

TRQ5F10ENF-LF000

200GE QSFP56 FR4 2 km Transceiver



Description

CIG's 200G QSFP56 FR4 transceiver module (TRQ5F10ENF) enables high 200 GbE port densities and high throughput capacity with its compact size (W x L x H: 18.4 x 72 x 8.5 (mm)) and low power consumption (Target 6W). These modules can be used in wide range of network applications, including high capacity Ethernet switches and IP routers. A maximum transmission distance of up to 2km 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 CWDM wavelength grid. The module is hot pluggable when mated to a compliant 38-pin connector that delivers a supply voltage of 3.3 V.

Features

- 200 Gigabit Ethernet (212.5 Gbit/s) Transceiver
- Aggregate data rate of 212.5 Gbit/s
- Optical Interface: Compliant to 26.5625 GBd PAM4 x 4 wavelength 200GBASE-FR4 [1]
- Electrical Interface: Compliant to 26.5625 GBd PAM4 x 4 lane 200GAUI-4 [1]
- Reach: Up to 2 km over single mode fiber
- Form Factor: Compliant to QSFP+ 28Gb/s 4X Pluggable Transceiver Specification (SFF-8665) [2]
- Optical Transmitter: CWDM EA-DFB
- Optical Receiver: PIN photodetector
- Power consumption: Target 6 W max
- Operating case temperature: 0 to 70 deg C
- Size (W x L (with pull tab) x H): 18.4 mm x 72 (122) mm x 8.5 mm
- Hot Z-Pluggable to 38-pin electrical connector
- Latching mechanism: Pull tab
- Management Interface: Two-wire common management interface [3]
- Environment: RoHS6 compliant

References

- [1] IEEE Std 802.3-2018
- [2] SFF-8665 Rev 1.9 June 29, 2015
- [3] SFF-8636 Rev 2.9 April 21, 2017

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	Target
3	Case Temperature	Tc	0	25	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		1264.5		1277.5	nm	
	Lane 1		1284.5		1297.5	nm	
	Lane 2		1304.5		1317.5	nm	
	Lane 3		1324.5		1337.5	nm	
4	Total average launch power				10.7	dBm	
5	Outer Optical Modulation Amplitude (OMA _{outer}), each lane		-1.2		+4.5	dBm	
6	Launch power in OMA _{outer} minus TDECQ, each lane		-2.6/-2.5			dBm	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		-8.2		4.7	dBm	
10	Receive power (OMA _{outer}), each lane				4.5	dBm	
11	Receiver sensitivity (OMA _{outer}), each lane				-5.5	dBm	For SECQ < 1.4dB

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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