

TRQ5E0AENS-LF000

100GE QSFP28 DR 500 m Transceiver



Description

CIG's 100GbE QSFP28 FR transceiver module (TRQ5E0AENS) enables dense port count 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 (4.0 W). These modules can be used in a wide range of network applications, including high capacity Ethernet switches and IP routers. A maximum transmission distance of up to 500m over single mode fiber is realized using a single channel 1310nm EA-DFB-based optical transmitter and PIN-PD based optical receiver. Clock and data recovery (CDR) ICs with a 4 channel x 25.78125/26.5625 Gbit/s electrical interface in transmit and receive paths ensure robust link performance over all operating conditions. The module is hot pluggable when mated to a compliant 38-pin connector that delivers a supply voltage of 3.3 V.

Features

- 100 Gigabit Ethernet (100GbE) Transceiver
- Data Rate: 103.125 Gbit/s Single Rate
- Optical Interface: Compliant to 53.125 GBd PAM4 100G-DR [1]
- Electrical Interface: Compliant to CAUI-4 [2] or 100GAUI-4 [3]
- Support RS(544,514) FEC coder/decoder function [2]
- Reach: Up to 500m over single mode fiber
- Form Factor: Compliant to QSFP+ 28Gb/s 4X Pluggable Transceiver Specification (SFF-8665) [4]
- Optical Transmitter: Single channel 1310 nm uncooled EA-DFB
- Optical Receiver: Single channel PIN photodetector
- Power Consumption: 4.0 W max
- Operating Case Temperature: 0 to 60 degC
- 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 management interface protocol (SFF-8636) [6]
- Environmental: RoHS6 compliant

References

- [1] 100G Lambda MSA 100G-FR Technical Specification, Rev. 2.0, Aug. 14, 2018
- [2] IEEE Std 802.3bm-2015
- [3] IEEE Std 802.3cd-2018
- [4] SFF-8665 Rev 1.9 June 29, 2015
- [5] SFF-8679 Rev 1.8 October 4, 2018
- [6] 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 | | 3.135 | 3.3 | 3.465 | V | |
| 2 | Power Consumption | | - | - | 4.0 | W | |
| 3 | Case Temperature | | 0 | - | 60 | °C | |

Optical Characteristics

Table 2 Optical Characteristics

| No. | Parameter | Symbol | Min. | Typ. | Max. | Unit | Remarks |
|-----|---|--------|---------------|------|------|------|-------------------|
| 1 | Signaling rate | | 53.125 | | | GBd | |
| 2 | Wavelength | | 1304.5-1317.5 | | | nm | |
| 3 | Average Launch Power | | -5.9 | | 4 | dBm | |
| 4 | Outer Optical Modulation Amplitude (OMA _{outer}), | | -0.8 | | +4.2 | dBm | |
| 5 | Launch power in OMA _{outer} minus TDECQ | | -2.2/-1.9 | | | dBm | ER≥5.0dB/ER<5.0dB |
| 6 | Transmitter and dispersion eye closure for PAM4 | TDECQ | | | 3.4 | dB | |
| 7 | Extinction Ratio | ER | 3.5 | | | dB | |
| 8 | Average receive power | | -5.9 | | 4 | dBm | |
| 9 | Receive power (OMA _{outer}) | | | | 4.2 | dBm | |
| 10 | Receiver sensitivity (OMA _{outer}) | | | | -3.9 | dB | For SECQ < 3.4dB |

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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