



# ***DisplayPort 1.2 Data Recovery Repeater***



*User's Manual for the  
DPAX*

**125-0563** **DIREKTRONIK**

## **Manual Contents**

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Manual Contents	1-0
Welcome! Product Description	1-1
System Requirements for Setup, Shipping group	1-2
Installation; Connection with Copper cable	1-3
Connection with Copper cable and Optical Extender (RX side)	1-4
Connection with Copper cable and Optical Extender (TX side)	1-5
Troubleshooting	1-6
Maintenance, Technical Support, and Service	1-7
Product Specifications	1-8
Warranty Information	1-9

### **Pictorials**

Figure 1 – Overall Connection of DPAX	1-1
Figure 2 – Connection of DPAX with Copper cable	1-3
Figure 3 – Connection of DPAX with Copper cable and Optical fiber (RX side)	1-4
Figure 4 – Connection of DPAX with Copper cable and Optical fiber (TX side)	1-5

## Welcome!

Congratulations on your purchase of the DisplayPort 1.2 Data Recovery Repeater, DPAX. This manual contains information that will assist you in installing and operating the product.

## Product Description

The new DisplayPort 1.2 Data Recovery Repeater, DPAX is an active repeater for DisplayPort video signal to increase video transmission of a DisplayPort signal up to combined length of 18m (59ft) over Premium grade DisplayPort Cable.

3m (10ft) from the Source - 15m (49ft) to the Display at DP1.2  
5m (16ft) from the Source - 20m (65ft) to the Display at DP1.1

DPAX complies with DisplayPort 1.2 standards, and supports Ultra High Definition (up to 3840x2160) at 60Hz with auxiliary channel, MST function.

DPAX has been especially designed to work with Opticis fiber-optic DisplayPort extenders, DPFX-100, DPFX-200 and M1-5000. So it can extend transmission of DisplayPort signal even longer.

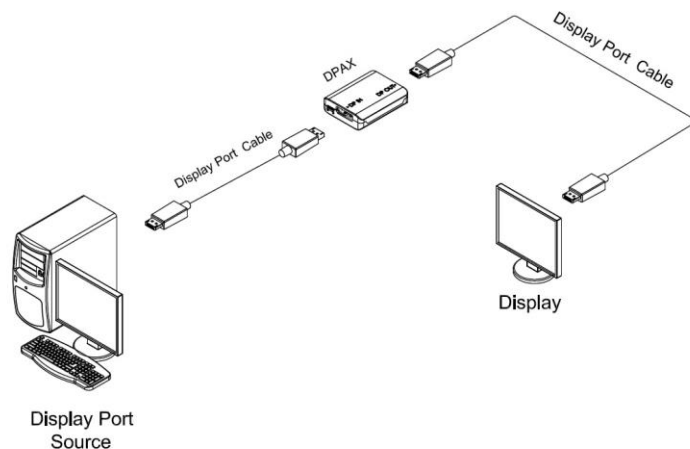


Figure 1 – Overall Connection of DPAX

### 1-1 Welcome, Product Description

## System Requirements for Setup

- Hardware requirements**
  - You have to have a DisplayPort source and Display. It should support the maximum graphic resolution feature of displays to be connected.
  - No special requirement of memory size, CPU speed and chipsets, if you've already installed graphic card that supports DisplayPort system properly on your Display Source.
  - For proper initial trial of the entire platform with its application, using a short length copper cable is recommended prior to install with the product.
- Software requirements**
  - No special restrictions, if you've already properly installed your DisplayPort system.
- Connection Advisory**
  - It is highly recommend that both Display Source and Display are capable of High-resolution transmission. For Optical fiber transmission, DPAX is specially designed to couple with Opticis DisplayPort Extender models. Connecting with other Optical fiber products can result in showing inappropriate display or having undesired resolution.

### Shipping Group of DPAX;

- One (1) DPAX
- One (1) USB Power Cable
- User's Manual
  
- Optional Products:**
  - DC +5V, 1A power adapter

### 1-2 System Requirements for Setup, Shipping Group

## Installation

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

### Connection with Copper cable

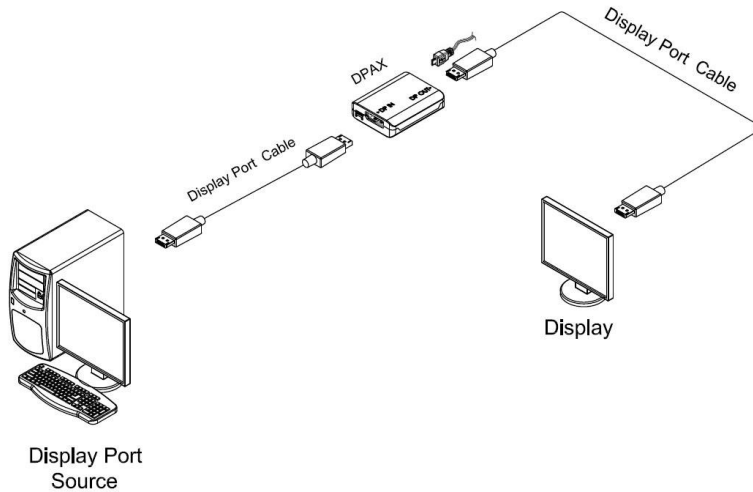


Figure 2 – Connection of DPAX with Copper cable

#### Step 1

Carefully unpack the contents in the shipping group.

#### Step 2

Connect a DisplayPort cable (maximum 3m) from the DisplayPort Source to input port of DPAX, DP IN.

#### Step 3

Connect another DisplayPort cable (maximum 5m) from output port of DPAX, DP OUT, to the Display.

#### Step 4

Power up DPAX by using USB power cable or DC power adapter(optional).

#### Step 5

Power up Display Source and Display and check if it works properly.

### 1-3 Installation

### Connection with Copper cable and Optical Extender (RX side)

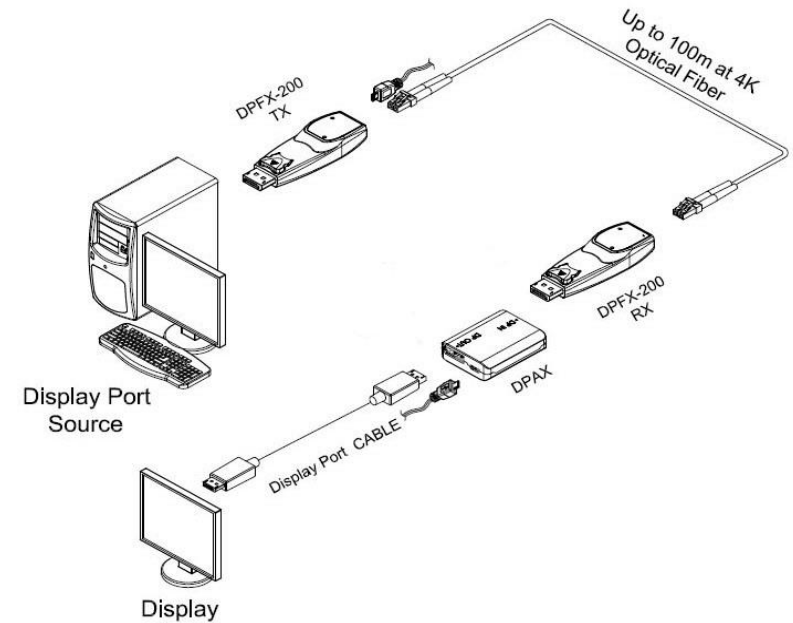


Figure 3 – Connection of DPAX with Copper cable and Optical fiber (RX side)

#### Step 1

Carefully unpack the contents in the shipping group.

#### Step 2

Connect a general DisplayPort cable from Display to the output port of DPAX, DP OUT, which coupled with Receiver module of DP Extender. Make sure to have DPAX switch on the RX side.

#### Step 3

Connect Optical fiber between Transmitter and the Receiver modules of DP Extender by reference to its user manual.

#### Step 4

Power up DPAX by using DC power adapter (optional). Both transmitter and receiver of DP Extender can be turned on by 3.3V from pin #20 of DisplayPort interface, however, supplying DC power is recommended for the stable power supply for DP Extender. Check LED ON at RX side below DPAX switch.

#### Step 5

Power on Display Source and Display and check if it works properly.

### 1-4 Installation

## Connection with Copper cable and Optical Extender (TX side)

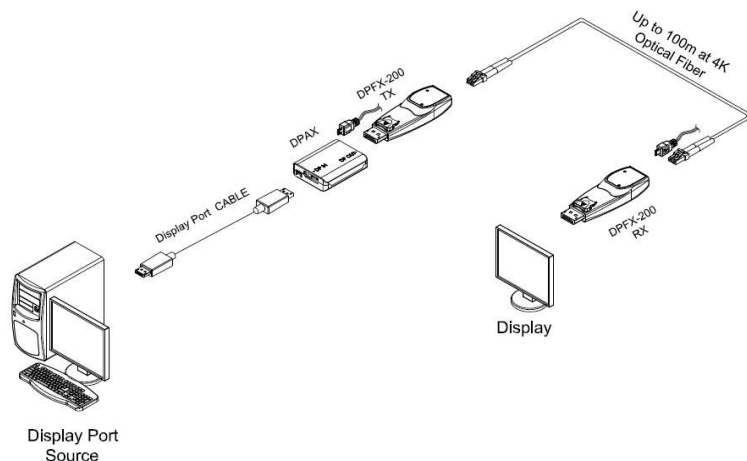


Figure 4 – Connection of DPAX with Copper cable and Optical fiber (TX side)

### Step 1

Carefully unpack the contents in the shipping group.

### Step 2

Connect a customized DisplayPort cable from Display source to input port of DPAX, DP IN, which coupled with Transmitter module of DP Extender. Make sure to have DPAX switch on the TX side.

### Step 3

Connect Optical fiber between Transmitter and the Receiver modules of DP Extender by reference to its user manual.

### Step 4

Power up DPAX by DC power adapter (optional). Both transmitter and receiver of DPFX can be turned on by 3.3V from pin #20 of DisplayPort interface, however, Supplying DC power is recommended for the stable power supply for DPFX. Check LED ON at TX side below DPAX switch.

### Step 5

Power on Display Source and Display and check if it works properly.

## 1-5 Installation

### Note 1. Indicator Information of DPAX

LED below switch is the indicator to classify use of DPFX Extender.

If connected to Display with DPFX RX module, make sure to have switch on 'RX' and check LED On at RX side below the switch.

If connected to Display Source with DP TX module, make sure to have switch on 'TX' and check LED ON at TX side below the switch.

## Troubleshooting

### The display shows only black screen.

- Ensure that all plugs and jacks used by provided power supplies are firmly connected.
- Ensure that the DP ports are firmly plugged into the Display Source and Display.
- Check if the DP source and Display are powered on and properly booted.
- Reset the system by de-plugging and re-plugging the DP cable, or by de-plugging and re-plugging the USB to DC plug cables that are plugged to DPAX module or transmitter and receiver module if connected with optical fiber.
- Re-boot up the system while connecting the module.

### Screen is distorted or displays 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 4K UHD (3840x2160) at 60Hz (YCbCr 4:4:4) refresh ratio.
- Reset the system.
- Power down, disconnect and reconnect each of DisplayPort cable or DC power adaptors, and power up.

## 1-6 Troubleshooting

## Maintenance

No special maintenance is required for the DPAX module and power supplies. Ensure that the cables and DPAX module 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 local 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 our website at [www.opticis.com](http://www.opticis.com)

## Product Specifications

- ❑ Complies with DisplayPort 1.2 standards
- ❑ Supports Ultra High Definition (up to 3840x2160) at 60Hz
- ❑ Offers data recovery function
- ❑ Transmits DisplayPort 1.2 data up to 18m (59feet) over Premium grade DisplayPort cable.
  - 3m (10ft) from the Source / 15m (49ft) to the Display at DP1.2
  - 5m (16ft) from the Source / 20m (65ft) to the Display at DP1.1
- ❑ Offers total data rate 21.6Gbps (5.4Gbps per lane)
- ❑ Supports auxiliary channel, MST function
- ❑ Supports much longer extension through daisy-chain connection
- ❑ Designed so that compatibility could go well especially with Opticis DisplayPort extenders for optical transmission
- ❑ Operated by USB power or DC power supplying adaptor
- ❑ Dimensions (WDH): 39.5 x 50 x 13mm

## 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.

## 1-9 Warranty Information

## Opticis Locations

### OPTICIS HQ

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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)