

DisplayPort Extender over 2 LC Fibers

EXT-DP-CP-2FO

User Manual

Release A2



Important Safety Instructions

GENERAL SAFETY INFORMATION

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this product near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Batteries that may be included with this product and/or accessories should never be exposed to open flame or excessive heat. Always dispose of used batteries according to the instructions.

Warranty Information

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.
2. Customers outside the US are responsible for shipping charges to and from Gefen.
3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at www.gefen.com.

PRODUCT REGISTRATION

Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.

Contacting Gefen Technical Support

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DisplayPort Extender over 2 LC Fibers
is a trademark of Gefen, LLC.

Important Notice

Gefen, LLC reserves the right to make changes in the hardware, packaging, and any accompanying documentation without prior written notice.

Operating Notes

- Fiber optic cables must be treated carefully when connectors are exposed. They are susceptible to dust which can cause pixel loss.
- The DisplayPort Extender over 2 LC Fibers works for all DisplayPort displays and supports resolution up to WQXGA (2560 x 1600 @ 60Hz).
- Extension distance will depend upon the type of fiber optic cable that is used:
 - ▶ Up to 1000 feet (300 meters) when using LC terminated OM2/OM3 fiber
 - ▶ Up to 500 feet (150 meters) when using LC terminated OM1 fiber
- HDCP and DPCP compliant

Features and Packing List

Features

- Extends DisplayPort up to 1000 feet (300 meters) over 2 strands of 50/125 μ m multi-mode (OM2/OM3) LC-terminated fiber optic cable
- Extends DisplayPort up to 500 feet (150 meters) over 2 strands of 62.5/125 μ m multi-mode (OM1) LC-terminated fiber optic cable
- Supports 1080p Full HD at 120Hz and dual-link resolutions up to 2560 x 1600 (WQXGA)
- Compliant with DisplayPort 1.1a standard
- Supports Dual-Mode DisplayPort (DP++)
- Supports auxiliary/I²C channel over fiber
- Fiber optic transmission eliminates susceptibility to electromagnetic interference (EMI)
- HDCP and DPCP-compliant
- Compact Sender and Receiver modules and female DisplayPort connectors provide clean, easy installation
- FCC and CE compliant for RFI (radio frequency interference) and EMI (electromagnetic immunity)

Packing List

The DisplayPort Extender over 2 LC Fibers ships with the items listed below. If any of these items are not present in your box when you first open it, immediately contact your dealer or Gefen.

- (1) DisplayPort Extender over 2 LC Fibers (Sender module)
- (1) DisplayPort Extender over 2 LC Fibers (Receiver module)
- (2) DisplayPort cables (M-M)
- (2) USB to DisplayPort cables (M-M)
- (2) 5V / 1A DC power supply
- (1) Quick-Start Guide

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DisplayPort Extender over 2 LC Fibers

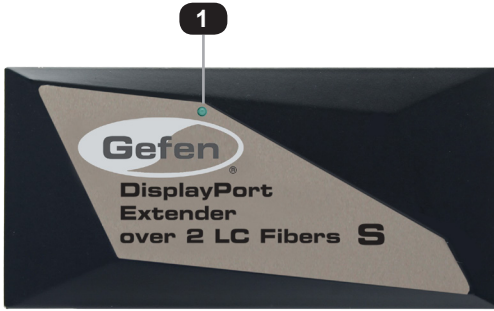
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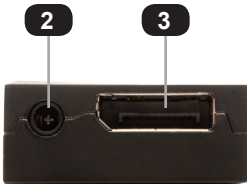
Module Layout

Sender Module

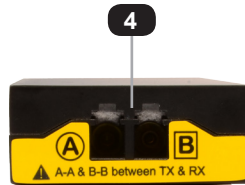
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Front



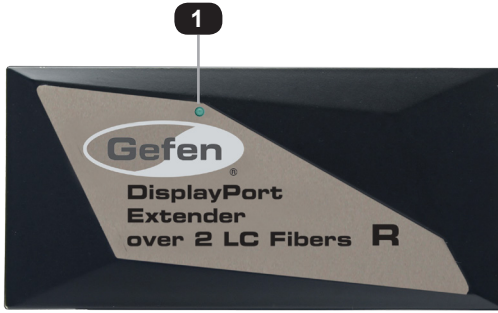
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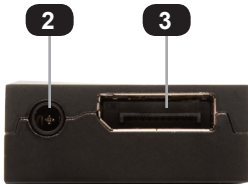
ID	Name	Description
1	Power indicator	This LED indicates the power status of the Sender module. See Connecting the DisplayPort Extender over 2 LC Fibers for more information.
2	Power receptacle	Connect the included 5V DC power supply to this power receptacle.
3	DisplayPort connector	Use a DisplayPort cable to connect the source to this connector.
4	LC connectors	Connect two strands of LC-terminated fiber optic cable from these ports to the associated ports on the Receiver module. See Connecting the DisplayPort Extender over 2 LC Fibers for important information on connecting fiber optic cables.
5	Status indicator	This LED indicates the connection status of the Sender module. See Connecting the DisplayPort Extender over 2 LC Fibers for more information on connecting fiber optic cables.

Receiver Module

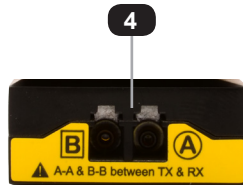
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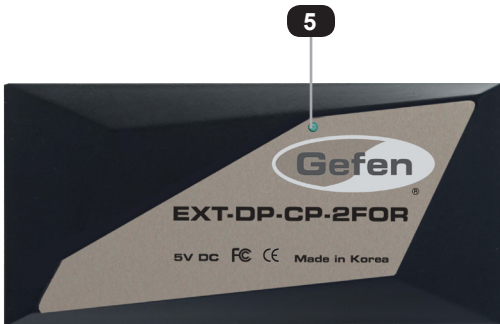
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Front



Bottom



ID	Name	Description
1	Power indicator	This LED indicates the power status of the Receiver module. See Connecting the DisplayPort Extender over 2 LC Fibers for more information.
2	Power receptacle	Connect the included 5V DC power supply to this power receptacle.
3	DisplayPort connector	Use a DisplayPort cable to connect the display to this connector.
4	LC connectors	Connect two strands of LC-terminated fiber optic cable from these ports to the associated ports on the Sender module. See Connecting the DisplayPort Extender over 2 LC Fibers for important information on connecting fiber optic cables.
5	Status indicator	This LED indicates the connection status of the Receiver module. See Connecting the DisplayPort Extender over 2 LC Fibers for more information on connecting fiber optic cables.

Installation

Connecting the DisplayPort Extender over 2 LC Fibers

1. Connect a DisplayPort cable from the source to the DisplayPort connector on the Sender module.
2. Connect a DisplayPort cable from the display to the DisplayPort connector on the Receiver module.
3. Connect 2 strands of LC-terminated multimode fiber optic cable from the Sender module to the Receiver module. See the *Table 2.1* on the next page for distance information based on the type of fiber optic cable.

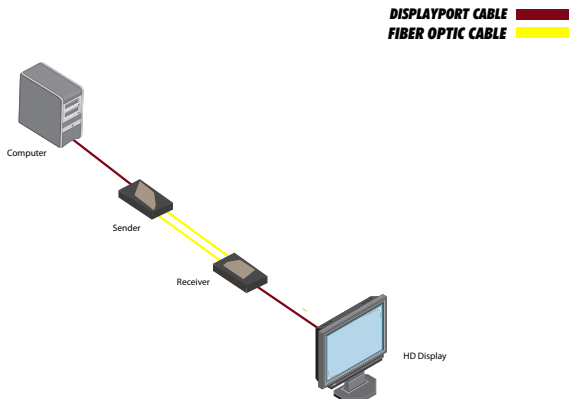


IMPORTANT: Each fiber optic port is identified by the letter A or B. Make sure that the fiber optic cables between the Sender and Receiver module are connected to the proper port, as shown below.



4. Connect the included 5V DC power supplies to the power receptacles on both the Sender and Receiver module. The LED on the top of both the Sender and Receiver module will flash slowly 3 times, then flash quickly as long as power is applied. See *Table 2.2* on the next page for details on LED status.

Sample Wiring Diagram








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Table 2.1 - Fiber optic cable distance

Maximum distance	500 feet (150 meters)	1000 feet (300 meters)
Category	OM1	OM2 / OM3
Core size / cladding diameter	62.5µm / 125µm	50µm / 125µm

Table 2.2 - LED indicator status

LED	Status	Conditions
Top	Off 	<ul style="list-style-type: none"> The Sender module is not powered. The Receiver module is not powered.
	Flashes 3 times and turns off 	<ul style="list-style-type: none"> The Sender and Receiver module are powered but are not connected using fiber optic cable.
	Flashing 	<ul style="list-style-type: none"> The Sender and Receiver modules are powered and connected to one another using LC-terminated fiber optic cables.
Bottom	Solid blue 	<ul style="list-style-type: none"> The display is connected to the Receiver module.
	Off 	<ul style="list-style-type: none"> The display has been disconnected from the Receiver module.

DisplayPort Extender over 2 LC Fibers

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Specifications

Supported Formats

Resolution (max.)	• WQUXGA (2560 x 1600 @ 60Hz)
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Electrical

Video bandwidth	• 10.8 Gb/s (2.7 Gb/s per lane, 4 lanes)
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Connectors

Video Input Connector (Sender)	• 1 x DisplayPort 20-pin, female
Video Output Connector (Receiver)	• 1 x DisplayPort 20-pin, female
Link Connector (Sender / Receiver)	• 2 x LC-type

Operational

Power Supply (Sender / Receiver)	• 5V DC
Power Consumption (Sender / Receiver)	• 2.1W (max.) each
Optical Power Budget	• 9.4 dB
Operating Temperature	• +32 to +122 °F (0 to +50 °C)
Storage Temperature	• -22 to +158 °F (-30 to +70 °C)
Operating Humidity	• 10 to 85% RH (non-condensing)
Storage Humidity	• 5 to 90% RH (non-condensing)

Physical

Dimensions (W x H x D)	• 1.4" x 0.6" x 2.8" (35mm x 16mm x 72mm)
Unit Weight (each)	• 0.1 lb (0.05 kg)



Stretch it. Switch it. Split it. Gefen's got it. ®

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