

DATASHEET 5.0

SO-CFP-40GBASE-LR4

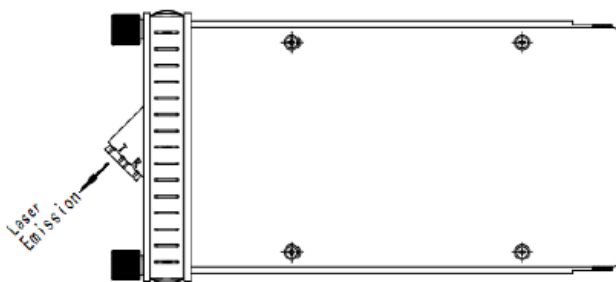
CFP, 40Gbps Ethernet LR4, SDH/SONET, OTN, SM, DDM, 6.7dB, 10km

OVERVIEW

The SO-CFP-40GBASE-LR4 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 is in accordance with the 40GBASE-LR standard, i.e. for optical distances up to 10km over a SingleMode (SM) fiber.

SO-CFP-40GBASE-LR4 uses four CWDM channels/lanes @ 10 Gbps to transport an Ethernet, SDH/SONET or OTN signal.

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



TECHNICAL DATA

Technology	Grey CFP
Transmission media	SM (2x LC)
Typical reach	10 km
Nominal wavelengths	Lane 1: 1271 nm Lane 2: 1291 nm Lane 3: 1311 nm Lane 4: 1331 nm
Interface standards	40GBASE-LR4
Bit rate range	39.813 - 43.018 Gbps 1) 9.95 - 11.3 Gbps 2)
Protocol support	Eth: 40GbE SDH/SONET: STM-256/OC-768 OTN: OTU3
Power budget	0 - 6.7 dB
Temperature range	-10°C to +75°C
Power consumption	< 8W
Transmitter data:	
Output power, tot:	Max: +8.3 dBm ³⁾
Output power, per lane	Min: -7.0 dBm Max: + 2.3dBm
Tx wavelengths	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⁾
Max input 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	CFP MSA

Regulatory compliance	
EMC CE	EN 55022:2010 EN 55024:2010
UL/Safety	UL 60950-1
FCC	47 CFR PART 15 OCT, 2013
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

ORDERING INFORMATION

Part Number	Description
SO-CFP-40GBase-LR4	CFP, 40Gbps Ethernet LR4, SDH/SONET, OTN, SM, DDM, 6.7dB, 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 (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.

DEFINITIONS

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 giving a BER, normally 1E ⁻¹² .
DDM	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.