

Datasheet

SONET/SDH SFP+ Optical Transceiver Product Features

- SONET OC-192 / STM-64 w/ CDR 3.5dB SONET/SDH SFP+
- 220m LRM SONET/SDH SFP+ for MMF @ 10Gbps
- 1310nm FP+PIN Laser 220m SONET/SDH SFP+
- 0°C - 70°C Temperature - Extended/Industrial Available
- 2-Wire Interface Digital Diagnostic Monitoring (SFF-8724)
- Hot-swappable for SONET/SDH SFP+ LC ports
- OptoSpan 1 year standard warranty
- Use with Finisar, Avago, JDSU & networks not requiring OEM compatibility
- Compliant with SFF-8431, SFF-8432
- RoHS compliant

* For OEM Compatibility, use Platinum Series Part# PSPS-81DT31M220

SPS-81D-M220T31



Applications

- SONET OC-192 / SDH STM-64
- OTN ITU-T G.709
- 10GBASE-LRM @ 10.31Gbps
- 10GbE & 10Gb/s FC w/FEC

Description

OptoSpan SPS-81D-M220T31 is a Duplex SONET OC-192 / STM-64 w/ CDR SONET/SDH SFP+ with CDR, FEC & OTN G.709 transceiver designed for long distance optical communications up to 220m with signaling rates up to 10Gbps.

OptoSpan 10Gb Standard optical transceivers are compatible with many brands such as Finisar, Avago, JDSU and network environments that do not require any special compatibility. For networks that require special OEM compatibility, such as CISCO, BROCADE, JUNIPER, ALCATEL, HP, NORTEL, EMC, QLOGIC and other OEMs, consider OptoSpan Platinum OEM Series transceiver model# PSPS-81DT31M220.

All OptoSpan long-reach SONET/SDH SFP+ s are ROHS compliant, allow for real-time diagnostic monitoring as per SFF-8472 and designed to meet Multi-Source Agreement (MSA) standards for Duplex transceivers with LC interface.

Optical Budget Calculation for 220m SONET/SDH SFP+ Optical Transceiver

| SPS-81D-M220T31 | Distance: 220m | | | | Fiber: 1310nm MMF | |
|-----------------------------|----------------|------------|------------|------------|---------------------|-----------------|
| | Tx Min dBm | Tx Max dBm | Rx Min dBm | Rx Max dBm | Link Attenuation dB | Power Budget dB |
| Product Specifications | -6.5 | 0.5 | -10 | 1.5 | | |
| Optical Calculation Results | | | -7.6 | -0.6 | 1.1 | 3.5 |



SFP+ SONET/SDH 220m transceiver | 10G LRM SONET OC-192 / STM-64 w/ CDR

General Specifications

| Parameter | Unit | Min. | Typ. | Max |
|--|------|------|------|------|
| Absolute Maximum Ratings | | | | |
| Maximum Supply Voltage | V | -0.5 | | 3.6 |
| Storage Temperature | °C | -40 | | +85 |
| Case Operating Temperature | °C | 0 | | +70 |
| Recommended Operating Condition | | | | |
| Supply Voltage | V | 3.15 | 3.3 | 3.45 |
| Supply Current | mA | | | 300 |
| Data Rate | Gbps | | | 11.1 |

Electrical Characteristics

| Parameter | Unit | Min. | Typ. | Max |
|-----------------------------------|------|------|------|---------|
| Transmitter | | | | |
| Differential Input Voltage Swing | mVpp | 150 | | 1200 |
| Input Differential Impedance | ohm | 85 | 100 | 115 |
| Transmit Disable Voltage - High | V | 2 | | 3.45 |
| Transmit Disable Voltage - Low | V | 0 | | 0.8 |
| Transmit Fault Voltage - High | V | 2 | | Vcc+0.3 |
| Transmit Fault Voltage - Low | V | 0 | | 0.5 |
| Receiver | | | | |
| Differential Output Voltage Swing | mVpp | 350 | | 700 |
| Differential Output Impedance | ohms | 85 | 100 | 115 |
| LOS Output Voltage - High | V | 2 | | Vcc+0.3 |
| LOS Output Voltage - Low | V | 0 | | 0.8 |



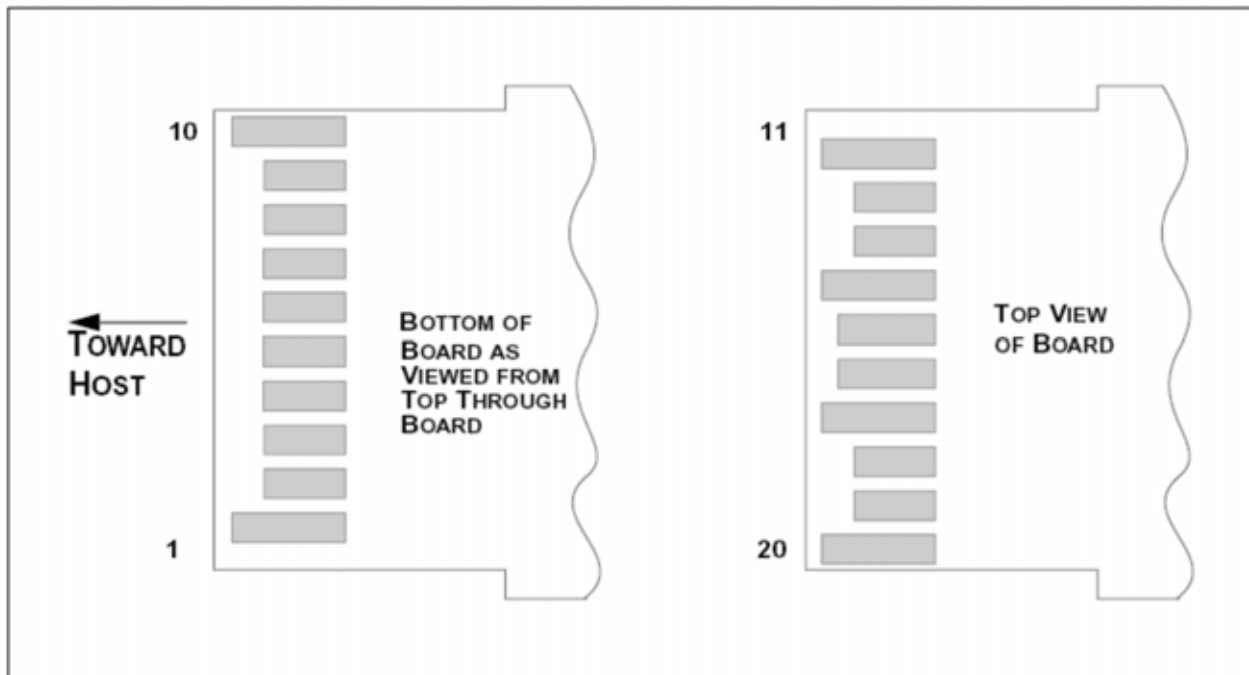
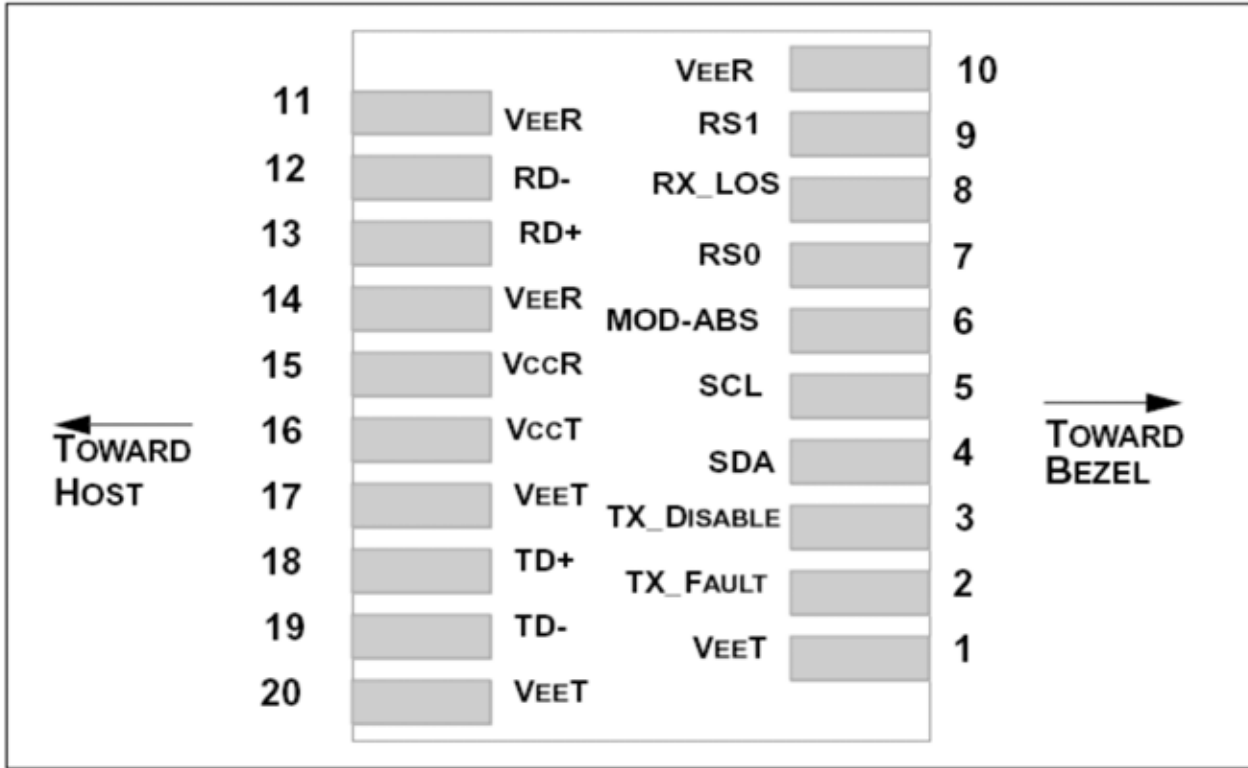
SFP+ SONET/SDH 220m transceiver | 10G LRM SONET OC-192 / STM-64 w/ CDR

Optical Characteristics

| Parameter | Unit | Min. | Typ. | Max |
|---------------------------------|------|------|------|------|
| Transmitter | | | | |
| Output Optical Power | dBm | -6.5 | | 0.5 |
| Optical Extinction Ratio | dB | 3.5 | | |
| Optical Wavelength | nm | 1260 | 1310 | 1355 |
| Spectral Width | nm | | | 3.5 |
| Side Mode Suppression Ratio | dB | | | |
| Receiver | | | | |
| Optical Center Wavelength | nm | 1260 | | 1555 |
| Receiver Sensitivity @ 10.3125G | dBm | -10 | | 1.5 |
| LOS DE-Assert | dBm | | | -11 |
| LOS Assert | dBm | -25 | | |

Laser Safety

This is a class 1 Laser Product according to IEC 60825-1:1993:+A1:1997+A2:2001. This product complies with 21 CFR 1040.10 and 1040 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001.

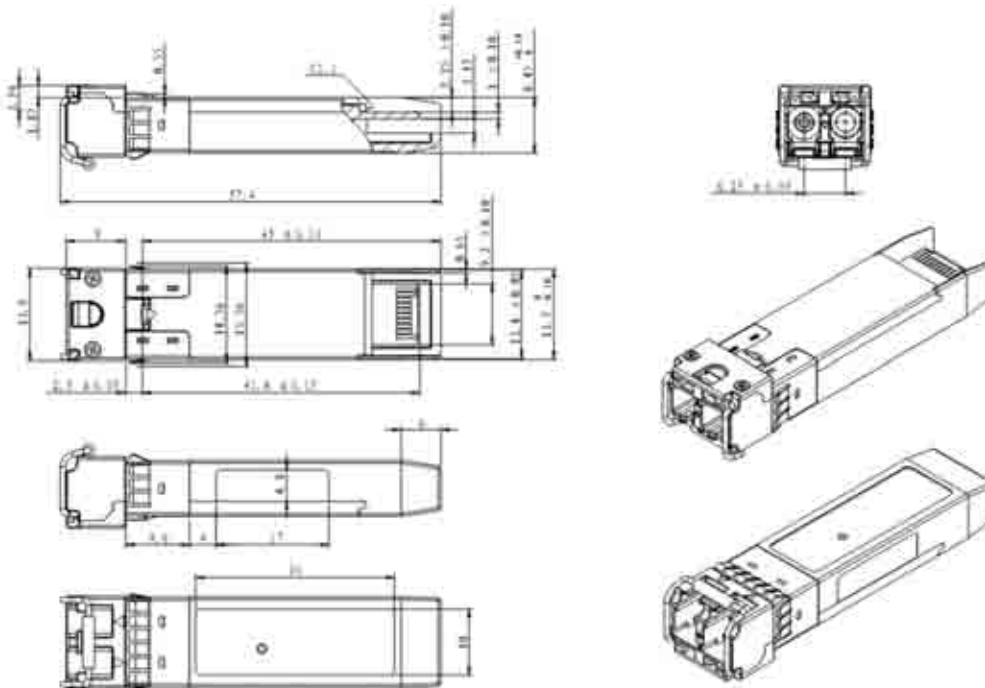
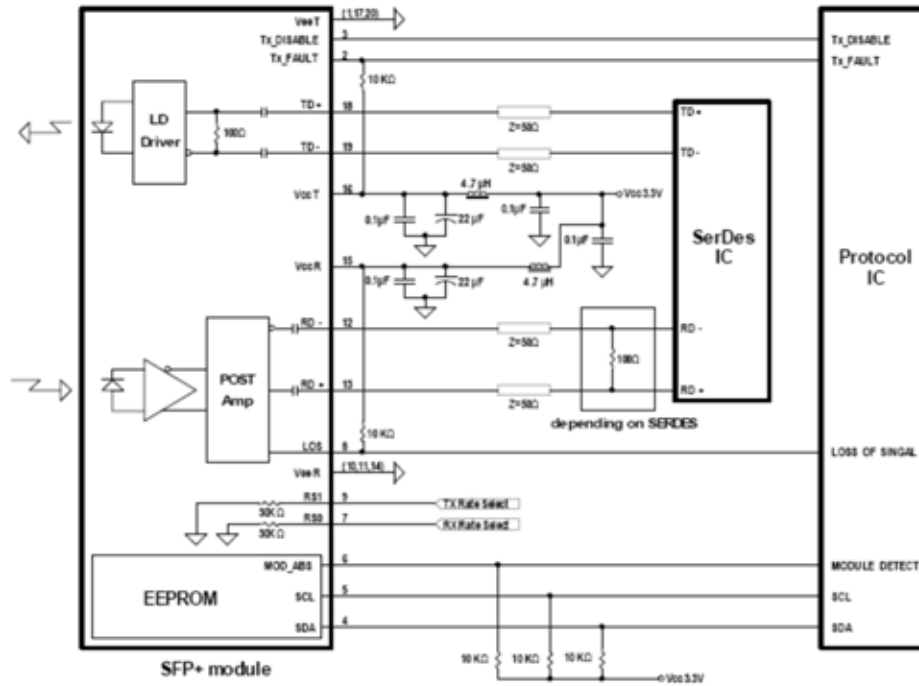




SFP+ SONET/SDH 220m transceiver | 10G LRM SONET OC-192 / STM-64 w/ CDR
PIN Functions

| Pin # | Name - Description |
|-------|------------------------------|
| 1 | Transmitter Ground |
| 2 | Transmitter Fault Indication |
| 3 | Transmitter Disable |
| 4 | Module Definition 2 |
| 5 | Module Definition 1 |
| 6 | Module Definition 0 |
| 7 | RX Rate Select (LVTTL). |
| 8 | Loss of Signal |
| 9 | TX Rate Select (LVTTL). |
| 10 | Receiver Ground |
| 11 | Receiver Ground |
| 12 | Inv. Received Data Out |
| 13 | Received Data Out |
| 14 | Receiver Ground |
| 15 | Receiver Power |
| 16 | Transmitter Power |
| 17 | Transmitter Ground |
| 18 | Transmit Data In |
| 19 | Inv. Transmit Data In |
| 20 | Transmitter Ground |
| 21 | |
| 22 | |
| 23 | |
| 24 | |
| 25 | |
| 26 | |
| 27 | |
| 28 | |
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| 30 | |

SFP+ SONET/SDH 220m transceiver | 10G LRM SONET OC-192 / STM-64 w/ CDR Mechanical Layouts



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