



160-9460-020-OPC

Ciena® 160-9460-020 Compatible TAA Compliant 100GBase-AOC QSFP28 to QSFP28 OTU4 Active Optical Cable (850nm, MMF, 20m)

Features

- Compliant to standard SFF-8636 QSFP28 active optical modules
- Compliant to 100GE/OTU4
- Automatic power down while broken cable is detected to improve eye safety
- Supports up to 4x28 Gbps bi-directional operation
- Low power consumption: less than 2.5W
- Reliable VCSEL and PIN photonic devices
- I2C standard management interface
- Excellent high speed signal integrity
- Operating case temperature: 0 to 70 Celsius
- RoHS Complaint and Lead-Free



Applications:

- 100GBase Ethernet
- Proprietary high speed, high density data
- High performance computing, server and data storage

Product Description

This is a Ciena® 160-9460-020 compatible 100GBase-AOC QSFP28 to QSFP28 OTU4 active optical cable that operates over multi-mode fiber with a maximum reach of 20.0m (65.6ft). At a wavelength of 850nm, it has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This active optical cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ.	Max.	Unit
Supply Voltage	Vcc	0		3.6	V
Relative Humidity	RH	5		85	%
Storage Temperature	Tstg	-40		85	°C
Operating Case Temperature	Tc	0	25	70	°C
Data Rate per Channel			4*25.78	4*27.95	Gbps

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Supply Voltage	Vcc	3.135	3.3	3.465	V	
Supply Current	Icc			750	mA	
Power Dissipation	PD			2500	mW	
Clock Rate-I2C	f			400	kHz	1
Module Turn-on time				2000	ms	2

Notes:

1. For management interface.
2. Time from module power-on / insertion/ ResetL de-assert to module full functional.

Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter						
Reference Differential Input Impedance	Zd		100		Ω	1
Optical Return Loss Tolerance				12	dB	
Differential Data Input Swing	Vin_pp	180		1200	mV	
Differential Data Input Threshold			50		mV	2
Receiver						
Reference Differential Input Impedance	Zd		100		Ω	3
Differential Data Output Swing	Vout_pp	0		800	mV	
Pre-emphasis Pulse Amplitude		0			%	4
Percentage		10			%	
		20			%	
		40			%	
Pre-emphasis Pulse Duration			30		ps	
Signal Speed			4*25.78	4*27.95	Gbps	5
Differential Data Output Swing		300		850	mV	
Differential Data Output Swing When Squelched				50	mV	
Rise / Fall Time (20% to 80%)		24			ps	
Receiver Overload (Pavg)	POL	2.5			dBm	
Damage Threshold	POL	3.4			dBm	

Notes:

1. AC coupled inside AOC module.
2. Input swing to trigger TX-squelch.
3. AC coupled inside AOC module.
4. User selectable. Percentage is the ratio of pre-emphasis amplitude to output swing. Users could change by writing to page 3 address 237, default value is "10."
5. BER is 5.0E-5.

Pin Descriptions

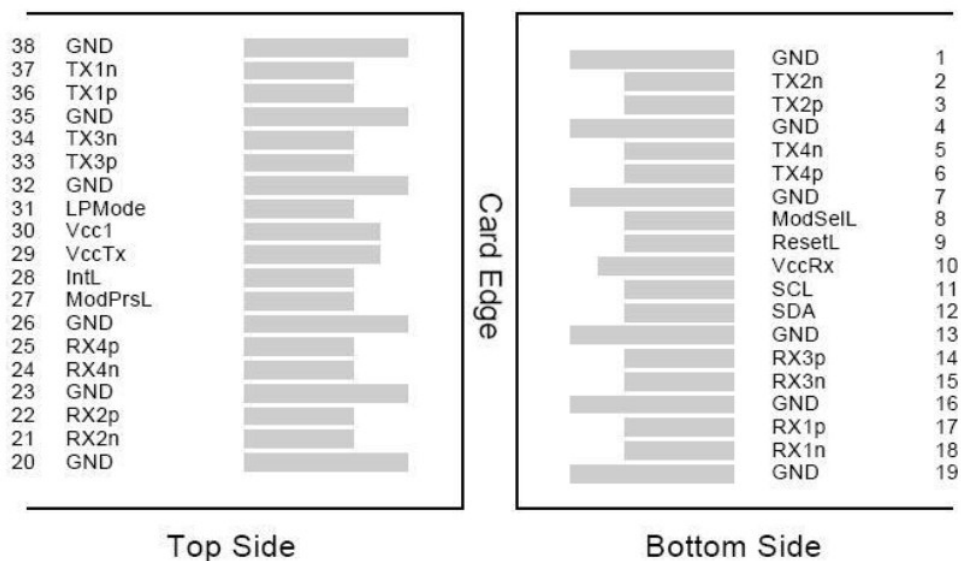
Pin	Symbol	Description	Notes
1	GND	Transmitter Ground. Common with Receiver Ground.	1
2	Tx2-	Transmitter Inverted Data Input.	
3	Tx2+	Transmitter Non-Inverted Data output.	
4	GND	Transmitter Ground. Common with Receiver Ground.	1
5	Tx4-	Transmitter Inverted Data Input.	
6	Tx4+	Transmitter Non-Inverted Data output.	
7	GND	Transmitter Ground. Common with Receiver Ground.	1
8	ModSelL	Module Select.	2
9	ResetL	Module Reset.	2
10	VccRx	3.3V Power Supply Receiver.	
11	SCL	2-Wire serial Interface Clock.	2
12	SDA	2-Wire serial Interface Data.	2
13	GND	Transmitter Ground. Common with Receiver Ground.	1
14	Rx3+	Receiver Non-Inverted Data Output.	
15	Rx3-	Receiver Inverted Data Output.	
16	GND	Transmitter Ground. Common with Receiver Ground.	1
17	Rx1+	Receiver Non-Inverted Data Output.	
18	Rx1-	Receiver Inverted Data Output.	
19	GND	Transmitter Ground. Common with Receiver Ground.	1
20	GND	Transmitter Ground. Common with Receiver Ground.	1
21	Rx2-	Receiver Inverted Data Output.	
22	Rx2+	Receiver Non-Inverted Data Output.	
23	GND	Transmitter Ground. Common with Receiver Ground.	1
24	Rx4-	Receiver Inverted Data Output.	1
25	Rx4+	Receiver Non-Inverted Data Output.	
26	GND	Transmitter Ground. Common with Receiver Ground.	1
27	ModPrsl	Module Present.	
28	IntL	Interrupt.	2
29	VccTx	3.3V power supply transmitter.	
30	Vcc1	3.3V power supply.	
31	LPMODE	Low Power Mode.	2
32	GND	Transmitter Ground. Common with Receiver Ground.	1
33	Tx3+	Transmitter Non-Inverted Data Input.	
34	Tx3-	Transmitter Inverted Data Output.	

35	GND	Transmitter Ground. Common with Receiver Ground.	1
36	Tx1+	Transmitter Non-Inverted Data Input.	
37	Tx1-	Transmitter Inverted Data Output.	
38	GND	Transmitter Ground. Common with Receiver Ground.	1

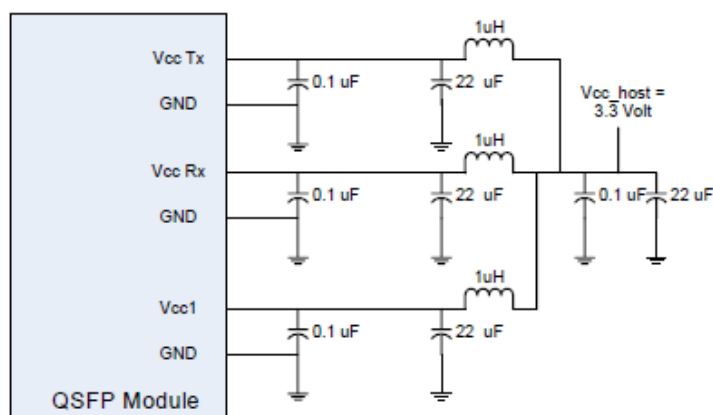
Note:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the host board requires a 4.7kΩ to 10kΩ pull-up resistor to VccHost.

Electrical Pin-Out Details

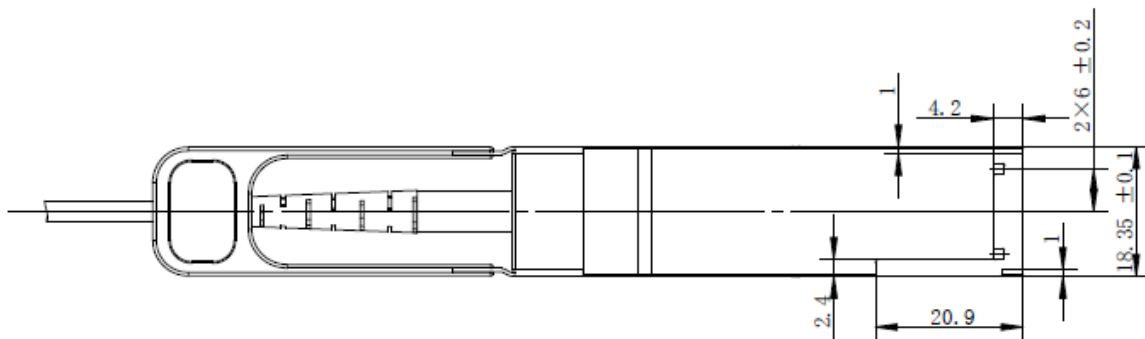
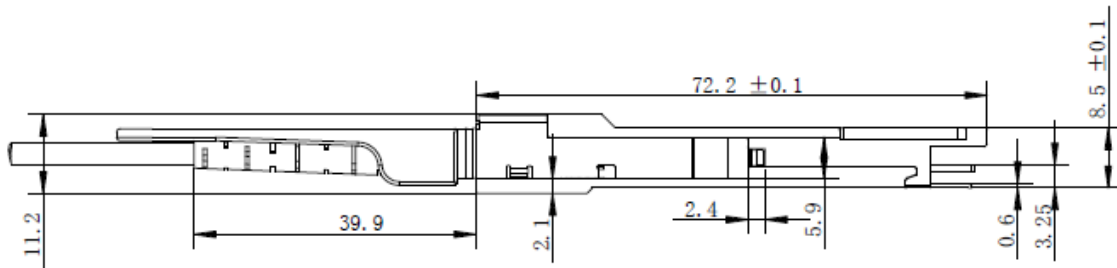
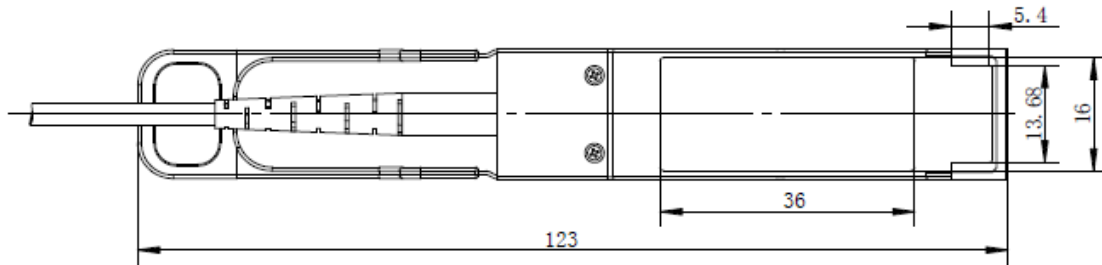


Recommended Application Interface Circuit



Mechanical Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Notes
AOC cable length (L ≤ 5m)	L	L-0.06	L	L+0.06	M	
AOC cable length (L > 5m)	L	L-(L*1.1%)	L	L+(L*1.1%)	M	
Module Retention		90		170	N	
Module Insertion		0		18	N	
Module Extraction		0		25	N	
Cable Pull Strength – Apply Load at 0°		44			N	
Cable Pull Strength – Apply Load at 90°		33			N	
Clearance Out of IO Bezel		75			nm	
Cable Bending Radius		3			cm	
Insertion / Removal Cycles		50			Cycles	



OptioConnect

Innovation for the Future of High-Speed Networking

Who We Are

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

What We Do

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

Smarter Networks by Design

Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

Our Team

Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

Our Mission

To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

Let's Connect

Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.

www.optioconnect.com | info@optioconnect.com

