

OSFP112 800G 2xDR4, CMIS5.0

OSFP112, 800G Ethernet, 2x400G-DR4, PAM4 CMIS5.0, 1311nm 500m 3.1dB Dual-LC

TOC002-S31C-SO

The TOC002-S31C-SO is an OSFP112 form-factor transceiver for 800Gbps or 2x400G Ethernet applications. It is intended for use in data center interconnect between switches, routers, storage equipment etc. for optical distances up to 500m over single-mode fiber. The optical interface consists of two MPO-12 connectors, allowing aggregation of two 400G-DR4 or eight 100G-DR transceivers.

The electrical interface consists of eight 106.25G signals (800GAUI-8) that are converted to eight PAM4-modulated channels/lanes to transport the optical signal over CWDM wavelengths. The transceiver can also be set in 2x400GAUI-4 and 8x100GAUI-1 mode to enable 2x 400G or 8x 100G break-out configurations. Digital diagnostics functions are available via an I²C interface, as specified by the CMIS revision 5.0.

The optical interface to the transceiver is two duplex LC connectors (UPC).

Forward Error Correction (FEC) is required to be implemented by the host in order to ensure reliable system operation. The FEC type shall be as defined in IEEE802.3bj, i.e. Reed Solomon RS(528,514). The optical parameters will provide a bit error ratio (BER) of 2.4×10^{-4} .

TECHNICAL DATA

Parameter	Value
Technology	Grey, OSFP112 800G
Transmission media	SM (2x MPO-12, APC)
Typical reach	500m
Nominal wavelengths	4x1311nm
Interface standards	2x 400GBASE-DR4 8x 100GBASE-DR
Electrical interfaces	800GAUI-8 2x 400GAUI-4 8x 100GAUI-1
Bit rate support	850Gbps ¹⁾ 53.125Gbd ²⁾
Protocol support	800GbE, 2x400GbE, 8x100GbE
Power budget	0 – 3.1dB
Power consumption	< 14W
Operating temperature	0°C to +70°C
Storage temperature	-40°C to +85°C

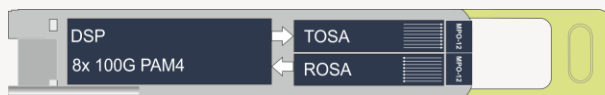
¹⁾ Aggregated line rate 800GbE

²⁾ Line baud rate per lane

Safety/regulatory compliance:

TUV/UL/FDA (contact Smartoptics for latest certification information)

RoHS compliance



Parameter	Value
Transmitter data:	
Output power, Average, per lane	Min: -2.9dBm Max: +4.0dBm
Output power, OMA, per lane	Min: -0.8dBm Max: +4.2dBm
Transmit wavelength	1304.5 – 1317.5nm
Receiver data:	
Minimum input power, Average, per lane	-6.0dBm
Overload, Average, per lane	+4.0dBm
Minimum input power, OMA per lane	-3.9dBm
Wavelength range	1304.5 – 1317.5nm
LOS Assert	Min -16dBm
LOS De-assert	Max -10dBm
LOS Hysteresis	Min 0.5dB
DDM	Yes
MSA compliance	OSFP MSA, CMIS5.0



Subject to change without notice.

For more information visit smartoptics.com.

smartoptics

ORDERING INFORMATION

Ordering number	Description
TOC002-S31C-SO	OSFP112 800G-2xDR4 Ethernet, PAM4 CMIS5.0, 8x 1311nm 500m 3.1dB 2xMPO12

GENERAL DEFINITIONS

Parameter	Description
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 cable with attached connectors. AOC: Active Optical Cable. 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 typical fiber dispersion, fiber loss and power budget properties, i.e. w/o dispersion compensation and optical amplification. Actual distance is dependent on actual optical path loss and dispersion properties.
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(s) from transmitter.
Interface standards	Referenced interface standards or MSA's, e.g. IEEE 802.3 standard for 10GbE services or 100G 4WDM-10 etc.
Power budget	Min and max power budget between Transmitter and Receiver w/o optical path penalties.
Dispersion tolerance/penalty	Maximum amount of tolerated dispersion and required reduction of power budget to maintain stipulated Bit Error Rate (BER) and at a given bit rate.
Temperature range	Max operating case temperature range. Standard temperature range (C-temp): 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. Will vary over temperature.
Transmitter Output power	Average output power. Provided in min and max values.
Receiver minimum input power	Minimum average input power at specified BER, normally $1E^{-12}$. Note that some protocols require FEC to achieve sufficient BER.
Receiver max input power	Maximum average input power giving a BER, normally $1E^{-12}$.
DDM	Digital Diagnostic Monitoring functionality as defined in e.g. SFF-8472 MSA.

Smartoptics makes no warranties or representations, expressed or implied, of any kind relative to the information or any portion thereof contained in this document or its adaptation or use, and assumes no responsibility or liability of any kind, including, but not limited to, indirect, special, consequential or incidental damages, for any errors or inaccuracies contained in the information or arising from the adaptation or use of the information or any portion thereof. The information in this document is subject to change without notice.