PureLink
Digital Extender®

HCE Owner's Manual
HDMI over Cat5/6 Extension System

PureLink™

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Package Contents

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

      1) HCE Transmitter Module
      2) HCE Receiver Module
      3) 6ft HDMI-D Cable (x2)
      4) DC 12V Power Supply Unit with a power cord
      5) DC 12V Power Supply Unit with a power cord

General Specification

1. HCE is a HDMI extension system over CAT5 cable for long distance up to 165ft.

2. Its compact & durable design and low power consumption makes it an ideal solution for connection for high definition video and audio signal of digital displays such as LCD/Plasma monitor and Projector.

3. HCE's unique circuitry design for the best quality of HDTV and low-power consumption design eliminates the need of two CAT5 connections between transmitter and receiver. PureLink's new HCE only requires one CAT5 connection. This CAT5 connection enables to minimize electrical noise and EMI free that is ideal for long distance extension of high definition HDMI signal with embedded audio.

4. HCE's intuitive LCD panel on both transmitter and receiver show the status of the video and audio signals including the current signal image format and audio format. With this information HCE provide, any user can easily view helpful diagnostic information.

Model	HCE
Input Signal	HDMI
Output Signal	HDMI
Supporting Display Resolutions	VGA ~WUXGA(up to 1920 x 1200 @ 60Hz) , 480i ~ 1080p
Max. Distance	1920x1200 @ 60Hz or at 1080p: 50 M(165ft)
Connector Type	DC Power Jack HDMI 19 Pin Female RJ-45
Conformations	HDMI version 1.3 With HDCP
Power Rating	DC +12V , 10W Max
Dimension	5.36 x 4.65x 0.9 (inches) | 136x118x25(mm)
Weight	Transmitter: 1.1Lbs(0.48Kg) / Receiver: 1.1Lbs(0.48Kg)

Operation and Reliability Specification

1. Operating Environment
   Temperature   : 50F ~ 104F (10℃~ 40℃)
   Humidity   : 10% ~ 80%
   Altitude   : 3,000m Max.

2. Transit Environment
   Temperature   : -13F ~ 140F (-25℃~ 60℃)
   Humidity   : 5% ~ 95%
   Altitude   : 15,000m Max.

3. Storage Environment
   Temperature   : -4F ~ -49F (-20℃~ 45℃)
   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

Main Features

1. Zero loss & Zero noise delivery of digital high definition video and audio signal using UTP connection, HCE delivers HD signals over CAT5 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.

2. Built-in signal repeater to support longer distance between the source and the HCE transmitter & HCE receiver and the display. This Signal Repeater logic supports up to 50ft copper based HDMI cables.

3. Compact and Robust Module Design

4. Long Distance (Up to 165ft at 1080p or lower signal) over cost effective single CAT5 cable.

5. Full EDID Management
   Saving/Emulating display's EDID in the transmitter module enhances reliability and compatibility with various displays.

6. HDCP (High-bandwidth Digital Content Protection) Support.

7. HDMI version 1.3 Support.

8. Signal Status LCD panel on both transmitter and receiver modules video and audio signal information is displayed on the LCD panels to help understand the signal even before the display is connected. Display Resolution, refresh rates and audio signal status are intuitively displayed on the modules.

Installation and Connection Instructions

Installation and Connection Instructions
1. Turn off both the video source and the display before connecting any cables.
2. Connect CAT5 cable between the HCE transmitter and the HCE receiver.
3. Connect HDMI cable between the source and the HCE transmitter AND the HCE receiver and the display.
4. Connect the power supply unit to both HCE transmitter and receiver module.
5. Turn on Display.
6. Turn on Video Source.

EDID Management

For reliability and correct signal transmission of the video source, EDID emulation is recommended. Please follow the steps below;

1. Connect the HCE transmitter's HDMI input port to the display's HDMI input port.
2. Press and hold EDID button for about 2 seconds until the display's EDID is successfully saved on to the transmitter. "EDID PASS" message on the LCD panel indicates successful EDID save. "EDID ERROR" message indicates failed EDID save. <Please refer to the drawing below for more information>
3. If you like to read/save other display's EDID, then repeat the step #1~ #2.

   ** Please note factory default EDID is based on 1080p. **

EDID LOAD
EDID PASS

EDID LOAD
EDID ERROR

        <EDID Save Successful>   < EDID Save Failed>

Signal Status LCD Display

The LCD panel on HCE transmitter and receiver shows the current signal status.
Example Status:

```
1920*1200@ 60Hz
   <Audio   OUT>
```

```
1600*1200@ 60Hz
   <Audio   OUT>
```

```
1280*1024@60Hz
   <Audio   OUT>
```

```
1024*768@ 60Hz
   <Audio   OUT>
```

How to install Cat5 cable

HCE was designed to conform to TIA/EIA-568-B standard. Please ensure that each PIN layout of HCE transmitter and HCE 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.
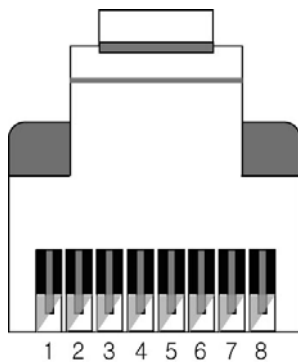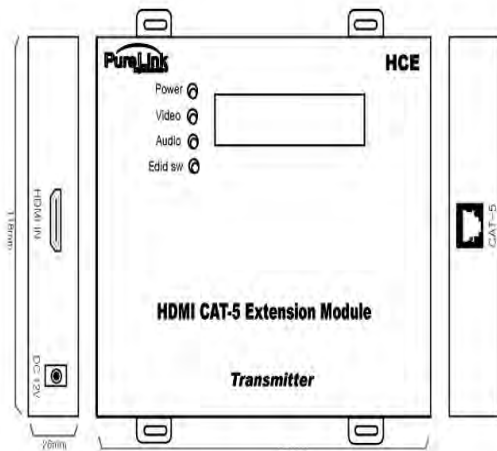
Pin	TIA/EIA-568B Wire color	Digital RGB
1	Orange/ White	TMDS Data2+
2	Orange	TMDS Data2-
3	Green/ White	TMDS Data1+
4	Blue	TMDS Data0+
5	Blue/ White	TMDS Data0-
6	Green	TMDS Data1-
7	Brown/ White	TMDS Clock+
8	Brown	TMDS Clock-
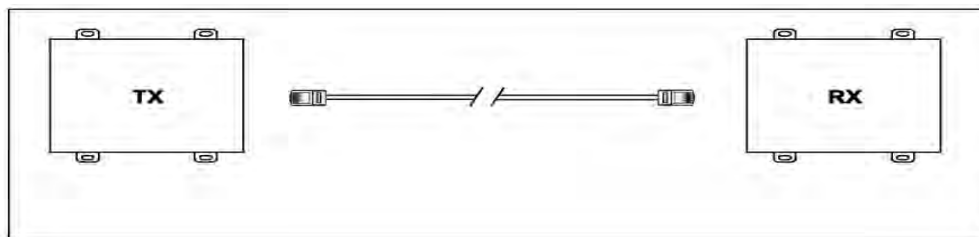
HCE Transmitter and Receiver Specification

HCE Transmitter and Receiver Specification
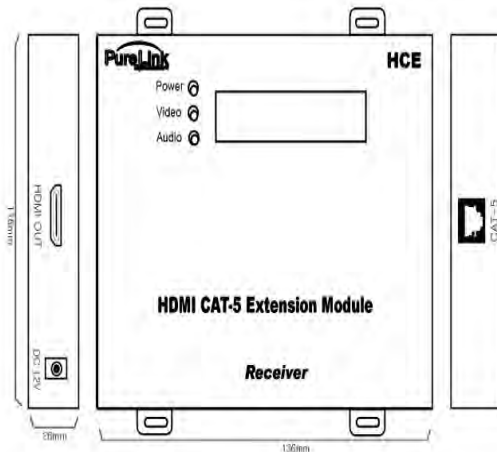
Module Dimensions: 53.6x46.5x9.86 (inches) 136x118x25(mm)

Connection Ports;
HDMI IN: HDMI Input
RJ-45(CAT) receptacle
12V DC Power Supply Unit Input
LCD Panel Display;
LCD Display: 16x2 digital LCD

Power LED: Power On/Off Indication
Video LED: HDMI Video Signal Status
Audio LED: Audio Signal Status
EDID s/w: EDID Save Function button

Connection Ports;
HDMI OUT: HDMI Output
RJ-45 (CAT) receptacle
12V DC Power Supply Unit Input
LCD Panel Display;
LCD Display: 16x2 digital LCD

Power LED: Power On/Off Indication
Video LED: HDMI Video Signal Status
Audio LED: Audio Signal Status
EDID s/w: EDID Save Function button

Technical Specification

Data Transfer Speed:	Up to 10 Gbps
Frequency Range:	25 ~ 165 MHz
Supporting Display Resolutions:	1080p / Up to WUXGA (1920X1200)@60Hz
I/O Signal Standard:	HDMI 1.3
Max Distance:	50m (165ft) at 1080p / 1920x1200@60Hz
UTP Cable specification:	CAT-5/5E/6
Input Ports:	HDMI Female 19P / RJ-45
Output Ports:	HDMI Female 19P / RJ-45
Power Consumption:	Transmitter: 1.65 Watts (Max) / Receiver: 2.28 Watts (Max)
Power Rating:	12V DC / 3A

Warranty

2 (Two) Year Warranty

Dtrovision warrants this fiber optical HDMI extension cable to be free from defects in workmanship and materials, under normal use and service, for a period of two (2) year 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.

Any replaced or repaired product or part has a ninety (90) day warranty or the reminder of the initial warranty period, whichever is longer.

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.

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.

UL Statement

This device has completed a UL Commercial Inspection and Testing Services for the multimode HDMI cable complied with VW-1 under UL 758. it is validated by the UL file number SV2038 and project number 04CA05353.