

SFP-1000BASE-BX10-D-WS-PRO

Waystream® PacketFront SFP-1000BASE-BX10-D Compatible TAA Compliant 1000Base-BX SFP Transceiver (SMF, 1550nmTx/1310nmRx, 0 to 70C, LC)

Features

- INF-8074 and SFF-8472 Compliance
- Uncooled DFB transmitter and PIN receiver
- Simplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



Applications:

- 1000Base-BX Ethernet
- 1x Fibre Channel
- Access (FTTx) and Enterprise

Product Description

This Waystream® PacketFront SFP-1000BASE-BX10-D compatible SFP transceiver provides 1000Base-BX throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1550nmTx/1310nmRx via an LC connector. It is guaranteed to be 100% compatible with the equivalent Waystream® PacketFront transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. 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.

Proline'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 61000-4-3.
- EMI/EMC: compatible with FCC Part 15 Subpart B Rules, EN55022:2010.
- Laser Eye Safety: compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1, 2.
- RoHS: compliant with EU RoHS 2.0 directive 2015/863/EU.

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Max. | Unit |
|----------------------------|------------------|------|------|------|
| Maximum Supply Voltage | V _{CC} | -0.5 | 4.0 | V |
| Storage Temperature | T _{stg} | -40 | 85 | °C |
| Operating Case Temperature | T _c | 0 | 70 | °C |
| Operating Humidity | RH | 5 | 85 | % |
| Receiver Power | R _{MAX} | | -3 | dBm |
| Maximum Bitrate | B _{max} | | 1.25 | Gbps |

Electrical Characteristics (TOP=25°C, V_{CC}=3.3Volts)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--------------------------------|----------------------|------|------|------|------|-------|
| Power Supply Voltage | V _{CC} | 3.15 | 3.30 | 3.43 | V | |
| Power Supply Current | I _{CC} | | | 303 | mA | |
| Power Consumption | P _{DISS} | | | 1 | W | |
| Transmitter | | | | | | |
| Differential Data Input Swing | V _{IN,pp} | 120 | | 850 | mV | |
| Input Differential Impedance | Z _{IN} | 80 | 100 | 120 | Ω | |
| Receiver | | | | | | |
| Differential Data Output Swing | V _{OUT, pp} | 300 | | 850 | mV | |
| Output Differential Impedance | Z _{IN} | 80 | 100 | 120 | Ω | |

Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--------------------------------|------------|------|------|-------|------|-------|
| Transmitter | | | | | | |
| Optical Power (Average) | P_{AVE} | -9 | | -3 | dBm | 1 |
| Optical Extinction Ratio | ER | 9 | | | dB | |
| Optical Wavelength | $T\lambda$ | 1530 | 1550 | 1570 | nm | |
| Insertion loss | IL | | 0.7 | | | |
| Receiver | | | | | | |
| Receiver Sensitivity (Average) | R_{AVE} | | | -19.5 | dBm | 2 |
| Receiver Overload | P_{max} | -3 | | | dBm | 3 |
| Receiver Wavelength | $R\lambda$ | 1260 | 1310 | 1360 | nm | |

Notes:

1. Coupled into a single-mode fiber.
2. Average power, back-to-back, @1.25Gbps, BER $1E^{-12}$, PRBS $2^{31}-1$.
3. Exceeding the receiver overload can physically damage the module. Please use appropriate attenuation.

Pin Descriptions

| Pin | Symbol | Name/Descriptions | Ref. |
|-----|------------|--|------|
| 1 | VeeT | Transmitter Ground (Common with Receiver Ground). | 1 |
| 2 | Tx_Fault | Transmitter Fault. LVTTTL-O. | 2 |
| 3 | Tx_Disable | Transmitter Disable. Laser output disabled on “high” or “open.” LVTTTL-I. | 3 |
| 4 | SDA | 2-Wire Serial Interface Data (Same as MOD-DEF2 in INF-8074i). LVTTTL-I/O. | |
| 5 | SCL | 2-Wire Serial Interface Clock (Same as MOD-DEF2 in INF-8074i). LVTTTL-I. | |
| 6 | MOD_ABS | Module Absent. Connect to VeeT or VeeR in the module. | 4 |
| 7 | RS0 | Rate Select 0. Not used. | 5 |
| 8 | LOS | Loss of Signal indication. “Logic 0” indicates normal operation. LVTTTL-O. | 2 |
| 9 | RS1 | Rate Select 1. Not used. | 5 |
| 10 | VeeR | Receiver Ground (Common with Transmitter Ground). | 1 |
| 11 | VeeR | Receiver Ground (Common with Transmitter Ground). | 1 |
| 12 | RD- | Receiver Inverted Data Out. AC Coupled. CML-O. | |
| 13 | RD+ | Receiver Non-Inverted Data Out. AC Coupled. CML-O. | |
| 14 | VeeR | Receiver Ground (Common with Transmitter Ground). | 1 |
| 15 | VccR | Receiver Power Supply. | |
| 16 | VccT | Transmitter Power Supply. | |
| 17 | VeeT | Transmitter Ground (Common with Receiver Ground). | 1 |
| 18 | TD+ | Transmitter Non-Inverted Data In. AC Coupled. CML-I. | |
| 19 | TD- | Transmitter Inverted Data In. AC Coupled. CML-O. | |
| 20 | VeeT | Transmitter Ground (Common with Receiver Ground). | 1 |

Notes:

1. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
2. This contact is an open collector/drain output and should be pulled up to the Host_Vcc with resistor in the range 4.7K Ω to 10K Ω . Pull-ups can be connected to one or several power supplies; however, the host board design shall ensure that no module contract has voltage exceeding module VccT/R +0.5V.
3. Tx_Disable is an input contact with a 4.7K Ω to 10K Ω pull-up resistor to VccT inside the module.
4. MOD_ABS is connected to VeeT or VeeR in the SFP+ module. The host may pull the contract up to the Host_Vcc with a resistor in the range from 4.7K Ω to 10K Ω . MOD_ABS is asserted “High” when the SFP+ module is physically absent from a host slot.
5. Internally pulled down per SFF-8431.



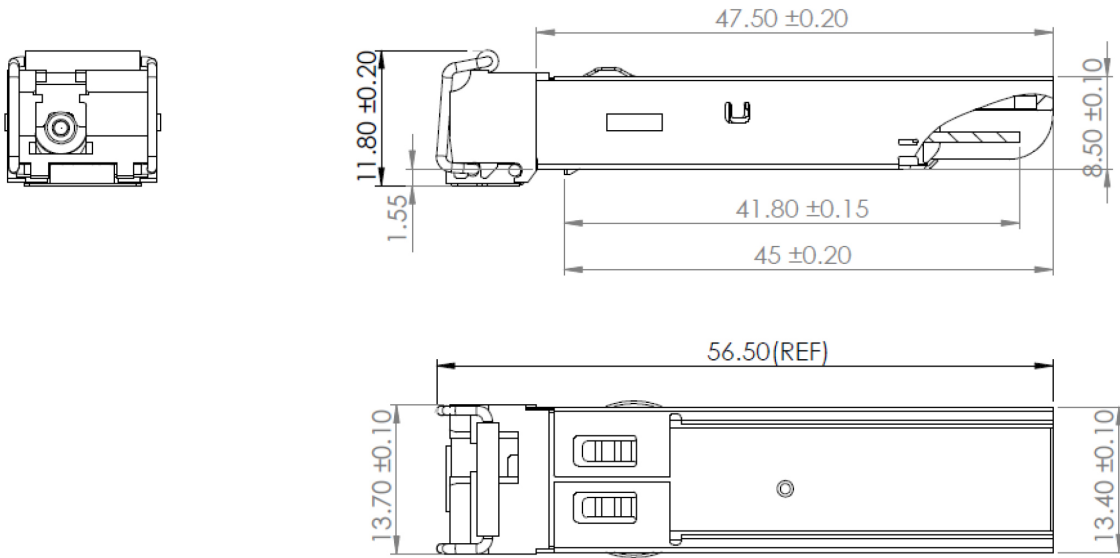
Pin-Out of Connector Block on the Host Board

Recommended Circuit Schematic



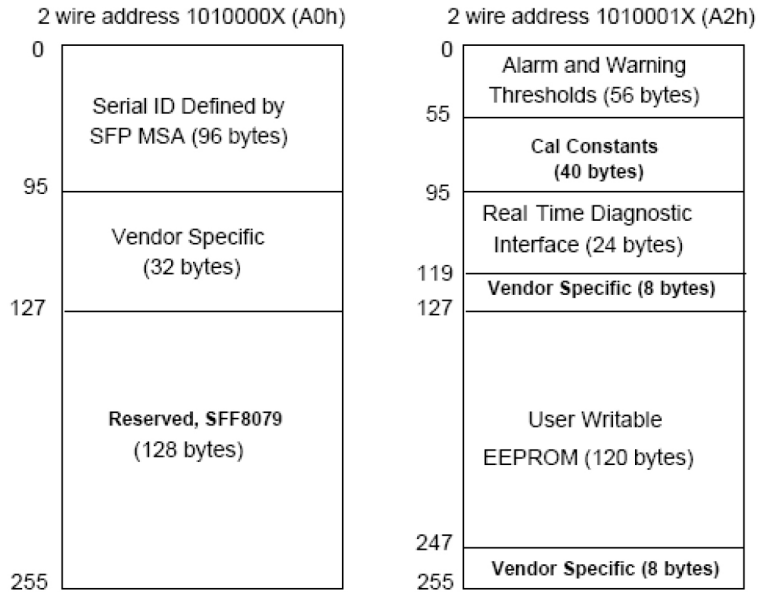
Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



EEPROM Information

EEPROM memory map-specific data field description is as below:



About Us:

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.



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