

10G SFP+ BiDi 80km

10G Eth, SFP+, BiDi, 80km, LC, 1490/1550nm, SM

CB-10E-80-xyyy02

OVERVIEW

The CB-10E-80-CD4502 and CB-10E-80-CD5402 are long-reach, single-fiber bidirectional SFP+ transceiver modules designed for 10 Gigabit Ethernet (10GbE) and 10G Fiber Channel (10G FC) links. They operate over single-mode fiber using complementary wavelength pairs one variant transmitting at 1490nm and receiving at 1550nm, and the other transmitting at 1550nm and receiving at 1490nm allowing full-duplex data transmission over a single optical fiber.

Both variants support link distances up to 80km and data rates from 10.3Gbps to 10.7Gbps. They meet the requirements of the SFP+ Multi-Source Agreement (MSA) and the SFF-8472 Digital Diagnostics Monitoring (DDM) standard. The DDM interface provides real-time monitoring of temperature, supply voltage, transmit power, receive power, and laser bias current.

Each module integrates a cooled EML laser transmitter and an APD receiver to enable high sensitivity and stable long-distance optical performance. The transceivers are available in Commercial (0°C to +70°C) operating temperature ranges, supporting deployment in access, metro, and long-haul environments.

KEY SPECIFICATIONS

- 10G BiDi SFP+ transceivers with single LC connector
- Two wavelength options:
 - 1490nm TX / 1550nm RX
 - 1550nm TX / 1490nm RX
- Supports 10.3Gbps to 10.7Gbps data rates
- Up to 80km transmission distance over single-mode fiber
- APD receiver for enhanced sensitivity
- Typical power consumption around 1.6W
- Temp operating conditions: Commercial (0°C to +70°C)

TECHNICAL DATA

Parameter	Value	Parameter	Value
Form Factor	BiDi SFP+	Transmitter Data:	
Transmission Media	SM (LC)	Tx Power	-1 to +4dBm ³⁾
Typical Reach	80km	Tx Wavelength	1480 - 1500nm ¹⁾ 1530 - 1560nm ²⁾
Nominal Wavelength	Tx:1490nm Rx:1550nm ¹⁾ Tx:1550nm Rx:1490nm ²⁾	Extinction Ratio	≥ 7.5dB
Data Rate Support	1Gbps to 10.7Gbps	Receiver Data:	
Protocol Support	10GbE	Rx Sensitivity	-23dBm ³⁾⁴⁾
Power Consumption	<1.6W	Rx Overload, max	-7dBm ⁴⁾
Operating Temperature	0°C to 70°C	Rx Wavelength	1540 - 1560nm ¹⁾ 1480 - 1500nm ²⁾
Storage Temperature	-40°C to 85°C	LOS Assert	-35dBm
DDM	Yes	LOS De-assert	-24dBm
		LOS Hysteresis	0.5dB

¹⁾ CB-10E-80-CD4502 – Violet-coloured latch

²⁾ CB-10E-80-CD5402 – Yellow-coloured latch

³⁾ Average power

⁴⁾ @10.31Gbps, BER ≤ 1x10⁻¹², PRBS 2³¹-1

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 4.5V	Relative Humidity	85%
Storage Temp	-40°C to 85°C	Max Rx Optical Power	-7dBm

ORDERING INFORMATION

Ordering Code	Description
CB-10E-80-CD4502	10G Eth, SFP+, BiDi, 80km, LC, 1490/1550nm, SM, 0 to 70C
CB-10E-80-CD5402	10G Eth, SFP+, BiDi, 80km, LC, 1550/1490nm, SM, 0 to 70C

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