100G QSFP28 LR1 10km

100G Eth, QSFP28, LR1, 10km, LC, 1311nm, SM

CPQ-CE-1LR-CDF02

OVERVIEW

The CPQ-CE-1LR-CDF02 is a 100G QSFP28 LR1 single-lambda optical transceiver designed for 100 Gigabit Ethernet and data center applications. It supports transmission distances of up to 10 km over single-mode fiber (SMF) and complies with IEEE 802.3cu and 100G Lambda MSA specifications.

The module utilizes a 1311 nm EML laser and PIN photodiode receiver, supporting 106.25 Gbps optical transmission using PAM4 modulation. It converts four 25.78 Gbps NRZ electrical lanes into a single high-speed optical channel for long-reach connectivity.

The transceiver features integrated KP4 FEC and digital diagnostic monitoring through an I^2C interface. Its hot-pluggable QSFP28 design provides reliable connectivity for high-speed data center and enterprise networking applications.

KEY SPECIFICATIONS

- Supports CAUI-4 electrical interface.
- Uses PAM4 optical modulation with a 1311 nm EML laser.
- Supports 4 electrical lanes and 1 optical channel.
- Features a duplex LC connector over SMF.
- Power consumption is less than 3.5 W.
- Supports DDM, SFF-8636, SFF-8679, IEEE 802.3cu and 100G Lambda MSA.
- Supports Commercial temperature: 0°C to +70°C.

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TECHNICAL DATA

Parameter	Value	Parameter	Value
Form Factor	QSFP28	**Transmitter Data:**	
Transmission Media	SM (LC)	Tx Power	-1.4 to +4.5dBm[3)]
Typical Reach	10km	Tx Power, OMA	+0.7 to +4.7dBm
Nominal Wavelength	1311nm	Tx Wavelength	1304.5-1317.5nm
Data Rate Support	103.125Gbps[1)] 53.125GBd [2)]	Extinction Ratio	≥ 3.5dB
Protocol Support	100GbE	**Receiver Data:**	
Power Consumption	<3.5W	Rx Power, min	-7.7dBm[3)]
Operating Temperature	0°C to 70°C	Rx Sensitivity, OMA	-6.1dBm [4)]
Storage Temperature	-40°C to 85°C	Rx Overload, max	+4.5dBm[3)]
DDM	Yes	Rx Wavelength	1304.5-1317.5nm
		LOS Assert	-26dBm
		LOS De-assert	-10dBm
		LOS Hysteresis	0.5dB

[1)] Aggregated line rate 100GbE
[2)] Baud rate
[3)] Average Power, per lane
[4)] For PRBS 2^{31}-1, Specified @ BER 2.4E-4

Safety/Regulatory Compliance

- Class 1 laser safe
- RoHS Compliance

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ABSOLUTE MAX RATING

Exceeding these limits can cause permanent damage to the transceiver

Parameter	Value	Parameter	Value
Supply Voltage	-0.5V to 4.0V	Relative Humidity	85%
Storage Temp	-40°C to 85°C	Max Rx Optical Power	+5.5dBm

ORDERING INFORMATION

Ordering Code	Description
CPQ-CE-1LR-CDF02	100G QSFP28, LR1, 10km, LC, 1311nm, SM, 0 to 70C

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