

## TRJ5H10ENF-LF000

### 400GE OSFP FR4 2 km Transceiver



## Description

CIG's 400G OSFP FR4 transceiver module (TRJ5H10ENF) enables high 400 GbE port densities and high throughput capacity with its compact size (W x L x H: 22.6 x 100.2 x 13.0 (mm)) and low power consumption (12W). 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 53.125 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 60-pin connector that delivers a supply voltage of 3.3 V.

## Features

- 400 Gigabit Ethernet (425 Gbit/s) Transceiver
- Aggregate data rate of 425 Gbit/s
- Optical Interface: Compliant to 53.125 GBd PAM4 x 4 wavelength 400G-FR4 [1]
- Electrical Interface: Compliant to 26.5625 GBd PAM4 x 8 lane 400GAUI-8 [2]
- Reach: Up to 2 km over single mode fiber
- Form Factor: Compliant to OSFP MSA hardware specification [3]
- Optical Transmitter: CWDM EA-DFB
- Optical Receiver: PIN photodetector
- Power consumption: 12 W max
- Operating case temperature: 0 to 70 deg C
- Size (W x L x H): 22.6 mm x 100.2 mm x 13.0 mm (not including pull tab)
- Hot Z-Pluggable to 60-pad OSFP electrical connector
- Latching mechanism: Pull tab
- Management Interface: Two-wire common management interface [4][5]
- Environment: RoHS6 compliant

## References

- [1] 100G Lambda MSA - "400G-FR4 Technical Specification Rev 1.0"
- [2] IEEE - "802.3bs-2017"
- [3] OSFP MSA - "OSFP Module Specification Rev 2.0"
- [4] OSFP Management Interface Specification Rev3.0
- [5] SNIA - "SFF-8636 Rev 2.5"

## 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	-	-	12	W	
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			106.25		Gbit/s	
2	Signaling rate, each lane			53.125		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				9.3	dBm	
5	Optical Output Power (OMA), each lane		-0.3		+3.7	dBm	
6	Launch power in OMAouter minus TDECQ, each lane		-1.7/-1.6			dBm	ER≥4.5dB/ER<4.5dB
7	Transmitter and dispersion eye closure for PAM4, each lane	TDECQ			3.4	dB	
8	Extinction Ratio	ER	3.5			dB	
9	Average receive power, each lane		-7.3		3.5	dBm	
10	Receive power (OMAouter), each lane				3.7	dBm	
11	Stressed eye closure for PAM4, lane under test	SECQ		0.9 to 3.4		dB	
12	OMAouter of each aggressor lane			1.5		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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