

**Multi-Rate 155 Mb/s – 2.7 Gb/s
1550 nm Single mode, 30 – 110 km
SFP Dual LC Connector**



Description

OptixCom's multi-rate fiber optics transceiver is designed for OC3/OC12/FC/GbE/2xFC/OC48 applications with data rate up to 2.7 Gb/s. This single mode module uses high performance 1550 nm DFB laser and is compliant with Small Form Pluggable (SFP) specifications.

The module is compliant with SFP Multi-Source Agreement (MSA). The transceiver reaches 30 - 110 km of distance with standard single mode fibers and 15 - 30 dB of power budget. The products are RoHS compliant.



Lead-Free

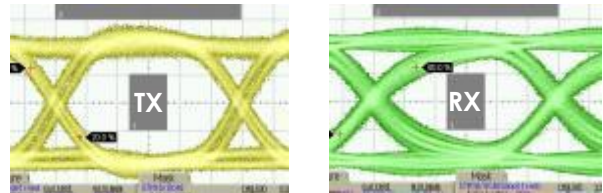
SFP-2670EX-ATXXK
(XX = 30, 50, 80, 90, 110)



Key Features

- 1550 nm single mode
- Multi-rate 155 Mb/s to 2.67 Gb/s
- 30 – 110 km with 15 – 30 dB power budget
- Duplex LC connector optical interface
- Z-axis hot pluggable
- AC coupling LVPECL differential I/O logics
- SFF-8472 MSA Compliant with DDM function
- TTL Signal detect to monitor optical signals
- Single 3.3 V power supply
- RoHS compliant

2.5 Gb/s, 2²³-1 NRZ Data Eye Pattern



Applications

- ✓ OC3/OC12/FC/GbE/2xFC/OC48
- ✓ High speed I/O for file server
- ✓ Media converter
- ✓ Data Communication for SAN and LAN
- ✓ Bus extension
- ✓ Central offices routers and switches
- ✓ Mass storage systems interconnect
- ✓ Computer cluster cross-connect

Ordering Information

Part Number: SFP-2670EX-ATXXK

Description:

1550 nm single mode, multi-rate 155Mb/s - 2.7 Gb/s SFP Transceiver, XX km reach. 0 - 70°C.

Operating Conditions

| Parameter | Min. | Typical | Max. | Units |
|---------------------|------|---------|------|-------|
| Operate Temperature | 0 | 25 | 70 | °C |
| Data Rate | --- | --- | 2.67 | Gb/s |
| Supply Voltage | 3.1 | 3.3 | 3.5 | V |

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Max. | Units |
|--|----------|------|----------|-------|
| Storage Temperature | T_{st} | -40 | 85 | °C |
| Supply Voltage | V_{cc} | -0.5 | 5.0 | V |
| Input Voltage | V_{IN} | -0.5 | V_{cc} | V |
| Operating Current | I_{op} | --- | 400 | mA |
| Output Current | I_o | --- | 50 | mA |
| Soldering Temperature (10 sec. on leads) | T_{sd} | --- | 260 | °C |

General Transmitter Characteristics

| Parameter | Symbol | Min. | Typical | Max. | Units |
|---|--------------|------|---------|----------|-------|
| Differential Input Voltage ¹ | ΔV_i | 0.4 | --- | 2.0 | V |
| Differential Input Impedance ² | Z | --- | 100 | --- | ohm |
| Relative Intensity Noise | RIN | --- | --- | -120 | dB/Hz |
| Rise/Fall Time (20% - 80%) | T_r/T_f | --- | --- | 160 | ps |
| Total Jitter | T_j | --- | --- | 0.1 | Ulp-p |
| TX Disable Asserted | P_{OFF} | --- | --- | -45 | dBm |
| TX Fault Output - High | V_{FH} | 2.4 | --- | V_{cc} | V |
| TX Fault Output - Low | V_{FL} | 0 | --- | 0.5 | V |
| TX Disable Voltage – High | V_{DH} | 2.4 | --- | V_{cc} | V |
| TX Disable Voltage - Low | V_{DL} | 0 | --- | 0.5 | V |
| TX Disable Assert Time | T_{ass} | --- | --- | 10 | μs |
| TX Disable Deassert Time | T_{disass} | --- | --- | 1.0 | ms |
| Time to Initialize | T_{as} | --- | --- | 300 | ms |
| TX Fault from Fault to Assertion | T_{fault} | --- | --- | 100 | μs |
| TX Disable Time to Start Reset | T_{reset} | 10 | --- | --- | μs |

Notes:

1. Module is designed for AC coupling. DC voltage will be filtered by internal capacitor.
2. Single ended will be 50 ohm for each signal line.

Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11



General Receiver Characteristics

| Parameter | Symbol | Min. | Typical | Max. | Units |
|---|--------------|------|---------|----------|---------|
| Differential Output Voltage ¹ | ΔV_o | 0.5 | --- | 1.2 | V |
| Differential Input Impedance ² | Z | --- | 100 | --- | Ohm |
| Optical Return Loss | OL | 27 | --- | --- | dB |
| Rise/Fall Time | T_r/T_f | --- | --- | 250 | ps |
| RX Signal Loss Output - High | V_{RL+} | 2.4 | --- | V_{cc} | V |
| RX Signal Loss Output - Low | V_{RL-} | 0 | --- | 0.5 | V |
| RX Signal Loss Assert Time | T_{RL+} | --- | --- | 100 | μ s |
| RX Signal Loss Deassert Time | T_{RL-} | --- | --- | 100 | μ s |
| Serial ID Clock Rate | f_c | --- | --- | 100 | kHz |

Notes:

1. Module is designed for AC LVPECL coupling. See the design guide for proper termination.
2. Single ended will be 50 ohm for each signal line.

Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11



Transmitter Electro-Optical Characteristics

| Parameter | Symbol | Min. | Typical | Max. | Units |
|-----------------------------------|-----------------|------|---------|------|-------|
| Optical Output Power ¹ | P_o | -5 | --- | 0 | dBm |
| Optical Wavelength | λ_o | 1530 | 1550 | 1570 | nm |
| Extinction Ratio | ET | 8.2 | --- | --- | dB |
| Spectral Width (-20 dB) | $\Delta\lambda$ | --- | --- | 1 | nm |
| Side Mode Suppression Ratio | $SMSR$ | 30 | --- | --- | dB |

Receiver Electro-Optical Characteristics

| Parameter | Symbol | Min. | Typical | Max. | Units |
|-----------------------------------|-------------|------|---------|------|-------|
| Operating Wavelength | λ_c | 1260 | --- | 1610 | nm |
| Receiver Overload | P_{max} | 0 | --- | --- | dBm |
| Receiver Sensitivity ² | P_I | --- | --- | -20 | dBm |
| RX Signal Loss – Asserted | P_{RL+} | --- | --- | -20 | dBm |
| RX Signal Loss – Deasserted | P_{RL-} | -30 | --- | --- | dBm |

Notes:

1. Output of coupling optical power into 9/125 μ m SMF.
2. Test at 2.5 Gb/s, 2⁷ – 1 PRBS data pattern, and > 1x10⁻¹² of Bit-Error-Rate (BER).
3. Optical eye diagram is compliant with IEEE 802.3z standard.
4. Maximum supply current for the transceiver from Vcc is 300 mA.

Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11

