

DATASHEET 5.0

# SO-XFP-LR20

XFP, 10G Multirate, 1310nm, SM, DDM, 12dB, 20km

## OVERVIEW

The SO-XFP-LR20 is a versatile 1310nm transceiver for SingleMode fiber supporting a wide range of traffic formats. The optical performance exceeds the IEEE 802.3ae LR/LW-standard, providing a bridgeable distance of up to 20km for 10GbE-LAN (10GBASE-LR) and 10GbE-WAN (10GBASE-LW) services. It is also in compliance with SDH/SONET as well as Fiberchannel interface standards.

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

## TECHNICAL DATA

<b>Technology</b>	Grey XFP										
<b>Transmission Media</b>	SM (2x LC)										
<b>Typical reach</b>	20 km										
<b>Nominal wavelength</b>	1310 nm										
<b>Interface standards</b>	10GBASE-LR 10GBASE-LW OC-192 LR-1 STM I-64.1 10GFC 1200-SM-LL-L										
<b>Bit rate range</b>	9.95 - 11.1 Gbps										
<b>Protocols</b>	<table border="0"> <tr> <td><b>Eth:</b></td> <td>10GbE-LAN 10GbE-WAN</td> </tr> <tr> <td><b>OTN:</b></td> <td>OTU2e OTU2</td> </tr> <tr> <td><b>SDH/SONET:</b></td> <td>STM-64/OC-192</td> </tr> <tr> <td><b>FC:</b></td> <td>10G FC</td> </tr> <tr> <td><b>CPRI:</b></td> <td>Opt 8 (10.1376 Gbps)</td> </tr> </table>	<b>Eth:</b>	10GbE-LAN 10GbE-WAN	<b>OTN:</b>	OTU2e OTU2	<b>SDH/SONET:</b>	STM-64/OC-192	<b>FC:</b>	10G FC	<b>CPRI:</b>	Opt 8 (10.1376 Gbps)
<b>Eth:</b>	10GbE-LAN 10GbE-WAN										
<b>OTN:</b>	OTU2e OTU2										
<b>SDH/SONET:</b>	STM-64/OC-192										
<b>FC:</b>	10G FC										
<b>CPRI:</b>	Opt 8 (10.1376 Gbps)										
<b>Power budget</b>	0.5 – 12.0 dB										
<b>Dispersion tolerance</b>	0 C to +70 C										

<b>Power consumption</b>	< 2.5W	
<b>Transmitter data</b>	<b>Output power:</b>	Min: -3.0 dBm Max: +1.0 dBm
	<b>Tx wavelength:</b>	Min: 1290 nm Max: 1330 nm
<b>Receiver data</b>	<b>Minimum input power:</b>	-15.0 dBm <sup>1)</sup>
	<b>Overload (max power):</b>	+0.5 dBm
	<b>Wavelength range:</b>	1270 - 1600 nm
<b>DDM</b>	Yes	
<b>MSA compliance</b>		SFF-8431
		SFF-8432
		SFF-8472

<sup>1)</sup>@ 10.3Gbps

## Regulatory Compliance

<b>EMC / CE</b>	EN 55022:2010 EN 55024:2010
<b>UL/Safety FCC</b>	UL 60950-1 47 CFR PART 15 OCT, 2013
<b>RoHS</b>	RoHS 6
<b>TUV</b>	EN 60950-1:2006+A11+A1+A12+A2 EN 60825-1:2014 EN 60825-2:2004+A1+A2

<b>Storage temp.</b>	-40°C to +85°C
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Note! See "Definitions" below.

## ORDERING INFORMATION

Part number	Description
SO-XFP-LR20	XFP, 10G Multirate, 1310nm, SM, DDM, 12dB, 20km

## 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:	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 <sup>-12</sup> .
Receiver max input power:	Maximum average input power at specified BER, normally 1E <sup>-12</sup> .
DDM:	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.