25GbE SFP28 Direct Attach Copper Cables

LinkX †

MCP2M00-A0xxxxxx

Mellanox® MCP2M00-A0xxxxxx direct attach copper cables are high speed, cost-effective alternatives to fiber optics in 25GbE Ethernet applications.

MCP2M00 passive copper cables[1] contain a single high-speed copper pair, operating at data rates of up to 25GbE. The cables are compliant SFF-8402 SFP28 standard. Each SFP28 port comprises an EEPROM providing product information, which can be read by the host system.

MCP2M00 cables up to 2m support IEEE 802.3by CA-25G-N (Cable Assembly No-FEC) with low latency. Cables from 4m to 5m support IEEE 802.3by CA-25G-L (Cable Assembly Long) with RS-FEC (Reed Solomon Forward Error Correction) enabled. For 2.5m and 3m cables there are two versions supporting either CA-25G-N or CA-25G-L.

Mellanox's unique quality passive 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 the data centers.

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

HIGHLIGHTS

– Up to 25GbE data rate

– SFF-8402 compliant SFP28

– Operating case temperature 0-70°C

– Single 3.3V supply voltage

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

– Hot pluggable

– RoHS6 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	Min	Typical	Max	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

OPN	AWG	Length (m)	Single Cable Diameter	Minimum Bend Radius	Length Tolerance
MCP2M00-A00AE30N	30	0.5	4.5 ± 0.2mm	Single bend: 21mm Repetitive and assembly bend: 45mm	±25mm
MCP2M00-A001E30N		1			
MCP2M00-A01AE30N		1.5			
MCP2M00-A002E30N		2			
MCP2M00-A02AE30L		2.5			
MCP2M00-A003E30L		3			
MCP2M00-A02AE26N	26	2.5	5.8 +0.3/-1.0mm	Single bend: 29mm Repetitive and assembly bend: 58mm	±50mm
MCP2M00-A003E26N		3			
MCP2M00-A004E26L		4			
MCP2M00-A005E26L		5			

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.
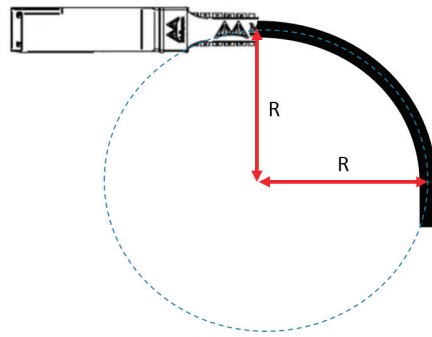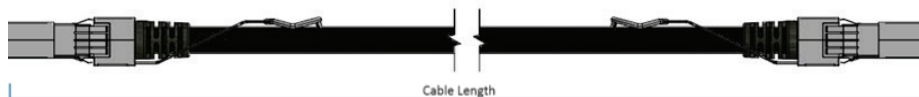
Figure 1. *Assembly Bending Radius*
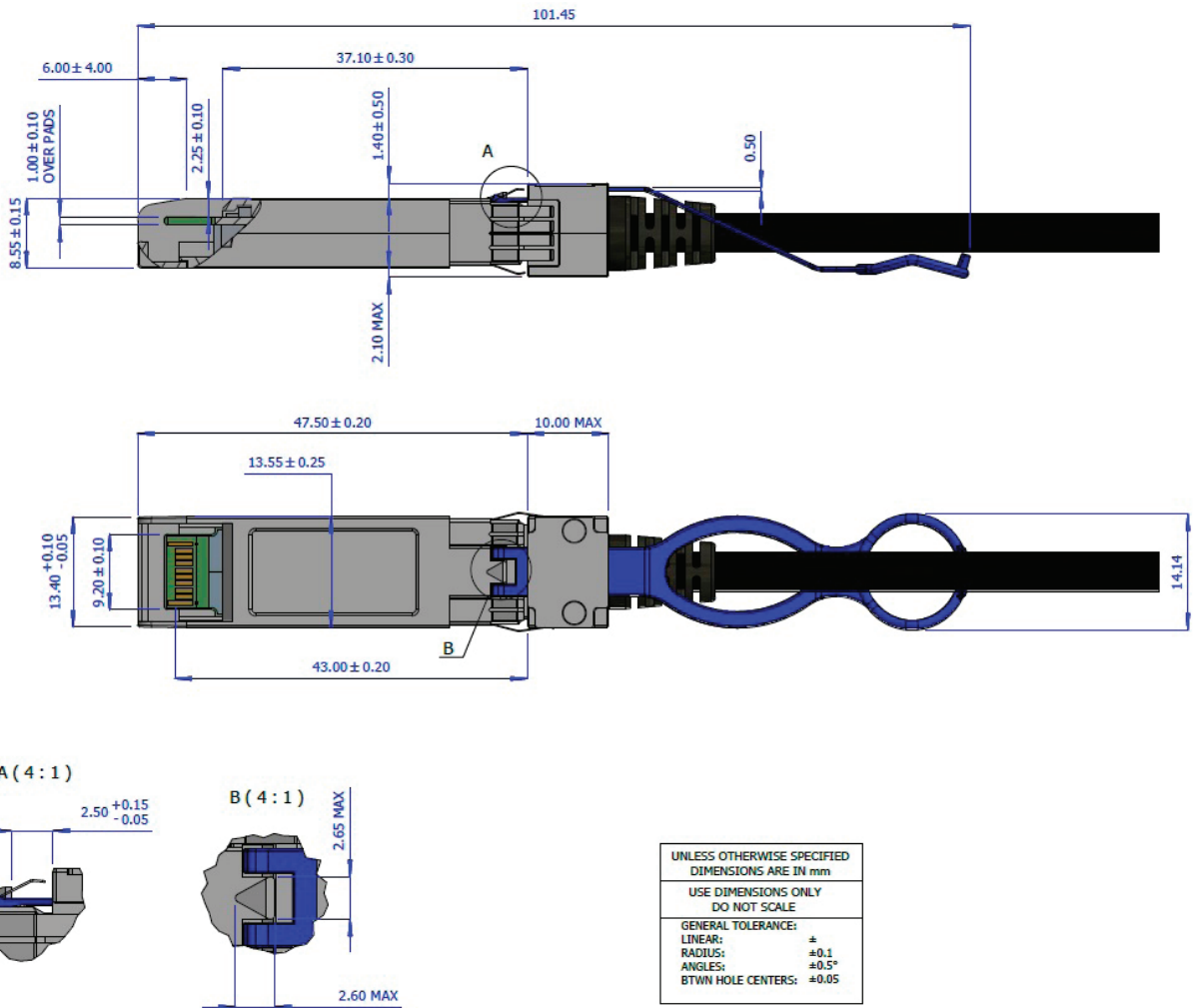

Table 5 - Part Numbers and Descriptions

OPN	Description
MCP2M00-A00AE30N	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 0.5m, Black, 30AWG, CA-N
MCP2M00-A001E30N	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 1m, Black, 30AWG, CA-N
MCP2M00-A01AE30N	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 1.5m, Black, 30AWG, CA-N
MCP2M00-A002E30N	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2m, Black, 30AWG, CA-N
MCP2M00-A02AE30L	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2.5m, Black, 30AWG, CA-L
MCP2M00-A02AE26N	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2.5m, Black, 26AWG, CA-N
MCP2M00-A003E30L	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 3m, Black, 30AWG, CA-L
MCP2M00-A003E26N	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 3m, Black, 26AWG, CA-N
MCP2M00-A004E26L	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 4m, Black, 26AWG, CA-L
MCP2M00-A005E26L	Mellanox® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 5m, Black, 26AWG, CA-L

Note 1. See Figure 2 for the cable length definition.

Figure 2. *Cable Length Definition*

Cable Length

Mechanical Schematics

Warranty Information

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

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