



# **SFP Modules**

## Datasheet



## Hybrid Passive **40G QSFP+** to **4x 10G SFP+** Direct Attach Passive Copper Cables

ULCQ004XL-CNM3



All UltraLAN SFP products carry a  
**3 year warranty** against defects.

## Product 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 is offer 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.

## Product Features

- Hybrid cable conforms to the Small Form Factor SFF-8436 and SFF-8431
- Support for multi-gigabit data rates :1.0 Gbps - 10.3125 Gbps (per channel)
- Compliant with SFP MSA and SFF-8472
- Maximum aggregate data rate: 41.25 Gbps (4 x 10.3125Gbit/s)
- Hybrid cable link length up to 5m (passive limiting)
- High-Density QSFP 38-PIN and 4x SFP 20-PIN Connector
- RoHS compliant
- Power Supply :+3.3V
- Case operating temperature:
- Commercial: 0°C to +70°C

## Applications:

- 40G QSFP+ to 4x10SFP+
- 10G/40Gigabit Ethernet
- InfiniBand SDR, DDR, QDR
- Switches, Routers, and HBAs
- Data Centers
- Fibre Channel

## Standards Compliance

### QSFP+

- SFF-8436
- QDR InfiniBand
- QSFP+ MSA

### SFP+

- RoHS compliant with 2002/95/EC 4.1&4.2 2005/747/EC

## Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Storage Ambient Temperature		-10		+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	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		VccRx	+3.3V Power Supply Receiver	2
11	LVC MOSI/O	SCL	2-wire serial interface clock	
12	LVC MOSI/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 Inverted Data Output	
18	CML-O	Rx1n	Receiver Non-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		VccTx	+3.3V Power supply transmitter	
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

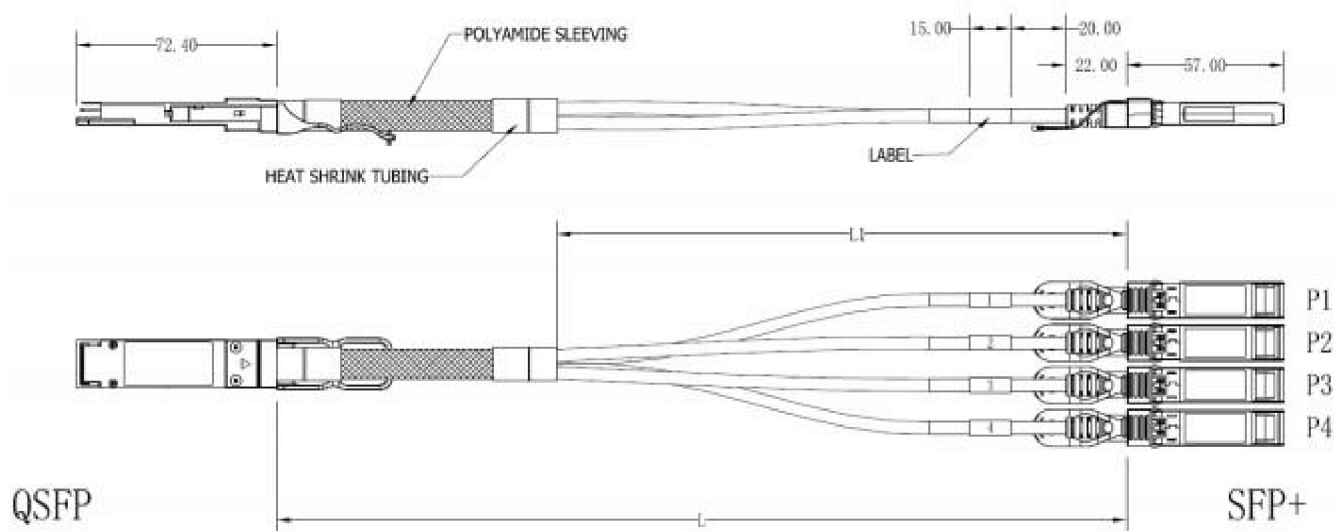
## QSFP+ Pin Descriptions

Pin	Logic	Symbol	Name/Description	Notes
1		VeeT	Tx ground	
2	LV-TTL-O	TxFault	N/A	1
3	LV-TTL-I	TxDisable	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	N/A	N/A	1
10		VeeR	Rx ground	
11		VeeR	Rx ground	
12	CML-O	RD-	Reciever Data Inverted	
13	CML-O	RD+	Reciever Data Non-Inverted	
14		VeeR	Rx ground	
15		VccR	Rx power supply	
16		VccT	Tx power supply	
17		VeeT	Tx ground	
18	CML-I	TD+	Transmitter Data Non-Inverted	
19	CML-I	TD-	Transmitter Data Inverted	
20		VeeT	Transmitter Ground	

### Notes:

1. Signals not supported in SFP+ Copper pulled-down to VeeT with 30K ohms resistor
2. Passive cable assemblies do not support LOS and TX\_DIS

## Mechanical Dimensions





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