

Product Specification

SDI 270Mb/s 35Km 1X9 Transceiver

EP-TR9-270-31L1

ePHOTON

Ver A

EP-TR9-270-31L1 SDI 270Mb/s 35Km 1x9 Transceiver

1 Features

- 1.1 Transceiver unit with independent
1310nm FP Laser diode transmitter
PIN-TIA receiver
- 1.2 SMPTE 259M-2006 compatible
- 1.3 Robust error-free transmission of SDI 270Mb/s for
up to 35Km single mode fiber;
- 1.4 Supports video pathological patterns for SD-SDI
- 1.5 Industry standard 1x9 package;
- 1.6 Single +3.3V power supply
- 1.7 Low power consumption, typically 680mW



2 Applications

- 2.1 ANSI/SMPTE 259M

3 General

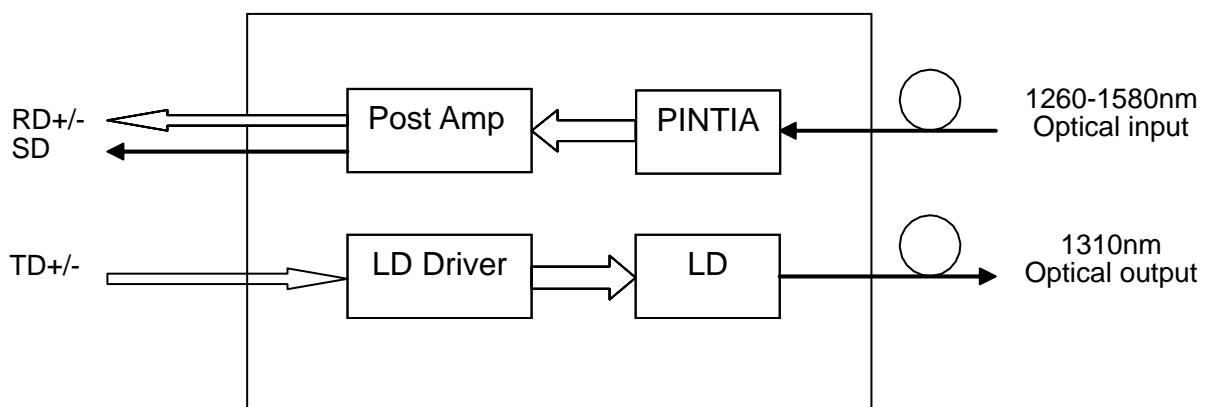
The Modules are optical transceiver or transmitter and receiver modules designed to transmit and receive optical and electrical serial digital signals as defined in SMPTE 297-2006. The transceiver or transmitter and receiver are specifically designed for the application with the performance of SDI pathological patterns.

3.1 Transmitter Section

Transmitter is designed for single mode fiber and operates at a nominal wavelength of 1310nm. The transmitter module uses a FP laser diode. It contains APC function, temperature compensation circuit, PECL data inputs interface.

3.2 Receiver Section

The receiver section uses a hermetic packaged front end receiver (InGaAs PIN and preamplifier). The post amplifier is coupled to preamplifier. As the input optical is decreased, SD will switch from high to low. As the input optical power is increased from very low levels, SD will switch back from low to high.



4 Performance Specifications

4.1 Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature (Non-Operating)	Tstg	-40	+85	°C
Case Temperature (Operating)	Tc	0	+70	°C
Input Voltage	-	GND	Vcc	V
Power Supply Voltage	Vcc-Vee	-0.5	+3.6	V

4.2 Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Power Supply Voltage	Vcc	+3.1	+3.3	+3.5	V	-
Power Supply Current	Icc	-	200	300	mA	-
Case Temperature (Operating)	Tc	0	-	70	°C	-
Data Rate	-	-	270	-	Mb/s	-

4.3 Transmitter E-O characteristics

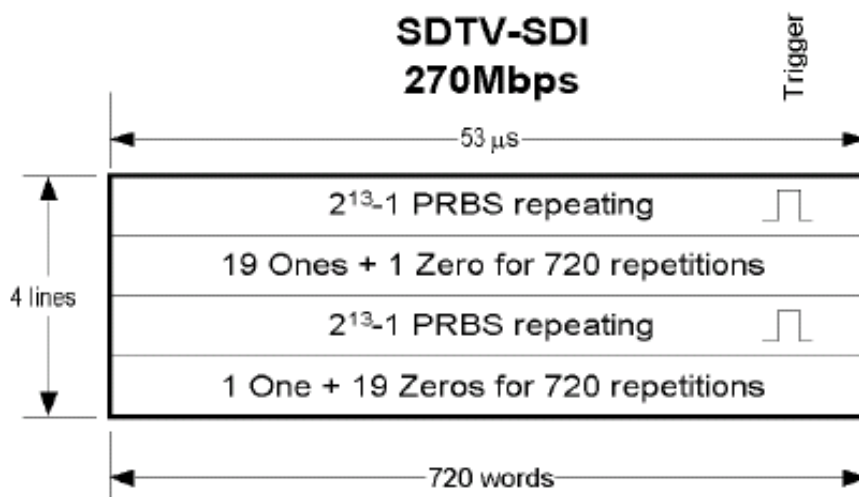
Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Center Wavelength	λ	1270	1310	1350	nm	-
Spectral Width (RMS)	$\Delta \lambda$	-	-	10	nm	-
Average Optical Output Power	Po	-12	-	-3	dBm	-
Extinction Ratio	Er	7	-	-	dB	-
Single Ended Data Input Swing	V _{INPP}	250	-	1200	mV	-
Optical Signal Intrinsic Jitter	-			180	pS	-
Optical Rise/Fall Time	Tr/Tf(20-80%)			1	nS	-

4.4 Receiver O-E Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Operate Wavelength	-	1270	-	1590	nm	-
Sensitivity	Sen	-	-26	-23	dBm	1
Saturation	Psat	-3	-	-	dBm	1
LOS Asserted	-	-40	-	-	dBm	Low Level: Alarm
LOS De-Asserted	-	-	-	-23	dBm	
LOS Hysteresis	-	-	1.5	-	dB	
Single Ended Data Output Swing	Voutpp	185	-	1000	mV	-
SD Low Voltage	Vlout	-	-	0.8	V	-
SD High Voltage	Vhout	2.0	-	-	V	-

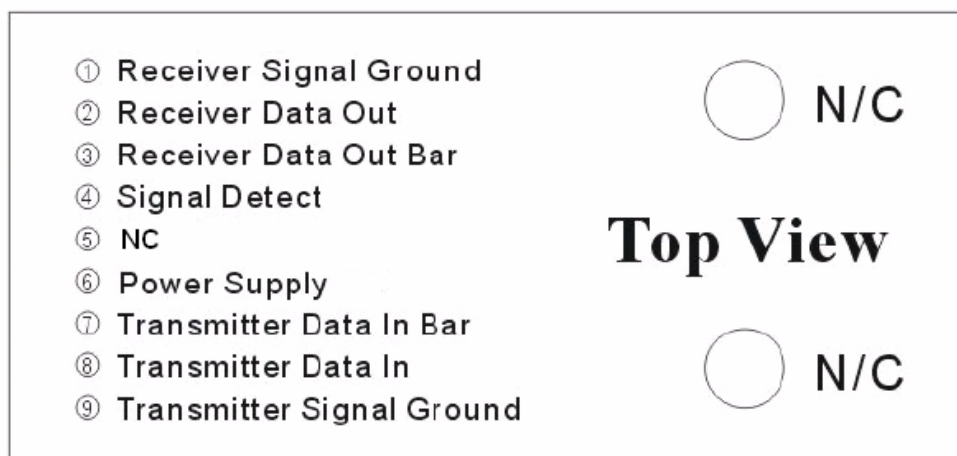
Notes:

1. Minimum sensitivity and saturation levels for the following test patterns:



5 Pin Definitions

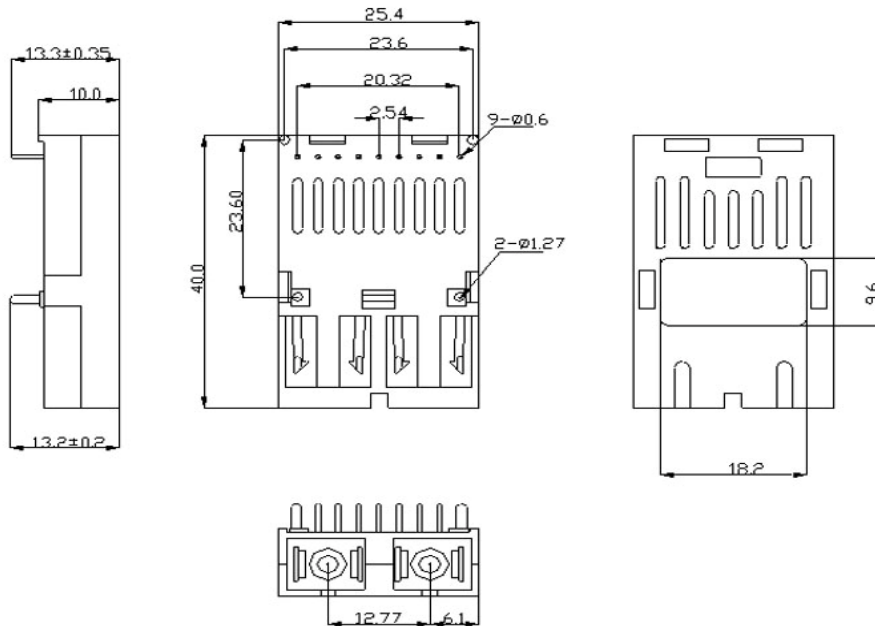
5.1 Pin Diagram



5.2 Pin Descriptions

Pin#	Name	Function
1	Vee	Negative power of receiver section, normally grounded
2	RD+	LVPECL, Data output of receiver section
3	RD-	LVPECL, Reverse data output of receiver section
4	SD	Optical alarm of receiver section, High level when normal, Low level when no light.
5	NC	Not connected
6	V _{CC}	Positive power of transmitter and receiver section, normally +3.3V
7	TD-	LVPECL, Reverse data input of transmitter section
8	TD+	LVPECL, Data input of transmitter section
9	Vee	Negative power of transmitter section, normally grounded

6 Package Information



7 Ordering Information

Part Number	Description
EP-TR9-270-31L1	SDI 270Mb/S,Duplex SC 1X9, 35Km,0~70°C

Contact Information:

Address: 2F, Jianxing Building 3; Chaguang Industrial Park; West Shahe Road; Shenzhen; China;
 PC: 518055
 Tel: 86-755-86131609
 Fax: 86-755-26635026