100Gb/s QSFP28 SR4 100m Transceiver
SLT0QPS4100GT85C

Features

- Support 100GBASE-SR4/100G Fiber Channel application
- Compliant to QSFP28 Electrical MSA SFF-8636
- Multi rate of up to 103.125Gbps
- Transmission distance up to 100m (OM4)
- +3.3V single power supply
- Low power consumption
- Operating case temp
  Commercial: 0°C to +70 °C
- RoHS compliant

Applications

- 100GBASE-SR4 at 25.78125Gbps per lane
- InfiniBand QDR, EDR
- Other optical links

Order Information

Part No.	Bit Rate (Gbps)	Laser (nm)	Distance [1]	Fiber Type	DDMI	Connector	Temp[2]
SLT0QPS4100GT85C	40/103.125	850	100m	MMF	YES	MPO 1x12	0℃~+70℃

Note:

1. OM4 fiber, 70m for OM3 fiber
2. Case Temperature

I. 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.	Typical	Max.	Unit	Notes
Supply Voltage	Vcc_3	-0.5	-	+3.6	V	
Storage Temperature	T_s	-40	-	+85	℃	
Operating Humidity	RH	+5	-	+85	%	1
Receiver Damage Threshold per Lane	P_{IND}	+3.4	-	-	dBm	

Note: 1 No condensation

II. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	T_C	0	-	+70	℃	
Power Supply Voltage	Vcc	3.14	3.3	3.47	V	
Power Dissipation	Pd	-	-	2.5	W	
Bit Rate	BR	10.3125	25.78125	-	Gbps	

III. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Input Logic Level High	V_{IH}	2.0	-	V_{CC}+0.3	V	
Input Logic Level Low	V_{IL}	V_{EE}-0.3	-	0.8	V	
Output Logic Level High	V_{OH}	2.0	-	V_{CC}+0.3	V	
Output Logic Level Low	V_{OL}	0	-	0.4	V	
Transmitter						
Differential Data Input Swing	$V_{in,P-P}$	200	-	1000	mV_{PP}	
Input Differential Impedance	Z_{IN}	90	100	110	Ω	
Receiver						
Differential Date Output Swing	V_{out}	200	-	1000	mV	
Output Differential Impedance	Z_D	90	100	110	Ω	

IV. Optical Characteristics

Parameter	Symbol	Unit	Min	Typ.	Max	Notes
Optical transmitter Characteristics						
Bit Rate	BR	Gbps	10.3125	25.78125	-	
Center Wavelength Range	λc	nm	840	850	860	
RMS Spectral Width	Δλ	nm	-	-	0.6	

Average Launch power Tx_off	Poff	dBm	-	-	-30	
Launch Optical Power	P_0	dBm	-6.0		2.4	1
Extinction Ratio	ER	dB	2	-	-	
Optical Receiver Characteristics						
Bit Rate	BR	Gbps	10.3125	25.78125	-	
Sensitivity @BER=1E-12	BER	dBm	-	-	-5.2	
Sensitivity @BER=5E-5	BER	dBm	-	-	-10.3	
Overload Input Optical Power	P_{IN}	dBm	2.4	-	-	2
Center Wavelength Range	λc	nm	840	-	860	
LOS Assert	-	dBm	-30	-	-	
LOS De-Assert	-	dBm	-	-	-12	
LOS Hysteresis	-	dB	0.5	-	-	

Note:

1. Coupled into 50/125 MMF.
2. Measured with PRBS 2^{31}-1 test pattern @25.78125Gbps.BER=1E-12

V. Recommended Interface Circuit

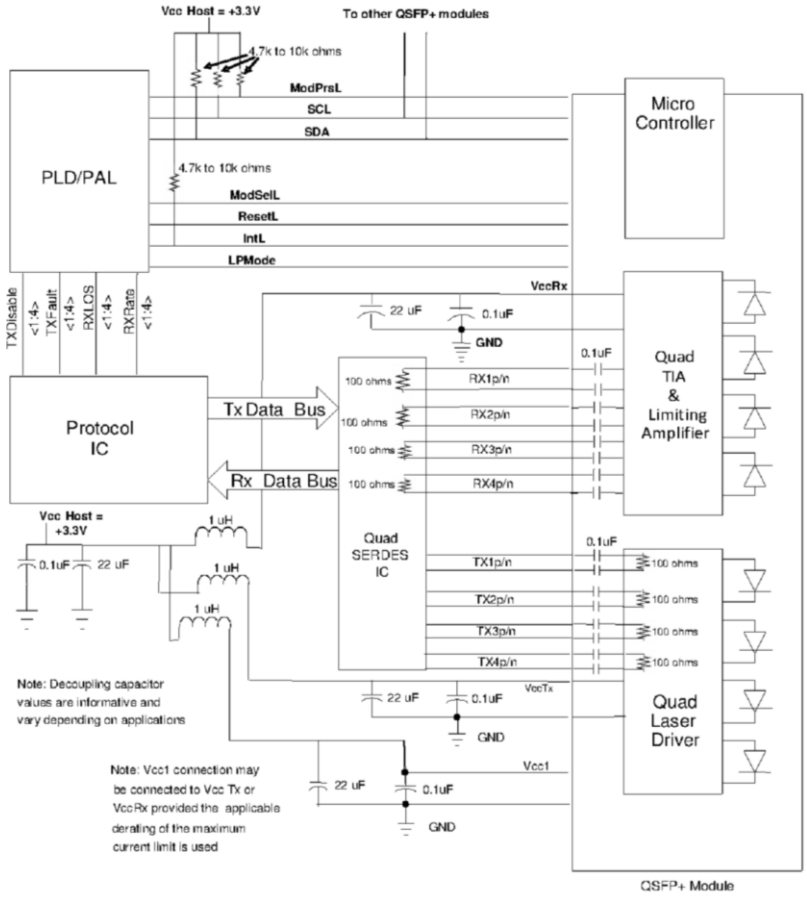


Figure 1, Recommended Interface Circuit

VI. Pin arrangement

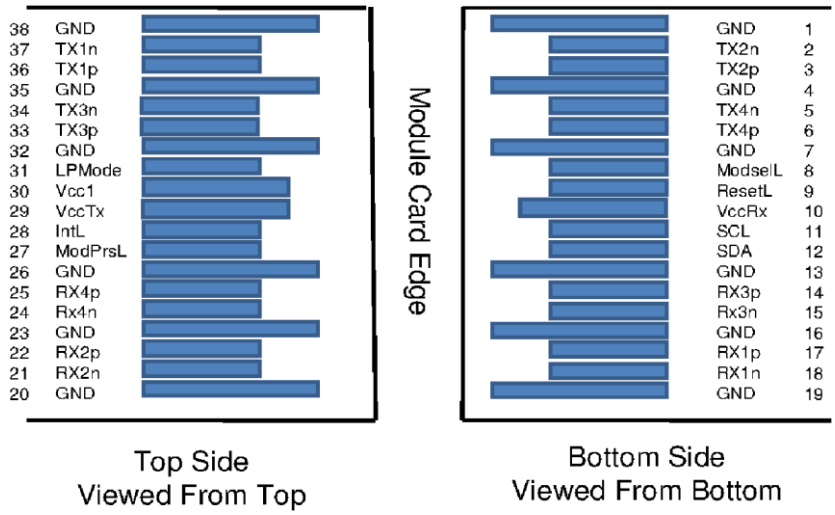


Figure 2, Pin View

Pin	Symbol	Name/Description	Notes
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	
12	SDA	2-wire serial interface data	
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	1
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1

27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	+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

Note: 1. Circuit ground is internally isolated from chassis ground.

VII. Optical interface arrangement

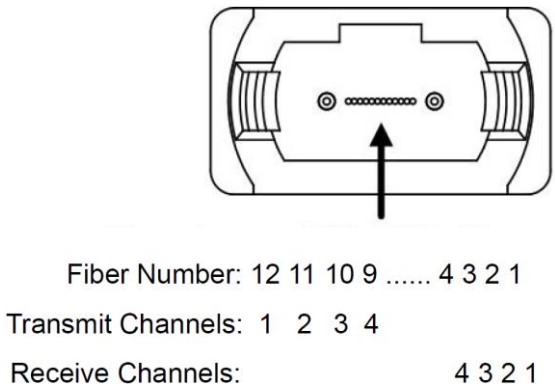


Figure 3, Optical interface arrangement. Lens upwards.

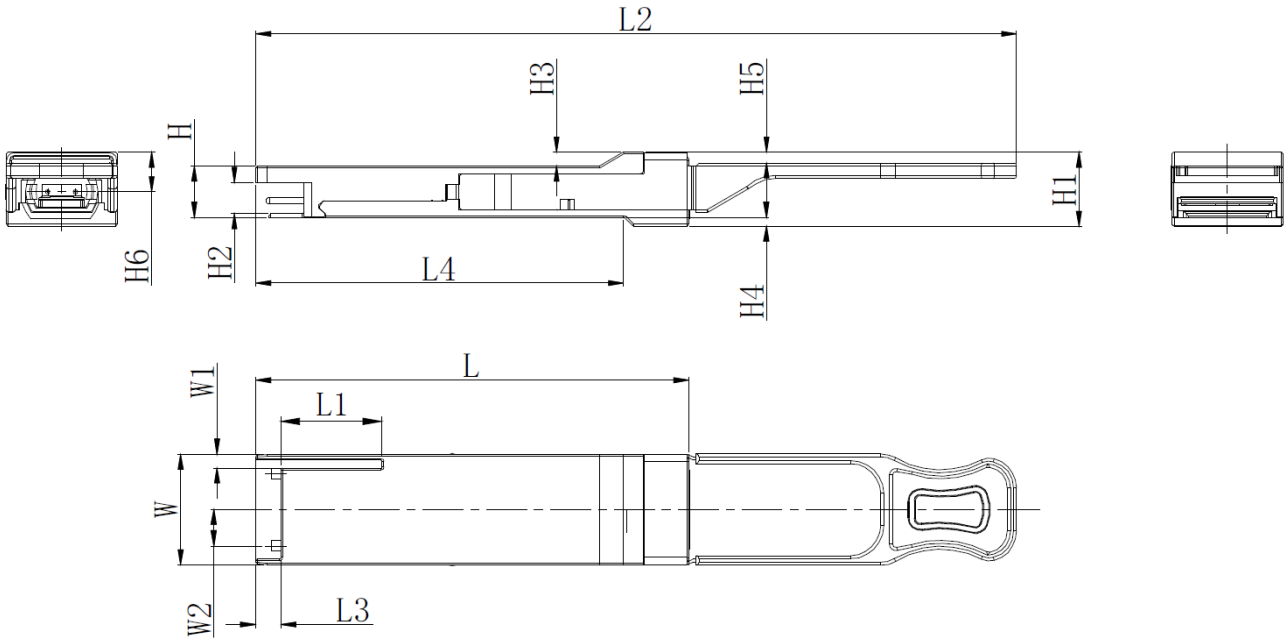
VIII. Monitoring Specification

2-Wire Serial Address 1010000x
Lower Page 00h
0 Identifier
1- 2 Status
3- 21 Interrupt Flags
22- 33 Free Side Device Monitors
34- 81 Channel Monitors
82- 85 Reserved
86- 98 Control
99 Reserved
100-104 Hardware Interrupt Pin Masks
105-106 Vendor Specific
107 Reserved
108-110 Free Side Device Properties
111-112 Assigned for use by PCI Express
113 Free Side Device Properties
114-118 Reserved
119-122 Password Change Entry Area (Optional)
123-126 Password Entry Area (Optional)
127 Page Select Byte

	Optional	Optional	Optional
Upper Page 00h	Page 01h	Page 02h	Page 03h
128 Identifier	128 CC_APPS	128-255 User EEPROM Data	128-175 Free Side Device Thresholds
129-191 Base ID Fields	129 AST Table Length (TL)		
	130-131 Application Code Entry 0		
	132-133 Application Code Entry 1		
	134-253 other entries		176-223 Channel Thresholds
192-223 Extended ID			224 Tx EQ & Rx Emphasis Magnitude ID
224-255 Vendor Specific ID			225 RX output amplitude indicators
			226-241 Channel Controls
			242-251 Channel Monitor Masks
	254-255 Application Code Entry TL		252-255 Reserved

Figure 4, Memory Map

IX. Mechanical



Unit mm

	L	L1	L2	L3	L4	W	W1	W2	H	H1	H2	H3	H4	H5	H6
Max	72.2	-	128	4.35	61.4	18.45	-	6.2	8.6	12.4	5.35	2.5	1.6	2.0	-
Type	72.0	-	-	4.20	61.2	18.35	-	-	8.5	12.2	5.2	2.3	1.5	1.8	6.55
Min	68.8	16.5	124	4.05	61.0	18.25	2.2	5.8	8.4	12.0	5.05	2.1	1.3	1.6	-

Figure 5, Mechanical Diagram

X. Revision history

Version	Initiated	Reviewed	Revision	Release Date
A0	Tony	Jack	New Release	2022-09-09

XI. Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD).
A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.
Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

XII. Contact Information

Sales@suliton.com