adertech

HIBT-U4H-150A

HDMI 2.0 4K60 4:4:4
HDBaseT Extender up to 150 meters



USER manual

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1. Introduction

Adertech H1BT-U4H-150A – is a HDMI 4K 4:4:4 HDBaseT extender. System supports point-to-point extension, featured bidirectional transmission for RS232 and IR ports. The extension range is up to 150 meters. Extender supports the maximum signal resolution up to 4K@60 4:4:4 with 18Gbps video bandwidth. Transmitter equipped with HDMI loop throughout for local display connection. Receiver has equipped with unbalanced analog stereo out port for de-embedding audio signal from HDMI stream. Extender based on the wide spread and good known Valens chipset. The initial specification of the HDBaseT 1.0 is supported. Extender offers long-range extension of UHD video, audio and control signals. Although Spec 1.0 requires a minimum compatible cable type of CAT5e, the CAT6 cable is recommended. Extension distance support is varying based on cable type and signal bandwidth: for 1080p up to 150m and for 4K up to 120m. Transmitter and Receiver units housed in the compact and robust metal cases and ensure protection and cooling the system components. Units could be powered by the external power supplies or over CAT cable using PoC technology.

2. Features

- HDMI 1.4/2.0, HDCP 1.4/2.2
- Support 18 Gbps video bandwidth
- Support signal video resolution up to 4K60 4:4:4
- Color space: RGB, YCbCr, YCbCr 4:4:4, 4:2:2, 4:2:0
- Based on Valens chipset, HDBaseT 1.0 is supported
- Extension distance: 150m - 1080p@60, 120m - 4K
- Local HDMI output on Transmitter
- Audio de-embedding feature on Receiver
- Two-way IR and RS232 extension
- Field firmware update option over USB
- Units are housed in compact cases
- Link and Data status indicators

3. Package Contents

1× H1BT-U4H-150A-TX Transmitter Unit
1× H1BT-U4H-150A-RX Receiver Unit
1× IR Receiver cable (1.5 meters)
1× IR Blaster cable (1.5 meters)
2× 3-pin Phoenix Connector
2× Mounting Set (plate and screws)
1× Power Supply 24V, 1A
1× User Manual

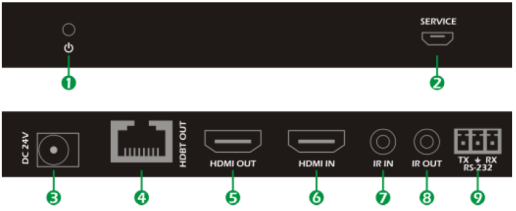
4. Warranty Information

ADERTECH warrants all units to be free from defects in workmanship and materials, under normal use and service, for a period of one (1) year from the date of purchasing from authorized reseller.
If a product does not work as it warranted during this period, ADERTECH will repair or replace the defective product or its part. Replacement products may be new or reconditioned.

Warranty ends if the product has been damaged due to abuse, misuse, neglect, accident, unusual physical or electrical stress, unauthorized modifications, tampering, alterations, or servicing other than by ADERTECH or its authorized centers, causes other than from ordinary use or failure to properly use the Product in the application for which said Product is intended.

5. Unit's interfaces

5.1 Transmitter Unit



N	Type	Description
1	LED Red	Power Indicator, active when power is applied to the unit
2	Micro USB Socket	Service Only - firmware update port
3	Power Socket	DC Power Connector, 24V, 1A – connect Power Supply
4	RJ45 Socket	HDBaseT Output Interface – connect CAT cable to Receiver
5	HDMI Socket 19 pin	HDMI Loop Through Output – connect to local Display
6	HDMI Socket 19 pin	HDMI Input – connect to Source Device
7	mJack 3.5mm Socket	IR Input Port – connect IR Receiver cable
8	mJack 3.5mm Socket	IR Output Port – connect IR Blaster cable
9	Phoenix 3-pin Socket	RS232 port – connect to control system or device

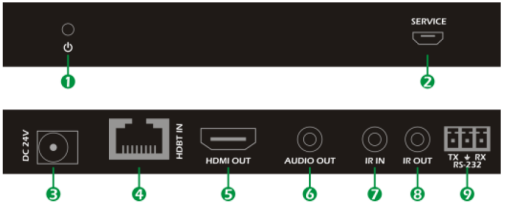
5.2 RJ45 Connector Indication

The RJ45 Connector has two LEDs which are could be used for understanding the current state of the system. Green shows link status and Orange - HDCP mode:



LED	Status	Description
Green	Constantly lit	HDBaseT interface linked, good connection
	Flashing	HDBaseT interface linked, poor connection
	Not lit	HDBaseT interface not linked, check CAT cable connection
Orange	Constantly lit	Source signal detected, HDCP protection
	Flashing	Source signal detected, no HDCP protection
	Not lit	No Source signal detected

5.3 Receiver Unit



N	Type	Description
1	LED Red	Power Indicator, active when power is applied to the unit
2	Micro USB Socket	Service Only - firmware update port
3	Power Socket	DC Power Connector, 24V, 1A – connect Power Supply
4	RJ45 Socket	HDBaseT Input Interface – connect CAT cable to Transmitter
5	HDMI Socket 19 pin	HDMI Output – connect to Display
6	mJack 3.5mm Socket	Unbalanced Stereo Audio Output – connect to Speakers
7	mJack 3.5mm Socket	IR Input Port – connect IR Receiver cable
8	mJack 3.5mm Socket	IR Output Port – connect IR Blaster cable
9	Phoenix 3-pin Socket	RS232 port – connect to control system or device

5.4 HDBaseT Interface

The system uses HDBaseT Technology for digital signal extension. The initial specification of the HDBaseT 1.0 is supported. Extender offers long-range extension of UHD video, audio and bidirectional control signals, including the RS232 and IR. The PoC technology enables powering over CAT cable feature. This means that only one external power supply has to be connected to Transmitter or Receiver Unit, while other unit will be powered over the CAT cable. Do not connect any PoC incompatible units to RJ45 ports - it can seriously damage equipment.

Extender supports using of CAT5e or CAT6 cables. The maximum transmission distance depends on the source resolution:

- 150 meters for Full HD 1080p@60
- 120 meters for Ultra HD 4K@60

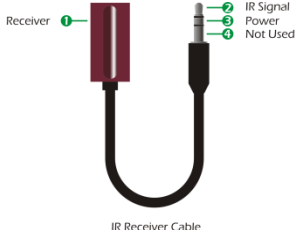
5.5 IR Extension Usage

Extender supports to send IR control data in both directions simultaneously. For example, this feature allows user to control a remote display device using its IR Remote control from the Transmitter side – by sending IR data to Receiver and at the same time - send IR control signals from the remote location to an HDMI source using its IR Remote control.

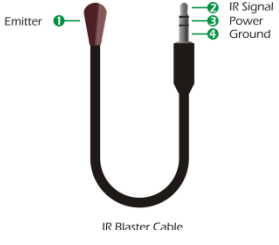
The supported IR range is 20 – 60KHz. The actual distance could vary depending on several IR parameters and environment conditions. The aiming of IR Remote is very important for distance. To achieve best results always point IR Remote to IR Receiver in between 45 to 90 degree angle, then the working distance will be about 5 to 8 meters in the line of sight.

5.6 IR Cables Pinout

We recommend use only IR cables from the set of the unit. The pinout of the mini Jack connector for IR cables may differ for different vendors. Always carefully check the connection of the peripheral equipment before powering the system.



IR Receiver Cable



IR Blaster Cable

6. Best Practice

ADERTECH engineers design products at the highest quality standards. To get the best results from our products, please read this manual carefully. We recommend using the best quality connectors, cables, and adapters. Consider the points below when you choose accessories and position equipment.

For best results with HDMI/DVI, use good quality cables up to 5 meters long for 4K and up to 15 meters for 1080p, or shorter if you are using any connection adapters. If you need to place your equipment more than 15 meters apart, we recommend using a signal extender. See ADERTECH Smart Extension product line of signal extenders to find correct one. Use only graded Speed HDMI cables.

In industrial environments, use shielded CAT cables (STP, FTP, F/UTP or S/FTP) with digital extenders. To achieve best performance and maximum distance use appropriate fiber optical types (Multi or Single Mode) and grades for optical extenders.

7. Safety Instructions

WARNING: To reduce the risk of fire or electric shock, do not expose this device to rain or moisture. Do not use this device near water. Clean only with a dry cloth.

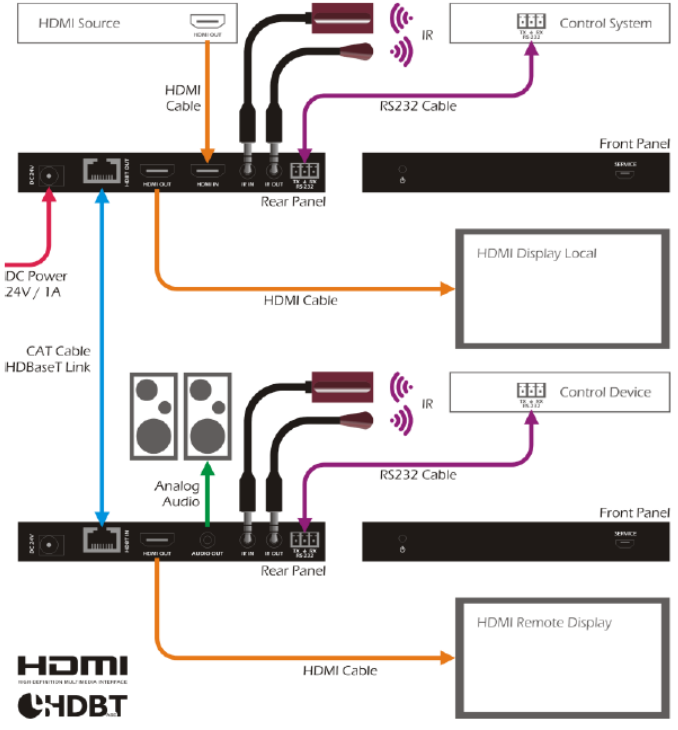
Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the device. This unit must be connected to an earthed mains socket outlet with the supplied cable. The AC wall outlet should be installed near to the unit and be easily accessible.

If using extenders which run a long distance, the protective earth circuit of the socket should be verified by a skilled person to ensure equipotential earth bonding. Do not use unit on objects or installations where power lines have grounding and/or different phase issues. Unplug units during lightning storms or when unused for long periods of time. Do not install unit near any heat sources such as radiators, heat registers, stoves, or devices (including amplifiers) that produce heat. Do not block any ventilation openings. This unit uses active cooling with fans. Do not install unit in dusty and/or dirty places. Use professional equipment racks with air condition and filters.

8. Specifications

SKU	H1BT-U4H-150A
Type	HDMI HDBaseT Extender
HDMI Compliance	HDMI1.4/2.0
HDCP Compliance	HDCP1.4/2.2
Resolutions supported	480i, 480p, 576i, 576p,720p,1080i,1080p, 3840x2160, 4096x2160
Color Scales, Subsampling	RGB, YUV, 4:2:0, 4:2:2, 4:4:4
Color Depth Resolution	8 , 10, 12-bit
HDMI Audio Formats	LPCM up to 7.1, Dolby Digital, Dolby TrueHD, Dolby Digital Plus, DTS, DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X
RS232	Up to 115200 baud
IR Range	20 – 60KHz
HDBaseT Compliance	Valens Gen1, VS100, PoC
HDBaseT Bandwidth	10.2Gbps
Transmission Distance	up to 150 meters for 1080p60, up to 120 meters for 4K60
ESD Protection	±8kV air-gap, ±4kV contact (human body model discharge)
Enclosure material	Metal
Finished colour	Black
Dimension	140x65x18mm
Weight (each unit)	0,16 kg
Operating Temperature	0°C ~ 40°C
Storage Temperature	-20°C ~ 60°C
Relative Humidity	20%~90% RH (non-condensing)
Transmitter	**H1BT-U4H-150A-TX**
Video Input	HDMI up to 3840x2160@60Hz, 4:4:4, HDMI type A ,19-pin
Input Video Bandwidth	18Gbps
Video Output (Loop)	HDMI up to 3840x2160@60Hz, 4:4:4, HDMI type A ,19-pin
RS232	1x Serial, Phoenix 3,81 mm, 3 -pin
IR Input	1x IR, mJack 3,5 mm, stereo
IR Output	1x IR, mJack 3,5 mm, stereo
Extension Link Output	1x HDBaseT, RJ45
Firmware update port	1x USB, micro USB
Power Supply	AC 110-240V, 50-60Hz / DC 24V,1A
Power Consumption	(m <10W
Receiver	**H1BT-U4H-150A-RX**
Video Output	HDMI up to 3840x2160@60Hz, 4:2:0, HDMI type A ,19-pin
Output Video Bandwidth	10.2Gbps
Audio Output	1x Analog Stereo Unbalanced, mJack 3,5 mm, stereo
RS232	1x Serial, Phoenix 3,81 mm, 3 -pin
IR Input	1x IR, mJack 3,5 mm, stereo
IR Output	1x IR, mJack 3,5 mm, stereo
Extension Link Input	1x HDBaseT, RJ45
Firmware update port	1x USB, micro USB
Power Supply	AC 110-240V, 50-60Hz / DC 24V,1A
Power Consumption	(m <10W

9. Connection Scheme Example



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