P26659-B25-AO

HP® P26659-B25 Compatible TAA 200G-AOC QSFP56 to 2xQSFP56 Infiniband HDR Active Optical Cable (850nm, MMF, 20m)

Features

- 200G QSFP56 Breakout to 2x 100G QSFP56 (Half-populated)
- Multi-rate capability: Up to 53.125Gbps PAM4 or 26.5625Gbps NRZ Per Channel
- Four-Channel Parallel Active Optical Cable
- Single 3.3V Power Supply
- 4x50G PAM4 Retimed 200GAUI-4 Electrical Interface (Half-populated on the 100G Ends)
- Low Power Dissipation: 4.5W per Cable End
- RoHS Compliant and Lead-Free
- Operating Temperature: 0 to 70 Celsius

Applications

- InfiniBand HDR
- 200GBase Ethernet

Product Description

This is an HP® P26659-B25 compatible 200GBase-AOC QSFP56 to 2xQSFP56 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.

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

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S.-made or designated country end products.")

TAA COMPLIANT

Rev. 122425

General Specifications

Parameter	Symbol	Min	Typ.	Max.	Unit	Notes
Storage Temperature	Tstg	-40		85	°C	1
Operating Case Temperature	Tc	0		70	°C	
Supply Voltage	Vcc	-0.5		4.0	V	
Relative Humidity (Non-Condensing)		15		85	%	
Aggregate Data Rate			212.5		Gbps	
Pre-FEC Bit Error Ratio	BER			10^{-6}		2
Maximum Power Consumpion per End				5 (Retimed Tx)	W	3
Data Rate Per Lane	DR	26.5625 ± 100ppm			Gbd	4

Notes:

1. Assumes no mechanical load force on the unit. Ensuring no mechanical load force requires a cable bend radius of >70 mm on the rest of the cable.
2. Tested with a PRBS 2^{31}-1 test pattern.
3. Maximum total power value is specified across the full temperature and voltage range.
4. Supports InfiniBand HDR.

Electrical Specifications

Parameter	Symbol	Min	Typ.	Max.	Unit	Notes
Supply Voltage	Vcc	3.135	3.3	3.465	V	
Supply Current	Icc			1.59	A	
Power Consumption	P			4.5	W	1
Transmitter						
AC Common Mode Input Voltage Tolerance (RMS)				20	mV	
Differential Input Return Loss		Equation 27 Below			dB	2
Differential to Common Mode Reflection		Equation 28 Below			dB	2
Eye Hight Tolerance, with Tx CDR enabled				32	mV	3
Eye Width Tolerance, with Tx CDR enabled				0.2	UI	3
DC Common Mode Input Voltage Tolerance		-350		2850	mV	4
Receiver						
Bit Error Rate				9E-6		
AC Common-mode Output Voltage (RMS)				20	mV	
Differential Unsigned Output Voltage		450			mV	5
Near-end Eye Symmetry Mask Width		0.265			UI	6
Near-end Differential Eye Height		70			mV	
Far-end Eye Symmetry Mask Width		0.2			UI	

Far-end Differential Eye Height		30			mV	
Far-end Pre-cursor ISI Ratio		-7		4	%	
Common Mode Output Return Loss		-2			dB	
Differential Output Return Loss		Equation 27 Below			dB	
Common Mode to Differential Reflection		Equation 28 Below			dB	
Differential Termination Mismatch				10	%	
Transition Time (20% to 80%)		9.5			ps	7
DC Common Mode Voltage (minimum)		-350		2850	mV	4

Notes:

1. Maximum total power value is specified across the full temperature and voltage range.
2. Ref: InfiniBand Architecture Specification Volume 2 Release 1.4.
3. Ref: CEI-04 16.3.10.3.1.2.
4. Referred to Signal Ground.
5. Hit Ratio=5E-5 with 100Ω load.
6. Ref: 802.3 120E.4.2.
7. PRBS13Q, see 120E.3.1.5 for positions in the pattern.

Equation 27

$$(S_{DDxx}(f)) \le \begin{pmatrix} -11,\ 0.05 \le f < 26.5625/7.5 \\ -6.0 + 9.2 \cdot \log 10\left(\dfrac{15 \cdot f}{7 \cdot 26.5625}\right), 26.5625/7.5 \le f \le 26.5 \end{pmatrix}$$

Equation 28

$$(S_{CD11}, S_{DC22}(f)) \le \begin{pmatrix} -25 + 20\left(\dfrac{f}{26.5625}\right),\ 0.05 \le f < 26.5625/2 \\ -18 + 6\left(\dfrac{f}{26.5625}\right), 26.5625/2 \le f < 26.5 \end{pmatrix}$$

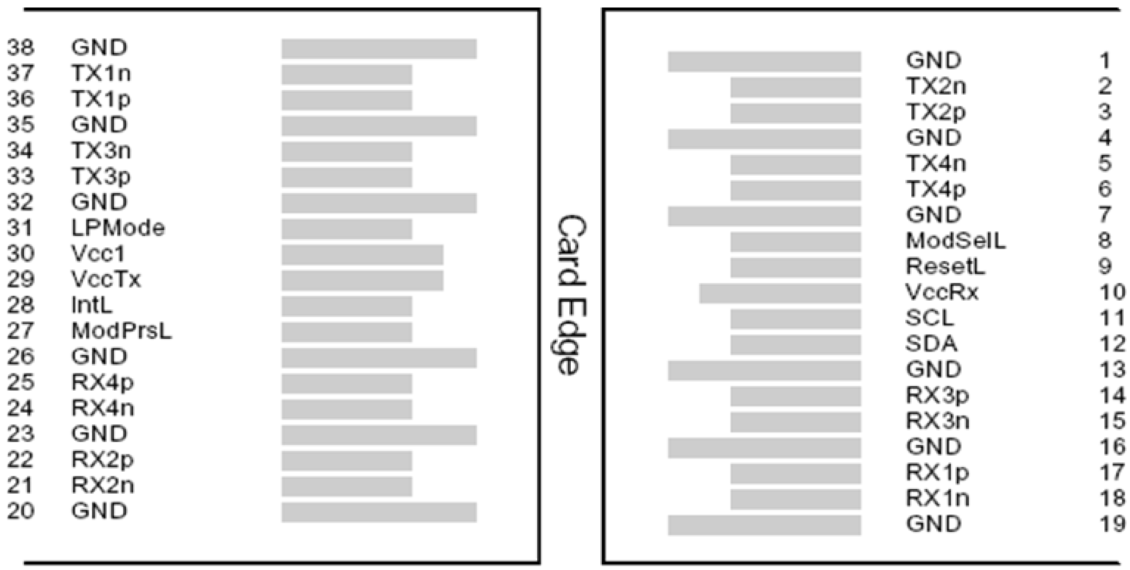
Pin Descriptions

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

36	Tx1+	Transmitter Non-Inverted Data Input.	
37	Tx1-	Transmitter Inverted Data Input.	
38	GND	Module Ground.	1

Notes:

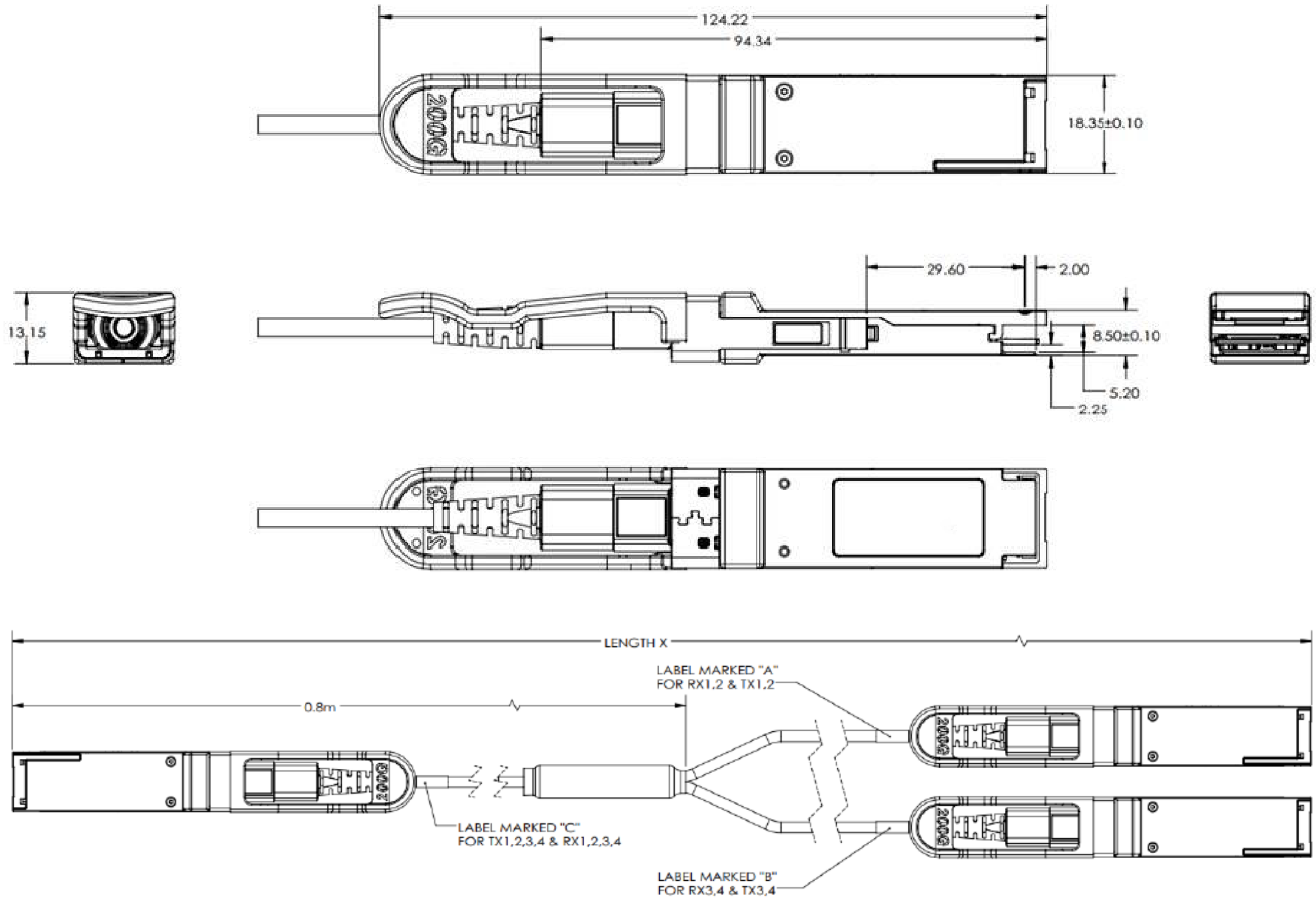
1. Circuit ground is internally isolated from chassis ground.



Top Side
Viewed from Top

Bottom Side
Viewed from Bottom

Mechanical Specifications



Active Optical Cable Dimensions

Mark "C"	Fiber	Mark "A"	Mark "B"
RX1	8	TX1	TX3
RX2	7	TX2	TX4
RX3	6	-	-
RX4	5	-	-
-	Fake Fiber	-	-
-	Fake Fiber	-	-
-	Fake Fiber	-	-
-	Fake Fiber	-	-
TX4	4	-	-
TX3	3	-	-
TX2	2	RX2	RX4
TX1	1	RX1	RX3

About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is in engrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.

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