



CHENGDU HONELINKS INNOVATION TECHNOLOGY CO.,LTD.

501 Kechuang Road, Jinjiang District, Chengdu City, Sichuan
Province

TEL: 86-028-86661062 Whatsapp/Cell:86-15196637014

Email: sales@honelinks.com sherry@honelinks.com

QSFP+/40G-SR4

40 Gb/s QSFP+ SR4 Optical Transceiver

1 Features

- 1.1 Hot pluggable QSFP+ MSA form factor
- 1.2 Compliant to IEEE 802.3ba 40GBASE-SR4
- 1.3 Up to 100m on OM3 MMF and 150m on OM4 MMF
- 1.4 Single +3.3V power supply
- 1.5 Operating case temperature: 0~70°C
- 1.6 Maximum power consumption 1.5W
- 1.7 Single 1x12 MPO receptacle
- 1.8 RoHS-6 compliant

2 Applications

- 40GBASE-SR4 Ethernet Links
- Breakout to 10GBASE-SR Ethernet
- Datacenter and Enterprise networking

3 General Description

This product is a 40Gb/s transceiver module designed for optical communication applications compliant to 40GBASE-SR4 of the IEEE 802.3ba standard.

The product is designed with form factor, optical/electrical connection and digital diagnostic interface according to the QSFP+ Multi-Source Agreement (MSA). It has been designed to meet the harshest external operating conditions including temperature, humidity and EMI interference.

4 Pin Function Definition

PIN	Logic	Symbol	Name/Description
1		GND	Ground
2	CML-I	Tx2n	Transmitter Inverted Data Input
3	CML-I	Tx2p	Transmitter Non-Inverted Data output



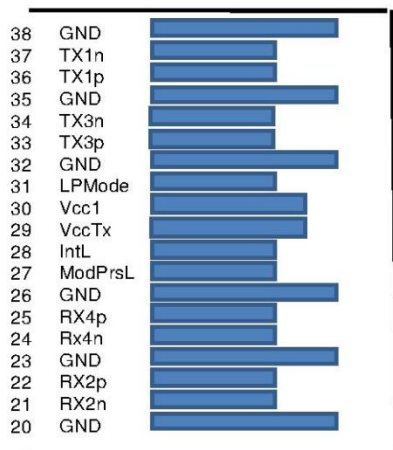
4		GND	Ground
5	CML-I	Tx4n	Transmitter Inverted Data Input
6	CML-I	Tx4p	Transmitter Non-Inverted Data output
7		GND	Ground
8	LVTLL-I	ModSelL	Module Select



9	LVTLL-I	ResetL	Module Reset
10		VccRx	+3.3V Power Supply Receiver
11	LVCMOSS-I/O	SCL	2-Wire Serial Interface Clock
12	LVCMOSS-I/O	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 Input
16		GND	Ground
17	CML-O	Rx1p	Receiver Non-Inverted Data output
18	CML-O	Rx1n	Receiver Inverted Data Input
19		GND	Ground
20		GND	Ground
21	CML-O	Rx2n	Receiver Inverted Data Input
22	CML-O	Rx2p	Receiver Non-Inverted Data output
23		GND	Ground
24	CML-O	Rx4n	Receiver Inverted Data Input
25	CML-O	Rx4p	Receiver Non-Inverted Data output
26		GND	Ground
27	LVTLL-O	ModPrsL	Module Present
28	LVTLL-O	IntL	Interrupt
29		VccTx	+3.3V Power Supply transmitter

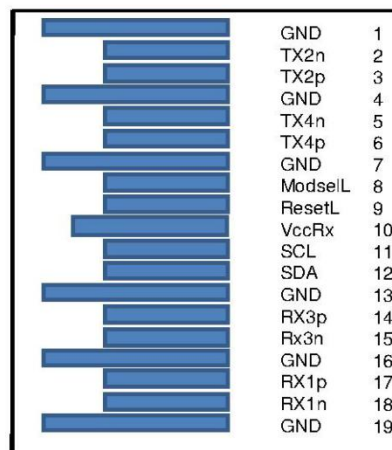


30		Vcc1	+3.3V Power Supply
31	LVTLL-I	LPMode	Low Power Mode
32		GND	Ground
33	CML-I	Tx3p	Transmitter Non-Inverted Data output
34	CML-I	Tx3n	Transmitter Inverted Data Input
35		GND	Ground
36	CML-I	Tx1p	Transmitter Non-Inverted Data output
37	CML-I	Tx1n	Transmitter Inverted Data Input
38		GND	Ground



Top Side
Viewed From Top

Module Card Edge



Bottom Side
Viewed From Bottom



5 Absolute Maximum Ratings

It has to be noted that the operation in excess of any individual absolute maximum ratings might cause permanent damage to this module

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T_{stg}	-20	+85	°C
Operating Case Temperature	T_{OP}	0	70	°C
Operating relative humidity (Non- condensing)	RH	0	85	%
Supply Voltage	V_{cc}	-0.5	3.6	V

6 Recommended Operating Conditions and Power Supply Requirements

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	T_{c}	0		+70	°C
Power Supply Voltage	V_{cc}	+3.135		+3.465	V
Data Rate,each Lane			10.3125		Gb/s
Power Consumption	P			1.5	W
Supply Current	ICC			455	mA
Link Distance	-	-		150	m



7 Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter						
Center Wavelength		840		860	nm	
Average Launch Power, each Lane	PAVG	-8.2		2.4	dBm	
Extinction Ratio	ER	3			dB	
Average Launch Power OFF Transmitter, each Lane	Poff			-30	dBm	
Receiver						
Center Wavelength	λC	840		860	nm	
Average Receive Power, each Lane		-9.5		2.4	dBm	
Receiver Sensitivity, each Lane(OMA)	SEN			-9.5	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Deassert	LOSD			-15	dBm	
LOS Hysteresis	LOSH	0.5			dB	

8 Electrical Characteristics

Parameter	Symbol	Min.	Max.	Unit
Transmitter				
Differential Data Input Amplitude	VIN,P-P	200	1600	mVpp



Differential Input Impedance			80	120	Ω
Tx_Disable	Normal Operation	VIL	-0.3	0.8	V
	Laser Disable	VIH	2.0	VCC+0.3	V
Receiver					
Differential Data Output Amplitude		VOUT,P-P	320	950	mVpp
Differential Output Impedance			80	120	Ω
Output Rise/Fall Time, 20%~80%		TR	-	100	ps
Rx_LOS	Normal Operation	VOL	-	0.4	V
	Lose Signal	VOH	VCC-0.5	-	V

9 Digital Diagnostic Functions

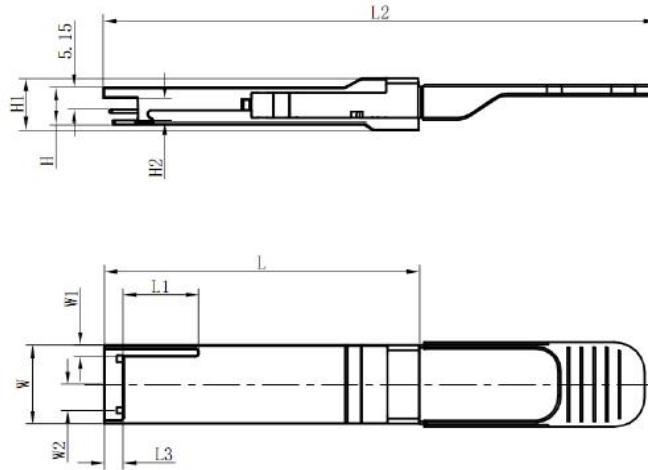
The following digital diagnostic characteristics are defined over the normal operating conditions unless otherwise specified

Parameter	Symbol	Min.	Max.	Unit	Note
Temperature monitor absolute error	DMI_Temp	-3	+3	$^{\circ}\text{C}$	Over operating temperature range
Supply voltage monitor absolute error	DMI_VCC	-0.1	0.1	V	Over full operating range
Channel RX power monitor absolute error	DMI_RX_Ch	-3	3	dB	
Channel Bias current monitor	DMI_Ibias_Ch	-10%	10%	mA	



Channel TX power monitor	DMI_TX_Ch	-3	3	dB	
absolute error					

10 Mechanical Dimensions



	L	L1	L2	L3	W	W1	W2	H	H1	H2
Max	72.2	—	122	4.35	18.5	—	6.2	8.6	12.1	5.35
Type	—	—	—		—	—	—	—	—	—
Min	68.8	16.5	118	4.05	18.1	2.2	5.8	8.4	11.7	5.05

11 Ordering Information

Part Number	Operating Case Temperature	RoHS Compliant
QSFP+/40G-SR4	0 ~ 70 °C	RoHS-6

12 Document History

Version	Change Description	Changed by	Date
VER A	Initial Release	Wang	01/15/2018