OHP3G-313110NCRN

Non-MSA 3Gb/s SDI Digital Video SFP Dual Channel Optical Transmitters,1310nm,10km

Features

- SMPTE 297-2006 Compatible Features
- Speed from 50 Mbps to 3Gbps
- Distance up to 10km for 3G-SDI over Single-mode Fiber
- Support Video Pathological Patterns for SD-SDI, HD-SDI & 3G-SDI
- Dual 1310nm FP laser
- Hot-pluggable SFP
- Non-MSA compliant Pinout
- Single +3.3V power supply
- Low Power Consumption
- RoHS compliant
- Operating case temperature: 0 to +70°C

Applications

- SMPTE 424M/297M (2.97Gb/s)
- SMPTE 292M/297M (1.485Gb/s)
- SMPTE 259M/297M (270/360Mb/s)
- High-density Video Router
- Broadcast cameras

Description

Optcore 3Gb/s HD digital video SMPTE SFP transmitter are high performance, cost effective optical modules for dual channel video transmission application over single mode fiber (SMF). The optical transmitter module is designed for data rates from 50Mbps to 2.97Gbps and is specifically designed for robust performance in the presence of SDI pathological patterns for SMPTE 259M, SMPTE 344M, SMPTE 292M and SMPTE 424M serial rates. It provide maximum transmission distance of 10km over single mode fiber at 3Gbps pathological signals. The OHP3G-313110NCRN is Class I Laser products per FDA/CDRH and IEC-60825 standards.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units	Note
Storage Temperature	Ts	-40	85	℃	-
Power Supply Voltage	Vcc	-0.5	4	V	-
Soldering Temperature	-	-	260	℃	10 seconds on leads only
Input Voltage	Vin	GND	Vcc	V	-

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Units
Power Supply Voltage	Vcc	3.1	3.3	3.5	V
Operating Temperature	Top	0	-	70	℃
Data Rate	-	-	2970	-	Mbps
Power Supply Current	Icc	-	200	300	mA

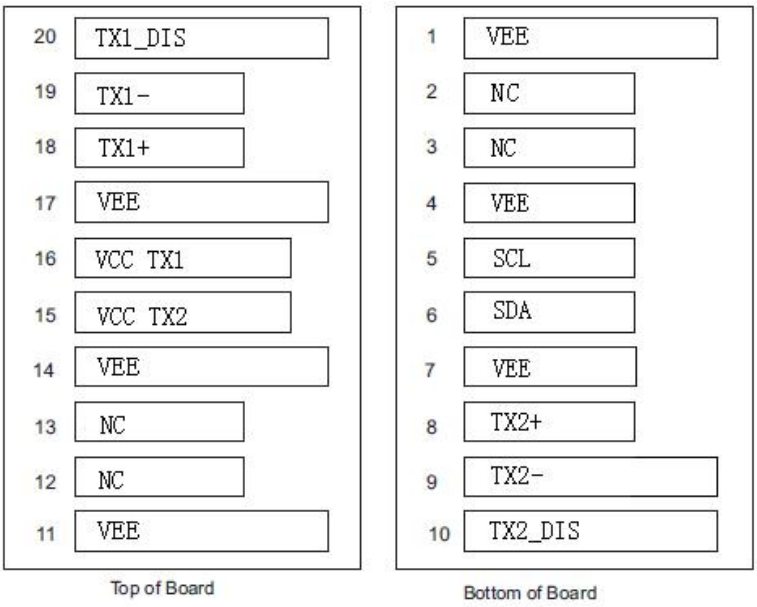
Transmitter Specifications (0°C < Top < 70°C, 3.1V < Vcc < 3.5V)

Parameter	Symbol	Min.	Typ.	Max.	Units
Optical					
Optical Transmit Power	Po	-5	-	0	dBm
Optical Center Wavelength	λ_C	1260	1310	1360	nm
Spectral Width (-20dB)	σ	-	-	4	nm
Extinction Ratio	E_R	6	-	-	dB
Optical Rise Time/Fall Time	tr/tf	-	-	135	Ps (1)
Electrical					
Differential Input Voltage	V_{IH}-V_{IL}	0.3	-	2.2	V
TX Disable Input Voltage–Low	$T_{DIS,L}$	0	-	-0.8	V
TX Disable Input Voltage–High	$T_{DIS,H}$	2.0	-	V_{CC}	V
TX Disable Assert Time	T_{ASSERT}	-	-	10	μs
TX Disable Deassert Time	$T_{DEASSERT}$	-	-	1	ms
TX Fault Output Voltage -- Low	$T_{FAULT,L}$	0	-	-0.8	V
TX Fault Output Voltage -- High	$T_{FAULT,H}$	2.0	-	V_{CC}	V

Note:

1. 20%~80%, Measured @2.97Gb/s and differential input data

Pin Assignment



Pin Descriptions

Pin No.	Name	Function	Note
1	VEE	Signal Ground	
2	NC	No Connection	
3	NC	No Connection	
4	VEE	Signal Ground	
5	SCL	SCL Serial Clock Signal	
6	SDA	SDA Serial Data Signal	
7	VEE	Signal Ground	
8	TX2+	Positive Transmitter Data In (2)	2
9	TX2-	Negative Transmitter Data In (2)	2
10	TX2_DIS	Transmitter Disable (2)	1
11	VEE	Signal Ground	
12	NC	No Connection	
13	NC	No Connection	
14	VEE	Signal Ground	
15	VCC TX2	Power Supply (2)	
16	VCC TX1	Power Supply (1)	
17	VEE	Signal Ground	
18	TX1+	Positive Transmitter Data In (1)	2
19	TX1-	Negative Transmitter Data In (1)	2
20	TX1_DIS	Transmitter Disable (1)	1

Notes:

1. TX Disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a 4.7K~10KΩ resistor. Its states are:

Low (0~0.8V): Transmitter on

(>0.8V, <2.0V): Undefined

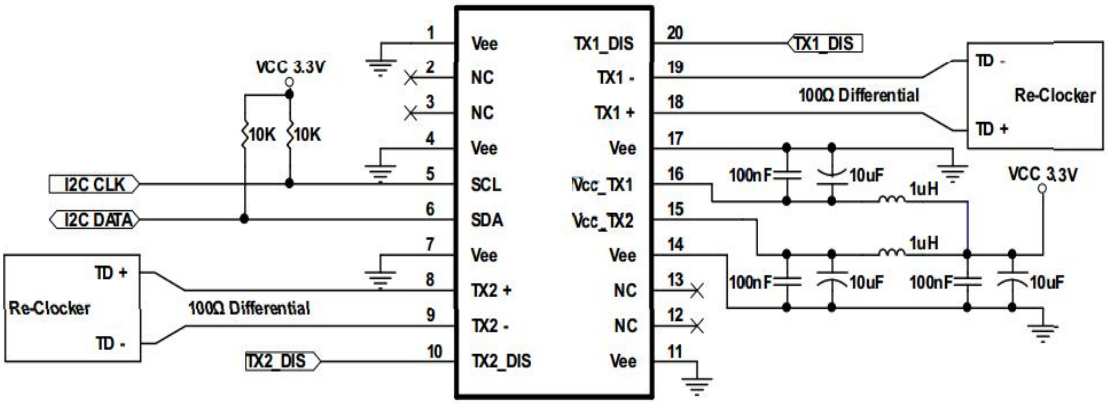
High (2.0~3.465V): Transmitter Disabled

Open: Transmitter Disabled.

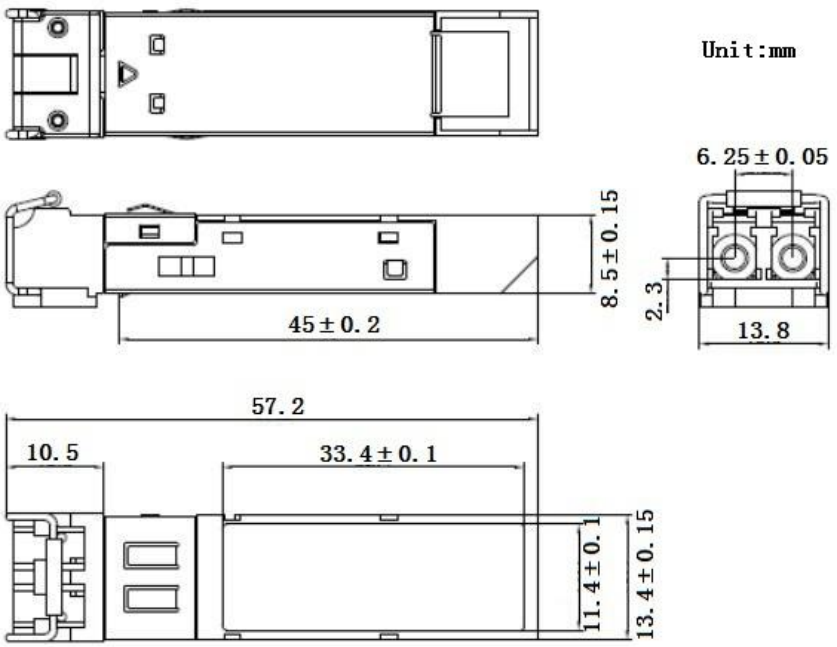
2. TD-/+: These are the differential transmitter inputs. They are AC coupled differential lines with 100Ω differential termination inside the module.

The AC coupling is done inside the module and is thus not required on host board.

Recommended Circuit



Mechanical Dimensions



Ordering information

Part number	Description
OHP3G-313110NCR	3G SDI Video SFP Dual Channel Optical Transmitter,1310nm,SMF,10km,LC

Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.