

100GbE QSFP28 Direct Attach Copper Cable

MCP1600-C0xxEyyz

Mellanox® MCP1600-C0xxEyyz direct attach copper (DAC) cables are high speed, cost-effective alternatives to fiber optics in 100Gb/s Ethernet applications.

Mellanox QSFP28 passive copper cable contains four high-speed copper pairs, each operating at data rates of up to 25GbE. Each QSFP28 connector includes 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. They enable higher port bandwidth, density and configurability at a low cost and reduced power requirement in the data centers.

MCP1600-C0xxEyyz cables up to 2m support IEEE 802.3bj CA-25G-N (Cable Assembly No-FEC) with low latency. Cables from 3m to 5m support IEEE 802.3bj CA-25G-L (Cable Assembly Long) with RS-FEC (Reed Solomon Forward Error Correction) enabled⁽¹⁾. For 2.5m and 3m cables there are two versions supporting either CA-25G-N or CA-25G-L.

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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	--	--	0.1	W
Operating case temperature	0	--	70	°C
Operating relative humidity	5	--	85	%

HIGHLIGHTS

- Up to 100GbE data rate
- SFF-8665 compliant QSFP28
- Operating case temperature 0-70°C
- Single 3.3V supply voltage
- Bit Error Rate (BER) better than 1E-15 with Mellanox 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 3 - Electrical Specifications

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

Note 1. Minimum insertion loss for up to 1m cable length is 6dB @ 12.89GHz.

Table 4 - Cable Mechanical Specifications

OPN	AWG	Length (m)	Single Cable Diameter	Minimum Bend Radius	Length Tolerance
MCP1600-C00AE30N	30	0.5	$7.1 \pm 0.35\text{mm}$	Single bend: 35.5mm Repetitive and assembly bend: 71mm	$\pm 25\text{mm}$
MCP1600-C001E30N		1			
MCP1600-C01AE30N		1.5			
MCP1600-C002E30N		2			
MCP1600-C02AE30L		2.5			
MCP1600-C003E30L	26	3	$9.4 \pm 0.4\text{mm}$	Single bend: 47mm Repetitive and assembly bend: 94mm	$\pm 50\text{mm}$
MCP1600-C02AE26N		2.5			
MCP1600-C003E26N		3			
MCP1600-C005E26L		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

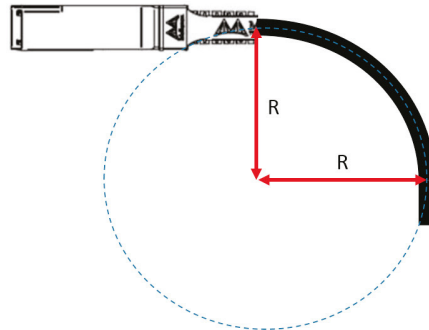


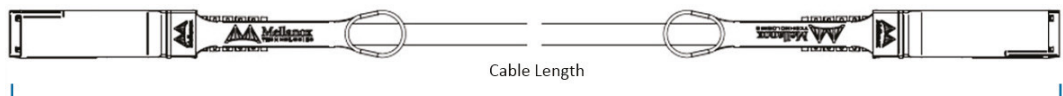
Table 5 - Part Numbers and Descriptions

Part Number	Description
MCP1600-C00AE30N	Mellanox® Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 0.5m, Black, 30AWG, CA-N
MCP1600-C001E30N	Mellanox® Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 1m, Black, 30AWG, CA-N
MCP1600-C01AE30N	Mellanox® Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 1.5m, Black, 30AWG, CA-N
MCP1600-C002E30N	Mellanox® Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2m, Black, 30AWG, CA-N
MCP1600-C02AE30L	Mellanox® Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2.5m, Black, 30AWG, CA-L
MCP1600-C02AE26N	Mellanox® Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2.5m, Black, 26AWG, CA-N
MCP1600-C003E30L	Mellanox® Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 3m, Black, 30AWG, CA-L
MCP1600-C003E26N	Mellanox® Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 3m, Black, 26AWG, CA-N
MCP1600-C005E26L	Mellanox® Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 5m, Black, 26AWG, CA-L

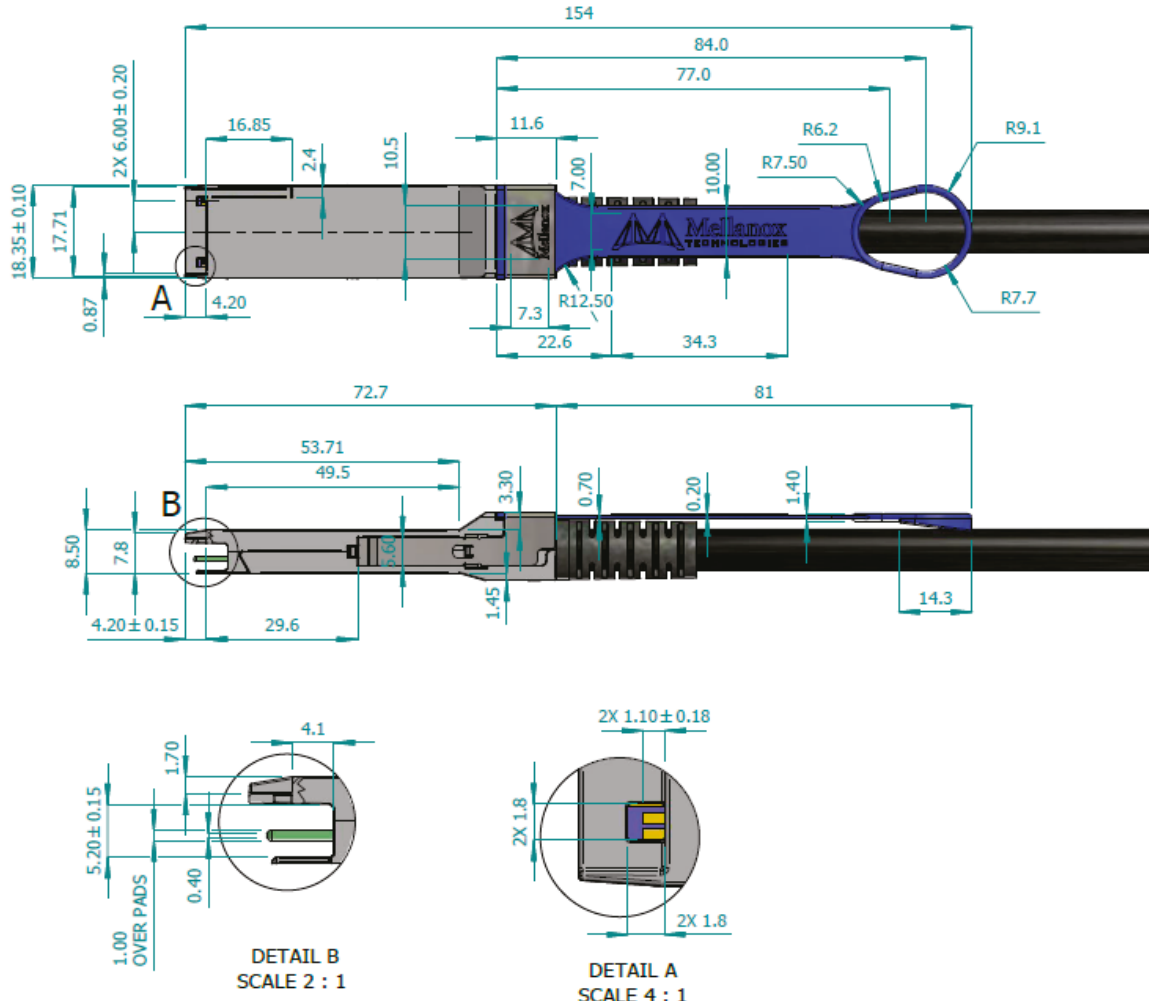
Note 1. See Figure 2 for the cable length definition.

Note 2. xx = reach; yy = wire gauge; z = link code

Figure 2 Cable Length Definition



Mechanical Schematics



Warranty Information

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