



100 GbE QSFP28 LR4 Optical Transceiver

MMA1L10-CR

NVIDIA® Mellanox® MMA1L10-CR is a 4-channel, pluggable, QSFP28, optical transceiver designed for use in 100 GbE links with up to 10 km reach on single mode fiber.

The transceiver is compliant with the QSFP28 MSA, IEEE 802.3ba 100GBASE-LR4, and IEEE 802.3bm CAUI-4 standards.

The MMA1L10-CR module converts 4 input channels of 25 Gb/s electrical data to 4 channels of LAN WDM optical signals at 4 different wavelengths and then multiplexes these into a single optical transmit signal. Reversely, on the receiver side the module de-multiplexes a 100 Gb/s optical LAN WDM input into 4 optical signals and then converts these to 4 electrical differential output signals.

MMA1L10-CR has selectable retiming as specified in the QSFP28 MSA. This enables the transceiver to be used in both 40 GbE and 100 GbE applications.

Digital diagnostic monitoring functions for temperature, supply voltage, and optical power are available via the two-wire (I²C) management interface, as specified by the QSFP28 MSA.

The optical connector is a duplex LC/UPC (un-angled) connector intended for a pair of single mode fibers.

Rigorous production testing ensures the best out-of-the-box installation experience, performance, and durability.

Table 1 - Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Storage temperature	T _s	-40	85	°C
Operating case temperature	T _{OP}	0	70	°C
Maximum supply voltage	V _{CC}	-0.5	3.6	V
Relative humidity (non-condensation)	RH	15	85	%
Damage threshold, each lane	TH _d	5.5	---	dBm

Table 2 - Recommended Operating Conditions and Power Supply Requirements

Parameter	Symbol	Minimum	Typical	Maximum	Units
Supply voltage	V _{CCRx} , V _{CC1} , V _{CCTx}	3.135	---	3.465	V
Data rate, each lane	---	-100 ppm	25.78125	+ 100 ppm	Gbps
Link distance with G.652 rated fiber	L _{max}	---	---	10	km



HIGHLIGHTS

- Hot pluggable QSFP28 MSA form factor
- IEEE 802.3ba 100GBASE-LR4 and IEEE 802.3bm CAUI-4 compliant
- Up to 10 km reach for Single Mode Fiber (SMF)
- Single +3.3 V supply, hot pluggable
- Operating case temperature: 0 °C to 70 °C
- 4 x 25.78 Gb/s DFB-based LAN-WDM transmitter
- 4 x 25.78 Gb/s retimed electrical interface
- QSFP28 Power Class 4 (3.5 W max)
- Duplex LC receptacles
- Hot pluggable
- RoHS compliant
- SFF-8636 compliant DDM functions
- Applications
 - 100GBASE-LR4 100G Ethernet
 - 40GBASE-LR4 40G Ethernet
 - Qualified for use in Mellanox Ethernet end-to-end systems

Mechanical Schematics

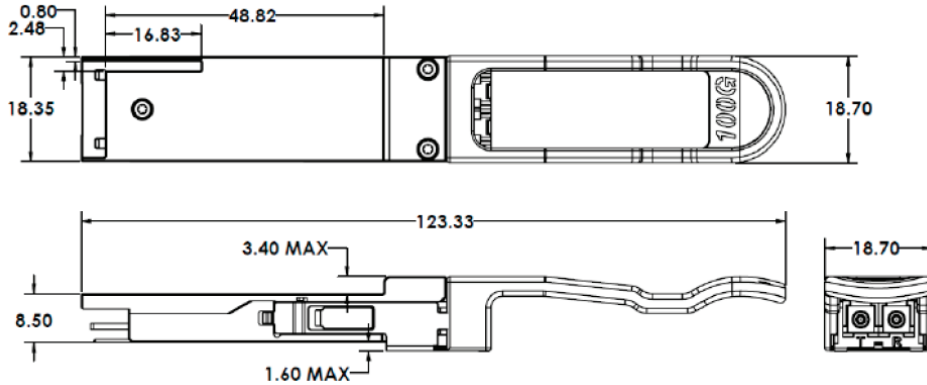


Table 4 - Part Number and Description

OPN	Description
MMA1L10-CR	Mellanox® optical transceiver, 100GbE, 100Gb/s, QSFP28, LC-LC, 1310nm, LR4 up to 10km

Warranty Information

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