

SO-QSFP-LR4-20

QSFP+, 40G Ethernet LR4, SM, DDM, 10.2dB, 20km

OVERVIEW

The SO-QSFP-LR4-20 is a QSFP+ (Quad Small Form-factor Pluggable Plus) transceiver for 40 Gbps applications such as inter- and intra-connect within and between data centers between switches, routers, storage equipment etc.

The SO-QSFP-LR4 converts 4x 10 Gbps flows into four CWDM channels in the 1300nm band up to 20 km over a SingleMode (SM) fiber.

TECHNICAL DATA

Technology	Grey QSFP+
Transmission media	SM (2x LC)
Typical reach	20 km
Nominal wavelength	Ch 1: 1271 nm Ch 2: 1291 nm Ch 3: 1311 nm Ch 4: 1331 nm
Interface standards	40GBASE-LR4
Bit rate range	41.25 Gbps ¹⁾ 10.3125 Gbps ²⁾
Protocols Eth:	40GbE
Power budget	0 – 10.2 dB
Temperature range	0°C to +70°C
Power consumption	< 3.5W

- ¹⁾ Aggregated line rate
- ²⁾ Per channel line rate
- ³⁾ Total power (all lanes)
- ⁴⁾ Ch 1
- ⁵⁾ Ch 2
- ⁶⁾ Ch 3
- ⁷⁾ Ch 4
- ⁸⁾ Per channel @ 10.3125 Gbps

Transmitter data	Output power, tot:	Max: dBm ³⁾
	Output power, per lane	Min: -3.5 dBm Max: + 2.3dBm
	Tx wavelength (nm):	1264.5 – 1277.5 ⁴⁾ 1284.5 – 1297.5 ⁵⁾ 1304.5 – 1317.5 ⁶⁾ 1324.5 – 1337.5 ⁷⁾
Receiver data	Minimum input power:	-13.7 dBm ⁸⁾
	Overload (max power):	+2.3 dBm ⁸⁾
	Wavelength range:	1264.5 – 1277.5 ⁴⁾ 1284.5 – 1297.5 ⁵⁾ 1304.5 – 1317.5 ⁶⁾ 1324.5 – 1337.5 ⁷⁾
DDM	Yes	
MSA compliance	QSFP+ MSA SFF-8436	

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.

ORDERING INFORMATION

Part number	Description
SO-QSFP-LR4-20	QSFP+, 40G Ethernet LR4, SM, DDM, 10.2dB, 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.
Transmission Media:	DAC: Direct Attach Cable. Electrical or optical cable with attached connectors. 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.