

## 10314-AO

4 Channel Optical Cable with 2 QSFP connector

### Features

- Full duplex 4 channel 850nm parallel active optical cable
- Transmission data rate up to 10.3Gbit/s per channel
- SFF-8436 QSFP+ compliant
- Hot pluggable electrical interface
- 4 channels 850nm VCSEL array
- 4 channels PIN photo detector array
- Multi-mode optical fibre cable up to 100m
- Management Interface and digital diagnostic monitoring through I2C
- Low power consumption
- Housing isolated from connector ground
- Operating case temperature 0°C to +70°C
- 3.3V power supply voltage
- RoHS 6 complain



### Applications

- Infiniband transmission at 4ch SDR, DDR and QDR
- Switches, Routers
- Data Centers
- 4ch 10Gb Ethernet or 8.5Gb fiber Channel transmission

### Product Description

AddOn Computer's 10314-AO are active optic cables designed with high performance, low power consumption, long reach interconnect solution supporting 40G Ethernet, fiber channel and NIC cards. It is compliant with the QSFP MSA and IEEE P802.3ba.

10314-AO is an assembly of 4full-duplex lanes, where each lane is capable of transmitting data at rates up to 10Gb/s, providing an aggregated rate of 40Gb/s.

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	Vcc	-0.3	3.6	V
Input Voltage	Vin	-0.3	Vcc+0.3	V
Storage Temperature	Tst	-20	85	°C
Case Operating Temperature	Top	0	70	°C
Humidity (non-condensing)	Rh	5	95	%

## Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Operating Case Temperature	Tca	0		70	°C
Data Rate Per Lane	fd	2.5		10.3	Gbps
Humidity	Rh	5		85	%
Fiber Bend Radius	Rb	3			cm
Power Dissipation	Pm			1.5	W

## Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Differential Input Impedance	Zin	90	100	110	ohm
Differential Output Impedance	Zout	90	100	110	ohm
Differential Input Voltage Amplitude	$\Delta V_{in}$	200		1200	mVp-p
Differential Output Voltage Amplitude	$\Delta V_{out}$	600		800	mVp-p
Skew	Sw			300	ps
Bit Error Rate	BR			E-12	
Input Logic Level High	V <sub>IH</sub>	2		V <sub>CC</sub>	V
Input Logic Level Low	V <sub>IL</sub>	0		0.8	V
Output Logic Level High	V <sub>OH</sub>	V <sub>CC</sub> -0.5		V <sub>CC</sub>	V
Output Logic Level Low	V <sub>OL</sub>	0		0.4	V

Note:

BER=10<sup>-12</sup>; PRBS 2<sup>31</sup>-1@10.3125 Gbps.

Differential input voltage amplitude is measured between TxNp and TxNn.

Differential output voltage amplitude is measured between RxNp and RxNn.

## Pin Descriptions

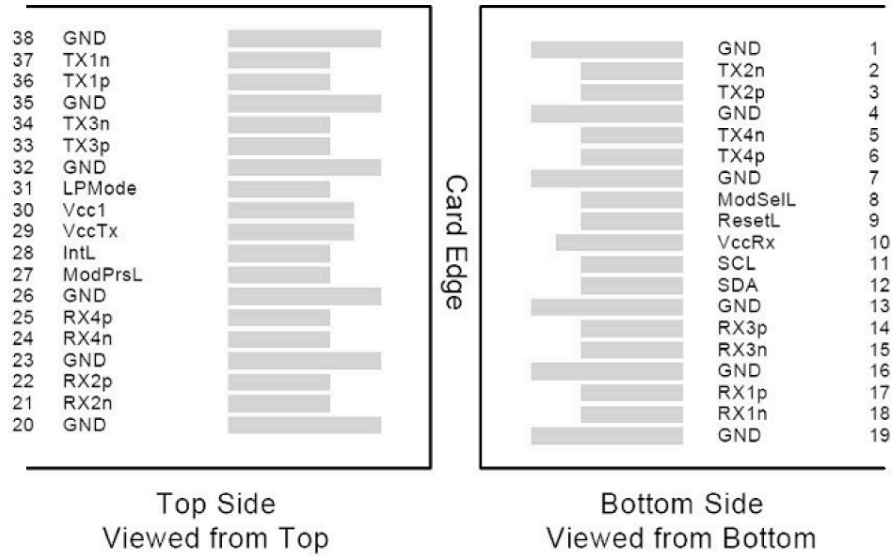
Pin	Logic	Symbol	Name/Description	Notes
1		GND	Module Ground	1
2	CML-I	Tx2-	Transmitter Inverted Data Input	
3	CML-I	Tx2+	Transmitter Non-inverted Data Input	
4		GND	Module Ground	1
5	CML-I	Tx4-	Transmitter Inverted Data Input	
6	CML-I	Tx4+	Transmitter Non-inverted Data Input	
7		GND	Module Ground	1
8	LVTTL-I	MODSEIL	Module Select	2
9	LVTTL-I	ResetL	Module Reset	2
10		VCCRx	+3.3v Receiver Power Supply	

11	LVC MOS-I	SCL	2-wire Serial Interface Clock	2
12	LVC MOS-I/O	SDA	2-wire Serial Interface Clock	2
13		GND	Module Ground	1
14	CML-O	RX3+	Receiver Non-inverted data Output	
15	CML-O	RX3-	Receiver Inverted Data Output	
16		GND	Module Ground	1
17	CML-O	RX1+	Receiver Non-inverted Data output	
18	CML-O	RX1-	Receiver Inverted Data Output	
19		GND	Module Ground	1
20		GND	Module Ground	1
21	CML-O	RX2-	Receiver Inverted Data Output	
22	CML-O	Rx2+	Receiver Non-inverted Data Output	
23		GND	Module Ground	1
24	CML-O	Rx4-	Receiver Inverted Data Output	
25	CML-O	Rx4+	Receiver Non-inverted Data Output	
26		GND	Module Ground	1
27	LVTTL-O	ModPrsL	Module Present, internal pulled down to GND	
28	LVTTL-O	IntL	Interrupt Output, should be on host board	2
29		VCCTx	+3.3v Transmitter Power Supply	
30		VCC1	+3.3v Power Supply	
31	LVTTL-I	LPMODE	Low Power Mode	2
32		GND	Module Ground	1
33	CML-I	Tx3+	Transmitter Non-inverted Data Input	
34	CML-I	Tx3-	Transmitter Inverted Data Input	
35		GND	Module Ground	1
36	CML-I	Tx1+	Transmitter Non-inverted Data Input	
37	CML-I	Tx1-	Transmitter Inverted Data Input	
38		GND	Module Ground	1

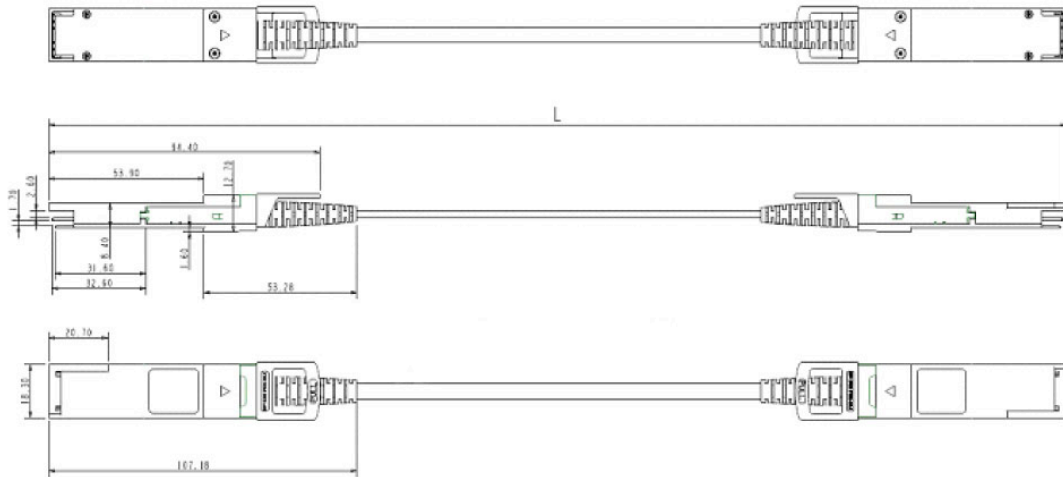
**Note:**

1. Module circuit ground is isolated from module chassis ground within the module.
2. Open collector; should be pulled up with 4.7k-10k ohms on host board to a voltage between 3.15V and 3.6V.

**Pin Diagram**



## Mechanical Specifications



10314-AO  
EXTREME, 40GBASE-CU QSFP+  
5M CABLE REACH



## Contact Information

AddOn Computer, Inc. is a leading supplier of Memory Upgrade, Network Transceivers and Network connectivity products to Channel Partners, Resellers and OEMs, with more than seventeen years of direct industry experience. AddOn Computer (ACP) has been the exclusive supplier to Ingram Micro's "Memory Upgrades" program for the past nine years.

AddOn Computer maximizes profitable opportunities for our partners. Our ability to source product worldwide, ensures that our pricing will always be competitive. Offering turnkey solutions, AddOn Computer has forged a reputation as a solutions provider, delivering high quality, cost effective product in a timely and reliable manner.

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