

TRA5E20FNF-LF000

100G CFP4 LR4/OTU4 10 km Transceiver



Description

CIG's 100Gbit CFP4 LR4/OTU4 transceiver module (TRA5E20FNF) enables dense port count and high throughput capacity with its compact size (W x L x H = 22 x 92 x 9.5 (mm)) and low power consumption (6 W). These modules can be used in a wide range of network applications, including DWDM systems, metropolitan area network (MAN) systems, Ethernet switches and IP routers. A maximum transmission distance of up to 10km over single mode fiber is realized using an EA-DFB-based optical transmitter and PIN-PD based optical receiver operating on the LAN-WDM wavelength grid. Clock and data recovery ICs in transmit and receive paths ensure robust link performance over all operating conditions. The module is hot pluggable when mated to a compliant 104-pin connector that delivers a supply voltage of 3.3 V.

Features

- 100 Gigabit Ethernet (100GbE) 100GBASE-LR4 & ITU-T G.959.1 4I1-9D1F Dual Protocol
- Aggregate Data Rate: 103.125 & 111.810 Gbit/s
- Optical Interface: Compliant to 100GBASE-LR4 [1] and ITU-T G.959.1 4I1-9D1F [2]
- Electrical Interface: Compliant to CEI-28G-VSR [3]
- Reach: Up to 10km over single mode fiber
- Form Factor: Compliant to CFP4 MSA [4]
- Optical Transmitter: EA-DFB
- Optical Receiver: PIN photodetector
- Power Consumption: 6 W max
- Operating Case Temperature: 0 to 70 degC
- Size (W x L x H): 22 mm x 92 mm x 9.5 mm
- Hot Z-Pluggable to 56-pin electrical connector
- Latching Mechanism: Lever Latch
- Management Interface: MDIO Management Interface [5]
- Environmental: RoHS6 compliant

References

- [1] IEEE Std 802.3ba-2010
- [2] ITU-T G.959.1
- [3] OIF CEI-28G-VSR
- [4] CFP4 MSA Hardware specification, rev1.0
- [5] CFP MSA MDIO Specification, Version 2.4 r06b, June 8, 2015

Operating Environments

Table 1 Operating Environment

No	Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
1	Supply Voltage	Vcc	3.135	3.3	3.465	V	
2	Power Consumption	P	-	-	6	W	
3	Case Temperature	Tc	0	-	70	°C	

Optical Characteristics

Table 2 Optical Characteristics of LR4

No.	Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
1	Channel data rate		25.78125			Gbit/s	
2	Aggregate data rate		103.125			Gbit/s	IEEE 802.3ba
3	Transmitter Center Wavelength						
	Lane 0		1294.53		1296.59	nm	
	Lane 1		1299.02		1301.09		
	Lane 2		1303.54		1305.63		
	Lane 3		1308.09		1310.19		
4	Optical Output Power (OMA), each lane	OMA	-1.3		+4.5	dBm	
5	Average Optical Output Power of OFF Transmitter	P _{off}			-30	dBm	
6	Extinction Ratio	ER	4			dB	
7	Receiver Sensitivity (OMA), each lane				-8.6	dBm	
8	Stressed Receiver Sensitivity (OMA), each lane	SRS			-6.8	dBm	
9	Average Receive Power (OMA), each lane		-10.6		+4.5	dBm	

Table 3 Optical Characteristics of OTU4

No.	Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
1	Channel data rate		27.9525			Gbit/s	
2	Aggregate data rate		111.80997			Gbit/s	ITU-T G.709
3	Transmitter Center Wavelength						
	Lane 0		1294.53		1296.59	nm	
	Lane 1		1299.02		1301.09		
	Lane 2		1303.54		1305.63		
	Lane 3		1308.09		1310.19		
4	Average Optical Power per lane		-2.5		+2.9	dBm	
5	Average Optical Output Power of OFF Transmitter	P _{off}			-30	dBm	
6	Extinction Ratio	ER	7			dB	
7	Mean Channel Input Power		-6.9/-8.8		+4/+2.9	dBm	ER 4~7/>7dB
8	Channel Power difference				5.5	dB	
9	Optical Path Penalty				1.5	dB	
10	Equivalent Sensitivity		-8.4/-10.3			dBm	ER 4~7/>7dB

EMI Compliance

This product meets Electromagnetic Interference (EMI) specifications of following standards.

- 1 FCC Part 15, Subpart B (Class B)
- 2 EN55032 (Class B)

Laser Safety

Certified as a Class 1 laser product per international standard IEC 60825-1:2014 3rd edition

Complies with 21 CFR 1040.10 except for deviations pursuant to Laser Notice No. 50, and IEC 60825-1 as Class 1 and with FDA 21 CFR as Class I laser product.

For more Information

Cambridge Industries Group (CIG)

www.cigtech.com

Sales: sales@cigtech.com Technical Support: support@cigtech.com