200G QSFP56 to 4x50G SFP56 Breakout Passive Direct Attach Copper Cable

Features

- Supporting 200Gbps to 4x50Gbps

- Support 50G (PAM4) electrical data rates/channel

- Compliant with QSFP56 MSA Specification Rev 3.4

- SFF-8679 electrical interface compliant

- SFF-8636 management interface support

- 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

- QSFP56 modules will be backwards compatible, allowing them to support existing QSFP modules and provide flexibility for end users and system designers

- 0 to 70°C case temperature operating range

Applications

- Data center & Networking Equipment

- Servers/Storage Devices

- Switches/Routers

Compliance

- IEEE802.3Bj,By,IEEE802.3CD

- RoHS Compliant

Description

The Q4S56-200G-DAC Passive cable assembly can provide new generation performance of QSFP by higher date transfer rate. At the same time, QSFP56 to 4SFP56 cable choose dual side drain cable and self-designed PCBA, provide low loss，less skew and better NEXT. 360 degree EMI crimping shielding and Zinc Die-cast shell designing make the product high-performance. And all the designing is based on the industry standard specifications, such as SFF-8679, SFF-8636 and QSFP56 to 4SFP56 MSA specification rev 4.0.

Absolute Maximum Ratings

Table1- Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Storage Temperature	TSTG	-40	-	+85	ºC	
Operating Temperature	Top	0		70	ºC	
3.3V Supply Voltage	VCC	-0.5	-	+3.6	V	
Relative Humidity	RH	0		85	%	
Power Dissipation	PD			0.1	W	

High Speed Characteristics

Table2-High Speed Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Differential Impedance	TDR	90	100	110	Ω	
Insertion loss	SDD21	-16.06			dB	At 13.28 GHz
Differential Return Loss	SDD11			See 1	dB	At 4.1 to 19 GHz
	SDD22			See 2	dB	At 4.1 to 19 GHz
Common-mode to common-mode output return loss	SCC11 SCC22			-2	dB	At 0.2 to 19 GHz
Differential to common-mode return loss	SCD11			See 3	dB	At 0.01 to 12.89 GHz
	SCD22			See 4		At 12.89 to 19 GHz
Differential to common Mode Conversion Loss	SCD21-IL			-10	dB	At 0.01 to 12.89 GHz
				See 5		At 12.89 to 15.7 GHz
				-6.3		At 15.7 to 19 GHz

Notes:

Reflection Coefficient given by equation SDD11(dB) ← -16.5 + 2 × SQRT(f), with f in GHz

Reflection Coefficient given by equation SDD11(dB) ← -10.66 + 14 × log10(f/5.5), with f in GHz

Reflection Coefficient given by equation SCD11(dB) ← -22 + (20/25.78)*f, with f in GHz

Reflection Coefficient given by equation SCD11(dB) ← -15 + (6/25.78)*f, with f in GHz

Reflection Coefficient given by equation SCD21(dB) ← -27 + (29/22)*f, with f in GHz

## Pin Descriptions

Table3-QSFP56 Pin Function Definition

Pin	Symbol	Description	Ref.
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	Vcc Rx	+3.3V Power Supply Receiver	
11	SCL	2-wire serial interface clock	
12	SDA	2-wire serial interface data	
13	GND	Ground	1
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	1
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	1
20	GND	Ground	1
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	1
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	+3.3V Power supply transmitter	

30	Vcc1	+3.3V Power supply	
31	LPMode	Low Power Mode	
32	GND	Ground	1
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	1
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Input	
38	GND	Ground	1

Top Side
Viewed From Top

Bottom Side
Viewed From Bottom
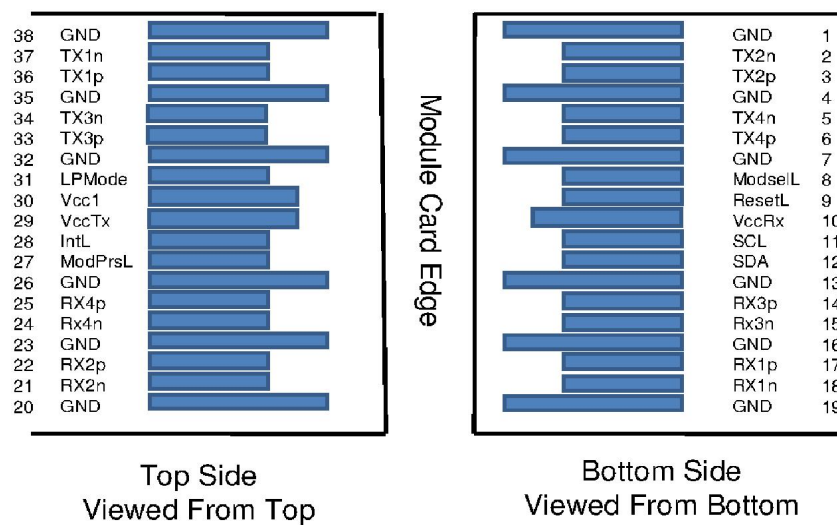
Table4-SFP56 Pin Function Definition			
Pin	**Symbol**	**Description**	**Ref.**
1	VEET	Transmitter Ground (Common with Receiver Ground)	
2	TFAULT	Transmitter Fault.	1
3	TDIS	Transmitter Disable. Laser output disabled on high or open	2
4	SDA	2-wire Serial Interface Data Line	
5	SCL	2-wire Serial Interface Clock Line	
6	Mod_ABS	Module Absent. Grounded within the module	
7	RS0	No connection required	1
8	Rx_LOS	Loss of Signal indication. Logic 0 indicates normal operation.	2
9	RS1	No connection required	1
10	VEER	Receiver Ground (Common with Transmitter Ground)	
11	VEER	Receiver Ground (Common with Transmitter Ground)	
12	RD-	Receiver Inverted DATA out. AC Coupled	

13	RD+	Receiver Non-inverted DATA out. AC Coupled	
14	VEER	Receiver Ground (Common with Transmitter Ground)	
15	VccR	Receiver Power Supply 3.3V	
16	VCCT	Transmitter Power Supply 3.3V	
17	VEER	Transmitter Ground (Common with Receiver Ground)	
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VEER	Transmitter Ground (Common with Receiver Ground)	
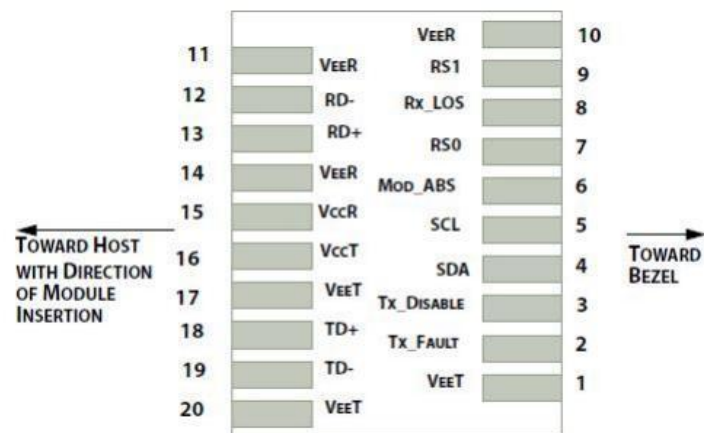
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2. Nothing herein should be construed as constituting an additional warranty.

3. NADDOD assumes no responsibility for the use or reliability of equipment or software not provided by NADDOD.

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