SO-XFP-ZR-DXXXX
XFP, 10G Multirate, DWDM, 100GHz, DDM, 24dB, 80km, D9180-D9610 (44ch)

OVERVIEW

The SO-XFP-ZR-Dxxxx is a versatile DWDM transceiver supporting a wide range of traffic formats ranging from 9.95 to 11.3 Gbps. The transceiver is provided in 44 channel versions at the 100GHz DWDM C-band grid as specified in the ITU-T 694.1 standard.

The distance performance is in accordance with the -ZR/ZW industry standard, providing a bridgeable distance of up to 80km for 10GbE-LAN (10GBASE-ZR) and 10GbE-WAN (10GBASE-ZW) services.

This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification.

The transceiver module is compliant to RoHS-6/6.

TECHNICAL DATA

<table>
<thead>
<tr>
<th>Technology</th>
<th>DWDM 100GHz XFP</th>
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<tbody>
<tr>
<td>Transmission media</td>
<td>SM (2x LC)</td>
</tr>
<tr>
<td>Nominal wavelength</td>
<td>191.80 - 196.10 THz (44ch)</td>
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<tr>
<td>Interface standards</td>
<td>10GBASE-ZR, 10GBASE-ZW, 12G-SM-LL-L 10G FC P1L1-2D2 (G.959.1)</td>
</tr>
<tr>
<td>Bit rate range</td>
<td>9.95 - 11.1 Gbps</td>
</tr>
<tr>
<td>Protocols</td>
<td>Eth: 10GbE-LAN, 10GbE-WAN, OTN: OTU2e, SDH/SONET: STM-64/OC-192, FC: 10G FC, CPRI: Opt 8 (10.1376 Gbps)</td>
</tr>
<tr>
<td>Power budget</td>
<td>14.0 - 23.0 dB</td>
</tr>
<tr>
<td>Dispersion tolerance</td>
<td>+1600 ps/nm 1)</td>
</tr>
<tr>
<td>Dispersion penalty</td>
<td>2.0 dB @ 1600 ps/nm 11)</td>
</tr>
<tr>
<td>Temperature range</td>
<td>0°C to +70°C</td>
</tr>
<tr>
<td>Power consumption</td>
<td>&lt; 2.0W</td>
</tr>
</tbody>
</table>

Transmitter data

| Output power: | Min: 0.0 dBm Max: +4.0 dBm |
| Tx wavelength:| 191.80 - 196.10 THz in 100GHz steps (G.694.1) |

Receiver data

| Minimum input power: | -23.0 dBm 1) |
| Max input power:     | -10.0 dBm |
| Wavelength range:    | 1520 – 1600 nm |

DDM

| Yes |

MSA compliance

| SFF-8431, SFF-8432, SFF-8472 |

Regulatory compliance

<table>
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<tr>
<th>EMC CE</th>
<th>EN 55022:2010, EN 55024:2010</th>
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<tr>
<td>UL/Safety</td>
<td>UL 60950-1, 47 CFR PART 15 OCT, 2013</td>
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Storage temp. -40°C to +85°C

Note! See “Definitions” below.

Note: 10GBASE-ZR/ZW is defined only at 1550 nm. The industry standard is referred to from bridgeable distance perspective for the other wavelengths within the DWDM band.

Subject to change without notice.
For more information visit smartoptics.com.
**DEFINITIONS**

**Technology:**
Grey; Transceiver type for non-WDM applications. Electrical or optical.
CWDM; Transceiver type for CWDM applications using G.694.2 channel grid.
DWDM; Transceiver type for DWDM applications using G.694.1 channel grid.
BiDi; Transceiver pair using two different wavelength channels operating on a single-fiber.
DAC: Direct Attach Cable. Electrical or optical cable with attached connectors.

**Transmission Media:**
The type of fiber, e.g. Multimode (MM) or Singlemode (SM). Number of and connector type within brackets (e.g. 2x LC, 1x MPO).

**Typical reach:**
Nominal distance performance based on dispersion and power budget properties, i.e. w/o dispersion compensation and optical amplification.

**Bit rate range:**
Supported bit rate range in Gigabit or Megabit per second (Gbps or Mbps).

**Protocols:**
Protocols within supported bit rate range.

**Nominal wavelength:**
Typical wavelength from transmitter.

**Interface standards:**
Referenced interface standards e.g. IEEE 802.3 standard for 10GbE services.

**Power budget:**
Min and max power budget between Transmitter and Receiver. Excluding any dispersion penalty.

**Dispersion tolerance/penalty:**
Maximum amount of tolerated dispersion and required reduction of power budget to maintain BER better than 1E-12. Defined at a specific bit rate.

**Temperature range:**
Max operating case temperature range.
Standard temperature range: Typically 0°C to +70°C (32°F to +158°F)
Extended temperature range (E-temp): Typically -20°C to +75°C (-4°F to +167°F)
Industrial temperature range (I-temp): -40°C to +85°C (-40°F to +185°F)

**Power consumption:**
Worst case power consumption.

**Transmitter Output power:**
Average output power. Provided in min and max values.

**Receiver minimum input power:**
Minimum average input power at specified BER, normally 1E-12.

**Receive max input power:**
Maximum average input power at specified BER, normally 1E-12.

**DDM:**
Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.