

SO-XFP-LR-Cxx

XFP, 10G Multirate, CWDM, DDM, 10dB, 10km, 1270nm-1610nm (18ch)

OVERVIEW

The SO-XFP-LR-Cxx is a versatile CWDM transceiver supporting a wide range of traffic formats. The range performance is in accordance with the IEEE 802.3ae LR/LW-standard, providing a bridgeable distance of up to 10km for 10GbE-LAN (10GBASE-LR) and 10GbE-WAN (10GBASE-LW) services.

The transceiver is available in 8 CWDM wavelength versions, spanning from 1270nm to 1610nm in accordance with the G.694.2 standard. This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the INF-8077i specification.

TECHNICAL DATA

Parameter	Value
Technology	CWDM XFP
Transmission media	SM (2x LC)
Typical reach	10km
Nominal wavelength	1270nm – 1610nm (18ch)
Bit rate support	9.95Gbps to 11.1Gbps
Interface standards	10GBASE-ER, 10GBASE-EW
Protocol support	10GbE-LAN, 10GbE-WAN
	OTU2, OTU2e
	STM-64/OC192
	10G FC
	CPRI Opt, 8
Power budget	0 – 10dB
Dispersion tolerance	200ps/nm
Dispersion penalty	Max 2dB
Power consumption	< 2.5W
Operating temperature	-5°C to +70°C
Storage temperature	-40°C to +85°C

Parameter	Value
Transmitter data:	
Output power	Min: -5.0dB ¹⁾ Max: 0.0dBm ¹⁾
Transmit wavelength	1271 – 1611nm (G.694.2)
Receiver data:	
Minimum input power	-15.0dBm ^{1) 2)}
Overload (max power)	+0.5dBm ¹⁾
Wavelength range	1260nm – 1620nm
LOS assert	Min -29dBm
LOS de-assert	Max -17dBm
LOS Hysteresis	Min 1dB
DDM	Yes
MSA compliance	INF-8077i, XFP-MSA

¹⁾ Average power.

²⁾ @ 10.3Gbps, BER 1x10⁻¹², PRBS 2³¹-1.

Safety/regulatory compliance:

TUV/UL/FDA (contact Smartoptics for latest certification information)

RoHS compliance

Note: IEEE 802.3ae 10GBASE-LR/LW is defined only at 1310nm. The standard is referred to from bridgeable distance perspective for the other wavelengths within the CWDM band.

ORDERING INFORMATION

Ordering code	Description
SO-XFP-LR-C27	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1270nm
SO-XFP-LR-C29	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1290nm
SO-XFP-LR-C31	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1310nm
SO-XFP-LR-C33	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1330nm
SO-XFP-LR-C35	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1350nm
SO-XFP-LR-C37	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1370nm
SO-XFP-LR-C39	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1390nm
SO-XFP-LR-C41	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1410nm
SO-XFP-LR-C43	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1430nm
SO-XFP-LR-C45	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1450nm
SO-XFP-LR-C47	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1470nm
SO-XFP-LR-C49	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1490nm
SO-XFP-LR-C51	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1510nm
SO-XFP-LR-C53	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1530nm
SO-XFP-LR-C55	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1550nm
SO-XFP-LR-C57	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1570nm
SO-XFP-LR-C59	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1590nm
SO-XFP-LR-C61	XFP, 10G Multirate 9.95-11.1Gbps, CWDM, 10km, 10dB, LC, 1610nm

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.

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