

QFP-AC11FG-xxMC

40Gbps QSFP+ AOC, 1-100m Reach

FEATURES

- Support 40GBASE-SR4/QDR application
- Compliant to QSFP+ Electrical MSA SFF-8436
- Multi rate of up to 10.3125Gbps
- Low power consumption
- Single 3.3V power supply
- RoHS compliant
- Operating case temperature: 0~+70°C

APPLICATION

- 40GBASE-SR4 at 10.3125Gbps per lane
- InfiniBand QDR
- Other optical links

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Storage Temperature	Ts	-10	-	+70	°C	
Maximum Supply Voltage	Vcc	-0.5	-	3.6	V	
Operating Relative Humidity	RH	5	-	+85	%	

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Case Temperature	Tc	0		70	°C	
Power Supply Voltage	Vcc	3.13		3.47	V	
Data Rate	DR	1.25	10.3125		Gb/s	

PIN DESCRIPTIONS

Pin	Symbol	Name/Description	Ref.
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
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	1
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	1
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	1
20	GND	Ground	1
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	1
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1
27	ModPrsL	Module Present	
28	IntL	Interrupt	2
29	Vcc Tx	+3.3 V Power supply transmitter	
30	Vcc1	+3.3 V Power Supply	
31	LPMODE	Low Power Mode	
32	GND	Ground	1
33	Tx3p	Transmitter Non-Inverted Data Input	

34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	1
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Input	
38	GND	Ground	1

1. Circuit ground is internally isolated from chassis ground.
2. IntL is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on the host board. The INTL pin is deasserted "High" after completion of reset, when byte 2 bit 0 (Data Not Ready) is read with a value of '0' and the flag field is read (see SFF-8436).

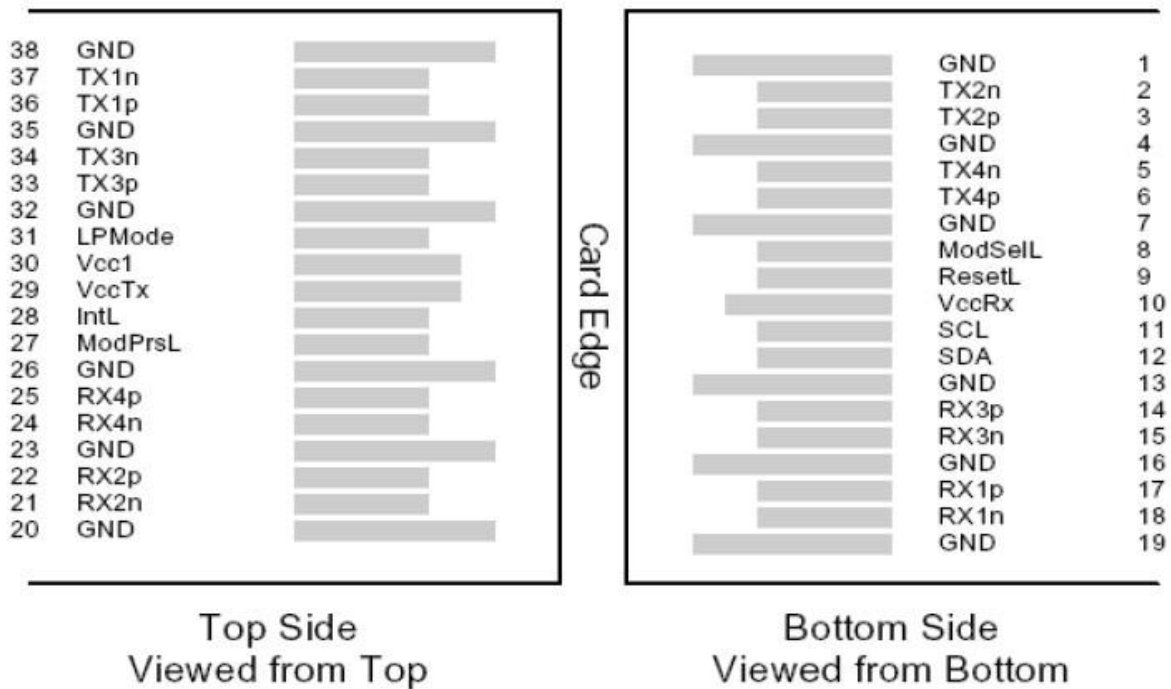


Figure 1 – QSFP+ Compliant 38-Pin Connector

ELECTRICAL SPECIFICATION

Parameter	Symbol	Min	Typical	Max	Unit	Notes
ModSelL	V _{OL}	0		0.8	V	
	V _{OH}	2.5		V _{CC}	V	
LPMode	V _{IL}	0		0.8	V	
	V _{IH}	2.5		V _{CC} +0.3	V	
ResetL	V _{IL}	0		0.8	V	
	V _{IH}	2.5		V _{CC} +0.3	V	
ModPrsL	V _{OL}	0		0.4	V	
IntL	V _{OL}	0		0.4	V	
	V _{OH}	2.4		V _{CC}	V	
Transmitter						
Differential Data Input Swing	V _{out}	200	-	1600	mV	
Output Differential Impedance	Z _D	90	100	110	Ω	
Receiver						
Differential Data Output Swing	V _{in}	350	-	800	mV	
Bit Error Rate	BER			1E-12		1
Input Differential Impedance	Z _{IN}	90	100	110	Ω	

Note: 1 PRBS2³¹-1@10.3125Gbps

DIGITAL DIAGNOSTIC FUNCTIONS

The transceivers provide serial ID memory contents and diagnostic information about the present operating conditions by the 2-wire serial interface (SCL, SDA).

The digital diagnostic memory map specific data field defines as following.

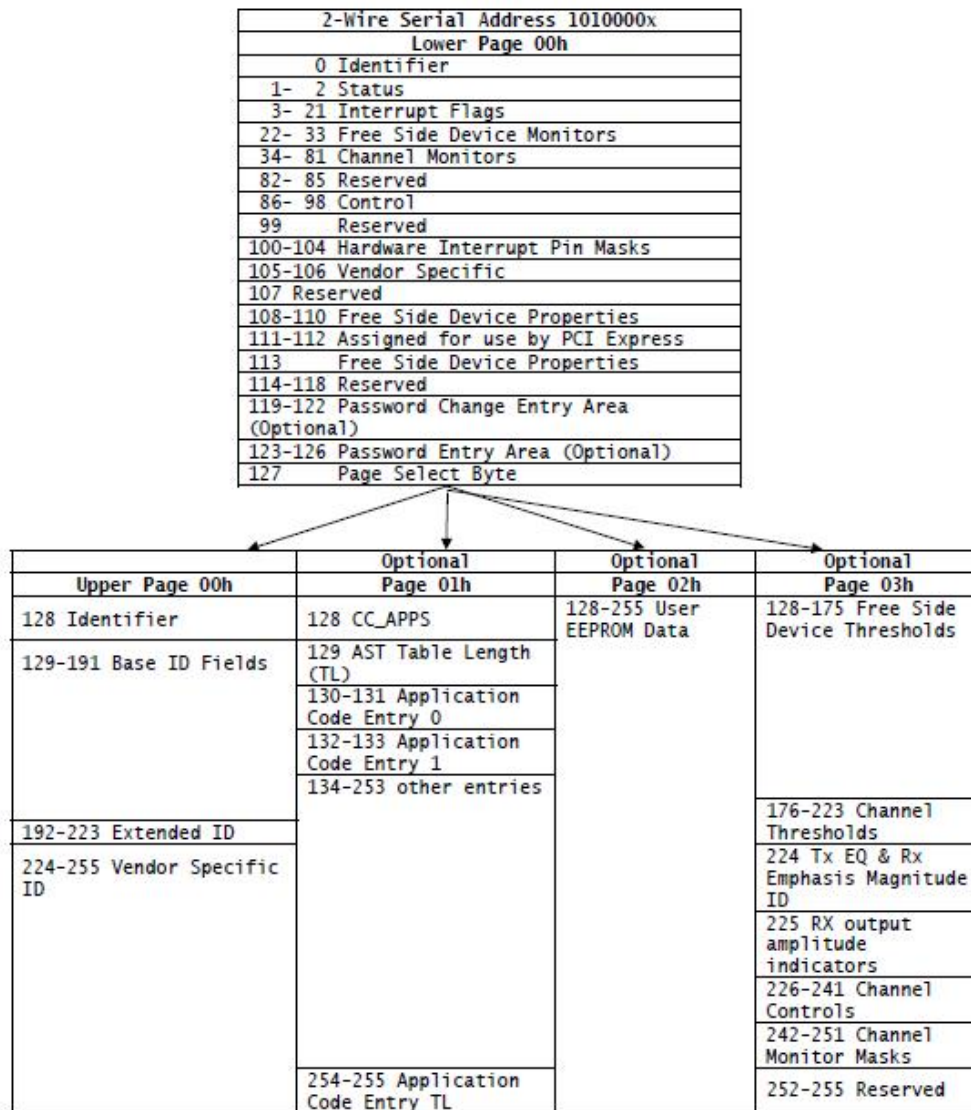
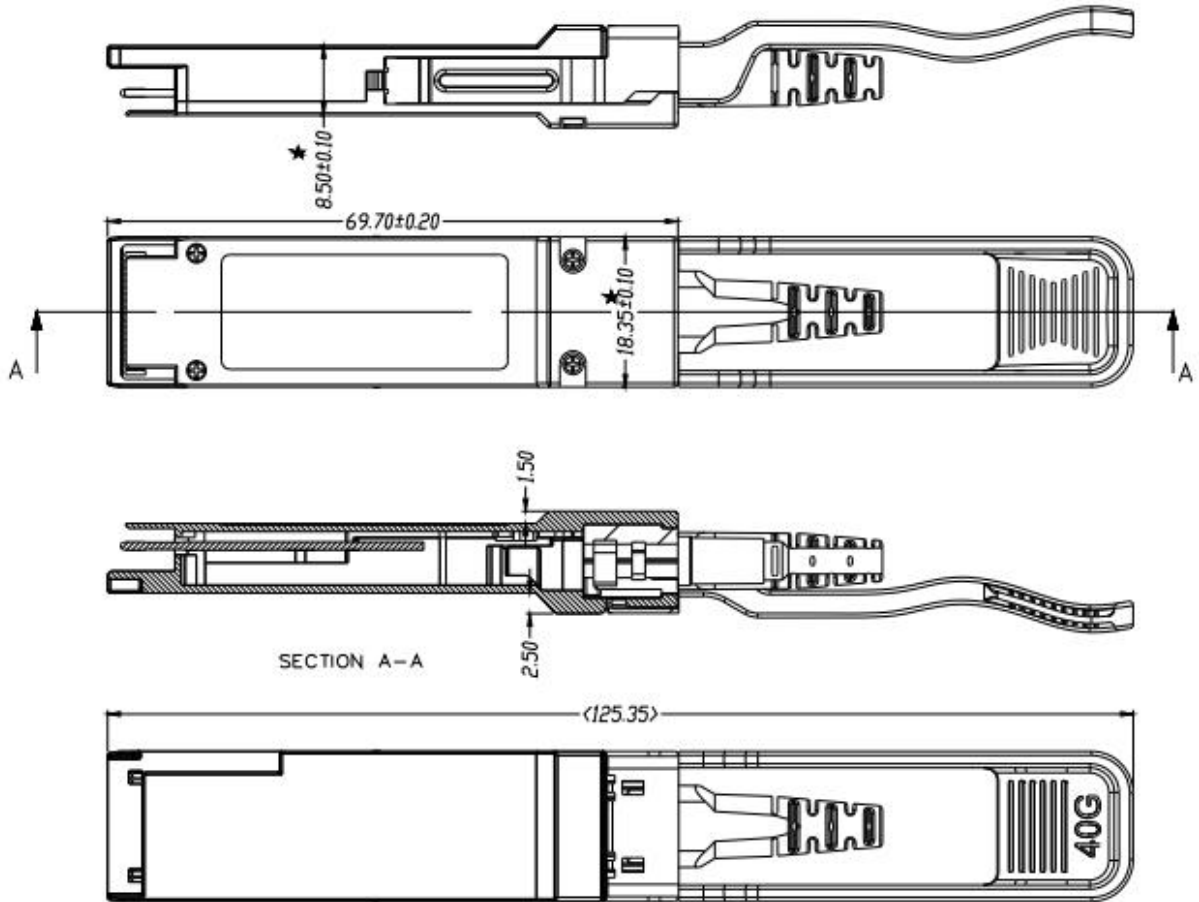


Figure 2 – Two-Wire Interface Fields

MECHANICAL SPECIFICATIONS



Ordering information

Part Number	Product Description
QFP-AC11FG-xxMC	40Gbps, AOC, 1-100m Cable Length, 0°C~+70°C

Reach

1M = 1m

3M = 3m

5M = 5m

2M5=2.5m

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A0M = 100m

For More Information

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