

# Dual Channel Receivers 1260 - 1580 nm Single Mode SDI SFP Dual LC Connector



SDI Video Small Form Pluggable (SDI SFP)

## Description

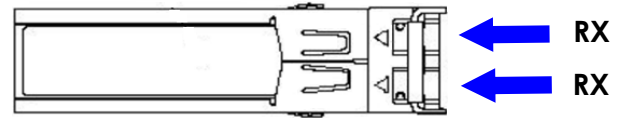
OptixCom's video SFP optical modules are deployed for the increasing demand of high definition video applications over a long distance. The design supports pathological patterns for SD, ED, HD, and 3G SDI (Serial Digital Interface) signals from 50 Mb/s to 3 Gb/s. The high data rate enables crystal clear 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 receiver for one-way video receiving. The module uses PIN photodiode for 1260-1580 nm incoming optical wavelength with -22 dB of sensitivity and 40 km reach typically. This product is RoHS compliant and typical power consumption is < 0.5 W.



Lead-Free

## SDI-2970EX-2R40K



## Key Features

- 1260 nm - 1580 nm single mode
- Dual receiver channels
- 50 Mb/s – 3 Gb/s, -22 dB sensitivity
- 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-2R40K

### Description:

1260 nm – 1580 nm, 50 Mb/s to 2.97 Gb/s, single mode, SDI video SFP dual channel receivers, 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	---	---	150	mA

### 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

### Receiver Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Output Voltage <sup>1</sup>	$\Delta V_i$	0.6	0.8	1.0	V
Differential Impedance <sup>2</sup>	$Z$	90	100	110	ohm
RX Signal Loss – Deasserted	$P_{RL-}$	-29	---	---	dBm
RX Signal Loss – Asserted	$P_{RL+}$	---	---	-22	dBm
Receiver Overload	$P_{max}$	+0	---	---	dBm
Optical Wavelength	$\lambda_o$	1260	---	1580	nm
Signal Detect Hysteresis	$P_{RL+} - P_{RL-}$	1	---	---	dB
Receiver Sensitivity (PBRs) <sup>3</sup>	SD-SDI	---	---	-25	dBm
	HD-SDI	$P_I$	---	-23	
	3G-SDI	---	---	-22	
Receiver (Pathological) <sup>3</sup>	SD-SDI	---	---	-25	dBm
	HD-SDI	$P_I$	---	-23	
	3G-SDI	---	---	-22	
Rise/Fall Time (20% - 80%)	SD-SDI	---	---	1500	ps
	HD-SDI	$T_r/T_f$	---	270	
	3G-SDI	---	---	135	

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. Test at 3 Gb/s, 2<sup>7</sup> – 1 PRBS data pattern, and > 1x10<sup>-12</sup> of Bit-Error-Rate (BER)

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

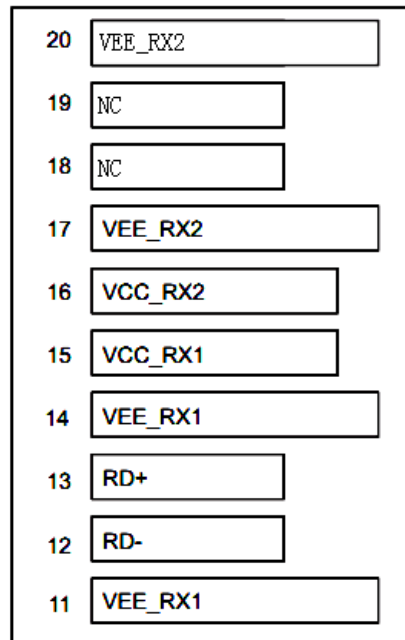


**Receiver Electro-Optical Characteristics (Cont'd)**

Parameter	Symbol	Min.	Typical	Max.	Units
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	---	
RX Signal Loss Output - High	$V_{RL+}$	2.0	---	$V_{CC}$	V
RX Signal Loss Output - Low	$V_{RL-}$	0	---	0.8	V
RX Signal Loss Assert Time	$T_{RL+}$	---	---	100	$\mu$ s
RX Signal Loss Deassert Time	$T_{RL-}$	---	---	100	$\mu$ s

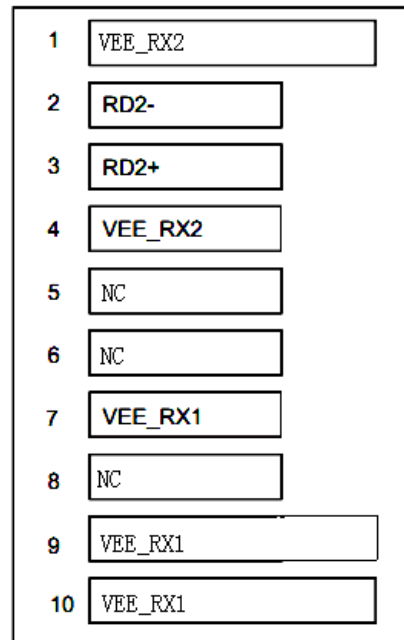
**PIN Assignment and Description**

**Top of Board**



**Bottom of Board**

(as viewed through top of board)



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