

QSFP+ Direct Attach Passive Copper Cable GQS-PC400-XXC

Features

- ◆ QSFP+ conforms to the Small Form Factor SFF-8436
- ◆ 4-Channel Full-Duplex Passive Copper Cable Transceiver
- ◆ Support for multi-gigabit data rates :1 Gb/s - 10 Gb/s (per channel)
- ◆ Maximum aggregate data rate: 40 Gb/s (4 x 10Gb/s)
- ◆ Copper link length up to 5m (passive limiting)
- ◆ High-Density QSFP 38-PIN Connector
- ◆ Power Supply :+3.3V
- ◆ Low power consumption: 0.02 W (typ.)
- ◆ I2C based two-wire serial interface for EEPROM signature which can be customized
- ◆ Temperature Range: 0~ 70 °C



Applications

- ◆ 10 Gigabit Ethernet
- ◆ 40 Gigabit Ethernet
- ◆ InfiniBand4x SDR, DDR, QDR
- ◆ 2, 4, 8, 10 Gigabit Fiber Channel
- ◆ Fiber Channel over Ethernet
- ◆ SAS, Servers, Hubs, Switches, Routers

STANDARDS COMPLIANCE

- ◆ IEEE 802.3ba
- ◆ SFF-8436
- ◆ InfiniBand
- ◆ QSFP+ MSA
- ◆ RoHS Compliant

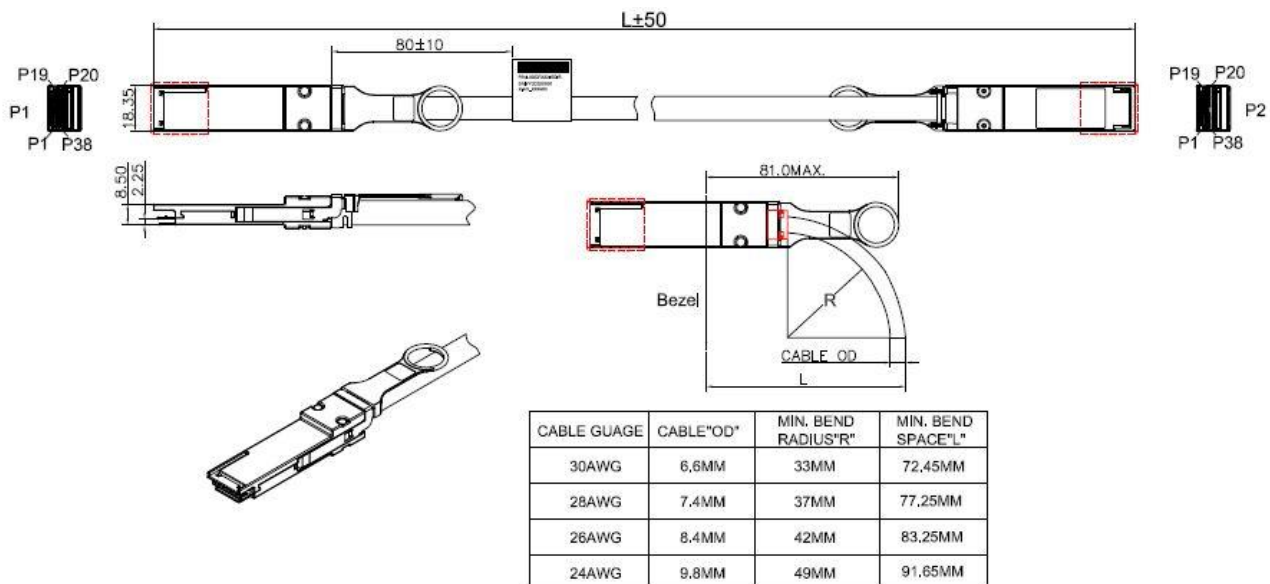
Product Description

The QSFP+ passive cable assemblies are high performance, cost effective I/O solutions for 40G LAN, HPC and SAN applications. The QSFP+ passive copper cables are compliant with SFF-8436, QSFP+ MSA and IEEE P802.3ba 40GBASE-CR4. It is offer a low power consumption, short reach intercon- nect applications. The cable each lane is capable of transmitting data at rates up to 10Gb/s, providing an aggregated rate of 40Gb/s.

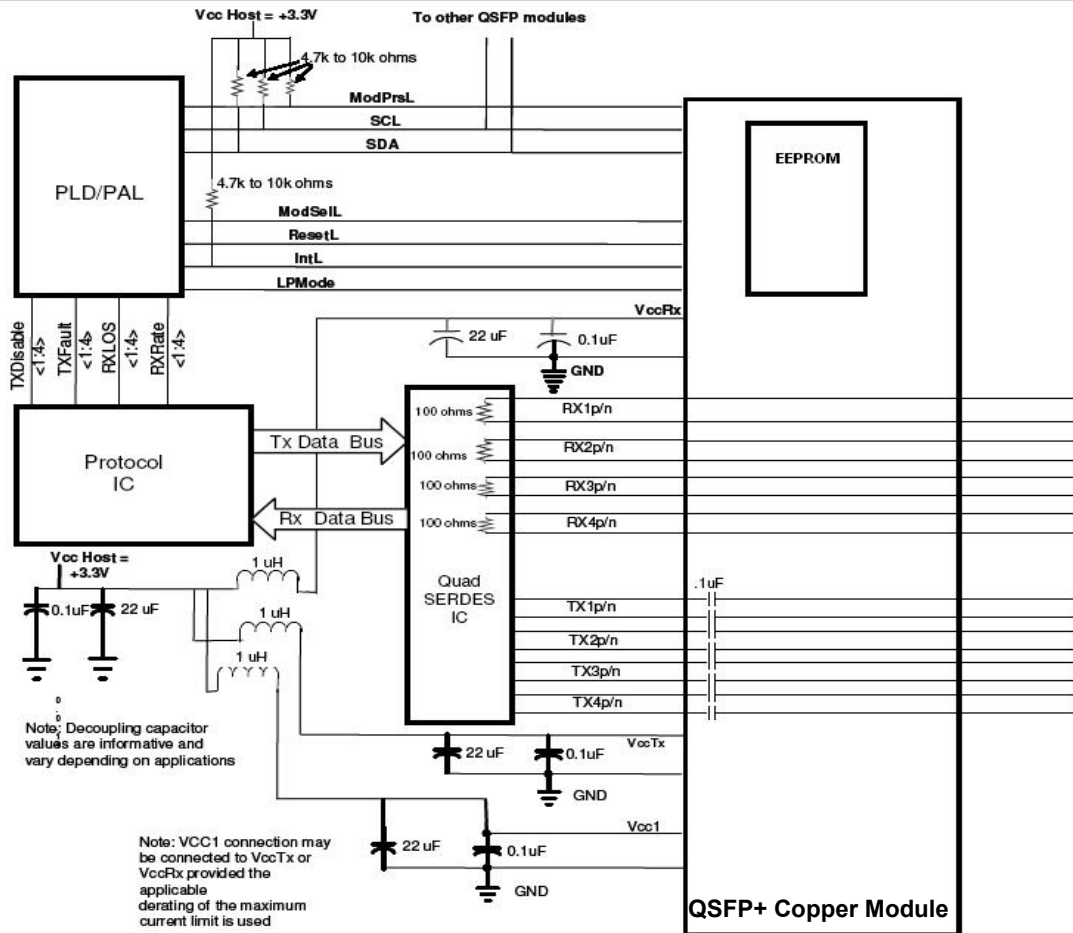
Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Storage Ambient Temperature		-40		+85	°C
Operating Case Temperature	T _c	0		+70	°C
Power Supply Voltage	V _{CC3}	3.14	3.3	3.47	V
Power Dissipation	PD			0.02	W

Mechanical Dimensions



QSFP+ Host Board Schematic for passive copper cables



Pin Descriptions

38	GND
37	TX1n
36	TX1p
35	GND
34	TX3n
33	TX3p
32	GND
31	LPMode
30	Vcc1
29	VccTx
28	IntL
27	ModPrsL
26	GND
25	RX4p
24	Rx4n
23	GND
22	RX2p
21	RX2n
20	GND

Top Side
Viewed From Top

Module Card Edge

GND	1
TX2n	2
TX2p	3
GND	4
TX4n	5
TX4p	6
GND	7
ModselL	8
ResetL	9
VccRx	10
SCL	11
SDA	12
GND	13
RX3p	14
Rx3n	15
GND	16
RX1p	17
RX1n	18
GND	19

Bottom Side
Viewed From Bottom

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.

Note 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 in any combination. The connector pins are each rated for a maximum current of 500 mA.

Ordering information

Part Number	GQS-PC400-XXC					
Length (meter)	1	2	3	4	5	6
Wire gauge (AWG)	30	30	30	26	26	26

Example:

GQS-PC400-01C/30AWG

GQS-PC400-04C/26AWG

Important Notice

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

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Revision History

Revision	Date	Description
V0	May. 23rd, 2014	Advance Release.
V1	Mar. 24th, 2022	Change product picture, change mechanical dimensions, correct PN and ordering information