MCP1600-E004E26-C

Mellanox® MCP1600-E004E26 Compatible TAA Compliant 56G/100GBase-CU QSFP28 Direct Attach Cable (Passive Twinax, 4m)

Features:

- QSFP Module Compliant to SFF-8661
- Transmission Data Rate up to 25.78Gbps Per Channel
- Enable 100Gbps Transmission
- Wire Gauge: 26AWG
- Operating Temperature: 0 to 70 Celsius
- Built-In EEPROM Functions
- RoHS Compliant and Lead-Free

Applications:

- 100GBase Ethernet

Product Description

This is a Mellanox® MCP1600-E004E26 Compatible 100GBase-CU QSFP28 to QSFP28 direct attach cable that operates over passive copper with a maximum reach of 4m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. We stand behind the quality of our products and proudly offer a limited lifetime warranty. This cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards.

ProLabs' transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

Rev. 120924

General Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Storage Temperature	Tstg	-40		85	˚C
Operating Temperature	Tc	0		70	˚C
Relative Humidity	RH	5		85	%
Data Rate			100		Gbps

Physical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Length	L			3	M
AWG				26	AWG
Jacket Material			LSZH, Black		
Relative Humidity	RH		VW-1		

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Resistance	Rcon			3	Ω	
Insulation Resistance	Rins			10	MΩ	
Raw Cable Impedance	Zca	95	100	110	Ω	
Mated Connector Impedance	Zmated	85	100	115	Ω	
Insertion Loss @12.89GHz	SDD21			16.74	dB	
Common-Mode Return Loss @50MHz to 26GHz	SCC22			-2		
Return Loss @12.89GHz	SDD11/22	$\text{Return\_Loss}(f) \leq \begin{cases} -9.5+0.37f & 0.5 \leq f < 8 \\ -4.75+7.4 \cdot \lg(f/14) & 8 \leq f \leq 26 \end{cases}$			dB	1
Differential to Common-Mode Return Loss	SCD11/22	$\text{Reflection}(f) \leq \begin{cases} 22-(20/25.78)f & 0.01 \leq f \leq 12.89 \\ -15+(6/25.78)f & 12.89 \leq f \leq 26 \end{cases}$			dB	1
Differential to Common-Mode Conversion Loss	SCD21-SDD21	$\text{Deviation}(f) \leq \begin{cases} 0.75 & 0.01 \leq f < 5 \\ (0.26)(f-5)+0.75 & 5 \leq f < 15.5 \\ 3.5 & 15.5 \leq f \leq 19.5 \end{cases}$			dB	2

Notes:

1. For 0.05≤f≤26GHz, where "f" is the frequency in GHz.
2. For 0.01≤f≤19.5GHz, where "f" is the frequency in GHz.

Pin Descriptions

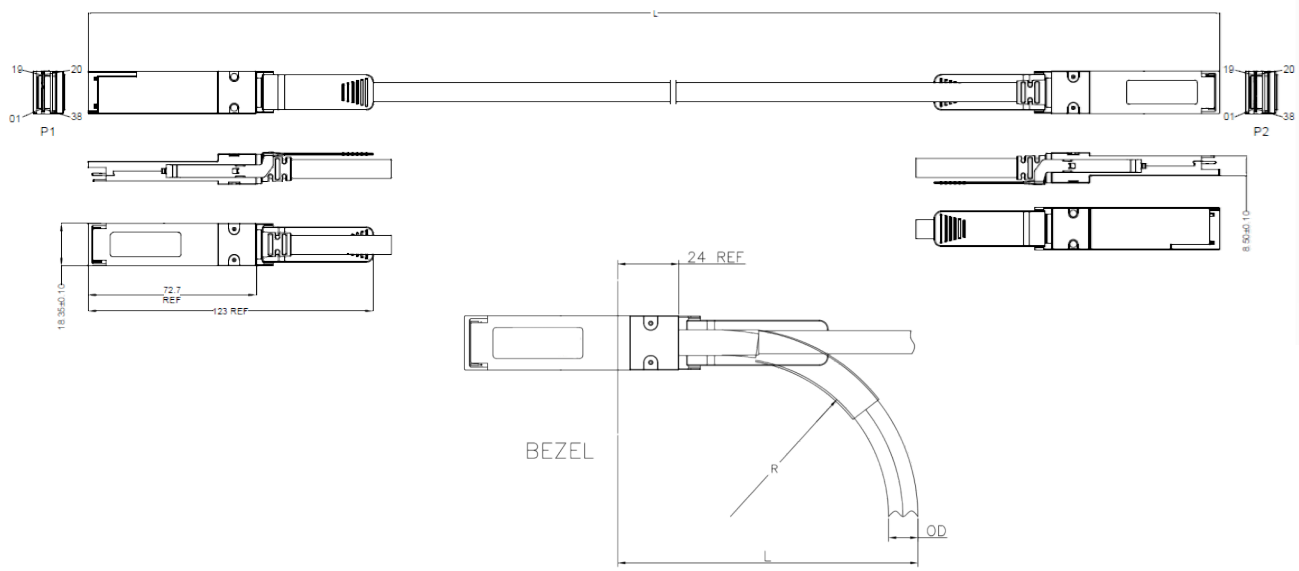| Pin	Logic	Symbol	Name/Description	Plug Sequence	Notes
1		GND	Module Ground.	1	1
2	CML-I	Tx2-	Transmitter Inverted Data Input.	3	
3	CML-I	Tx2+	Transmitter Non-Inverted Data Input.	3	
4		GND	Module Ground.	1	1
5	CML-I	Tx4-	Transmitter Inverted Data Input.	3	
6	CML-I	Tx4+	Transmitter Non-Inverted Data Input.	3	
7		GND	Module Ground.	1	1
8	LVTTL-I	MODSEIL	Module Select.	3	2
9	LVTTL-I	ResetL	Module Reset.	3	2
10		VccRx	+3.3V Receiver Power Supply.	2	
11	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock.	3	2
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data.	3	2
13		GND	Module Ground.	1	1
14	CML-O	Rx3+	Receiver Non-Inverted Data Output.	3	
15	CML-O	Rx3-	Receiver Inverted Data Output.	3	
16		GND	Module Ground.	1	1
17	CML-O	Rx1+	Receiver Non-Inverted Data Output.	3	
18	CML-O	Rx1-	Receiver Inverted Data Output.	3	
19		GND	Module Ground.	1	1
20		GND	Module Ground.	3	1
21	CML-O	Rx2-	Receiver Inverted Data Output.	3	
22	CML-O	Rx2+	Receiver Non-Inverted Data Output.	1	
23		GND	Module Ground.	1	1
24	CML-O	Rx4-	Receiver Inverted Data Output.	3	
25	CML-O	Rx4+	Receiver Non-Inverted Data Output.	3	
26		GND	Module Ground.	1	1
27	LVTTL-O	ModPrsL	Module Present.	3	
28	LVTTL-O	IntL	Interrupt.	3	2
29		VccTx	+3.3V Transmitter Power Supply.	2	
30		Vcc1	+3.3V Power Supply.	2	
31	LVTTL-I	LPMode	Low-Power Mode.	3	2
32		GND	Module Ground.	1	1
33	CML-I	Tx3+	Transmitter Non-Inverted Data Input.	3	
34	CML-I	Tx3-	Transmitter Inverted Data Input.	3	
35		GND	Module Ground.	1	1
36	CML-I	Tx1+	Transmitter Non-Inverted Data Input.	3	
37	CML-I	Tx1-	Transmitter Inverted Data Input.	3	
38		GND	Module Ground.	1	1

Notes:

1. GND is the symbol for signal and supply (power) common for the QSFP+ module. All are common within the QSFP+ module, and all module voltages are references to this potential unless otherwise noted. Connect the directly to the host board signal-common ground plane.

2. VccRx, Vcc1, and VccTx are the receiver and transmitter power supplies and shall be applied concurrently. Requirements defined for the host board power supply filtering is shown below. VccRx, Vcc1, and VccTx may be internally connected within the QSFP+ module in any combination. The connector pins are each for a maximum current of 500mA.

Electrical Pin-Out Details

38	GND
37	Tx1n
36	Tx1p
35	GND
34	Tx3n
33	Tx3p
32	GND
31	LPMode/TxDis
30	Vcc1
29	VccTx
28	IntL/RxLOSL
27	ModPrsL
26	GND
25	Rx4p
24	Rx4n
23	GND
22	Rx2p
21	Rx2n
20	GND

Module Card Edge

GND	1
Tx2n	2
Tx2p	3
GND	4
Tx4n	5
Tx4p	6
GND	7
ModselL	8
ResetL	9
VccRx	10
SCL	11
SDA	12
GND	13
Rx3p	14
Rx3n	15
GND	16
Rx1p	17
Rx1n	18
GND	19

Top Side
Viewed From Top

Bottom Side
Viewed From Bottom
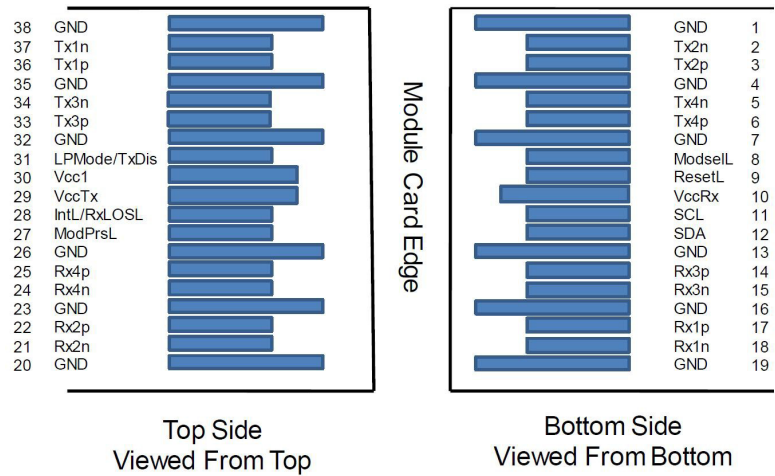
Mechanical Specifications

About ProLabs

Our experience comes as standard; for over 15 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with over 90 optical switching and transport platforms.

Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 400G while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.

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