



FTH-C01T-Tx

QSFP28 100G Direct Attach Cable, 0.5-5m



Description

QSFP28 Direct Attach Cable can be used to setup high speed serial data links between two networking devices. This cable is equipped with two 100Gbps QSFP28 connectors. Low power consumption and price make this solution very attractive, especially for interconnections on short distances. Maximum length available for those cables is 2 meters. Thanks to module's compact size high port density of host device can be archived easily. Casing made fully from metal alloys ensures very good EMI immunity. Module is fully compliant with QSFP28 MSA. Transceiver can be prepared as compatible with: Cisco, Netgear, Avaya, D-Link, Brocade, Extreme Networks, Huawei, Enterasys, 3Com, Alcatel-Lucent and other. To confirm compatibility please contact technical support before ordering.

Applications

- 100G Ethernet,
- Infiniband EDR
- Rack to rack connections
- Fiber Channel over Ethernet



Key features

- Two 100Gbps QSFP28 connectors
- Transmission distance: 0.5-5m
- Fully compliant with QSFP28 MSA SFF-8665
- Hot-Pluggable
- RoHS compliant
- Class 1 laser safety
- Low power dissipation
- Metal case for low EMI
- Operating case temperature: 0~70°C

Specification

Supported transmission technology

Ethernet

Speed supported for Ethernet technology

100G, 25G

Speed supported for InfiniBand technology

1xEDR, 4xEDR

Transmission medium

Copper cable

Transmission distance

0.5-5m

Receptacle type

QSFP28

Wavelength

N/A

Output power

N/A

Receiver sensitivity

N/A

Power supply voltage

3.3V

Total Power Dissipation

0.02W

Operating environment – temperature

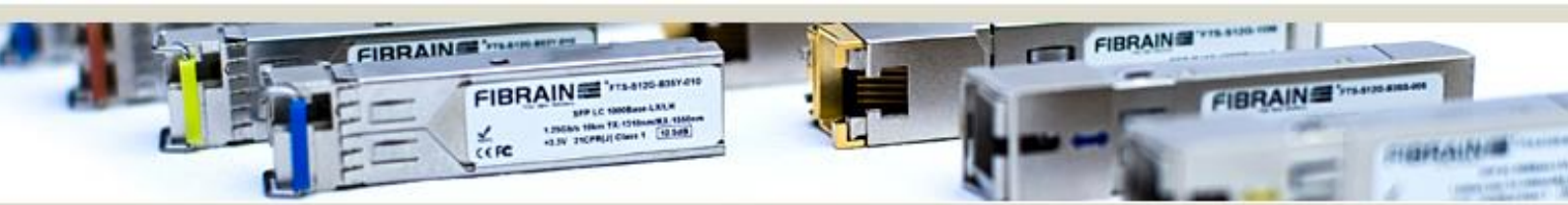
0~70°C

Operating environment – humidity

5~95% non-condensing

Dimensions

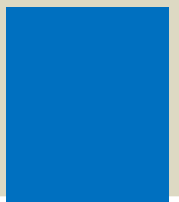
Compliant with QSFP28 Multi-Source Agreement

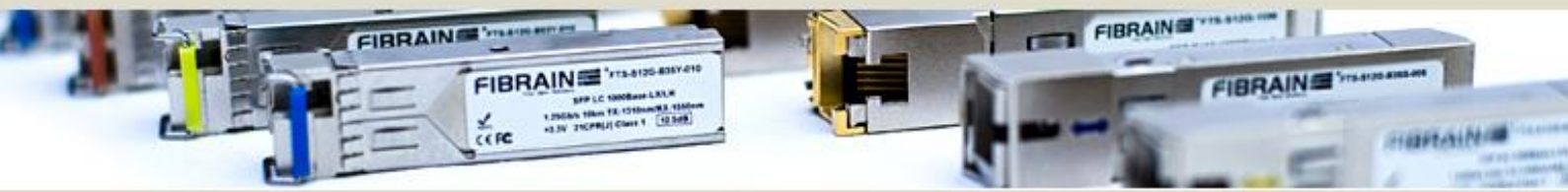


Detailed technical specification

Pin Description

Pin	Name	Function/Description	Notes
1	GND	Transmitter Ground (Common with Receiver Ground)	1
2	Tx2-	Transmitter Inverted Data Input	-
3	Tx2+	Transmitter Non-Inverted Data output	-
4	GND	Transmitter Ground (Common with Receiver Ground)	1
5	Tx4-	Transmitter Inverted Data Input	-
6	Tx4+	Transmitter Non-Inverted Data output	-
7	GND	Transmitter Ground (Common with Receiver Ground)	1
8	ModSelL	Module Select	-
9	ResetL	Module Reset	2
10	VccRx	3.3V Power Supply Receiver	2
11	SCL	2-Wire serial Interface Clock	-
12	SDA	2-Wire serial Interface Data	-
13	GND	Transmitter Ground (Common with Receiver Ground)	-
14	Rx3+	Receiver Non-Inverted Data Output	-
15	Rx3-	Receiver Inverted Data Output	-
16	GND	Transmitter Ground (Common with Receiver Ground)	1
17	Rx1+	Receiver Non-Inverted Data Output	-
18	Rx1-	Receiver Inverted Data Output	-
19	GND	Transmitter Ground (Common with Receiver Ground)	1
20	GND	Transmitter Ground (Common with Receiver Ground)	1
21	Rx2-	Receiver Inverted Data Output	-
22	Rx2+	Receiver Non-Inverted Data Output	-
23	GND	Transmitter Ground (Common with Receiver Ground)	1
24	Rx4-	Receiver Inverted Data Output	1
25	Rx4+	Receiver Non-Inverted Data Output	-
26	GND	Transmitter Ground (Common with Receiver Ground)	1
27	ModPrsl	Module Present	-
28	IntL	Interrupt	-
29	VccTx	3.3V 3ower supply transmitter	2
30	Vcc1	3.3V 3ower supply	2
31	LPMode	Low Power Mode	-
32	GND	Transmitter Ground (Common with Receiver Ground)	1
33	Tx3+	Transmitter Non-Inverted Data Input	-
34	Tx3-	Transmitter Inverted Data Output	-
35	GND	Transmitter Ground (Common with Receiver Ground)	1
36	Tx1+	Transmitter Non-Inverted Data Input	-
37	Tx1-	Transmitter Inverted Data Output	-
38	GND	Transmitter Ground (Common with Receiver Ground)	1





Notes:

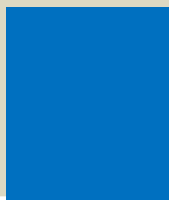
1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the host board requires a 4.7KΩ to 10KΩ pull-up resistor to Vcchost.

Electrical parameters

Parameter	Symbol	Min	Typical	Max	Unit	Note
Differential Impedance	Rin,p-p	90	100	110	Ω	
Insertion loss	SDD21	8		22.48	dB	At 12.8906 GHz
Differential Return Loss	SDD11	12.45		See1	dB	At 0.05 to 4.1 GHz
	SDD22	3.12		See2	dB	At 4.1 to 19 GHz
Common-mode to common-mode output return loss	SDD11 SDD22	2			dB	At 0.2 to 19 GHz
Differential to common-mode return loss	SDD11 SDD22	12		See3	dB	At 0.01 to 12.89 GHz
		10.58		See4		At 12.89 to 19 GHz
Differential to common-mode Conversion Loss	SCD21-IL	10			dB	At 0.01 to 12.89 GHz
				See5		At 12.89 to 15.7 GHz
		6.3				At 15.7 to 19 GHz
Channel Operating Margin	COM	3			dB	

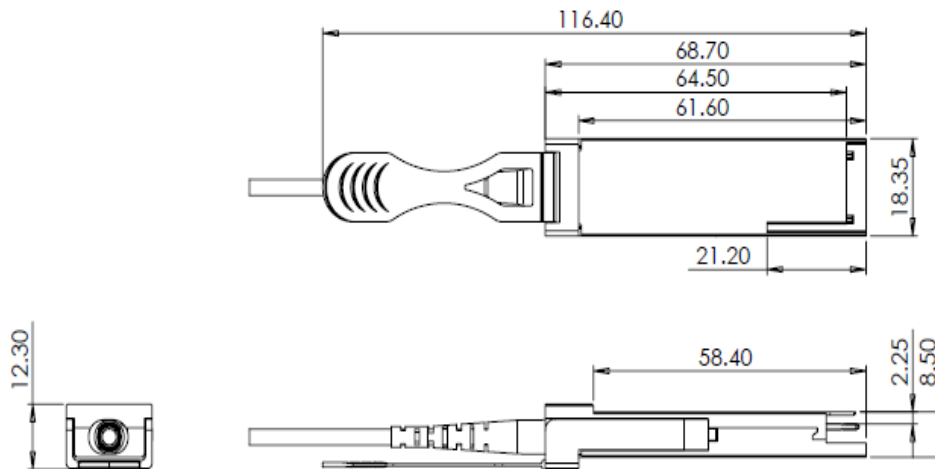
Notes:

1. Reflection Coefficient given by equation $SDD11(dB) < 16.5 - 2 * \sqrt{f}$, with f in GHz
2. Reflection Coefficient given by equation $SDD11(dB) < 10.66 - 14 * \log_{10}(f/5.5)$, with f in GHz
3. Reflection Coefficient given by equation $SDD11(dB) < 22 - (20/25.78) * f$, with f in GHz
4. Reflection Coefficient given by equation $SDD11(dB) < 15 - (6/25.78) * f$, with f in GHz
5. Reflection Coefficient given by equation $SDD21(dB) < 27 - (29/22) * f$, with f in GHz





Mechanical specification




Recommended environment conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature Range	T	0	25	70	°C
Storage Temperature	T	0		70	°C
Supply Voltage	V _{CC}	3.135	3.3	3.465	V
Relative Humidity	RH	5	-	95	%

Ordering information

FTH-C01T-Tx – QSFP28 100G Direct Attach Cable, 1m-5m, commercial temperature (0~70°C)

 x – indicates cable length(1m, 2m, 3m, 5m), more info available in Ordering Information chapter

For further information regarding host device PCB layout recommendation, power supply requirements, EEPROM memory map, DDMI specification please check:

[SFF-8679 - Technical specification for QSFP28 transceiver](#)

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