

DEM-211-PRO

D-Link® DEM-211 Compatible TAA Compliant 100Base-FX SFP Transceiver (MMF, 1310nm, 2km, DOM, 0 to 70C, LC)

Features

- INF-8074 and SFF-8472 Compliance
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Multi-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



Applications:

- 100Base Ethernet
- Access and Enterprise

Product Description

This D-Link® DEM-211 compatible SFP transceiver provides 100Base-FX throughput up to 2km over multi-mode fiber (MMF) using a wavelength of 1310nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent D-Link® 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.



Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|----------------------------|------------------|------|---------|------|------|
| Maximum Supply Voltage | V _{CC} | -0.5 | | 3.6 | V |
| Storage Temperature | T _{stg} | -40 | | 85 | °C |
| Operating Case Temperature | T _c | 0 | | 70 | °C |
| Operating Humidity | RH | | | 95 | % |
| Receiver Power | R _{MAX} | | | -12 | dBm |
| Data Rate | | | 100/155 | | Mbps |
| 50µm Core Diameter MMF | L | | 2 | | km |

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|-------------------------------|------------------|------|------|----------------------|-------|-------|
| Power Supply Voltage | V _{CC} | 3.15 | 3.30 | 3.45 | V | |
| Power Supply Current | I _{CC} | | | 300 | mA | |
| Transmitter | | | | | | |
| LVPECL Differential Inputs | V _{IN} | 400 | | 2000 | mVp-p | 1 |
| Input Differential Impedance | Z _{IN} | 85 | 100 | 120 | Ω | 2 |
| Tx_Disable | Disable | | 2 | V _{CC} | V | |
| | Enable | | 0 | 0.8 | V | |
| Tx_Fault | Fault | | 2 | V _{CC} +0.3 | V | |
| | Normal | | 0 | 0.5 | V | |
| Receiver | | | | | | |
| LVPECL Differential Outputs | V _{OUT} | 400 | | 2000 | mVp-p | 1 |
| Output Differential Impedance | Z _{IN} | 85 | 100 | 120 | Ω | |
| Tx_Disable Assert Time | T _{off} | | | 10 | us | |
| Rx_LOS | LOS | | 2 | V _{CC} +0.3 | V | |
| | Normal | | 0 | 0.8 | V | |
| MOD_DEF (0.2) | VOH | 2.5 | | | V | 3 |
| | VOL | 0 | | 0.8 | V | 3 |

Notes:

1. AC Coupled.
2. R_{IN} > 100kΩ @ DC.
3. With Serial ID.

Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|----------------------------|-----------------|-----------------------|------|------|------|-------|
| Transmitter | | | | | | |
| Average Output Power | POUT | -19 | | -14 | dBm | 1 |
| Optical Extinction Ratio | ER | 10 | | | dB | 2 |
| Optical Wavelength | $T\lambda$ | 1260 | 1310 | 1360 | nm | |
| Spectral Width (RMS) | $\Delta\lambda$ | | | 4 | nm | |
| Total Jitter | TJ | | | 1 | ns | 2 |
| Tx_Disable Asserted Time | T_off | | | 10 | us | |
| POUT @ Tx_Disable Asserted | POUT | | | -45 | dBm | |
| Rise/Fall Time (20-80%) | T_r/T_f | | | 2 | ns | |
| Output Optical Eye | | IUT-T G.957 Compliant | | | | |
| Receiver | | | | | | |
| Receiver Sensitivity | P_{min} | | | -31 | dBm | 3 |
| Receiver Overload | P_{max} | -12 | | | dBm | |
| Optical Center Wavelength | λ_C | 1260 | | 1600 | nm | |
| Return Loss | | 14 | | | dB | |

Notes:

1. Output power is measured by coupling into a 50/125mm multi-mode fiber.
2. Filtered. Measured with a PRBS $2^{23}-1$ test pattern @155Mbps.
3. Minimum average optical power is measured at BER less than $1E^{-12}$ with $2^{23}-1$ PRBS and ER=9dB.

Pin Descriptions

| Pin | Symbol | Name/Description | Note |
|-----|------------|---|------|
| 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 a resistor in the range 4.7kΩ-10kΩ. Pull-ups can be connected to one or several power supplies; however, the host board design shall ensure that no module contact has a voltage exceeding the module $V_{ccT}/R+0.5V$.
3. Tx_Disable is an input contact with a 4.7kΩ-10kΩ pull-up resistor to the VccT inside the module.
4. MOD_ABS is connected to the VeeT or VeeR in the SFP+ module. The host may pull the contact up to the Host_Vcc with a resistor in the range from 4.7kΩ-10kΩ. 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



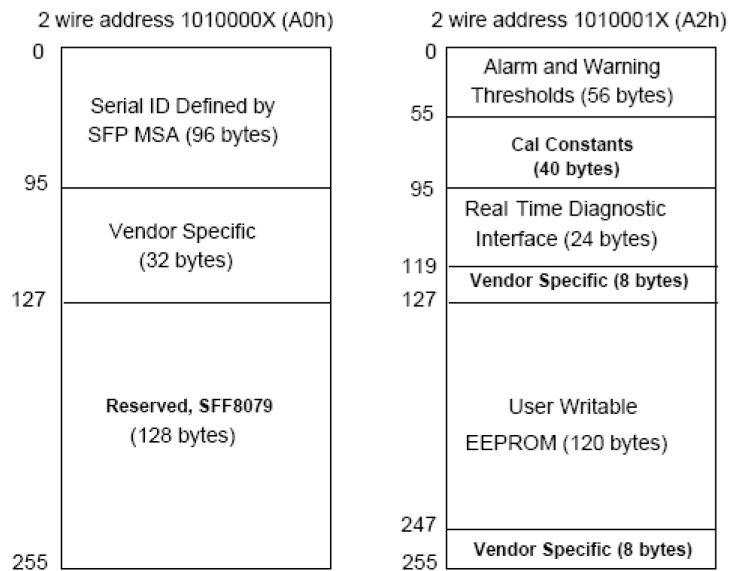
Mechanical Specifications

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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