

HD/SD-SDI Over Fiber Mini Transmitter and Receiver Extender

User Manual L-1SDI-FE-MN-TX/RX



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1 Introduction

1.1 Overview

The L-1SDI-FE-MN-TX-RX is a thumb type HD/SD-SDI video optical transceiver, including a transmitter and a receiver, which achieves optical transmission of one HD/SD-SDI signal (audio signal embedded) and provides one reversed RS485 data channel, and can be widely used in high-definition video conference, high-definition 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
- Transmitter: one SD/HD-SDI input (BNC)
- Receiver: one SD/HD-SDI output (BNC)
- 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 , supports DVB-ASI signal
- With integrated HD-SDI reclocker and cable equalizer
- One reversed RS485 channel, up to 115.2Kb/s baud rate
- 12V DC power supply
- Equipment size: 80mm x 32mm x 29 mm

1.3 Application



2 Panel Description

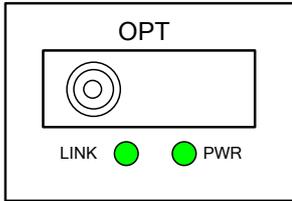


Figure 2-1 Front panel

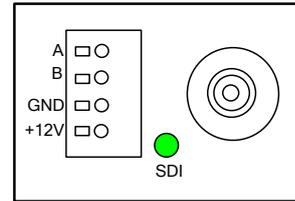


Figure 2-2 Rear panel

Table 2-1 Front panel

| Interface | Description |
|-----------|---|
| OPT | Optical interface, bi-directional, ST-PC connector |
| LINK | Optical port status indicator, Green. ON: Normal OFF: No optical signal. |
| PWR | Power supply indicator, Green. ON: Power works normally. OFF: Power is abnormal or absence. |

Table 2-2 Rear Panel

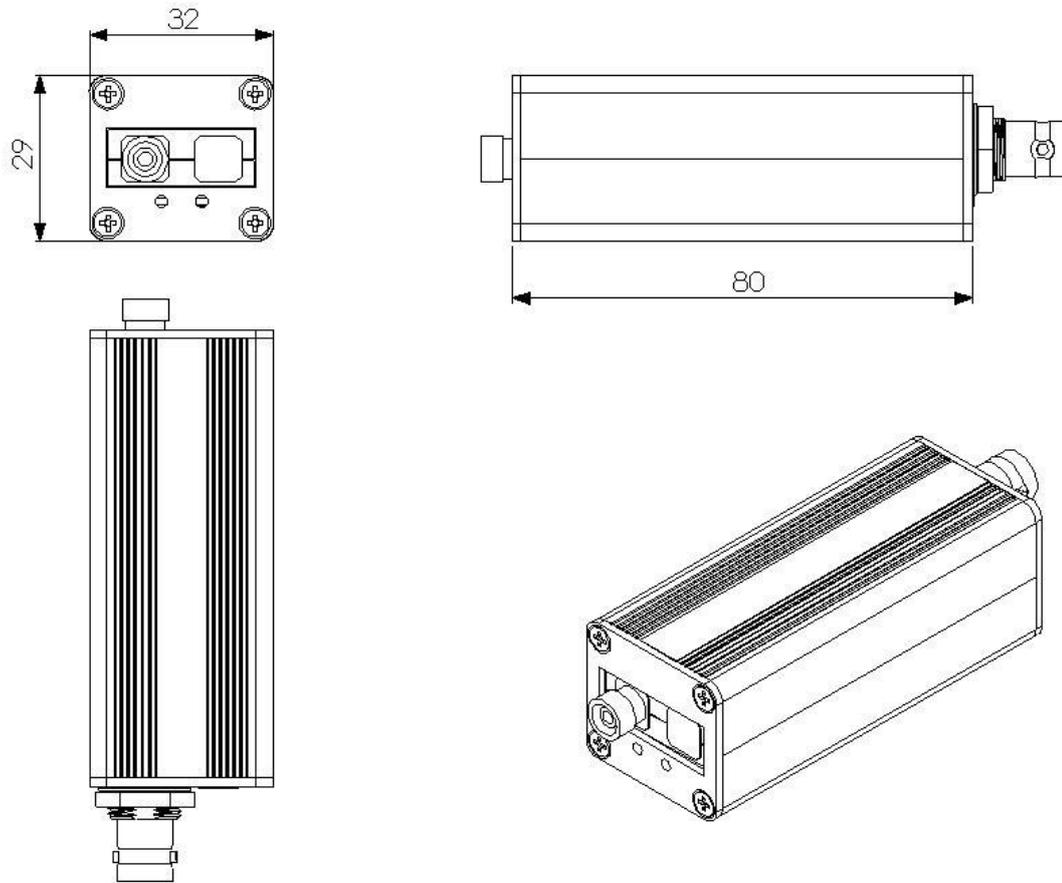
| Interface | Description | |
|---------------|--|-------------------------|
| RS485 | A | RS485 positive terminal |
| | B | RS485 negative terminal |
| SDI interface | SD/HD/3G-SDI video input/output(BNC) Transmitter: SDI input Receiver: SDI output | |
| SDI indicator | SDI input/output lock indicator, Green. ON: SDI input/output normal. OFF: SDI input/output abnormal. | |
| GND | Ground | |
| +12V | 12V DC power input | |

3 Technical Specification

| Item | Description | | | | |
|--------------------------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
| Transmitter optical interface | | | | | |
| 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 |
| Maximum receive sensitivity (dBm) | -32 | -32 | -33 | -36 | -37 |
| Receiver optical interface | | | | | |
| 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 |
| Maximum receive sensitivity (dBm) | -21 | -21 | -24 | -24 | -26 |
| SDI Interface | | | | | |
| 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 (3G-SDI) | ≤135ps | | | | |
| 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 | | | | |
| HD-SDI timing jitter (10Hz) | <1.0UI | | | | |
| 3G-SDI alignment jitter(100KHz) | ≤0.3UI | | | | |
| 3G-SDI timing jitter(10Hz) | ≤2.0UI | | | | |
| Standard | Comply to SMPTE 424M 3G-SDI, SMPTE-292M HD-SDI and SMPTE-259M SD-SDI standard | | | | |
| RS485 Interface | | | | | |
| Connector | PHOENIX connector | | | | |
| Baud rate | 0~115.2Kb/s | | | | |
| Bit error rate | <10 ⁻⁹ | | | | |
| Work mode | Unidirectional transmission from Receiver to Transmitter | | | | |
| Power and Consumption | | | | | |
| Power supply | DC 12V | | | | |
| Range | 8V~14V | | | | |
| Power consumption | 1.5W±10% | | | | |
| Environment Requirements | | | | | |
| Working temperature | -30~+60℃ | | | | |
| Relative Humidity | ≤95%, no condensation | | | | |
| Storage temperature | -40~85℃ | | | | |
| Equipment dimension | | | | | |

4 Device Dimension



1 Channel HD-SDI to Optical Fiber
Mini Extender with RS-485 Data
Optional RS-422 and RS-232



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!