

## 40G QSFP+ to 4×10G SFP+ Breakout Passive Copper Cable

### Description

The QSFP+ to 4x SFP+ Passive cable assemblies are high performance, cost effective for SFP+ and QSFP+ equipment interconnects. The Hybrid cables are compliant with SFF-8436 and SFF-8431 specifications. It offers a low power consumption, short reach interconnect applications. The cable each lane is capable of transmitting data at rates up to 10Gb/s, providing an aggregated rate of 40Gb/s.

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### Features

- Hybrid cable conforms to the Small Form Factor SFF-8436 and SFF-8431
  - 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)
  - Hybrid cable link length up to 5m (passive limiting)
  - High-Density QSFP 38-PIN and 4x SFP 20-PIN Connector
  - Power Supply :+3.3V
  - Low power consumption: 0.02 W (typ.)
  - Temperature Range: 0~ 70 °C
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### Applications

- 40G QSFP+ to 4×10SFP+
  - 10G/40Gigabit Ethernet
  - InfiniBand4x SDR, DDR, QDR
  - Switches, Routers, and HBAs
  - Data Centers
  - Fiber Channel
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### STANDARDS COMPLIANCE

#### QSFP+

- SFF-8436
- InfiniBand
- QSFP+ MSA
- RoHS Compliant

#### SFP+

- SFF-8431
  - SFP+ MSA
  - RoHS Compatible
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### 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	VCC3	3.14	3.3	3.47	V
Power Dissipation	PD		0.02		W

### QSFP+ Pin Descriptions

Pin	Logic	Symbol	Name/Description	Notes
1	GND	Ground	Ground	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	Ground	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	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	Ground	1
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	
15	CML-O	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	Ground	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	
18	CML-O	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	Ground	1
20	GND	Ground	Ground	1
21	CML-O	Rx2n	Receiver Inverted Data Output	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	Ground	1
24	CML-O	Rx4n	Receiver Inverted Data Output	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	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	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

### SFP+ 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	Receiver Ground	
11		VeeR	Receiver Ground	
12	CML-O	RD-		Receiver Data Inverted
13	CML-O	RD+		Receiver Data Non-Inverted
14		VeeR	Receiver Ground	
15		VccR	Receiver 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

### Mechanical Dimensions

