

TRH5H20ENE-LF000

400GE CFP8 LR8 10 km Transceiver



Description

CIG's 400GbE CFP8 LR8 transceiver module (TRH5H20ENE) enables dense port count and high throughput capacity with its compact size (W x L x H = 40 x 102 x 9.5 (mm)) and low power consumption (16 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 4-level pulse amplitude modulation (PAM4) at 26.5625 Gbaud optical transmitter and PIN-PD based optical receiver operating on the LAN-WDM wavelength grid. The module is hot pluggable when mated to a compliant 124-pin connector that delivers a supply voltage of 3.3 V.

Features

- 400Gigabit Ethernet (400GbE) 400GBASE-LR8 Single Protocol Transceiver
- Aggregate Data Rate: 425 Gbit/s
- Optical Interface: Compliant 26.5625 GBd PAM4 x 8 wavelength 400GBASE-LR8 [1]
Electrical Interface: Compliant to 26.5625 Gbit/s x 16 lane 400GAUI-16 [1]
- Reach: Up to 10km over single mode fiber
- Form Factor: Compliant to CFP8 MSA Pluggable Transceiver Specifications [2]
- Optical Transmitter: L-WDM EA-DFB
- Optical Receiver: PIN photodetector
- Power Consumption: 16 W max
- Operating Case Temperature: 0 to 70 degC
- Size (W x L x H): 40 mm x 102 mm x 9.5 mm
- Hot Z-Pluggable to 124-pin electrical connector
- Latching Mechanism: Pull tab
- Management Interface: MDIO Management Interface [3]
- Environmental: RoHS6 compliant

References

- [1] IEEE Std 802.3bs-2017
- [2] CFP8 Hardware Specification Revision 1.0
- [3] CFP MSA Management Interface Specification Version 2.6 r06a

Operating Environments

Table 1 Operating Environment

No	Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
1	Supply Voltage	Vcc	3.2	3.3	3.4	V	
2	Power Consumption	P	-	-	16	W	
3	Case Temperature	Tc	0	-	70	°C	

Optical Characteristics

Table 2 Optical Characteristics

No.	Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks	
1	Channel data rate			53.125		Gbit/s		
2	Signaling rate, each lane			26.5625		GBd		
3	Transmitter Center Wavelength	Lane 0		1272.55		1274.54	nm	
		Lane 1		1276.89		1278.89		
		Lane 2		1281.25		1283.27		
		Lane 3		1285.65		1287.68		
		Lane 4		1294.53		1296.59		
		Lane 5		1299.02		1301.09		
		Lane 6		1303.54		1305.63		
		Lane 7		1308.09		1310.19		
4	Total average launch power				13.2	dBm		
5	Average launch power, each lane		-2.8		5.3	dBm		
6	Launch power in OMAouter minus TDECQ, each lane		-1.2/-1.1			dB	ER≥4.5dB/ER<4.5dB	
7	Transmitter and dispersion eye closure for PAM4, each lane	TDECQ			3.3	dB		
8	Extinction Ratio	ER	3.5			dB		
9	Average receive power, each lane		-9.1		5.3	dBm		
10	Receive power (OMAouter), each lane				5.7	dBm		
11	Stressed eye closure for PAM4, lane under test	SECQ		3.3		dB		
12	OMAouter of each aggressor lane			-0.2		dBm		

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

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