40Gbps 850nm Multimode QSFP Active Optical Cable

Features：

- Support 40GBASE-SR4/QDR application
- Compliant to QSFP+ Electrical MSA SFF-8436
- Multi rate of up to 10.3125Gbps
- +3.3V single power supply
- Low power consumption
- Operating case temp

  Commercial: 0°C to +70 °C
- UL certification cables (optional)
- RoHS 6/6 compliant

Applications

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

Order Information

Table 1-Order Information

Part No.	Bit Rate (Gbps)	Laser (nm)	Fiber Type	DDMI	Fiber Length(m) note1	Temp note2
FLY850M10GQA#2xx	10.3125	850	MMF	YES	0.5~150	0℃~+70℃

Note:

1. **0.5m to 100m for OM3 fiber, 101m to 150m for OM4 fiber**
2. **Case Temperature**

Absolute Maximum Ratings

Table2- Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	Vcc_3	-0.5	-	+3.6	V	
Storage Temperature	T_s	-10	-	+85	°C	
Operating Humidity	RH	+5	-	+85	%	1

Note: 1 No condensation

Recommended Operating Conditions

Table 3- Recommended operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	T_C	0	-	+70	°C	
Power Supply Voltage	Vcc	3.14	3.3	3.47	V	
Power Dissipation	Pd	-	-	1.5	W	1
Bit Rate	BR	1.25	10.3125	-	Gbps	

Note: 1 Per terminal

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Electrical Characteristics

Table 4- Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Units	Notes
ModSelL	Module Select	V_{OL}	0	-	0.8	V	
	Module Unselect	V_{OH}	2.5	-	V_{CC}	V	
LPMode	Low Power Mode	V_{IL}	0	-	0.8	V	
	Normal Operation	V_{IH}	2.5	-	V_{CC}+0.3	V	
ResetL	Reset	V_{IL}	0	-	0.8	V	
	Normal Operation	V_{IH}	2.5	-	V_{CC}+0.3	V	
ModPrsL	Normal Operation	V_{OL}	0	-	0.4	V	
IntL	Interrupt	V_{OL}	0	-	0.4	V	
	Normal Operation	V_{oH}	2.4	-	V_{CC}	V	
Electrical transmitter Characteristics							
Differential Date Input Swing		V_{out}	200	-	1600	mV	
Output Differential Impedance		Z_D	80	100	120	Ω	
Electrical Receiver Characteristics							
Differential Data Output Swing		$V_{in,P-P}$	350	-	800	mV_{PP}	
Bit Error Rate		BER			E-12		1
Input Differential Impedance		Z_{IN}	80	100	120	Ω	

Note: 1 PRBS2^31-1@10.3125Gbps

Recommended Interface Circuit

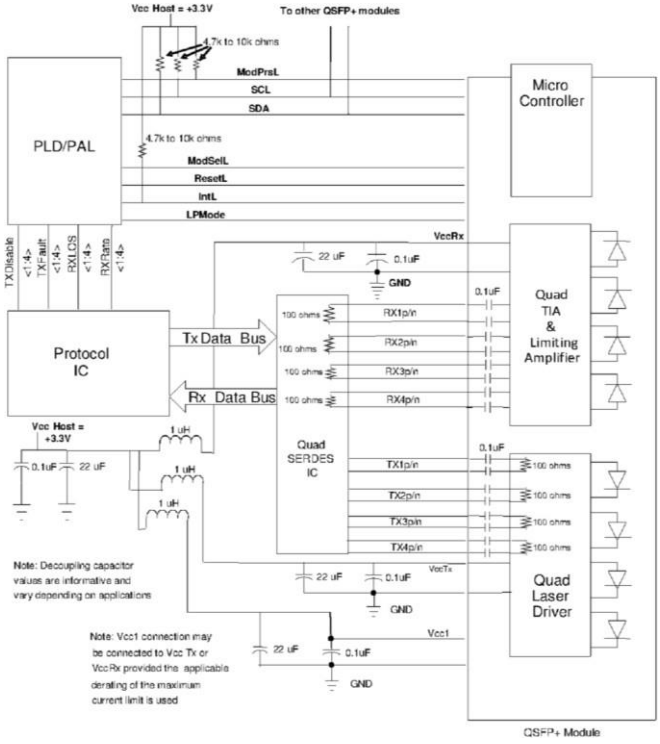

Figure 1, Recommended Interface Circuit

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Pin arrangement

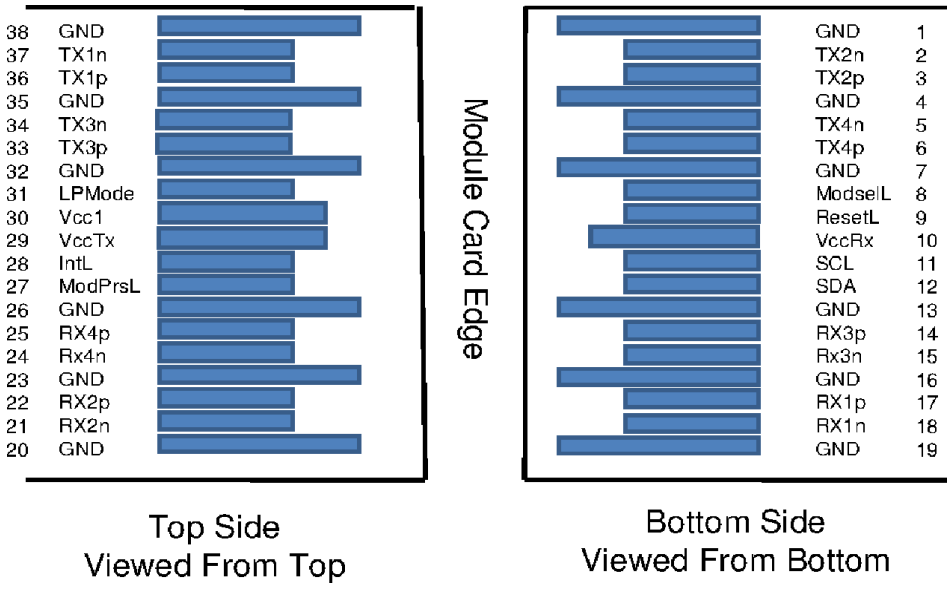


Figure 2, Pin View

Table 6-Pin Function Definitions

Pin	Symbol	Name/Description	Notes
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	+3.3V 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	

Pin	Symbol	Name/Description	Notes
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	+3.3V Power supply transmitter	
30	Vcc1	+3.3V 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

Note: 1. Circuit ground is internally isolated from chassis ground.

Monitoring Specification

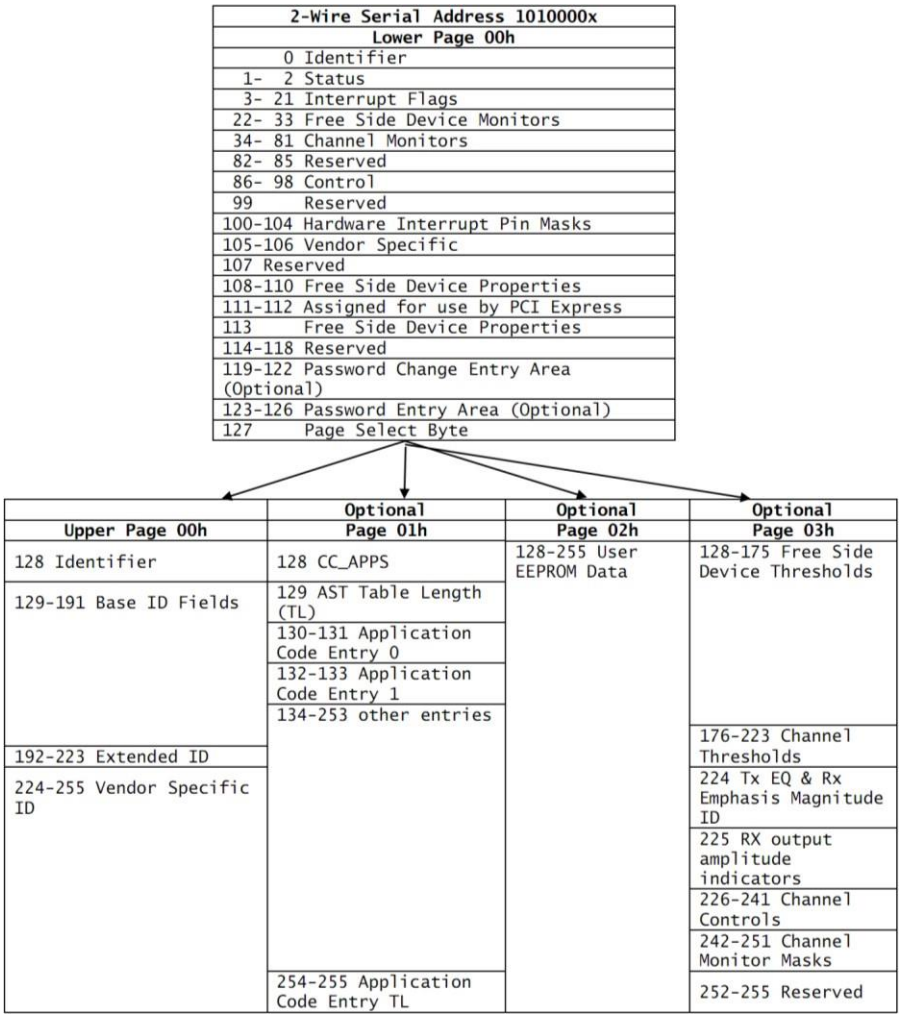
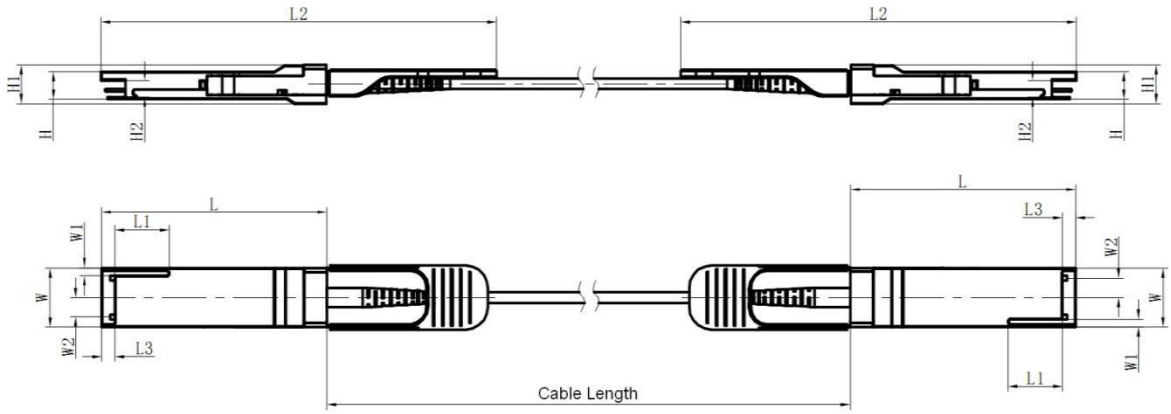


Figure 4, Memory Map

Mechanical



Unit: mm

	L	L1	L2	L3	W	W1	W2	H	H1	H2
MAX	72.2	–	122	4.35	18.45	–	6.2	8.6	12.0	5.35
Typical	72.0	–	–	4.20	18.35	–	–	8.5	11.8	5.2
MIN	68.8	16.5	118	4.05	18.25	2.2	5.8	8.4	11.6	5.05

Figure 5, Mechanical Diagram

Table 7- Cable Length

Cable Length (Unit: m)	Tolerant (Unit: cm)
＜1.0	+5/-0
1.0~4.5	+15/-0
5.0~14.5	+30/-0
≥15.0	+2%/-0

Appendix A. Document Revision

Version No.	Date	Description
Preliminary	2018-04-23	Preliminary datasheet

Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD).
A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.
Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.