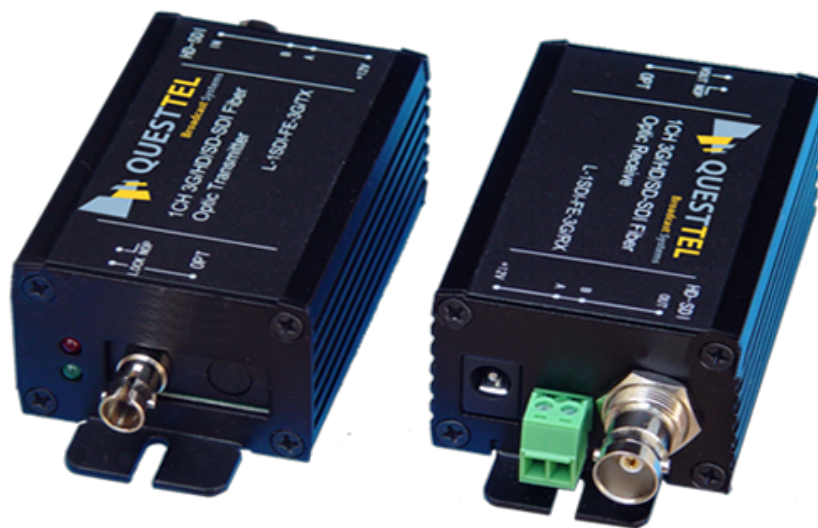


# QUESTTEL

Broadcast Systems

## 3G/HD/SD-SDI Over Fiber Transmitter and Receiver Extender User Manual L-1SDI-FE-3G-TX/RX



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# 1 Introduction

## 1.1 Overview

The L-1SDI-FE-3G-TX/RX is a SD/HD/3G-SDI over fiber transmitter and receiver extender kit. This unit provides optical transmission of one SD/HD/3G-SDI signal as well as audio signal and has reversed RS485 data channel for camera control. L-1SDI-FE-3G-TX/RX kit can be used in HD video conference, as well as HD video monitoring, intelligent transportation system and public security system.

## 1.2 Feature

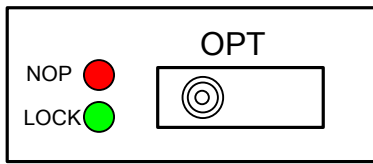
- Adopts high-definition transmission without compression technology to realize real-time, loss-free and high-quality video transmission
- Comply with SMPTE-292M HD-SDI and SMPTE-259M SD-SDI standard, supports 1.485Gb/s and 270Mb/s
- Optional 3G-SDI compliant to SMPTE 424M standard, with bit rate of 2.97Gb/s
- □ L-1SDI-FE-3G-TX: one SD/HD/3G-SDI input (BNC)
- □ L-1SDI-FE-3G-RX: one SD/HD/3G-SDI output (BNC)
- □ 8 audio channels embedded
- □ 1080P@60, 50(declared before order) , 1080P@30, 29.97, 25, 24, 23.98, 1080I@60, 59.94, 50, 720P@60, 59.94, 50, 30, 29.97, 25, 24, 23.98, and 625i, 525i
- □ With integrated HD-SDI reclocker and cable equalizer
- □ With NOP (No optical signal) alarm indications, output status indicator and input lock indicator
- □ One reversed RS485 channel, half duplex, up to 115.2Kb/s baud rate
- □ 12V DC power supply
- □ Equipment size: 93.2mm × 46.2mm × 29.6mm

## 1.3 Application

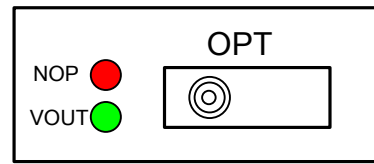


## 2 Panel Description

### 2.1 Front Panel



Transmitter front panel

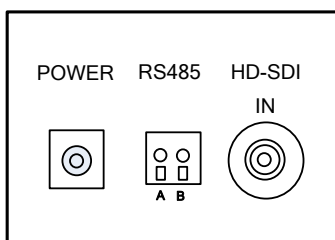


Receiver front panel

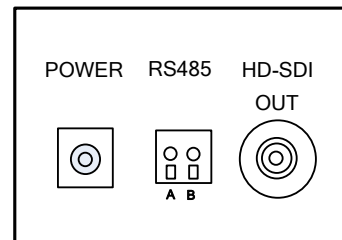
Transmitter/Receiver front panel

Interface	Description
OPT	Optical interface, bi-directional, adopts FC connector
NOP	Optical signal loss alarm indicator, red. ON: Optical signal loss is detected at the port. OFF: the optical port receive normal signal.
LOCK	The HD-SDI input lock indicator, green. ON: connect normally. OFF: connect abnormally.
VOUT	The HD-SDI output status indicator, green. ON: output normally. OFF: output abnormally.

### 2.2 Rear Panel



Transmitter rear panel



Receiver rear panel

Transmitter Rear Panel

Interface	Description	
POWER	12V DC power input	
RS485	A	RS485 positive terminal
	B	RS485 negative terminal
HD-SDI IN	SD/HD/3G-SDI video input	

Receiver Rear Panel

Interface		Description
POWER		12V DC power input
RS485	A	RS485 positive terminal
	B	RS485 negative terminal
HD-SDI OUT		SD/HD/3G-SDI video output

### 3 Technical Specification

Technical Specification

Item	Description				
<b>Transmitter optical interface</b>					
Wavelength(nm)	Tx1310FP /Rx1550	Tx1310FP /Rx1550	Tx1550DFB /Rx1310	Tx1550DFB /Rx1310	Tx1550DFB /Rx1310
Transmission distance (Km)	10	20	40	60	80
launched power (dBm)	-9~-3	-6~-1	-7~-2	-5~0	-2~+3
Connector	FC	FC	FC	FC	FC
Maximum receive sensitivity (dBm)	-32	-32	-33	-36	-37
<b>Receiver optical interface</b>					
Wavelength(nm)	Tx1550FP /Rx1310	Tx1550FP /Rx1310	Tx1310FP /Rx1550	Tx1310FP /Rx1550	Tx1310FP /Rx1550
Transmission distance (Km)	10	20	40	60	80
launched power (dBm)	-14~-7	-14~-7	-8~-3	-5~0	0~+5
Connector	FC	FC	FC	FC	FC
Maximum receive sensitivity (dBm)	-21	-21	-24	-24	-26
<b>SDI Interface</b>					
Connector	BNC				
Bit rate	2.97Gb/s,1.485Gb/s and 270Mb/s auto adaptive				
Impedance	75Ω				
Return loss	>15dB				
level	800mVp-p± 10%				
Rise and fall time (HD-SDI)	≤270ps				
Rise and fall time (SD-SDI)	≤1.50ns				
SD-SDI Alignment jitter (1KHz)	≤0.2UI				
SD-SDI Timing jitter (10Hz)	≤0.2UI				
HD-SDI Alignment jitter (100KHz)	≤0.2UI				
Standard	Comply to SMPTE 424M 3G-SDI, SMPTE-292M HD-SDI and SMPTE-259M SD-SDI standard				
<b>RS485 Interface</b>					
Connector	PHOENIX connector				

Baud rate	0~115.2Kb/s
Bit error ratio	<10 <sup>-9</sup>
Work mode	Half-duplex
<b>Power and Consumption</b>	
Power supply	DC 12V
range	8V~14V
Power consumption	1.5W ± 10%
<b>Environment Requirements</b>	
Working temperature	-30~+60°C
Relative Humidity	≤95%, no condensation
Storage temperature	-40~85°C
<b>Equipment dimension</b>	
Equipment dimension	93.2mm×46.2mm×29.6mm

Note: The optical module is optional for users, the default is 20Km, other long distance needs to be declared when ordering.



## Read before operating equipment.

1. **Cleaning** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
2. **Power Sources** - Use supplied or equivalent UL/CSA approved low voltage DC plug-in transformer.
3. **Outdoor Antenna Grounding** - If you connect an outside antenna or cable system to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
4. **Lightning** - Avoid installation or reconfiguration of wiring during lightning activity.
5. **Power Lines** - Do not locate an outside antenna system near overhead power lines or other electric light or power circuits or where it can fall into such power lines or circuits. When installing an outside antenna system, refrain from touching such power lines or circuits, as contact with them might be fatal.
6. **Overloading** - Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
7. **Object and Liquid Entry** - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts, resulting in a fire or electric shock. Never spill liquid of any kind on the product.
8. **Servicing** - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
9. **Damage Requiring Service** - Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  - When the power supply cord or plug is damaged.
  - If liquid spills or objects fall into the product.
  - If the product is exposed to rain or water.
  - If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions. An improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
  - If the video product is dropped or the cabinet is damaged.
  - When the video product exhibits a distinct change in performance, this indicates a need for service.

## **WARNING!**

This unit outputs continuous invisible light, which may be harmful to the eyes; use with caution. For additional safety, plug the attached dust caps into the optical transceivers when the fiber optic cable is unplugged. Direct viewing into optical connectors should be avoided at all times!