



## ***DCE Series***

***DVI over CAT5 Extension System***

***With Audio***

## ***Owner's Manual***

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## **DCE Package Contents**

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

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

## General Specification

- DCE is a DVI, surround digital audio and analog audio extension system over CAT5 cable for long distance up to 165ft.
- 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.
- DCE's unique circuitry design for the best quality of HDTV and low-power consumption design eliminates the need of two CAT5 connection between transmitter and receiver. Purelink's new DCE 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 DVI signal with embedded audio.
- DCE'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 DCE provide, any user can easily view helpful diagnostic information.

|                                |  |
|--------------------------------|--|
| Model                          | DCE  |
| Input Signal                   | DVI-D  |
| Output Signal                  | DVI-D  |
| Supporting Display Resolutions | VGA ~WUXGA(up to 1920 x 1200 @ 60Hz) ,<br>480i ~ 1080p                             |
| Max. Distance                  | 1920x1200 @ 60Hz or at 1080p: 50 M(165ft)  |
| Connector Type                 | DC Power receptacle / DVI 29 Pin Female<br>RCA Audio / Optical Audio Jack<br>RJ-45 |
| Conformations                  | DDWG DVI1.0<br>With HDCP   |
| Power Rating                   | DC +12V , 10W Max  |
| Dimension                      | 53.6x46.5x9.86(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°C~ 40°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 ~ -49F (-20°C~ 45°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

## Main Features

1. Zero loss & Zero noise delivery of digital high definition video and audio signal using UTP connection, DCE delivers HD signals over CAT-5 cable without loss or digital interference maintaining the clarity and colors. Noise cancellation and error correction logic enhances video and audio signals over long distance.
2. Built-in signal repeater to support longer distance between the source and the DCE transmitter & DCE receiver and the display. This Signal Repeater logic supports up to 50ft copper based DVI cables.
3. Compact and Robust Module Design
4. Long distance (Up to 165ft at 1080p or lower signal) over cost effective single CAT-5 cable
5. DVI video signal AND Digital Audio or Analog Audio delivery via fiber optic cables.
6. Full EDID Management  
Saving/Emulating display's EDID in the transmitter module enhances reliability and compatibility with various displays.
7. HDCP (High-bandwidth Digital Content Protection) Support.
8. DDWG DVI ver.1.0 Support.
9. 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

1. Turn off both the video source and the display before connecting any cables.
2. Connect CAT5 cable between the DCE transmitter and the DCE receiver.
3. Connect DVI cable between the source and the DCE transmitter AND the DCE receiver and the display.
4. Connect the power supply unit to both DCE 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 DCE transmitter's DVI input port to the display's DVI 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 Save Successful>



< EDID Save Failed>

## Signal Status LCD Display

The LCD panel on DCE transmitter and receiver shows the current signal status.

Example Status;

1920\*1200@ 60Hz  
<Audio OUT>

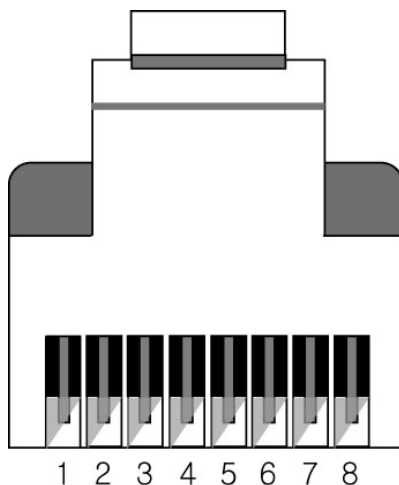
1600\*1200@ 60Hz  
<Audio OUT>

1280\*1024@60Hz  
<Audio OUT>

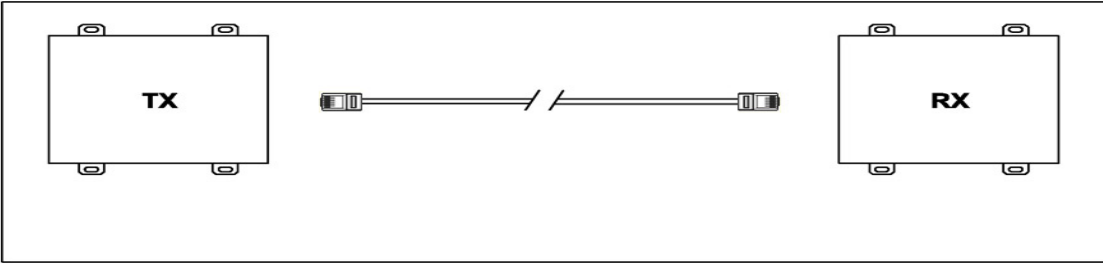
1024\*768@ 60Hz  
<Audio OUT>

## How to install CAT5 Cable

DCE was designed to conform to TIA/EIA-568-B standard. Please ensure that each PIN layout of DCE transmitter and DCE 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.



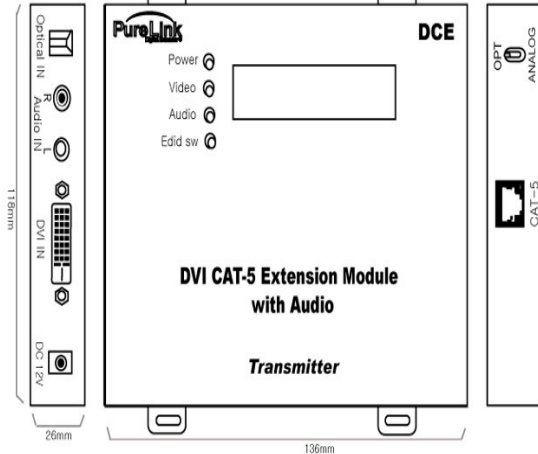
| Pin | TIA/EIA-568B  | Digital RGB |
|-----|---------------|-------------|
|     | Wire color    |             |
| 1   | Orange/ White | TMDS Data2+ |
| 2   | Orange        | TMDS Data2- |
| 3   | Green/ White  | TMDS Data1+ |
| 4   | Blue          | TMDS Data0+ |
| 5   | Blue/ White   | TMDS Data0- |
| 6   | Green         | TMDS Data1- |
| 7   | Brown/ White  | TMDS Clock+ |
| 8   | Brown         | TMDS Clock- |



## DCE Transmitter and Receiver Specification

Module Dimensions: 53.6x46.5x9.86 (inches) 136x118x25(mm)

Transmitter



### Connection Ports:

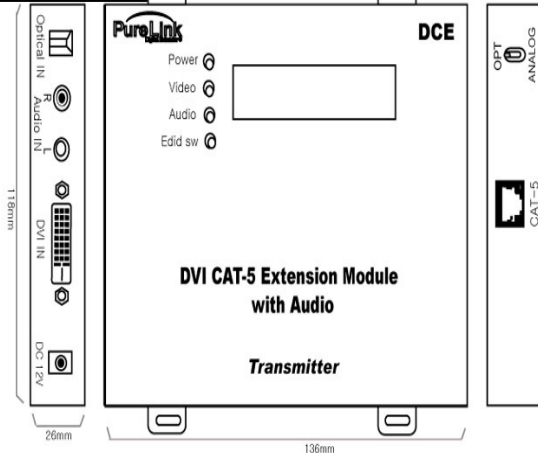
DVI IN: DVI Input  
 Audio IN(R, L): Analog Stereo Audio input  
 OPTICAL IN: Digital Audio input  
 OPT/ANALOG Switch: Toggle between Stereo Audio and Digital Audio (Optical In)

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: DVI Video Signal Status  
 Audio LED: Audio Signal Status  
 Edid s/w: EDID Save Function button

Receiver



### DVI OUT: DVI Output

Audio Out (R, L): Analog Stereo Audio Output  
 OPTICAL Out: Digital Audio Output  
 OPT/ANALOG Switch: Toggle between Stereo Audio and Digital Audio (Optical Out)

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: DVI Video Signal Status  
 Audio LED: Audio Signal Status  
 Edid s/w: EDID Save Function button

## Technical Specification



|                                 |  |
|---------------------------------|--|
| Data Transfer Speed:            | Up to 2.25 Gbps (Single Link)                              |
| Frequency Range:                | 25 ~ 165 Mhz   |
| Supporting Display Resolutions: | Up to WUXGA (1920X1200)@60Hz / 1080p                       |
| I/O Signal Standard:            | Digital RGB, TMDS  |
| Max Distance:                   | 1,000m (3,300ft) at 1920x1200@60Hz / 1080p                 |
| UTP Cable specification:        | CAT-5/5E/6   |
| Input Ports:                    | DVI-D Female 29P / RJ-45 / RCA / Optical                   |
| Output Ports:                   | DVI-D Female 29P / RJ-45 / RCA / Optical                   |
| Power Consumption:              | Transmitter: 1.65 Watts (Max) / Receiver: 2.28 Watts (Max) |
| Power Rating:                   | 12V DC / 3A  |

## Warranty

### *1 (One) 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 one (1) 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 remainder 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.