

QSFPDD-400G-PDAC2M-C

MSA and TAA Compliant 400GBase-CU QSFP-DD to QSFP-DD Direct Attach Cable (Passive Twinax, 2m)

Features:

- Compliant to QSFP-DD MSA Standards
- Compliant to IEEE802.3bs
- Operating Temperature: 0 to 70 Celsius
- Hot-Pluggable
- Built-In EEPROM Functions
- RoHS Compliant and Lead-Free



Applications:

• 400GBase

Product Description

This is an industry standard 400GBase-CU QSFP-DD to QSFP-DD direct attach cable that operates over passive copper with a maximum reach of 2.0m (6.6ft). It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This direct attach cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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.")



Absolute Maximum Ratings

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes
Supply Voltage	Vcc	-0.3	3.3	3.6	V	
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Тс	0		70	°C	
Humidity	RH	5		85	%	
Data Rate			400		Gbps	

Pin Descriptions

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

31	LVTTL-I	InitMode	Initialization Mode. In legacy QSFP applications, the InitMode pad is called LPMode.	3B
32		GND	Module Ground.	1B
33	CML-I	Tx3+	Transmitter Non-Inverted Data Input.	3B
34	CML-I	Tx3-	Transmitter Inverted Data Input.	3B
35		GND	Module Ground.	1B
36	CML-I	Tx1+	Transmitter Non-Inverted Data Input.	3B
37	CML-I	Tx1-	Transmitter Inverted Data Input.	3B
38		GND	Module Ground.	1B
39		GND	Module Ground.	1A
40	CML-I	Tx6-	Transmitter Inverted Data Input.	3A
41	CML-I	Tx6+	Transmitter Non-Inverted Data Input.	3A
42		GND	Module Ground.	1A
43	CML-I	Tx8-	Transmitter Inverted Data Input.	3A
44	CML-I	Tx8+	Transmitter Non-Inverted Data Input.	3A
45		GND	Module Ground.	1A
46		OPEN		3A
47		OPEN		3A
48		OPEN		2A
49		OPEN		3A
50		OPEN		3A
51		GND		1A
52	CML-O	Rx7+	Receiver Non-Inverted Data Output.	3A
53	CML-O	Rx7-	Receiver Inverted Data Output.	3A
54		GND	Module Ground.	1A
55	CML-O	Rx5+	Receiver Non-Inverted Data Output.	3A
56	CML-O	Rx5-	Receiver Inverted Data Output.	3A
57		GND	Module Ground.	1A
58		GND	Module Ground.	1A
59	CML-O	Rx6-	Receiver Inverted Data Output.	3A
60	CML-O	Rx6+	Receiver Non-Inverted Data Output.	3A
61		GND	Module Ground.	1A
62	CML-O	Rx8-	Receiver Inverted Data Output.	3A
63	CML-O	Rx8+	Receiver Non-Inverted Data Output.	3A
64		GND	Module Ground.	1A
65		OPEN	Not Connected.	3A
66		OPEN	For Future Use.	3A
67		OPEN	+3.3V Transmitter Power Supply.	2A
68		OPEN	+3.3V Power Supply.	2A
69		OPEN	For Future Use.	3A
70		GND	Module Ground.	1A
71	CML-I	Tx7+	Transmitter Non-Inverted Data Input.	3A
72	CML-I	Tx7-	Transmitter Inverted Data Input.	3A
73		GND	Module Ground.	1A

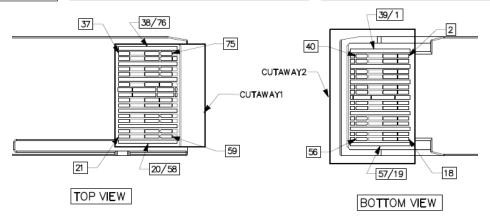
74	CML-I	Tx5+	Transmitter Non-Inverted Data Input.	3A
75	CML-I	Tx5-	Transmitter Inverted Data Input.	3A
76		GND	Module Ground.	1A

Wiring Diagram

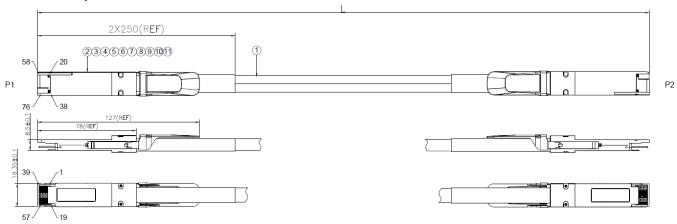
LOW S	PEED SIGNALS
	P1 &P2
PAD	SIGNAL
8	MODSELL
9	RESETL
10	VCCRX
11	SCL
12	SDA
27	MODPRSL
28	INTL
29	VCCTX
30	VCC1
31	INIT_MODE
46	OPEN
47	OPEN
48	OPEN
49	OPEN
50	OPEN
65	OPEN
66	OPEN
67	OPEN
68	OPEN
69	OPEN

WIRING DIAGRAM						
P1 END P2 END						
Pad	Signal		Pad	Signal		
1	GND	-	20	GND		
2	TX2n	\rightarrow	21	RX2n		
3	TX2p	\rightarrow	22	RX2p		
4	GND	_	23	GND		
5	TX4n	\rightarrow	24	RX4n		
6	TX4p	\rightarrow	25	RX4p		
7	GND	-	26	GND		
13	GND		- 32	GND		
14	RX3p	<	- 33	ТХ3р		
15	RX3n	<	34	TX3n		
16	GND	-	- 35	GND		
17	RX1p	<	36	TX1p		
18	RX1n	<	37	TX1n		
19	GND	-	38	GND		
20	GND	_	1	GND		
21	RX2n	<	2 3 4	TX2n		
22	RX2p	<	- 3	TX2p		
23	GND	-		GND		
24	RX4n	<	- 5	TX4n		
25	RX4p	<	6	TX4p		
26	GND		7	GND		
32	GND		13	GND		
33	TX3p	\rightarrow	14	RX3p		
34	TX3n	\rightarrow	15	RX3n		
35	GND		16	GND		
36	TX1p	\rightarrow	17	RX1p		
37	TX1n	\rightarrow	18	RX1n		
38	GND		19	GND		

WIRING DIAGRAM						
	P1 END		P2 END			
Pad	Signal		Pad	Signal		
39	GND		58	GND		
40	TX6n	\rightarrow	59	RX6n		
41	TX6p	\rightarrow	60	RX6p		
42	GND		61	GND		
43	TX8n	\rightarrow	62	RX8n		
44	TX8p	\rightarrow	63	RX8p		
45	GND		64	GND		
51	GND		70	GND		
52	RX7p	<	71	TX7p		
53	RX7n	<	72	TX7n		
54	GND		73	GND		
55	RX5p	<	74	TX5p		
56	RX5n	<	75	TX5n		
57	GND		76	GND		
58	GND		39	GND		
59	RX6n	<	40	TX6n		
60	RX6p	<	41	ТХ6р		
61	GND		42	GND		
62	RX8n	<	43	TX8n		
63	RX8p	<	44	TX8p		
64	GND		45	GND		
70	GND		51	GND		
71	TX7p	\rightarrow	52	RX7p		
72	TX7n	\rightarrow	53	RX7n		
73	GND		54	GND		
74	TX5p	\rightarrow	55	RX5p		
75	TX5n	\rightarrow	56	RX5n		
76	GND		57	GND		



Mechanical Specifications



Item	Name	Description	Quantity
1	Raw Cable	9 Pairs, PVC Jacket, Black	A/R
2	PCBA	PCB, 76P, Au 30u" Minimum	2
3	Top Shell	Zinc Alloy, Plated Nickel Over Copper	2
4	Bottom Shell	Zinc Alloy, Plated Nickel Over Copper	2
5	Pull Tab	Pull Tab, TPV, Black	2
6	Rivet	Aluminum Alloy	4
7	Spring	Stainless Steel	4
8	Blackshell Label	Blackshell Label	2
9	Inner Mold	Hot-Melt Glue	A/R
10	Copper Tape	T=0.15MM	A/R
11	Heat Shrinkable Tube	Black Tube	A/R

Notes:

- 1. Raw cable impedance: $100^{+10}_{-5}\Omega$. Mated connector impedance: $100^{+10}_{-15}\Omega$. Rise time: 25ps (20-80%).
- 2. 100% conductor test. Test condition: voltage 5V. Insulation resistance: $10m\Omega$. Conduction resistance maximum: 3Ω .
- 3. High-frequency test according to IEEE802.3cd standard.
- 4. All materials are RoHS complaint.

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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