100G QSFP28 TO 2x50G QSFP28 Passive Direct Attach Copper Breakout Cable

Application

- 100 Gigabit Ethernet
- 128G Fibre Channel

Features

- Up to 5m transmission
- Thinner than thinner
- Low insertion loss
- Small bend radius
- RoHS compliant
- I^2C management interface
- Operating case temperature range: 0 to +70°C

I. General Description

The QSFP28 to 2xQSFP28 Direct Attach Cable product is a 4-channel parallel copper direct attach cable for storage, data center, and high performance computing connectivity. It offers 4 independent data transmission channels and 4 data receiving channels via the copper cable, the aggregate data rate of 100Gbps over 5 meters transmission can be achieved with this product.

II. General Product Characteristics

Compliance Standard	IEEE 802.3bj/SFF-8665/SFF-8679/ SFF-8636/ SFF-8661
Number of Lanes	4 Tx & 4 Rx
Channel Data Rate	25.78125 Gbps/channel
Operating Case Temperature	0 to + 70° C
Storage Temperature	-40 to + 85° C
Supply Voltage	3.3V nominal
Electrical Interface	38-pin edge connector
Management Interface	Serial, I2C

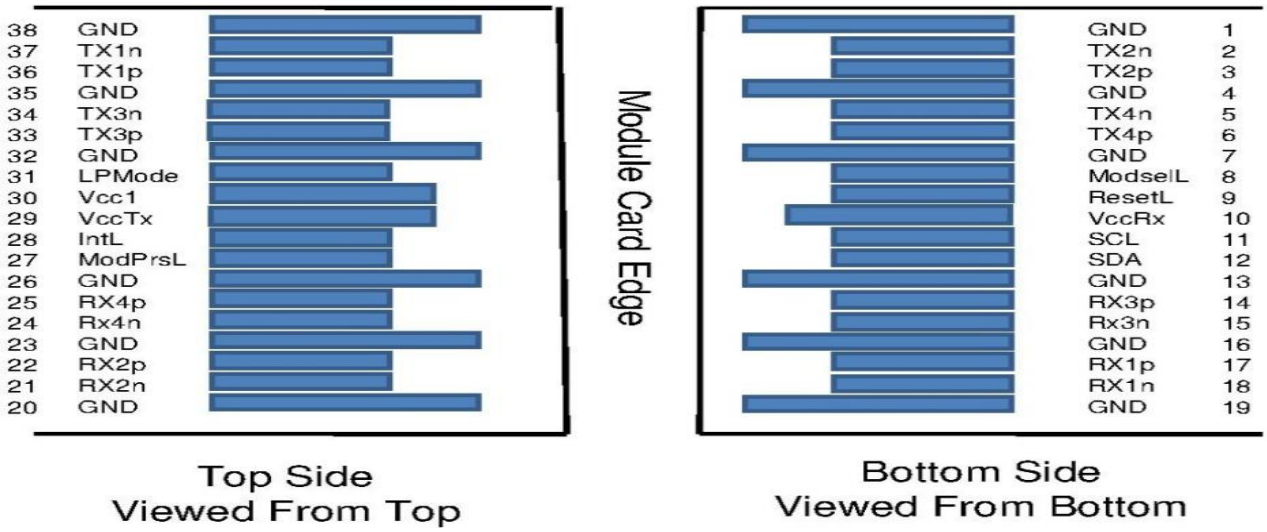
III. Pin Function Definition

Module Complied with SFF-8436 Rev 4.8

Pin	Logic	Symbol	Description	Plug Sequence	Note
1		GND	Ground	1	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	3	
3	CML-I	Tx2p	Transmitter Non-inverted Data Input	3	
4		GND	Ground	1	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	3	
6	CML-I	Tx4p	Transmitter Non-inverted Data Input	3	
7		GND	Ground	1	1

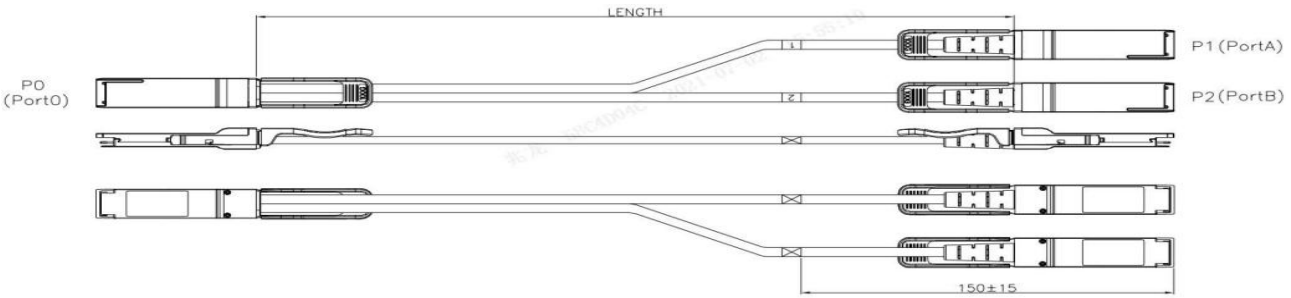
8	LVTTL-I	ModSelL	Module Select	3	
9	LVTTL-I	ResetL	Module Reset	3	
10		VccRx	+3.3V Power Supply Receiver	2	
11	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock	3	2
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data	3	2
13		GND	Ground	1	1
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	3	
15	CML-O	Rx3n	Receiver Inverted Data Output	3	
16		GND	Ground	1	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	3	
18	CML-O	Rx1n	Receiver Inverted Data Output	3	
19		GND	Ground	1	1
20		GND	Ground	1	1
21	CML-O	Rx2n	Receiver Inverted Data Output	3	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	3	
23		GND	Ground	1	1
24	CML-O	Rx4n	Receiver Inverted Data Output	3	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	3	
26		GND	Ground	1	1
27	LVTTL-O	ModPrsL	Module Present	3	2
28	LVTTL-O	IntL	Interrupt	3	2
29		VccTx	+3.3V Power Supply Transmitter	2	
30		Vcc1	+3.3V Power Supply	2	
31	LVTTL-1	LPMode	Low Power Mode	3	
32		GND	Ground	1	1
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	3	
34	CML-I	Tx3n	Transmitter Inverted Data Input	3	
35		GND	Ground	1	1
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	3	
37	CML-I	Tx1n	Transmitter Inverted Data Input	3	
38		GND	Ground	1	1

Notes:
1,GND is the symbol for signal and supply (power) common for QSFP modules. All are common within the QSFP 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, Vcc1 and VccTx are the receiver and transmitter power suppliers and shall be applied concurrently. Recommended host board power supply filtering is shown below. Vcc Rx, Vcc1 and Vcc Tx may be internally connected within the QSFP transceiver module in any combination. The connector pins are each rated for a maximum current of 1000mA.



IV. Mechanical Specifications

Module Complied with SFF-8436 Rev 4.8



V. FS Part Number List

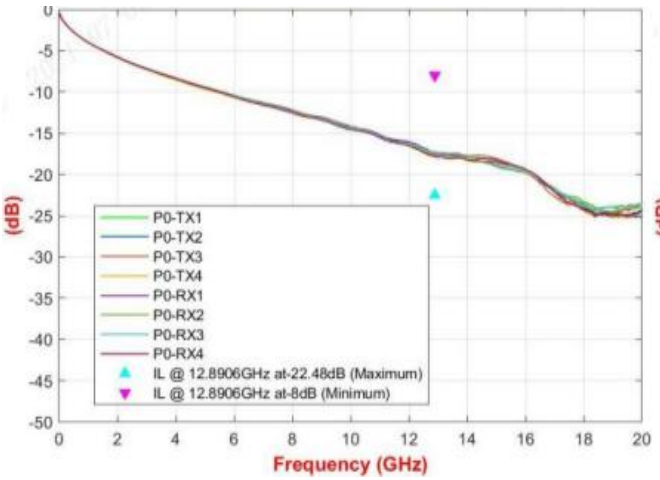
FS P/N	Length (m)	Passive	Material of Conduct	Cable AWG	Cable OD (mm)
03.12GJ00500-1	0.5	Passive	Copper	30	5.9
03.12GJ01000-1	1	Passive	Copper	30	5.9
03.12GJ02000-1	2	Passive	Copper	30	5.9
03.12GJ03000-1	3	Passive	Copper	30	5.9
03.12GK04000-1	4	Passive	Copper	28	6.3
03.12GL05000-1	5	Passive	Copper	26	7.4

VI. Regulatory Compliance

Feature	Test Method	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883C Method 3015.7	Class 1(>2000 Volts)
Electromagnetic Interference(EMI)	FCC Class B	Compliant with Standards
	CENELEC EN55022 Class B	
	CISPR22 ITE Class B	
RF Immunity	IEC61000-4-3	Typically Show no Measurable Effect from a 10V/m Field Swept from 80 to 1000MHz
RoHS Compliance	RoHS Directive 2011/65/EU and it's Amendment Directives 6/6	RoHS 6/6 compliant

VII. S-parameter test result：(Based on 3m 30AWG Passive)

SDD21:



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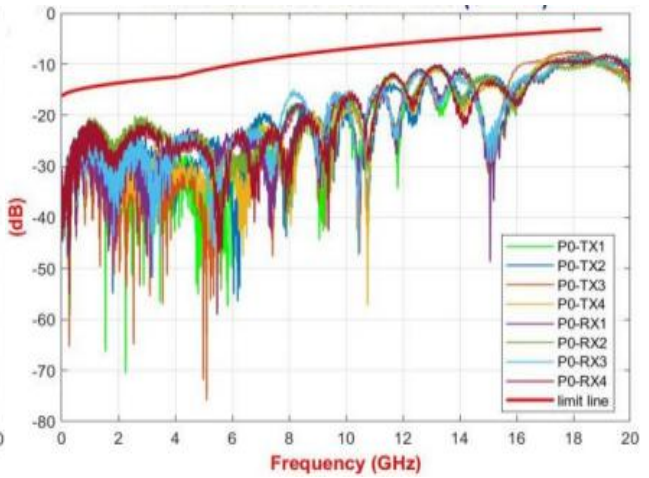

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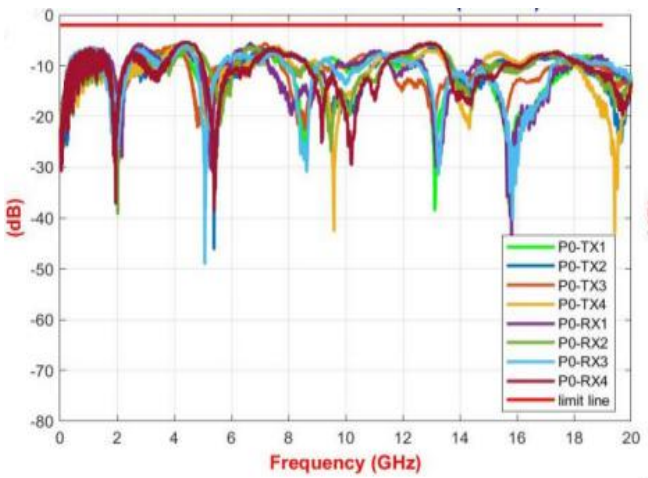

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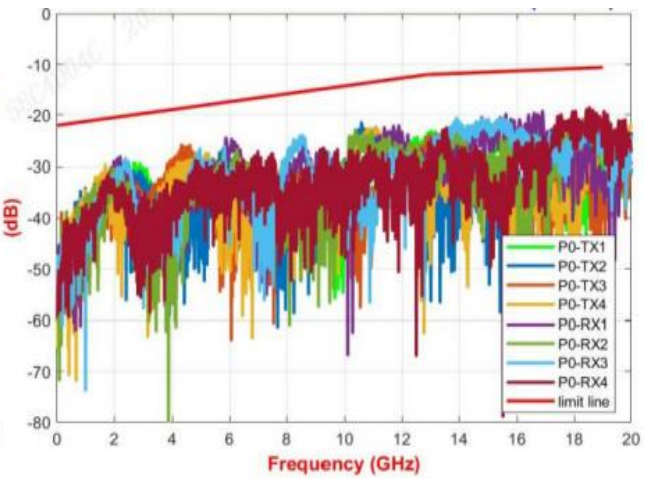
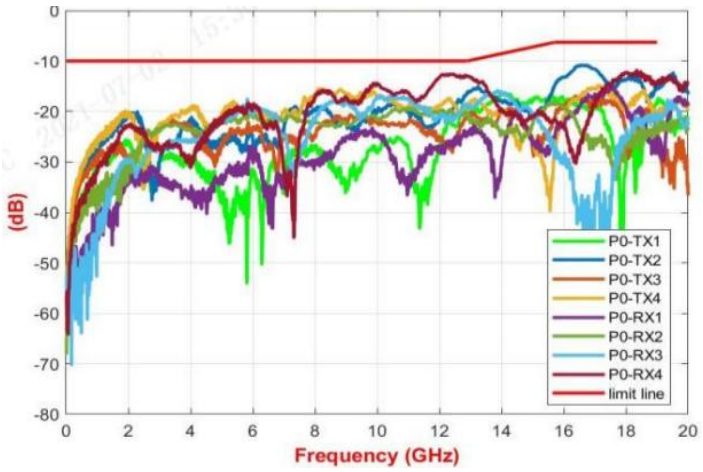


SCD21-SDD21:


0
-10
-20
-30
-40
-50
-60
-70
-80
(dB)
0
2
4
6
8
10
12
14
16
18
20
Frequency (GHz)
P0-TX1
P0-TX2
P0-TX3
P0-TX4
P0-RX1
P0-RX2
P0-RX3
P0-RX4
limit line

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