

LQ-AOC11100-3M

100G QSFP28 Active Optical Cable

Product Features

- Compliant with IEEE Std 802.3bm
- Compliant with SFF-8665
- Full duplex 4 channel 850nm parallel active optical cable
- Transmission data rate up to 25.78125Gbps Data rate per channel
- High Reliability 850nm VCSEL technology
- Electrically hot-pluggable
- Single +3.3V power supply
- Real Time Digital Diagnostic Monitoring
- Operating case temperature:
Standard: 0 to +70°C Industrial: -40 to +85°C

Applications

- 100G BASE-SR4 Ethernet links
- Data centers



Description

This product is a Four-Channel, Pluggable, Parallel, Fiber-Optic QSFP8 AOC for 100 Gigabit Ethernet, In fini Band EDR Applications. This transceiver is a high performance module for short-range multi-lane data communication and interconnect applications. It integrates four data lanes in each direction with 100Gbps bandwidth. LINK-PP QSFP28 Active Optical Cable's length is up to 70 meters over OM3 MMF or 100 meters over OM4 MMF. These modules are designed to operate over multimode fiber systems using a nominal wavelength of 850nm. The electrical interface uses a 38 contact edge type connector.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Power Supply Voltage	Vcc	-0.5	3.6	V
Input Voltage	Vin	-0.3	Vcc+0.3	V
Storage Temperature	Tst	-40	85	°C
Case Operating Temperature	Top	0	70	°C
Humidity(non-condensing)	RH	0	85	%

Recommended Operating Conditions and Power Supply

Requirements

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Power Supply Voltage	VCC	3.135	3.3	3.465	V	
Power Supply Current	ICC	-		750	mA	per cable end
Bit Rate	BR		25.78125		Gbps	Each channel

General Product Characteristics

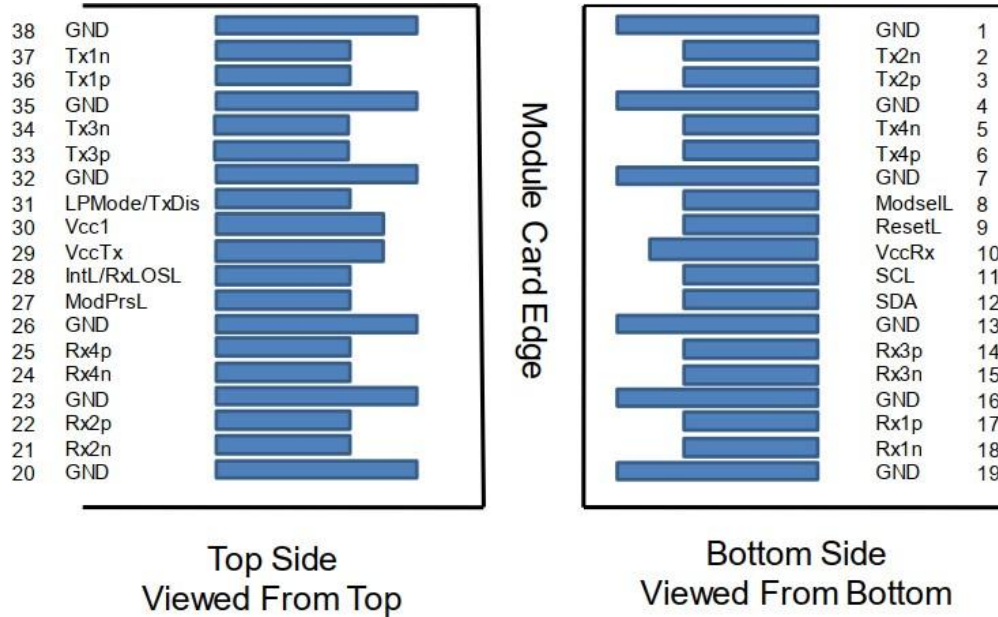
Parameter	Value	Unit	Notes
Module Form Factor	QSFP28		
Number of Lanes	4 Tx /Rx		
Maximum Aggregate Data Rate	103.125	Gb/s	
Maximum Data Rate per Lane	25.78125	Gb/s	
Standard Cable Lengths	3, 5, 7, 10...50	meters	
Electrical Interface and Pin-out	38-pin edge connector		Pin-out as defined by the QSFP28 MSA
Standard Optical Cable Type	Multimode ribbon fiber cable assembly		
Maximum Power Consumption per End	2.5	W	
Management Interface	Serial, I2C-based, 400 kHz maximum frequency		As defined by the QSFP28 MSA

Data Rate Spec	Symbol	Min.	Typ.	Max.	Unit	Note
Bit Rate per Lane	BR			25.78125	Gb/s	
Pre-FEC Bit Error Ratio	BER	-		5xE-5		PRBS 2 ³¹ -1 test pattern
Post-FEC Bit Error Ratio	BER			E-12		PRBS 2 ³¹ -1 test pattern

Electrical specifications per Lane

Parameter		Symbol	Min.	Typ.	Max.	Units	Notes
Differential Voltage Input Swing		Vin	200	-	1000	mVpp	
Input Differential Impedance		ZD	85	100	115	Ω	
Differential Voltage Output Swing		Vout	300	800	900	mVpp	
Output Differential Impedance		ZD	85	100	115	Ω	
ModSelL	Module Select	VOL	VEE-0.3	-	0.4	V	
	Module Unselect	VOH	2	-	VCC+0.3	V	
LPMMode	Low Power Mode	VIL	VEE-0.3	-	0.8	V	
	Normal Operation	VIH	2	-	VCC+0.3	V	
ResetL	Reset	VIL	VEE-0.3	-	0.8	V	
	Normal Operation	VIH	2	-	VCC+0.3	V	
ModPrsL	Normal Operation	VOL	VEE-0.3	-	0.4	V	
IntL	Interrupt	VOL	VEE-0.3	-	0.4	V	
	Normal Operation	VoH	2	-	VCC+0.3	V	

Pin Assignment



Pin	Symbol	Name/Description	NOTE
1	GND	Transmitter Ground (Common with Receiver Ground)	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data output	
4	GND	Transmitter Ground (Common with Receiver Ground)	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data output	
7	GND	Transmitter Ground (Common with Receiver Ground)	1
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	VccRx	3.3V Power Supply Receiver	2
11	SCL	2-Wire serial Interface Clock	
12	SDA	2-Wire serial Interface Data	
13	GND	Transmitter Ground (Common with Receiver Ground)	
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Transmitter Ground (Common with Receiver Ground)	1

17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Transmitter Ground (Common with Receiver Ground)	1
20	GND	Transmitter Ground (Common with Receiver Ground)	1
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Transmitter Ground (Common with Receiver Ground)	1
24	Rx4n	Receiver Inverted Data Output	1
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Transmitter Ground (Common with Receiver Ground)	1
27	ModPrsl	Module Present	
28	IntL	Interrupt	
29	VccTx	3.3V power supply transmitter	2
30	Vcc1	3.3V power supply	2
31	LPMODE	Low Power Mode, not connect	
32	GND	Transmitter Ground (Common with Receiver Ground)	1
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Output	
35	GND	Transmitter Ground (Common with Receiver Ground)	1
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Output	
38	GND	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. GND is the symbol for signal and supply (power) common for QSFP28 modules. All are common within the QSFP28 module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal common ground plane.

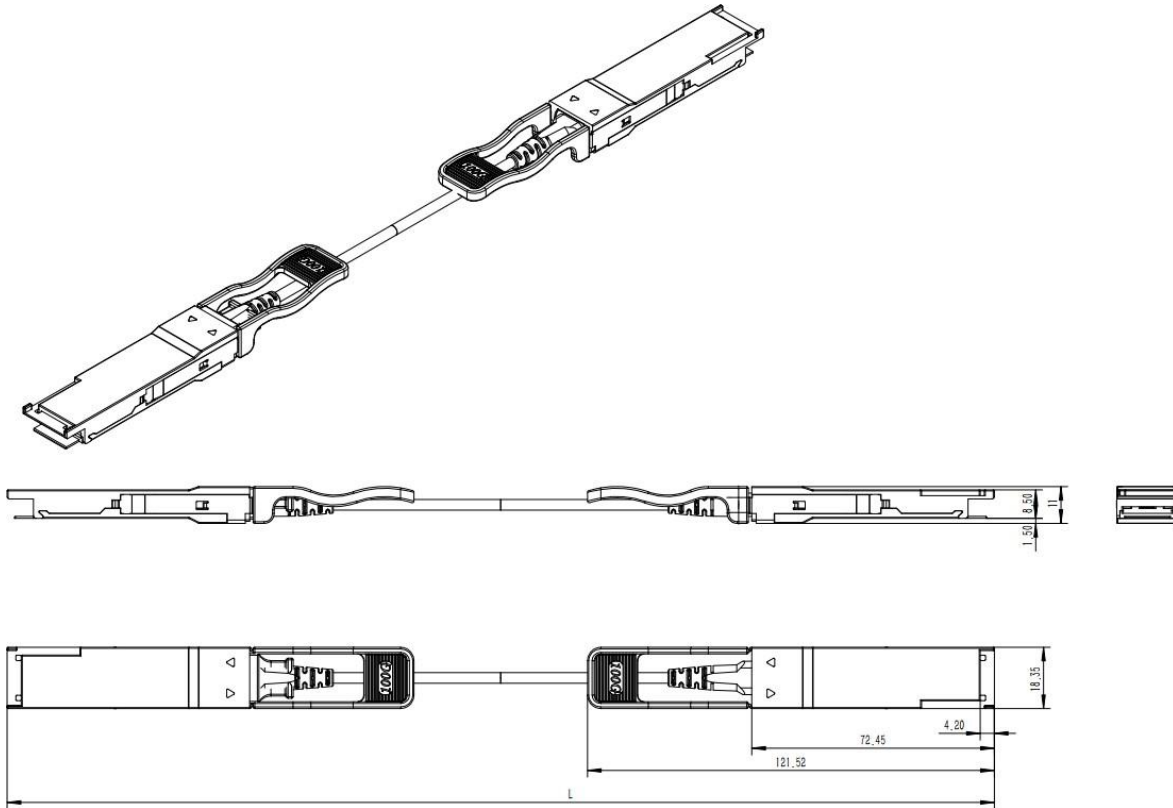
1) VccRx, Vcc1 and VccTx are the receiving and transmission power suppliers and shall be applied concurrently. Recommended host board power supply filtering is shown below. Vcc Rx, Vcc1 and Vcc Tx may be internally connected within the QSFP28 transceiver module in any combination. The connector pins are each rated for a maximum current of 1000mA.

Memory Map

Compatible with SFF-8636.

Mechanical Specifications

Pull Tab: Beige Unit: mm



Ordering information

Part Number	Product Description
LQ-AOC11100-1M	850nm, 100Gbps, AOC, 1m, 0°C~+70°C, with DDM
LQ-AOC11100-3M	850nm, 100Gbps, AOC, 3m, 0°C~+70°C, with DDM
LQ-AOC11100-5M	850nm, 100Gbps, AOC, 5m, 0°C~+70°C, with DDM
LQ-AOC11100-7M	850nm, 100Gbps, AOC, 7m, 0°C~+70°C, with DDM
LQ-AOC11100-10	850nm, 100Gbps, AOC, 10m, 0°C~+70°C, with DDM
LQ-AOC11100-15	850nm, 100Gbps, AOC, 15m, 0°C~+70°C, with DDM
LQ-AOC11100-20	850nm, 100Gbps, AOC, 20m, 0°C~+70°C, with DDM
LQ-AOC11100-xx	850nm, 100Gbps, AOC, xxm, 0°C~+70°C, with DDM