

GLQX0ACXX

40Gb/s QSFP+ Active Optical Cable

Features:

- Support 40GBASE-SR4/QDR application
- Compliant to QSFP+ Electrical MSA SFF-8436
- Multi rate of up to 10.3125Gbps
- +3.3V single power supply
- Low power consumption
- Operating case temp Commercial: 0°C to +70 °C
- UL certification cables (optional)
- RoHS 6/6 compliant



Applications

- 40GBASE-SR4 at 10.3125Gbps per lane
- InfiniBand QDR
- Other optical links

General Description

The Gearlink’s QSFP+ active optic cables are a high performance, low power consumption, long reach interconnect solution supporting InfiniBand DR/DDR/SDR, 12.5G/10G/8G/4G/2G fiber channel , PCIe and SAS. It is compliant with the QSFP+ MSA and IEEE P802.3ba. GearLink’s QSFP+ AOC is an assembly of 4 full-duplex lanes, where each lane is capable of transmitting data at rates up to 10.3Gb/s, providing an aggregated rate of 41.2Gb/s. GearLink’s QSFP+ AOC is one kind of parallel transceiver which provides increased port density and total system cost savings.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	Vcc3	-0.5	-	+3.6	V	
Storage Temperature	Ts	-10	-	+85	°C	
Operating Humidity	RH	+5	-	+85	%	1

Note:

1. No condensation

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Operating Case Temperature	T _c	0	-	+70	°C	
Power Supply Voltage	V _{cc}	3.14	3.3	3.47	V	
Power Dissipation	P _d	-	-	1.5	W	1
Bit Rate	BR	1.25	10.3125	-	Gbps	

Note:

1. Per terminal

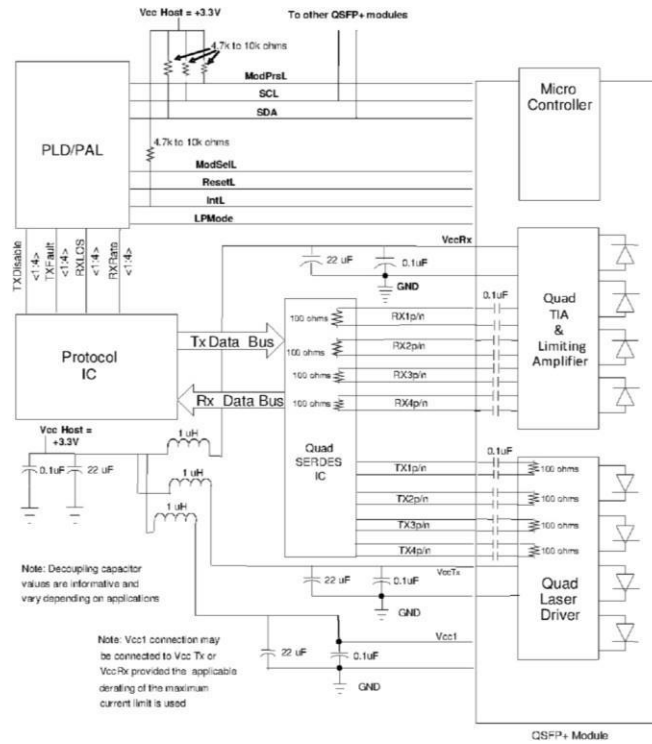
Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
ModSelL	Module Select	VOL	0	-	0.8	V
	Module Unselect	VOH	2.5	-	VCC	V
LPMode	Low Power Mode	VIL	0	-	0.8	V
	Normal Operation	VIH	2.5	-	VCC+0.3	V
ResetL	Reset	VIL	0	-	0.8	V
	Normal Operation	VIH	2.5	-	VCC+0.3	V
ModPrsL	Normal Operation	VOL	0	-	0.4	V
IntL	Interrupt	VOL	0	-	0.4	V
	Normal Operation	VoH	2.4	-	VCC	V
Electrical transmitter Characteristics						
Differential Data Input Swing	V _{out}	200	-	1600	mV	
Output Differential Impedance	Z _D	80	100	120	Ω	
Electrical Receiver Characteristics						
Differential Data Output Swing	V _{in,P-P}	350	-	800	mVPP	
Bit Error Rate	BER			E-12		1
Input Differential Impedance	Z _{IN}	80	100	120	Ω	

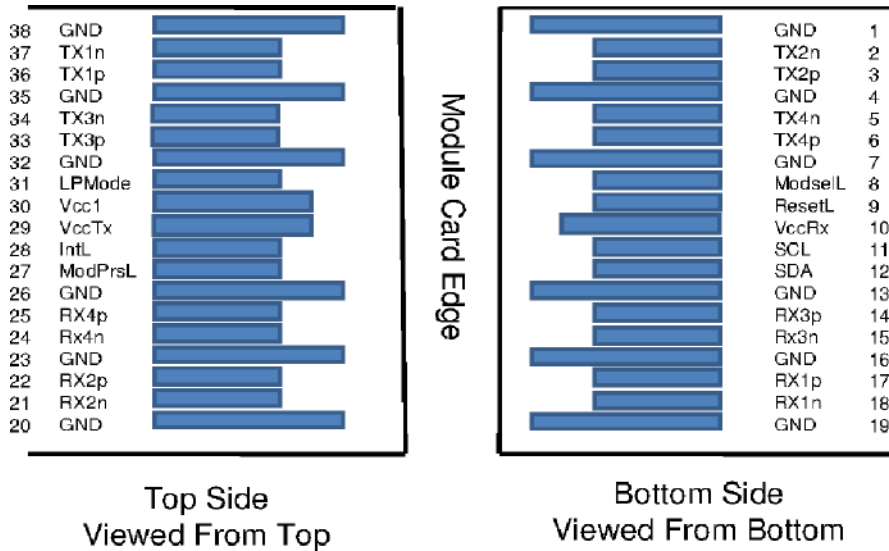
Note:

1. PRBS2^31-1@10.3125Gbps

Recommended Interface Circuit



Pin arrangement



Pin Function Definitions

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

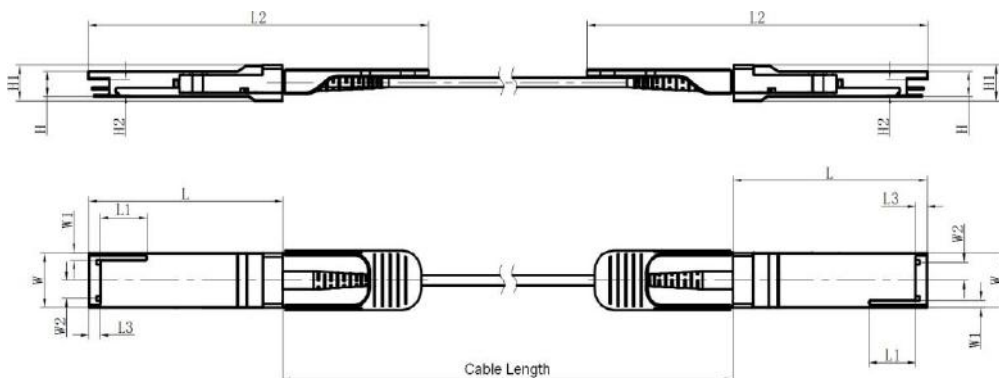
Note: 1. Circuit ground is internally isolated from chassis ground

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

Upper Page 00h	Optional Page 01h	Optional Page 02h	Optional 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)		176-223 Channel Thresholds	224 Tx EQ & Rx Emphasis Magnitude ID
	130-131 Application Code Entry 0			
	132-133 Application Code Entry 1			
	134-253 other entries			
192-223 Extended ID	254-255 Application Code Entry TL	225 RX output amplitude indicators	226-241 Channel Controls	
224-255 Vendor Specific ID		242-251 Channel Monitor Masks	252-255 Reserved	

Mechanical Dimension



Unit: mm

	L	L1	L2	L3	W	W1	W2	H	H1	H2
MAX	72.2	-	122	4.35	18.45	-	6.2	8.6	12.0	5.35
Typical	72.0	-	-	4.20	18.35	-	-	8.5	11.8	5.2
MIN	68.8	16.5	118	4.05	18.25	2.2	5.8	8.4	11.6	5.05

Cable Length

Cable Length (Unit: m)	Tolerant (Unit: cm)
<1.0	+5/-0
1.0~4.5	+15/-0
5.0~14.5	+30/-0
≥15.0	+2%/-0

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.

Ordering Information

GLQX0ACXX	QSFP+ Active Optical Cable with operate temperature 0°C~70°C
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