

Features

- Up to 1.25Gb/s Data Links
- Hot-Pluggable
- Duplex LC connector
- Up to 10km on 9/125µm SMF
- 1310nm FP laser transmitter
- Single +3.3V Power Supply
- Monitoring Interface Compliant with SFF-8472
- Maximum Power < 1W
- Available operating temperature ranges:
 - Commercial: 0°C to 70°C
 - Industrial: -40°C to 85°C
 - Extended: -10°C to 85°C
- RoHS Compliant and Lead Free



Applications

- 1000Base-LX Ethernet
- Metro/Access Networks
- 1x Fibre Channel
- Other Optical Links

1. Absolute Maximum Ratings

Operation in excess of any absolute maximum ratings might cause permanent damage to this module.

| Parameter | Symbol | Min | Typ | Max | Units |
|----------------------|--------|------|-----|-----|-------|
| Storage Temperature | TS | -40 | | +85 | °C |
| Power Supply Voltage | VCC | -0.5 | | 4 | V |
| Relative Humidity | RH | 0 | | 85 | % |

2. Recommended Operating Environment

| Parameter | Symbol | Min | Typ | Max | Unit |
|----------------------------|------------|-----|-----|-----|------|
| Case Operating Temperature | Commercial | 0 | | 70 | °C |
| | Industrial | -40 | | 85 | °C |
| | Extended | -10 | | 85 | °C |

| | | | | | |
|----------------|--------------------|-------|--|---------------------|----|
| Supply Voltage | VCC | 3.135 | | 3.465 | V |
| Supply Current | Icc | | | 300 | mA |
| Inrush Current | I _{surge} | | | I _{cc} +30 | mA |
| Maximum Power | P _{max} | | | 1 | W |

3. Electrical Characteristics

(TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

| Parameter | Symbol | Min | Typ | Max | Unit | Note |
|--------------------------------|-----------------------|----------------------|-----|----------------------|------|------|
| Transmitter | | | | | | |
| Input differential impedance | R _{in} | 90 | 100 | 110 | | 1 |
| Single ended data input swing | V _{in PP} | 250 | | 1200 | mVpp | |
| Transmit Disable Voltage | VD | V _{cc} -1.3 | | V _{cc} | V | 2 |
| Transmit Enable Voltage | VEN | V _{ee} | | V _{ee} +0.8 | V | |
| Transmit Disable Assert Time | T _{dessert} | | | 10 | us | |
| Receiver | | | | | | |
| Single ended data output swing | V _{out,pp} | 250 | | 800 | mv | 3 |
| LOS Fault | V _{losfault} | V _{cc} -0.5 | | V _{CC_host} | V | 5 |
| LOS Normal | V _{losnorm} | V _{ee} | | V _{ee} +0.5 | V | 5 |
| Power Supply Rejection | PSR | 100 | | | mVpp | 6 |

Notes:

1. AC coupled.
2. Or open circuit.
3. Into 100 ohm differential termination.
4. 20 – 80 %
5. LOS is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.
6. All transceiver specifications are compliant with a power supply sinusoidal modulation of 20 Hz to 1.5MHz up to specified value applied through the power supply filtering network shown on page 23 of the Small Form-factor Pluggable (SFP) Transceiver Multi-Source Agreement (MSA), September 14, 2000.

4. Optical Parameters

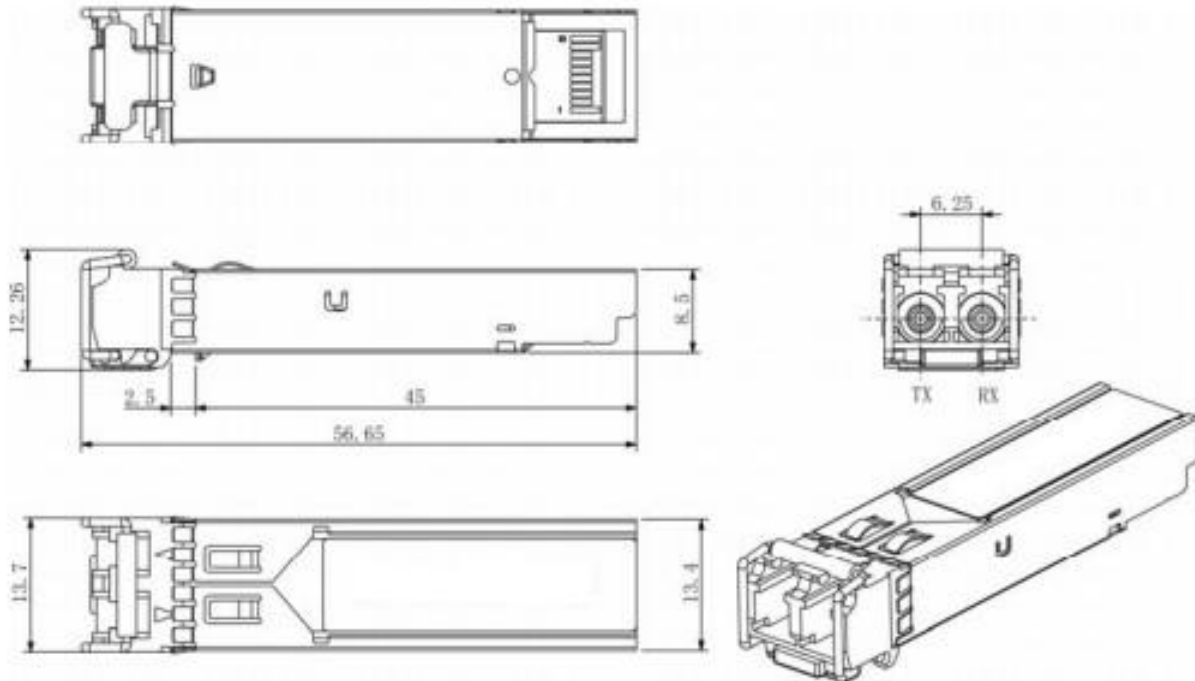
(TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

| Parameter | Symbol | Min | Typ | Max | Unit | Notes |
|--|---|------|------|-------------------|-------|-------|
| Transmitter | | | | | | |
| Center Wavelength | λ_c | 1270 | 1310 | 1360 | nm | |
| Spectral Width | σ | | | 3 | nm | |
| Optical Output Power | P _{out} | -9 | | -3 | dBm | 1 |
| Extinction Ratio | ER | 8.2 | | | dB | |
| Optical Rise/Fall Time | tr / tf | | | 260 | ps | 2 |
| Relative Intensity Noise | RIN | | | -120 | dB/Hz | |
| Output Eye Mask | Compliant with IEEE802.3 z (class 1 laser safety) | | | | | |
| Receiver | | | | | | |
| Optical Input Wavelength | λ_c | 1260 | | 1360 | nm | |
| Receiver Overload | P _{ol} | -3 | | | dBm | 4 |
| RX Sensitivity | Sen | | | -24 | dBm | 4 |
| RX_LOS Assert | LOS A | -35 | | | dBm | |
| RX_LOS De-assert | LOS D | | | -25 | dBm | |
| RX_LOS Hysteresis | LOS H | 0.5 | | | dB | |
| General | | | | | | |
| Data Rate | BR | | 1.25 | | Gb/s | |
| Bit Error Rate | BER | | | 10 ⁻¹² | | |
| Max. Supported Link Length on 9/125µm SMF@1.25Gb/s | LMAX | | 20 | | km | |
| Total System Budget | LB | 15 | | | dB | |

Notes:

1. The optical power is launched into SMF.
2. 20-80%.
3. Jitter measurements taken using Agilent OMNIBERT 718 in accordance with GR-253.
4. Measured with PRBS 2⁷⁻¹ at 10⁻¹² BER

5. Mechanical Diagram



Note: External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

6. Ordering Information

| OEM | Part Number | OEM | Part Number |
|----------|-----------------|-------------|------------------|
| Accedian | 7SN-000-A | Cisco | GESFP-LXI-CSC |
| Adtran | 1200481E1-A | Cisco | GLC-LX-SM-RGD-C1 |
| Adtran | 1184561PG1-A | Cyan | 280-0030-00-A |
| Adtran | 1184561P1-A | Dell | 407-BBOO-A |
| Adtran | 1442810G1-A | Dell | 407-BBOO-C1 |
| Adtran | 1200481L1-A | Dell | 407-10588-A |
| Adtran | 1442655G1C-A | Dell | 320-2879-A |
| Adtran | 1000SFP10-AND | Edgecore | ET4201-LX-A |
| Adva | 61004009-A | Enterasys | MGBIC-LC09-A |
| Adva | 1061705850-01-A | Ericsson | RDH10247/25-A |
| Alcatel | 3HE00028CA-A | Extreme | 10052H-A |
| Alcatel | 3HE04117AA-A | Extreme | 10052H-C1 |
| Alcatel | 1AB187280031-A | Extreme | 10052-A |
| Alcatel | 3FE25774AA-A | Extreme | GESFP-LX-EXN |
| Alcatel | 3FE25774AA-C1 | F5 Networks | F5-UPG-SFPLX-R-A |

| | | | |
|-----------------|-------------------|---------------------|-----------------------|
| Alcatel | 109568782-A | Finisar | FTRJ-1319-P1BTL-A |
| Alcatel | ISFP-GIG-LX-A | Finisar | FTLF1318P2BTL-A |
| Alcatel | 3HE04524AA-A-A | Fortinet | FN-TRAN-LX-A |
| Alcatel | SFP-GIG-LX-I-A | Fortinet | FR-TRAN-LX-A |
| Alcatel | 1AB187280040-A | Fortinet | FG-TRAN-LX-A |
| Alcatel | ISFP-GIG-LX-A | Hp | GESFP-LX-HP |
| Alcatel | 3HE04116AA-A | Hp | JW087A-A |
| Alcatel | SFP-GIG-LX-A | Hp | J4859D-C1 |
| Alcatel | 3HE00028AA-A | Huawei | 34060290-A |
| Allied Telesis | SPLX10-A | Infinera | TOM-1G-LX-A |
| Apcon | 1000SFP10-APC | Jdsu | JSH-42L4DD1-A |
| Arista | SFP-1G-LX-A | Juniper | EX-SFP-1GE-LH-40-A |
| Arista | GESFP-LX-ARI | Juniper | SRX-SFP-1GE-LX-A |
| Aruba | SFP-LX-A | Juniper | SFP-1GE-LX-A |
| Avaya | 108873258-A | Juniper | SFP-1GE-LX-C1 |
| Avaya | AA1419049-E6-C1 | Juniper | QFX-SFP-1GE-LX-A |
| Brocade-Foundry | XBR-000077-A | Juniper | EX-SFP-1GE-LX-A |
| Brocade-Foundry | E1MG-LX-OM-T-A | Juniper | SFP-1GE-LX-IT-A |
| Brocade-Foundry | E1MG-LX-OM-C1 | Juniper | SRX-SFP-1GE-LX-ET-A |
| Brocade-Foundry | E1MG-LX-A | Juniper | 1000SFP10-J |
| Brocade-Foundry | GESFP-LX-FBR | Linksys | MGBLX1-A |
| Calix | 100-01662-A | Meraki | MA-SFP-1GB-LX10-A |
| Calix | 100-01662-CTEMP-A | MSA | AN-SFP-LX-I |
| Calix | 1000SFP10-CLX | MSA | AN-SFP-LX-RGD |
| Calix | GESFP-LXI-CLX | MSA Champion ONE | 1000SFP10-PM |
| Ciena | XCVR-010M31-A | MSA Champion ONE | 1000SFP10-H |
| Ciena | XCVR-A10Y31-A | MRV | SFP-DGD-LX-A |
| Ciena | XCVR-A10Y31-C1 | MRV | SFP-GD-LX-A |
| Ciena | XCVR-010Y31-A | Nortel | NTTP01CF-A |
| Ciena | NTTP06CF-A | Nortel | AA1419015-E5-A |
| Ciena | GESFP-LX-CIE | Nortel | AA1419049-E6-A |
| Ciena | GESFP-LXI-CIE | OnePort | OP-SFP-LXD |
| Ciena | B-700-1016-002-A | Palo Alto | PAN-SFP-LX-A |
| Cisco | GLC-LX-SM-RGD-A | Palo Alto | PAN-SFP-LX-C1 |
| Cisco | GLC-LH-SMD-A | Telco | BTI-MGBIC-GLX-DD-LC-A |
| Cisco | GLC-LH-SMD-C1 | Tellabs | 0410-0448-A |
| Cisco | GLC-LH-SM-A | Transition Networks | TN-EX-SFP-1GE-LX-A |

| | | | |
|-------|--------------|---------------------|--------------|
| Cisco | GESFP-LX-CSC | Transition Networks | TN-SFP-LX1-A |
|-------|--------------|---------------------|--------------|

7. Contact Information

Tel: 800.590.9535

Web: <http://www.approvednetworks.com>