QDD-800GB-PDAC2M-AO

MSA and TAA 800GBase-CU QSFP-DD to QSFP-DD Direct Attach Cable (Passive Twinax, 2m)

Features

- QSFP-DD Module Compliant to QSFP-DD MSA
- Enables 800Gbps Transmission
- Transmission Data Rate to PAM4 up to 106.25Gbps Per Channel
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free
- Built-In EEPROM Functions

Applications

- 800GBase Ethernet

Product Description

This is an MSA Compliant compatible 800GBase-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.

AddOn's 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	M	
AWG			26		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	100	110	Ω	
Mated Connector Impedance	Zmated	85	100	115	Ω	
Maximum Insertion Loss @26.56GHz	SDD21	11		19.75	dB	
Differential to Common-Mode Return Loss	SDD11/22	$RLcd(f) \geq \begin{cases} 22 - 10(f/26.56) & 0.05 \leq f < 26.56 \\ 15 - 3(f/26.56) & 26.56 \leq f \leq 40 \end{cases}$			dB	1
Differential to Common-Mode Conversion Loss	SCD11/22	$\text{Conversion\_loss}(f) - \begin{cases} 10 & 0.05 \leq f < 12.89 \\ 14 - 0.3108f & 12.89 \leq f \leq 40 \end{cases}$			dB	1
Common-Mode to Common-Mode Return Loss	SCD21-SDD21	$RLcc(f) \geq 1.08$			dB	1
Minimum COM	COM	3			dB	
Minimum Cable Assembly ERLa	ERL	8.25			dB	

Notes:

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

Pin Descriptions

Pin	Logic	Symbol	Name/Description	Plug Sequence	Notes
1		GND	Module Ground.	1B	1
2	CML-I	Tx2-	Transmitter Inverted Data Input.	3B	
3	CML-I	Tx2+	Transmitter Non-Inverted Data Input.	3B	
4		GND	Module Ground.	1B	1
5	CML-I	Tx4-	Transmitter Inverted Data Input.	3B	
6	CML-I	Tx4+	Transmitter Non-Inverted Data Input.	3B	
7		GND	Module Ground.	1B	1
8	LVTTL-I	ModSelL	Module Select.	3B	
9	LVTTL-I	ResetL	Module Reset.	3B	
10		VccRx	+3.3V Receiver Power Supply.	2B	2
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	1
14	CML-O	Rx3+	Receiver Non-Inverted Data Output.	3B	
15	CML-O	Rx3-	Receiver Inverted Data Output.	3B	
16		GND	Module Ground.	1B	1
17	CML-O	Rx1+	Receiver Non-Inverted Data Output.	3B	
18	CML-O	Rx1-	Receiver Inverted Data Output.	3B	
19		GND	Module Ground.	1B	1
20		GND	Module Ground.	1B	1
21	CML-O	Rx2-	Receiver Inverted Data Output.	3B	
22	CML-O	Rx2+	Receiver Non-Inverted Data Output.	3B	
23		GND	Module Ground.	1B	1
24	CML-O	Rx4-	Receiver Inverted Data Output.	3B	
25	CML-O	Rx4+	Receiver Non-Inverted Data Output.	3B	
26		GND	Module Ground.	1B	1
27	LVTTL-O	ModPrsL	Module Present.	3B	
28	LVTTL-O	IntL/RxLOS	Interrupt/Optional RxLOS.	3B	
29		VccTx	+3.3V Transmitter Power Supply.	2B	2
30		Vcc1	+3.3V Power Supply.	2B	2
31	LVTTL-I	LPMode/Tx_Dis	Low-Power Mode/Optional Tx_Disable.	3B	
32		GND	Module Ground.	1B	1
33	CML-I	Tx3+	Transmitter Non-Inverted Data Input.	3B	
34	CML-I	Tx3-	Transmitter Inverted Data Input.	3B	
35		GND	Module Ground.	1B	1
36	CML-I	Tx1+	Transmitter Non-Inverted Data Input.	3B	
37	CML-I	Tx1-	Transmitter Inverted Data Input.	3B	
38		GND	Module Ground.	1B	1
39		GND	Module Ground.	1A	1
40	CML-I	Tx6-	Transmitter Inverted Data Input.	3A	

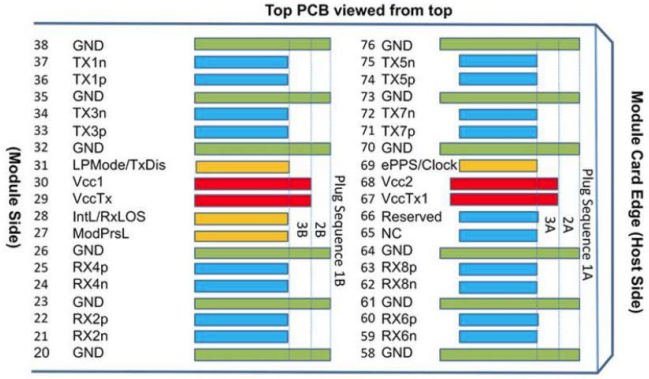
41	CML-I	Tx6+	Transmitter Non-Inverted Data Input.	3A	
42		GND	Module Ground.	1A	1
43	CML-I	Tx8-	Transmitter Inverted Data Input.	3A	
44	CML-I	Tx8+	Transmitter Non-Inverted Data Input.	3A	
45		GND	Module Ground.	1A	1
46	LVCMOS/CML-I	P/VS4	Programmable/Vendor-Specific 4.	3A	5
47	LVCMOS/CML-I	P/VS1	Programmable/Vendor-Specific 1.	3A	5
48		VccRx1	+3.3V Receiver Power Supply.	2A	2
49	LVCMOS/CML-O	P/VS2	Programmable/Vendor-Specific 2.	3A	5
50	LVCMOS/CML-O	P/VS3	Programmable/Vendor-Specific 3.	3A	5
51		GND	Module Ground.	1A	1
52	CML-O	Rx7+	Receiver Non-Inverted Data Output.	3A	
53	CML-O	Rx7-	Receiver Inverted Data Output.	3A	
54		GND	Module Ground.	1A	1
55	CML-O	Rx5+	Receiver Non-Inverted Data Output.	3A	
56	CML-O	Rx5-	Receiver Inverted Data Output.	3A	
57		GND	Module Ground.	1A	1
58		GND	Module Ground.	1A	1
59	CML-O	Rx6-	Receiver Inverted Data Output.	3A	
60	CML-O	Rx6+	Receiver Non-Inverted Data Output.	3A	
61		GND	Module Ground.	1A	1
62	CML-O	Rx8-	Receiver Inverted Data Output.	3A	
63	CML-O	Rx8+	Receiver Non-Inverted Data Output.	3A	
64		GND	Module Ground.	1A	1
65		NC	Not Connected.	3A	3
66		Reserved	For Future Use.	3A	3
67		VccTx1	+3.3V Power Supply.	2A	2
68		Vcc2	+3.3V Power Supply.	2A	2
69	LVCMOS-I	ePPS/Clock	1PPS PTP Clock or Reference Clock Input.	3A	6
70		GND	Module Ground.	1A	1
71	CML-I	Tx7+	Transmitter Non-Inverted Data Input.	3A	
72	CML-I	Tx7-	Transmitter Inverted Data Input.	3A	
73		GND	Module Ground.	1A	1
74	CML-I	Tx5+	Transmitter Non-Inverted Data Input.	3A	
75	CML-I	Tx5-	Transmitter Inverted Data Input.	3A	
76		GND	Module Ground.	1A	1

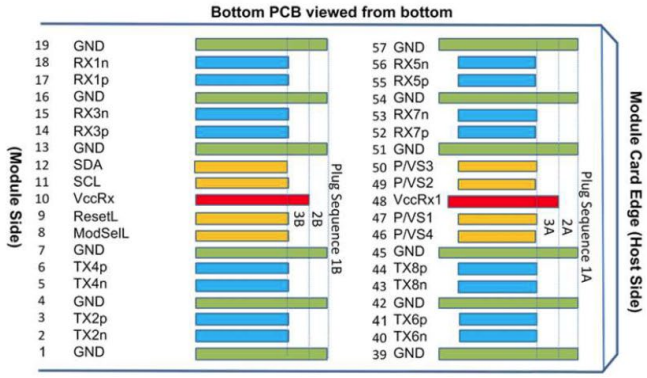
Notes:

1. QSFP-DD uses common ground (GND) for all signals and supply (power). All are common within the QSFP-DD module, and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal common ground plane. Each connector GND contact is rated for a maximum current of 500mA.

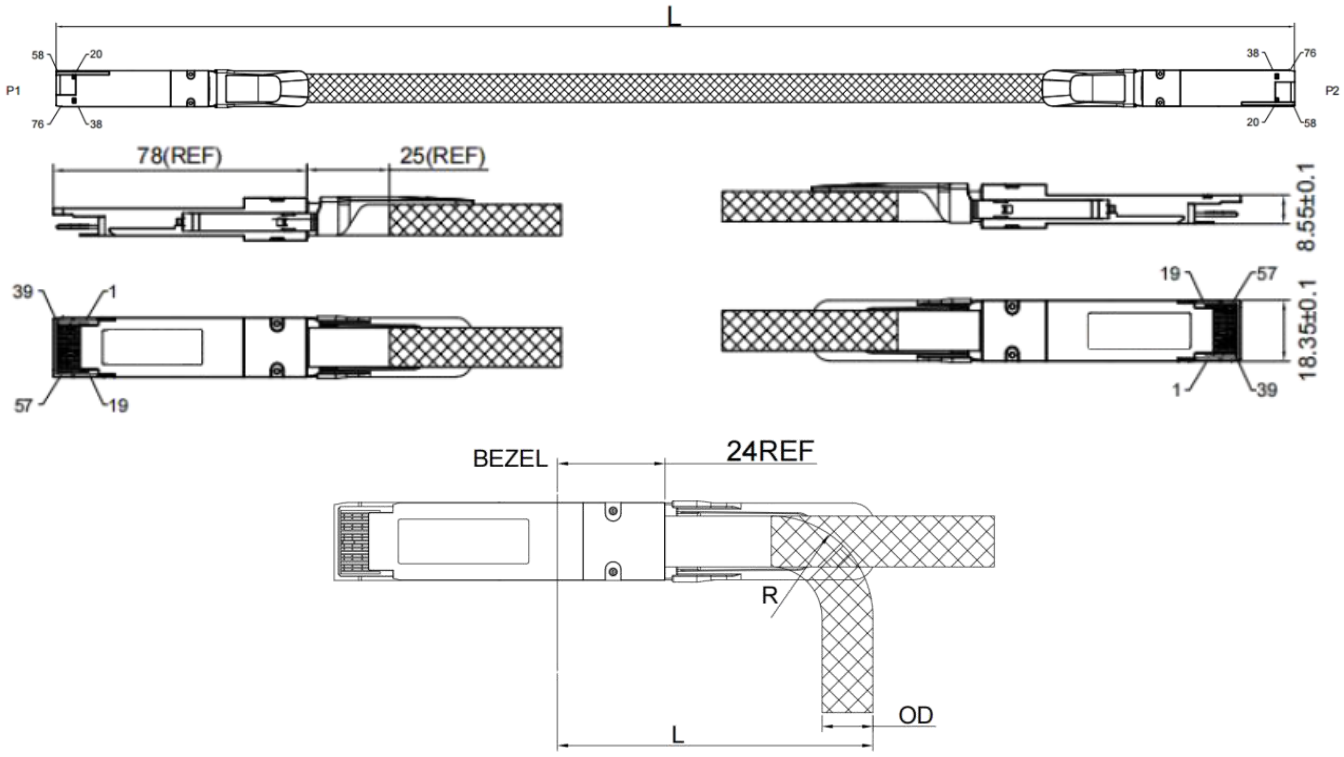
2. VccRx, VccRx1, Vcc1, Vcc2, VccTx, and VccTx1 shall be applied concurrently. For power classes 4 and above the module differential loading of input voltage pads must not result in exceeding contact current limits. Each connector Vcc contact is rated for a maximum current of 1500mA.
3. Reserved and Not Connected pads recommended to be terminated with 10kΩ to ground on the host. Pad 65 (Not Connected) shall be left unconnected within the module.
4. Plug Sequence specifies the mating sequence of the host connector and module. The sequence is 1A, 2A, 3A, 1B, 2B, and 3B. Contact sequence A will make, then break contact with additional QSFP-DD pads. Sequence 1A, 1B will then occur simultaneously, followed by 2A, 2B, followed by 3A, 3B.
5. Full definitions of the P/VSx signals are currently under development. On new designs not used, P/VSx signals are recommended to be terminated on the host with 10kΩ.
6. ePPS/Clock, if not used, is recommended to be terminated with 50Ω to ground on the host.

Electrical Pin-Out Details





Mechanical Specifications



Bending Radius

Wire Gauge	OD (Ref.)	Bend Radius "R"	Min. Bend Radius "L"
26AWG	12.1mm	25mm	70mm

About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is in engrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.

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