

SFP Series**STI-WDM-0220B****1.25Gbps SFP Bi-Directional Transceiver, 20km Reach****1310nm TX / 1550nm RX****Features**

- Dual data-rate of 1.25Gbps/1.063Gbps operation
- 1310nm FP laser and PIN photodetector for 20km transmission
- Compliant with SFP MSA and SFF-8472 with simplex LC or SC receptacle
- Digital Diagnostic Monitoring: Internal Calibration or External Calibration
- Compatible with SONET OC-24-LR-1
- Compatible with RoHS
- +3.3V single power supply
- Operating case temperature range of 0°C to +70°C (Commercial) or -40°C to +85°C (Industrial)



range of

Applications

- Gigabit Ethernet
- Fiber Channel
- Switch to Switch interface
- Switched backplane applications
- Router/Server interface
- Other optical transmission systems
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Description

The SFP-BIDI transceivers are high performance, cost effective modules supporting dual data-rate of 1.25Gbps/1.063Gbps and 20km transmission distance with SMF.

The transceiver consists of three sections: a FP laser transmitter, a PIN photodiode integrated with a trans-impedance preamplifier (TIA) and MCU control unit. All modules satisfy class I laser safety requirements.

The transceivers are compatible with SFP Multi-Source Agreement (MSA) and SFF-8472. For further information, please refer to SFP MSA.



Optical and Electrical Characteristics

| Parameter | | Symbol | Min | Typical | Max | Unit | Notes |
|----------------------------------|---------|--------------------------------|------|---------|-----------------|----------|-------|
| Transmitter | | | | | | | |
| Centre Wavelength | | λ_c | 1260 | 1310 | 1360 | nm | |
| Spectral Width (RMS) | | $\Delta\lambda$ | | | 4 | nm | |
| Average Output Power | | P _{out} | -9 | | -3 | dBm | 1 |
| Extinction Ratio | | ER | 9 | | 13 | dB | |
| Optical Rise/Fall Time (20%~80%) | | t _r /t _f | | | 0.26 | ns | |
| Data Input Swing Differential | | V _{IN} | 400 | | 1800 | mV | 2 |
| Input Differential Impedance | | Z _{IN} | 90 | 100 | 110 | Ω | |
| TX Disable | Disable | | 2.0 | | V _{cc} | V | |
| | Enable | | 0 | | 0.8 | V | |
| TX Fault | Fault | | 2.0 | | V _{cc} | V | |
| | Normal | | 0 | | 0.8 | V | |
| Receiver | | | | | | | |
| Centre Wavelength | | λ_c | 1480 | | 1580 | nm | |
| Receiver Sensitivity | | | | | -22 | dBm | 3 |
| Receiver Overload | | | -3 | | | dBm | 3 |
| LOS De-Assert | | LOS _D | | | -24 | dBm | |
| LOS Assert | | LOS _A | -35 | | | dBm | |
| LOS Hysteresis | | | 1 | | 4 | dB | |
| Data Output Swing Differential | | V _{out} | 400 | | 1800 | mV | 4 |
| LOS | High | | 2.0 | | V _{cc} | V | |
| | Low | | | | 0.8 | V | |

Notes:

1. The optical power is launched into SMF.
2. PECL input, internally AC-coupled and terminated.
3. Measured with a PRBS 2⁷-1 test pattern @ 1250Mbps, BER ≤ 1 × 10⁻¹².
4. Internally AC-coupled.



Regulatory Compliance

| Feature | Standard | Performance |
|--|--|---|
| Electrostatic Discharge (ESD) to the Electrical Pins | MIL-STD-883E Method 3015.7 | Class 1(>500 V) Isolation with the case |
| Electromagnetic Interference (EMI) | FCC Part 15 Class B | Compatible with standards |
| Laser Eye Safety | FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2 | Compatible with Class I laser product. Compatible with TÜV standards |
| Component Recognition | UL and CUL | UL file E317337 |
| Green Products | 2002/95/EC 2005/618/EC | RoHS6 |

