EW-SFP-GE-T1310/EW-SFP-GE-R1550

1.25Gbps BIDI SFP Optical Transceiver 20KM DDM

EWIND

SFP package with LC connector

1310nm FP Laser and 1550nm PIN photodetector;

1550nm DFB Laser and 1310nm PIN photodetector;

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.

RoHS FC CE

1: APPLICATION

1.25 Gb/s 1000Base-SX Ethernet;

1.06 Gb/s Fiber Channel.

2: TECHNICAL SPECIFICATION

Parameter	Symbol		Typical		Units
Absolute Maximum Ratings					
Supply Voltage	Vcc	0	-	+3.6	V
Operating Relative Humidity	RH	5	-	95	%
Operation Environment					
Supply Voltage	Vcc	3.15	3.3	3.45	V
Operating Case Temperature	Tc	0		+70	
Power Dissipation				1	W
Data Rate			1.25		Gbps
Optical Characteristics					
Transmitter Section					

Center Wavelength	Tx 1310		1260	1310	1360	
			1540	1550	1560	
Spectral Width(RMS)	Tx 1310		-	-	4	
					1	
Average Output Power	Tx 1310		-9	-	-3	
	Tx 1550		-9		-3	
Extinction Ratio		Er	8	-		dB
Rise/Fall Time(20%~80%)		Tr/Tf			300	ps
Total jitter		Tj			0.43	UI
Optical Eye Diagram		IEEE 802.3z and ANSI Fibre Channel Compatible				
Receiver Section						
Center Wavelength	Rx 1550		1500	1550	1600	
			1260	1310	1360	
Receiver Sensitivity		Rsen			-22	dBm
Receiver Overload		Rov	-3			dBm
Return Loss			12			dB
LOS Assert		LOSA	-36			dBm
LOS Dessert		LOSD			-23	dBm
LOS Hysteresis			0.5		5	
Electrical Characteristics						
Transmitter Section						
Input Differential Impendence		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 impendence		Zout	-	100	-	Ohm
Data Input Swing Differential		Vout	370	-	2000	mV
Rx_LOS	Assert	-	2.0	-	Vcc	V
	Deassert	-	0	-	0.8	V

Add.	Field Size (Bytes)	Name of Field	HEX	Description
EEPROM INFORMATION A0				
0	1	Identifier	03	SFP
1	1	Ext. Identifier	04	MOD4
2	1	Connector	07	SC
3-10	8	Transceiver	00 00 00 02 12 00 0D 01	Transmitter Code
11	1	Encoding	01	8B10B
12	1	BR, nominal	0D	1250M bps
13	1	Reserved	00	
14	1	Length (9um)-km	14	20km
15	1	Length (9um)	64/C8/FF	
16	1	Length (50um)	00	
17	1	Length (62.5um)	00	
18	1	Length (copper)	00	
19	1	Reserved	00	
20-35	16	Vendor name	57 49 4E 54 4F 50 20 20 20 20 20 20 20 20 20 20	EWIND
36	1	Reserved	00	

37-39	3	Vendor OUI	00 00 00	
40-55	16	Vendor PN	xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx	ASC II
56-59	4	Vendor rev	31 2E 30 20	V1.0
60-61	2	Wavelength	05 1E/05 D2	1310nm/1550nm
62	1	Reserved	00	
63	1	CC BASE	XX	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	Year, Month, Day
92-94	3	Reserved	00	
95	1	CC_EXT	XX	Check sum of byte 64~94
96-255	160	Vendor specific		

Parameter	Range	Accuracy	Unit	Calibration
Diagnostics				
Temperature	0 ~70		ºC	Internal
Voltage	3-15 ~3.45	0.1	V	Internal
Bias Current	10 ~80		mA	Internal
Tx Power	-9 ~-3		dBm	Internal

Rx Power	-26~-3		dBm	Internal

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

Notes:

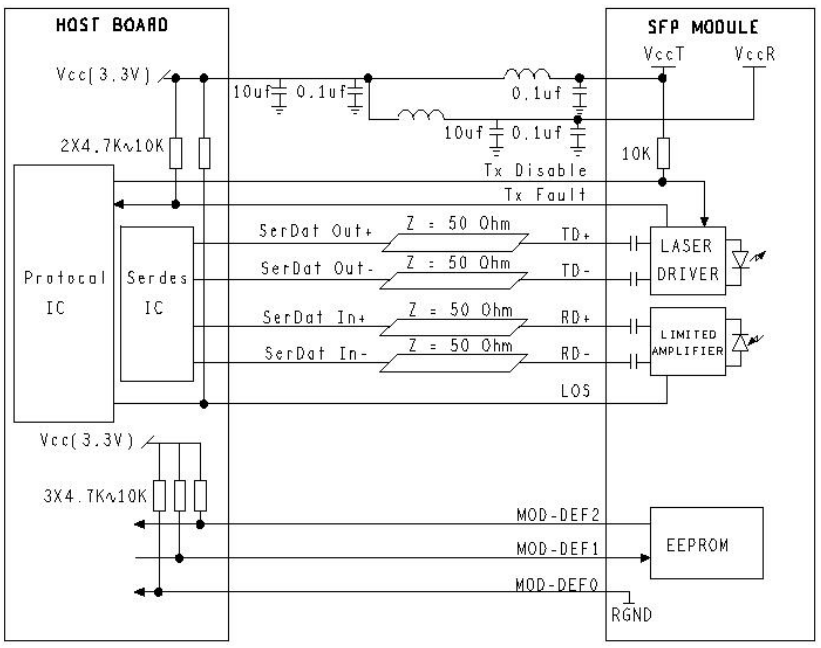
1. TX_Fault is an open collector output, which should be pulled up with 4.7k~10k resistor on the host board to avoltage between 2.0V and Vcc+0.3V. Logic 0indicates normal operation; logic 1indicates alaser fault of some kind. In the low state, the

output will be pulled to less than 0.8V.

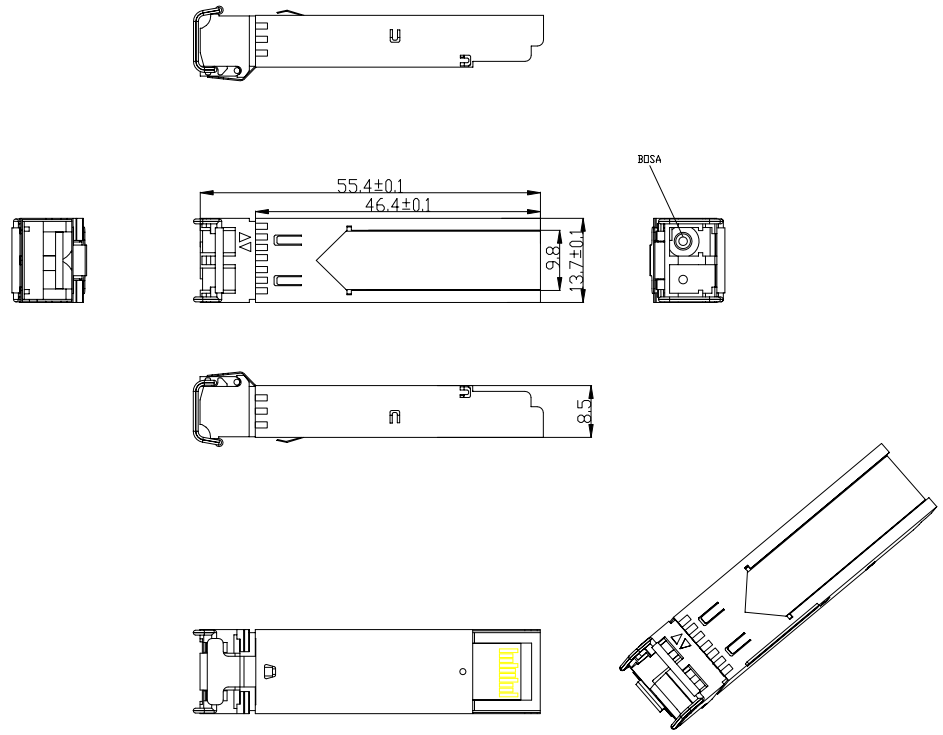
2. TX Disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a4.7k~10k resistor. Its states are:
   Low (0~0.8V): Transmitter on
   (>0.8V, <2.0V): Undefined
   High (2.0~3.465V): Transmitter Disabled
   Open: Transmitter Disabled
3. MOD-DEF 0,1,2 are the module definition pins. They should be pulled up with a 4.7k~10k resistor on
   the host board. The pull-up voltage shall be VccT or VccR.
   MOD-DEF 0is grounded by the module to indicate that the module is present
   MOD-DEF 1is the clock line of two wire serial interface for serial ID
   MOD-DEF 2is the data line of two wire serial interface for serial ID
4. LOS is an open collector output, which should be pulled up with a4.7k~10k resistor on the host board to avoltage between 2.0V and Vcc+0.3V. Logic 0indicates normal
   operation; logic 1indicates 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 100differential lines which should be terminated with 100(differential) at the user SERDES.

6. These are the differential transmitter inputs. They are AC-coupled, differential lines with 100 differential termination inside the module.

3: Recommended Application Circuit



4: Outline drawing (mm)



5: ORDER INFROMATION

Model	Description	Units
EW-SFP-FE-MD850	155M, Multi-mode Dual Fiber, 850nm, 550meter, LC connector;	1PCS
EW-SFP-FE-SD1310	155M, Single-mode Dual Fiber, 1310nm, 20km, LC connector;	1PCS
EW-SFP-GE-MD850	1.25G, Multi-mode Dual Fiber, 850nm, 500meter, LC connector;	1PCS
EW-SFP-GE-SD1310	1.25G, Single-mode Dual Fiber, 1310nm, 20km, LC connector;	1PCS
EW-SFP-GE-T1310 EW-SFP-GE-R1550	1.25G, Single-mode single Fiber, 20km, connector, Tx1310/Rx1550nm: 1310nm is transmitter 1550nm is receiver.	1PAIR
EW-SFP-10G-MD850	SFP+, 10G, Multi-mode Dual Fiber, 850nm, 300meter, LC connecto	1PCS
EW-SFP-10G-SD1310	SFP+, 10G, Single-mode Dual Fiber, 1310nm, 10km, LC connector;	1PCS
EW-SFP-GFE	1.25G SFP port transform to 10/100/1000M *RJ45 port	1PCS