



8-Channel Bi-Directional SD/HD/3G-SDI 4K/UHD over Single Fiber

Technical Datasheet - 8 bidirectional SD/HD/3G-SDI CWDM transmitter/receiver kit with SDI loop-out over one single-mode fiber.



Model Number

F-8SDI-B-3G-TxRx-RM

Manufacturer: Thor Fiber

Primary Purpose: Thor Fiber F-8SDI-B-3G-TxRx-RM transports up to 8 bidirectional SD, HD, or 3G-SDI video signals over a single optical fiber using CWDM technology. The rackmount transmitter and receiver kit supports loop-out outputs, embedded audio, ancillary data, and long-distance broadcast or production fiber transport.

Key Specifications

Spec Category	Extracted Value
Model Number	F-8SDI-B-3G-TxRx-RM
Signal Capacity	Up to 8 bidirectional 3G-SDI signals over one single-mode fiber
Video Standards	SD/HD/3G-SDI; SMPTE ST 425-3, ST 425-5, 259M, 292, 297-2006, 424M-2006, 305M, 310M, 344M, DVB-ASI
UHD Support	Up to 4 x 4K/UHD at 60 Hz using 4 x 3G-SDI lines, or up to 8 x 4K/UHD at 30 Hz using 2 x 3G-SDI lines
Fiber / Connector	Single-mode fiber only; single ST/PC optical connector
Optical Technology	CWDM with DFB laser module; each SDI signal is converted to a different optical wavelength
Distance Options	20 km, 40 km, 80 km, and 120 km model options
Electrical Interface	BNC, 75 ohm; input level 1.00 V peak-to-peak; any serial digital signal up to 3.0 Gbps
Form Factor / Power	1RU 19 in. rackmount; internal universal 100-240 VAC power supply; 25 W

Core Features

- 8 Bidirectional Channels: Sends up to 8 SD/HD/3G-SDI signals over one single-mode fiber link.
- CWDM Optical Multiplexing: Each SDI signal uses a dedicated optical wavelength for simultaneous transport.
- Loop-Out Flexibility: Transmitter and receiver support SDI loop-out for monitoring or re-transmission.
- UHD Transport Support: Supports 4K/UHD workflows using multiple 3G-SDI lines.
- Signal Integrity: SDI signals are equalized and re-clocked prior to fiber optic transmission.
- Embedded Audio/Data: Passes embedded audio, ancillary data, and DVB-ASI signals.
- Long-Distance Options: Standard and high-powered versions are available for 20, 40, 80, and 120 km links.
- Rackmount Design: 1RU 19 in. transmitter and receiver chassis with internal power supply.

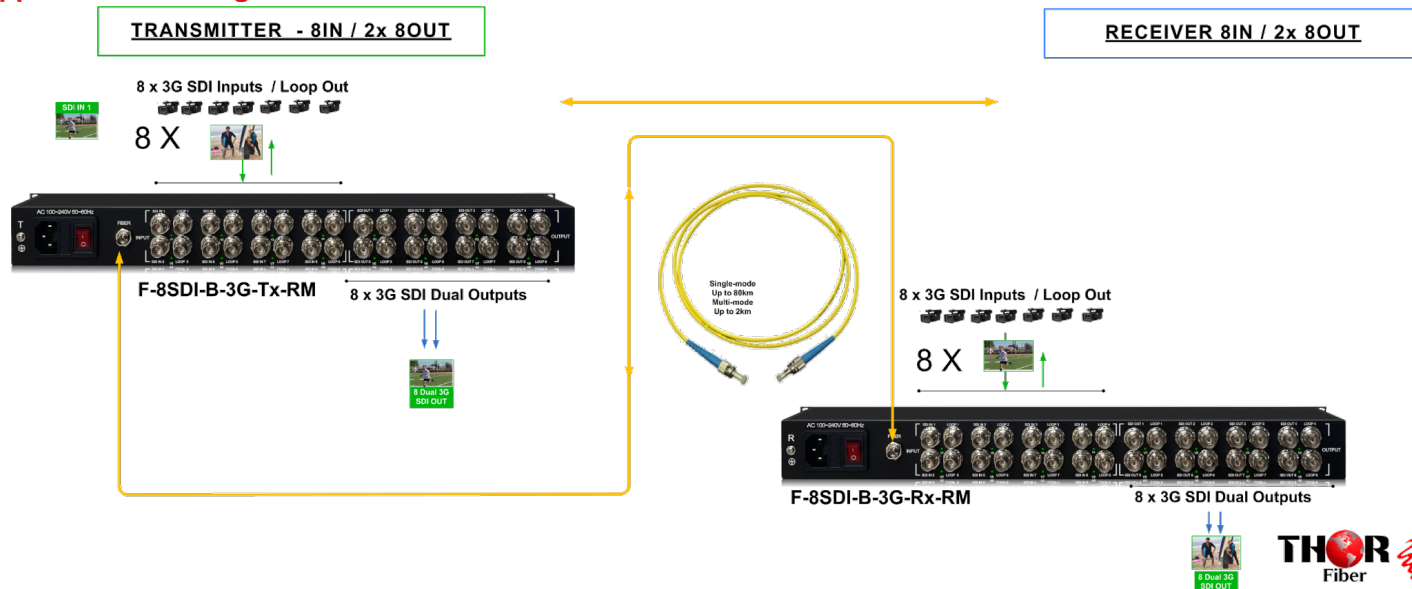
Target Applications

- Live broadcast and production truck fiber links
- Stadium, venue, and arena SDI signal transport
- Television studio and control room interconnects
- Remote camera and multi-camera production workflows
- 4K/UHD transport using multiple 3G-SDI channels
- Campus and facility-wide broadcast video distribution

Additional Product Information

Item	Extracted Value
Supported Formats	480i, 720p, 1080i, 1080p/60, 2K, and 4K/UHD transport using multiple 3G-SDI lines
Embedded Audio	16 channels of embedded audio per SDI signal
Fiber Type	Single-mode only
Connector Type	ST/PC

Application Drawings



Model Selection

Model	Description
F-8SDI-B-3G-TX/RX	8 bidirectional SD/HD/3G-SDI fiber optic transmitter/receiver kit with loop-out outputs - 20 km
F-8SDI-B-3G-TX/RX-40	40 km version
F-8SDI-B-3G-TX/RX-80	80 km version
F-8SDI-B-3G-TX/RX-120	120 km version

Technical Specifications

Parameter	Extracted Value
1310 nm CWDM Band	1271, 1291, 1311, 1331, 1351, 1371, 1411, 1431 nm
1550 nm CWDM Band	1471, 1491, 1511, 1531, 1551, 1571, 1591, 1611 nm
Fiber Cable	Single-mode fiber only
Optical Data Rate	Up to 4.25 Gbps, model specific
Optical Source	DFB laser module - CWDM
Optical Budget	10 dB - 20 km; 15 dB - 40 km; 20 dB - 80 km; 35 dB - 120 km
Fiber Connector	Single ST/PC
Input	Any serial digital signal up to 3.0 Gbps
Input Level / Impedance	1.00 V peak-to-peak / 75 ohm
Electrical Connector	BNC, 75 ohm
Dimensions	82.6 mm x 279.4 mm x 44.45 mm / 19 in. x 11 in. x 1.75 in.
Weight	TX 10 lb, RX 10 lb
Temperature Range	Operating: -10C to +55C; Storage: -30C to +70C
Humidity Range	0 to 95%, non-condensing
Power	100-240 VAC, 25 W