

# 100GbE QSFP28 SMF 1550nm Optical Transceiver

## MMS1C00-Cxxx

The Mellanox® MMS1C00 transceiver is a 4-channel, pluggable, QSFP28 optical transceiver designed for use in 100GbE Ethernet applications. This module incorporates Mellanox® Silicon Photonics (SiP) 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 1550nm, 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, 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 MMS1C00 transceiver has Digital Diagnostic Monitoring 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 is controlled via control registers as defined in the SFF-8636 standard.

The MMS1C00 transceiver will work with a fiber plant as specified in the PSM4 MSA.

Table 1 - Absolute Maximum Ratings

Parameter	Minimum	Maximum	Units
Supply voltage	-0.3	3.465	V
Data input voltage	-0.3	3.465	V
Control input voltage	-0.3	4.0	V
Storage temperature	-20	85	°C

Table 2 - Operational Information

Parameter	Minimum	Typical	Maximum	Units
Supply voltage	3.135	3.3	3.465	V
Power dissipation (no retiming)	---	2.5	2.7	W
Power dissipation (retiming on all lanes)	---	3.3	3.5	W
Supply noise tolerance (10Hz-10MHz)	---	---	66	mVpp
Operating case temperature	0	---	70	°C
Operating relative humidity	5	---	85	%RH



## HIGHLIGHTS

- Up to 100Gb/s data rate
- Up to 2km link length (3.5dB loss budget) over single mode fiber ITU-T G.652.D at 100Gb/s
- Programmable Rx output amplitude and emphasis
- Programmable Tx input equalizer
- Selectable retiming
- SFF-8665 compliant QSFP28
- SFF-8636 compliant digital diagnostic monitoring (DDM)
- 3.3V power supply
- QSFP28 power class 4
- BER<sup>1</sup> better than 1E-15
- Class 1 laser safety
- Hot pluggable
- RoHS compliant
- CAUI-4 compliant
- SFF-8636 compliant I<sup>2</sup>C management interface
- Utilizes Angle Polished Connectors (APC) to reduce laser back reflections
- 1550nm PSM4 transceiver is compatible with most 1310nm PSM4 transceivers

<sup>1</sup>With FEC, tested in a system composed of Mellanox network cards and Mellanox switches.

# Mechanical Schematics

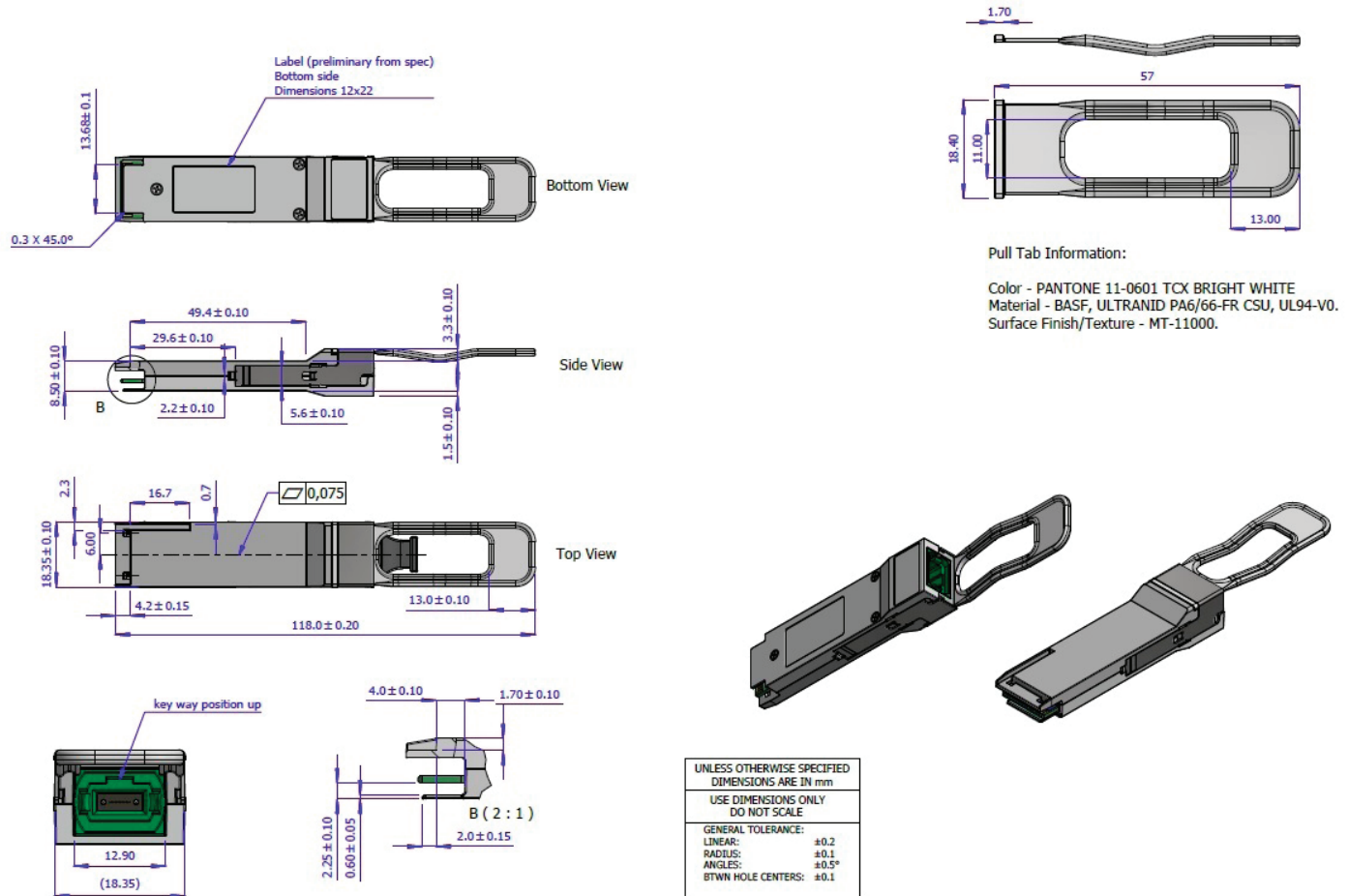
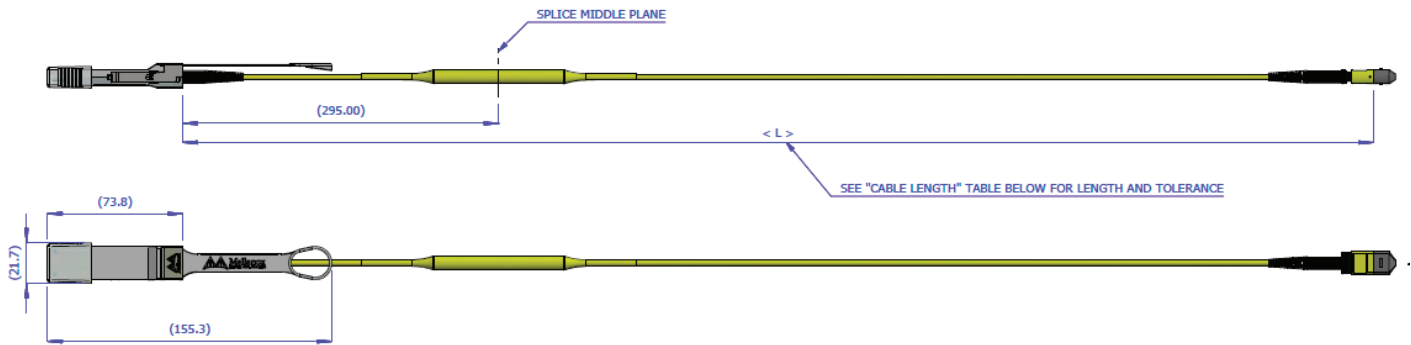
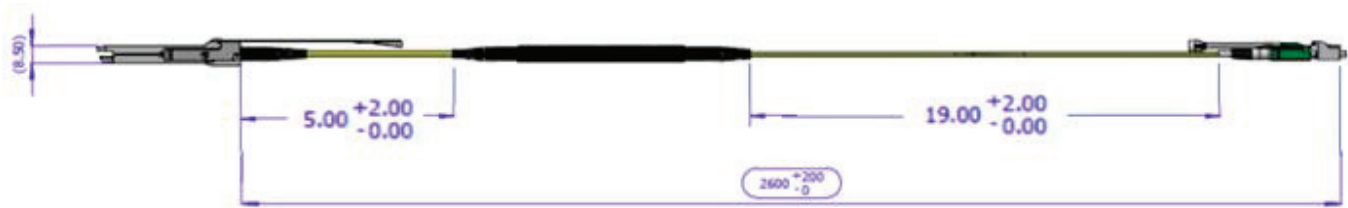


Figure 1. MMS1C00-C500 Mechanical Dimensions

## Mechanical Schematics (cont.)



**Figure 2.** MMS1C00-CMMA Mechanical Dimensions, Pigtailed MPO



**Figure 3.** MMS1C00-CMLC Mechanical Dimensions, Pigtailed LC

**Table 1 - Part Number and Description**

OPN	Description
MMS1C00-C500	Mellanox® transceiver, 100GbE, QSFP28, MPO, 1550nm PSM4, up to 2km
MMS1C00-CMMA	Mellanox® transceiver, 100GbE, QSFP28, MPO, pigtailed 1m, 1550nm PSM4, up to 2km
MMS1C00-CMLC	Mellanox® transceiver, 100GbE, QSFP28, 4x duplex LC, pigtailed short, 1550nm PSM4, up to 2km

### Warranty Information

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