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

OptixCom Connect with Light

SDI Video Small Form Pluggable (SDI SFP)

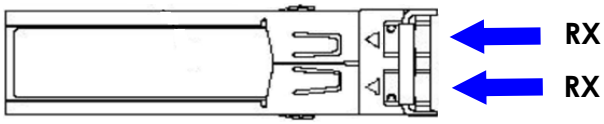
Description

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

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

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

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

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Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	*Tst*	-40	85	°C
Humidity	*R.H.*	---	85	%
Soldering Temperature (10 sec. on leads)	*Tsd*	---	260	°C

Receiver Electro-Optical Characteristics

Parameter		Symbol	Min.	Typical	Max.	Units
Differential Output Voltage [1]		ΔVi	0.6	0.8	1.0	V
Differential Impedance [2]		*Z*	90	100	110	ohm
RX Signal Loss – Deasserted		P_{RL-}	-29	---	---	dBm
RX Signal Loss – Asserted		P_{RL+}	---	---	-22	dBm
Receiver Overload		*Pmax*	+0	---	---	dBm
Optical Wavelength		λ_o	1260	---	1580	nm
Signal Detect Hysteresis		$P_{RL+} - P_{RL-}$	1	---		dB
Receiver Sensitivity (PBRS)[3]	SD-SDI	*PI*	---	---	-25	dBm
	HD-SDI		---	---	-23	
	3G-SDI		---	---	-22	
Receiver (Pathological)[3]	SD-SDI	*PI*	---	---	-25	dBm
	HD-SDI		---	---	-23	
	3G-SDI		---	---	-22	
Rise/Fall Time (20% - 80%)	SD-SDI	*Tr/Tf*	---	---	1500	ps
	HD-SDI		---	---	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, $2^7 - 1$ PRBS data pattern, and > $1x10^{-12}$ of Bit-Error-Rate (BER)

Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11

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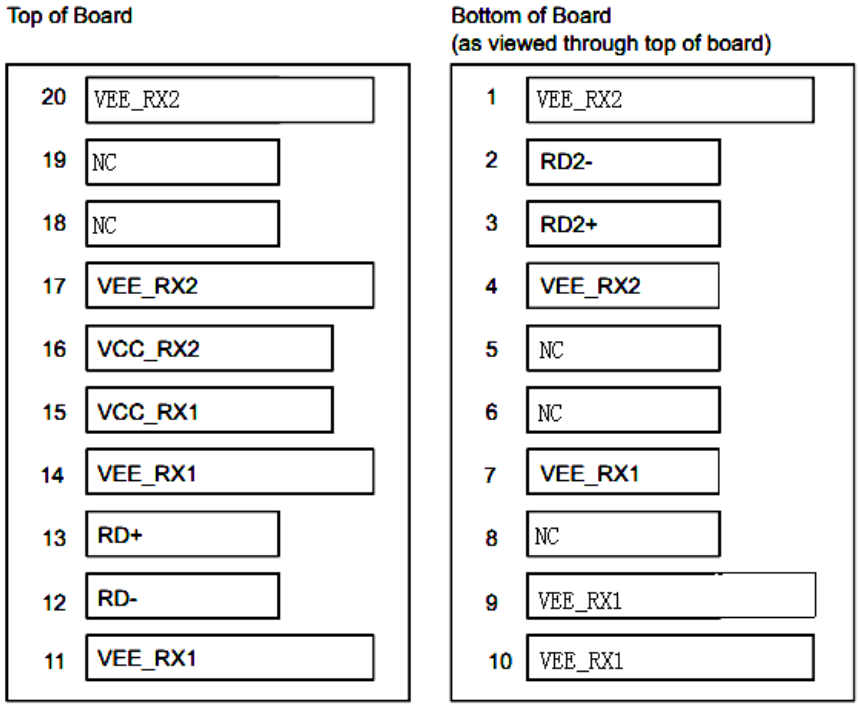
Receiver Electro-Optical Characteristics (Cont'd)

Parameter		Symbol	Min.	Typical	Max.	Units
Total Jitter PRBS & Color Bar	SD-SDI	T_j	---	70	200	ps
	HD-SDI		---	50	135	
	3G-SDI		---	70	100	
Total Jitter Pathological	SD-SDI	T_j	---	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	µs
RX Signal Loss Deassert Time		T_{RL-}	---	---	100	µs

PIN Assignment and Description



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