

# SO-CFP-40GBASE-LR4-20

CFP, 40Gbps Ethernet LR4, SM, DDM, 10.7dB, 20km

## OVERVIEW

The SO-CFP-40GBASE-LR4-20 is a CFP (C Form-factor Pluggable) transceiver for 40 Gbps applications. It is intended for use in inter- and intra-connect applications within and between data centers between switches, routers, storage equipment etc. The optical performance exceeds the 40GBASE-LR standard enabling optical distances up to 20km over a SingleMode (SM) fiber.

SO-CFP-40GBASE-LR4-20 uses four CWDM channels/lanes @ 10 Gbps to transport the Ethernet signal.

## TECHNICAL DATA

<b>Technology</b>	Grey CFP
<b>Transmission media</b>	SM (2x LC)
<b>Typical reach</b>	20 km
<b>Nominal wavelength</b>	Lane 1: 1271 nm Lane 2: 1291 nm Lane 3: 1311 nm Lane 4: 1331 nm
<b>Interface standards</b>	40GBASE-LR4
<b>Bit rate range</b>	41.25 Gbps <sup>1)</sup> 10.3125 Gbps <sup>2)</sup>
<b>Protocols</b>	Eth: 40GbE
<b>Power budget</b>	0 - 10.7 dB
<b>Temperature range</b>	0°C to +75°C
<b>Power consumption</b>	< 8W

<sup>1)</sup> Aggregated line rate

<sup>2)</sup> Per lane line rate

<sup>3)</sup> Total power (all lanes)

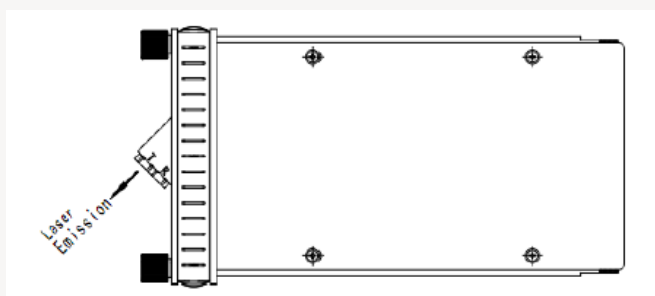
<sup>4)</sup> Lane 1

<sup>5)</sup> Lane 2

<sup>6)</sup> Lane 3

<sup>7)</sup> Lane 4

<sup>8)</sup> Per lane @ 10.3125 Gbps



<b>Transmitter data</b>	<b>Output power, tot:</b>	Max: +8.3 dBm <sup>3)</sup>
	<b>Output power, per lane</b>	Min: -3.0 dBm Max: +2.3 dBm
	<b>Tx wavelength (nm):</b>	1264.5 – 1277.5 <sup>4)</sup> 1284.5 – 1297.5 <sup>5)</sup> 1304.5 – 1317.5 <sup>6)</sup> 1324.5 – 1337.5 <sup>7)</sup>
<b>Receiver data</b>	<b>Minimum input power:</b>	-13.7 dBm <sup>8)</sup>
	<b>Overload (max power):</b>	+2.3 dBm <sup>8)</sup>
	<b>Wavelength range:</b>	1264.5 – 1277.5 <sup>4)</sup> 1284.5 – 1297.5 <sup>5)</sup> 1304.5 – 1317.5 <sup>6)</sup> 1324.5 – 1337.5 <sup>7)</sup>
<b>DDM</b>		Yes
<b>MSA compliance</b>		CFP MSA

### Regulatory compliance

<b>EMC CE</b>	EN 55022:2010 EN 55024:2010
<b>UL/Safety</b>	UL 60950-1
<b>FCC</b>	47 CFR PART 15 OCT, 2013
<b>RoHS</b>	RoHS 6
<b>TUV</b>	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-CFP-40GBase-LR4-20	CFP, 40Gbps Ethernet LR4, SM, DDM, 10.7dB, 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. DAC: Direct Attach Cable (DAC). 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: Nominally 0°C to +70°C (32°F to +158°F) Extended temperature range (E-temp): Will vary, but 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 giving a BER, normally $1E^{-12}$ .
DDM:	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.