QSFP28 to 1XSFP28 DAC cable

FWG-10030XXXC

Features

- Up to 25.78125 Gbps data rate
- Up to 5 meter transmission
- Hot-pluggable SFP28 and QSFP28
- Compatible to SFF-8402 and SFF-8432
- Compatible to SFF-8665
- Compatible to IEEE 802.3bj
- I2C based two-wire serial interface for EEPROM signature which can be customized
- Power consumption <0.1 W
- Temperature Range: 0~ 70 °C
- RoHS Compatible

Applications

- 25GE Ethernet
- Data storage and communication industry
- Switch / router / HBA
- Enterprise network
- SAN
- Data Center Network

Product Description

FIBERSTAMP's FWG-10030XXXC cable assembly is a customized passive copper cable. The cable connects data signals from each of the 1 pair on the single QSFP end to the SFP28 end, the pair operates at data rates of up to 25Gb/s, each end can be addressed by EEPROM to provide product information, which can be read or write by I2C interface.

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Storage Ambient Temperature		-40		+85	°C
Operating Case Temperature	Tc	0		+70	°C
Power Supply Voltage	V_{CC3}	3.14	3.3	3.47	V
Power consumption				0.1	W
Data Rate Per Lane		1		25.78	Gb/s

High Speed Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Note
Differential Impedance(bulk cable)	Rin1,P-P	95	100	110	Ω	
Differential Impedance (Mated connector)	Rin2,P-P	90	100	110	Ω	
Differential Impedance(cable termination)	Rin3,P-P	85	100	110	Ω	
Insertion loss	SDD21			22.48	dB	At 12.8906 GHz

Differential Return Loss	SDD11			See 1	dB	At 0.05 to 4.1 GHz
	SDD22			See 2	dB	At 4.1 to 19 GHz
Common-mode to common-mode output return loss	SCC11	2			dB	At 0.2 to 19 GHz
	SCC22					
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			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
Channel Operating Margin	COM	3			dB	

Notes:

1. Reflection Coefficient given by equation SDD11(dB) < 16.5 - 2 × SQRT(f), with f in GHz
2. Reflection Coefficient given by equation SDD11(dB) < 10.66 - 14 × log10(f/5.5), with f in GHz
3. Reflection Coefficient given by equation SCD11(dB) < 22 - (20/25.78)*f, with f in GHz
4. Reflection Coefficient given by equation SCD11(dB) < 15 - (6/25.78)*f, with f in GHz
5. Reflection Coefficient given by equation SCD21(dB) < 27 - (29/22)*f, with f in GHz

SFP28 end Pin Descriptions

Pin	Logic	Symbol	Name/Description	Notes
1		VeeT	Transmitter Ground	
2	LV-TTL-O	TX_Fault	N/A	1
3	LV-TTL-I	TX_DIS	Transmitter Disable	2
4	LV-TTL-I/O	SDA	Tow Wire Serial Data	
5	LV-TTL-I	SCL	Tow Wire Serial Clock	
6		MOD_DEF0	Module present, connect to VeeT	
7	LV-TTL-I	RS0	N/A	1
8	LV-TTL-O	LOS	LOS of Signal	2
9	LV-TTL-I	RS1	N/A	1
10		VeeR	Reciever Ground	
11		VeeR	Reciever Ground	
12	CML-O	RD-	Reciever Data Inverted	
13	CML-O	RD+	Reciever Data Non-Inverted	
14		VeeR	Reciever Ground	
15		VccR	Reciever Supply 3.3V	
16		VccT	Transmitter Supply 3.3V	
17		VeeT	Transmitter Ground	
18	CML-I	TD+	Transmitter Data Non-Inverted	
19	CML_I	TD-	Transmitter Data Inverted	
20		VeeT	Transmitter Ground	

Note:

1. Signals not supported in SFP+ Copper pulled-down to VeeT with 30K ohms resistor
2. Passive cable assemblies do not support LOS and TX_DIS

QSFP28 end Pin Descriptions

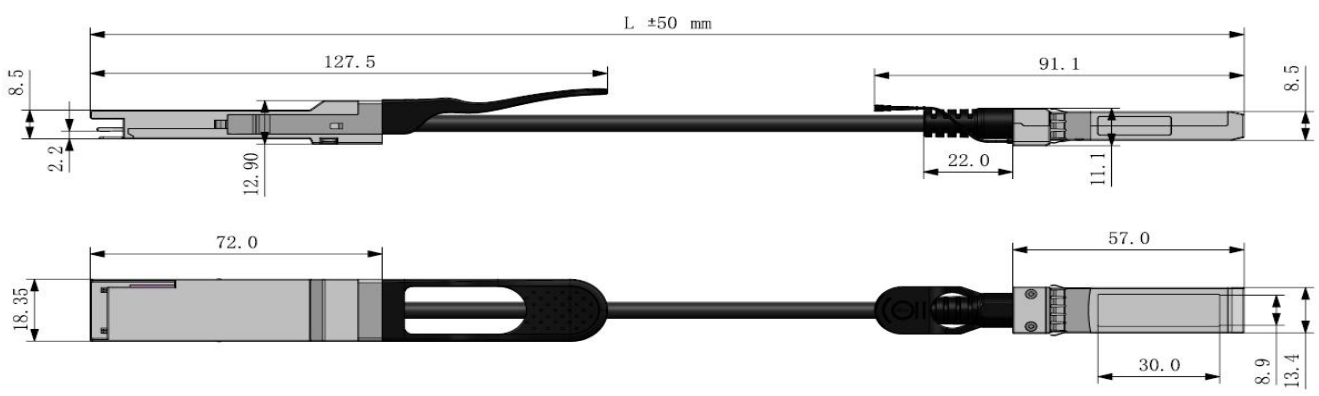
Pin	Logic	Symbol	Name/Description	Notes
1		GND	Ground	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input	
4		GND	Ground	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input	
7		GND	Ground	1
8	LVTTL-I	ModSelL	Module Select	
9	LVTTL-I	ResetL	Module Reset	
10		Vcc Rx	+3.3V Power Supply Receiver	2
11	LVCMOSI/O	SCL	2-wire serial interface clock	
12	LVCMOSI/O	SDA	2-wire serial interface data	
13		GND	Ground	1

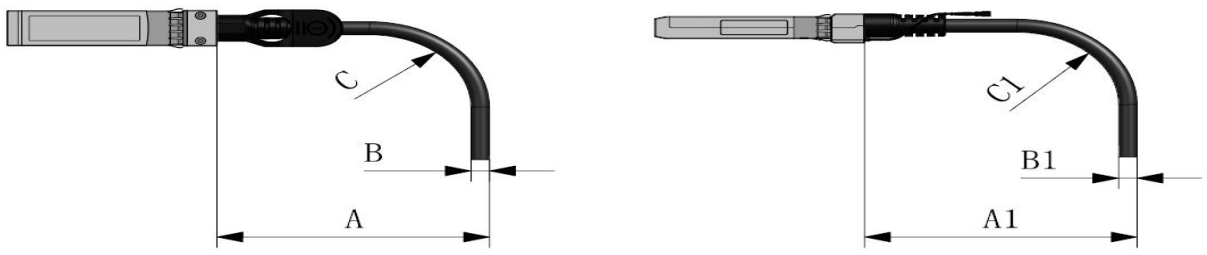
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	
15	CML-O	Rx3n	Receiver Inverted Data Output	
16		GND	Ground	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	
18	CML-O	Rx1n	Receiver Inverted Data Output	
19		GND	Ground	1
20		GND	Ground	1
21	CML-O	Rx2n	Receiver Inverted Data Output	
22	CML-O	Rx2p	Receiver 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		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

Note:

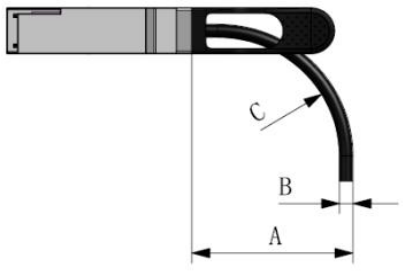
1. GND is the symbol for signal and supply (power) common for the QSFP+ module. All are common within the QSFP+ module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
2. Vcc Rx, Vcc1 and Vcc Tx are the receiver and transmitter power supplies and shall be applied concurrently. Requirements defined for the host side of the Host Edge Card Connector are listed in Table 6. Recommended host board power supply filtering is shown in Figure 4. Vcc Rx Vcc1 and Vcc Tx may be internally connected within the QSFP+ Module module in any combination. The connector pins are each rated for a maximum current of 500 mA.

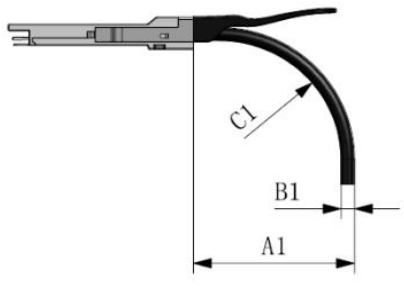
Mechanical Dimensions





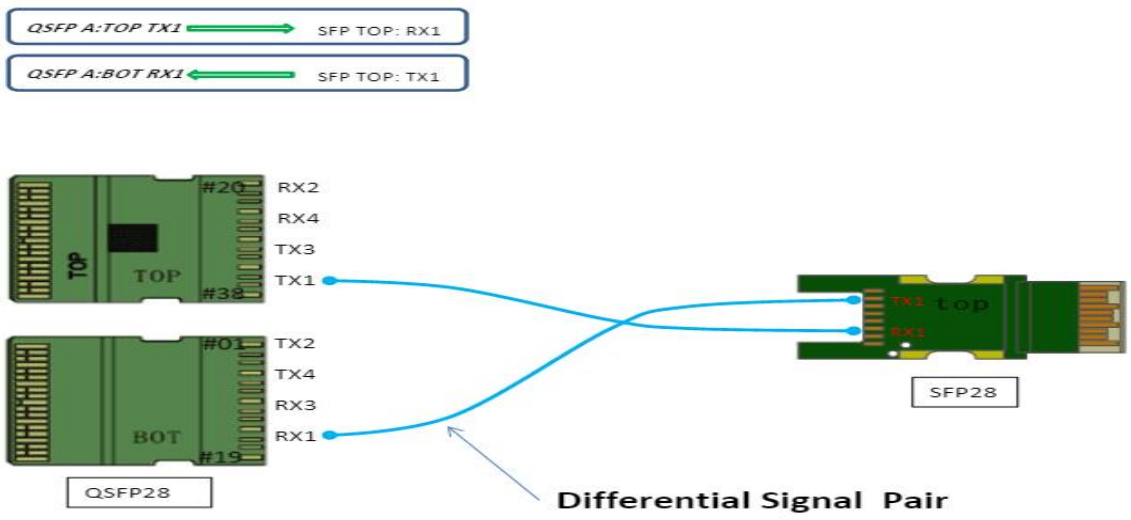
SFP Horizontal Direction			
CABLE GUAGE	DIAMETER"B"	MIN BEND RADIUS"C"	MIN BEND RADIUS"A"
30AWG	4.5MM	22.5MM	49MM
26AWG	5.2MM	25MM	52.2MM
SFP Vertical Direction			
CABLE GUAGE	DIAMETER"B1"	MIN BEND RADIUS"C1"	MIN BEND RADIUS"A1"
30AWG	4.5MM	22.5MM	49MM
26AWG	5.2MM	25MM	52.2MM





QSFP Horizontal Direction			
CABLE GUAGE	DIAMETER"B"	MIN BEND RADIUS"C"	MIN BEND RADIUS"A"
30AWG 2P	4.5MM	22.5MM	39MM
26AWG 2P	5.2MM	25MM	42.2MM
QSFP Vertical Direction			
CABLE GUAGE	DIAMETER"B1"	MIN BEND RADIUS"C1"	MIN BEND RADIUS"A1"
30AWG 2P	4.5MM	22.5MM	39MM
26AWG 2P	5.2MM	25MM	42.2MM

Wiring connection diagram



Ordering information

Note: You can be customized diameter and distance.

Part Number	FWG-10030XXXC				
Length (meter)	1	2	3	4	5
Wire gauge（AWG）	30	30	30/26	26	26

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by FIBERSTAMP before they become applicable to any particular order or contract. In accordance with the FIBERSTAMP policy of continuous improvement specifications may change without notice.

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sales@fiberstamp.com
http://www.fiberstamp.com

Revision History

Revision	Date	Description
V0	July. 15th, 2025	Advance Release.