

# 40Gb/s QSFP+ SR4 Optical Transceiver Module

## Applications

- 40G Ethernet
- Data Center
- Back to Back
- InfiniBand QDR, DDR and SDR



## Features

- 4 independent full-duplex channels
- Up to 11.2Gb/s data rate per channel
- High Reliability 850nm VCSEL technology
- MTP/MPO optical connector
- QSFP+ MSA compliant
- Electrically hot-pluggable
- Up to 100m transmission on OM3 multimode fiber or 150m links on OM4 multimode fiber
- RoHS compliant and lead-free
- Digital diagnostic capabilities
- Single +3.3V power supply
- Maximum power consumption 1.5W
- All-metal housing for superior EMI performance
- Case operating temperature Commercial: 0  
Industrial: -40 ~ +85°C

## Description

The 40Gb/s QSFP+SR4 is a Four-Channel, Pluggable, Parallel, Fiber-Optic QSFP+ Transceiver for InfiniBand QDR/DDR/SDR, 10G/8G/4G/2G fiber channel, PCIe and SAS Applications. The QSFP full-duplex optical module offers 4 independent transmit and receive channels, each capable of 10.7Gbps operation for an aggregate data rate of 42.8Gbps 1.4km using single mode fiber. These modules are designed to operate over single mode fiber systems using 1310nm FP laser array. An optical fiber ribbon cable with an MPO/MTP™ connector can be plugged into the QSFP module receptacle. QSFP+ PSM IR4 is one kind of parallel transceiver which provides increased port density and total system cost savings.

## Absolute Maximum Ratings

The operation in excess of any absolute maximum ratings might cause permanent damage to this module.

## Recommended Operating Conditions and Supply

Parameter	Symbol	Min	Max	Unit	Note
Storage Temperature	TST	-40	85	degC	
Relative Humidity(non-condensing)	RH	0	85	%	
Operating Case Temperature	TOPC	0	70	degC	
Supply Voltage	VCC	-0.3	3.6	V	
Input Voltage	Vin	-0.3	Vcc+0.3	V	

## Requirements

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	TOPC	0		70	degC
Power Supply Voltage	VCC	3.13	3.3	3.47	V
Power Consumption		-		2.5	W
Data Rate	DR		10.3	10.7	Gbps
Data Speed Tolerance	ΔDR	-100		+100	ppm

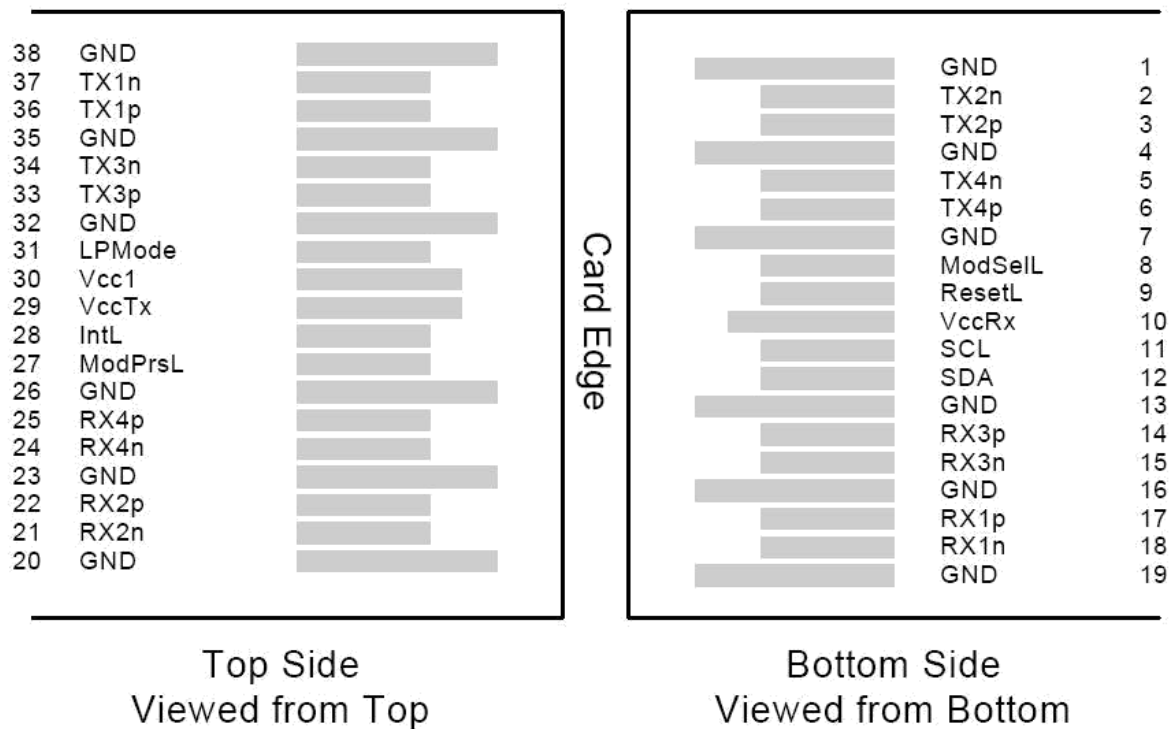
## Pin Descriptions



PIN	Logic	Symbol	Name/Description	Note
1		GND	Ground	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data output	
4		GND	Ground	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data output	
7		GND	Ground	1
8	LVTLL-I	ModSelL	Module Select	
9	LVTLL-I	ResetL	Module Reset	
10		VccRx	+ 3.3V Power Supply Receiver	2
11	LVC MOS-I/	SCL	2-Wire Serial Interface Clock	
12	LVC MOS-I/	SDA	2-Wire Serial Interface Data	
13		GND	Ground	
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 Non-Inverted Data Output	
18	CML-O	Rx1n	Receiver Inverted Data Output	
19		GND	Ground	1
20		GND	Ground	1
21	CML-O	Rx2n	Receiver Inverted Data Output	

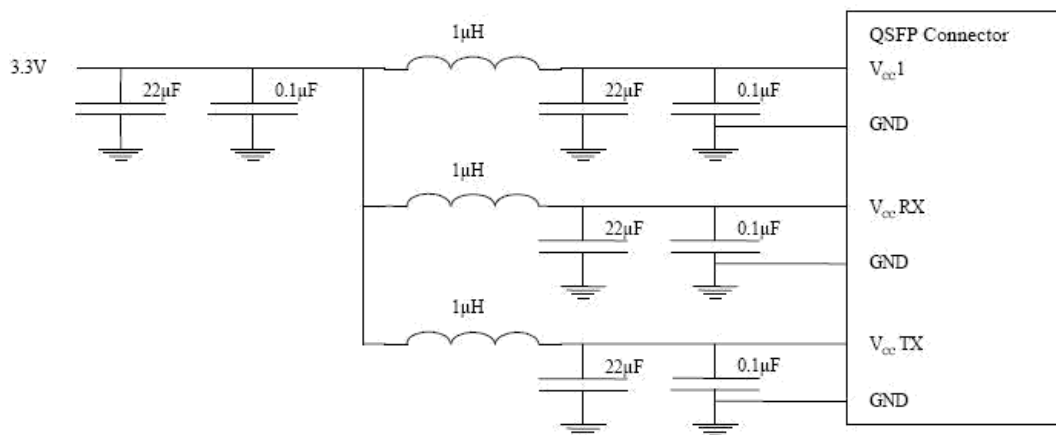
**Notes:**

1. Module circuit ground is isolated from module chassis ground within the module. GND is the symbol for signal and supply (power) common for QSFP modules.
2. The connector pins are each rated for a maximum current of 500mA.



**Power Supply Filtering**

The host board should use the power supply filtering shown in Figure1.



**Figure1. Host Board Power Supply Filtering**