

100G QSFP28 FR4 2km

100G Eth, QSFP28, CWDM4, FR4, 2km, LC, 1310nm, SM

CPQ-CE-FR-CDC02

OVERVIEW

The CPQ-CE-FR-CDC02 is a QSFP28 optical transceiver designed for 100 Gigabit Ethernet applications. It uses four CWDM optical lanes in both the transmit and receive paths. Each lane operates at 25.78Gbps and uses a DFB laser on the transmit side and a PIN photodiode on the receive side. The module provides a combined data rate of 103.125Gbps and supports transmission distances up to 2km on single mode fiber.

The transceiver complies with the QSFP28 Multi-Source Agreement, CWDM4 MSA and IEEE 802.3ba. It supports dual rate 25G and 28G operation and includes Digital Diagnostics Monitoring for real time visibility of temperature, voltage, optical power and bias current. The device also supports 40G and 100G operation through CDR auto bypass mode.

The module operates from a single 3.3V supply and has a typical power dissipation below 3.5W. It uses a duplex LC optical interface and is suitable for high density switches, routers and 100G CWDM4 links in data centers.

KEY SPECIFICATIONS

- 100G QSFP28 transceiver with duplex LC connector
- Four CWDM lanes with DFB transmitters and PIN receivers
- Supports 25.78Gbps per lane for 100Gbps aggregate data rate
- Supports 25G/28G Dual-Rate operation
- Up to 2km transmission distance over single mode fiber
- Power dissipation less than 3.5W
- Supports 40G and 100G dual mode operation with CDR auto bypass
- Digital Diagnostics Monitoring supported
- Operating temperature: 0°C to +70°C
- Compliant with QSFP28 MSA and CWDM4 MSA

TECHNICAL DATA

Parameter	Value	Parameter	Value
Form Factor	QSFP28	Transmitter Data:	
Transmission Media	SM (LC)	Tx Power	-6.5 to +2.5dBm ³⁾
Typical Reach	2km	Tx Power, OMA	-4 to 2.5dBm
Nominal Wavelength	1271/1291/1311/1330nm	Tx Wavelength	1264.5 - 1277.5nm 1284.5 - 1297.5nm 1304.5 - 1317.5nm 1324.5 - 1337.5nm
Data Rate Support	103.1Gbps ¹⁾ 25.78Gbps ²⁾	Extinction Ratio	≥3.5dB
Protocol Support	100GbE-LAN	Receiver Data:	
Power Consumption	<3.5W	Rx Power, min	-11.5dBm ^{3) 4)}
Operating Temperature	0°C to 70°C	Rx Sensitivity, OMA	-10dBm ⁴⁾
Storage Temperature	-40°C to 85°C	Rx Overload, max	2.5dBm ^{3) 4)}
DDM	Yes	Rx Wavelength	1264.5 - 1277.5nm 1284.5 - 1297.5nm 1304.5 - 1317.5nm 1324.5 - 1337.5nm
		LOS Assert	-12dBm
		LOS De-assert	-30dBm
		LOS Hysteresis	0.5dBm

¹⁾ Aggregated line rate 100GbE

²⁾ Line data rate per 25.78Gbps lane

³⁾ Average Power, per lane

⁴⁾ Per 25.78Gbps. Measured with PRBS 2³¹-1 @ BER 5E-5

Safety/Regulatory Compliance

- Class 1 laser safe
- RoHS Compliance

ABSOLUTE MAX RATING

Exceeding these limits can cause permanent damage to the transceiver

Parameter	Value	Parameter	Value
Supply Voltage	-0.5V to 3.6V	Relative Humidity	85%
Storage Temp	-40°C to 85°C	Max Rx Optical Power	3.5dBm per lane

ORDERING INFORMATION

Ordering Code	Description
CPQ-CE-FR-CDC02	100G QSFP28, CWDM4, FR4, 2km, LC, 1310nm, SM, 0C to 70C

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