

GSFP-LX-20KM



Gigabit SFP Transceiver

Overview

The SFP transceivers are high performance, cost effective modules supporting dual data-rate of 1.25Gbps and 20KM transmission distance with SMF. The transceiver consists of three sections: a FP laser transmitter, a PIN photodiode integrated with a trans-impedance preamplifier (TIA) and MCU control unit. All modules satisfy class I laser safety requirements. The transceivers are compatible with SFP Multi-Source Agreement (MSA). For further information, please refer to SFP MSA.

Application

- ❖ Gigabit Ethernet
- ❖ Fiber Channel
- ❖ Switch to Switch interface
- ❖ Switched backplane applications
- ❖ Router/Server interface
- ❖ Other optical transmission systems

Features

- ❖ Dual data-rate of 1.25Gbps operation
- ❖ 1310nm FP laser and PIN photo detector for 20km transmission
- ❖ Digital Diagnostic Monitoring
- ❖ Internal Calibration or External Calibration
- ❖ Compatible with RoHS
- ❖ +3.3V single power supply
- ❖ Operating case temperature:
 - ❖ Standard : 0 to +70°C
 - ❖ Industrial : -40°C to +85°C
- ❖ Compliant with SFP MSA

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	0	+3.6	V
Storage Temperature	Tst	-40	+85	°C
Operating Relative Humidity	Rh	5	95	%

Operation Environment

Parameter	Symbol	Min	Typical	Max	Units
Supply Voltage	Vcc	3.15	3.3	3.45	V
Operating Case Temperature	Commercial	Tc		70	°C
	Industrial			-40	
Power Dissipation				1	W
Data Rate			1.25		Gbps

Optical Characteristics

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

Parameter	Symbol	Min	Typ.	Max	Units
Transmitter Section					
Center Wavelength	λ_0	1260	1310	1360	nm
Spectral Width(RMS)	$\Delta\lambda$	-	-	4	nm
Average Output Power	Po	-8	-	-3	dBm
Extinction Ratio	Er	10	-	15	dB
Rise/Fall Time(20%~80%)	Tr/Tf			0.26	ns
Total Jitter	Tj			0.43	UI
Optical Eye Diagram	IEEE 802.3z and ANSI Fiber Channel Compatible				
Receiver Section					
Center	λ_0	1260		1620	nm

Wavelength					
Receiver Sensitivity	Rsen			-24	dBm
Receiver Overload	Rov	-3			dBm
Return Loss		12			dB
LOS Assert	LOSa	-36			dBm
LOS Dessert	LOSd			-24	dBm
LOS Hysteresis		0.5		5	

Electrical Characteristics

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

Parameter	Symbol	Min	Typ.	Max	Units
Transmitter Section					
Input Differential Impedance	Zin	90	100	110	Ohm
Data Input Swing Differential	Vin	500		2400	mV
TX Disable	Disable	2		Vcc	V
	Enable	0		0.8	V
TX Fault	Assert	2		Vcc	V
	Deassert	0		0.8	V
Receiver Section					
Output differential impedance	Zout		100		Ohm
Data Input Swing Differential	Vout	370		2000	mV
RX_LOS	Assert	2		Vcc	V
	Deassert	0		0.8	V

EEPROM Information

Addr	Field Size	Name of Field	HEX	Description
0	1	Identifier	3	SFP
1	1	Ext. Identifier	4	MOD4
2	1	Connector	7	LC
3-10	8	Transceiver	00 00 00 02 12 00 0D 01	Transmitter code
11	1	Encoding	1	8B10B
12	1	BR, nominal	0D	1250M bps
13	1	Reserved	00	

14	1	Length (9um)-km	0A/14	20km
15	1	Length(9um)	64/C8/FF	
16	1	Length(50um)	37	550m
17	1	Length(62.5um)	37	550m
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	Techroutes
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 xx	ASC II
56-59	4	Vendor rev	31 2E 30 20	V1.0
60-61	2	Wavelength	05 1E	1310nm
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		

Pin Description

Pins	Name	Description	NOTE
1	Veet	Transmitter Ground	
2	Tx Fault	Transmitter Fault Indication	1
3	Tx Disable	Transmitter Disable	2
4	MOD DEF 2	Module Defination 2	3
5	MOD DEF 1	Module Defination 1	3
6	MOD DEF 0	Module Defination 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+	Tranmitter Data Input	6
19	TD-	Inv.Transmit Data Input	6
20	Veet	Transmitter Ground	

Ordering Information

Make/Model	Description
GSFP-LX-20KM	GE SFP single-mode (20Km, 1310nm, LC, 0°C ~ +70°C DDM)
IGSFP-LX-20KM	GE SFP single-mode (20Km, 1310nm, LC, -40°C ~ +85°C DDM)



For More details:
 visit : www.techroutes.com
 Or contact
sales@techroutes.com
info@techroutes.com