100G QSFP28 FR1 2km

100G Eth, QSFP28, FR1, 2km, LC, 1311nm, SM

CPQ-CE-1FR-CDF02

OVERVIEW

The CPQ-CE-1FR-CDF02 is a 100G QSFP28 FR1 single-lambda optical transceiver designed for 100 Gigabit Ethernet and data center applications. It supports transmission distances of up to 2 km over single-mode fiber (SMF) and complies with the IEEE 802.3cu 100GBASE-FR1 specification.

The module converts four 25.78125 Gbps electrical channels into a single 106.25 Gbps optical signal. It incorporates a 1311 nm EML laser and PIN photodiode receiver, supporting high-speed optical communication through a duplex LC interface.

The transceiver features integrated KP4 FEC termination and digital diagnostic monitoring through a two-wire serial interface. Its hot-pluggable QSFP28 design provides reliable connectivity for high-speed networking and data center infrastructure.

KEY SPECIFICATIONS

- Supports CAUI-4 electrical interface.
- Uses PAM4 modulation with a 1311 nm EML laser.
- Supports 4 electrical lanes and 1 optical channel.
- Features a duplex LC connector over SMF.
- Maximum power consumption is 4 W.
- Supports DDM, SFF-8636 Rev. 2.10a and IEEE 802.3cu 100GBASE-FR1.
- 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	-2.4 to +4dBm[3]
Typical Reach	2km	Tx Power, OMA	-0.2 to +4.2dBm
Nominal Wavelength	1311nm	Tx Wavelength	1304.5-1317.5nm
Data Rate Support	103.12Gbps[1] 53.125GBd[2]	Extinction Ratio	≥ 3.5dB
Protocol Support	100GbE	**Receiver Data:**	
Power Consumption	<4W	Rx Power, min	-6.4dBm[3]
Operating Temperature	0°C to 70°C	Rx Sensitivity, OMA	-4.5dBm[3] [4]
Storage Temperature	-40°C to 85°C	Rx Overload, max	+4.5dBm[3]
DDM	Yes	Rx Wavelength	1304.5-1317.5nm
		Rx LOS Assert	-26dBm
		Rx LOS De-assert	-8dBm
		Rx Hysteresis	0.5dB

[1] Aggregated Line Rate, 100GbE
[2] Line Baud Rate
[3] Average power, per lane
[4] 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	95%
Storage Temp	-40°C to 85°C	Max Rx Optical Power	+5.5dBm

ORDERING INFORMATION

Ordering Code	Description
CPQ-CE-1FR-CDF02	100G QSFP28, FR1, 2km, LC, 1311nm, SM, 0 to 70C

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