MCP7Y00-N02A-C

Mellanox® MCP7Y00-N02A Compatible TAA 800GBase-CU OSFP112 to 2xOSFP112-RHS Direct Attach Cable (Passive Twinax, 2.5m, Infiniband)

Features:

- OSFP Module Compliant to OSFP MSA
- Transmission Data Rate Up to PAM4 106.25Gbps Per Channel
- Enable 800Gbps to 2x400Gbps Transmission
- Built-In EEPROM Functions
- Operating Temperature Range: 0 to 70 Celsius
- RoHS Compliant and Lead-Free

Applications:

- 800GBase Ethernet

Product Description

This is a Mellanox® Compatible 800GBase-CU OSFP to 2xOSFP112-RHS direct attach cable that operates over passive copper with a maximum reach of 2.5m. 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."

TAA COMPLIANT

General Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	Tstg	-40		85	°C
Operating Case Temperature	Tc	0		70	°C
Supply Voltage	Vcc	3.13	3.3	3.47	V
Relative Operating Humidity	RH	5		85	%
Data Rate	DR		800		Gbps

Physical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Length	L			2.5	M	
AWG			25		AWG	
Jacket Material		Plastic Braided Mesh Technology Net, Silver Gray				

Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Resistance	Rcon			3	Ω	
Insulation Resistance	Rins			10	MΩ	
Raw Cable Impedance	Zca	95		110	Ω	
Mated Connector Impedance	Zmated	85		115	Ω	
Maximum Insertion Loss @26.56GHz	SDD21	11		25.3	dB	
Differential to Common-Mode Return Loss	SDD11/ 22	$RLcd(f) \geq \begin{cases} 22 - 10(f/26.56) & 0.05 \leq f < 26.56 \\ 15 - 3(f/26.76) & 26.56 \leq f \leq 40 \end{cases}$			dB	1
Differential to Common-Mode Conversion Loss	SCD21-SDD21	$\text{Conversion\_loss}(f) - \begin{cases} 10 & 0.05 \leq f < 12.89 \\ 14 - 0.3108f & 12.89 \leq f \leq 40 \end{cases}$			dB	1
Common-Mode to Common-Mode Return Loss	SCC11-22	$RLcc(f) \geq 1.08$			dB	1
Minimum COM	COM	3			dB	

Notes:

1. For $0.05 \leq f \leq 40$GHz, where f is the frequency in GHz.

Pin Descriptions

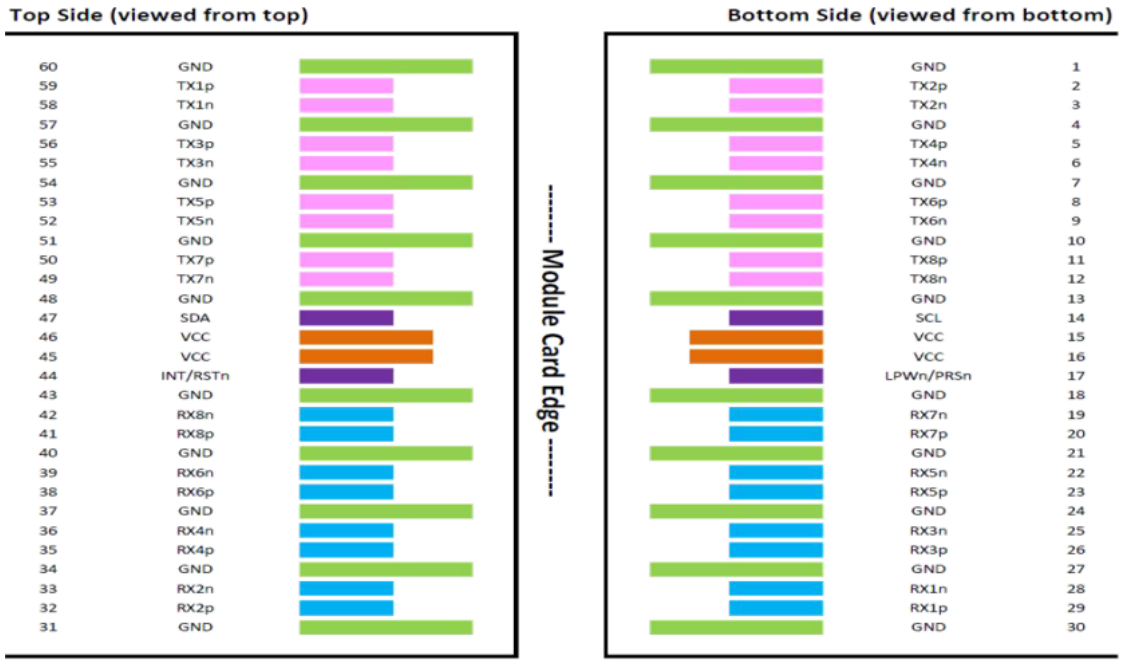
Pin	Symbol	Name/Description	Logic	Plug Sequence	Direction	Notes
1	GND	Module Ground.		1		
2	Tx2+	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
3	Tx2-	Transmitter Data Inverted.	CML-I	3	Input from Host	
4	GND	Module Ground.		1		
5	Tx4+	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
6	Tx4-	Transmitter Data Inverted.	CML-I	3	Input from Host	
7	GND	Module Ground.		1		
8	Tx6+	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
9	Tx6-	Transmitter Data Inverted.	CML-I	3	Input from Host	
10	GND	Module Ground.		1		
11	Tx8+	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
12	Tx8-	Transmitter Data Inverted.	CML-I	3	Input from Host	
13	GND	Module Ground.		1		
14	SCL	2-Wire Serial Interface Clock.	LVCMOS-I/O	3	Bi-Directional	1
15	Vcc	+3.3V Power.		2	Power from Host	
16	Vcc	+3.3V Power.		2	Power from Host	
17	LPWn/PRSn	Low-Power Mode/Module Present.	Multi-Level	3	Bi-Directional	2
18	GND	Module Ground.		1		
19	Rx7-	Receiver Data Inverted.	CML-O	3	Output to Host	
20	Rx7+	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
21	GND	Module Ground.		1		
22	Rx5-	Receiver Data Inverted.	CML-O	3	Output to Host	
23	Rx5+	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
24	GND	Module Ground.		1		
25	Rx3-	Receiver Data Inverted.	CML-O	3	Output to Host	
26	Rx3+	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
27	GND	Module Ground.		1		
28	Rx1-	Receiver Data Inverted.	CML-O	3	Output to Host	
29	Rx1+	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
30	GND	Module Ground.		1		
31	GND	Module Ground.		1		
32	Rx2+	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
33	Rx2-	Receiver Data Inverted.	CML-O	3	Output to Host	
34	GND	Module Ground.		1		
35	Rx4+	Receiver Data Non-Inverted.	CML-O	3	Output to Host	

36	Rx4-	Receiver Data Inverted.	CML-O	3	Output to Host	
37	GND	Module Ground.		1		
38	Rx6+	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
39	Rx6-	Receiver Data Inverted.	CML-O	3	Output to Host	
40	GND	Module Ground.		1		
41	Rx8+	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
42	Rx8-	Receiver Data Inverted.	CML-O	3	Output to Host	
43	GND	Module Ground.		1		
44	INT/RSTn	Module Interrupt/Module Reset.	Multi-Level	3	Bi-Directional	2
45	Vcc	+3.3V Power.		2	Power from Host	
46	Vcc	+3.3V Power.		2	Power from Host	
47	SDA	2-Wire Serial Interface Data.	LVCMOS-I/O	3	Bi-Directional	1
48	GND	Module Ground.		1		
49	Tx7-	Transmitter Data Inverted.	CML-I	3	Input from Host	
50	Tx7+	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
51	GND	Module Ground.		1		
52	Tx5-	Transmitter Data Inverted.	CML-I	3	Input from Host	
53	Tx5+	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
54	GND	Module Ground.		1		
55	Tx3-	Transmitter Data Inverted.	CML-I	3	Input from Host	
56	Tx3+	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
57	GND	Module Ground.		1		
58	Tx1-	Transmitter Data Inverted.	CML-I	3	Input from Host	
59	Tx1+	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
60	GND	Module Ground.		1		

Notes:

1. Open-drain with pull-up resistor on the Host.
2. See “Pin Assignment” below for the required circuit.

Pin Assignments

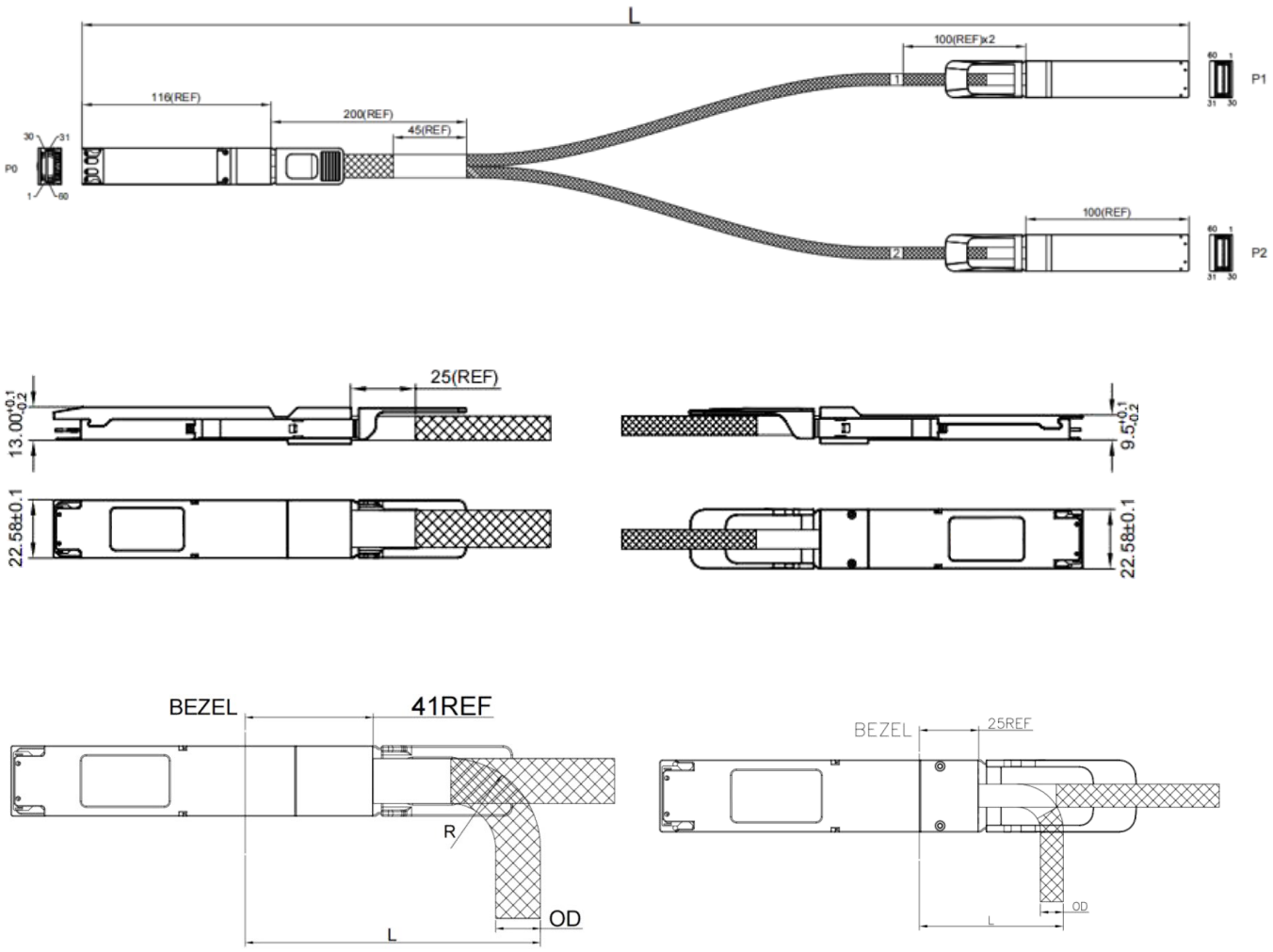


Wiring Diagram

WIRING DIAGRAM				
P0 END			P1 END	
58	TX1n	→	28	RX1n
59	TX1p	→	29	RX1p
28	RX1n	←	58	TX1n
29	RX1p	←	59	TX1p
2	TX2p	→	32	RX2p
3	TX2n	→	33	RX2n
32	RX2p	←	2	TX2p
33	RX2n	←	3	TX2n
55	TX3n	→	25	RX3n
56	TX3p	→	26	RX3p
25	RX3n	←	55	TX3n
26	RX3p	←	56	TX3p
5	TX4p	→	35	RX4p
6	TX4n	→	36	RX4n
35	RX4p	←	5	TX4p
36	RX4n	←	6	TX4n
GND GROUP 1/4/7/10/13/18/ 21/24/27/30/31/ 34/37/40/43/48/ 51/54/57/60		—	GND GROUP 1/4/7/10/13/18/ 21/24/27/30/31/ 34/37/40/43/48/ 51/54/57/60	
SHELL–SHIELDING–SHELL				

WIRING DIAGRAM				
P0 END			P2 END	
52	TX5n	→	28	RX1n
53	TX5p	→	29	RX1p
22	RX5n	←	58	TX1n
23	RX5p	←	59	TX1p
8	TX6p	→	32	RX2p
9	TX6n	→	33	RX2n
38	RX6p	←	2	TX2p
39	RX6n	←	3	TX2n
49	TX7n	→	25	RX3n
50	TX7p	→	26	RX3p
19	RX7n	←	55	TX3n
20	RX7p	←	56	TX3p
11	TX8p	→	35	RX4p
12	TX8n	→	36	RX4n
41	RX8p	←	5	TX4p
42	RX8n	←	6	TX4n
GND GROUP 1/4/7/10/13/18/ 21/24/27/30/31/ 34/37/40/43/48/ 51/54/57/60		—	GND GROUP 1/4/7/10/13/18/ 21/24/27/30/31/ 34/37/40/43/48/ 51/54/57/60	
SHELL–SHIELDING–SHELL				

Mechanical Specifications



Bending Radius

800G OSFP				OSFP RHS			
Wire Gauge	**OD**	**Bend Radius "R"**	**Min. Bend Radius "L"**	**Wire Gauge**	**OD**	**Bend Radius "R"**	**Min. Bend Radius "L"**
25AWG	12.1mm	25mm	86mm	**25AWG**	8.3mm	17mm	65mm

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.

Contact Information

ProLabs US

Email: sales@prolabs.com
Telephone: 952-852-0252

ProLabs UK

Email: salessupport@prolabs.com
Telephone: +44 1285 719 600