

XFP-10G-BXD-20KM-ALC-C

MSA and TAA 10GBase-BX XFP Transceiver (SMF, 1330nmTx/1270nmRx, 20km, LC, DOM)

Features:

- INF-8077i Compliance
- Simplex LC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



Applications:

- 10GBase-BX Ethernet
- 8x/10x Fibre Channel
- Access, Metro and Enterprise

Product Description

This MSA Compliant XFP transceiver provides 10GBase-BX throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1330nmTx/1270nmRx via an ALC connector. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."



Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4
- ESD to the LC Receptacle: compatible with IEC 61000-4-2
- EMI/EMC compatible with FCC Part 15 Subpart B Rules, EN55022:2010
- Laser Eye Safety compatible with FDA21CFR, EN60950-1&EN (IEC) 60825-1,2
- RoHS compliant with EU RoHS Directive 2011/65/EU

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ | Max. | Unit |
|------------------------------|--------|------|-----|------|------|
| Maximum Supply Voltage | Vcc | -0.5 | | 4.0 | V |
| Storage Temperature | TS | -40 | | 85 | °C |
| Operating Humidity | RH | 0 | | 85 | % |
| Operating Temperature | Tc | 0 | | 70 | °C |
| Data Rate (Gigabit Ethernet) | | 9.95 | 10 | 10.5 | Gbps |
| 9/125µm G.652 SMF | Lmax | | | 20 | km |

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--------------------------------|----------|---------|------|---------|------|-------|
| Power Supply Voltage | Vcc | 3.13 | 3.30 | 3.47 | V | Vcc |
| Power Supply Current | Icc | | | 350 | mA | Icc |
| Transmitter | | | | | | |
| Differential data input swing | Vin, pp | 120 | 600 | 850 | mV | |
| Input differential impedance | Zin | 90 | 100 | 110 | Ω | |
| TX Disable-High | | 2.0 | | Vcc+0.3 | V | |
| TX Disable-Low | | Vee-0.3 | | 0.8 | V | |
| TX Fault-High | | 2.0 | | Vcc+0.3 | V | |
| TX Fault-Low | | Vee-0.3 | | 0.8 | V | |
| Receiver | | | | | | |
| Differential data output swing | Vout, pp | 300 | 600 | 850 | mV | |
| Output Differential Impedance | Zin | 90 | 100 | 110 | Ω | |
| LOS-High | | 2.0 | | Vcc+0.3 | V | |
| LOS-Low | | Vee-0.3 | | 0.8 | V | |

Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|----------------------------------|-------------|---------------------------------|------|------|------|-------|
| Transmitter | | | | | | |
| Output Opt. Power | PO | 1 | | 6 | dBm | 1 |
| Optical Wavelength | λ | 1320 | 1330 | 1340 | nm | |
| Spectral Width (-20dB) | σ | | | 1 | nm | |
| Extinction Ratio | ER | 4 | | | dB | |
| Average Power of OFF Transmitter | | | | -40 | dBm | |
| Eye Diagram | | Compatible with IEEE 802.3-2005 | | | | |
| Receiver | | | | | | |
| Center Wavelength | λ_C | 1260 | 1270 | 1280 | nm | |
| Receiver Sensitivity | PIN | | | -13 | dBm | |
| Receiver Overload | Pmax | 0.5 | | | dBm | |
| LOS Hysteresis | | 0.5 | | 5 | dB | |
| LOS Assert | LOSA | -30 | | | dBm | |
| LOS De-Assert | LOSD | | | -15 | dBm | |

Note:

1. BER $\leq 10^{-12}$ @PRBS231 -1 at 10.3125Gb/s

Digital Diagnostic Functions

The digital diagnostic monitoring interface also defines another 256-byte memory map in EEPROM, which makes use of the 8 bit address 1010000X (A0h). The monitoring specification of the product is described in this table.

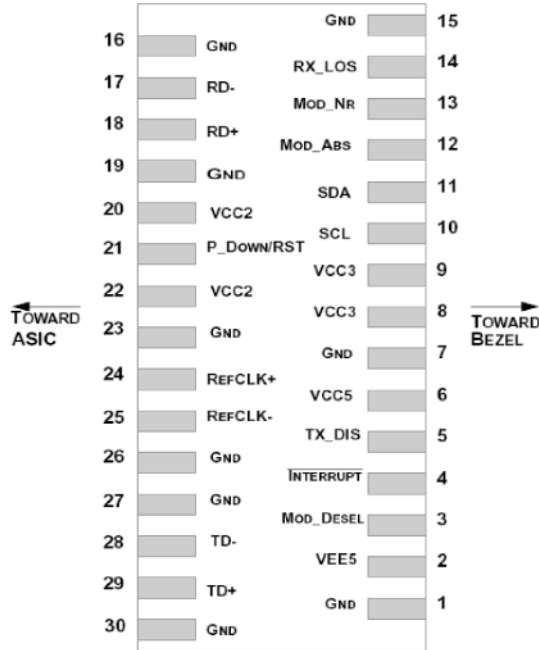
| Parameter | Range | Accuracy | Calibration |
|--------------|---------------|-----------------------|-------------|
| Temperature | -5 to +85°C | $\pm 3^\circ\text{C}$ | Internal |
| Voltage | 2.97 to 3.63V | $\pm 3\%$ | Internal |
| Bias Current | 0 to 100mA | $\pm 10\%$ | Internal |
| TX Power | 1 to 6dBm | $\pm 2\text{dB}$ | Internal |
| RX Power | -13 to 0.5dBm | $\pm 3\text{dB}$ | internal |

Pin Descriptions

| Pin | Symbol | Name/Descriptions | Ref. |
|-----|------------|---|------|
| 1 | GND | Module Ground | |
| 2 | Vee5 | (not required) | |
| 3 | MOD_DESEL | Module De-select; When Held low allows the module to respond to 2-wire serial interface. LVTTTL-I | |
| 4 | /INTERRUPT | Interrupt; Indicates presence of an important condition which can be read via the 2-wire serial interface. LVTTTL-O | 2 |
| 5 | TX_DIS | Transmitter Disable. Logic1 indicates laser output disabled, LVTTTL-I | |
| 6 | VCC5 | +5V Power Supply (Not required) | |
| 7 | GND | Module Ground | 1 |
| 8 | VCC3 | +3.3V Power Supply | |
| 9 | VCC3 | +3.3V Power Supply | |
| 10 | SCL | 2-Wire Serial Interface Clock. LVTTTL-I | 2 |
| 11 | SDA | 2-Wire Serial Interface Data Line. LVTTTL-I/O | 2 |
| 12 | MOD_Abs | Indicates Module is not present. Grounded in the Module. LVTTTL-O | 2 |
| 13 | MOD_NR | Module Not Ready; Indicating Module Operational Fault. Open-collector. LVTTTL-O | 2 |
| 14 | RX_LOS | Loss of Signal indication. Logic 1 indicates loss of Signal. Open-collector. LVTTTL-O | 2 |
| 15 | GND | Module Ground | 1 |
| 16 | GND | Module Ground | 1 |
| 17 | RD- | Receiver Inverted Data Output. CML-O | |
| 18 | RD+ | Receiver Non-Inverted Data Output. CML-O | |
| 19 | GND | Module Ground | 1 |
| 20 | VCC2 | +1.8V Power Supply (Not required). | 3 |
| 21 | P_DOWN/RST | Power down; When high, requires the module to limit power consumption to 1.5W or below. 2-Wire serial interface must be functional in the low power mode. LVTTTL-I Reset; The falling edge initiates a complete reset of the module including the 2-wire serial interface, equivalent to a power cycle. LVTTTL-I | |
| 22 | VCC2 | +1.8V Power Supply (Not required) | 3 |
| 23 | GND | Module Ground | 1 |
| 24 | REFCLK+ | Reference Clock (Not required) | |
| 25 | REFCLK- | Reference Clock (Not required) | |
| 26 | GND | Module Ground | 1 |
| 27 | GND | Module Ground | 1 |
| 28 | TD- | Transmitter Inverted Data Input. CML-I | |
| 29 | TD+ | Transmitter Non-Inverted Data Input. CML-I | |
| 30 | GND | Module Ground | 1 |

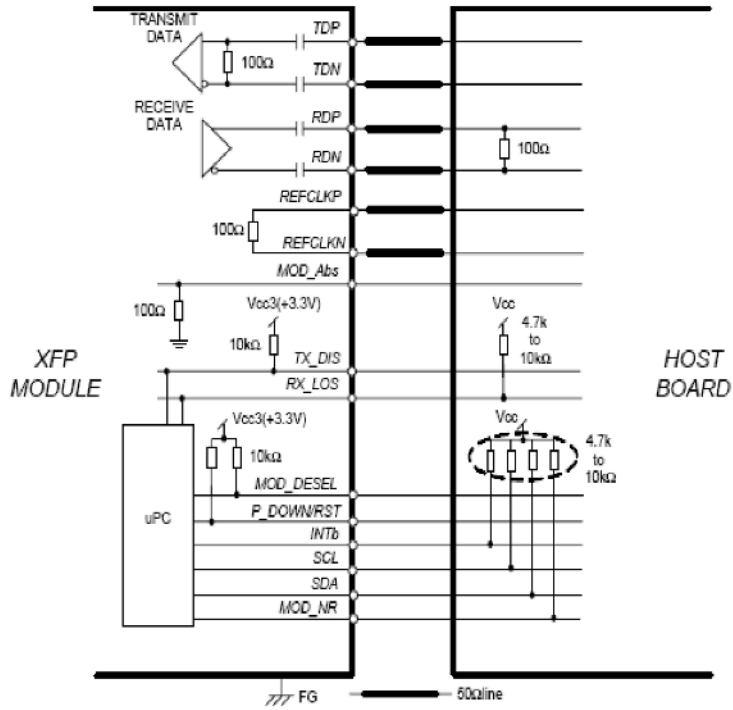
Notes:

1. Module ground pins GND are isolated from the module case and chassis ground within the module.
2. Open collector; should be pulled up with 4.7K-10Kohms to a voltage between 3.15V and 3.6V on the host board.
3. The pins are open within module.

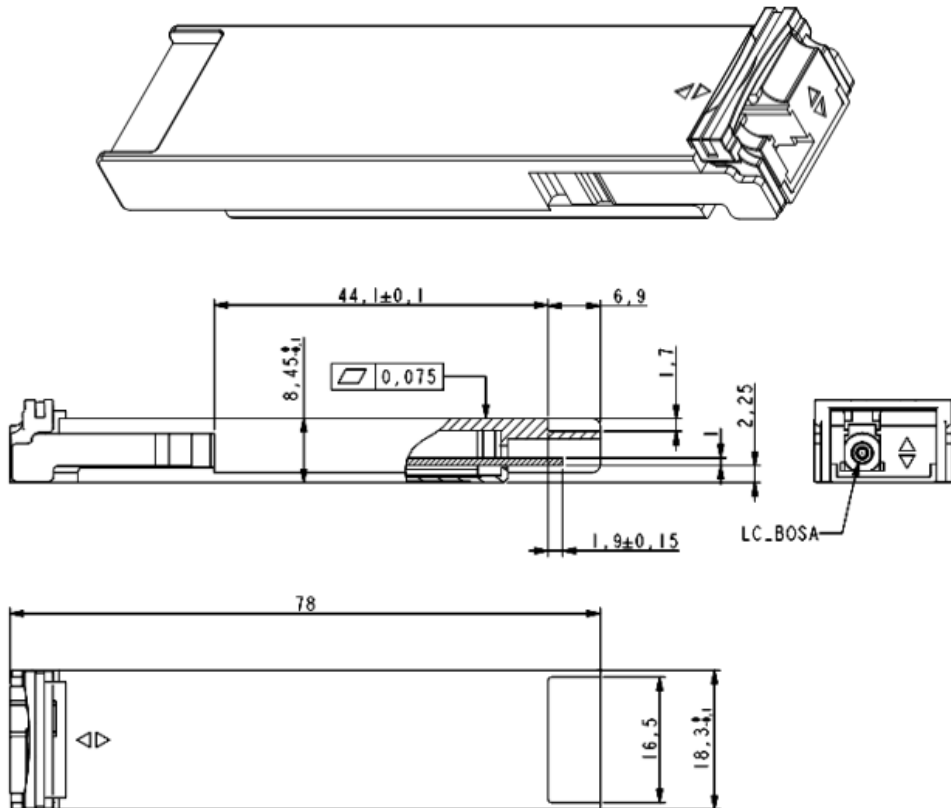


Pin-out of connector Block on Host board

Recommend Circuit Schematic



Mechanical Specifications



About ProLabs

Our experience comes as standard; for over 15 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with over 90 optical switching and transport platforms.

Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 400G while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.

Contact Information

ProLabs US

Email: sales@prolabs.com

Telephone: 952-852-0252

ProLabs UK

Email: salessupport@prolabs.com

Telephone: +44 1285 719 600