# 100GbE to 2x50GbE (QSFP28 to 2xQSFP28) Direct Attach Copper Splitter Cable

## MCP7H00-G0xxxxxxx

Mellanox® MCP7H00-G0xxxxxxx DAC splitter cables[1] are a high speed, cost effective 100GbE to 2x 50GbE Ethernet connectivity solution, designed to meet the growing needs for higher bandwidth in data centers. MCP7H00 cables are compliant with SFF-8665 QSFP28 specifications and provide connectivity between systems with a QSFP28 port on one end and two QSFP28 ports on the other.

The cable connects the data signals from each of the two dual copper pairs on the single QSFP28 (pair 1&2, 3&4) end to the dual copper pair of each of the QSFP28 (pair 1&2) ends on the multiport side. Each QSFP28 port comprises an EEPROM providing product information, which can be read by the host system.

MCP7H00-G0xxxxxxx cables up to 2m support IEEE 802.3by CA-25G-N (Cable Assembly No-FEC) with low latency. Cables with 4m length 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. 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

– 100GbE to 2x50GbE 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

### 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 | % |

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

† For illustration only. Actual products may vary.

## Table 3 - Electrical Specifications

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

## Table 4 - Cable Mechanical Specifications

| OPN | AWG | Length (m) | Single Cable Diameter | Minimum Bend Radius |
|---|---|---|---|---|
| MCP7H00-G001R30N | 30 | 1 ± 0.025 | 5.6 ± 0.35mm | Single bend: 28mm Assembly/repeated bend: 56mm |
| MCP7H00-G01AR30N | | 1.5 ± 0.025 | | |
| MCP7H00-G002R30N | | 2 ± 0.050 | | |
| MCP7H00-G02AR30L | | 2.5 ± 0.050 | | |
| MCP7H00-G003R30L | | 3 ± 0.050 | | |
| MCP7H00-G02AR26N | 26 | 2.5 ± 0.050 | 7.4 ± 0.3mm | Single bend: 37mm Assembly/repeated bend: 74mm |
| MCP7H00-G003R26N | | 3 ± 0.050 | | |
| MCP7H00-G004R26L | | 4 ± 0.050 | | |

Note 1. See Figure 2 for the cable length definition.
Note 2. 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.
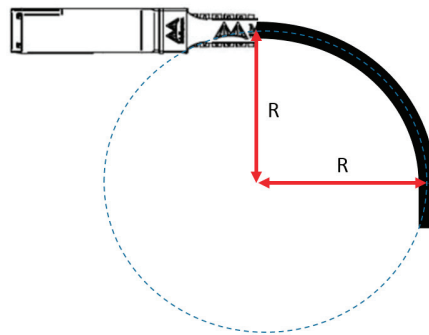
**Figure 1.** *Assembly Bending Radius*
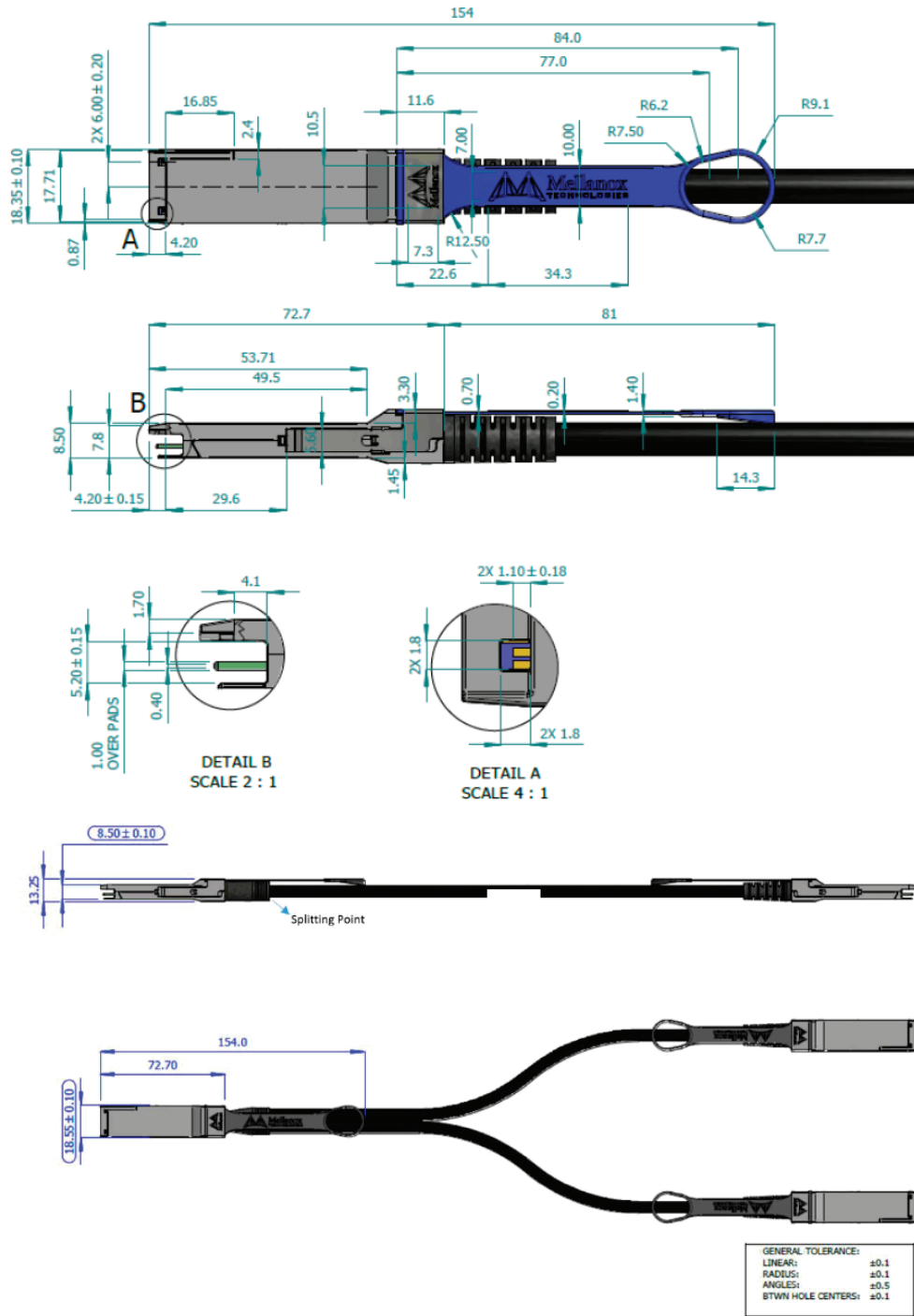


## Table 5 - Part Numbers and Descriptions

| Part Number | Description |
|---|---|
| MCP7H00-G001R30N | Mellanox® passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1m,    Colored, 30AWG, CA-N |
| MCP7H00-G01AR30N | Mellanox® passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1.5m, Colored, 30AWG, CA-N |
| MCP7H00-G002R30N | Mellanox® passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2m,    Colored, 30AWG, CA-N |
| MCP7H00-G02AR30L | Mellanox® passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2.5m, Colored, 30AWG, CA-L |
| MCP7H00-G02AR26N | Mellanox® passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2.5m, Colored, 26AWG, CA-N |
| MCP7H00-G003R30L | Mellanox® passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 3m,    Colored, 30AWG, CA-L |
| MCP7H00-G003R26N | Mellanox® passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 3m,    Colored, 26AWG, CA-N |
| MCP7H00-G004R26L | Mellanox® passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 4m,    Colored, 26AWG, CA-L |

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

**Figure 2.** *Cable Length Definition*

# Mechanical Schematics



DETAIL B
SCALE 2 : 1

DETAIL A
SCALE 4 : 1

Splitting Point

| GENERAL TOLERANCE: | |
|---|---|
| LINEAR: | ±0.1 |
| RADIUS: | ±0.1 |
| ANGLES: | ±0.5 |
| BTWN HOLE CENTERS: | ±0.1 |

## Warranty Information

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

60189PB
Rev 1.31