SO-QSFP-LR4

QSFP+, 40G Ethernet LR4, OTU3, SM, 1271/1291/1311/1331nm, 10km, 6.7dB, LC

OVERVIEW

The SO-QSFP-LR4 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 10 km over a SingleMode (SM) fiber.

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

TECHNICAL DATA

Technology		Grey QSFP+
Transmission media		SM (2x LC)
Typical reach		10 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 / 43.018 Gbps [1] 10.3125 / 10.7546 Gbps [2]
Protocols	Eth:	40GbE
	OTN:	OTU3
Power budget		0 – 6.7 dB
Dispersion penalty		2.6dB
Temperature range		0°C to +70°C
Power consumption		< 3.5W

Transmitter data	Output power, tot:	Max: +8.3 dBm [3]
	Output power, per lane	Min: -7.0 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:	-13.7dBm [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

[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

Regulatory compliance

EMC CE	EN 55032:2012, EN 55032:2015 EN 55024:2010, EN 55024:2010+A1
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

Note! See “Definitions” below.

ORDERING INFORMATION

Part number	Description
SO-QSFP-LR4	QSFP+, 40G Ethernet LR4, OTU3, SM, 1271/1291/1311/1331nm, 10km, 6.7dB, LC

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.