



12G-SDI Fiber Extender with Return RS485 and 2-Channel Reverse Tally

TECHNICAL DATASHEET

Technical Datasheet | 12G-SDI optical transmitter/receiver kit with loop-out, reverse RS485, and two-channel reverse tally over fiber.



Model Number

F-12G-SDI-D-T-TxRx

Manufacturer: Thor Fiber

Primary Purpose: Thor Fiber F-12G-SDI-D-T-TxRx is a professional 12G-SDI optical transmitter and receiver kit for long-distance video, reverse RS485 control, and red/green tally signal transport over one single-mode fiber. The system provides one 12G-SDI input with loop-out, two receiver SDI outputs carrying the same video, and up to 10 km single-mode fiber transmission.

Key Specifications

| Spec Category | Extracted Value |
|-------------------------------|--|
| Model Number | F-12G-SDI-D-T-TxRx |
| Signal Set | 12G-SDI video input with loop-out + 1x reverse RS485 + 2x reverse TALLY (R/G) |
| Optical Interface | LC SFP module interface; 1270 / 1330 nm wavelength |
| SFP Module Rate / Distance | 12 Gbps; up to 10 km single-mode fiber |
| Supported Standards | SMPTE ST2082-1, ST2081-1, SMPTE 424M, 292M, 259M, 297M, 305M, 310M |
| SMPTE Rates | 270 Mbit/s, 1.48 Gbit/s, 2.97 Gbit/s, 5.94 Gbit/s, 11.88 Gbit/s |
| Resolution / Signal Integrity | Up to 4K60Hz; pathological code supported; clock recovery supported; cable distance < 70 m |
| RS485 / Tally | EIA RS485; 0-115200 Kbps; TTL 5V / LVTTTL 3.3V tally level; 2-channel red/green tally |
| Power / Mechanical | DC 5-30V or 5V via USB Type-C; power dissipation < 2 W; 87.3 x 61.9 x 24 mm; 0.35 kg pair |

Core Features

- 12G-SDI Video Transport: One 12G-SDI input with local loop-out on the transmitter.
- Dual Receiver Outputs: Receiver provides two 12G-SDI outputs carrying the same video signal.
- Reverse RS485: One reverse RS485 data channel for camera control or control-room communication.
- 2-Channel Reverse Tally: Red and green reverse tally channels for camera status feedback.
- Broadcast Standard Support: Supports 12G, 6G, 3G, HD, and SD-SDI standards including SMPTE ST2082-1.
- Clock Recovery and EQ: Clock recovery reduces jitter and input cable equalization compensates for coaxial cable loss.
- Flexible Power: Supports DC 5.5 x 2.1 mm power input from 5-30V or USB Type-C 5V power.
- Compact Mounting: Aluminum housing supports desktop use or 1/4 hot shoe screw mounting.

Product Images



Transmitter (TX)



Receiver (RX)

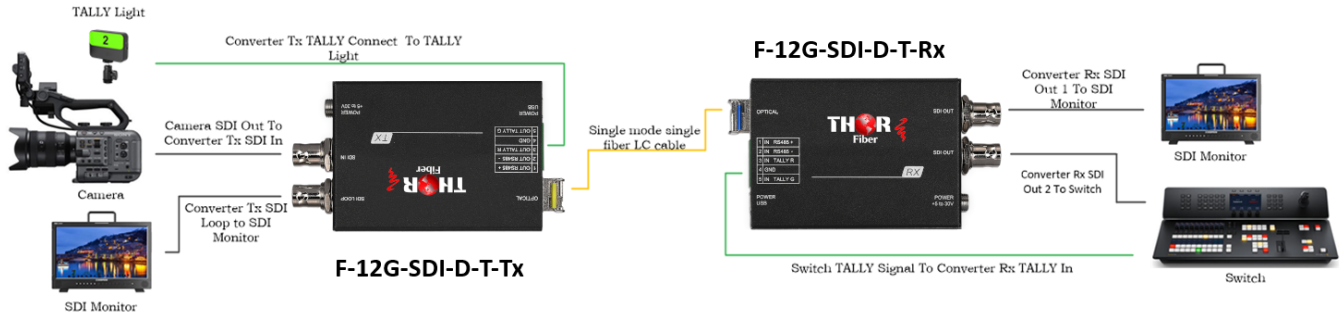
Target Applications

- Broadcast studios
- Remote camera links
- Outside broadcast vans
- Camera control and tally feedback systems
- Live event production
- Industrial and medical imaging

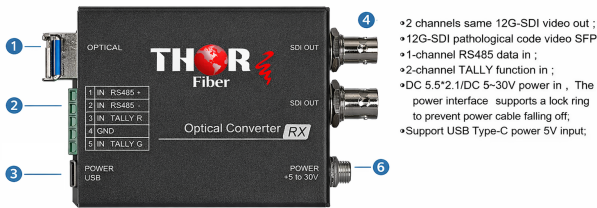
Model Options

| Model | Description |
|--------------------|--|
| F-12G-SDI-D-T-TxRx | One 12G-SDI video channel, reverse RS485, two reverse tally channels, 10 km single-mode transmission |
| F-3G-SDI-D-T-TxRx | One 3G-SDI video channel, reverse RS485, two reverse tally channels, 10 km single-mode transmission |

Application Drawings



Interface Overview



| Number | Description | Function |
|--------|-------------|-------------------------|
| 1 | OPTICAL | LC SFP module interface |
| 2 | IN RS485+ | RS485 + in |
| | IN RS485- | RS485 - in |
| | IN TALLY R | TALLY Red light in |
| | GND | Ground wire |
| | IN TALLY G | TALLY Green light in |
| 3 | POWER USB | USB Type-C power in |
| 4 | SDI OUT | SDI video out |

| Number | Description | Function |
|--------|---|--------------------------------|
| 1 | OPTICAL | LC SFP module interface |
| 2 | IN RS485+ / IN RS485- / IN TALLY R / GND / IN TALLY G | Reverse RS485 and tally inputs |
| 3 | POWER USB | USB Type-C power input |
| 4 | SDI OUT | SDI video out CH1 |
| 5 | SDI OUT | SDI video out CH2, same as CH1 |
| 6 | POWER +5 to 30V | DC 5.5 x 2.1 mm power input |

I/O Summary

TX (Transmitter) I/O

12G-SDI IN; 12G-SDI LOOP OUT; Optical LC; reverse outputs: RS485+, RS485-, TALLY R, TALLY G, GND; power by DC or USB-C

RX (Receiver) I/O

2x 12G-SDI OUT (same video); Optical LC; reverse inputs: RS485+, RS485-, TALLY R, TALLY G, GND; power by DC or USB-C

Package Contents and Additional Product Information

| Item | Qty |
|---|-----|
| Transmitter (TX) | 1 |
| Receiver (RX) | 1 |
| 12G pathological code video SFP module pair | 1 |
| 1/4 hot shoe mount base | 1 |
| 5P industrial terminal interface, 3.81 mm | 2 |
| 12V 1A DC 5.5 x 2.1 power adapter | 2 |
| User manual | 1 |
| Warranty card / Certificate | 1 |

| Item | Extracted Value |
|-----------------------|---------------------------|
| Operating Temperature | -20 deg C to +70 deg C |
| Storage Temperature | -40 deg C to +85 deg C |
| Humidity | 5% to 95%, non-condensing |
| Working Life | >100,000 hours |
| Packing Size | 227 x 219 x 54 mm |
| Packing Weight | 0.7 kg |