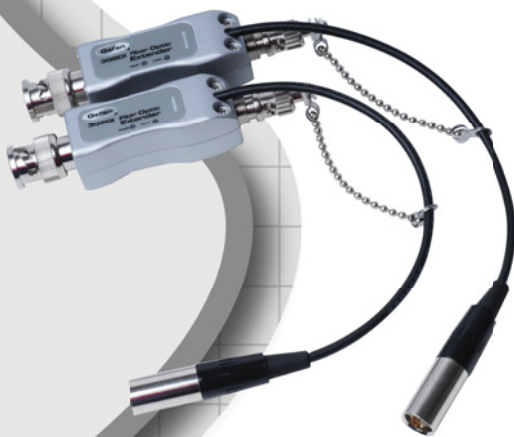


# Gefen®

## **3G-SDI Fiber Optic Extender**

**EXT-3GSDI-FO-141  
USER MANUAL**



**[www.gefen.com](http://www.gefen.com)**



## ASKING FOR ASSISTANCE

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**Technical Support:**

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**Technical Support Hours:**

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**Notice**

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

**3GSDI Fiber Optic Extender** is a trademark of Gefen LLC

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# INTRODUCTION

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Congratulations on your purchase of the 3GSDI Fiber Optic Extender. Your complete satisfaction is very important to us.

## **Gefen**

Gefen delivers innovative, progressive computer and electronics add-on solutions that harness integration, extension, distribution and conversion technologies. Gefen's reliable, plug-and-play products supplement cross-platform computer systems, professional audio/video environments and HDTV systems of all sizes with hard-working solutions that are easy to implement and simple to operate.

## **The Gefen 3GSDI Fiber Optic Extender**

The Gefen 3GSDI Fiber Optic Extender is a miniature digital video data transport system over fiber optic cable supporting 1080p for 3G-SDI and HD-SDI. It converts a one-channel SMPTE-424M 3G-SDI, SMPTE-292M HD, or SMPTE-259M serial digital video signal over extended distances up to 18 miles (30 km) over either single-mode or multi-mode fiber optic cable.

## **How It Works**

The Sender receives the SDI input signal and converts the SMPTE-424M / 292M / 259M SDI signals to optical data. The Receiver unit collects the optical data from the fiber cable and converts it to an SDI signal.

## **OPERATION NOTES**

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### **READ THESE NOTES BEFORE INSTALLING OR OPERATING THE 3GSDI FIBER OPTIC EXTENDER**

- The use of an intermediate cable or adapter is not recommended. Additional coupling devices may deteriorate the signal transmission.

# FEATURES

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## Features

- Extends 3G-SDI up to 18 miles (30km)
- Transports Multi-rate HD-SDI Digital Video over a single ST fiber cable.
- Supports SMPTE-424M (3G-SDI), SMPTE-292M (HD-SDI), or SMPTE-259M (SDI) specifications.
- Automatic Input Equalization
- Latch-Locking Power Connector
- HD-SDI BNC input connector and ST terminated fiber optical connector
- Robust metal die-casting enclosure for harsh environments

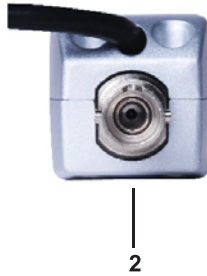
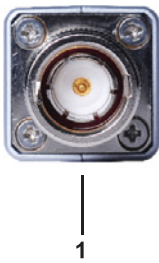
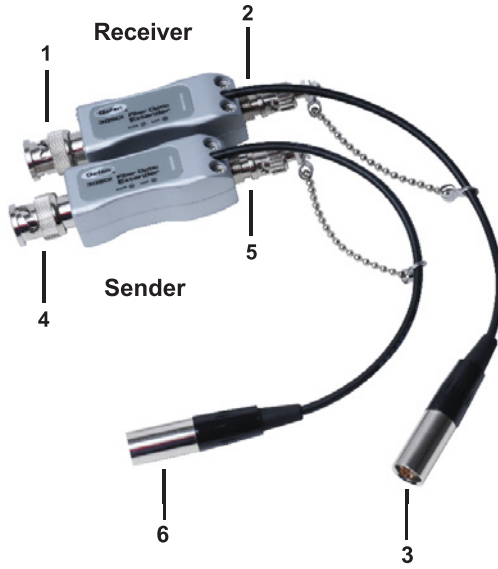
## Package Includes

- (1) 3GSDI Fiber Optic Extender Sender Unit
- (1) 3GSDI Fiber Optic Extender Receiver Unit
- (2) 5V DC Power Supplies
- (1) Quick-Start Guide

## SMPTE Standards Table (Showing Bit Rates for SDI):

Standard	Name	Bit Rates	Example Video Formats
SMPTE 424M	3G-SDI	2.970 Gbit/s	1080p
SMPTE 292M	HD-SDI	1.485 Gbit/s	720p, 1080i
SMPTE 259M	SD-SDI	270 Mbit/s, 360 Mbit/s 143 Mbit/s and 177 Mbit/s	480i, 576i

# CONNECTOR LAYOUT



(shown with protective cover)



## CONNECTOR DESCRIPTIONS

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- 1 3G-SDI BNC Output**  
Connect the Receiver to the input of the SDI display.
- 2 ST Fiber Connector Input**  
Connect the ST-fiber cable to this connector.
- 3 5V DC Power Supply Connector (Receiver)**  
Connect this cable to the included 5V DC power supply.
- 4 3G-SDI BNC Input**  
Connect the Sender to the output of the SDI source.
- 5 ST Fiber Connector Output**  
Connect the ST-fiber cable to this connector.
- 6 5V DC Power Supply Connector (Sender)**  
Connect this cable to the included 5V DC power supply.

# CONNECTING & OPERATING THE 3GSDI FIBER OPTIC EXTENDER

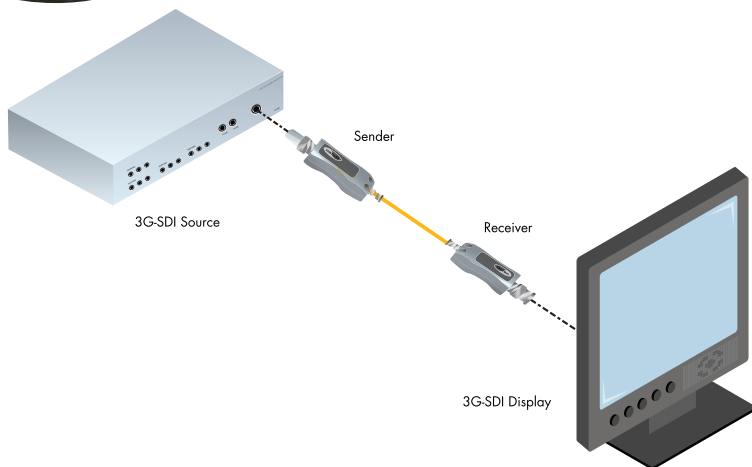
## How to Connect the 3GSDI Fiber Optic Extender

1. Connect the Sender of the Gefen 3GSDI Fiber Optic Extender to the 3G-SDI source equipment via the BNC connector.
2. Remove the locking protective cover from the fiber connector of the Sender and connect one end of the fiber cable to the ST connector of the Sender.
3. Remove the locking protective cover from the fiber connector of the Receiver and connect the other end of the fiber cable to the ST connector of the Receiver.
4. Connect the BNC output connector to the SDI display device.
5. Connect the included 5V DC power supplies to both the Sender and Receiver.

## Wiring Diagram for the 3GSDI Fiber Optic Extender



### **ST FIBER OPTIC CABLE**



**EXT-3GSDI-FO-141**

## TROUBLESHOOTING

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### **No picture / display shows a blank screen**

- Ensure that all jacks that are used by the 5V DC power supplies are firmly connected.
- Ensure that the SDI connector is firmly plugged in to the SDI source and SDI display. Ensure that the Sender and Receiver module parts are connected to the SDI source and SDI display, respectively.
- Check if the SDI source and SDI display are powered on and properly booted.
- Reset the system by unplugging and reconnecting the Sender SDI module or Receiver SDI module. Re-boot the system while connecting the 3GSDI Fiber Optic Extender.
- Verify that the fiber cables are not damaged.

### **Picture is distorted or contains noise**

- Verify the quality of the SDI source and check the length of the fiber cable. The 3GSDI Fiber Optic Extender will work up to a distance of 18 miles (30km) using single-mode fiber.

# SPECIFICATIONS

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Input Impedance.....	75 Ohm
Signal Format:	
SMPTE-424M (Bit rate: 2.970 Gbit/s).....	3G-SDI / HD-SDI
SMPTE-292M (Bit rate: 1.485 Gbit/s).....	HD-SDI
SMPTE-259M (Bit rates: 360 / 270 / 177 / 143 Mbit/s) .....	SDI
Recommended Fiber Optic Cable:	
Single-mode fiber with 1310, 1550nm of bandwidth and ST-terminated conector	
Data Rate.....	3 Gbp/s, single link (max.)
Signal Level.....	800mVp-p +/- 50mV
Optical Fiber Types.....	ST (Multi mode and Single mode)
Number of Fibers.....	1
Output Connector.....	BNC Female
Distance.....	Up to 18 miles (30km) using single-mode fiber
Power Supply.....	5V DC @ 0.5 A
Power Budget.....	16dB
Operating Temperature.....	-20 to + 80C
Dimensions (W x H x D).....	0.77" x 0.77" x 50" (20mm x 20mm x 111mm)
Shipping Weight.....	1.3 lbs (.6 kg)

## WARRANTY

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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](http://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.**







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This product uses UL listed power supplies.