



## ***Two (2) fibers Detachable DisplayPort 1.2 Extender***



## ***User Manual DPFX-250-TR***

### **Manual Contents**

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## Welcome!

Congratulations on your purchase of the two (2) fibers DisplayPort extender, DPFX-250-TR. This manual contains information that will assist you in installing and operating the product.

## Product Description

A compact optical DisplayPort extender, DPFX-250-TR enables to transmit 4K (4096x2160) at 60Hz signal up to 200m (656feet), avoiding any tricks like scaling or data compression for lessening a burden of data transmission. It provides total data throughput 21.6Gbps (5.4Gbps per lane).

The OM3 fiber connection by two (2) LC fibers connector between transmitter and receiver, gives clean, secure and easy installation with perfect electrical isolation, but without electrical hazard and interference. The DPFX-250-TR can be operated by either USB power by plugging the USB cable or 3.3V from pin #20 of DisplayPort interface.

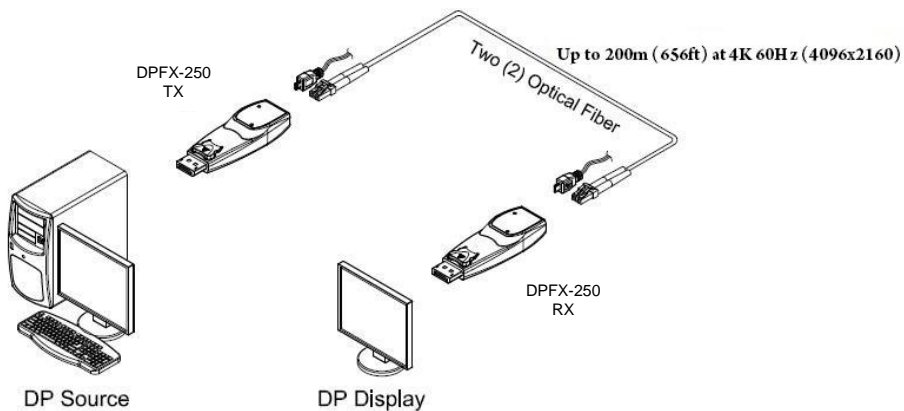


Figure 1 – Overall Connection of DPFX-250-TR

## System Requirements for Setup

- Hardware requirements**
  - You must have a DisplayPort source and display. It should support the maximum graphic resolution feature of displays to be connected.
  - No special requirements of memory size, CPU speed and chipsets, if you've already properly installed your DisplayPort systems or graphic cards.
  - Proper initial trial of the entire platform with its application using a short length copper cable is recommended prior to installation with the optical link.
- Software requirements**
  - No special restrictions, if you've already properly installed your DisplayPort systems.
- Power Technical Advisory**
  - Enclosed Power Adaptors and USB cables supply power to both Transmitter and Receiver.
- Connection Advisory**
  - **It is highly recommended that DisplayPort source is directly connected into DisplayPort display output via DPFX-250-TR without connection to incompatible distributor, switcher and selector.**

### The Shipping Group of DPFX-250-TR;

- One (1) Transmitter (Tx) and One (1) Receiver (Rx)
- One (1) 0.2m Male to Female DisplayPort copper cable
- Two (2) Micro USB to USB cables
- Two (2) 5V 1A power adapter
- User Manual

※ **Default connection is direct connection to both source (Tx side) and display (RX side)**

※ **If direct connection is impracticable, 0.2m DisplayPort copper cable is strongly recommended to use on TX(Display Source) side only**

## Installation

**Important:** Please keep the installation procedure below. Improper or no operation may result if the start-up sequence is not correctly followed.

### Step 1

Carefully unpack the contents in the shipping group.

### Step 2

Power on the DisplayPort source and display. Both the transmitter and receiver will be turned on by 3.3V from pin #20 of DisplayPort interface. The USB power is recommended for the stable power supply for both the transmitter and receiver.

### Step 3

The Power LED will be turned on when DPFX-250-TR is connected to DisplayPort interface of signal source and display and the Status LED will blink three (3) times. Then the Status LED will blink again when the whole connection is made.

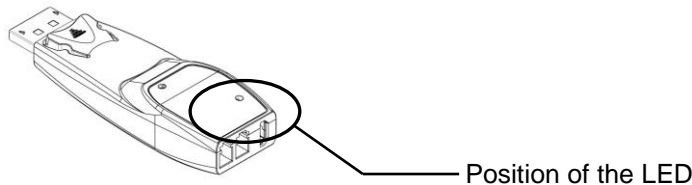


Figure 2 – Position of the LED

### Step 4

Connect two (2) LC optical fibers between the transmitter and the receiver and each fiber channel shall be connected as (A) to (A) and (B) to (B) carefully. Ensure the duplex connectors are fully engaged and then, the top LED will begin to blink regularly.

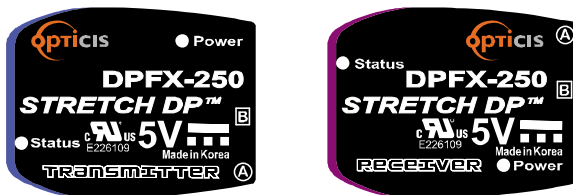


Figure 3 – Fiber Numbering on product label

## 1-3 Installation

**Note1:** Please DO NOT look directly into the LC receptacles of the Transmitter when it is powered on. Although this product is regulated strictly enough to operate under the LASER Class I, classified by CDRH/FDA for eye safety, it is not recommended to do so.

**Note2:** The maximum extension length by OM3 fiber is 200 meters (656ft.).

**Note3:** It is recommended NOT to use any intermediate cable or adapter between them to avoid undesirable performance degradation.

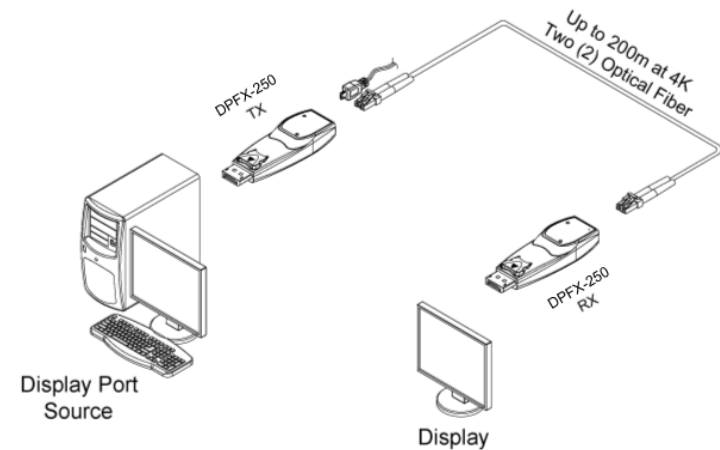


Fig Figure 4 – Connection of optical fiber

### Step 5

Connect the transmitter to the DisplayPort source

### Step 6

Connect the receiver to the DisplayPort source.

**Note:** If the connectors are fully engaged, the bottom LED will turn on.

### Step 7

If the system does not work properly, go to the page 1-6 for trouble shooting.

## 1-4 Installation

## Connection with DPAX

Opticis DisplayPort Data Recovery Repeater, DPAX, is an active repeater for DisplayPort video signal to increase video transmission.

With using DPAX, DPFX-250 can extend its total transmission length even longer. DPAX can be connected any side of DPFX-250, however, to connect on TX side of DPFX-250, customized copper cable has to be used.

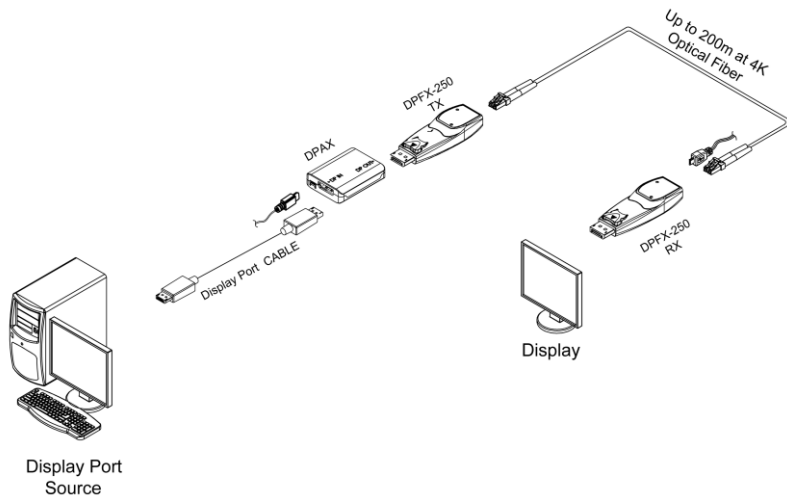


Figure 5 – Connection of DPFX-250 and DPAX (TX & RX)

DPAX can improve transmission length of DPFX-250 via optical fiber. It has been confirmed that DisplayPort signal transmission length has improved up to 300m when using DPFX-250 with DPAX under certain environment such as below configuration. Each 200m and 300m of DisplayPort signal transmission has successfully tested when using GTX960 as a display source and ASUS PA328Q as a display.

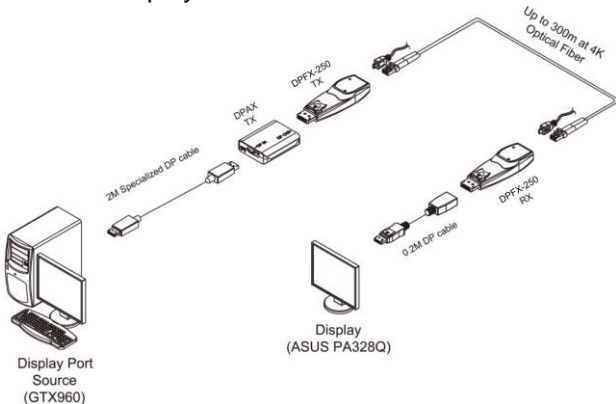


Figure 6- Connection of DPFX-250 and DPAX

### 1-5 Connection with DPAX

## Troubleshooting

### The display shows black screen.

- Ensure that all plugs and jacks used by USB power supplies are firmly connected.
- Ensure that the LED is ON.
- Ensure that the DisplayPort is firmly plugged in to the DisplayPort source and display.
- Ensure that the transmitter and receiver modules are plugged correctly to the source and display, respectively.
- Check if the DisplayPort source and display are powered on and properly booted.
- Reset the system by de-plugging and re-plugging the transmitter DisplayPort or receiver DisplayPort, or by de-plugging and re-plugging the USB power cables that are plugged of the transmitter and receiver module
- Re-boot the system while connecting the module.

### Screen is distorted or has noises.

- Check if the graphic resolution is properly set. Go to the display properties and tap the settings. Ensure that the resolution sets less than WQUXGA (3840x2400) at 60Hz refresh ratio.
- Reset the system
- Power down, disconnect and reconnect the optical system cable or USB power adaptors, and power up

## Maintenance

No special maintenance is required for the optical system cables and power supplies. Ensure that the cables and power modules are stored or used in a benign environment free from liquid or dirt contamination. There are no user serviceable parts. Refer all service and repair issues to Opticis or its authorized distributor.

## Technical Support and Service

For commercial or general product support, contact your reseller. For technical service, contact Opticis by email [techsupp@opticis.com](mailto:techsupp@opticis.com) or visit its website at [www.opticis.com](http://www.opticis.com)

### 1-6 Trouble Shooting, Maintenance, Technical Support and Service

## Product Specifications

- **Compliance with DisplayPort standard:** supports DP 1.2
- **Extension limit:** 200m (656feet) for 4K (4096x2160) at 60 Hz refresh rate over two (2) LC OM3 fibers (50/125um).
- **Graphic Transmission Bandwidth:** Supports total data rate 21.6Gbps (5.4Gbps per lane).
- Supports **Dual-mode DP (DP++)**
- Supports **auxiliary /I<sup>2</sup>C channel over fiber**
  
- **Mechanical specifications of transmitter and receiver**
  - **Dimensions(WDH):** 26mm x 72mm x 15mm
  
- **Environmental Specifications**
  - Operating temperature: 0°C to 50°C
  - Storage temperature: -30°C to 70°C
  - Humidity: 10% to 85%

### AC/DC Power Adapter

- **Power Input:** AC 100-240V, 50/60Hz.
- **Power Output:** +5 V, 1A SMPS DC-power Adapter

## Warranty Information

### 1 (One) Year Warranty

Opticis warrants this optical DP module 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 Opticis or its authorized resellers.

If a product does not work as warranted during the applicable warranty period, Opticis 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 Opticis.

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.

Opticis 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 Opticis for repair under warranty or not.

### Warranty Limitation and Exclusion

Opticis 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 Opticis 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.

### Dispose of Old Electrical & Electronic Equipment

(Applicable in the European Union and other European countries with separate systems)



This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

## Connection with BR-500

By using BR-500, 19" 1RU multi-mounting rack, users are allowed to use DPFX-250-TX up to 8 units with one power supply only. BR-500 has one separate RJ45 Port which allows the connection through LAN cable. This connection to GUI enables the access to the current power status of individual module and also allows to turn on/off the power of the device. By using premium graded DisplayPort 1.2 copper cables, BR-500 can extend up to 3m (9.84ft) distance from the sources.

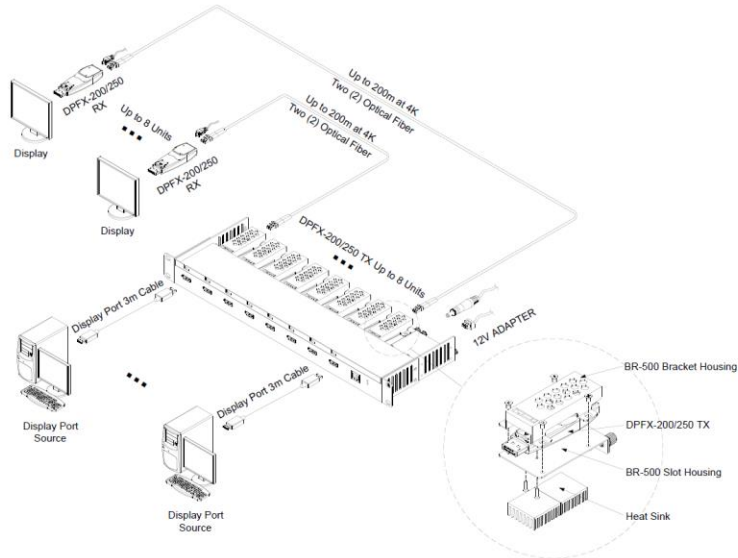


Figure 7 – Connection of DPFX-250 and BR-500

\*Note: BR-500 is applicable to use with **Opticis DisplayPort 1.2 fiber-optic transmitters ONLY**.

## Certifications

CE / FCC, Class 1 Laser Eye Safety

### Certification of Eye Safety

This laser product is inside implemented by using 825, 850, 930nm LD Transceivers, manufactured by Opticis Co., Ltd., which are all certified by CDRH/FDA referred as classified in Laser Class 1 (IEC60825-1).



Caution – Use of controls or adjustments or performances of procedures other than those specified herein may result in hazardous radiation exposure.

## 1-9 Connection with BR-500, Certifications

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For order support, please contact your Distributor or Reseller.

For technical support, check with the Opticis web site [www.opticis.com](http://www.opticis.com) or contact [techsupp@opticis.com](mailto:techsupp@opticis.com)