



200Gb/s HDR QSFP56 Active Direct Attach Copper Cable

MCA1J00-H0xxE

Mellanox® MCA1J00-H0xxE active copper cables are high speed, cost-effective alternatives to fiber optics in 200Gb/s InfiniBand HDR applications.

The MCA1J00-H0xxE active copper cable⁽¹⁾ contains four high-speed copper pairs (Rx/Tx) on each end, with each lane operating at data rates of up to 50Gb/s. Each QSFP56 port comprises an EEPROM providing product information, which can be read by the host system.

Mellanox's unique quality active copper cable solutions provide power-efficient connectivity for short distance interconnects. They enable higher port bandwidth, density and configurability at a low cost and reduced power requirement in data centers.

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

Table 1 - Absolute Maximum Ratings

Parameter	Min	Max	Units
Supply voltage	-0.3	3.6	V
Data input voltage	-0.3	3.6	V
Control input voltage	-0.3	3.6	V
Storage temperature	-40	85	°C

Table 2 - Operational Specifications

Parameter	Min	Typical	Max	Units
Supply voltage (Vcc)	3.135	3.3	3.465	V
Power consumption	--	--	3.5	W
Operating case temperature	0	--	70	°C
Operating relative humidity	5	--	85	%

Table 3 - Electrical Specifications

Parameter	Min	Typical	Max	Units
Characteristic impedance	90	100	110	Ω
Time propagation delay	--	--	4.5	ns/m



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HIGHLIGHTS

- IBTA InfiniBand HDR compliant
- Up to 200Gb/s data rate
- 4x 50Gb/s PAM4 modulation
- SFF-8665 compliant
- Operating case temperature 0-70°C
- Single 3.3V supply voltage
- Enables BER (Bit Error Rate) better than 1E-15 with Mellanox IB HDR systems
- Hot pluggable
- RoHS compliant
- LSZH (Low Smoke Zero Halogen) jacket
- LF (Lead Free) HF (Halogen Free) PCB
- SFF-8636 compliant I²C management interface

⁽¹⁾ Raw cables are provided from different sources to ensure supply chain robustness.

Table 4 - Cable Mechanical Specifications

OPN	AWG	Length (m)	Single Cable Diameter	Minimum Bend Radius	Cable Color
MCA1J00-H003E	30	3 ± 0.025mm	6.9 ± 0.3mm Jacket: Thermoplastic copolymer (FRNC) BK	Single bend: 34.5mm Repetitive and assembly bend: 69mm	Black
MCA1J00-H004E		4 ± 0.025mm			

Note 1. The minimum assembly bending radius (close to the connector) is 10x the cable's outer diameter. The repeated bend (far from the connector) is also 10x the cable's outer diameter. The single bend (far from the connector) is 5x the cable's outer diameter.

Figure 1. Assembly Bending Radius

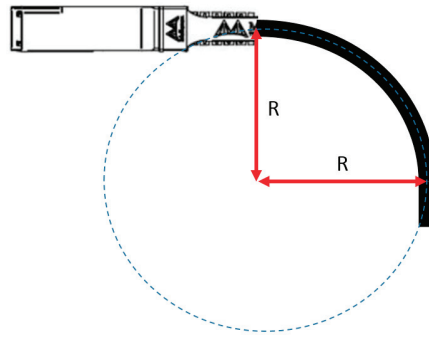
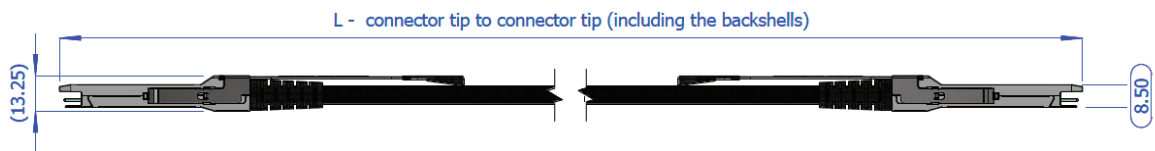


Figure 2. Cable Length Definition



Mechanical Schematics

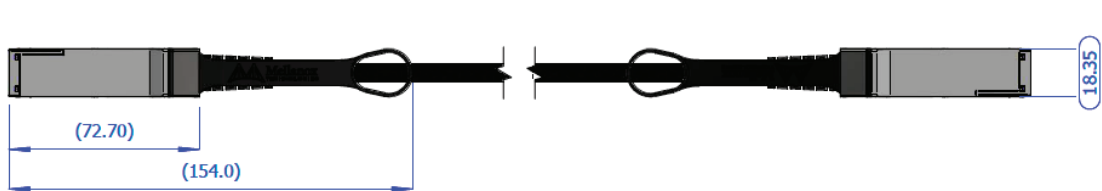


Table 5 - Part Numbers and Descriptions

Part Number	Description
MCA1J00-H003E	Mellanox® active copper cable, IB HDR, up to 200Gb/s, QSFP56, 3m, yellow pulltab
MCA1J00-H004E	Mellanox® active copper cable, IB HDR, up to 200Gb/s, QSFP56, 4m, yellow pulltab

Note. See Figure 2 for the cable length definition.

Warranty Information

Mellanox LinkX direct attach copper cables include a 1-year limited hardware warranty, which covers parts repair or replacement.