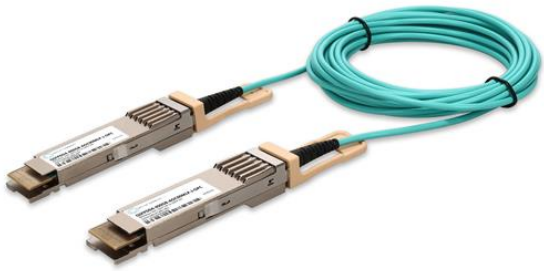
QSFPDD4-400GB-AOC90MLP-J-OPC

Juniper Networks® Compatible TAA 400GBase-AOC QSFP-DD to QSFP-DD Low Power Active Optical Cable (850nm, MMF, 90m)

Features

- QSFP-DD MSA HW Rev. 5.0 compliant
- CMIS 4.0 compliant
- 8x26.56GBaud optical links with integrated CDR
- OM4 multi-mode fiber
- CML compatible electrical I/O
- PAM4 & NRZ compatible
- OFNP jacket
- Operating Temperature 0 to 70 Celsius
- Hot pluggable
- RoHS compliant and lead-free



Applications:

- 400GBase Ethernet

Product Description

This is a Juniper Networks® compatible 400GBase-AOC QSFP28 to QSFP28 active optical cable that operates over active fiber with a maximum reach of 90.0m (295.3ft). 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	Notes
Storage Ambient Temperature	Tstg	-40		85	˚C	
Operating Case Temperature	Tc	0	25	70	ºC	1
Module Supply Voltage	Vcc	3.14	3.3	3.46	V	
Module Supply Voltage	Vcc	-0.5		3.6	V	
Single Module Supply Current	I_{IN}		2100		mA	
Relative Humidity – Storage	RH_{stg}	0		95	%	2
Relative Humidity – Operating	RH_{op}	0		85	%	2
Signaling Speed Per Channel	S		26.56		GBaud	

Notes:

1. Commercial temperature range.
2. RH is a non-condensing condition.
3. Exceeding the Absolute Maximum Ratings may cause irreversible damage to the device. The device is not intended to be operated under the conditions of simultaneous Absolute Maximum Ratings, a condition which may cause irreversible damage to the device.

Cable Specifications

Parameter	Value	Unit
Cable Diameter	3.0 ± 0.15	mm
Minimum Bend Radius	30	mm

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Tx_Data Differential Input Voltage	VIN	400		900	mV	
Tx_Data Differential Input Impedance	ZIN		100		Ω	
Receiver						
Rx_Data Differential Output Voltage	VOUT			900	mV	
Rx_Data Differential Output Impedance	ZOUT	90	100	110	Ω	
Link BER	BER			$2.4E^{-4}$		1

Notes:

1. Better than $2.4E^{-4}$ @26.56GBaud PRBS31.

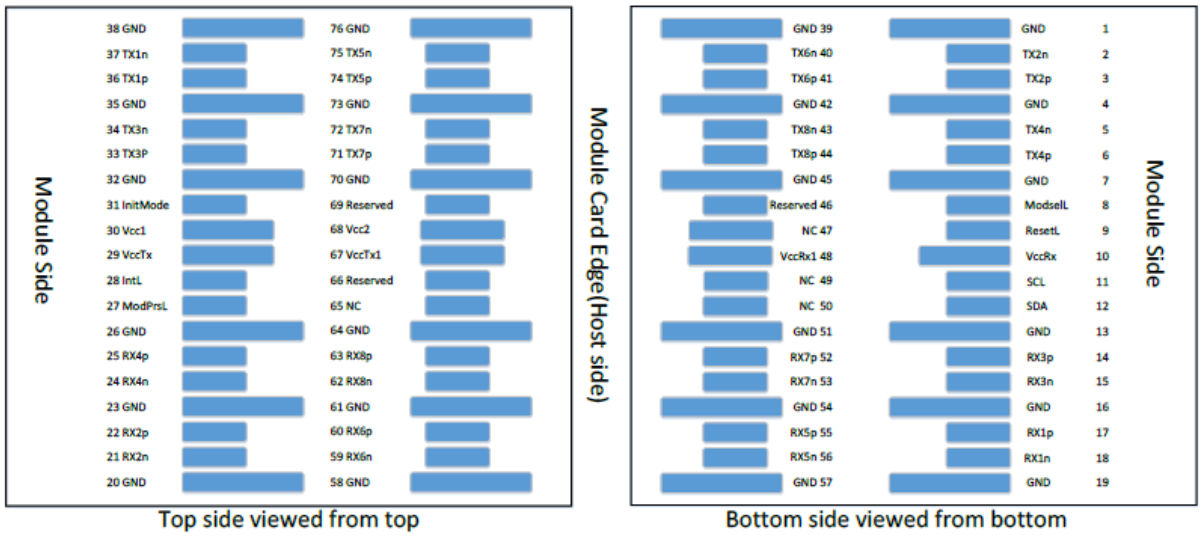
Pin Descriptions

Pin	Symbol	Name/Description
1	GND	Module Ground.
2	Tx2-	Transmitter Inverted Data Input.
3	Tx2+	Transmitter Non-Inverted Data Input.
4	GND	Module Ground.
5	Tx4-	Transmitter Inverted Data Input.
6	Tx4+	Transmitter Non-Inverted Data Input.
7	GND	Module Ground.
8	ModSelL	Module Select.
9	ResetL	Module Reset.
10	VccRx	+3.3V Receiver DC Power Supply.
11	SCL	I^2C Serial Clock.
12	SDA	I^2C Serial Data.
13	GND	Module Ground.
14	Rx3+	Receiver Non-Inverted Differential Output.
15	Rx3-	Receiver Inverted Differential Output.
16	GND	Module Ground.
17	Rx1+	Receiver Non-Inverted Differential Output.
18	Rx1-	Receiver Inverted Differential Output.
19	GND	Module Ground.
20	GND	Module Ground.
21	Rx2-	Receiver Inverted Differential Output.
22	Rx2+	Receiver Non-Inverted Differential Output.
23	GND	Module Ground.
24	Rx4-	Receiver Inverted Differential Output.
25	Rx4+	Receiver Non-Inverted Differential Output.
26	GND	Module Ground.
27	ModPrsL	Module Present.
28	IntL	Interrupt.
29	VccTx	+3.3V Transmitter DC Power Supply.
30	Vcc1	+3.3V DC Power Supply.
31	Init Mode	Initialization Mode.
32	GND	Module Ground.
33	Tx3+	Transmitter Non-Inverted Data Input.
34	Tx3-	Transmitter Inverted Data Input.

35	GND	Module Ground.
36	Tx1+	Transmitter Non-Inverted Data Input.
37	Tx1-	Transmitter Inverted Data Input.
38	GND	Module Ground.
39	GND	Module Ground.
40	Tx6-	Transmitter Inverted Data Input.
41	Tx6+	Transmitter Non-Inverted Data Input.
42	GND	Module Ground.
43	Tx8-	Transmitter Inverted Data Input.
44	Tx8+	Transmitter Non-Inverted Data Input.
45	GND	Module Ground.
46	Reserved.	Not Connected.
47	NC	Not Connected.
48	VccRx1	+3.3V DC Power Supply.
49	NC	Not Connected.
50	NC	Not Connected.
51	GND	Module Ground.
52	Rx7+	Receiver Non-Inverted Differential Output.
53	Rx7-	Receiver Inverted Differential Output.
54	GND	Module Ground.
55	Rx5+	Receiver Non-Inverted Differential Output.
56	Rx5-	Receiver Inverted Differential Output.
57	GND	Module Ground.
58	GND	Module Ground.
59	Rx6-	Receiver Inverted Differential Output.
60	Rx6+	Receiver Non-Inverted Differential Output.
61	GND	Module Ground.
62	Rx8-	Receiver Inverted Differential Output.
63	Rx8+	Receiver Non-Inverted Differential Output.
64	GND	Module Ground.
65	NC	Not Connected.
66	Reserved.	Not Connected.
67	VccTx1	+3.3V DC Power Supply.
68	Vcc2	+3.3V DC Power Supply.
69	Reserved	Not Connected.
70	GND	Module Ground.

71	Tx7+	Transmitter Non-Inverted Data Input.
72	Tx7-	Transmitter Inverted Data Input.
73	GND	Module Ground.
74	Tx5+	Transmitter Non-Inverted Data Input.
75	Tx5-	Transmitter Inverted Data Input.
76	GND	Module Ground.

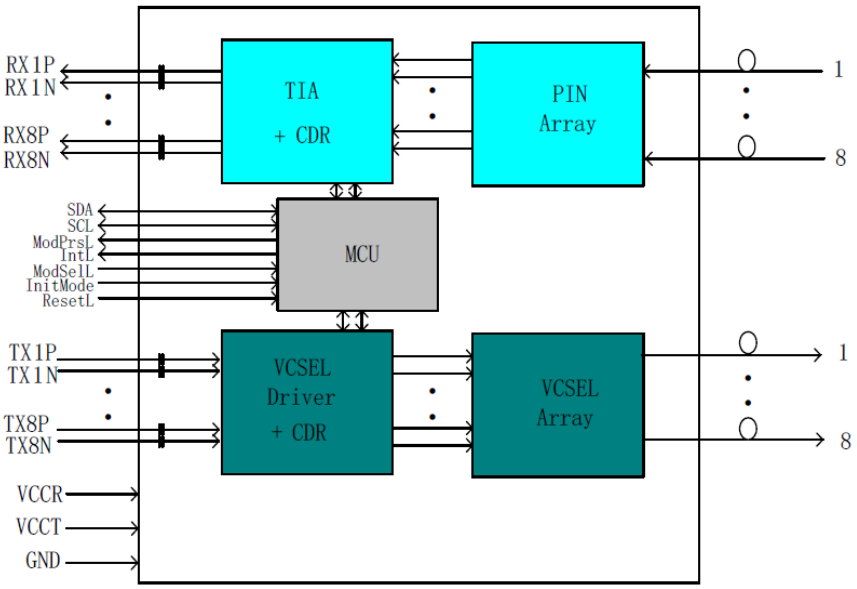
Electrical Pin-Out Details



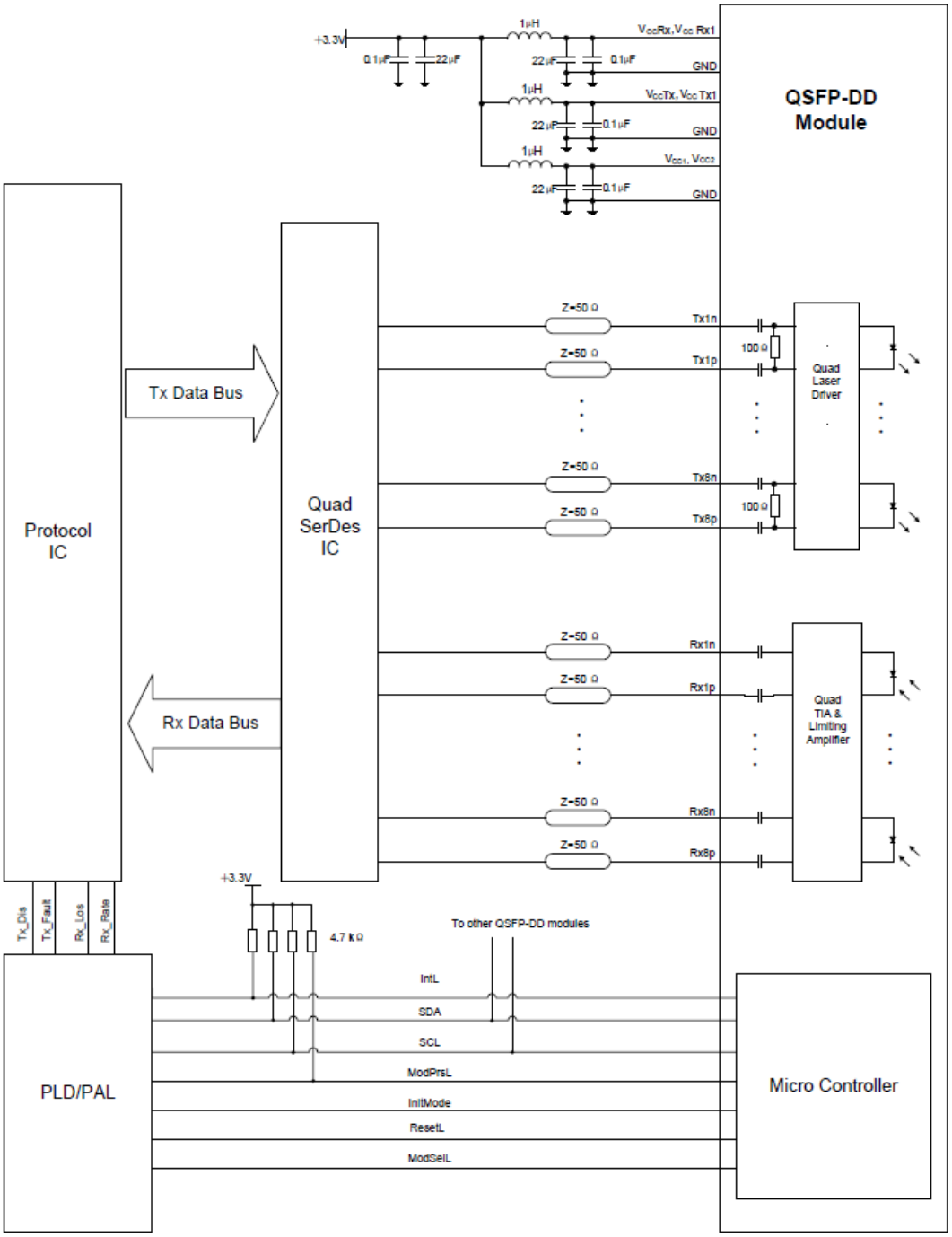
Top side viewed from top

Bottom side viewed from bottom

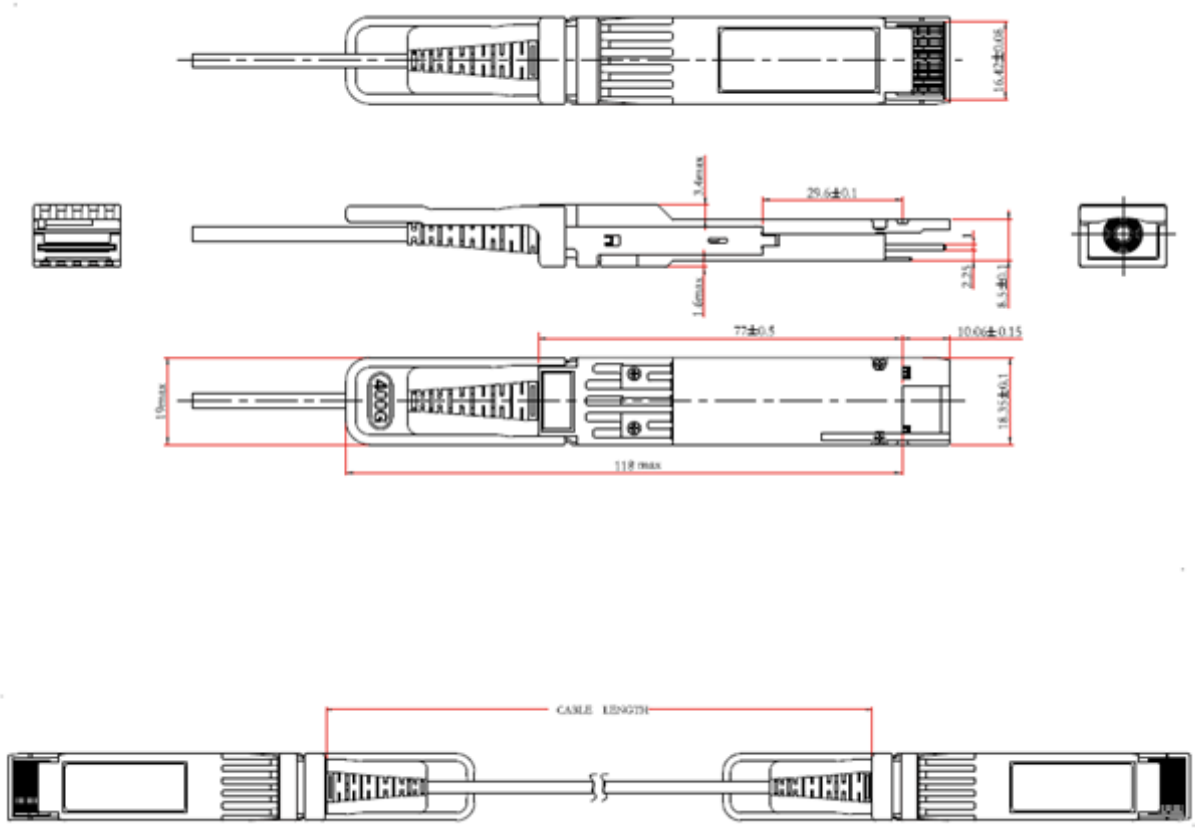
Block Diagram



Electrical Interface



Mechanical Specifications



Notes:

1. Tolerance +/-0.1mm.
2. Others according with QSFP-DD MSA or customer specifications.
3. Light Port according with fiber connector specifications.
4. For cable lengths greater than 5m, the cable length tolerance is +4%/-0%.

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.
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