

YX--SFP-GSX-SM-WDM-1310-1550-20

1.25Gbps BIDI 20KM SFP Transceiver

Feature:

- | SFP package with LC connector 1310nm DFB Laser and 1550nm PIN photodetector
P/N: YX-SFP-GSX-SM-WDM-1310-20
- | 1550nm DFB Laser and 1310nm PIN photodetector
P/N: YX-SFP-GSX-SM-WDM-1550-20
- | Up to 20Km transmission on SMF
- | +3.3V single power supply
- | LVPECL compatible data input/output interface
- | Low EMI and excellent ESD protection
- | laser safety standard IEC-60825 compliant
- | Compatible with RoHS
- | Compatible with SFF8472
- | Digital Diagnostic Monitoring Optional

Application

- | Ethernet
- | Telecom Fiber
- | Channel

Absolute Maximum Ratings

Parameter Storage	Symbol	Minimum	Maximum	Units
Temperature Supply	Tst Vcc	-40 0 5	+85 +3.6	°C V
Voltage	RH		95	%
Operating Relative Humidity				

Operation Environment

		Vcc	3.15	3.3	3.45	V
Operating Case Temperature	Commercial	Tc	0		+70	°C
	Industrial		-40		+85	
Power Dissipation					1	W
Data Rate				1.25		Gbps

Optical Characteristics

(Ambient Operating Temperature 0°C to +70°C, Vcc =3.3 V)

Parameter		Symbol	Min.	Typ.	Max.	Units
Transmitter Section						
Center Wavelength	Tx 1310	λ_o	1300	1310	1320	nm
	Tx 1550		1540	1550	1560	
Spectral Width(RMS)	Tx 1310	$\Delta\lambda$	-	-	1	nm
	Tx 1550				1	
Average Output Power	Tx 1310	P_o	0	-	5	dBm
	Tx 1550		0		5	
Extinction Ratio		E_r	10	-	15	dB
Rise/Fall Time(20%~80%)		T_r/T_f			0.26	ns
Total jitter		T_j			0.43	UI
Optical Eye Diagram		IEEE 802.3z and ANSI Fibre Channel Compatible				
Receiver Section						
Center Wavelength	Rx 1310	λ_o	1260	1310	1360	nm
	Rx 1550		1500	1550	1600	
Receiver Sensitivity		R_{sen}			-24	dBm
Receiver Overload		R_{ov}	-3			dBm
Return Loss			12			dB
LOS Assert		$LOSA$	-36			dBm
LOS Dessert		$LOSD$			-24	dBm
LOS Hysteresis			0.5		5	

Electrical Characteristics: (Temperature 0°C to +70°C, Vcc =3.3

Parameter		Symbol	Min.	Typ.	Max.	unit
Transmitter Section						
Input Differential Impedence		Zin	90	100	110	Ohm
Data Input Swing Differential		Vin	500		2400	mV
TX Disable	Disable		2.0		Vcc	V
	Enable		0		0.8	V
TX Fault	Assert		2.0		Vcc	V
	Deassert		0		0.8	V
Receiver Section						
Output differential impedance		Zout		100		Ohm
Data output Swing Differential		Vout	370		2000	mV V
Rx_LOS	Assert		2.0		Vcc	V
	Deassert		0		0.8	

EEPROM INFORMATION (A0) :

Addr	Field Size (Bytes)	Name of Field	HEX	Description
0 1 2	1 1	Identifier Ext.	03 04 07 00 00 00 02 12	SFP MOD4 LC
3-10	1 8	Identifier	00 0D 01 01 0D 00 50 64	Transmitter Code
11 12	1 1	Connector	00 00 00 00	8B10B 1250M bps
13 14	1 1	Transceiver		
15 16	1 1	Encoding BR,		
17 18	1 1	nominal Reserved		
19 20-	1	Length (9um)-km		
35 36	16	Length (9um)		20km
37-39	1 3	Length (50um)		
		Length (62.5um)		
		Length (copper)		
		Reserved Vendor		
		name Reserved		
		Vendor OUI		
			00 00 00 00 xx xx xx xx	
			xx xx xx xx	
			xx xx xx xx xx xx xx xx	
40-55	16	Vendor PN	31 2E 30 20	ASC II
56-59	4	Vendor rev	05 1E/05 D2	V1.0
60-61	2	Wavelength	00	1310nm/1550nm
62	1	Reserved	XX	
63	1	CC BASE		Check sum of byte 0~62
64-65	2	Options	00 1A	LOS, TX_DISABLE, TX_FAULT
66	1	BR, max	32	50%
67	1	BR, min	32	50%

68-83	16	Vendor SN	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Unspecified
84-91	8	Vendor date code	XX XX XX 20 00 XX	Year, Month, Day
92-94	3	Reserved		
95	1	CC_EXT		Check sum of byte 64~94
96-255	160	Vendor specific		

Pin Description:

Pins	Name	Discription	NOTE
1 2	VeeT Tx	Transmitter Ground	
3 4	Fault Tx	Transmitter Fault Indication	1
5 6	Disable	Transmitter Disable Module	2
7 8	MOD DEF2	Definition 2 Module	3
9	MOD DEF1	Definition 1 Module	3
10	MOD DEF0	Definition 0 Not Connected	3
11	Rate Select	Loss of Signal Receiver	
12	LOS	Ground Receiver Ground	4
13	VeeR	Receiver Ground Inv.	
14	VeeR	Received Data Output	
15	VeeR	IReceived Data Output	
16	RD-	Receiver Ground Receiver	5
17	RD+	Power Transmitter Power	5
18	VeeR	Transmitter Ground Transmit	
19	VccR	Data Input Inv. Transmit	
20	VccT	Data Input Transmitter	
	VeeT	Ground	
	TD+		6
	TD-		6
	VeeT		

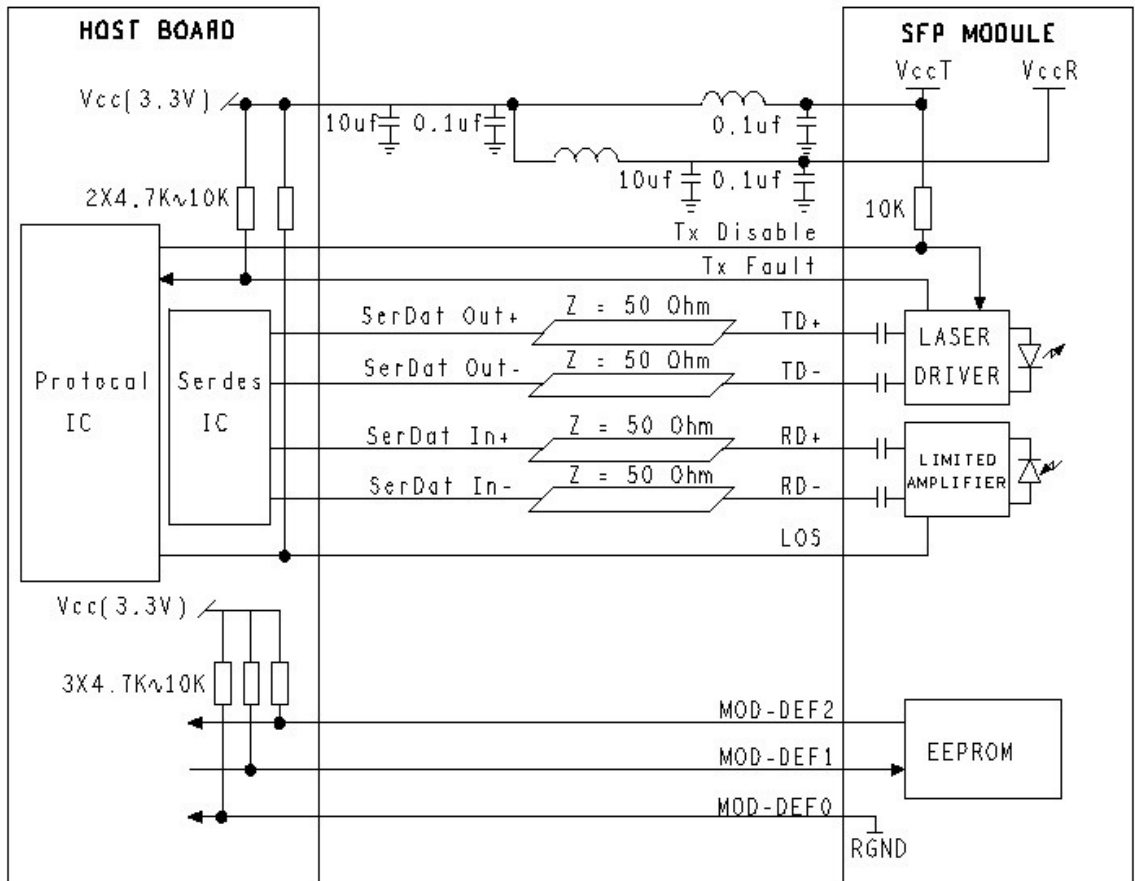
Notes: 1.TX Fault is an open collector output, which should be pulled up with a 4.7k~10kΩ

resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; logic 1 indicates a laser fault of some kind. In the low state, the output will be pulled to less than 0.8V.

2.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 (2.0~3.3V): Transmitter Disabled Open: Transmitter Disabled

3. MOD-DEF 0,1,2 are the module definition pins. They should be pulled up with a 4.7k~10kΩ resistor on the host board. The pull-up voltage shall be VccT or VccR. MOD-DEF 0 is grounded by the module to indicate that the module is present MOD-DEF 1 is the clock line of two wire serial interface for serial ID MOD-DEF 2 is the data line of two wire serial interface for serial ID
4. LOS is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; logic 1 indicates loss of signal. In the low state, the output will be pulled to less than 0.8V.
5. These are the differential receiver output. They are internally AC-coupled 100Ω differential lines which should be terminated with 100Ω (differential) at the user SERDES.
6. These are the differential transmitter inputs. They are AC-coupled, differential lines with 100Ω differential termination inside the module.

Recommended Application Circuit



Outline drawing (mm):

