



HCE II Owner's Manual

HDMI, and IR Extender over HDBaseT
with 3D, 4K Support



PureLink™

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Package Contents

Please make sure all of the following items are included in the package:

HCE II Tx package

- 1 x HCE II transmitter module
- 1 x Power adapter
- 1 x IR blaster
- 2 x screws
- 1 x User manual

HCE II Rx package

- 1 x HCE II receiver module
- 1 x Power adapter
- 1 x IR blaster
- 1 x IR receiver
- 2 x screws
- 1 x User Manual

Description

The PureLink HCE II is a transmitter and receiver set for long distance extension of HDMI video and embedded audio with bi-directional control signal (IR) over single CAT 5/6/7- type cable. It is designed on HDBaseT technology which allows full 3D support with up to 230ft (70m) at 1080P@60Hz, and 130ft (40m) at 4K2K (UHD) resolution. A compact and low profile enclosure makes the HCE II ideal for extending HDMI video, embedded multi-channel audio, and bi-directional control signal to limited space environment such as behind a flat-panel display.

PureLink HCE II is HDCP compliant and it enables the reliable, long distance extension of HDMI signals, supporting Deep Color and full 3D and embedded HD lossless audio formats. In addition, EDID and HDCP communication is being maintained between a source and display. Also, the HCE II includes an IR insertion port, allowing bi-directional control of an AV device.

Features

- **Zero loss & Zero noise delivery** of digital high definition video and audio signal using UTP connection, HCE II delivers HD signals over CAT5/6/7-type cables without loss or digital interference maintaining the clarity and colors. Noise cancellation and error correction logic enhances HDMI video and audio signals over long distance.
- **Compact and Robust enclosure design** allows for discreet installation behind a flat-panel display.
- **Designed based on HDBaseT Technology**, supporting support Deep Color and full 3D support plus DTS-HD and Dolby TrueHD over a single low cost CATx interface with up to 230ft (70m) at 1080P@60Hz or 1920x1200@60Hz and 130ft (40m) at 4K2K (UHD) resolution.
- Bi-directional IR control signal transmission.
- Uncompressed high definition video up to 4K2K@30Hz@48bits and 3D.
- Max. Data Rate- 10.2 Gbps.
- HDCP (High-bandwidth Digital Content Protection) Support.
- HDMI version 1.4 Support.
- Audio transmission support LPCM 7.1@192KHz, Dolby TrueHD, DTS-HD MA.

Model	THE
Input Signal	HDMI
Output Signal	HDMI
Supporting Display Resolutions	VGA ~ WUXGA (up to 1920 x 1200 @ 60Hz), 480i ~ 1080p, 4K2K @ 30Hz
Max. Distance	1920x1200 @ 60Hz or 1080P@60Hz : 230ft (70m) 4K2K@30Hz : 130ft (40m)
Connector Type	DC Power Jack HDMI 19 Pin Female (Type A) RJ-45 IR
Conformations	HDMI version 1.4 With HDCP
Power Rating	DC 5V , 2A
Dimension	4.01x3.34x1.02 inches / 102.1 x 85.0 x26.0 mm
Weight	0.61lbs (0.28Kg) each

***Please use CAT6a/CAT7 cable for maximum distance transmission.**

*** Travel Range Specification**

Cable Type	Range	Pixel clock rate	Video Data Rate	Supported Video
CAT5e/CAT6	60 m	<= 225 MHz	<= 5.3 Gbps (HD Video)	Up to 1080p, 60Hz, 36bpp (Data rates lower than 5.3 Gbps or below 225 MHz TMDS clock)
	35 m	> 225 MHz	> 5.3 Gbps (Ultra HD Video)	1080p 60Hz 48bpp, 1080p60Hz 3D, and 4K2K, 30Hz video formats
CAT6a/CAT7	70 m	<= 225 MHz	<= 5.3 Gbps (HD Video)	Up to 1080p, 60Hz, 36bpp (Data rates lower than 5.3 Gbps or below 225 MHz TMDS clock)
	40 m	> 225 MHz	> 5.3 Gbps (Ultra HD Video)	1080p 60Hz 48bpp, 1080p60Hz 3D, and 4K2K, 30Hz video formats

Operation and Reliability Specification

1. Operating Environment

Temperature : 32F ~ 131F (0°C ~ 55°C)
Humidity : 10% ~ 80%
Altitude : 3,000m Max.

2. Transit Environment

Temperature : -13F ~ 140F (-25°C ~ 60°C)
Humidity : 5% ~ 95%
Altitude : 15,000m Max.

3. Storage Environment

Temperature : -4F ~ 185F (-20°C ~ 85°C)
Humidity : 5% ~ 95%
Altitude : 3,000m Max.

4. Reliability

MTBF: 90% at over 50,000 hours aging test

- In compliance with LCD Monitor reliability test standard

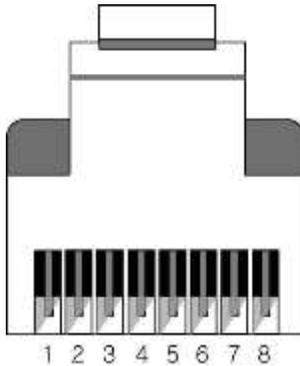
Installation and Connection Instructions

Installation and Connection Instructions

1. Turn off both the video source and the display before connecting any cables.
2. Connect CATx cable between the HCE II transmitter and the HCE II receiver.
3. Connect HDMI cable between the source and the HCE II transmitter AND the HCE II receiver and the display.
4. Connect the power supply unit to both HCE II transmitter and receiver module.
5. Turn on Display.
6. Turn on Video Source.

How to terminate CATx cable

HCE II was designed to conform to TIA/EIA-568-B standard. Please ensure that each PIN layout of HCE II transmitter and HCE II receiver are corresponding with the picture below before connecting the cable. Please note that CAT5e or above level cable enables to deliver better video quality and longer distance.



Pin	TIA/EIA-568B	
	Wire color	Digital RGB
1	Orange/ White	DATA0 +
2	Orange	DATA0 -
3	Green/ White	DATA1
4	Blue	DATA2 +
5	Blue/ White	DATA2
6	Green	DATA1 -
7	Brown/ White	DATA3
8	Brown	DATA3 -

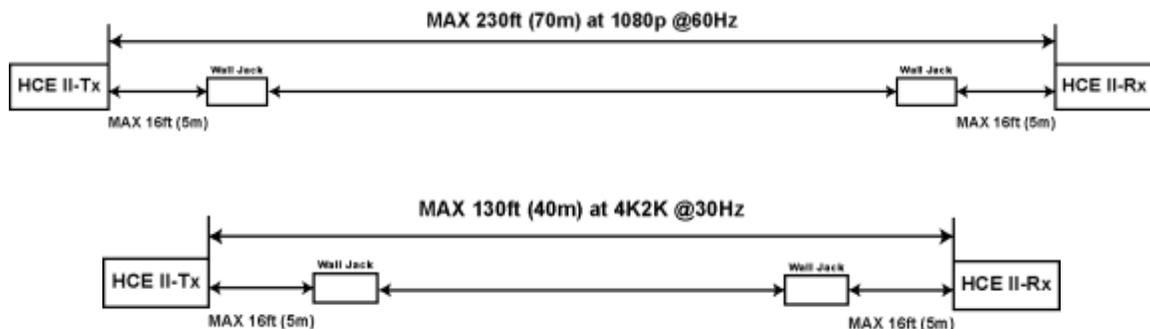
CATx cable

Link cable recommend use high quality CAT5, CAT5e, CAT6, CAT6a, CAT7 UTP / STP or FTP cable.

Transmission Distance

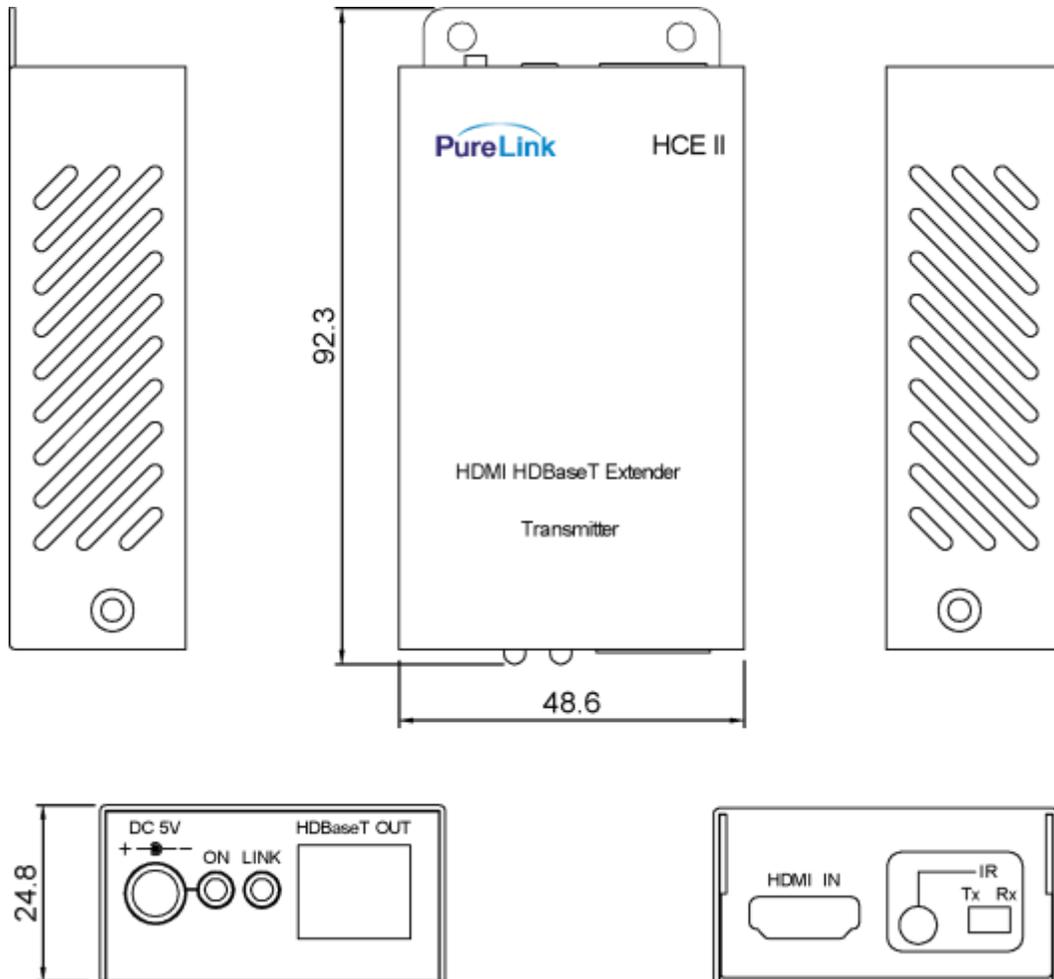
The maximum transmission distance up to 230ft (70m), use lower resolution won't extend longer distance

If connection through the wall socket, the cable length must less 5 meters between HDMI extender and wall jack, as below drawing:



HCE II Transmitter and Receiver Specification

[HCE II Transmitter]



Module Dimensions:

1.93x3.6x0.98 (inches) | 48.6 x 92.3 x24.8 (mm)

Connection Ports:

HDMI IN: HDMI Input

RJ-45(CAT) receptacle

5V DC Power Supply Unit Input

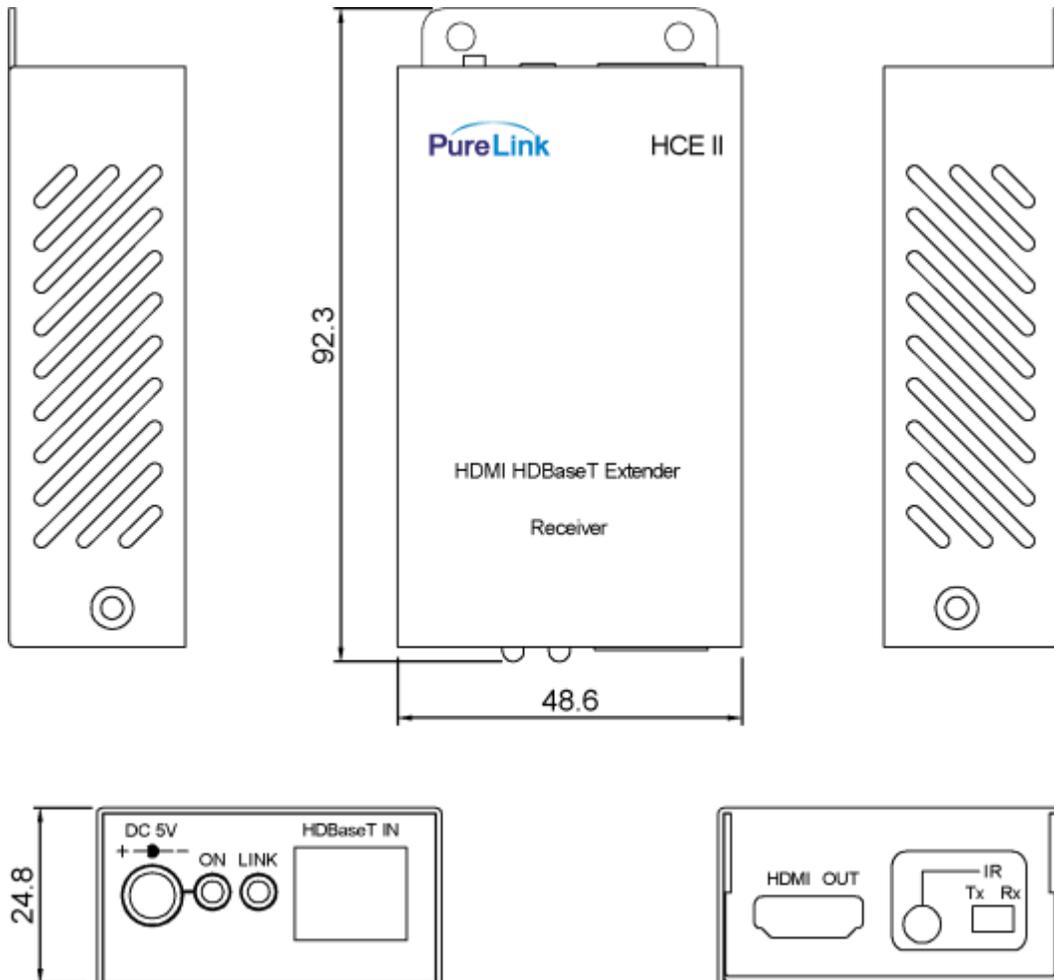
Green LED: Power On/Off Indication

Blue LED: IR Receive

Red LED: IR Transmit

RJ-45 Green LED: Link

[HCE II Receiver]



Module Dimensions:

1.93x3.6x0.98 (inches) | 48.6 x 92.3 x24.8 (mm)

Connection Ports:

HDMI OUT: HDMI Output

RJ-45 (CAT) receptacle

5V DC Power Supply Unit Input

Green LED: Power On/Off Indication

Blue LED: IR Receive

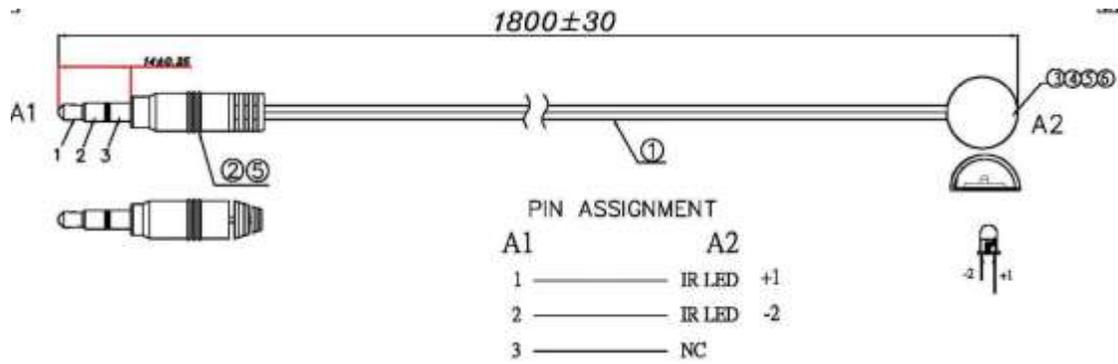
Red LED: IR Transmit

RJ-45 Green LED: Link

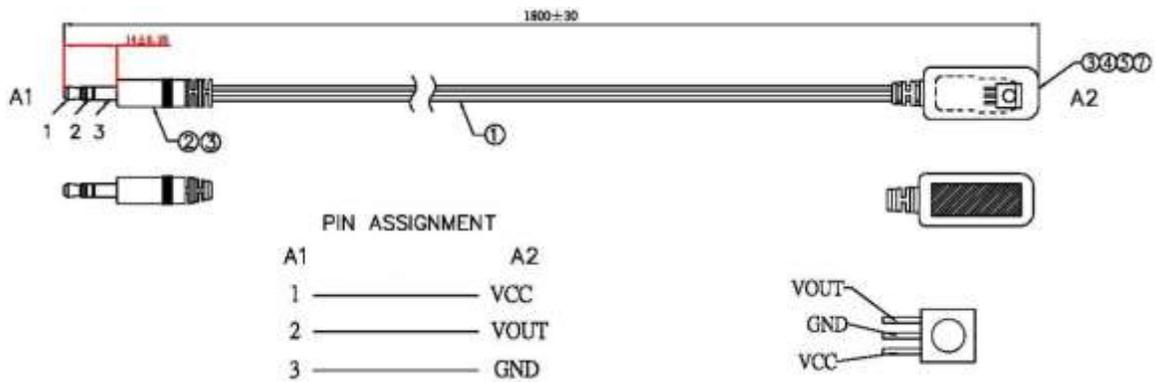
IR Information

- IR Blaster is always on the end point (display)
- The unit that will be connected to the IR blaster should be on TX dip switch mode.
- The other unit with IR receiver connected should be on RX dip switch mode.
- Use the remote control of the end point device facing the IR receiver.

IR Cable Pin Assignment



[Transmitter]



[Receiver]

Technical Specification

Frequency Range:	25 ~ 165 MHz
Supporting Resolutions:	Up to 4K2K / 30Hz / 48 bit
I/O Signal Standard:	HDMI 1.4
Max Distance:	Max 230ft (70m) at 1080P@60Hz / Max 230ft (70m) at 1920x1200@60Hz / Max 130ft (40m) at 4K2K@30Hz
IR Carrier:	38Khz / $\pm 10^\circ$ / 5M / 2 Way
UTP Cable specification:	CAT5/5e/6/6a/7
Input Ports:	HDMI Female 19P (Type A) / RJ-45
Output Ports:	HDMI Female 19P (Type A) / RJ-45
Power Consumption:	Transmitter: 380mA (Max) / Receiver: 820mA (Max)
Power Rating:	5V DC / 2A

Warranty

Three Three (3) Years Warranty

Dtrovision warrants this HDMI, and IR Extender over HDBaseT with 3D, and 4K Support to be free from defects in workmanship and materials, under normal use and service, for a period of three (3) years from the date of purchase from Dtrovision or its authorized resellers.

If a product does not work as warranted during the applicable warranty period, Dtrovision shall, at its option and expense, repair the defective product or part, deliver to customer an equivalent product or part to replace the defective item, or refund to customer the purchase price paid for the defective product.

All products that are replaced will become the property of Dtrovision.

Replacement products may be new or reconditioned.

Dtrovision shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to Dtrovision for repair under warranty or not.

Warranty Limitation and Exclusion

Dtrovision shall have no further obligation under the foregoing limited warranty if the product has been damaged due to abuse, misuse, neglect, accident, unusual physical or electrical stress, unauthorized modifications, tampering, alterations, or service other than by Dtrovision or its authorized agents, causes other than from ordinary use or failure to properly use the Product in the application for which said Product is intended.

Caution

1. The wiring must away from any equipment with electromagnetic wave, i.e.: mobile phone, microwave, radio equipment, fluorescent lamp, high voltage power lines.
2. This device is not network equipment, do not connect with Network to avoid damage.
3. IR transmitter do not put near from receiver to avoid mutual interference.

FCC/CE Statement

This device complies with part 15 of FCC Rules and EN 55022/55024/61000-3 for CE certification. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must not accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 and 2 of FCC Rules and EN 55022/55024/61000-3 for CE certification. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction guide, 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:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult a service representative for help.

Properly shielded and grounded cables and connectors must be used in order to comply with FCC/CE emission limits. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

