edge OPTICAL SOLUTIONS

Product Data Sheet

BIDI-1.25G-SFP-20-BD

Optical Transceiver

Key Features

- Media Type: **Single-Mode Fiber (SMF)**
- Fiber Count: **BiDi**
- Connector: **Single LC/UPC**
- Maximum Distance: **20 km**
- Guaranteed Link Budget: **13 dB**
- Tx Wavelenght: **1550 nm**
- Supported Data Rate: **1.063 Gbps - 1.25 Gbps**
- DDM/DOM: **Supported**

Product Description

Our EDGEOPTIC BIDI-1.25G-SFP-20-BD is a multi-vendor compatible 1000BASE-BX bidirectional SFP optical module designed for medium-reach Gigabit Ethernet applications operating over single-mode fiber infrastructure. This BiDi transceiver enables cost-effective fiber utilization by transmitting and receiving on a single fiber strand, making it particularly suitable for metropolitan access networks and extended campus deployments where fiber conservation delivers meaningful infrastructure savings.

The BIDI-1.25G-SFP-20-BD module operates at 1550nm wavelength for transmission and 1310nm for reception, supporting data rates from 1.063 to 1.25 Gbps. This Side B transceiver must be deployed in matched pairs with its complementary Side A unit (transmitting at 1310nm, receiving at 1550nm) to establish bidirectional communication over a single fiber strand. Our 1000BASE-BX SFP transceiver utilizes DFB (Distributed Feedback) laser technology for transmission, providing superior wavelength stability and narrow spectral width essential for reliable operation at extended distances, paired with PIN photodiode for signal reception. The module ensures a 13 dB guaranteed optical link budget, supporting transmission distances up to 20 kilometers over standard single-mode fiber. However, distance remains an indicative parameter calculated for ease of identification – actual reach depends on minimal optical budget requirements and real-world attenuation characteristics of the installed fiber plant.

The BIDI-1.25G-SFP-20-BD is a hot-pluggable SFP module featuring a single LC/UPC connector as the optical interface. The electrical interface conforms to INF-8074i and SFP MSA (Multi-Source Agreement) specifications, ensuring compatibility with standard SFP host systems across multiple vendor equipment platforms. Our 1000BASE-BX SFP transceiver can be encoded for compatibility with 80+ equipment brands,

enabling seamless integration into existing network infrastructure. The module incorporates DDM/DOM (Digital Diagnostic Monitoring) functionality, providing real-time operational parameters including transmitted and received optical power levels, module temperature, laser bias current, and supply voltage. This diagnostic data is accessible via MSA-compatible EEPROM interface, enabling comprehensive monitoring of transceiver health and performance.

The SFP form factor, while considered a legacy standard, remains widely deployed across enterprise, carrier, and industrial networks due to its proven reliability, broad equipment support, and cost-effectiveness for Gigabit applications. The module operates within a standard 0°C to 70°C commercial temperature range, with appropriate thermal considerations for sustained operation in controlled equipment room environments. Power requirements are met by a single +3.3V supply.

Standards compliance includes IEEE 802.3ah for 1000BASE-BX Gigabit Ethernet along with 1G Fiber Channel support at 1.0625 Gbps. The transceiver achieves multi-vendor interoperability through adherence to industry MSA standards, though equipment with vendor-specific module validation may require custom EEPROM programming for full compatibility. Our 1000BASE-BX SFP transceiver is CE and RoHS certified, meeting Class 1 FDA and IEC60825-1 laser safety requirements.

Typical applications include metropolitan access networks, multi-building campus connectivity, industrial site interconnections, and carrier access infrastructure requiring medium-reach single-fiber paths. Because our focus is providing top quality service, we perform rigorous quality checks before delivery. This includes optical parameter measurements, connector cleanliness inspection, and SFP transceiver EEPROM memory data validation tests.

Technical Specifications

Specification	Value
Form Factor	SFP
Media Type	Single-Mode Fiber (SMF)
Fiber Count	BiDi
Connector	Single LC/UPC
Maximum Distance	20 km
Guaranteed Link Budget	13 dB
TX Wavelength	1550 nm

RX Wavelength	1310 nm
Supported Data Rate	1.063 Gbps - 1.25 Gbps
Supportet Ethernet Applications	Gigabit Ethernet (1.25 Gbps)
Supported Fiber Channel Applications	1G Fiber Channel (1.0625 Gbps)
DDM/DOM	Supported
Tx Wavelength Bandwidth	40 nm (1530-1570 nm)
Rx Wavelength Bandwidth	40 nm (1290-1330 nm)
Minimum Transmitting Power	-9 dBm
Maximum Transmitting Power	3 dBm
Receiver Sensitivity	-22 dBm
Receiver Overload	-3 dBm
Dispersion	430-500 ps/nm ps/nm
Transmitter Type	DFB Laser
Receiver Type	PIN photodiode
Temperature Range	Standard 0°-70°C
Power	+3.3V single power supply
Compliance	CE, Class 1 FDA and IEC60825-1 Laser Safety Compliant, RoHS, INF-8074i, SFP MSA

Ordering Info

SKU	Description
BIDI-1.25G-SFP-20-BD	Single Fiber 1.25G SFP Module (Tx/Rx 1550/1310nm, 100Mbps-1.25Gbps, Max. 20km over SMF, 14 dB, Temp. 0-70C, LC/UPC)

Warranty

EDGE Optic's provides a limited warranty for **sixty (60) months** from Purchaser's receipt of the Equipment represented in this data sheet against defective design or workmanship.

Compatibility

EDGE Optical transceivers can be provided with custom-encoded firmware, in order to provide compatibility with more than 100 vendor brands in data and telecom communications industry:

MS - General MSA
AD - Adva (Adtran)
MS - Advantech
MS - Allied Telesis
AR - Arista
MS - Arris
AG - Avago
AV - Avaya
BR - Broadcom
QL - Cavium (Qlogic)
MS - Ceragon
CH - Checkpoint
CN - Ciena
CI - Cisco
LI - Cisco (Linksys)
MS - Comnet
MS - D-link
MS - Dahua
MS - DCN
DL - Dell
MS - DZS(Dasan-Zhone)
MS - EdgeCore
MS - EdgeWare
MS - Eltex
MS - Emulex
MS - Enterasys
ER - Ericsson
MS - EXFO
EX - Extreme Networks
F5 - F5 Networks
MS - Finisar
FO - Fortinet
MS - Fujitsu
HI - Hirschmann
HP - HP
AU - HP Aruba
HU - Huawei
IB - IBM
IF - Infinera
MS - Innolight
IN - Intel
MS - JDSU
JU - Juniper
MS - KeyMile
MS - KyLand
LN - Lenovo
ML - Mellanox (NVIDIA)
ME - Meraki (Cisco)
MS - MikroTik
MO - Moxa
MS - MRV
NC - NEC
MS - NetApp
MS - Netgear
MS - Netinsight
NK - Nokia (Alcatel)
MS - Nortel
NS - NSN
MS - OE Solutions
MS - Oracle
MS - Palo Alto Network
MS - Planet
QL - Qlogic (Oracle)
MS - QNAP
RD - RAD
MS - RadWare
MS - Raisecom
MS - Ruckus
MS - Ruijie Networks
MS - Sandvine
MS - Silicom
MS - SolarFlare
SW - Sonicwall
MS - Sophos
MS - Sumitomo
MS - Supermicro
MS - Synology
MS - Telco Systems
MS - TP-LINK
TM - Transmode
MS - Trendnet
MS - Ubiquiti Networks
MS - WatchGuard
WS - Waystream
WT - Westermo
MS - ZTE
MS - Zyxel
XX - Other

Version Control

Version: 2.0
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CERTIFIED
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BUREAU VERITAS

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