SO-XFP-ZR & -ZR-I

XFP, 10G Multirate, 1550nm, SM, DDM, 24dB, 80km

OVERVIEW

The SO-XFP-ZR is a versatile 1550nm XFP transceiver for SingleMode fiber supporting a wide range of traffic formats. The optical 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 over a 1550nm wavelength.

This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the INF-8077i specification. The transceiver is available in two temperature range options, one being the Industrial temperature range (I-temp): -40°C to 85°C (-40°F to 185°F).

TECHNICAL DATA

Parameter	Value
Technology	Grey XFP
Transmission media	SM (2x LC)
Typical reach	80km
Nominal wavelength	1x 1550nm
Bit rate support	9.95Gbps to 11.1Gbps
Interface standards	10GBASE-ZR, 10GBASE-ZW
Protocol support	10GbE-LAN, 10GbE-WAN
	OTU2, OTU2e
	STM-64/OC192
	10G FC
	CPRI Opt, 8
Power budget	11 – 24dB
Dispersion tolerance	1600ps/nm
Dispersion penalty	Max 3dB
Power consumption	< 3.5W
Operating temperature	-0°C to +70°C (-ZR)
	-40°C to +85°C (-ZR-I)
Storage temperature	-40°C to +85°C

Parameter	Value
Transmitter data:	
Output power	Min: 0.0dB [1]
	Max: +4.0dBm [1]
Transmit wavelength	1530nm – 1565nm
Receiver data:	
Minimum input power	-24.0dBm [1] [2]
Overload (max power)	-7.0dBm [1]
Wavelength range	1260nm – 1600nm
LOS assert	Min -38dBm
LOS de-assert	Max -26dBm
LOS Hysteresis	Min 0.5dB
DDM	Yes
MSA compliance	INF-8077i, XFP-MSA

[1] Average power.

[2] @ 10.3Gbps, BER $1x10^{-12}$, PRBS 2^{31}-1.

Safety/regulatory compliance:
TUV/UL/FDA (contact Smartoptics for latest certification information)
RoHS compliance

ORDERING INFORMATION

Ordering code	Description
SO-XFP-ZR	XFP, 10G Multirate 9.95-11.3Gbps, SM, 1550nm, 80km, 24dB, LC
SO-XFP-ZR-I	XFP, 10G Multirate 9.95-11.3Gbps, SM, 1550nm, 80km, 24dB, I-temp, LC

GENERAL DEFINITIONS

Parameter	Description
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 cable with attached connectors. AOC: Active Optical Cable. 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 typical fiber dispersion, fiber loss and power budget properties, i.e. w/o dispersion compensation and optical amplification. Actual distance is dependent on actual optical path loss and dispersion properties.
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(s) from transmitter.
Interface standards	Referenced interface standards or MSA's, e.g. IEEE 802.3 standard for 10GbE services or 100G 4WDM-10 etc.
Power budget	Min and max power budget between Transmitter and Receiver w/o optical path penalties.
Dispersion tolerance/penalty	Maximum amount of tolerated dispersion and required reduction of power budget to maintain stipulated Bit Error Rate (BER) and at a given bit rate.
Temperature range	Max operating case temperature range. Standard temperature range (C-temp): 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. Will vary over temperature.
Transmitter Output power	Average output power. Provided in min and max values.
Receiver minimum input power	Minimum average input power at specified BER, normally $1E^{-12}$. Note that some protocols require FEC to achieve sufficient BER.
Receiver max input power	Maximum average input power giving a BER, normally $1E^{-12}$.
DDM	Digital Diagnostic Monitoring functionality as defined in e.g. SFF-8472 MSA.