



DATASHEET

QSFP-H40G-AOC3M-C

Product specifications



QSFP-H40G-AOC3M-C

40Gb/s QSFP+ Active Optical Cable 3m

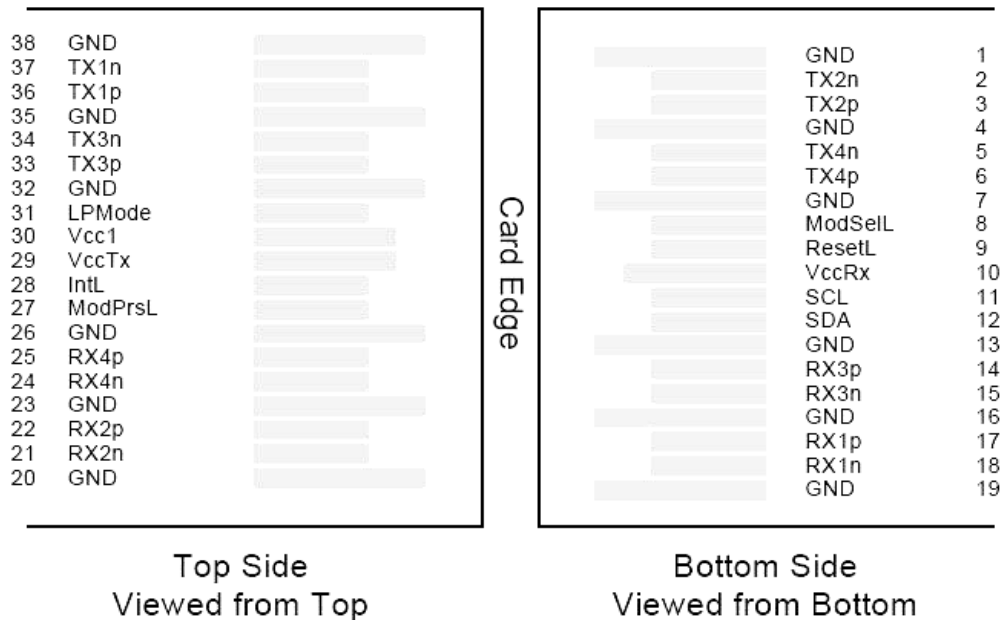
Product Features

- ✓ 4 independent full-duplex channels
- ✓ 1G to 10.3 Gbps data rate per channel
- ✓ Support hot-pluggable
- ✓ Available in lengths of 1 to 50m
- ✓ 360 degree active optical cable braid crimp and enhanced EMI skirt Excellent ESD protection
- ✓ Single 3.3V power supply
- ✓ RoHS Compliant and Lead-Free
- ✓ Compliant with IEEE802.3ba
- ✓ Compliant with QSFP+ MSA: SFF-8436

Applications

- ✓ 40G Ethernet
- ✓ Infiniband 4X SDR DDR QDR
- ✓ 40G Telecom connections
- ✓ Proprietary Interconnects

Pin Assignment and Pin Description



QSFP Transceiver Electrical Pad Layout

Pin Descriptions

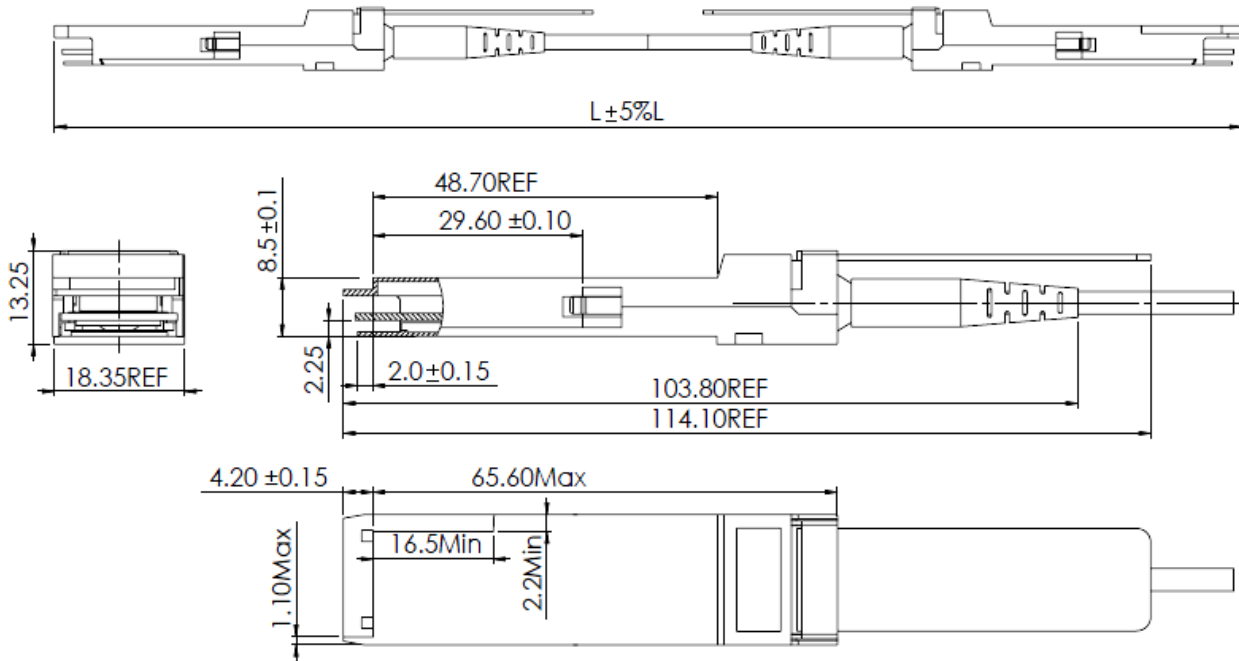
PIN	Logic	Symbol	Name/Description	Note
1		GND	Ground	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data output	
4		GND	Ground	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data output	
7		GND	Ground	1
8	LVTLL-I	ModSelL	Module Select	
9	LVTLL-I	ResetL	Module Reset	
10		VccRx	+ 3.3V Power Supply Receiver	2

11	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock	
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data	
13		GND	Ground	
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	
15	CML-O	Rx3n	Receiver Inverted Data Output	
16		GND	Ground	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	
18	CML-O	Rx1n	Receiver Inverted Data Output	
19		GND	Ground	1
20		GND	Ground	1
21	CML-O	Rx2n	Receiver Inverted Data Output	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	
23		GND	Ground	1
24	CML-O	Rx4n	Receiver Inverted Data Output	1
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	
26		GND	Ground	1
27	LVTTL-O	ModPrsL	Module Present	
28	LVTTL-O	IntL	Interrupt	
29		VccTx	+3.3 V Power Supply transmitter	2
30		Vcc1	+3.3 V Power Supply	2
31	LVTTL-I	LPMode	Low Power Mode	
32		GND	Ground	1
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	
34	CML-I	Tx3n	Transmitter Inverted Data Output	
35		GND	Ground	1
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	
37	CML-I	Tx1n	Transmitter Inverted Data Output	

Notes:

1. GND is the symbol for signal and supply (power), Connect these directly to the host board signal common ground plane
2. VccRx, Vcc1 and VccTx are the receiving and transmission power suppliers and shall be applied concurrently. Vcc Rx, Vcc1 and Vcc Tx may be internally connected within the QSFP+, The connector pins are each rated for a maximum current of 500mA.

Mechanical Specifications (mm)



Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Note
Storage Temperature	TS	-40	85	°C	
Relative Humidity	RH	5	95	%	
Supply Voltage	Vcc	-0.5	4.0	V	

Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Note
Power Supply Voltage	Vcc	3.13	3.30	3.47	V	
Power Supply Current	Icc			432	mA	1
Case Operating Temperature	Tc	0		+70	°C	
Bit Error Rate	BER			10^{-12}		

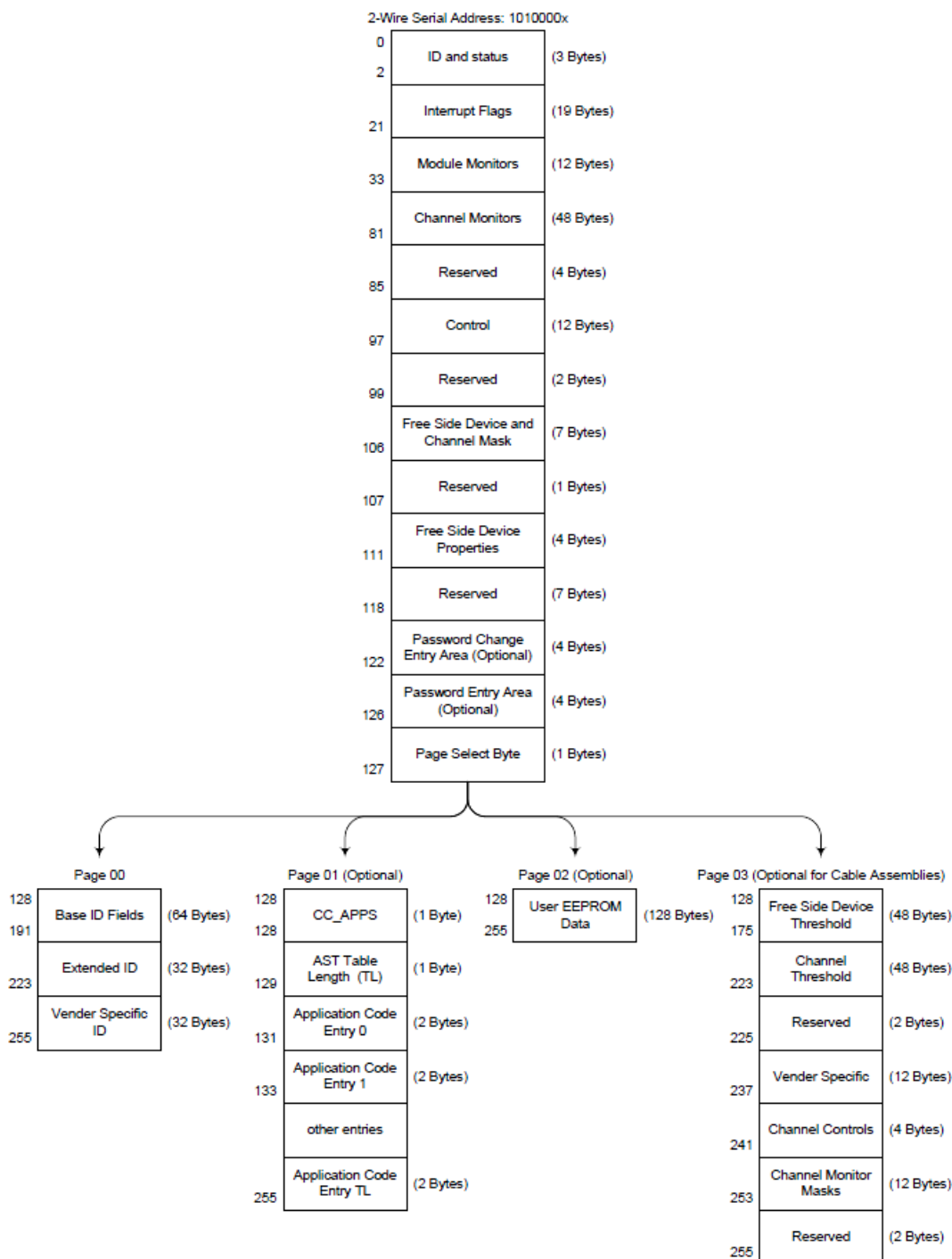
Note: One end of the cable

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Note
Data Rate, each Lane		1		10.5	Gbps	
ModSelL-High		2		Vcc+0.3	V	
ModSelL-Low		Vee		Vee+ 0.8	V	
ResetL -High		2		Vcc+0.3	V	
ResetL -Low		Vee		Vee+ 0.8	V	
LPMoDe -High		2		Vcc+0.3	V	
LPMoDe -Low		Vee		Vee+ 0.8	V	
IntL -High		2		Vcc+0.3	V	
IntL -Low		Vee		Vee+ 0.8	V	
Transmitter						
Tx Input Diff Voltage	Vi	100		1000	mV	
Tx Input Diff Impedance	Zi	80	100	120	Ω	
Receiver						
Rx Output Diff Voltage	Vo		600	800	mV	
Rx Output Diff Impedance	Zo	80	100	120	Ω	

EEPROM Information

EEPROM memory map specific data field description is as below:



Digital Diagnostic Functions

Three transceiver parameter values are monitored. The following table defines the monitored parameter's accuracy.

Parameter	Range	Accuracy	Calibration
Temperature	0 to +70°C	±3°C	Internal
Voltage	2.97 to 3.63V	±3%	Internal
Bias Current	0 to 100mA	±10%	Internal

Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.7
- Immunity compatible with IEC 61000-4-3
- EMI compatible with FCC Part 15 Class B EN55022 Class B (CISPR 22B) VCCI Class B
- RoHS compliant with 2002/95/EC 4.1&4.2 2005/747/EC