200G QSFP56 to QSFP56 Active Optical Cable

Application

- 200Gb/s InfiniBand HDR systems
- Other optical links

Features

- Supports IBTA InfiniBand HDR
- Up to 200Gb/s data rate
- 4x 50Gb/s PAM4 modulation
- SFF-8665 compliant QSFP56 port
- SFF-8636 compliant I2C management
- Single 3.3V power supply
- 4.5W power dissipation each end, with retiming
- Operating case temperature: 0℃to+70℃
- RoHS6 compliant (lead free)

Product Specifications

I. Absolute Maximum Ratings

Parameter	Symbol	Min	Typical	Max	Unit
Storage Temperature	TS	-20		85	℃
Relative Humidity	RH	0		85	%
Case Operating Temperature	TCase	0		70	℃
Supply Voltage	VCC	-0.5		3.6	V

II. Transmitter Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Signaling Speed per Lane			PRBS31Q@26.5625Gbd PAM4		Gb/s
Center Wavelength	C	840	850	860	nm
Differential Input Impedance	Zin	90	100	110	Ohm
Differential Input Voltage	Vin	-	900	-	mVp-p
Differential termination mismatch	-	-	-	10	%
DC common mode voltage	-	-350	-	2850	mV

III. Receiver Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Signaling Speed per Lane			PRBS31Q@26.5625Gbd PAM4		Gb/s
Center Wavelength	C	840	850	860	nm
Differential Input Impedance	-	-	-	10	%
Differential Input Voltage	Zout	90	100	110	Ohm
Differential termination mismatch	Vout	-	-	900	mVp-p
DC common mode voltage	-	-350	-	2850	mV
Error Bit Rate	BER	-	-	2.4E-4	PRBS31Q@26.5625Gbd PAM4

IV. Recommended operating environment

Recommended Operating Environment specifies parameters for which the electrical and optical characteristics hold unless otherwise noted.

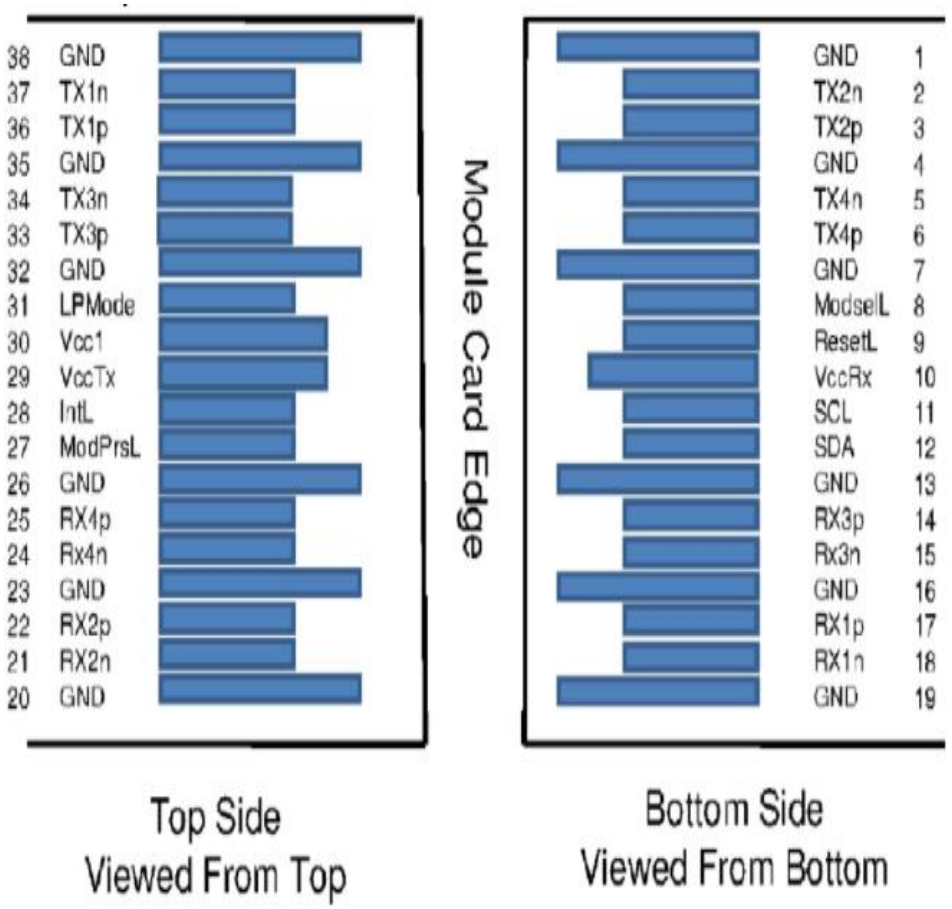
Parameter	Symbol	Min	Typical	Max	Unit
Power Supply Voltage	VCC	3.135	3.300	3.465	V
Operating Case Temperature	TC	0	25	70	℃

V. Pin definition Receiver Specifications

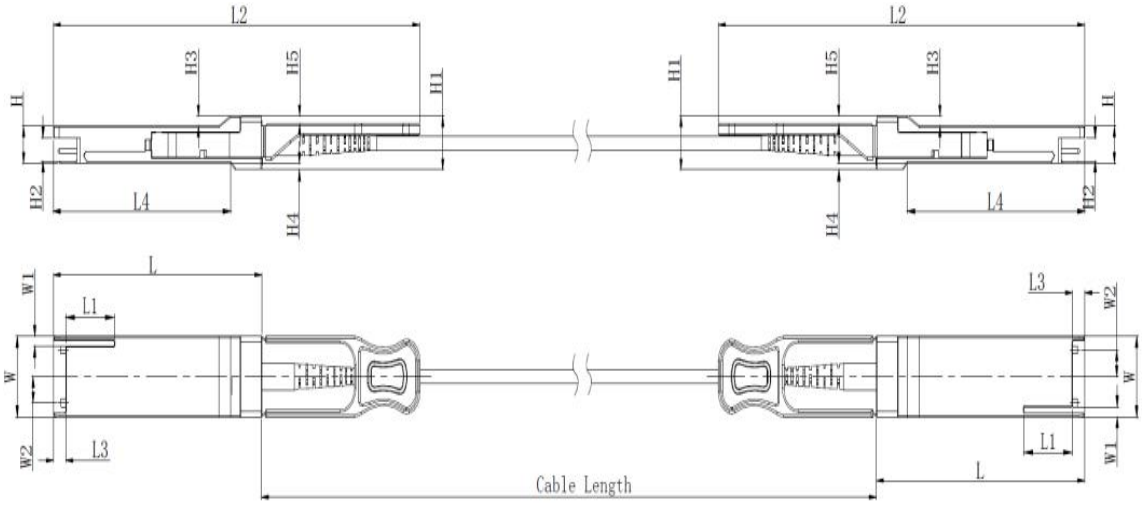
Pin	Symbol	Name/Description
1	GND	Ground
2	Tx2n	Transmitter Inverted Data Input
3	Tx2p	Transmitter Non-Inverted Data Input
4	GND	Ground
5	Tx4n	Transmitter Inverted Data Input
6	Tx4p	Transmitter Non-Inverted Data Input
7	GND	Ground
8	ModSelL	Module Select
9	ResetL	Module Reset
10	Vcc Rx	+3.3 V Power supply receiver
11	SCL	2-wire serial interface clock
12	SDA	2-wire serial interface data
13	GND	Ground
14	Rx3p	Receiver Non-Inverted Data Output
15	Rx3n	Receiver Inverted Data Output
16	GND	Ground
17	Rx1p	Receiver Non-Inverted Data Output
18	Rx1n	Receiver Inverted Data Output
19	GND	Ground

20	GND	Ground
21	Rx2n	Receiver Inverted Data Output
22	Rx2p	Receiver Non-Inverted Data Output
23	GND	Ground
24	Rx4n	Receiver Inverted Data Output
25	Rx4p	Receiver Non-Inverted Data Output
26	GND	Ground
27	ModPrsL	Module Present
28	IntL	Interrupt
29	Vcc Tx	+3.3 V Power supply transmitter
30	Vcc1	+3.3 V Power Supply
31	LPMode	Low Power Mode
32	GND	Ground
33	Tx3p	Transmitter Non-Inverted Data Input
34	Tx3n	Transmitter Inverted Data Input
35	GND	Ground
36	Tx1p	Transmitter Non-Inverted Data Input
37	Tx1n	Transmitter Inverted Data Input
38	GND	Ground

VI. Pin Descriptions



VII. Drawing



VIII. Unit mm

	L	L1	L2	L3	L4	W	W1	W2	H	H1	H2	H3	H4	H5
Max	72.2	-	128	4.35	61.4	18.45	-	6.2	8.6	12.4	5.35	2.5	1.6	2.0
Type	72.0	-	-	4.20	61.2	18.35	-	-	8.5	12.2	5.2	2.3	1.5	1.8
Min	68.8	16.5	124	4.05	61.0	18.25	2.2	5.8	8.4	12.0	5.05	2.1	1.3	1.6

Part Number	Product Description
QSFP56 200G AOC	xxx = denotes the AOC length with unit meter. For example,001 denote 1m, 002 denote 2m … 099 denote 99m.

Test Center

FS.COM transceivers are tested to ensure connectivity and compatibility in our test center before shipped out. FS.COM test center is supported by a variety of mainstream original brand switches and groups of professional staff, helping our customers make the most efficient use of our products in their systems, network designs and deployments.

The original switches could be found nowhere but at FS.COM test center, eg: Juniper MX960 & EX 4300 series, Cisco Nexus 9396PX & Cisco ASR 9000 Series, HP 5900 Series & HP 5406R ZL2 V3(J9996A), Arista 7050S-64, Brocade ICX7750-26Q & ICX6610-48, Avaya VSP 7000 MDA 2, etc.

Cisco ASR 9000 Series(A9K-MPA-1X40GE)


ARISTA 7050S-64(DCS-7050S-64)

Juniper MX960


Brocade ICX 7750-26Q

Extreme Networks X670V VIM-40G4X

Mellanox M3601Q


Dell N4032F

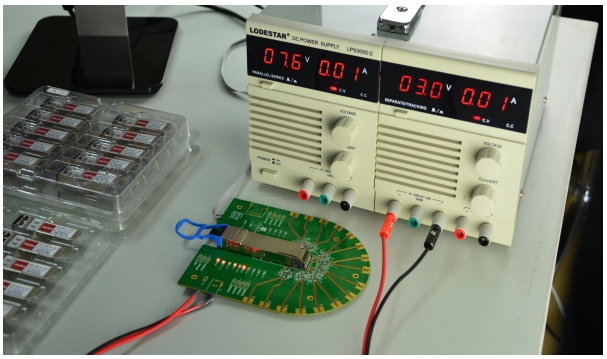
HP 5406R ZL2 V3(J9996A)

AVAYA 7024XLS(7002QQ-MDA)

Test Assured Program

FS.COM truly understands the value of compatibility and interoperability to each optics. Every module FS.COM provides must run through programming and an extensive series of platform diagnostic tests to prove its performance and compatibility. In our test center, we care of every detail from staff to facilities—professionally trained staff, advanced test facilities and comprehensive original-brand switches, to ensure our customers to receive the optics with superior quality.

Our smart data system allows effective product management and quality control according to the unique serial number, properly tracing the order, shipment and every part.



Our in-house coding facility programs all of our parts to standard OEM specs for compatibility on all major vendors and systems such as Cisco, Juniper, Brocade, HP, Dell, Arista and so on.

With a comprehensive line of original-brand switches, we can recreate an environment and test each optics in practical application to ensure quality and distance.

The last test assured step to ensure our products to be shipped with perfect package.

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