400G OSFP to 2 x200G QSFP56 Passive Copper Breakout Direct Attach Cable

Features

- Compliant with OSFP MSA Specification
- Operating Voltage 3.135V~3.465V
- I²C for EEPROM communication, pull to Release latch design
- Excellent EMI/EMC performance 360 degree cable shield Termination
- Low loss, stronger mechanical features, more flexible
- Temperature: Operating: 0℃ to +70℃;Storage: -40℃to +85℃
- Insertion/Removal cycles: 50 cycles

Applications

- Data Center & Networking Equipment
- Servers/Storage Devices
- High Performance Computing (HPC)
- Switches/Routers

Standards Compliance

- IEEE 802.3cd IEEE Standard for Ethernet Amendment
- CMIS Rev 4.0: Common Management Interface Specification
- SFF8436: QSFP+ 10Gb/s 4x pluggable transceiver
- SFF8665: QSFP+ 28Gb/s 4x pluggable transceiver solution (QSFP28)
- SFF8679: QSFP+ 4X base electrical specification
- SFF8636: Common Management Interface
- RoHS Compliant

Description

The OSFP 400G to 2xQSFP56 200G Direct Attach Copper Cable (DAC) utilizes high-quality copper cable and shielding, supports transmission distances of 0.5m to 3m, and ensures signal integrity and stability. It is a high-performance, low-power, high-speed interconnect solution designed for data centers, AI computing clusters, and high-performance computing (HPC) applications. This cable features an OSFP 400G port on one end and two QSFP56 200G ports on the other. Compliant with both the OSFP MSA and QSFP56 MSA standards, it interoperates with mainstream switches and network adapters, enabling efficient direct connections between a single 400G port and dual 200G devices.

Materials

Connector

- The Backshell material is Nickel Plated Zinc
- The PCB has gold plated pads
- All materials are RoHS complaint
- The PCBs are certified by UL

Cable

- The conductors are solid copper with silver plating
- The cable jacket is polyvinylchloride (PVC)
- All materials are RoHS complaint
- The cables are UL listed CM 75° C

Performance Requirements

Electrical Performance Requirements

NO	Test Items	Test Condition	Specification
1	Current		0.5A per contact
2	Voltage		30 vDC per contact
3	LLCR	EIA 364-23, 20mVdc, 100mA	less than 2 ohms
4	Continuit	Verify the continuous electrical path	No open, short, or high resistance

SI Requirements

NO	Test Items	Specification	Notes
1	SDD21&SDD12	-17.16 dB Min. @13.28 GHz	From 0.01 GHz- 19GHz
2	SDD11&SDD22	• -16.5+2*sqrt(f)dB Max. @0.05GHz~4.1GHz • -10.66+14*log(f/5.5)dB Max.@4.1GHz~10GHz	From 0.01 GHz- 19GHz

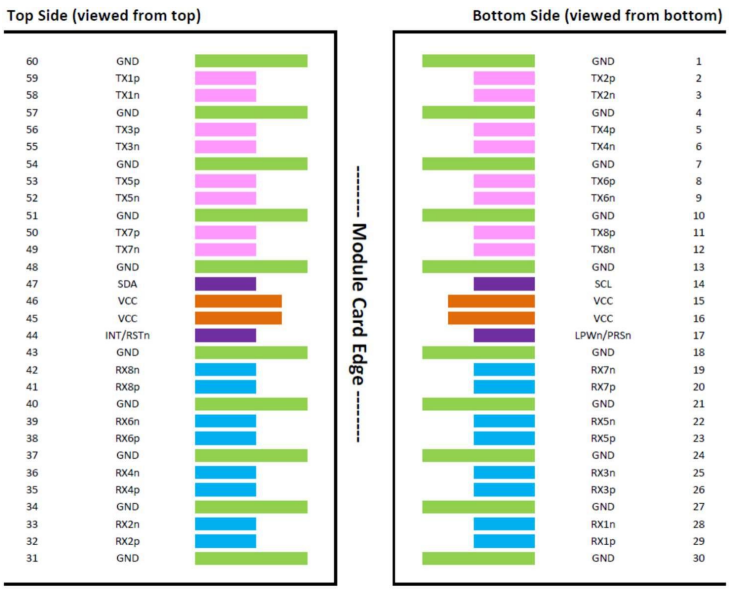
3	SCD21-SDD21	• -10 dB Max. @0.01 GHz~12.89 GHz • -27+(29/22)*f dB Max. @12.89 GHz~15.7 GHz • -6.3 dB Max. @15.7 GHz~19 GHz	From 0.01 GHz- 19GHz

Mechanical Performance Requirements

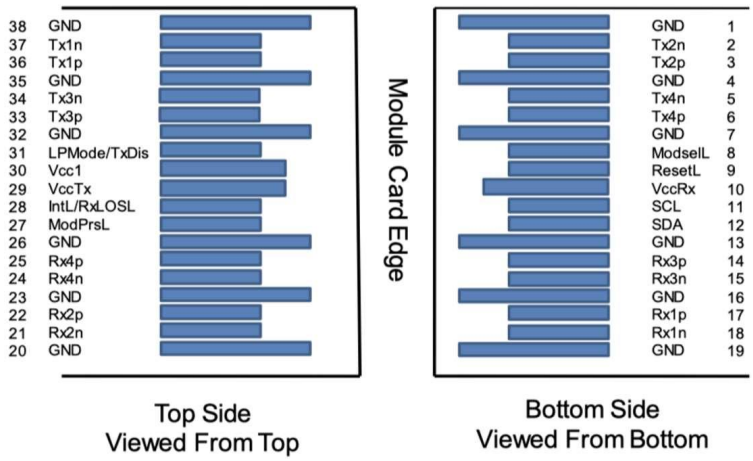
NO	Test Items	Test Condition	Specification
1	Mating Forces	A rate of 10mm per minute	OSFP＜40N, QSFP＜60N
2	Un-mating Forces	A rate of 10mm per minute	OSFP＜30N,QSFP＜30N
3	OSFP Module Retention in Cage	Pull to separate module from cage, Test with connector, cage & module (latch Mechanism engaged)	Minimum of an 125N force
4	Bulk cable retention in module	Pull to separate bulk cable from module,Test with cable assembly only	Minimum of an 90N force
5	Wire Flex	Flex cable 180° for 10 cycles at X/Y axis, 20 times/minutes, with an 1kg suspended weight. Type C EIA 364-41, test condition I.	No microsecond discontinuities are allowed.
6	Durability	Perform 50 unplug/plug cycles	No evidence of physical damage
7	Cable Minimum Bend Radius	The cable is bent on time over the correct mandrel with 5 perpendicular, the Minimum bend Radius is 10x OD.	1. No physical damage 2. Verify continuity and SI

Pin connection

OSFP pin definitions as OSFP MSA defined



QSFP pin definitions as SFF-8661 defined



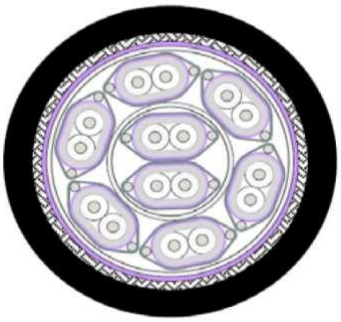
Pin Descriptions

Pair No.	P1 (OSFP-RHS)		P2 (QSFP)	
	Pin	Signal	Pin	Signal
1	28	RX1n	37	TX1n(QSFP-1)
	29	RX1p	36	TX1p(QSFP-1)
2	59	TX1p	17	RX1p(QSFP-1)
	58	TX1n	18	RX1n(QSFP-1)
3	33	RX2n	2	TX2n(QSFP-1)
	32	RX2p	3	TX2p(QSFP-1)
4	2	TX2p	22	RX2p(QSFP-1)
	3	TX2n	21	RX2n(QSFP-1)
5	25	RX3n	34	TX3n(QSFP-1)
	26	RX3p	33	TX3p(QSFP-1)
6	56	TX3p	14	RX3p(QSFP-1)
	55	TX3n	15	RX3n(QSFP-1)
7	36	RX4n	5	TX4n(QSFP-1)
	35	RX4p	6	TX4p(QSFP-1)
8	5	TX4p	25	RX4p(QSFP-1)
	6	TX4n	24	RX4n(QSFP-1)
9	22	RX5n	37	TX1n(QSFP-2)
	23	RX5p	36	TX1p(QSFP-2)
10	53	TX5p	17	RX1p(QSFP-2)
	52	TX5n	18	RX1n(QSFP-2)
11	39	RX6n	2	TX2n(QSFP-2)
	38	RX6p	3	TX2p(QSFP-2)

12	8	TX6p	22	RX2p(QSFP-2)
	9	TX6n	21	RX2n(QSFP-2)
13	19	RX7n	34	TX3n(QSFP-2)
	20	RX7p	33	TX3p(QSFP-2)
14	50	TX7p	14	RX3p(QSFP-2)
	49	TX7n	15	RX3n(QSFP-2)
15	42	RX8n	5	TX4n(QSFP-2)
	41	RX8p	6	TX4p(QSFP-2)
16	11	TX8p	25	RX4p(QSFP-2)
	12	TX8n	24	RX4n(QSFP-2)
17	52	TX5n	18	RX1n(QSFP-2)
	39	RX6n	2	TX2n(QSFP-2)

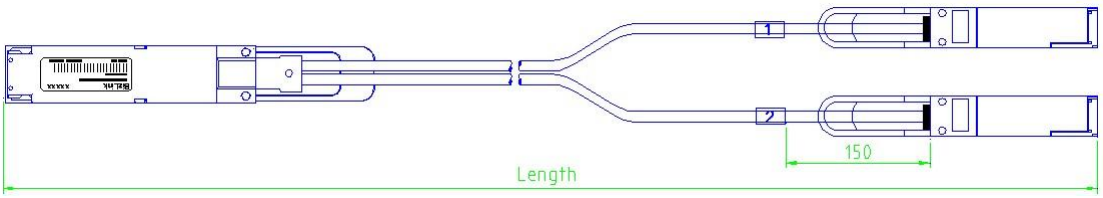
Cable

Cable type is a 100 ohm twinax cable which consists of 8 parallel pairs. Each pair consists of two signal conductors and two drains wire wrapped in a shield;



Cable Assembly

Cable Bulk shield is directly to be connected to the connector backshell to minimize EMI. P1 side is OSFP, P2 side is 2xQSFP.



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