HDR 200Gb/s QSFP56 Direct Attach Copper Cable

MCP1650-H0xxEyy

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Mellanox® MCP1650-H0xxEyy DAC cables are high speed, cost-effective alternatives to fiber optics in 200Gb/s InfiniBand HDR applications.

Mellanox QSFP56 passive copper cable[1] contains eight high-speed copper pairs, each 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 passive copper cable solutions provide power-efficient connectivity for short distance interconnects. It enables higher port bandwidth, density and configurability at a low cost and reduced power requirement in the data centers.

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

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

– Bit Error Rate (BER) better than 1E-15 with Mellanox InfiniBand 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

Table 1 - Absolute Maximum Ratings

Parameter	Minimum	Maximum	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	Minimum	Typical	Maximum	Units
Supply voltage (Vcc)	3.135	3.3	3.465	V
Power consumption	---	---	0.1	W
Operating case temperature	0	---	70	°C
Operating relative humidity	5	---	85	%

Table 3 - Electrical Specifications

Parameter	Minimum	Typical	Maximum	Units
Characteristic impedance	90	100	110	Ω
Time propagation delay (informative)	---	---	4.5	ns/m

[1] Raw cables are provided from different sources to ensure supply chain robustness.

Table 4 - Cable Mechanical Specifications

Ordering Part No.	Length (m)	AWG	Single Cable Diameter	Minimum Bend Radius
MCP1650-H00AE30	0.5 ± 0.025mm	30	7.1 ± 0.35mm	Single bend: 35.5mm Assembly/repeated bend: 71mm
MCP1650-H001E30	1 ± 0.025mm			
MCP1650-H01AE30	1.5 ± 0.025mm			
MCP1650-H002E26	2 ± 0.050mm	26	9.4 ± 0.4mm	Single bend: 47mm Assembly/repeated bend: 94mm

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.
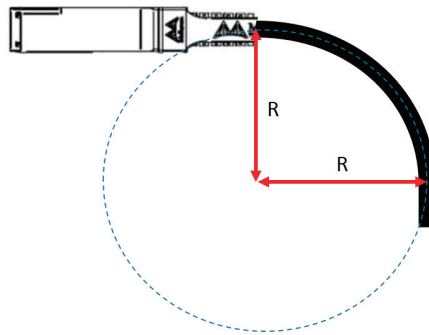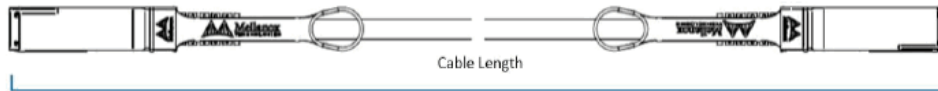
Figure 1. *Assembly Bending Radius*
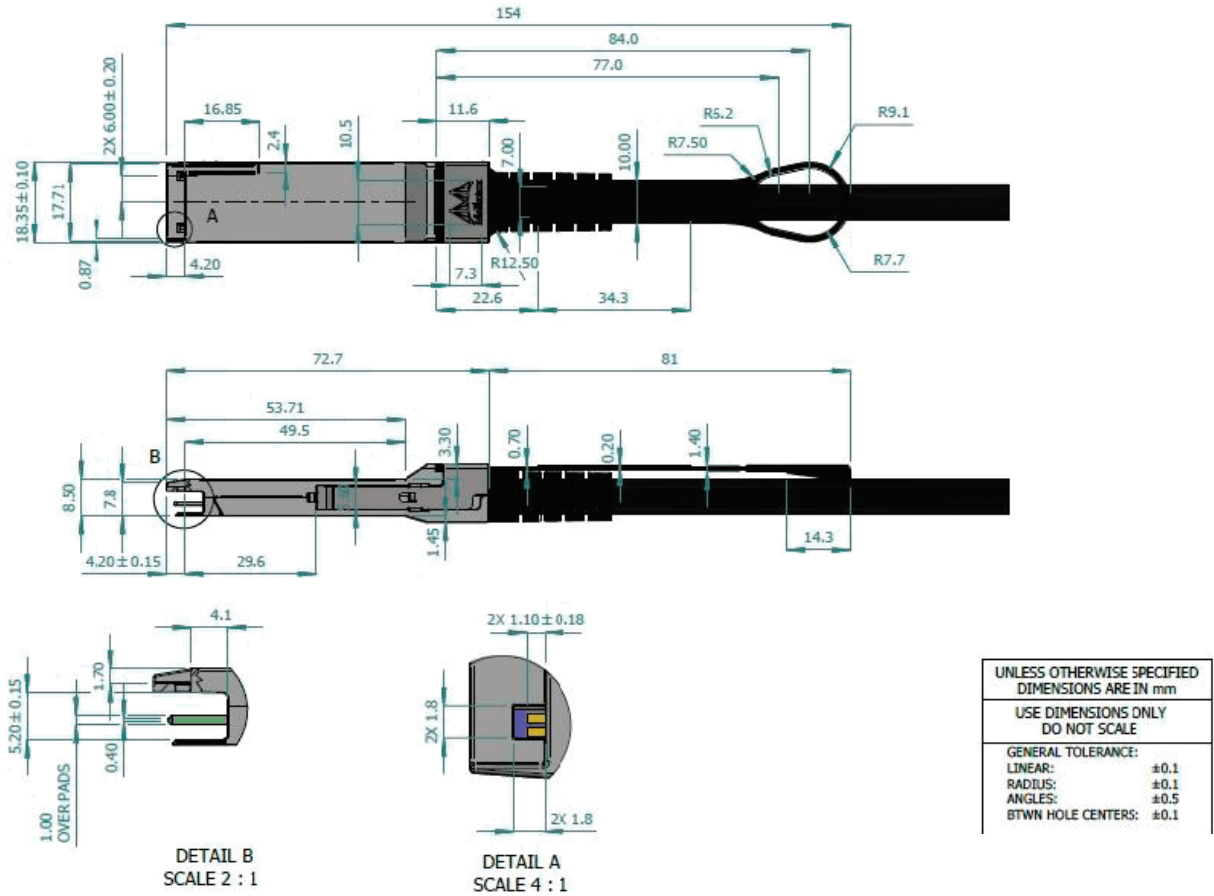

Figure 2. *Cable Length*

Mechanical Schematics

Table 5 - Part Numbers and Descriptions

Part Number	Description
MCP1650-H00AE30	Mellanox® Passive Copper cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, 0.5m, black pulltab, 30AWG
MCP1650-H001E30	Mellanox® Passive Copper cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, 1m, black pulltab, 30AWG
MCP1650-H01AE30	Mellanox® Passive Copper cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, 1.5m, black pulltab, 30AWG
MCP1650-H002E26	Mellanox® Passive Copper cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, 2m, black pulltab, 26AWG

Note: xx = reach; yy = wire gauge

Warranty Information

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

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