

GL4H-AQDY1M3xxM

Quad wire Parallel Breakout 400Gbps Active Optical Cable

Features

- Four-channel full duplex active optical cable with breakout from QSFP-DD to four QSFP28
- Hot-plug gable QSFP-DD footprint
- Hot-plug gable QSFP28 footprint
- Support 425Gbps aggregate bit rate
- Available in lengths up to 100m
- Power Dissipation <10W on QSFP-DD end
- Power Dissipation <2.5W on QSFP28 end
- Single +3.3V power supply
- Operating Case temperature range
0°C to 70°C
- RoHS-6 compliant
- Compliant with QSFP-DD MSA
- Compliant with QSFP28 MSA

Applications

- 400G/100G-Ethernet
- Data Center
- Other Optical Links

Ordering information

Part No.	Reach	Data Rate	Temp.
GL4H-AQDY1M303M	3m	425Gpbs	0°C to 70°C
GL4H-AQDY1M305M	5m	425Gpbs	0°C to 70°C
GL4H-AQDY1M307M	7m	425Gpbs	0°C to 70°C
GL4H-AQDY1M310M	10m	425Gpbs	0°C to 70°C
GL4H-AQDY1M315M	15m	425Gpbs	0°C to 70°C
GL4H-AQDY1M320M	20m	425Gpbs	0°C to 70°C
GL4H-AQDY1M31HM	100m	425Gpbs	0°C to 70°C

More detail product selection and cable lengths, please contact FIBRECROSS.

Description

GL4H-AQDY1M3xxM active optical cables are designed for use in 400/100G-Ethernet links. They are compliant QSFP-DD MSA and QSFP28 MSA.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Power Supply Voltage	V _{CC}	0		3.6	V	
Storage Temperature	T _s	-40		+85	°C	
Relative Humidity	RH	5		85	%	Non-condensing
Case Operating Temperature	T _c	0		+70	°C	

Electrical Characteristics

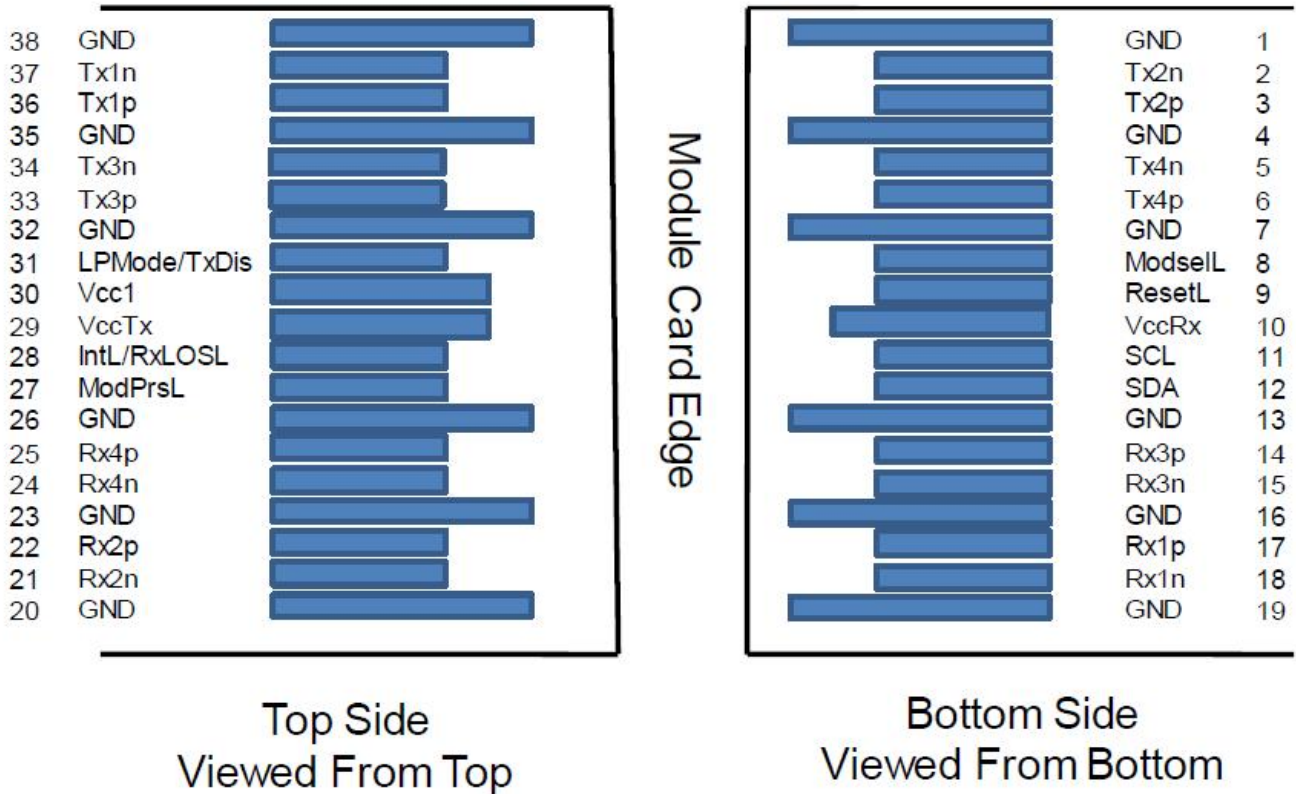
Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Power Supply Voltage	V _{CC}	3.135	3.3	3.465	V	
Power Dissipation	P _D			10	W	QSFP-DD
Power Dissipation	P _D			2.5	W	QSFP28
Power Supply Current	I _{cc}			3300	mA	QSFP-DD
Power Supply Current	I _{cc}			800	mA	QSFP28
Aggregate Data Rate			425		Gbps	PAM4
Signaling rate per lane			103.1		Gbps	PAM4
Clock Rate-I2C				400	kHz	
Transmitter						
Input Differential impedance	Z _{IN}		100		ohm	
Differential data input swing	V _{IN}	180		900	mV	
Single-ended voltage tolerance		-0.3		3.3	V	
Receiver						
Output Differential impedance	Z _{out}		100		ohm	
Differential data Output Swing	V _{out}	300		850	mV	

General Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Aggregate Data Rate			425		Gbps	
Signaling rate per lane			103.1		Gbps	
Bit Error Ratio (pre-FEC)	BER			2.4E-4		PRBS31
Maximum Supported Distances						
Fiber Type	Bandwidth (850nm)					
50um	2000MHz*km			70	m	OM3
50um	4700MHz*km			100	m	OM4

Pin Assignment:

QSFP28 end



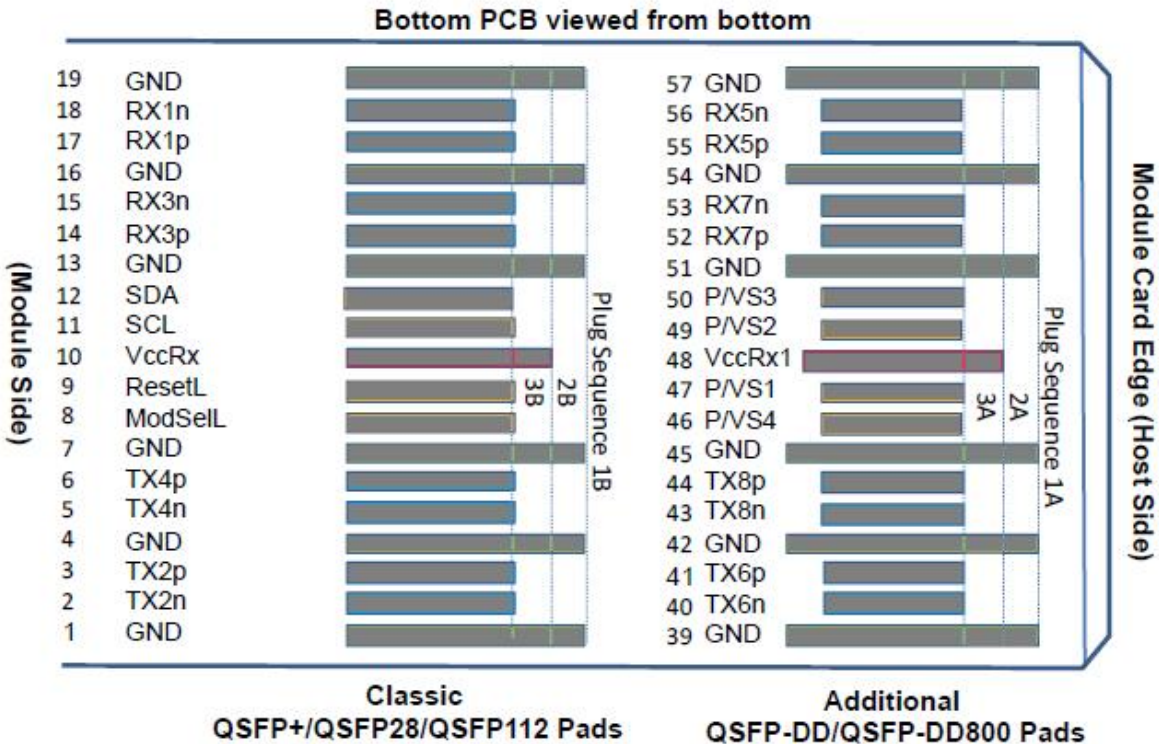
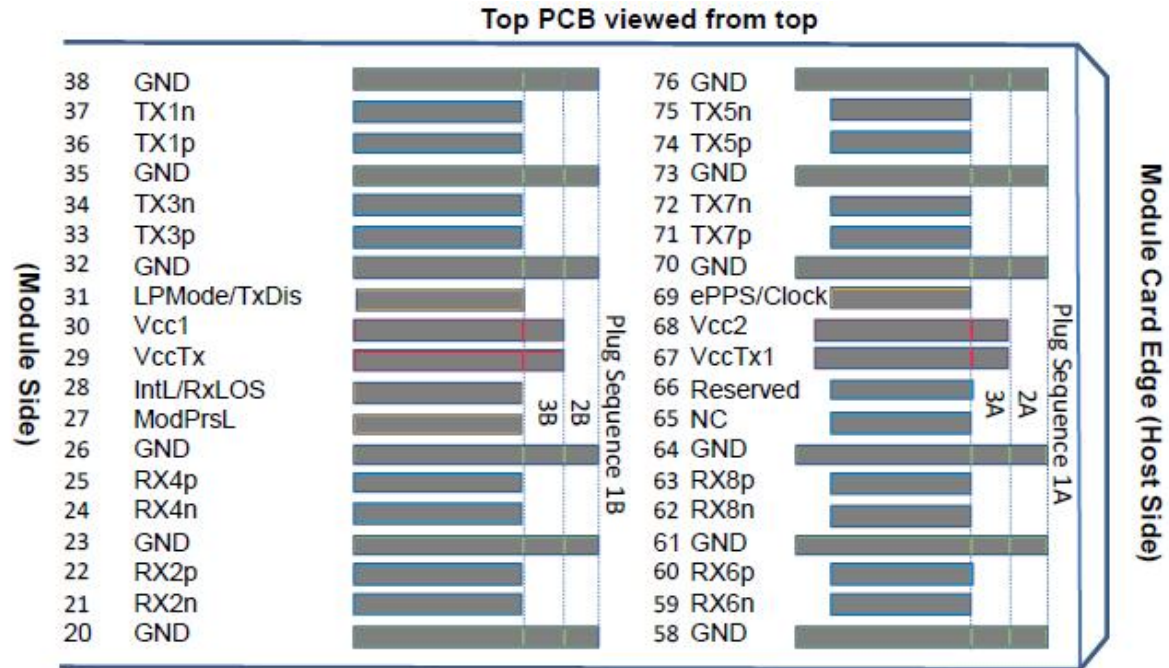
Pin Descriptions

PIN	Symbol	Name / Description	Note
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	
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

Note1: Module ground pins GND are isolated from the module case.

QSFP-DD end



PIN	Symbol	Name / Description	Note
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	2
12	SDA	2-wire serial interface data	2
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	2
28	IntL	Interrupt	2
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
39	GND	Ground	1
40	Tx6n	Transmitter Inverted Data Input	
41	Tx6p	Transmitter Non-Inverted Data Input	

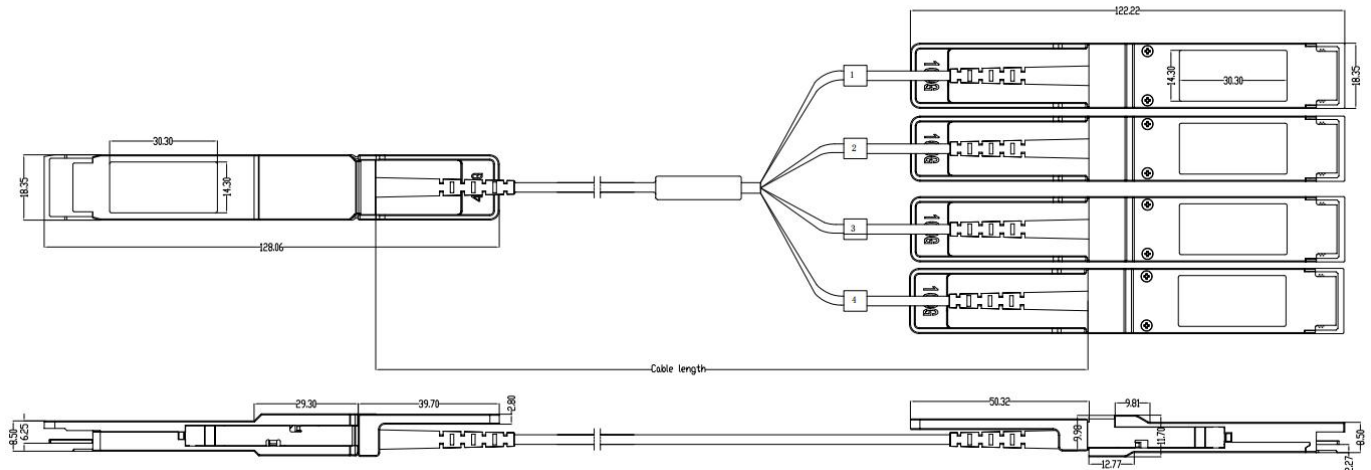
42	GND	Ground	1
43	Tx8n	Transmitter Inverted Data Input	
44	Tx8p	Transmitter Non-Inverted Data Input	
45	GND	Ground	1
46	Reserved	Reserved	
47	VS1	Module Vendor Specific 1	
48	Vcc Rx1	3.3V Power Supply Receiver	
49	VS2	Module Vendor Specific 2	
50	VS3	Module Vendor Specific 3	
51	GND	Ground	1
52	Rx7p	Receiver Non-Inverted Data Output	
53	Rx7n	Receiver Inverted Data Output	
54	GND	Ground	1
55	Rx5p	Receiver Non-Inverted Data Output	
56	Rx5n	Receiver Inverted Data Output	
57	GND	Ground	1
58	GND	Ground	1
59	Rx6n	Receiver Inverted Data Output	
60	Rx6p	Receiver Non-Inverted Data Output	
61	GND	Ground	1
62	Rx8n	Receiver Inverted Data Output	
63	Rx8p	Receiver Non-Inverted Data Output	
64	GND	Ground	1
65	NC	No Connect	
66	Reserved	Reserved	
67	Vcc Tx1	3.3V power supply	
68	Vcc2	3.3V power supply	
69	ePPS	Precision Time Protocol(PTP)reference clock input	
70	GND	Ground	1
71	Tx7p	Transmitter Non-Inverted Data Input	
72	Tx7n	Transmitter Inverted Data Input	
73	GND	Ground	1
74	Tx5p	Transmitter Non-Inverted Data Input	
75	Tx5n	Transmitter Inverted Data Input	
76	GND	Ground	1

Note1: Module ground pins GND are isolated from the module case.

Note2: Shall be pulled up with 4.7K-10Kohms to a voltage between 3.15V and 3.45V on the host board.

Mechanical Dimensions

Unit: mm



Revision History

Revision	Initiated	Reviewed	Approved	DCN	Release Date
V1.0	LIN	XX	XX	Released.	July 18, 2022

Important Notice

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