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2-Fiber Detachable Dual Link DVI module, DDFX-100

User Manual



Manual Contents

Manual Contents	1-0
Welcome! Product Description	1-1
System Requirements for Setup	1-2
Installation	1-3
Self-EDID Programming Procedure	1-5
Troubleshooting, Maintenance, Technical Support	1-6
Product Specifications	1-7
Warranty Information	1-8
Certifications	1-9

Pictorials

Figure 1 – Connection Diagram of Optical DVI	
Extension Modules	1-1
Figure 2 – Fiber numbering and Status LED position	
on a label	1-3
Figure 3 – Connection of optical fiber	1-4
Figure 4 – Position of EDID-PRG. Button and	
Status LED	1-5

Welcome!

Congratulations on your purchase of the **Stretch DVI™** DDFX-100-TR Optical Dual Link DVI (Digital Visual Interface) Extension Module. This manual contains information that will assist you in installing and operating the product.

Product Description

The **DDFX-100-TR** optical DVI module transmits uncompressed WQXGA (2560x1600), 60Hz or WQUXGA (3840x2400), 33Hz vertical refresh rate of Dual-link DVI up to 500 meters (1,640feet) over two (2) LC multi-mode fibers OM2 or OM3, and 300 meters (984 feet) with OM1 fiber. The EDID (Extended Display Identification Data) in a display can be read and restored by just plugging once transmitter to the display. This **Self-EDID programming** feature makes the installation of DDFX-100-TR more easy and flexible at any variable resolution display systems. For your convenience, WQXGA EDID had been stored before shipment as a default.

Shipping Group

- **DDFX-100-TR Optical Dual Link DVI Extension Module:** One (1) pair
- **AC/DC power adapter:** Two (2) units of +5V, 1A
- **User Manual**
- **Option Product:** Duplex LC Patch Cord (Multi-mode fiber)
Up to 500m at WQUXGA (3840x2400) @33Hz

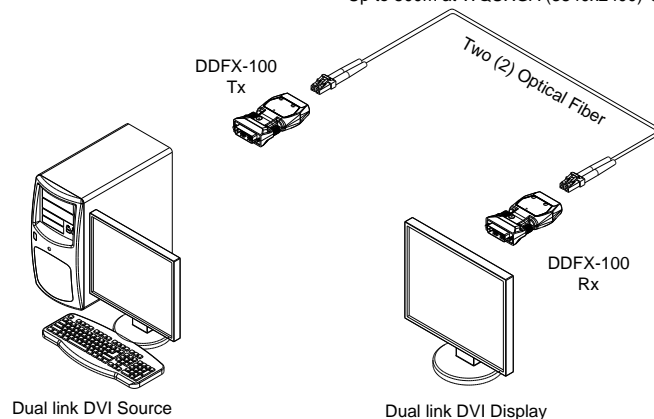


Figure 1 – Connection Diagram of Optical DVI Extension Module

System Requirements for Setup

□ Hardware requirements

- You must have a DVI graphic controller or card having a DVI port in your PC, SUN or Mac systems. It should support the maximum graphic resolution feature of displays to be connected.
- No special requirements for memory size, CPU speed and chipsets, if you've already properly installed your DVI graphic controllers or cards.

□ Software requirements

- No special restrictions, if you've already properly installed your DVI graphic controller in your OS.

□ AC/DC Power Adapter Technical Advisory

The transmitter (Tx) module of DDFX-100-TR is designed for power protection circuit from conflict of power supply between the external AC/DC power adapter and your DVI source by #14 pin.

We strongly recommend to use external AC/DC adapter for Transmitter (Tx) for stable power supplying. In case of Receiver (Rx), power should be supplied by AC/DC adapter due to no internal power supplying from the displays.

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 of the shipping group.

Step 2

Plug the 5V power adapters to the power jack of the transmitter and receiver. Ensure the Power LED is ON (Blue) and Status LED is blinking slowly (Blue).

Step 3

Please, check if the maximum resolution of the display is WQXGA (2560x1200). If not, follow the instructions for **Self-EDID Programming Procedure** on page 1-5.

Step 4

Connect two (2) LC optical fibers between the transmitter and the receiver and each fiber channel shall be connected as 1 to 1 and 2 to 2 carefully and ensure the duplex connectors are fully engaged.



Figure 2 – Fiber numbering and Status LED position on a label

Step 5

Plug the transmitter to the DVI receptacle of the DVI source such as PC and the receiver to the DVI receptacle of the display as shown in figure 3.

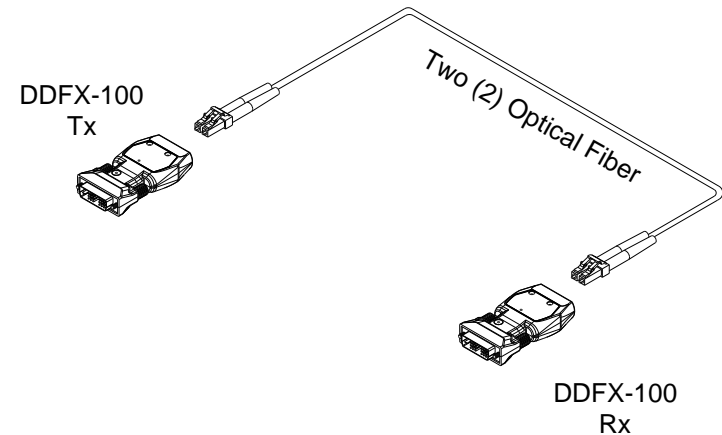


Figure 3 – Connection of optical fiber

Note1: The maximum extension length by multi-mode fiber is 500 meters with OM2 or OM3 fiber and 300 meters (984 feet) with OM1 fiber.

Note2: It is recommended NOT to use any intermediate cable or adapter between them to avoid undesirable performance degradation.

Step 6

Turn the PC and the display power ON. And ensure that the Status LED in transmitter and receiver are on.

Self-EDID Programming Procedure

The graphic source equipment generally requires display information (EDID). It contains resolution and timing information of the display.

DDFX-100-TR supports Self-EDID programming. It is the procedure that reads the EDID from the display and stores it in the EEPROM of the transmitter. You have to do Self-EDID programming if the maximum resolution of the user's display is not WQXGA (2560x1600). Follow the steps below to do it correctly.

Note1: If you know that EDID is not required by the user's DVI source, Self-EDID programming is not necessary.

Note2: The default EDID in factory ship-out is programmed in the VESA standard of WQXGA (2560x1600), 60Hz.

Step 1

Power on the display.

Step 2

Plug the 5V power adapter to the power jack of the transmitter of DDFX-100. Ensure the Power LED is ON.

Step 3

Push the EDID PRGM. button of the transmitter with a narrow pin. Then, status LED will be turned ON.

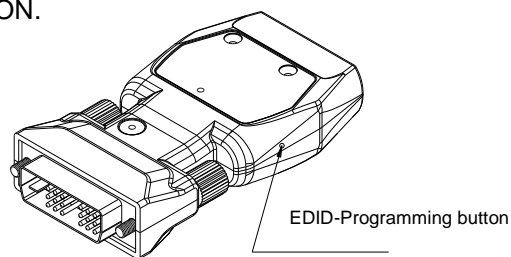


Figure 4 – Position of EDID-Programming button

Step 4

Connect the transmitter to the display not to the PC. Then the status LED will begin to blink rapidly. It indicates that the module is reading the EDID from the display and storing it in the EEPROM. After 7~8 sec, the status LED will be turned ON and it indicates that all the procedure is finished.

Step 5

Disconnect the transmitter from the display.

1-5 Self-EDID Programming Procedure

Troubleshooting

The display shows black screen.

- Ensure that all plugs and jacks used by external power supplies (both Opticis and others) are firmly connected. Ensure that the Power and status LED is ON.
- Ensure that the DVI ports are firmly plugged into the PC and display.
- Ensure that the transmitter and receiver modules are plugged correctly to the PC and display, respectively.
- Check if the PC and display are powered on and properly booted.
- Reset the system by de-plugging and re-plugging the transmitter DVI port or receiver DVI port, or by de-plugging and re-plugging the power plugs of transmitter and receiver modules.
- Re-boot up the system while connecting the optical DVI extension module.

Screen is distorted or displays noises.

- Check if the graphic resolution is properly set. Go to the display properties of Windows and tap the settings.
- Ensure that the resolution sets less than WQUXGA (3840x2400) at 33Hz refresh ratio.
- Reset the system. Disconnect and reconnect the optical DVI cables or 5V power adapters.

Maintenance

No special maintenance is required for the optical DVI module and power adapters. Ensure that the DVI modules and power adapters 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.

Technical Support and Service

For commercial or general product support, contact your reseller. For technical service, contact Opticis by email techsupp@opticis.com or visit its website at www.opticis.com

1-6 Troubleshooting, Maintenance, Technical Support

Product Specifications

DDFX-100-TR Optical DVI Extension Modules

- **Compliance with DVI standard:** Supports DVI1.0, fully implemented by fiber-optic communication and DDC2B by virtual DDC.
- **Extension limit:** 500 meters (1640 feet) for WQUXGA (3840x2400) at 33Hz refresh rate with OM2 or OM3 and 300 meters (984 feet) with OM1 fiber.
- **Graphic transmission bandwidth:** Supports up to WQUXGA, 33Hz, or 1.65Gbps bandwidth per graphic channel.
- **Supporting resolution (Based on DVI input)**
HDTV) 480p, 720p, 1080p
VESA) VGA, SVGA, XGA, WXGA, SXGA, WXGA+, UXGA, WSXGA+, WUXGA, WQXGA (Default), WQUXGA
- **Fiber-optic connection:** The transmitter and receiver modules of DDFX-100 have two (2) LC receptacles so as to be connected with two (2) LC multi-mode fibers, having 50/125µm core.
- **DDC connection:** Virtual DDC by Self-EDID programming.
- **Mechanical specifications of transmitter and receiver modules**
 - **Dimensions:** 39mm x 72mm x 15mm (W/D/H)
- **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 0.1A
- **Power Output:** +5 V, 1A SMPS DC-power Adapter
- **Cord DC Jack:** Core is 5 V and outer is GND.

1-7 Product Specifications

Warranty Information

1 (One) Year Warranty

Opticis warrants this optical DVI extension 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.

1-8 Warranty Information

Certifications

CE / FCC, Class 1 Laser Eye Safety

Certification of Eye Safety

This laser product is inside implemented by using 850, 990nm 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.

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