1G SFP BiDi 20km

1G Eth, FC, SFP, BiDi, 20km, LC, 1310/1550nm, SM

CB-GB-20-xxyy02

OVERVIEW

The CB-GB-20-xD5302 and CB-GB-20-xD3502 are single fiber bidirectional SFP transceivers designed for 1.25Gbps Gigabit Ethernet and 1.063Gbps Fiber Channel applications. These modules transmit and receive on complementary wavelength pairs which enables full duplex communication over a single strand of single mode fiber. One variant transmits at 1550nm and receives at 1310nm, and the other transmits at 1310nm and receives at 1550nm. Both versions support up to 20km optical reach.

Each transceiver integrates a DFB or FP laser transmitter depending on the wavelength version and a PIN photodiode receiver with TIA. The modules comply with the SFP Multi-Source Agreement and support Digital Diagnostics Monitoring according to SFF-8472. The DDM interface provides real time monitoring of temperature, supply voltage, transmit power, receive power and bias current.

The devices operate from a single 3.3V supply with typical current around 300mA. They are available in Commercial 0°C to +70°C temperature grade. This makes them suitable for Gigabit Ethernet, Fiber Channel and other 1.25Gbps optical systems requiring 20km reach.

KEY SPECIFICATIONS

- 1G BiDi SFP transceivers with single LC connector
- Two wavelength options:
  - 1550nm transmit and 1310nm receive
  - 1310nm transmit and 1550nm 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
- Temp operating conditions:
  - Commercial 0°C to +70°C
- Digital Diagnostics Monitoring compliant with SFF-8472
- Hot pluggable SFP MSA form factor

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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] 1530 -1570nm [2]
Nominal Wavelength	Tx:1310nm Rx:1550nm [1] Tx:1550nm Rx:1310nm [2]	Extinction Ratio	≥ 9dB
Data Rate Support	10Mbps to 1.25Gbps	**Receiver Data:**	
Protocol Support	GbE, 1G FC	Rx Sensitivity	-23dBm [3] [4]
Power Consumption	<1.0W	Rx Overload, max	-1dBm [4]
Operating Temperature	0°C to 70°C	Rx Wavelength	1530 -1570nm [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-xD3502 – Blue-coloured latch
[2] CB-GB-20-xD5302 – Yellow-coloured latch
[3] Average Power
[4] @1250 Mbps, BER ≤$1x10^{-12}$, PRBS 2^7-1

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 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-CD3502	1G SFP, BiDi 20km, LC, 1310/1550nm, SM, 0 to 70C
CB-GB-20-CD5302	1G SFP, BiDi, 20km, LC, 1550/1310nm, SM, 0 to 70C

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