

PROLABS – CBL-QSFP-40GE-PASS-xM-C

QSFP+ to QSFP+ 40G Copper Cable Assembly

Overview

PROLABS's QSFP+ (Quad Small Form-factor Pluggable Plus) Copper direct-attach cables are suitable for very short distances and offer a highly cost-effective way to establish a 40-Gigabit link between QSFP+ ports. QSFP+ are designed for a high density cabling interconnect system capable of delivering an aggregate data bandwidth of 40Gbps. This interconnect system is fully compliant with QSFP+ MSA. The QSFP+ cables support the bandwidth transmission requirements as defined by IEEE802.3ba(40Gbps) .

Product Features

- Up to 40 GBd bi-directional data links
- Compliant with QSFP+ MSA specifications
- Fully Compliant with IEEE802.3ba and Infiniband QDR specifications
- 4 independent duplex channels operating at 10Gbps,also support for 2.5Gbps,5Gbps data rates
- AC coupled inputs and outputs
- 100 Ohm differential impedance
- All-metal housing for superior EMI performance
- Single power supply 3.3V, low power consumption
- RoHS Compliance
- Operating temperature range: 0°C to 70°C .

Applications

- 40Gigabit Ethernet
- Serial Data Transmission

Ordering Information

Part Number	Description
QSFP-H40G-CU1M-C	40G QSFP+ Direct Attach Copper Cable Assembly, 1 Meter
QSFP-H40G-CU3M-C	40G QSFP+ Direct Attach Copper Cable Assembly, 3 Meter
QSFP-H40G-CU5M-C	40G QSFP+ Direct Attach Copper Cable Assembly, 5 Meter

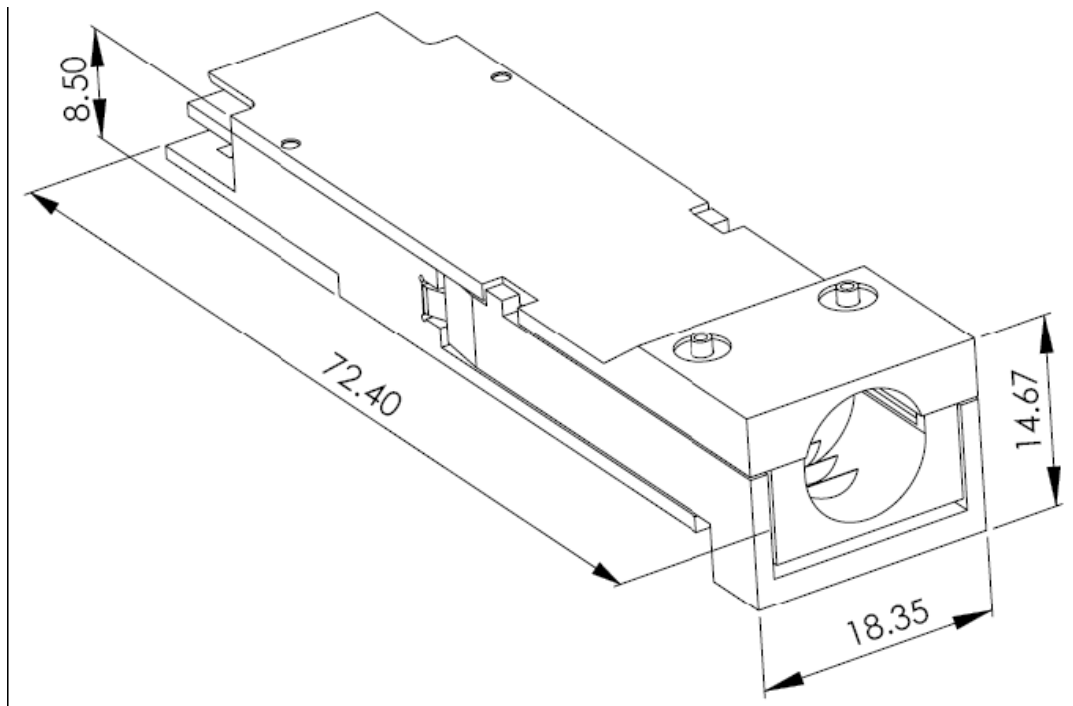
General Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Bit Error Rate	BER			10 ⁻¹²		
Operating Temperature	T _{OP}	0		70	°C	Case temperature
Storage Temperature	T _{STO}	- 40		85	°C	Ambient temperature
Input Voltage	V _{CC}	3	3.3	3.6	V	
Maximum Voltage	V _{MAX}	- 0.5		4	V	For electrical power interface

Cable Mechanical Specifications

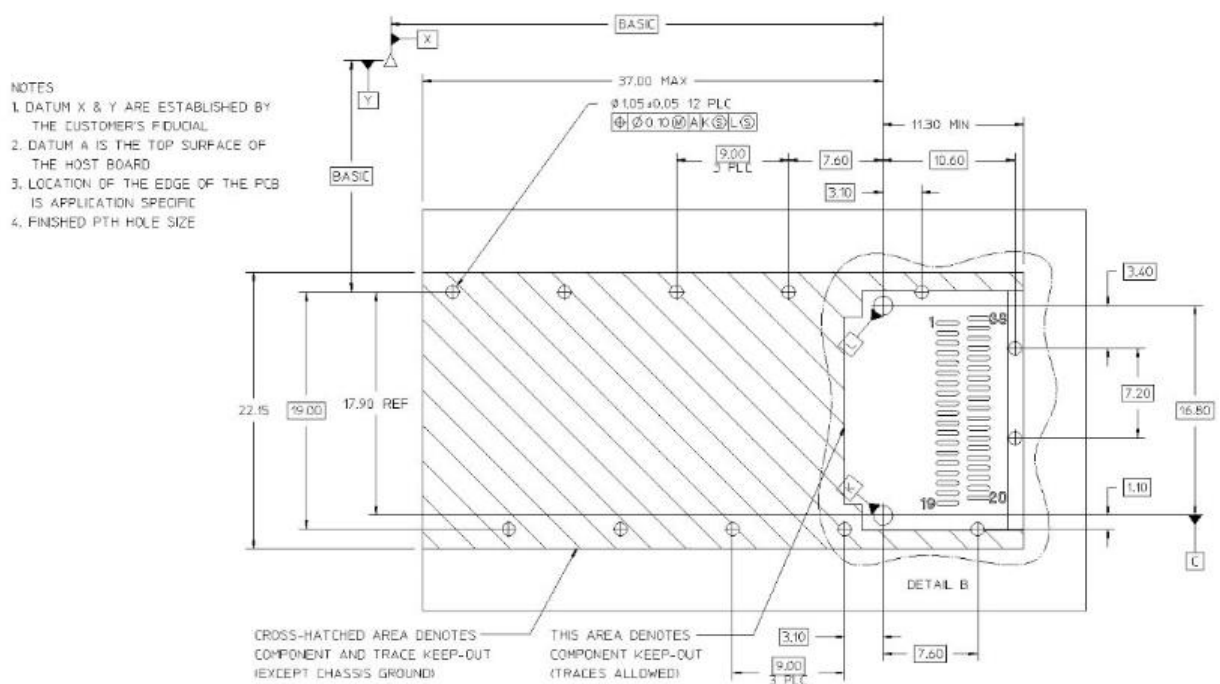
Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Wire Gauge		24AWG		30AWG		
Cable Impedance	Z	95	100	105	Ohm	

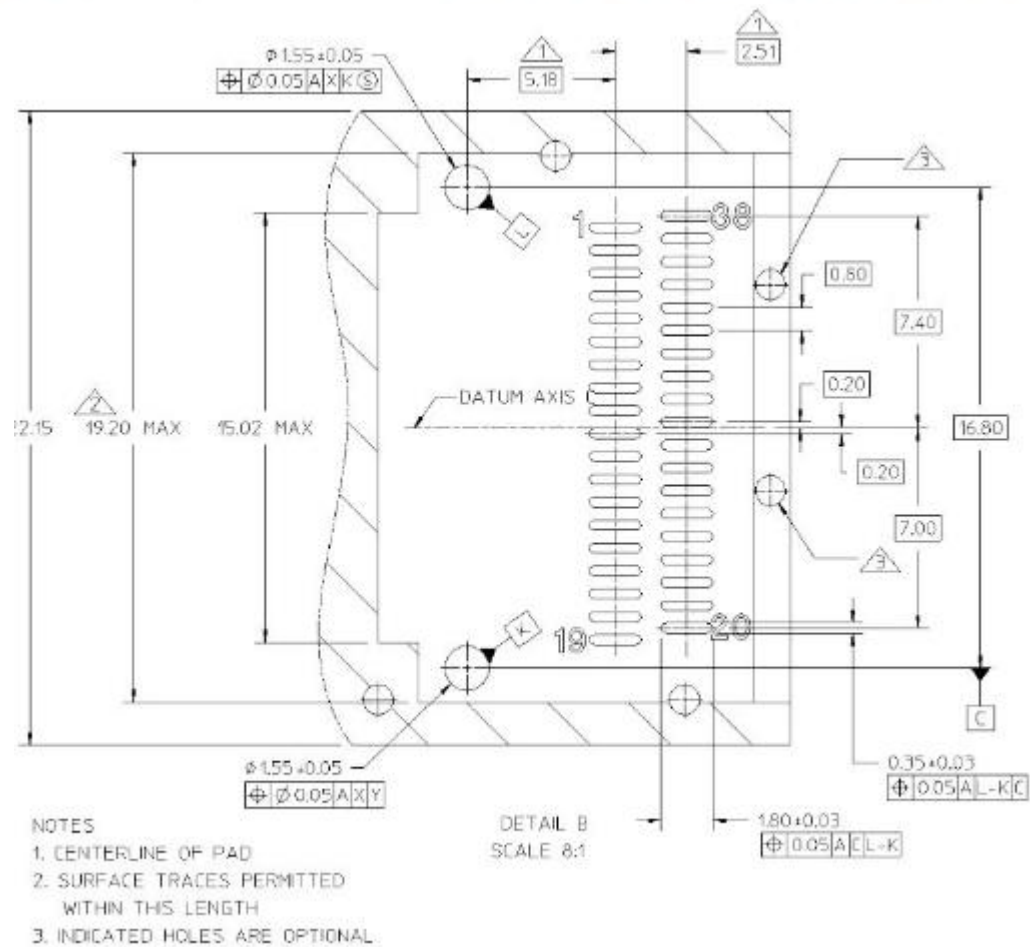
QSFP+ Outline Dimensions



ALL DIMENSIONS ARE $\pm 0.2\text{mm}$ UNLESS OTHERWISE SPECIFIED
UNIT: mm

PCB Layout Recommendation





Electrical Pad Layout

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

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 Assignment

PIN #	Symbol	Description	Remarks
1	GND	Ground	
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	V _{cc} RX	+3.3V Power Supply Receiver	
11	SCL	2-wire serial interface clock	
12	SDA	2-wire serial interface data	
13	GND	Ground	
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	
20	GND	Ground	
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	V _{cc} TX	+3.3V Power Supply transmitter	
30	V _{cc1}	+3.3V Power Supply	
31	LPMODE	Low Power Mode	
32	GND	Ground	
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Input	
38	GND	Ground	

References

1. IEEE standard 802.3ba. IEEE Standard Department.
2. QSFP+ 10 Gbs 4X PLUGGABLE TRANSCEIVER –SFF-8436