edge OPTICAL SOLUTIONS

Product Data Sheet

# BIDI-10G-SFP-20A

Optical Transceiver




## Key Features

- Media Type: **Single-Mode Fiber (SMF)**
- Fiber Count: **BiDi**
- Connector: **Single LC/UPC**
- Maximum Distance: **20 km**
- Guaranteed Link Budget: **9 dB**
- Tx Wavelenght: **1270 nm**
- Supported Data Rate: **1.25 Gbps - 11.32 Gbps**
- DDM/DOM: **Supported**

## Product Description

Our EDGEOPTIC BIDI-10G-SFP-20A is a multi-vendor compatible 10G BiDi SFP+ single-fiber optical module engineered for long-reach 10 Gigabit Ethernet applications over single-mode fiber infrastructure using bidirectional transmission technology. The BIDI-10G-SFP-20A module operates with asymmetric wavelengths, transmitting at 1270nm and receiving at 1330nm, supporting data rates from 1.25 to 11.32 Gbps across multiple protocol standards and network applications. Our 10G BiDi SFP+ transceiver utilizes DFB (Distributed Feedback) laser technology for transmission and PIN photodiode with WDM (Wavelength Division Multiplexing) filter for signal reception on the same fiber strand. The transceiver ensures a 9 dB guaranteed optical link budget, which determines the maximum transmission distance capabilities. Over single-mode fiber (SMF), the transceiver can reach distances up to 20 kilometers under optimal conditions. However, distance is just an indicative parameter calculated for comfort of identification – eventually we calculate distance taking into account minimal optical budget and average attenuation of optical cabling in industry.

BIDI-10G-SFP-20A compatible 10G BiDi module is a hot-pluggable SFP+ transceiver with simplex LC/UPC connector as the optical interface, utilizing a single fiber strand for both transmit and receive functions. The electrical interface conforms to SFF-8431 MSA (Multi-Source Agreement) specifications, ensuring compatibility with standard SFP+ host systems supporting multiple vendor equipment platforms. Our 10G BiDi SFP+ transceiver can be encoded to be compatible and successfully operate in different 80+ brands of network equipment. The module incorporates DDM/DOM (Digital Diagnostic Monitoring) functionality providing real-time information including transmitted and received optical power levels, module temperature, bias current, and supply voltage. This diagnostic data is available via MSA-compatible EEPROM interface and enables monitoring of

transceiver operational parameters. The module operates within a 0 to 70°C temperature range, with appropriate thermal considerations for sustained operation in controlled server room environments.

CRITICAL NOTE: BiDi transceivers must be deployed in matched pairs with complementary wavelength configurations. This module (Tx1270/Rx1330) must be paired with a corresponding module operating at Tx1330/Rx1270 to establish proper bidirectional communication on a single fiber strand.

Standards compliance includes IEEE 802.3ae for 10 Gigabit Ethernet, along with SDH/SONET specifications and BiDi MSA requirements. 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 compatibility. Our 10G SFP+ BiDi transceiver is CE/RoHS certified, and it is compliant with product safety standards.

Typical applications are metropolitan area network deployments, campus backbone connections with limited fiber availability, intermediate-distance point-to-point links, fiber-to-the-business implementations, and service provider access networks where fiber strand conservation reduces infrastructure costs by approximately 50 percent while extending reach beyond short-range solutions. The multi-rate capability accommodates legacy Gigabit Ethernet operation at 1.25 Gbps alongside native 10 Gigabit rates, providing operational flexibility for mixed-speed network deployments. Because our focus is providing top quality service, we are performing serious quality checks before delivery of our products. As a result, we do optical parameter measurements, connector cleanness tests 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 | 9 dB |
| TX Wavelength | 1270 nm |
| RX Wavelength | 1330 nm |

| | |
|---|---|
| Supported Data Rate | 1.25 Gbps - 11.32 Gbps |
| Supportet Ethernet Applications | 10G Ethernet (10.31Gbps), Gigabit Ethernet (1.25 Gbps) |
| Supported Fiber Channel Applications | 10G Fiber Channel (10.52 Gbps), 1G Fiber Channel (1.0625 Gbps), 2G Fiber Channel (2.125 Gbps), 4G Fiber Channel (4.25 Gbps), 8G Fiber Channel (8.5 Gbps) |
| SDH/SONET Standards | STM-64 (9.95Gbps) |
| DDM/DOM | Supported |
| Tx Wavelength Bandwidth | 40 nm (1250-1290 nm) |
| Rx Wavelength Bandwidth | 40 nm (1310-1350 nm) |
| Minimum Transmitting Power | -5 dBm |
| Maximum Transmitting Power | 0 dBm |
| Receiver Sensitivity | -14.5 dBm |
| Receiver Overload | 4 dBm |
| Dispersion | 140-160 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,SFF-8431,SFP MSA |

## Ordering Info

| SKU | Description |
|---|---|
| BIDI-10G-SFP-20A | Single Fiber 10G SFP+ Module (Tx/Rx 1270/1330nm, 1.25-11.32 Gbps, Max. 20km over SMF, 9 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
AU - Aruba
AG - Avago
AV - Avaya
MS - Barracuda
BR - Broadcom
CX - Calix
QL - Cavium (Qlogic)
MS - Ceragon
CH - Checkpoint
MS - Chelsio
CN - Ciena
CI - Cisco
LI - Cisco (Linksys)
MS - Comnet
MS - D-link
MS - Dahua
MS - DCN
DL - Dell
MS - DZS(Dasan-Zhone)
EI - ECI
MS - EdgeCore
MS - EdgeWare
MS - Eltex
MS - Emulex
ER - Ericsson
MS - EXFO
EX - Extreme Networks
F5 - F5 Networks
MS - Finisar
FO - Fortinet
MS - Fujitsu
HI - Hirschmann
HP - HP
HU - Huawei
IB - IBM
IF - Infinera
MS - Innolight
IN - Intel
MS - Ixia
MS - JDSU
JU - Juniper
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
MS - ZTE
MS - Zyxel
XX - Other

## Version Control

**Version:** 5.0
**Updated:** January 16, 2026

CERTIFIED
ISO 9001

edge
EDGE Technologies Ltd.
Plienciema Street 33, Marupe,
Latvia, LV-2167
+371 27746349
www.edgeoptic.com
sales@edgeoptic.com