

RUKUS Compatible 10G-SFP-LR-FL Quick Spec:

| | |
|-------------------|---|
| Part Number: | 10G-SFP-LR-FL 10G-SFP-LR-EXT-FL 10G-SFP-LR-IND-FL |
| Form Factor: | SFP+ |
| TX Wavelength: | 1310nm |
| Reach: | 10km |
| Cable Type: | SMF |
| Rate Category: | 10GBase |
| Interface Type: | LR |
| DDM: | Yes |
| Connector Type: | Dual-LC |
| Power Budget: | 6.00 dB |
| TX Power Min/Max: | -8.00 to 0.50 |
| RX Power Min/Max: | -14.00 to -3.0 |



RUKUS Compatible 10G-SFP-LR-FL Features

- Operating Data Rate up to 10.3Gbps
- 1310nm DFB-LD Transmitter
- Single 3.3V Power Supply and TTL Logic Interface
- Hot Pluggable
- Compliant with MSA SFP+
- Compliant with IEEE 802.3ae 10GBASE-LR
- Compliant with IEEE 802.3ae 10GBASE-LW
- Compliant with SFF-8472
- RoHS 6 Compliant
- Operating Case Temperature:
 - Standard: 0°C to +70 °C
 - Extended -5°C to +85 °C
 - Industrial -40°C to +85 °C

RUKUS Compatible 10G-SFP-LR-FL Applications

- 10GBASE-LR at 10.3125Gbps
- 10GBASE-LW at 9.953Gbps
- Other Optical Links

RUKUS Compatible 10G-SFP-LR-FL Electrical Characteristics (Condition: Ta=TOP)

| Parameter | Symbol | Min. | Typ | Max. | Unit | Notes |
|---------------------------------|--------|------|-----|---------|--------|---------------------|
| CML Inputs(Differential) | Vin | 150 | | 1200 | mV p-p | AC coupled inputs |
| Supply Current | ICC | | | 300 | mA | |
| Input Impedance (Differential) | Zin | 85 | 100 | 115 | ohm | Rin > 100 kohm @ DC |
| Tx_Disable Input Voltage – Low | VIL | 0 | | 0.8 | V | |
| Tx_Disable Input Voltage – High | VIH | 2.0 | | 3.45 | V | |
| Tx_Fault Output Voltage – Low | VOL | 0 | | 0.5 | V | |
| Tx_Fault Output Voltage – High | VOH | 2.0 | | Vcc+0.3 | V | |
| CML Outputs (Differential) | Vout | 350 | | 700 | mV pp | AC coupled outputs |
| Output Impedance (Differential) | Zout | 85 | 100 | 115 | ohms | |
| Rx_LOS Output Voltage- Low | VOL | 0 | | 0.5 | V | |
| Rx_LOS Output Voltage- High | VOH | 2.5 | | | V | |

RUKUS Compatible 10G-SFP-LR-FL Optical Characteristics (Condition: Ta=TOP)

| TX | | | | | | |
|----------------------------------|------------------|------|------|---------|----------|--|
| Parameter | Symbol | Min | Typ | Max | Unit | |
| Data Rate | | - | 10.3 | - | Gb/s | |
| 9µm Core Diameter SMF | | | 10 | | Km | |
| Centre wavelength | λ_c | 1270 | 1310 | 1355 | nm | |
| Output Spectral Width(-20dB) | $\Delta\lambda$ | - | - | 1 | nm | |
| Average Output Power | P _{out} | -8 | - | +0.5 | dBm | |
| Extinction Ratio | ER | 3.5 | - | - | dB | |
| Average Power of OFF Transmitter | | | | -30 | dBm | |
| Side Mode Suppression Ratio | SMSR | 30 | | | dB | |
| Input Differential Impedance | Zin | 90 | 100 | 110 | Ω | |
| TX Disable | Disable | | 2.0 | Vcc+0.3 | V | |
| | Enable | | 0 | 0.8 | | |
| TX Fault | Fault | | 2.0 | Vcc+0.3 | V | |
| | Normal | | 0 | 0.8 | | |
| TX Disable Assert Time | t _{off} | | | 10 | us | |

| RX | | | | | |
|--------------------------------------|-------------|------|-----|--------------|----------|
| Parameter | Symbol | Min | Typ | Max | Unit |
| Center Wavelength | λ_c | 1260 | | 1565 | nm |
| Receive Sensitivity | P_{in} | - | - | -14 | dBm |
| Maximum Input Power | P_{MAX} | -3 | 0 | - | dBm |
| Signal Detect Threshold-Assertion: | SD_{HIGH} | - | - | -15 | dBm |
| Signal Detect Threshold-Deassertion: | SD_{LOW} | -25 | - | - | dBm |
| Output Differential Impedance | P_{in} | 90 | 100 | 110 | Ω |
| Receiver Overload | P_{max} | 0.5 | | | dBm |
| Optical Return Loss | ORL | | | -12 | dB |
| LOS | High | 2.0 | | $V_{cc}+0.3$ | V |
| | Low | 0 | | 0.8 | |

Absolute Maximum Ratings ($T_c=25^\circ C$)

| Parameter | Symbol | Min | Max | Unit |
|-----------------------------|----------|-----|-----|------------|
| Storage Temperature | T_{ST} | -40 | +85 | $^\circ C$ |
| Operating Temperature (Com) | T_{IP} | 0 | +70 | $^\circ C$ |
| Operating Temperature (Ext) | | -40 | +85 | |
| Input Voltage | T_{CC} | 0 | 5 | V |

RUKUS Compatible 10G-SFP-LR-FL Recommend Operation Environment

| Parameter | Symbol | Min | Typ | Max | Unit |
|-----------------------|----------|-------|-----|-------|------------|
| Supply Voltage | V_{CC} | +3.15 | 3.3 | +3.45 | V |
| Operating Temperature | T_{OP} | 0 | - | +70 | $^\circ C$ |
| Operating Temperature | | -40 | - | +85 | |

Licensing

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U.S. Patent Nos: 7,184,668, 7,079,775, 6,957,021, 7,058,310, 6,952,531, 7,162,160, 7,050,720