QSFPDD-8SFP28-PDACXM-AO
MSA and TAA Compliant 200GBase-CU QSFP-DD 200G to 8xSFP28 Direct Attach Cable (Passive Twinax, Up to 2.5m)

Features

- Compliant with QSFP-DD MSA Specification Rev 3.4
- SFF-8679 electrical interface compliant
- SFF-8636 management interface support
- Compliant with IEEE802.3Bj, By, IEEE802.3CD Standard
- I2C for EEPROM communication
- Pull to Release latch design
- Excellent EMI/EMC performance 360-degree cable shield termination
- Advantage dual side pre-solder automated assembly technologies
- Low loss, stronger mechanical features, more flexible
- ROHS-6 Compliant

Applications

- Servers
- Switches
- Routers
- Data Centers
- High Performance Computing

Product Description
This is an MSA compliant 200GBase-CU QSFP-DD to 8xSFP28 direct attach cable that operates over passive copper with a maximum reach up to 2.5m (8.2ft). It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. Our direct attach cables are 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 direct attach cables 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."

Order Information

Part Number	Description
QSFPDD-8SFP28-PDAC1M-AO	MSA and TAA Compliant 200GBase-CU QSFP-DD 200G to 8xSFP28 Direct Attach Cable (Passive Twinax, 1m)
QSFPDD-8SFP28-PDAC2M-AO	MSA and TAA Compliant 200GBase-CU QSFP-DD 200G to 8xSFP28 Direct Attach Cable (Passive Twinax, 2m)
QSFPDD-8SFP28-PDAC2-5M-AO	MSA and TAA Compliant 200GBase-CU QSFP-DD 200G to 8xSFP28 Direct Attach Cable (Passive Twinax, 2.5m)

Regulatory Compliance

Certification	Standard
Laser Eye Safety	IEC: 60825-1, 3rd Edition FDA: CFR-21 Sections 1040.10 and 1040.11
Product Safety	TUV: EN62368-1 UL/CSA 60950-1
EMC/EMI	FCC: Part 15 sb.B EN: 55032/55024

Mechanical Characteristics

Length	Wire Gauge	Cable OD	Cable Jacket Material	Flammability Rating
1m	32 AWG	3.81mm	PVC	VW-1
2m	28AWG	4.62mm	PVC	VW-1
2.5m	28AWG	4.62mm	PVC	VW-1

Electrical Characteristics

Parameter	Specification
Impedance	100 ohm
Data Rate	28Gbps per lane (NRZ)
Voltage	3.3V DC
Current (signal application only)	0.75A
Operating Temperature	-10°C to +60°C
High Speed Compliant	IEEE 802.3cd

QSFP-DD to 8xSFP Wiring Schematic

P1 (QSFP-DD)			P2 (SFP56)	
GND				GND
TX1+	36	⟷	13	RX1+
TX1-	37	⟷	12	RX1-
GND				GND
RX1+	17	⟷	18	TX1+
RX1-	18	⟷	19	TX1-
GND				GND

P1 (QSFP-DD)			P3 (SFP56)	
GND				GND
TX2+	3	⟷	13	RX1+
TX2-	2	⟷	12	RX1-
GND				GND
RX2+	22	⟷	18	TX1+
RX2-	21	⟷	19	TX1-
GND				GND

P1 (QSFP-DD)			P4 (SFP56)	
GND				GND
TX3+	33	⟷	13	RX1+
TX3-	34	⟷	12	RX1-
GND				GND
RX3+	14	⟷	18	TX1+
RX3-	15	⟷	19	TX1-
GND				GND

P1 (QSFP-DD)			P5 (SFP56)	
GND				GND
TX4+	6	⟷	13	RX1+
TX4-	5	⟷	12	RX1-
GND				GND
RX4+	25	⟷	18	TX1+
RX4-	24	⟷	19	TX1-
GND				GND

P1 (QSFP-DD)			P6 (SFP56)	
GND				GND
TX5+	74	⟷	13	RX1+
TX5-	75	⟷	12	RX1-
GND				GND
RX5+	55	⟷	18	TX1+
RX5-	56	⟷	19	TX1-
GND				GND

P1 (QSFP-DD)			P7 (SFP56)	
GND				GND
TX6+	41	⟷	13	RX1+
TX6-	40	⟷	12	RX1-
GND				GND
RX6+	60	⟷	18	TX1+
RX6-	59	⟷	19	TX1-
GND				GND

P1 (QSFP-DD)			P8 (SFP56)	
GND				GND
TX7+	71	⟷	13	RX1+
TX7-	72	⟷	12	RX1-
GND				GND
RX7+	52	⟷	18	TX1+
RX7-	53	⟷	19	TX1-
GND				GND

P1 (QSFP-DD)			P9 (SFP56)	
GND				GND
TX8+	44	⟷	13	RX1+
TX8-	43	⟷	12	RX1-
GND				GND
RX8+	63	⟷	18	TX1+
RX8-	62	⟷	19	TX1-
GND				GND

QSFP-DD Pin Descriptions

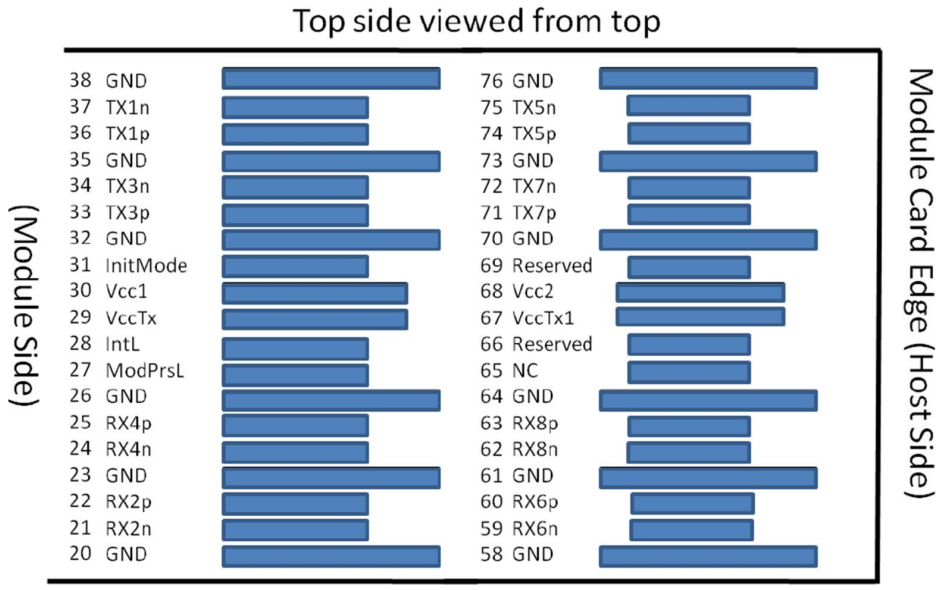
PIN	Logic	Symbol	Description	Notes
1		GND	Ground	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input	
4		GND	Ground	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input	
7		GND	Ground	1
8	LVTTL-I	ModSelL	Module Select	
9	LVTTL-I	ResetL	Module Reset	
10		VccRx	+3.3V Power Supply Receiver	2
11	LVCMOS-I/O	SCL	2-wire serial interface clock	
12	LVCMOS-I/O	SDA	2-wire serial interface data	
13		GND	Ground	1
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	
15	CML-O	Rx3n	Receiver Inverted Data Output	
16		GND	Ground	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	
18	CML-O	Rx1n	Receiver Inverted Data Output	
19		GND	Ground	1
20		GND	Ground	1
21	CML-O	Rx2n	Receiver Inverted Data Output	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	
23		GND	Ground	1
24	CML-O	Rx4n	Receiver Inverted Data Output	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	
26		GND	Ground	1
27	LVTTL-O	ModPrsL	Module Present	
28	LVTTL-O	IntL	Interrupt	
29		VccTx	+3.3V Power Supply Transmitter	2
30		Vccl	+3.3V Power Supply	2
31	LVTTL-I	InitMode	Initialization mode; In legacy QSFP applications, the InitMode pad is called LPMODE	
32		GND	Ground	1
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	
34	CML-I	Tx3n	Transmitter Inverted Data Input	
35		GND	Ground	1
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	
37	CML-I	Tx1n	Transmitter Inverted Data Input	
38		GND	Ground	1

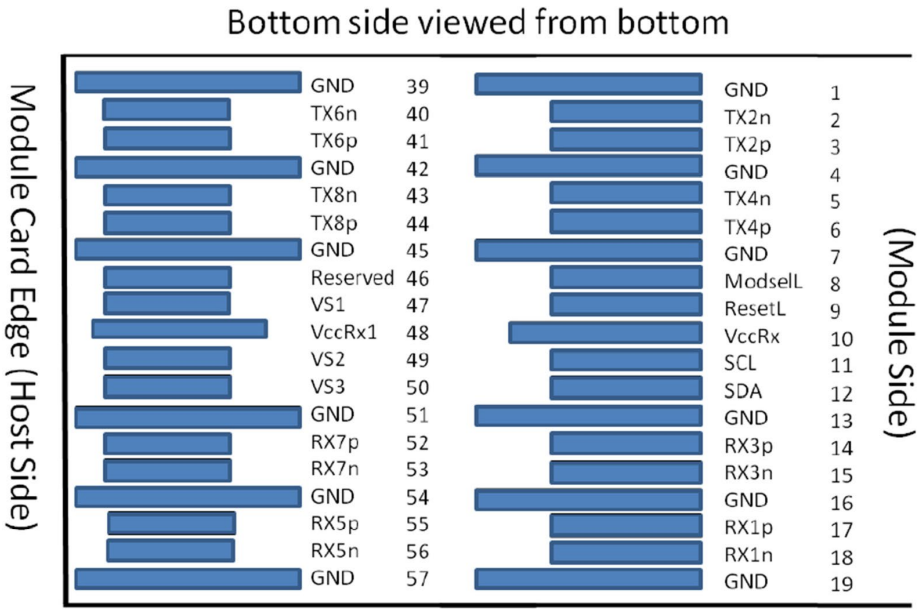
PIN		Symbol	Description	Notes
39		GND	Ground	1
40	CML-I	Tx6n	Transmitter Inverted Data Input	
41	CML-I	Tx6p	Transmitter Non-Inverted Data Input	
42		GND	Ground	1
43	CML-I	Tx8n	Transmitter Inverted Data Input	
44	CML-I	Tx8p	Transmitter Non-Inverted Data Input	
45		GND	Ground	1
46		Reserved	For future use	3
47		VSl	Module Vendor Specific 1	3
48		VccRx1	3.3V Power Supply	2
49		VS2	Module Vendor Specific 2	3
50		VS3	Module Vendor Specific 3	3
51		GND	Ground	1
52	CML-O	Rx7p	Receiver Non-Inverted Data Output	
53	CML-O	Rx7n	Receiver Inverted Data Output	
54		GND	Ground	1
55	CML-O	Rx5p	Receiver Non-Inverted Data Output	
56	CML-O	Rx5n	Receiver Inverted Data Output	
57		GND	Ground	1
58		GND	Ground	1
59	CML-O	Rx6n	Receiver Inverted Data Output	
60	CML-O	Rx6p	Receiver Non-Inverted Data Output	
61		GND	Ground	1
62	CML-O	Rx8n	Receiver Inverted Data Output	
63	CML-O	Rx8p	Receiver Non-Inverted Data Output	
64		GND	Ground	1
65		NC	No Connect	3
66		Reserved	For future use	3
67		VccTx1	3.3V Power Supply	2
68		Vcc2	3.3V Power Supply	2
69		Reserved	For future use	3
70		GND	Ground	1
71	CML-I	Tx7p	Transmitter Non-Inverted Data Input	
72	CML-I	Tx7n	Transmitter Inverted Data Input	
73		GND	Ground	1
74	CML-I	Tx5p	Transmitter Non-Inverted Data Input	
75	CML-I	Tx5n	Transmitter Inverted Data Input	
76		GND	Ground	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.
2. VccRx, VccRx1, Vcc1, Vcc2, VccTx and VccTx1 shall be applied concurrently. Requirements defined for the host side of the Host Card Edge Connector are listed in Table 6. VccRx, VccRx1, Vcc1, Vcc2, VccTx and VccTx1 may be internally connected within the module in any combination. The connector Vcc pins are each rated for a maximum current of 1000 mA.
3. All Vendor Specific, Reserved and No Connect pins may be terminated with 50 ohms to ground on the host. Pad 65 (No Connect) shall be left unconnected within the module. Vendor specific and Reserved pads shall have an impedance to GND that is greater than 10 kOhms and less than 100 pF.
4. Plug Sequence specifies the mating sequence of the host connector and module. The sequence is 1A, 2A, 3A, 1B, 2B, 3B. (see Figure 2 for pad locations) 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.

QSFP-DD Electrical Pin-out Details





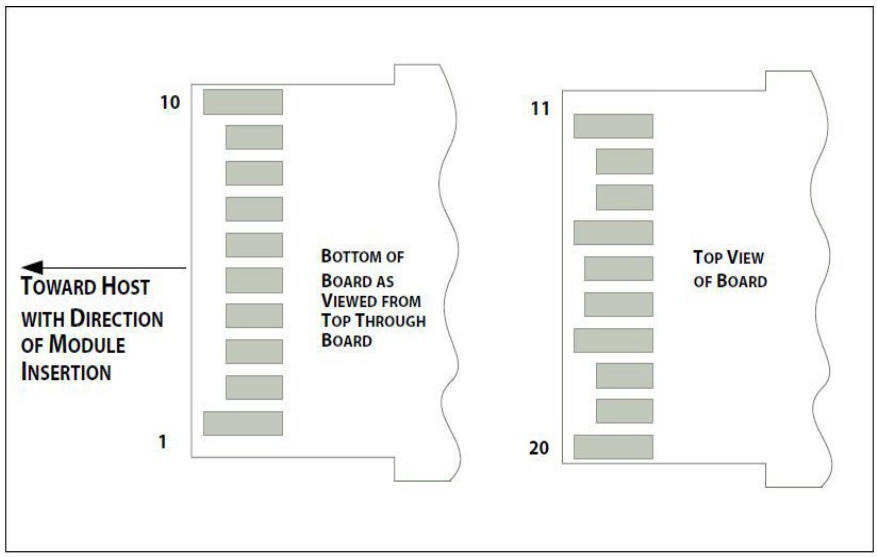
SFP28 Pin Descriptions

Pin	Logic	Symbol	Name/Descriptions	Notes
1		VeeT	Module Transmitter Ground	1
2	LVTTL-O	TX_Fault	Module Transmitter Fault	2
3	LVTTL-I	TX_Disable	Transmitter Disable; Turns off transmitter laser output	3
4	LVTTL-I/O	SDA	2-wire Serial Interface Data Line (Same as MOD-DEF2 as defined in the INF-8074i)	4
5	LVTTL-I/O	SCL	2-wire Serial Interface Clock (Same as MOD-DEF1 as defined in the INF-8074i)	4
6		MOD_ABS	Module Absent, connected to VeeT or VeeR in the module	5
7	LVTTL-I	RS0	Rate Select 0, optionally controls SFP+ module receiver.	6
8	LVTTL-O	RX_LOS	Receiver Loss of Signal Indication (In FC designated as RX_LOS, in SONET designated as LOS, and in Ethernet designated at Signal Detect)	2
9	LVTTL-I	RS1	Rate Select 1, optionally controls SFP+ module transmitter	6
10		VeeR	Module Receiver Ground	1
11		VeeR	Module Receiver Ground	1
12	CML-O	RD-	Receiver Inverted Data Output	
13	CML-O	RD+	Receiver Non-Inverted Data Output	
14		VeeR	Module Receiver Ground	1
15		VccR	Module Receiver 3.3 V Supply	
16		VccT	Module Transmitter 3.3 V Supply	
17		VeeT	Module Transmitter Ground	1
18	CML-I	TD+	Transmitter Non-Inverted Data Input	
19	CML-I	TD-	Transmitter Inverted Data Input	
20		VeeT	Module Transmitter Ground	1

Notes:

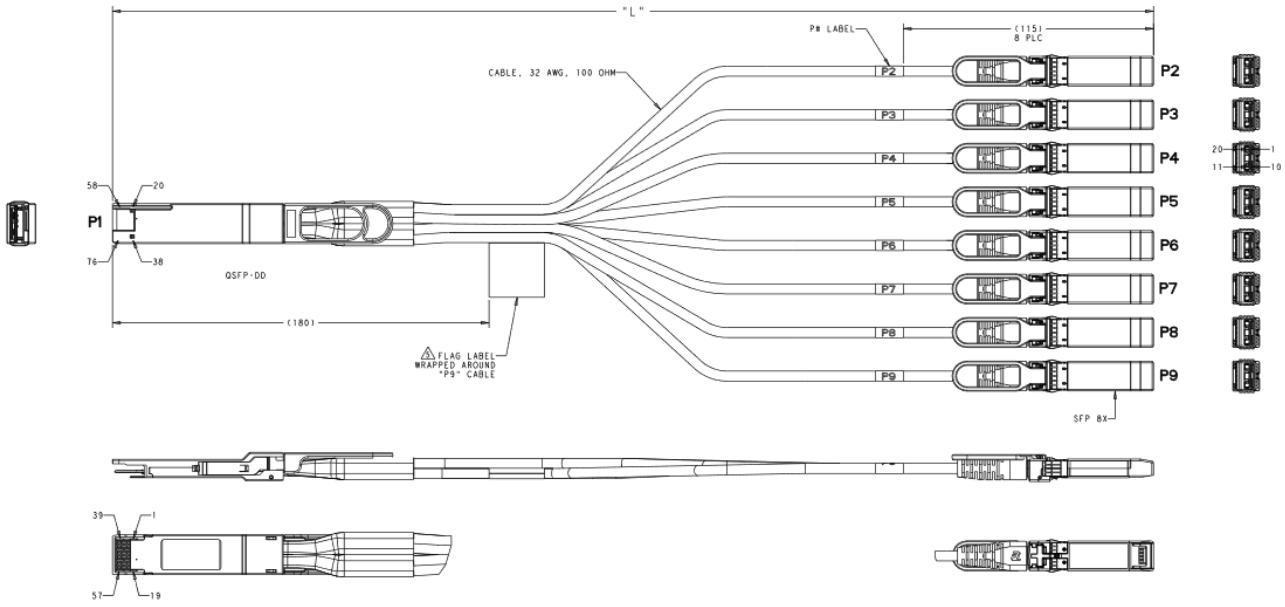
1. The module signal ground pins, VeeR and VeeT, shall be isolated from the module case.
2. This pin is an open collector/drain output pin and shall be pulled up with 4.7k-10kohms to Host_Vcc on the host board. Pull ups can be connected to multiple power supplies, however the host board design shall ensure that no module pin has voltage exceeding module VccT/R + 0.5 V.
3. This pin is an open collector/drain input pin and shall be pulled up with 4.7k-10kohms to VccT in the module.
4. See SFF-8431 4.2 2-wire Electrical Specifications.
5. This pin shall be pulled up with 4.7k-10kohms to Host_Vcc on the host board.
6. RS0 and RS1 are module inputs and are pulled low to VeeT with 30kΩ resistors in the module.

SFP28 Pin-out of Connector Block on Host Board

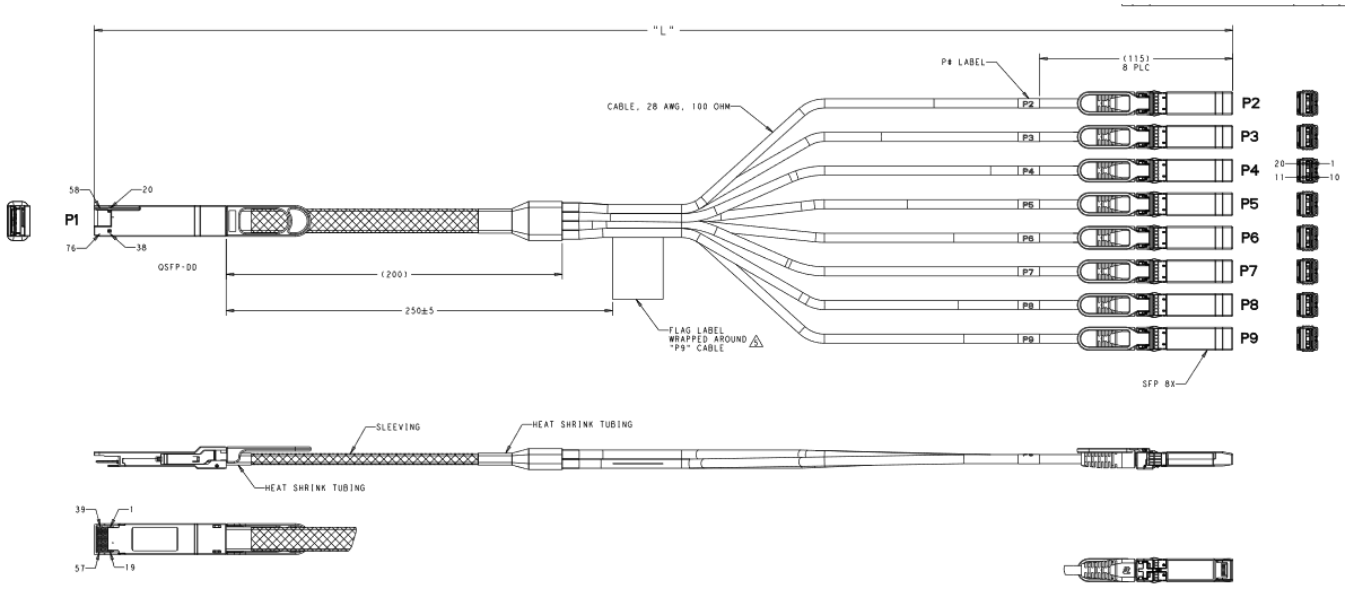


Mechanical Specifications

QSFP-DD to 8xSFP 1m



QSFP-DD to 8xSFP 2m, 2.5m



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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