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

Features

- Compliant with SFF-8665
- Compliant with IEEE 802.3bj
- Up to 100Gb/s data rates
- Ultra low crosstalk for improved performance
- Low insertion loss
- Serial numbers printed on each end
- Tested in an end-to-end system
- RoHS compliant

Applications

- Low EMI radiation Switches, servers and routers
- Data Center networks
- Storage area networks
- Telecommunication and wireless infrastructure
- Medical diagnostics and networking
- Test and measurement equipment

Description

The Q2Q28-100G-DAC Passive cables provide robust connections for leading edge100Gb/s systems. Passive copper cables require no additional power to ensure quality connectivity. The 100Gb/s passive copper cables are fully compliant with SFF-8436 specification and provide connectivity between devices using QSFP28 ports.

High Speed Characteristics

Table1-High Speed Characteristics

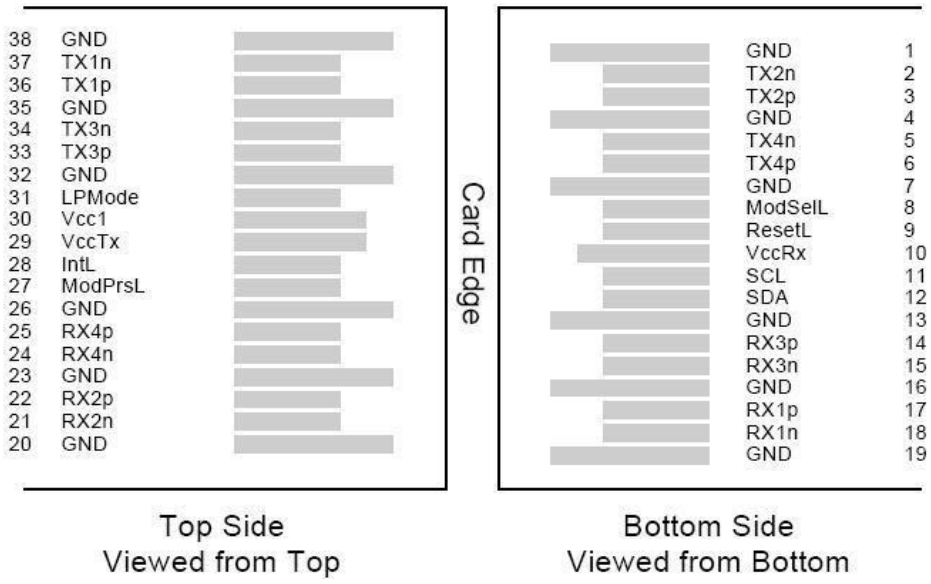
Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Operating Case Temperature	Topc	-20		85	°C	
Storage Temperature	Tst	-40		85	°C	
3.3V Supply Voltage	V_{CC}	3.315		3.465	V	
Relative Humidity (non-condensation)	RS	35		60	%	
Voltage on LVTTL Input	Volvttl	-0.3		$V_{CC}3$ +0.2	V	
Power Supply Current	ICC3			15	mA	
Total Power Consumption	Pd			0.1	W	

Pin Descriptions

Table2-QSFP28 Pin Function Definition

Pin	Logic	Symbol	Description	Ref.
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		Vcc Rx	+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	1
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		Vcc Tx	+3.3V Power supply transmitter	2
30		Vcc1	+3.3V Power supply	2
31	LVTTL-I	LPMode	Low Power Mode	
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



Top Side Bottom Side

Viewed from Top Viewed from Bottom

Table3-SFP28 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)	

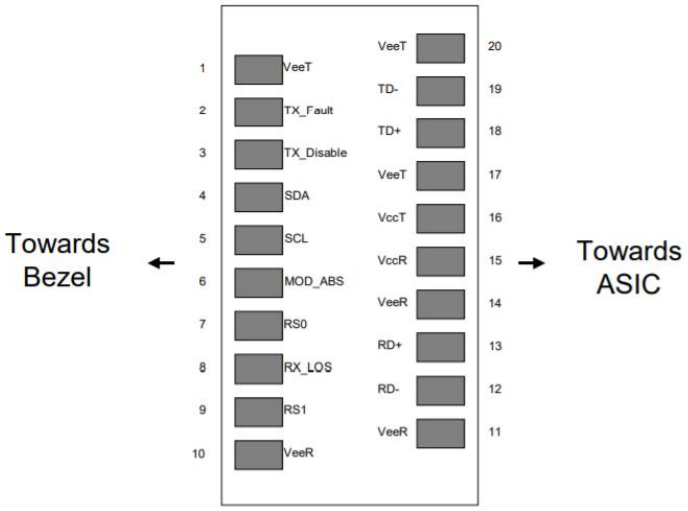


Table4-Mechanical Specifications

Parameter	Minimum	Typical	Maximum	Unit
Cable Diameter (26AWG)		0.220		Inches
Bend Radius (26AWG)	1.102			Inches
Cable Diameter (28AWG)		0.185		Inches
Bend Radius (28AWG)	0.925			Inches
Cable Diameter (30 AWG)		0.181		Inches
Bend Radius (30 AWG)	0.906			Inches
Within Pair Skew			100	ps/10m
Cable Insertion Loss		15.43		dB/5m

Bulk Cable Time Delay			5.2	ns/m
Bulk Cable Impedance	95	100	105	Ohms
Insertion Force	/		40	N
Withdrawal Force	/		30	N
Retention Force	90		/	N
Durability	50 Cycles		/	/

Mechanical Specifications

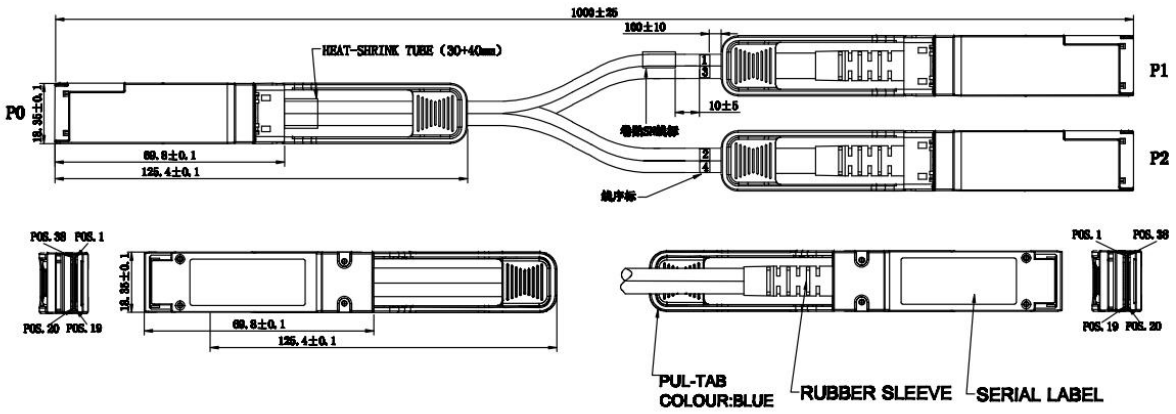


Table5-100G QSFP28 to 2x 50G QSFP28 Copper Breakout Cable Assemblies

P/N	Length	Data Rate	AWG	Length Tolerance
Q2Q28-100G-CU1	1M	100G	28 / 30	+3.5/-3.5cm
Q2Q28-100G-CU1-5	1.5M	100G	28 / 30	+3.5/-3.5cm
Q2Q28-100G-CU2	2M	100G	28 / 30	+3.5/-3.5cm
Q2Q28-100G-CU2-5	2.5M	100G	28 / 30	+3.5/-3.5cm
Q2Q28-100G-CU3	3M	100G	28 / 30	+4/-4cm
Q2Q28-100G-CU5	5M	100G	26	+6/-6cm

Further Information:

Web www.naddod.com

Email For order requirements: sales@naddod.com

For technical support: tech@naddod.com

For technical support: tech@naddod.com

For customer service: support@naddod.com

For cooperation: agency@naddod.com

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1. We are committed to continuous product improvement and feature upgrades, and the contents contained in this manual are subject to change without notice.

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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