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## **40G QSFP+ Passive Copper Cable**

### **Features**

- Compliant with SFF- 8436
- Up to 10.3125Gbps data rate per channel
- Up to 7m transmission
- Single 3.3V power supply
- RoHS compliant
- Commercial temperature range(COM): 0 to 70°C
- Low power consumption: less than 0.1W
- High-Density QSFP 38-PIN Connector

### **Applications**

- 40 Gigabit Ethernet
- Fiber Channel over Ethernet

### **Compliance**

- Compliant with SFF-8636
- Compliant with IEEE 802.3ba
- RoHS Compliance

## Description

QSFP+ (Quad Small Form-factor Pluggable Plus) passive cable assemblies are high performance, cost effective I/O solutions for 40G LAN, HPC and SAN applications. QSFP+ 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 of QSFP+ switches within racks and across adjacent racks.

QSFP+ passive copper cables are compliant with SFF-8436, QSFP+ MSA and IEEE 802.3ba 40GBASE-CR4. It is offer a low power consumption, short reach inter connect applications. The cable each lane is capable of transmitting data at rates up to 10Gb/s, providing an aggregated rate of 40Gb/s.

## Absolute Maximum Ratings

**Table1-Absolute Maximum Ratings**

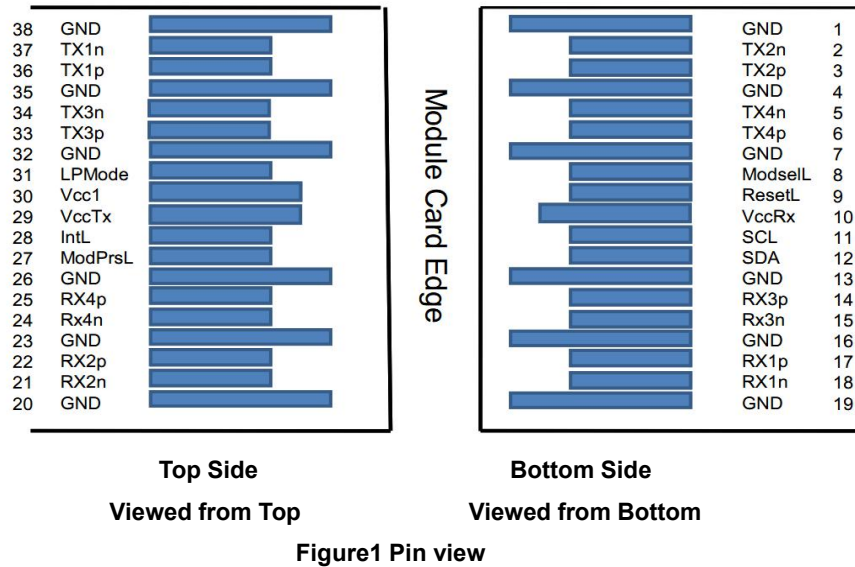
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Storage Temperature	TSTG	-40	-	+85	°C	
Relative Humidity (non-condensation)	RH	0	-	85	%	
Operating Case Temperature	Tc	0	-	+70	°C	
Supply Voltage	VCC3	-0.3	3.3	3.6	v	

## High Speed Characteristics

**Table2-High Speed Characteristics**

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Differential Impedance	Zd	90	100	100	Ω	
Differential Input Return Loss	SDDXX	$< -12 + 2 \cdot \sqrt{f}$ with f in GHz			dB	0.01~4.1GHz
		$< -6.3 + 13 \cdot \log_{10}(f/5.5)$ with f in GHz			dB	4.1~11.1GHz
Common Mode Output Return Loss	SCCXX	$< -7 + 1.6 \cdot f$ with f in GHz			dB	0.01~2.5GHz
Difference Waveform Distortion Penalty	dWDPC			6.75	dB	
VMA Loss	L			4	dB	
VMA Loss to Crosstalk Ratio	VCR	32.5			dB	

## Pin Description



**Table3-Pin Function Definitions**

Pin	Symbol	Name/Description	Note
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	Vcc Rx	+3.3V Power Supply Receiver	
11	SCL	2-wire serial interface clock	2
12	SDA	2-wire serial interface data	2
13	GND	Ground	1
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	1
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	1
20	GND	Ground	1
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	

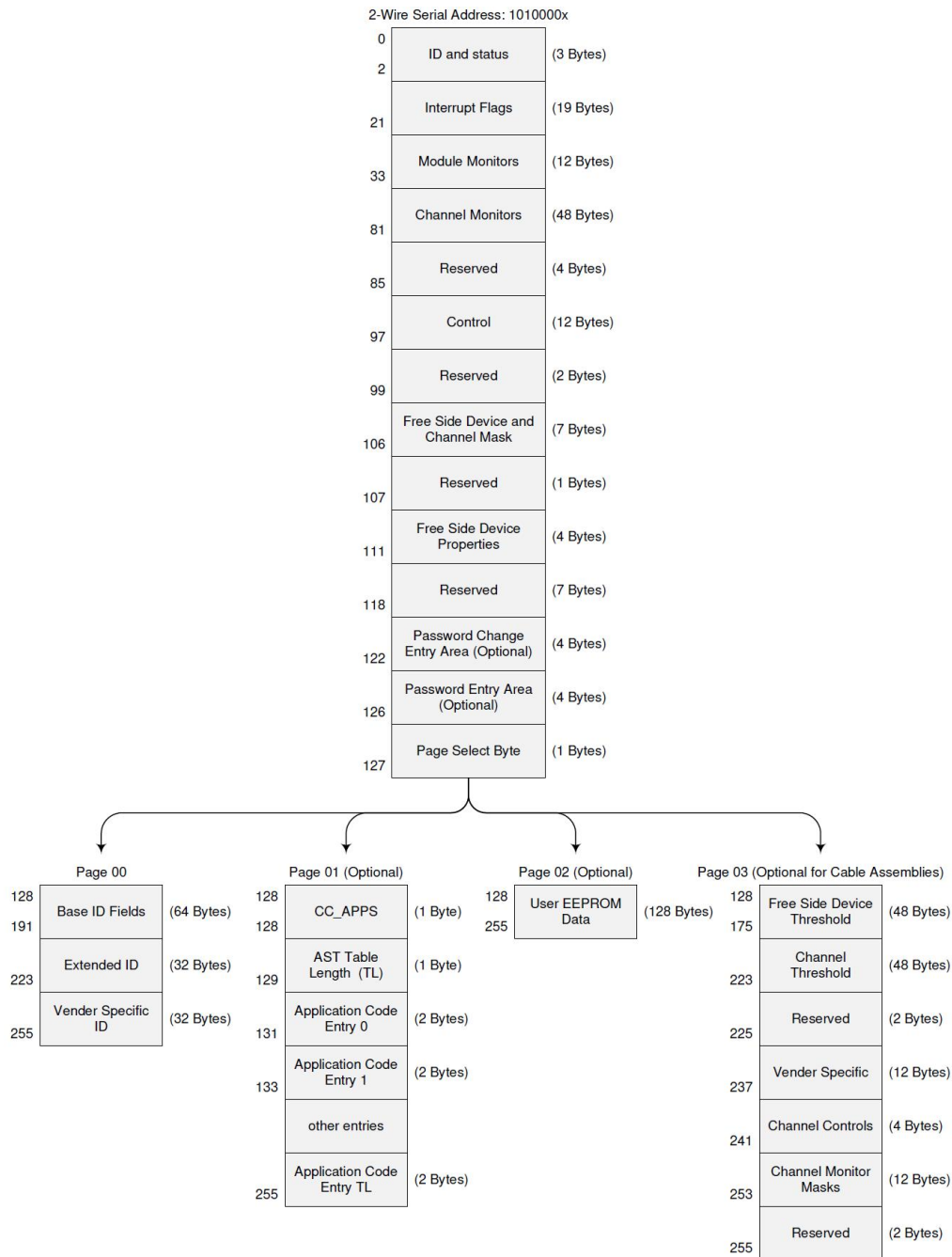
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1
27	ModPrsL	Module Present	2
28	IntL	Interrupt	2
29	VccTx	+3.3V Power supply transmitter	
30	Vcc1	+3.3V Power supply	
31	LPMode	Low Power Mode	
32	GND	Ground	1
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	1
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Input	
38	GND	Ground	1

Notes:

[1] Module ground pins GND are isolated from the module case and chassis ground within the module

[2] Shall be pulled up with 4.7K-10Kohms to a voltage between 3.14V and 3.47V on the host board

## Monitoring Specification



**Figure2 Memory map**

## Caution

All adjustments have been done at the factory before the shipment of the devices. No maintenance and user serviceable part is required. Tampering with and modifying the performance of the device will result in voided product warranty.

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## Contact Information

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