

1G SFP BiDi 20km

1G Eth, FC, SFP, BiDi, 20km, LC, 1310/1490nm, SM

CB-GB-20-xyyy02

OVERVIEW

The CB-GB-20-xD4302 and CB-GB-20-xD3402 are single fiber bidirectional SFP transceivers that support Gigabit Ethernet at 1.25Gbps and Fiber Channel at 1.063Gbps. Using complementary wavelength pairs, these modules enable full duplex communication over a single strand of single mode fiber. One variant transmits at 1490nm and receives at 1310nm, while the other transmits at 1310nm and receives at 1490nm. Both versions support up to 20km optical transmission.

Each transceiver integrates a DFB or FP laser, a PIN photodiode receiver with TIA and an MCU control unit for stable operation. The modules comply with the SFP Multi-Source Agreement and support Digital Diagnostics Monitoring according to SFF-8472. DDM allows real time monitoring of key operating parameters such as temperature, supply voltage, transmit power, receive power and bias current.

The devices operate from a single 3.3V power supply with maximum current at 300mA. They are offered in Commercial 0°C to +70°C temperature grade, making them suitable for a wide range of access, enterprise and telecom applications requiring 20km single fiber connectivity.

KEY SPECIFICATIONS

- 1G BiDi SFP transceivers with single LC connector
- Two wavelength options:
 - 1490nm transmit and 1310nm receive
 - 1310nm transmit and 1490nm receive
- Supports 1.25Gbps Ethernet and 1.063Gbps Fiber Channel
- Up to 20km transmission distance over single mode fiber
- DFB or FP laser transmitter and PIN photodiode receiver with TIA
- Typical operating current around 300mA
- Temperature options:
 - Commercial 0°C to +70°C
- Digital Diagnostics Monitoring compliant with SFF-8472
- Hot pluggable SFP MSA form factor

TECHNICAL DATA

Parameter	Value	Parameter	Value
Form Factor	BiDi SFP	Transmitter Data:	
Transmission Media	SM (LC)	Tx Power	-9 to +0dBm ³⁾
Typical Reach	20km	Tx Wavelength	1260 -1360nm ¹⁾ 1470 -1510nm ²⁾
Nominal Wavelength	Tx:1310nm Rx:1490nm ¹⁾ Tx:1490nm Rx:1310nm ²⁾	Extinction Ratio	≥ 9dB
Data Rate Support	10Mbps to 1.25Gbps	Receiver Data:	
Protocol Support	Gigabit Ethernet 1.063Gbps Fiber channel	Rx Sensitivity	-23dBm ³⁾⁴⁾
Power Consumption	<1.0W	Rx Overload, max	-1dBm ⁴⁾
Operating Temperature	0°C to 70°C	Rx Wavelength	1470 -1510nm ¹⁾ 1260 - 1360nm ²⁾
Storage Temperature	-40°C to 85°C	LOS Assert	-38dBm
DDM	Yes	LOS De-assert	-24dBm
		LOS Hysteresis	0.5dB

¹⁾ CB-GB-20-xD3402 – Blue-coloured latch

²⁾ CB-GB-20-xD4302 – Purple-coloured latch

³⁾ Average Power

⁴⁾ @1250 Mbps, BER ≤1x10⁻¹², PRBS 2⁷-1

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 3.75V	Relative Humidity	85%
Storage Temp	-40°C to 85°C	Max Rx Optical Power	-1dBm

ORDERING INFORMATION

Ordering Code	Description
CB-GB-20-CD3402	1G SFP, BiDi, 20km, LC, 1310/1490nm, SM, 0 to 70C
CB-GB-20-CD4302	1G SFP, BiDi, 20km, LC, 1490/1310nm, SM, 0 to 70C

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