

SO-SFP-10GE-LR10-CXX

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

OVERVIEW

The SO-SFP-10GE-LR10-Cxx is a versatile CWDM transceiver supporting a wide range of traffic formats. The distance 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 18 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 SFF-8472 specification.

TECHNICAL DATA

Technology	CWDM SFP+
Transmission media	SM (2x LC)
Typical reach	10 km
Nominal wavelength	1270 nm - 1610 nm (18ch)
Interface standards	10GBASE-LR 10GBASE-LW
Bit rate range	0.6 - 11.3 Gbps
Protocols	Eth: 10GbE-LAN 10GbE-WAN GbE
	OTN: OTU2e OTU2 OTU1
	SDH/SONET: STM-64/OC-192 STM-16/OC-48 STM-4/OC-12
	FC: 10G FC 8G FC 4G FC 1G FC
	CPRI: Opt 1 (0.6144 Gbps) Opt 2 (1.2288 Gbps) Opt 3 (2.4576 Gbps) Opt 4 (3.0720 Gbps) Opt 5 (4.9152 Gbps) Opt 6 (6.1440 Gbps) Opt 7 (9.8304 Gbps) Opt 7A (8.11008 Gbps) Opt 8 (10.1376 Gbps)
	OBSAI: 1x (0.768 Gbps) 2x (1.536 Gbps) 4x (3.0720 Gbps) 8x (6.1440 Gbps)
Power budget	0 - 10.0 dB
Temperature range	-5°C to +70°C
Power consumption	< 1.2W

Transmitter data	Output power:	Min: -5.0 dBm Max: +0.0 dBm
	Tx wavelength:	1270 - 1610 nm in 20nm steps (G.694.2)
Receiver data	Minimum input power:	-15.0 dBm ¹⁾
	Overload (max power):	+0.5 dBm
	Wavelength range:	1260 - 1620 nm
DDM		Yes
MSA compliance		SFF-8431 SFF-8472

¹⁾ @ 10.7Gbps

Regulatory compliance

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

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

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

ORDERING INFORMATION

Part number	Description
SO-SFP-10GE-LR10-C27	SFP+, 10G Multirate, CWDM 1270nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C29	SFP+, 10G Multirate, CWDM 1290nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C31	SFP+, 10G Multirate, CWDM 1310nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C33	SFP+, 10G Multirate, CWDM 1330nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C35	SFP+, 10G Multirate, CWDM 1350nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C37	SFP+, 10G Multirate, CWDM 1370nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C39	SFP+, 10G Multirate, CWDM 1390nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C41	SFP+, 10G Multirate, CWDM 1410nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C43	SFP+, 10G Multirate, CWDM 1430nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C45	SFP+, 10G Multirate, CWDM 1450nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C47	SFP+, 10G Multirate, CWDM 1470nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C49	SFP+, 10G Multirate, CWDM 1490nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C51	SFP+, 10G Multirate, CWDM 1510nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C53	SFP+, 10G Multirate, CWDM 1530nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C55	SFP+, 10G Multirate, CWDM 1550nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C57	SFP+, 10G Multirate, CWDM 1570nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C59	SFP+, 10G Multirate, CWDM 1590nm, DDM, 10dB, 10km
SO-SFP-10GE-LR10-C61	SFP+, 10G Multirate, CWDM 1610nm, DDM, 10dB, 10km

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 $1E^{-12}$.
Receiver max input power:	Maximum average input power at specified BER, normally $1E^{-12}$.
DDM:	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.