

PROLABS – QSFP-4SFP10G-CUxM-C

QSFP+ to 4 SFP+ Passive Copper Cable Assembly

QSFP-4SFP10G-CUxM-C Overview

PROLABS's 1032X-C QSFP+ (Quad Small Form-factor Pluggable Plus) to 4 SFP+ Copper direct-attach cables are suitable for very short distances and offer a highly cost-effective way to connect QSFP+ and SFP+ equipment. The direct-attach assemblies support 4 lanes of 10Gbps (40Gbps composite). This interconnect system is fully compliant with QSFP+ MSA and SFP+ MSA.

Product Features

- QSFP+ End: Compliant with QSFP+ MSA specifications
- SFP+ End: Compliant with SFP+ MSA 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

- 10Gigabit Ethernet
- Serial Data Transmission
- Networking
- Storage
- Fiber Channel

Ordering Information

<i>Part Number</i>	<i>Description</i>
QSFP-4SFP10G-CU1M-C	QSFP+ to 4 SFP+ Direct Attach Copper Cable Assembly, 1 Meter
QSFP-4SFP10G-CU3M-C	QSFP+ to 4 SFP+ Direct Attach Copper Cable Assembly, 3 Meter
QSFP-4SFP10G-CU5M-C	QSFP+ to 4 SFP+ Direct Attach Copper Cable Assembly, 1 Meter

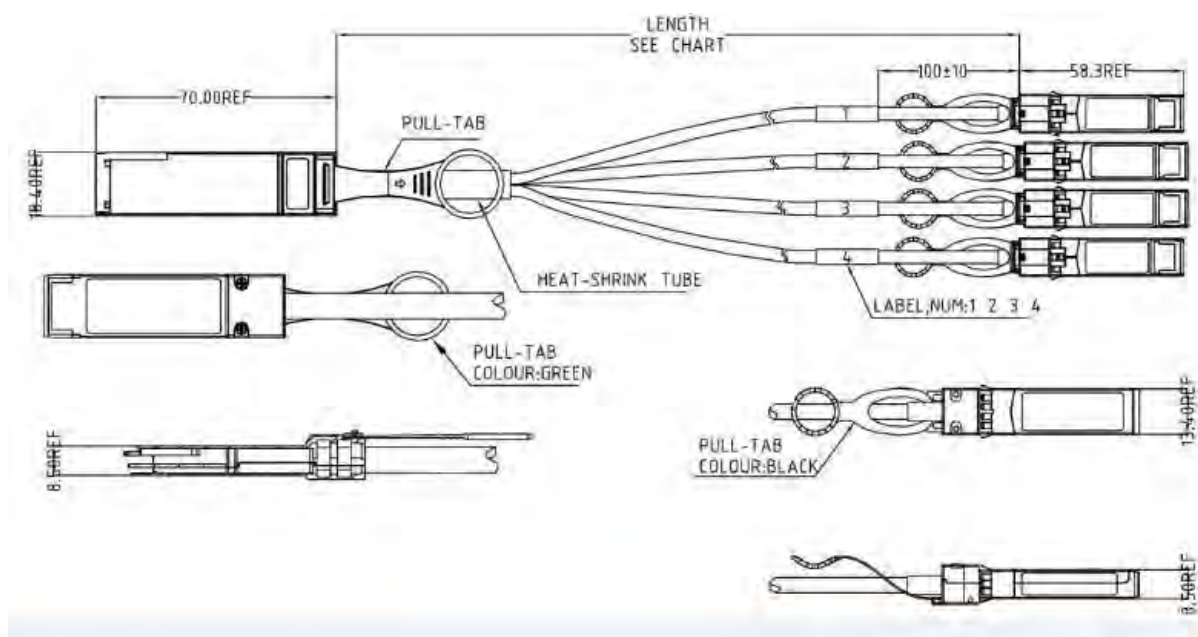
General Specifications

<i>Parameter</i>	<i>Symbol</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>	<i>Remarks</i>
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

<i>Parameter</i>	<i>Symbol</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>	<i>Remarks</i>
Wire Gauge			30AWG			
Cable Impedance	Z	95	100	105	Ohm	

Outline Dimensions



ALL DIMENSIONS ARE ±0.2mm UNLESS OTHERWISE SPECIFIED

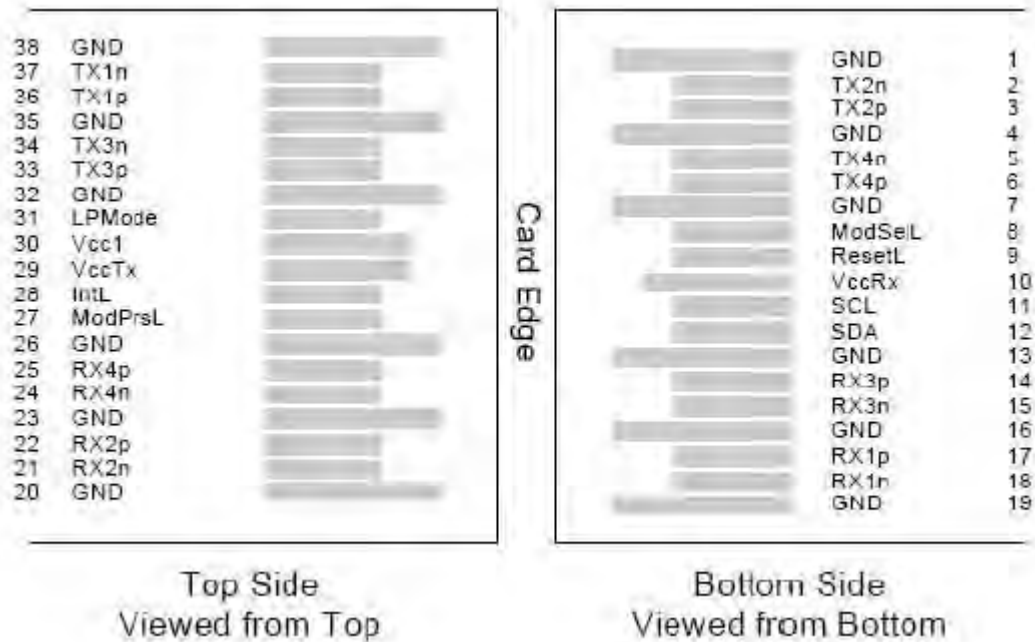
UNIT: mm

Technical drawing of Detail B, Scale 8:1, showing a cross-section of a mechanical part. The drawing includes dimensions for overall size, hole locations, and surface features. Key dimensions include a total width of 18.0 ± 0.03, a central hole diameter of 1.55 ± 0.05, and a datum axis. Surface features are indicated by triangles 1, 2, and 3. Notes specify that surface traces are permitted and that indicated holes are optional.

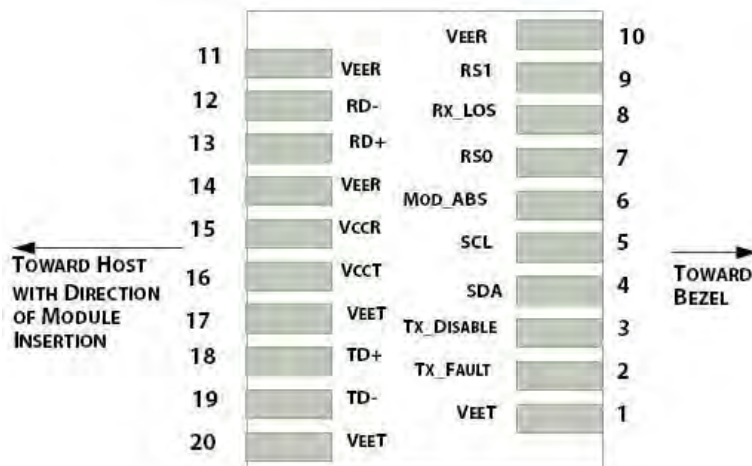
NOTES

1. CENTERLINE OF PAD
2. SURFACE TRACES PERMITTED WITHIN THIS LENGTH
3. INDICATED HOLES ARE OPTIONAL

Electrical Pad Layout (QSFP+ END)



Electrical Pad Layout (SFP+ END)



Pin Assignment (QSFP+ END)

<i>PIN#</i>	<i>Symbol</i>	<i>Description</i>	<i>Remarks</i>
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	

Pin Assignment (SFP+ END)

<i>PIN#</i>	<i>Symbol</i>	<i>Description</i>	<i>Remarks</i>
1	V _{EET}	Transmitter ground (common with receiver ground)	
2	T _{FAULT}	Transmitter Fault.	
3	T _{DIS}	Transmitter Disable. Laser output disable on high or open	
4	SDA	Data line for serial ID	
5	SCL	Clock line for serial ID	
6	MOD_ABS	Module Absent. Grounded within the module	
7	RS0	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation	
9	RS1	No connection required	
10	V _{EER}	Receiver ground (common with transmitter ground)	
11	V _{EER}	Receiver ground (common with transmitter ground)	
12	RD-	Receiver Inverted DATA out. AC coupled	
13	RD+	Receiver Non-inverted DATA out. AC coupled	
14	V _{EER}	Receiver ground (common with transmitter ground)	
15	V _{CCR}	Receiver power supply	
16	V _{CCT}	Transmitter power supply	
17	V _{EET}	Transmitter ground (common with receiver ground)	
18	TD+	Transmitter Non-Inverted DATA in. AC coupled	
19	TD-	Transmitter Inverted DATA in. AC coupled	
20	V _{EET}	Transmitter ground (common with receiver ground)	

References

- Enhanced 8.5 and 10 Gigabit Small Form Factor Pluggable Module "SFP+" – SFF-8431
- IEEE standard 802.3ae. IEEE Standard Department, 2008.
- QSFP+ 10 Gbs 4X PLUGGABLE TRANSCEIVER –SFF-8436