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OPTICAL SOLUTIONS

Product Data Sheet

Key Highlights:

- **Type**: 100G BIDI LR4 QSFP28 4WDM
- **Compatibility:** Multi-Vendor MSA Compatible
- **Tx/Rx Wavelength:** 1295.56nm, 1300.05nm, 1304.58nm, 1309.14nm / 1273.55nm, 1277.89nm, 1282.26nm, 1286.66nm
- **Laser:** EML
- **Modulation:** NRZ
- **Fiber Type:** Single-Mode Fiber (SMF)
- **Connectors:** Simplex LC
- **Optical Budget:** 10.2 dB (with FEC)
- **Max. Distance:** 20 km (OS2) with RS(528,514) FEC
- **Data Rate:** 103.125 Gbps
- **FEC Forward Error Correction:** Supported
- **DDM/DOM:** Supported
- **Power Consumption:** ≤5 W
- **Temperature:** Extended -20°-+85°C
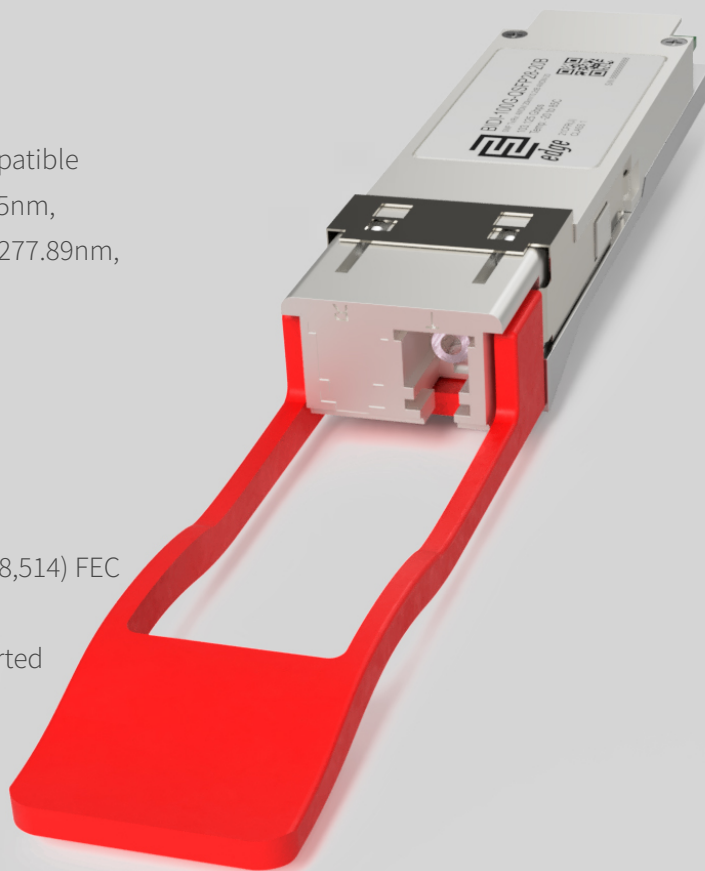
Optical Transceiver : BIDI-100G-QSFP28-20B

Product Description:

BIDI-100G-QSFP28-20B is an B side 100G BIDI LR4 Multi-Vendor MSA Compatible Bidirectional QSFP28 (Quad Small Form-Factor Pluggable 28) Transceiver designed for operation over Single-Mode Fiber (SMF). 100G BIDI LR4 QSFP28 4WDM hardware building principles are similar as traditional 100G LR4, 100G ER4 modules as it has cooled 4x25Gb/s LAN-WDM NRZ (non return to Zero) modulated, EML lasers, therefore modules can be used in legacy 100G switches and routers and not require PAM4 modulation support or RS (544,514) FEC support to achieve desired distance as it is required by BIDI 100G PAM4 module series. 100G BIDI transceivers are designed for dense applications and provide the ability for operators and service providers to save optical fiber resources. Please note to establish A to B connection this A side BIDI-100G-QSFP28-20B module must work in pair with A side BIDI 100G module BIDI-100G-QSFP28-20A.

100G BIDI LR4 B side module has a minimum guaranteed optical budget of 10.2 dB, which in most cases is enough to reach 20km over OS2 single-mode fiber with RS(528,514) FEC enabled on the host device. Without RS(528,514) FEC enabled reach will be lower. However, distance is just an indicative parameter calculated for comfort of identification. Eventually we

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calculate distance taking in account minimal optical budget and average attenuation of optical cabling in industry. BIDI 100G-LR QSFP28 4WDM uses 4 channel 25 Gbps 1295.56nm, 1300.05nm, 1304.58nm, 1309.14nm EML (External Modulation Laser) transmitters and 4 channel 25 Gbps 1273.55nm, 1277.89nm, 1282.26nm, 1286.66nm PIN photodiode receivers. On the transmission side module converts four electrical interface lanes (CAUI-4) 25-Gbps into a four 25-Gbps optical signal (NRZ modulated) and reversely at the receiver side four 25-Gbps optical signals are converted into four 25-Gbps electrical signals. Module supports DDM/DOM optical diagnostics, which provide diagnostic information about the present operating conditions. BIDI 100G-LR QSFP28 4WDM operates in the extended -20°-+85°C temperature range and has a Single LC optical connector and 38 pins edge connector for electrical interface. BIDI 100G-LR QSFP28 4WDM supports 103.1 Gbps data rate and such applications as 100G Ethernet.

100G BIDI LR4 B side module can be used in Cisco, HP, Mellanox, Intel, Arista, Huawei and other industry well known manufacturers equipment. Transceivers are CE/RoHS2.0 certified and are compliant with product safety standards. BIDI-100G-QSFP28-20A transceivers are fully compliant to QSFP28 MSA (Multi Source Agreement), where IEEE 802.3cu defines physical and management layer specifications CAUI-4 electrical interface, SFF-8679 defines QSFP+ 4X Hardware and Electrical Specification. Consequently, compliance to above standards guarantees that module is compatible and works with majority of networking equipment, where is not implemented special algorithm for protection against third party modules. However – we have accumulated expertise in custom-encoded firmware for BIDI-100G-QSFP28-20B in order to make these modules work in almost any brand of equipment. We will be glad to know your requirements – Contact Us.

Product Specification:

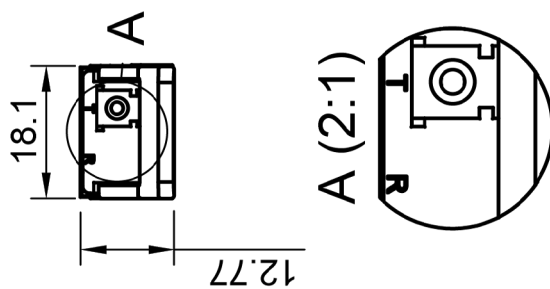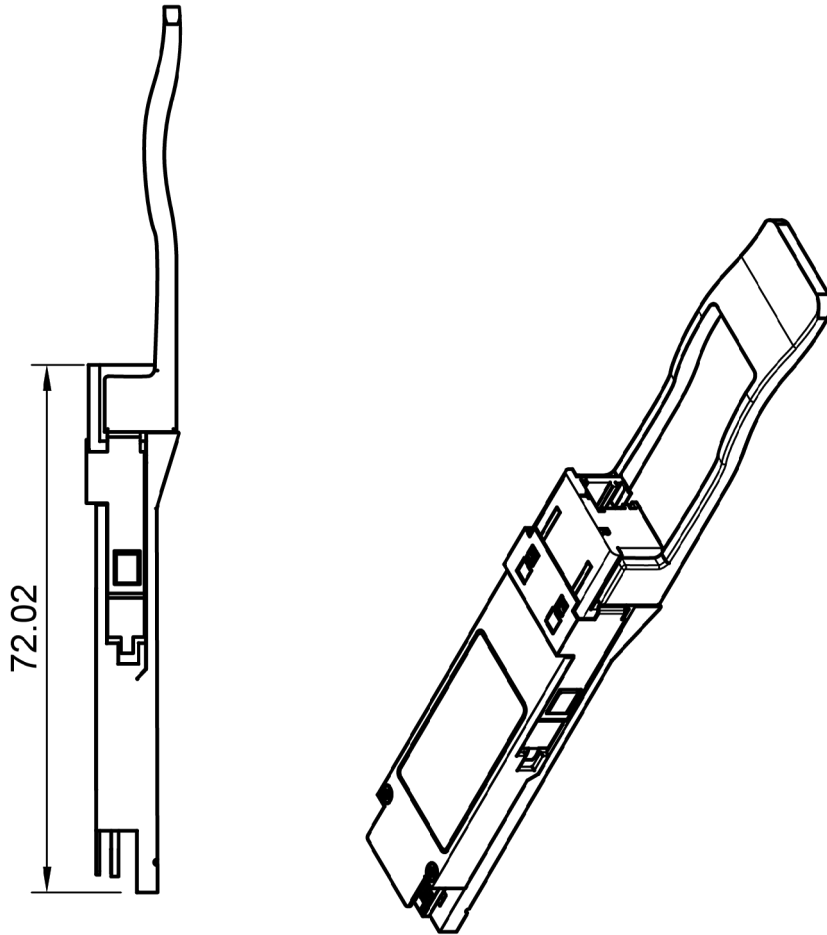| General parameter	Value
Media Type:	Single-Mode Fiber (SMF)
Connectors:	Simplex LC
TX Wavelength:	1295.56nm, 1300.05nm, 1304.58nm, 1309.14nm
RX Wavelength:	1273.55nm, 1277.89nm, 1282.26nm, 1286.66nm
Minimum Optical Budget:	10.2 dB (with FEC)
Maximum Distance:	20 km (OS2) with RS(528,514) FEC
Supported Data Rate:	103.125 Gbps
Modulation:	NRZ
Supported Applications:	100G Ethernet (103.125 Gbps)
Digital Diagnostic Monitoring (DDM):	Supported
Optical Clock And Data Recovery (CDR):	Supported
Forward Error Correction (FEC):	Supported
Operating Temperature Range:	Extended -20°- 85°C

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General parameter	Value
Storage Temperature Range:	- 40° to 85°C
Relative Humidity (Non-Condensation):	5 to 95%
Power Consumption:	≤5W
Power Supply Voltage Typical:	+ 3.3V
Power Supply Voltage Range:	-3.135 to 3.465V
Compliance:	IEEE 802.3cu, CAUI-4, SFF-8679, RoHS-6, CE, QSFP28 MSA

Transmitter Parameters:	Value
Transmitter Type:	EML Laser
Tx Wavelength Bandwidth:	4 LAN WDM Separated Lanes (9.02 nm 1295.56 – 1304.58nm) (L0 Tx center 1295.56nm, L1 Tx center 1300.05nm, L2 Tx center 1304.58nm, L3 Tx center 1309.14nm)
Average Launch Power, Each Lane (Max):	4.5 dBm
Average Launch Power, Each Lane (Min):	-4.3 dBm
Extinction Ratio (Min):	4 dB
Transmitter reflectance (Max):	- 26 dB
Optical return loss tolerance:	20 dB
Average Launch Power OFF Transmitter (Max) Each Lane:	- 30 dBm

Receiver Parameters:	Value
Receiver Type:	PIN Photodiode Array
Rx Wavelength Bandwidth:	4 LAN WDM Separated Lanes (13.11 nm 1273.55 – 1286.66nm) (L0 Tx center 1273.55nm, L1 Tx center 1277.89nm, L2 Tx center 1282.26nm, L3 Tx center 1286.66nm)
Average Receive Power Each Lane (Min):	-14.5 dBm
Average Receive Power Each Lane (Max):	4.5 dBm
Damage Threshold Each Lane:	5.5 dBm

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Mechanical Dimensions:

72.02

18.1

12.77

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Compatibility:

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

MS - General MSA	**DZ** - DZS(Dasan-Zhone)	**KY** - KyLand	**SV** - Sandvine
AD - ADVA	**EI** - ECI	**LN** - Lenovo	**SC** - Silicom
AE - Advantech	**EC** - EdgeCore	**ML** - Mellanox	**SF** - SolarFlare
AL - Alcatel (Nokia)	**EW** - EdgeWare	**ME** - Meraki (Cisco)	**SW** - Sonicwall
AT - Allied Telesis	**EL** - Eltex	**MT** - MikroTik	**SM** - Supermicro
AR - Arista	**EM** - EMC2	**MO** - Moxa	**SY** - Synology
AS - Arris	**EN** - Enterasys	**MR** - MRV	**TC** - Telco Systems
AV - Avaya	**ER** - Ericsson	**NC** - NEC	**TP** - TP-LINK
BC - Barracuda	**EF** - EXFO	**NG** - Netgear	**TN** - Trendnet
BR - Broadcom	**EX** - Extreme Networks	**NK** - Nokia	**UN** - Ubiquiti Networks
QL - Cavium (Qlogic)	**F5** - F5 Networks	**NT** - Nortel	**VX** - VeEx
CR- Ceragon	**FI** - Finisar	**NS** - NSN	**WG** - WatchGuard
CP - Checkpoint	**FO** - Fortinet	**OR** - Oracle	**WS** - Waystream
CH - Chelsio	**FU** - Fujitsu	**PA** - Palo Alto Network	**WT** - Westermo
CN - Ciena	**H3** - H3C	**PL** - Planet	**ZT** - ZTE
CI - Cisco	**HI** - Hirschmann	**QC** - QCT(Quanta)	**ZX** - Zyxel
LI - Cisco (Linksys)	**HU** - Huawei	**QN** - QNAP	**HP** - HP
CE - Comnet	**IB** - IBM	**RD** - RAD	**AG** - Avago
CO - Coriant	**IF** - Infinera	**RW** - RadWare	**OC** - Oclaro
DH - Dahua	**IN** - Intel	**RC** - Raisecom	**EU** - Emulex
DC - DCN	**IX** - Ixia	**RK** - Ruckus	**TM** - Transmode
DL - Dell & Force10	**JU** - Juniper Networks	**RU** - Ruijie Networks	**AU** - HP Aruba
DK - D-Link	**KM** - KeyMile	**SG** - Samsung	**XX** - Other

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. Warranty does not cover damage caused by improper deployment, misuse and accidents.

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