagram 1

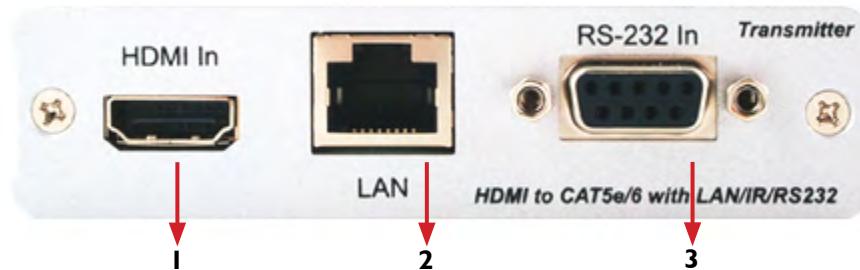
POINT TO POINT

1080p60 = 100m (328 feet) **CAT6**
 4K2K@30 = 100m (328 feet) **CAT6A**



4. PANEL DESCRIPTION

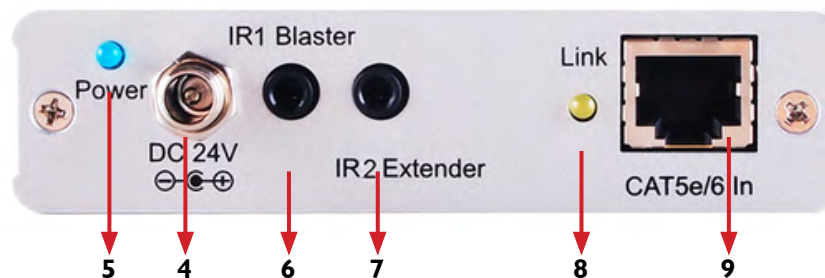
4.1 INPUT PANEL (Transmitter, HBT-C6POE-S) Front



- | | |
|---|---|
| <p>1. HDMI IN: Connect HDMI source Max 35ft via HDMI Cable Blu-ray player or Digital player</p> | <p>2. LAN Connect to a router for LAN sharing. This allows network/internet access) to be shared over the CATx to the RX.

Warning: DO NOT connect the LAN connection to the CAT5e/6/7 output, this may trigger a power shut down and may damage the device.</p> |
| <p>3. RS-232 IN: Connect to a device that has the ability to send control commands (PC or laptop via D-Sub 9-pin male cable)</p> | |

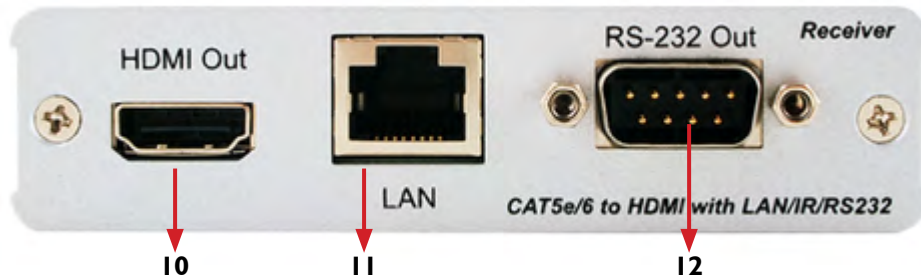
4.2 INPUT PANEL (Transmitter HBT-C6POE-S) Rear



- | | |
|---|--|
| <p>4. DC 24V: Connect the 24 V DC power supply included. Secure screw connector.</p> | <p>5. POWER LED: This blue LED will illuminate when the device is connected to a power supply.</p> |
| <p>6. IR I Blaster: Plug the IR Blaster cable for IR signal being transmitted. Place IR Blaster within direct site of the device being controlled.</p> | <p>7. IR 2 Extender: Plug the IR Extender cable for IR signal being received. Place IR Extender within direct line of site with the IR Remote.</p> |
| <p>8. LINK LED: Illuminate when both the input and output signals are in sync. The LED will blink intermittently to indicate no signal is being received from the display and irregularly to indicate that an error has occurred.</p> | <p>9. CAT5e/6/7 OUT: Connect CAT5e/6/7 cable to transmit all data signals extend the signal to the Rx unit.</p> |



4.3 INPUT PANEL (Receiver, HBT-C6POE-R) Front

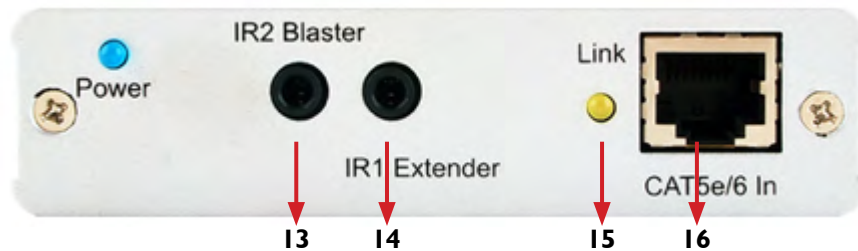


10. HDMI OUT: Connect to HDMI display Max 35ft via HDMI Cable or cascade with another Avenview type Transmitter

11. LAN OUT: Connect to a LAN equipped device (such as a smart TV or games console) to share the network/internet access. Warning: **DO NOT** connect the LAN connection to the CAT5e/6/7 output, this may trigger a power shut down and may damage the device.

12. RS-232 OUT: Connect to a device that has the ability to Receive control commands via RS232 only with compatible Transmitters.

4.4 INPUT PANEL (Receiver HBT-C6POE-R) Rear



13. IR 2 Blaster: Plug the IR Blaster cable for IR signal being transmitted. Place IR Blaster within direct site of the device being controlled.

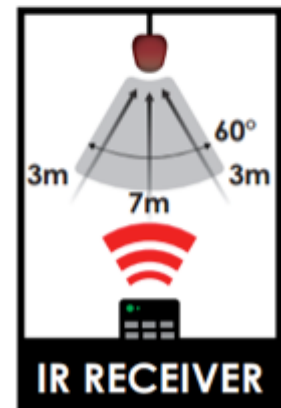
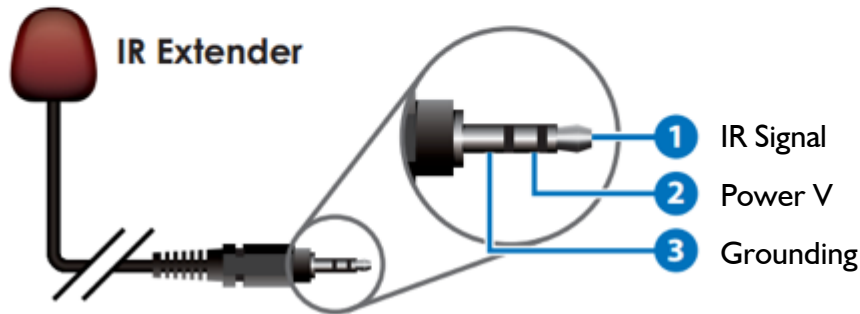
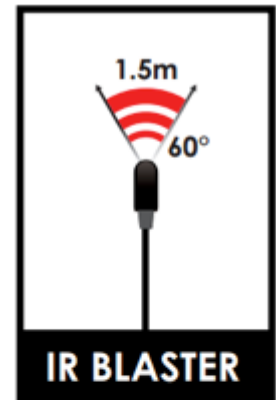
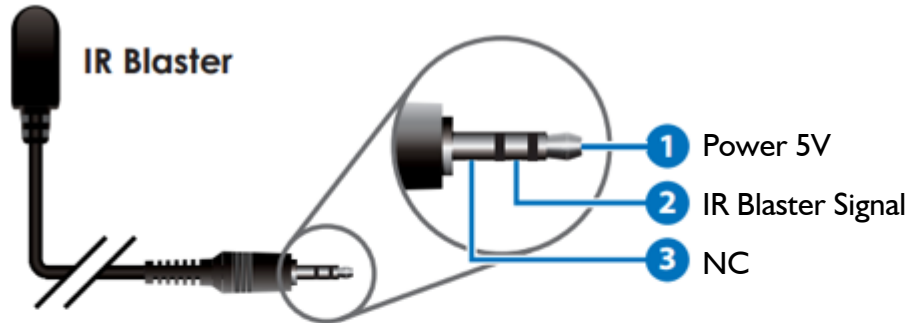
14. IR 1 Extender: Plug the IR Extender cable for IR signal being received. Place IR Extender within direct line of site with the IR Remote.

15. LINK LED: Illuminate when both the input and output signals are in sync. The LED will blink intermittently to indicate no signal is being received from the display and irregularly to indicate that an error has occurred.

16. CAT5e/6/7 IN: Connect CAT5e/6/7 cable to transmit all data signals extend the signal from the TX unit.



5. IR CABLE DEFINITION



IR Sockets

IR BLASTER: plug in the IR blaster to the HBT-C6POE-R to emit all IR command signals received from the IR Extender plugged into the TX. IR1 Blaster on TX receives IR from IR1 Extender on RX. IR2 Blaster on RX receives IR from IR2 Extender on TX. to control the devices corresponding to the IR signals. Example: Set Top Box or DVD player (The Source).

IR EXTENDER: plug in the IR Extender into the (RX) Receiver (Monitor Side) to receive all IR command signals from the IR remote controls of the corresponding source.

Example: Set Top Box or DVD player (IR Remote Control).

WARNING

NOTE: Incorrect placement of IR Blaster and IR Extender into the extender may result in the failure of the IR extenders.

Please check carefully before plugging in the IR extender to the respective IR sockets.

It is clearly marked and IR 1: IR EXTENDER / IR 2: IR BLASTER

WARRANTY WILL NOT COVER THE DAMAGE.





6. INSTALLATION (HBT-C6POE-SET)

To setup Avenview HBT-C6POE-SET please follow these steps for connecting to a device:

- Turn off all devices including monitors / TV
- .Connect to a HDMI source (such as a Blu-Ray Disc player) to the Transmitter HBT-C6POE-S/SP4/8 or Matrix 4x4/8x8
- Connect HBT-C6POE-R 100m or HBT-C6POE-RL 60m with a CAT5/6/7 cable with shielded ends, then connect to display with HDMI cable.
- Plug in Power for the Tx.
- Plug in the IR BLASTER: into IR BLASTER in this case and the blinker on the IR eye (Source)
- Plug in the IR Extender to IR EXTENDER in this case to receive IR Signals from Remote
- Power on the HDMI display
- Power on HDMI Sources.

NOTE: The QUALITY and TRANSMISSION of the video signals depends on the characteristics and quality of the UTP cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/100m) for best performance.

Unshielded CAT6 with metal RJ-45 connectors is recommended.

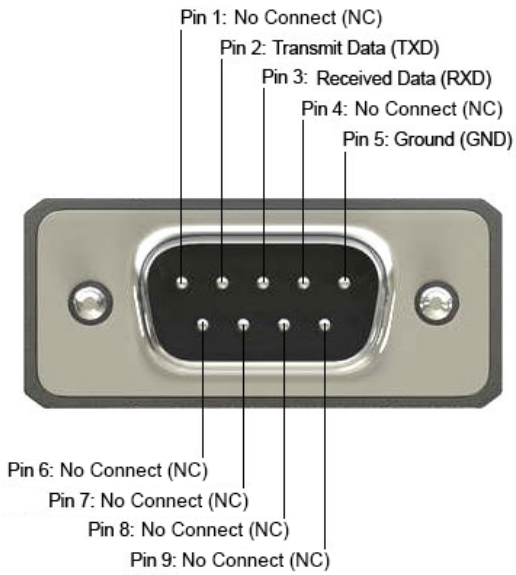


HBTC6POE-S	
PIN	Assignment
1	NC
2	TxD
3	RxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

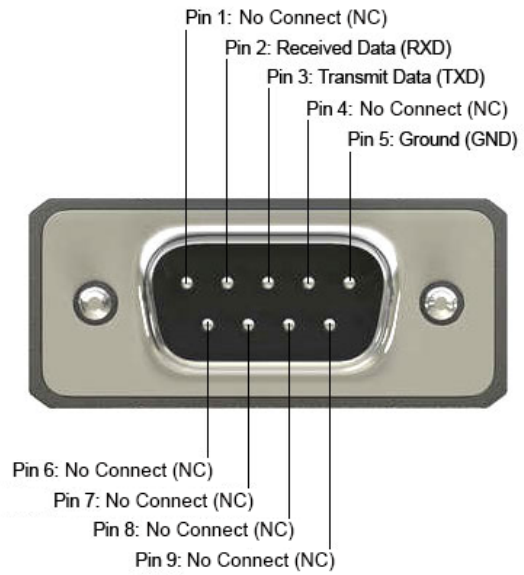


Remote Controller(PC)	
PIN	De finition
1	NC
2	RxD
3	TxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

RS232 Pinout



RS232 Pinout



7. GENERAL TROUBLESHOOTING

Problem	Possible Solution
NO IMAGE	<ol style="list-style-type: none"> 1. Check if connection to the source and the display are correct. 2. Ensure that display device supports 480p, 720p and 1080p 4K@30 resolution 3. Terminated to 568B standard with Shielded Ends Recommended 4. High Quality CAT5/6/7 Cable helps signal transmission 5. Please use the supplied power supply-DC 24V 1.25A 6. Check LED Link light see (Section 4 Panel Description) 7. Check LED Sync light see (Section 4 Panel Description)
SET-TOP BOX NO PICTURE	<ol style="list-style-type: none"> 8. HDBaseT and HDMI 1.3 standards support CLOCK STRETCHING for i2c buss protocol 9. Example set top boxes like Scientific Atlantic results no picture. This can be resolved by swapping out the box for a newer version that supports HDMI 1.3 not HDMI 1.2
NO INFRARED COMMUNICATION	<ol style="list-style-type: none"> 10. Ensure the UTP cable is run within the wall away from EMI and High Voltage power Lines. 11. Please check manual of device to ensure proper placement of IR Blaster on IR EYE. 12. Some LED /Plasma TV have EMI interference with the IR Extender, please place the IR Rx 3-6" away from Screen
Recommended TEST	
END-TO-END TESTING	<ol style="list-style-type: none"> 13. HDBaseT system, a final end-to-end test of all the A/V components should take place. These tests include checking the HDMI stream at the far end (sink end), the clock rate, frame compare, video pattern, audio, EDID and HDCP with Quantum 780 (recommended)
PASSIVE MONITORING:	<ol style="list-style-type: none"> 14. Passive monitoring enables an integrator to view the HDCP transactions, EDID exchange, as well as the connection events between the actual devices in the network.

NOTE

Additional info on Guidelines to Test & Troubleshoot HDBaseT Systems
 Can be retrieved from our website under the category Downloads for this product HBT-C6POE-SET



8. SPECIFICATIONS

Item	Description	
UNITS	HBT-C6POE-S	HBT-C6POE-R
UNIT DESCRIPTION	HDBaseT HDMI Transmitter	HDBaseT HDMI Receiver
HDCP	YES	
ETHERNET SPEED	100Mbps	
VIDEO BANDWIDTH	Single-link 300MHz [9Gbps]	
SUPPORTED RESOLUTIONS	480i~1080p@50/60, 1080p@24, 3D 4K@30 Up to Ultra HD (3840x2160@24/25/30Hz)	
CEC SUPPORT	ALLOWS CEC BYPASS	
CAT5/6/7 CABLE	4K2K: (3840X2160@30Hz) ~ 70meter (229feet) (CAT6e) FULL HD: (1080p) ~ 100meter (330feet) (CAT6e/6A)	
AUDIO SUPPORT	LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio	
HDMI IN CABLE M/M	15m/1080p@8-bit or 6m/1080p@12-bit	
HDMI OUT CABLE M/M	15m/1080p@8-bit or 10m/1080p@12-bit	
ESD PROTECTION	Human body model — ±8kV (air-gap discharge) & ±4kV (contact discharge)	
INPUT	1x 3.5mm IR Extender 1x RS-232 1x LAN port 1x HDMI	1x CAT5e/6/7 1x 3.5mm IR Extender
OUTPUT	1x CAT5e/6/7 1x 3.5mm IR Blaster	1x 3.5mm IR Blaster 1x RS-232 1x LAN port 1x HDMI
HDMI CONNECTOR	Type A (19 pin female)	
LED	YELLOW/BLUE LED	
IR FREQUENCY	30~50kHz	
DIMENSIONS (L X W X H)	4" x 4.4" x 1" 102 mm (L) x 113 mm (W) x 25 mm (H)	4" x 4.4" x 1" 102 mm (L) x 113 mm (W) x 25 mm (H)
WEIGHT	252g /0.5lbs	252g /0.5lbs
POWER SUPPLY	24V / 1.25A DC (US/EU standards, CE/FCC/UL certified)	POE (Powered from Transmitter)
POWER CONSUMPTION	13 Watt (max)	

Environmental

OPERATING TEMPERATURE	32° ~ 104°F (0° to 40°C)
STORAGE TEMPERATURE	-4° ~ 140°F (-20° ~ 60°C)
RELATIVE HUMIDITY	20~90% RH (no condensation)



Notes



Notes



Avenview Warranty Certificate

AVENVIEW CORP. ("Avenview") warrants Avenview-branded product(s) contained in the original packaging against defects in materials and workmanship when used normally in accordance with Avenview's enclosed manual guidelines for a period of THREE (3) YEARS from the date of original retail purchase - Warranty Period. Avenview's published guidelines include but are not limited to information contained in technical specifications, user manuals and service communications.

LABOR: During the Warranty Period of THREE (3) YEARS, Avenview will repair or replace the product(s) at no cost using new or used parts equivalent to novel performance and reliability if the product(s) is determined to have abide by Avenview's published guidelines. Cost of Labor applicable to product(s) after Warranty Period. For labor costs, please contact support@avenview.com.

PARTS: During the Warranty Period of of THREE (3) YEARS, Avenview will supply new or rebuilt replacements in exchange for defective parts of the product(s) at no cost if the product(s) is determined to have abide by Avenview's published guidelines. Cost of Parts applicable to product(s) after Warranty Period. For part(s) costs, please contact support@avenview.com.

To obtain Warranty: (a) proof of purchase in the form of a bill of sale or receipted invoice reflecting that the registered product(s) is within warranty period must be presented to obtain warranty service; (b) product(s) must be registered at time of purchase. Failure to do so will result in applicable parts and labor charges. Returning product(s) must be shipped in Avenview's original packaging or in packaging pertaining equal degree of protection to Avenview's. Both Avenview and purchaser are responsible for freight charges and brokerages when shipping the product(s) to the receiver.

NOT COVERED BY THIS WARRANTY

This warranty does not apply to any non-Avenview branded product(s); non-registered Avenview product(s). This warranty does not apply: (a) to cosmetic damage, including but not limited to scratches, dents and broken cords; (b) to damage caused by use with another product; (c) to damage caused by accident, abuse, misuse, liquid contact, fire, earthquake or other external cause; (d) to damage caused by operating the Avenview product(s) outside Avenview's manuals or guidelines; (e) to damage caused by service performed by anyone who is not a representative of Avenview or an Avenview authorized personnel; (f) to defects caused by normal wear and tear or otherwise due to the normal aging of the Avenview product(s), or (g) if any serial number has been removed or defaced from the Avenview product(s).

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Some states do not allow the inclusion or limitation of incidental or consequential damages, or allow limitations on duration implements of the Warranty Period; therefore the above limitations or exclusions may not be applicable to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.



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