

Dual Channel Transmitters 1550 nm Single Mode, 40 km SDI SFP Dual LC Connector



SDI Video Small Form Pluggable (SDI SFP)

Description

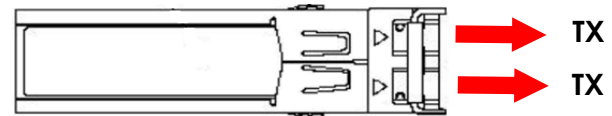
OptixCom's video SFP optical modules are deployed for the increasing demand of high definition video applications over a long distance. The design supports pathological patterns for SD, ED, HD, and 3G SDI (Serial Digital Interface) signals from 50 Mb/s to 3 Gb/s. The high data rate enables crystal clear video resolution with minimum degradation. In addition to standard optical transceiver components used in the module, a micro-controller IC is utilized to process video signals. This electrical-optical interface is also compatible with SMPTE 297-2006 standard and SFP Multi-Source Agreement (MSA) package specifications.

This particular optical module supports two channels of transmitter for one-way video transmission. 1550 nm DFB laser is used with a typical transmission distance of 40 km. This product is RoHS compliant and typical power consumption is < 1.7 W.



Lead-Free

SDI-2970EX-2T40K



Key Features

- 1550 nm single mode
- Dual transmitter channels
- 50 Mb/s – 3 Gb/s, 40 km reach
- SMPTE 297-2006 compatible
- Support SMPTE 424M/292M/297M/259M
- Duplex LC connector optical interface
- Single 3.3 V power supply
- Z-axis hot pluggable
- SFF-8472 MSA Compliant
- RoHS compliant

Applications

- ✓ Serial Digital Interface (SDI) standard
- ✓ SMPTE 297-2006 compatible electrical-optical interface
- ✓ Remote digital display systems or security surveillance
- ✓ Professional video broadcast
- ✓ Digital cinema system

Ordering Information

Part Number: SDI-2970EX-2T40K

Description:

1550 nm, 50 Mb/s to 2.97 Gb/s, single mode, SDI video SFP dual channel transmitters, 40 km reach, 0-70°C

Operating Conditions

Parameter	Min.	Typical	Max.	Units
Operate Temperature	0	25	70	°C
Data Rate	50	2970	3000	Mb/s
Supply Voltage	3.15	3.3	3.45	V
Supply Current	---	---	500	mA

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Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	T_{st}	-40	85	°C
Humidity	$R.H.$	---	85	%
Soldering Temperature (10 sec. on leads)	T_{sd}	---	260	°C

Transmitter Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Input Voltage ¹	ΔV_i	0.4	---	1.8	V
Differential Input Impedance ²	Z	90	100	110	ohm
Optical Output Power (40 km) ³	P_o	-2	0	+3	dBm
Optical Wavelength	λ_o	1480	1550	1580	nm
Spectral Width (-20 dB)	$\Delta\lambda$	---	---	1	nm
Side Mode Suppression Ratio	SMSR	30	---	---	dB
Extinction Ratio	ET	5	8	---	dB
Rise/Fall Time (20% - 80%)	SD-SDI	---	---	1500	ps
	HD-SDI	---	---	270	
	3G-SDI	---	---	135	
Total Jitter PRBS & Color Bar	SD-SDI	---	70	200	ps
	HD-SDI	---	50	135	
	3G-SDI	---	70	100	
Total Jitter Pathological	SD-SDI	---	200	300	ps
	HD-SDI	---	115	---	
	3G-SDI	---	120	---	

Notes:

1. Applied to AC LVPECL I/O coupling. See the design guide for proper termination.
2. Single ended will be 50 ohm for each signal line.
3. Output of coupling optical power into 9/125 μ m SMF.

**Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11**



Transmitter Electro-Optical Characteristics (Cont'd)

Parameter	Symbol	Min.	Typical	Max.	Units
TX Disable Voltage – High	V_{DH}	2.0	---	V_{CC}	V
TX Disable Voltage - Low	V_{DL}	0	---	0.8	V
TX Fault Output - High	V_{FH}	2.0	---	V_{CC}	V
TX Fault Output - Low	V_{FL}	0	---	0.8	V
TX Disable Assert Time	T_{ass}	---	---	10	μ s
TX Disable Deassert Time	T_{disass}	---	---	1.0	ms
Serial ID Clock Rate	f_c	---	---	280	kHz
Time to Initialize	T_{as}	---	---	300	ms
TX Fault from Fault to Assertion	T_{fault}	---	---	100	μ s
TX Disable Time to Start Reset	T_{reset}	10	---	---	μ s

PIN Assignment and Description

Top of Board

20	TX1_DIS
19	TD1-
18	TD1+
17	VEE_TX1
16	VCC_TX1
15	VCC_TX2
14	VEE_TX2
13	NC
12	TX2_FAULT
11	VEE_TX2

Bottom of Board

(as viewed through top of board)

1	VEE_TX1
2	TX1_FAULT
3	NC
4	VEE_TX1
5	I ² C CLK
6	I ² C DATA
7	VEE_TX2
8	TD2+
9	TD2-
10	TX2_DIS

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