Avenview

Control Your Video

4X8 HDMI & HDBASET CAT5/6 MATRIX SWITCH WITH PoE/IR/RS232/Ethernet

HDMI · AUDIO · IR · WUXGA 1920x1200 · HDMI HDCP · HD ready 1080p · RoHS Compliant · FC CE

Model #: SW-HBT-C6POE-4X8E

Product Application & Market Sectors

	Coroprate		House Of Worship
	Military		Residential
	Education		Industrial
	Medical		Aviation

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SECTION 1: GETTING STARTED

1.1 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.

1.2 SAFETY INSTRUCTIONS

The **SW-HBT-C6POE-4X8E** HDBaseT HDMI & CAT5/6/7 Matrix Switcher set has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the SW-HBT-C6POE-4X8E 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.

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
	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.
	DO NOT TAMPER WITH THE UNIT. DOING SO WILL VOID THE WARRANTY AND CONTINUED USE OF THE PRODUCT.
BEWARE this unit contains static sensitive devices	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.

⚠ WARNING

Read & understand user guide before using this device.

Failure to follow the proper installation instructions could result in damage to the product and preventing expected results.

2. INTRODUCTION

Avenview **4x8 HDBaseT CAT5/6 & HDMI Matrix Switch** supports the transmission of video and multi-channel digital audio along with IR, RS-232, PoC and LAN (Internet). This matrix can be controlled via Telnet or Web GUI to setup 4 HD sources to any 8 outputs -4 via HDMI cable upto 15m and the other 4 CAT5/6 ports (up to 100m) to be displayed on any 8 HD screens.

Video Signals: 480i up to Full HD 1080p@60 Hz/36-bit color depth.

Audio signals: LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio

Data Signals: Bi-Directional IR signals 30 KHz to 50 KHz over CAT5/6. LAN up to 100Mbps

The SW-HBT-C6POE-4x8E includes one (1) unit: Transmitter unit with eight input/output ports 4 HDMI and 4 CAT5/6 HDBaseT which allows the user to extend all signals up 100m (330ft). Compatible with receivers HBT-C6POE-R , HBT-C6PLT-R and HBT-C6POEWP-R

The bonus features with this device it can be powered by the 24V from the TX PoC (Power over the CATx cable to the RX) also extends Internet (100Mbps Ethernet service when connected to a Router at the TX). 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.

FEATURES

1. **INPUT**: HDMI 480i up to 1080p, HDCP and DVI compliant
2. **VIDEO BANDWIDTH**: From 225MHz/6.75Gbps
3. **PC RESOLUTIONS**: Up to VGA to WUXGA
4. **HD RESOLUTIONS**: 1080p(1920x1080@60Hz)
   AUDIO SUPPORTED: LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio
   AUDIO TRANSMISSION: (32-192kHz sample rate)
5. **SUPPORTS:** CEC bypass
6. **DISTANCE**: Extra 100 meters connected with HBT-C6POE-EX through CAT6e/6a/7 cables =200m (300m with additional Repeater unit) Cascading HDBaseT Matrixes
7. **ETHERNET TRANSMISSION:** Rate up to 100Mbps
8. **UNCOMPRESSED VIDEO:** 1080p, 60 Hz, 36-bit
9. **SERVICE:** USB for Manufacturer USE ONLY
10. **3D SUPPORT:** Follow by Display / TV's EDID
11. **5Play™ convergence: HDMI, LAN, PoC & Bi Directional Control**
    NOTE:
    Receivers (Rx) from different manufactures and non HDBaseT would not be compatible.

Do not connect CAT inputs/outputs of this device to a POE network switch. Doing so may damage the unit. Only connect LAN port to a network.

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

1	1x SW-HBT4K-C6-4X8E	
2	IR EXTENDER	
3	IR BLASTER	
4	IR REMOTE	
5	1 x Power Adapter (24V/3.75A DC)	
6	Power Cord	
7	1 x Right and Left Ear Rack Sets	
8	User's Manual	

- 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 and supplied with the unit. If improper power supply is used the unit may malfunction and cause a fire.
- Do not twist or pull by force ends of the UTP cable. It can cause malfunction.

2.2 CABLE SPECIFICATIONS

To achieve best results with our SW-HBT-C6POE-4X8E we highly recommend a premium quality 26 or 24 AWG HDMI cable with the below specifications to maintain signal integrity and distances.

FEATURES:

- Length: 5m (16ft) to 15m (50ft)
- Bandwidth: 10.2 Gbps data transfer rate
- Supports Resolution: Up to 3840x2160 @ 24Hz and 4096x2160 @ 24Hz, 1080p @ 24Hz / 50/60Hz/3D
- Conductor gauge: 26 / 24 AWG
- Deep Color
- 3D Capable
- CEC
- Ethernet Channel
- Audio Return Channel
- Connector 1: HDMI (Type A) Male
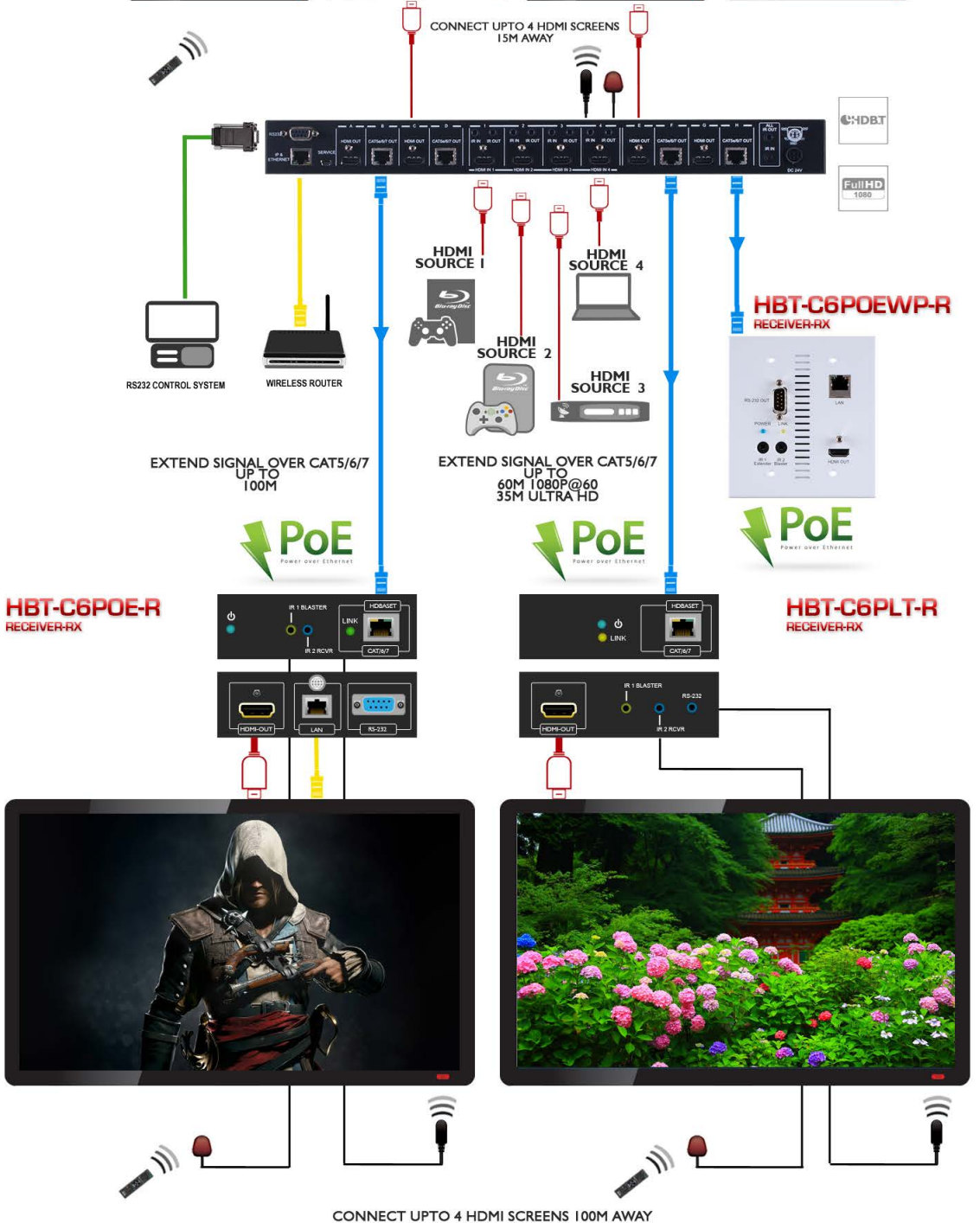- Connector 2: HDMI (Type A) Male

SW-HBT–C6POE-4X8E

1080p(1920x1080) = 100m (330 feet) **CAT6E 250MHz**
WXGA(1920x1200) =100m (330 feet) **CAT6E 250MHz**

CABLE INDEX
Input / Output
RS-232
IR
CAT-5e / CAT-6
LAN/NETWORK

CONNECT UPTO 4 HDMI SCREENS 15M AWAY

HDMI SOURCE 1
HDMI SOURCE 4
HDMI SOURCE 2
HDMI SOURCE 3

HBT-C6POEWP-R
RECEIVER-RX

RS232 CONTROL SYSTEM
WIRELESS ROUTER

EXTEND SIGNAL OVER CAT5/6/7 UP TO 100M

EXTEND SIGNAL OVER CAT5/6/7 UP TO 60M 1080P@60 35M ULTRA HD

PoE
Power over Ethernet

PoE
Power over Ethernet

PoE
Power over Ethernet

HBT-C6POE-R
RECEIVER-RX

HBT-C6PLT-R
RECEIVER-RX

CONNECT UPTO 4 HDMI SCREENS 100M AWAY

3.1 FRONT PANEL (SW-HBT-C6POE-4X8E)
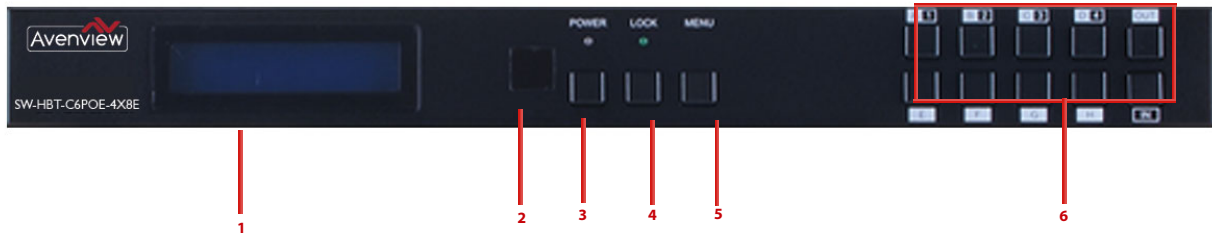
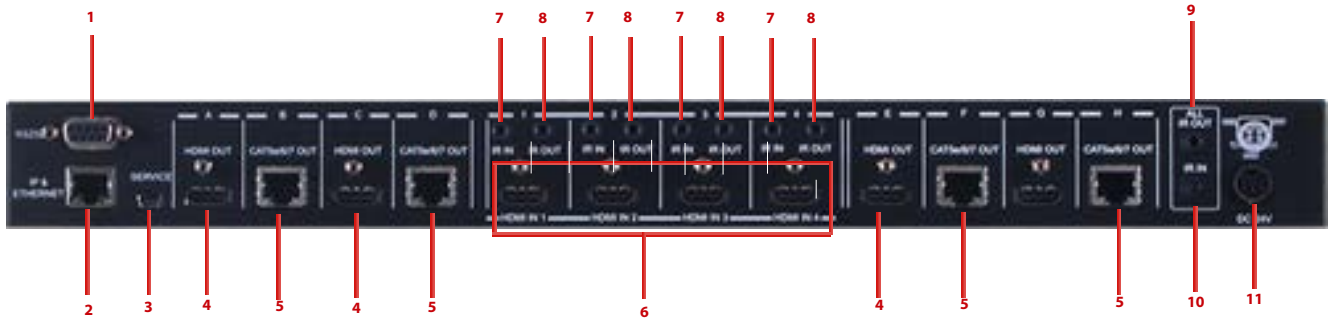

1. **Front Panel Menu (FPM):** Displays the information of the input and output settings.		2. **IR:** IR Receiver window (accepts the remote control signal of this matrix only).	
3. **POWER:** (LED Status) GREEN Power ON, RED Standby Mode.		4. **LOCK:** Press for 3 seconds to lock all the buttons on the panel; press again for 3 seconds to unlock. The LED Status Green when locked.	
5. **MENU:** Press to access the FPM system, Easily manage EDID settings and quickly access the IP info of device.		6. **A~D/1~4 and In/Out:** Press Out or In button to select the output or input mode and then press the preferred number to manually setup your solution.	

3.2 REAR PANEL (SW-HBT-C6POE-4X8E)

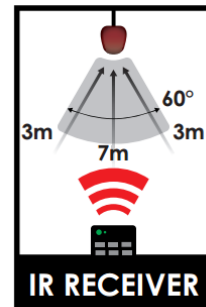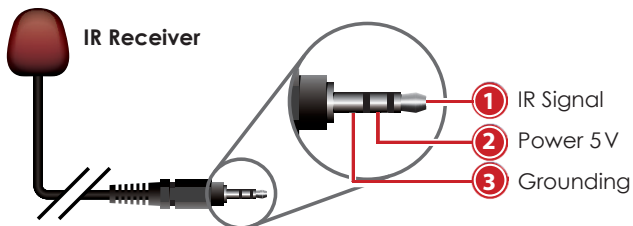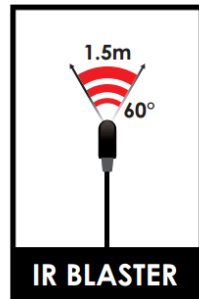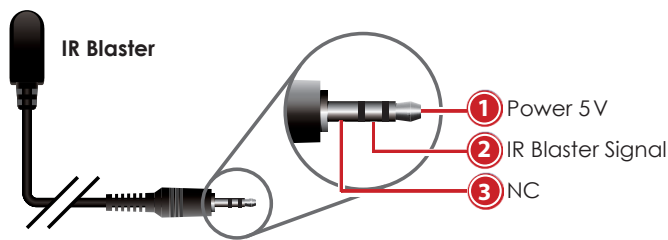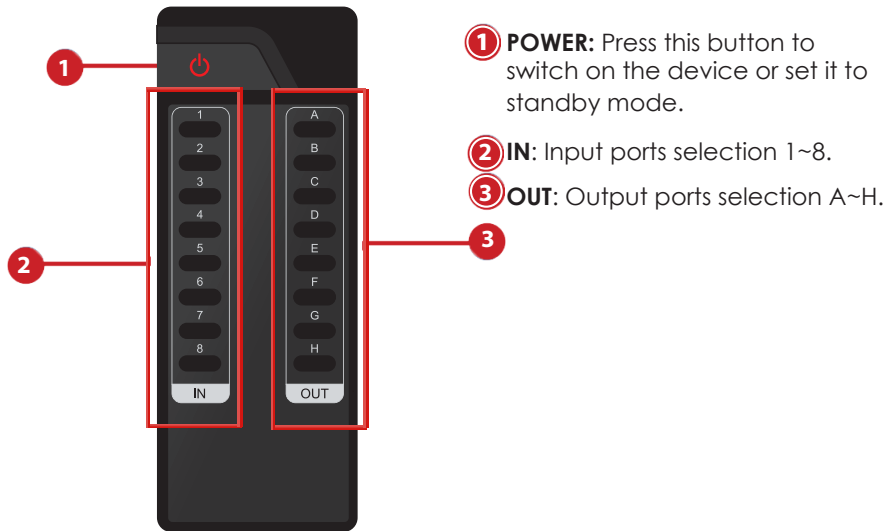|	
1. **RS-232:** Connect to PC or control system with D-Sub 9-pin cable for the transmission of RS-232 commands.	2. **IP/ETHERNET:** Telnet and WebGUI control. (allows ethernet access when connecting to an active network source)
3. **SERVICE:** Manufacturer use only. (Mini-USB for firmware updates).	4. **HDMI OUT:** Connect to any HD monitor/ display.
5. **CAT 5e/6/7 OUT:** Connect with HDMI over CAT5e/6/7 Receiver for signal extension up to 100m	6. **HDMI IN 1~4:** Connect to HDMI input source.
7. **IR IN 1~4:** Connect to IR extenders for IR signal reception.	8. **IR OUT 1~4:** Connect to IR blasters for IR signal transmission.
9. **ALL IR IN:** Connect to IR extender for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR extender for it will send out the signal to all receiver's IR OUT.	10. **ALL IR OUT:** Connect to IR blaster for IR signal transmission to source side. Place the IR blaster in direct line-of-sight of the equipment to be controlled for it will blaster out all signal received from the IR IN at the receiver sides.
11. **DC 24V MAIN POWER:** Plug the 24 V DC power supply into the unit.	

REMOTE CONTROL

1 POWER: Press this button to switch on the device or set it to standby mode.

2 IN: Input ports selection 1~8.

3 OUT: Output ports selection A~H.

IR Blaster

1 Power 5 V
2 IR Blaster Signal
3 NC

1.5m
60°

IR BLASTER

IR Receiver

1 IR Signal
2 Power 5 V
3 Grounding

60°
3m   3m
7m

IR RECEIVER

IR Sockets

IR BLASTER: plug in the IR blaster to the SW-HBT-C6POE-4X8E to emit all IR command signals received from the IR

Extender plugged into the Rx (Monitor Side) 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.
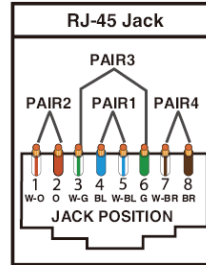Example: Set Top Box or DVD player (IR Remote Control).

⚠️

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

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+

Data Link TIA/EIA-568-B

RJ-45 Jack

PAIR3
PAIR2 PAIR1 PAIR4

1   2   3   4   5   6   7   8
W-O O W-G W-BL G W-BR BR
JACK POSITION

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/upto 300m) for best performance.
Unshielded CAT6 with metal RJ-45 connectors is recommended.

5. INSTALLATION (SW-HBT-C6POE-4X8E)

To setup Avenview SW-HBT-C6POE-4X8E please follow these steps for connecting to a device:

1. Turn off all devices including monitors / TV
2. Connect to a HDMI source 1080p (such as a Blu-Ray Disc player) to the matrix unit.
2. Connect a compatable receiver with CAT5/6/7 cable with shielded ends and HDMI out to monitor
3. Connect HBT-C6POE-EX to extend upto 300m with a CAT5/6/7 cable with shielded ends (OPTIONAL)
4. Plug in dual Power to supply the Rx with PoE
5. Plug in the IR BLASTER: into IR out and the blinker on the IR eye (Source)
6. Plug in the IR Extender to IR IN to receive IR Signals from Remote (Monitor end)
7. Power on the HDMI display
8. Power on HDMI Sources.

COMPATABLE DEVICES

HBT-C6PLT-R
Up to 60 meters

HBT-C6POE-R
Up to 100 meters

HBT-C6POEWP-R
Up to 100 meters

HBT-C6POE-EX
Up to 300 meters

PROBLEM	SOLUTION
NO IMAGE	• Check if connection to the source and the display are correct. • Ensure that display device supports 480p, 720p and 1080p 4K@30 resolution • Terminated to 568B standard with Shielded Ends Recommended • High Quality CAT5/6/7 Cable helps signal transmission • Please use the supplied power supply-DC 24V/3.75A DC • Check LED Link light see (Section 3 Panel Description) • Check LED Sync light see (Section 3 Panel Description)
EDID ISSUE	• **EDID MODE-TV:** The default factory setting is on TV. The unit will detect the 1st CAT5e/6/7 output's EDID. When obtained a (4K2K) Ultra HD 3840x2160 EDID the signal is transmitted. • If the 1st CAT5e/6/7 output is without a Ultra HD 3840x2160 EDID the unit will detect all output's EDID and Transmit the signal that all outputs can accept. • **EDID MODE-STD:** Switch to STD to use built-in EDID if the display has No Image. STD EDID's video at 1080p@60Hz and audio at LPCM 2CH.
Set-Top Box No Picture	• HDBaseT and HDMI 1.3 standards support CLOCK STRETCHING for i2c buss protocol • 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	• Ensure the UTP cable is run within the wall away from EMI and High Voltage power Lines. • Please check manual of device to ensure proper placement of IR Blaster on IR EYE. • 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	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:	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
Addional info on Guidelines to Test & Troubleshoot HDBaseT Systems Can be retreived from our website under the category Downloads for this product SW-HBT-C6POE-4X4E

SECTION 7: SPECIFICATIONS

ITEM	DESCRIPTION
UNITS	**SW-HBT-C6POE-4X8E**
UNIT DESCRIPTION	HDBaseT HDMI Matrix Switcher with IR/RS232/PoC/LAN support
HDCP	YES
LAN / ETHERNET	100Mbps
VIDEO BANDWIDTH	225 MHz (6.75Gbps)
SUPPORTED RESOLUTIONS	480i~1080p@50/60, 1080p@24, 3D
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
ESD PROTECTION	Human body model — ±8kV (air-gap discharge) & ±4kV (contact discharge)
INPUT	4×HDMI 5x 3.5mm Stereo jack IR Extender 1x 9pin Dsub RS-232 1x RJ45 IP Control / LAN Serving, 1x USBMini B (for firmware updates)
OUTPUT	4X HDMI 4x RJ45 WE/SS 8P8C with 2 LED indicators 5x 3.5mm Stereo jack IR Emitter
HDMI CONNECTOR	Type A (19 pin female)
IR FREQUENCY	30~50kHz
DIMENSIONS (L X W X H)	9.8" x 17.1" x 1.7" 249 mm (L)×436 mm (W)×44mm (H)
NET WEIGHT	3344g /7.3lbs
POWER SUPPLY	24V / 3.75A DC (US/EU standards, CE/FCC/UL certified)
POWER CONSUMPTION	65 W (PoE)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32˚ ~ 104˚F (0˚ to 40˚C)
STORAGE TEMPERATURE	-4˚ ~ 140˚F (-20˚ ~ 60˚C)
RELATIVE HUMIDITY	20~90% RH (non-condensing)

NOTICE

1. *All HDMI over UTP transmission distances are measured using Belden CAT6A (625MHz), 4-Pair, U/UTP-Unshielded, Riser-CMR, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, Polyolefin Insulation, Patented Double-H spline, Ripcord, PVC Jacket using Quantum 980 signal HDMI Video Generator Module Video Pattern Testing.*

2. *The transmission length is largely affected by the type of category cables, also the type of HDMI sources, and the type of HDMI display. The testing result shows solid UTP cables (usually in the form of 300m or 1000ft bulk cable) can transmit a lot longer signals than stranded UTP cables (usually in the form of patch cords). Shielded STP connectors are better suit than unshielded UTP connectors. A solid UTP CAT5e cable shows longer transmission length than stranded STP CAT6 cable. For long extension users, solid cables are your only choice.*

3. *EIA/TIA-568-B termination (T568B) for category cables is recommended for better performance.*

4. *To reduce the interference among the unshielded twisted pairs of wires in category cable, you can use shielded STP cables with shielded connector to improve EMI problems, which occurs in long transmission.*

5. *Because the quality of the category cables has the major effects in how long transmission distance will be made and how good is the received display, the actual transmission length is subject to your category cables. For resolution greater than 1080i or 1280x1024, a solid CAT6 cable is the only viable choice.*

PERFORMANCE GUIDE FOR HDMI OVER CATEGORY CABLE TRANSMISSION

PERFORMANCE RATING		TYPE OF CATEGORY CABLE		
WIRING	**SHIELDING**	**CAT5e**	**CAT6**	**CAT6A/7**
SOLID	UNSHIELDED (UTP)	★★★★	★★★★★	★★★★★
	SHIELDED (STP)	★★★	★★★★	★★★★
STRANDED	UNSHIELDED (UTP)	★	★★	★★
	SHIELDED (STP)	★★	★	★★
TERMINATION		PLEASE USE **EIA/TIA-568-B** TERMINATION (**T568B**) AT ANY TIME		

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).

AVENVIEW IS NOT LIABLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO LOSS OF USE; LOSS OF REVENUE; LOSS OF ACTUAL OR ANTICIPATED PROFITS (INCLUDING LOSS OF PROFITS ON CONTRACTS); LOSS OF THE USE OF MONEY; LOSS OF ANTICIPATED SAVINGS; LOSS OF BUSINESS; LOSS OF OPPORTUNITY; LOSS OF GOODWILL; LOSS OF REPUTATION; LOSS OF, DAMAGE TO, COMPROMISE OR CORRUPTION OF DATA; OR ANY INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER.

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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