

100GbE QSFP28 PSM4 Optical Transceiver

MMS1C10-CM

Mellanox® MMS1C10-CM transceiver is a parallel, single mode, 1310nm, 4-channel (PSM4), pluggable, QSFP28 optical transceiver designed for use in 100GbE Ethernet applications. It is also qualified for use in Mellanox InfiniBand EDR end-to-end systems. This module incorporates state-of-the-art uncooled DFB laser and integrated circuit technology in order to provide high performance. The transceiver operates over 4-lane, parallel, single mode fiber (SMF) using a nominal wavelength of 1310nm, and is SFF-8665 compliant.

The transceiver has a standard QSFP28 connector on the electrical side towards the host system. The optical interface is composed of four optical channels/fibers in each direction and is intended for a parallel single-mode optical cable via a standard MPO connector. Each channel/fiber operates at signaling rates up to 25.78125GbD. Rigorous production testing ensures the best out-of-the-box installation experience, performance and durability.

The MMS1C10-CM transceiver has Digital Diagnostic Monitoring (DDM) functions for supply voltage, temperature, laser bias current, optical transmit and receive levels with associated warning and alarm thresholds.

Adjustment of the Tx input equalizer, Rx output amplitude/emphasis, and (de)selection of retiming are controlled via control registers defined in the SFF-8636 standard.

The MMS1C10-CM transceiver complies with the PSM4 MSA.

Table 1 - Absolute Maximum Ratings

Parameter	Symbol	Conditions	Minimum	Maximum	Units
Storage Temperature	Ts	---	-40	+85	°C
Storage Relative Humidity	RH	Non condensing	0	85	%
Supply Voltage # 3.3	Vcc	---	0	3.6	V

Table 2 - Operational Information

Parameter	Symbol	Minimum	Typical	Maximum	Units
Operating Case Temperature	Tc	-5	---	70	°C
Supply Voltage	Vcc	3.13	3.3	3.47	V
Supply Current	Icc	---	---	1000	mA
Data Rate	Vcc	---	100	---	Gb/s
Link Distance	D	2	---	500	m



HIGHLIGHTS

- Up to 100Gb/s data rate
- Up to 500m link length over single mode fiber at 100Gb/s
- Selectable retiming
- SFF-8665 compliant
- 3.3V power supply
- QSFP28 Power Class 4 (< 3.5W)
- Class 1 Laser Safety
- Hot pluggable
- RoHS, UL & TÜV compliant
- 100G-PSM4 compliant
- SFF-8636 compliant I²C Management Interface with DDM functions
- Applications:
 - 100G Ethernet
 - Qualified for Mellanox InfiniBand EDR end-to-end systems

Table 3 - Transmitter Electrical Specifications

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Differential Input Impedance	R _{DI}	---	---	100	---	Ohm
High speed Differential Input Voltage (CML)	V _{CML_DI}	AC-coupled, peak to peak	0.2	---	1.0	V
Low speed Input Voltage – Low (LVCOMS)	V _{LVCMOS_IL}	---	-0.3	---	V _{cc} *0.3	V
Low speed Input Voltage – High (LVCOMS)	V _{LVCMOS_IH}	---	V _{cc} *0.7	---	V _{cc} +0.5	V
Low speed Input Voltage – Low (LVTTTL)	V _{LVTTTL_IL}	---	-0.3	---	0.8	V
Low speed Input Voltage – High (LVTTTL)	V _{LVTTTL_IH}	---	2	---	V _{cc} +0.3	V

Table 4 - Receiver Electrical Specifications

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Differential Output Impedance	R _{DO}	---	---	100	---	Ohm
High speed Differential Output Voltage (CML)	V _{CML_DO}	AC-coupled, peak to peak	0.3	---	0.8	V
Low speed Output Voltage – Low (LVCOMS)	V _{LVCMOS_OL}	---	0	---	0.4	V
Low speed Output Voltage – High (LVCOMS)	V _{LVCMOS_OH}	---	V _{cc} -0.5	---	V _{cc} +0.3	V
Low speed Output Voltage – Low (LVTTTL)	V _{LVTTTL_OL}	---	0	---	0.4	V
Low speed Output Voltage – High (LVTTTL)	V _{LVTTTL_OH}	---	V _{cc} -0.5	---	V _{cc} +0.3	V

Mechanical Schematics

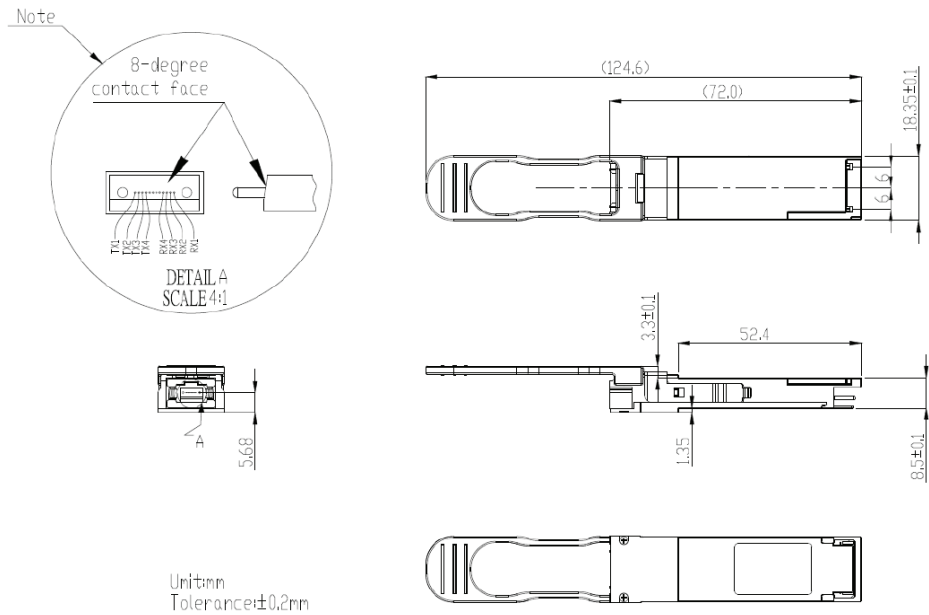


Table 5 - Part Number and Description

OPN	Description
MMS1C10-CM	Mellanox® active optical module, 100Gb/s, QSFP, MPO, 1310nm, PSM4

Warranty Information

Mellanox LinkX optical transceivers include a 1-year limited hardware warranty, which covers parts repair or replacement.