

## YQ21H-AO85Mxx

### Features

- ✓ Four-channel full-duplex active optical cable
- ✓ Multirate capability:10Gbps and 25Gbps per channel
- ✓ Reliable VCSEL array technology using multimode fiber
- ✓ PIN array receiver
- ✓ +3.3V single power supply
- ✓ QSFP28 High-density form factor
- ✓ Hot pluggable
- ✓ Power dissipation:<3.5W
- ✓ All-metal housing for superior EMI performance
- ✓ RoHS6 compliant (lead free)
- ✓ Operating case temperature:  
Commercial: 0°C to +70°C



### Applications

- ✓ 100GBASE-SR4
- ✓ Infiniband FDR/EDR
- ✓ Data Center Network

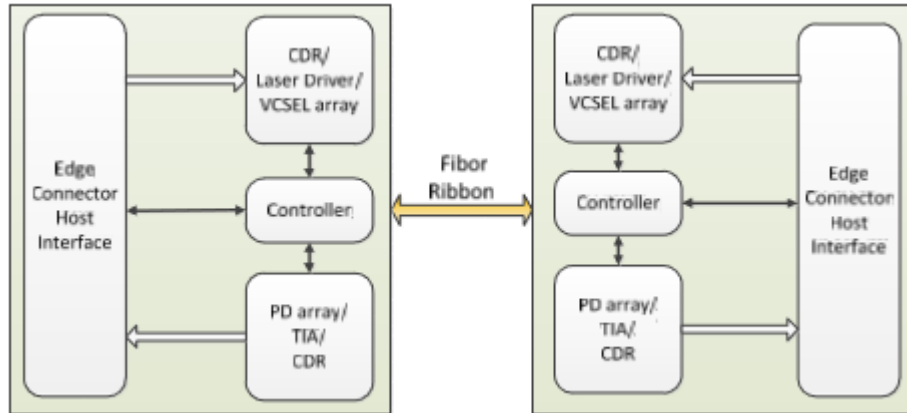
### Standards

- ✓ Compliant with QSFP28 MSA
- ✓ Compliant with SFF-8665
- ✓ Compatible with 100GEBASE-SR4

### Description

The YQ21H-AO85Mxx are designed for use in 100G Ethernet links up to 100m@OM4.

### Module Block Diagram



### Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit
Power Supply Voltage	V <sub>CC</sub>	0		3.6	V
Storage Temperature	T <sub>s</sub>	-20		+85	°C
Relative Humidity	RH	0		85	%

### Recommended Operating Environment

Parameter	Symbol	Min.	Typical	Max.	Unit
Power Supply Voltage	V <sub>CC</sub>	3.13	3.3	3.46	V
Power Dissipation	P <sub>D</sub>			3.5	W
Operating Case Temperature	T <sub>c</sub>	0		+70	°C
Aggregate Data Rate	-			103.12	Gbps
Bit Rate per Lane	BR			25.78	Gbps

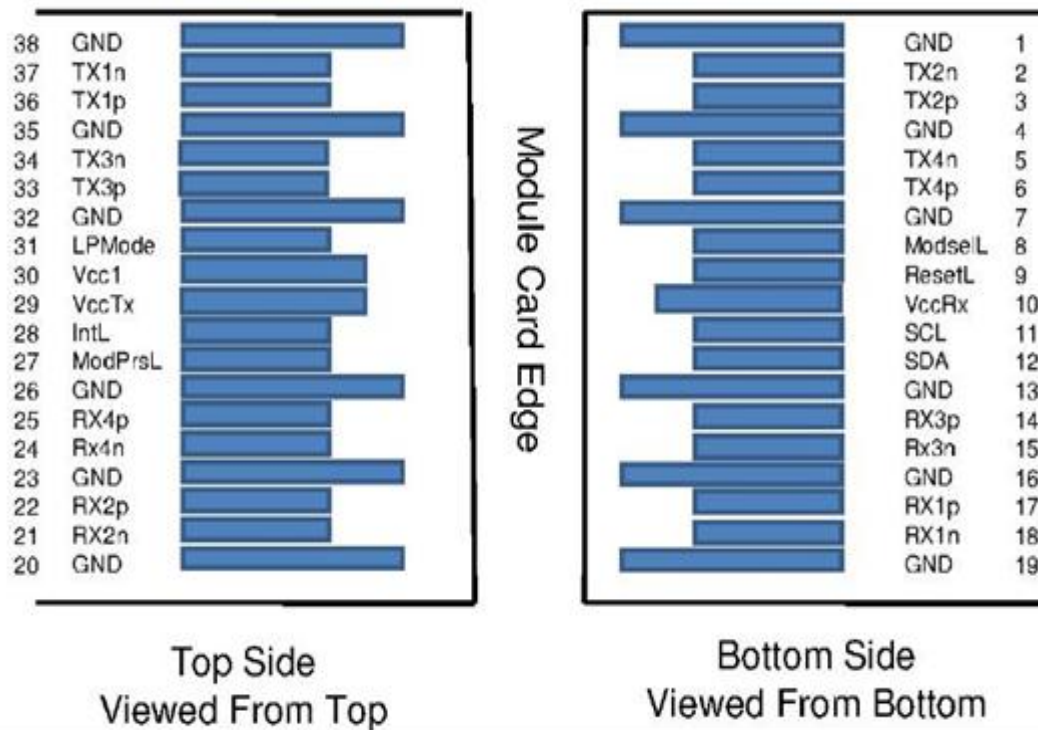
### Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Differential Impedance	-	90	100	110	Ω	
Differential Data Input Swing	-			900	mV	
Differential Data Output Swing	-			900	mV	
Transition Time	T <sub>r</sub> , T <sub>f</sub>	9.5			ps	20%-80%
Bit Error Rate	BER			E-12		1

#### Notes:

1. Measured with a PRBS 2<sup>31</sup>-1 test pattern @25.78Gbps, BER <10<sup>-12</sup>.

### QSFP28 Pin Definitions



### QSFP28 Pin Descriptions

Pin	Symbol	Description	Plug Seq.	Notes
1	Ground	Ground	1	1
2	Tx2n	Transmitter Inverted Data Input	3	
3	Tx2p	Transmitter Non-Inverted Data Input	3	
4	Ground	Ground	1	1
5	Tx4n	Transmitter Inverted Data Input	3	
6	Tx4p	Transmitter Non-Inverted Data Input	3	
7	Ground	Ground	1	1
8	ModSelL	Module Select	3	
9	ResetL	Module Reset	3	
10	VccRx	+3.3 V Power supply receiver	2	2
11	SCL	2-wire serial interface clock	3	
12	SDA	2-wire serial interface data	3	
13	Ground	Ground	1	1
14	Rx3p	Transmitter Non-Inverted Data Input	3	
15	Rx3n	Transmitter Inverted Data Input	3	
16	Ground	Ground	1	1
17	Rx1p	Transmitter Non-Inverted Data Input	3	
18	Rx1n	Transmitter Inverted Data Input	3	

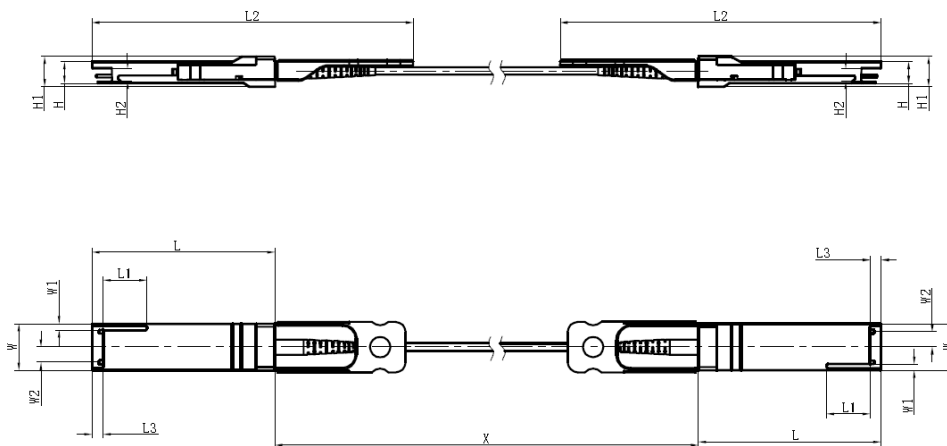
19	Ground	Ground	1	1
20	Ground	Ground	1	1
21	Rx2n	Transmitter Inverted Data Input	3	
22	Rx2p	Transmitter Non-Inverted Data Input	3	
23	Ground	Ground	1	1
24	Rx4n	Transmitter Inverted Data Input	3	
25	Rx4p	Transmitter Non-Inverted Data Input	3	
26	Ground	Ground	1	1
27	ModPrsL	Module Present	3	
28	IntL	Interrupt	3	
29	VccTx	+3.3 V Power supply transmitter	2	2
30	Vcc1	+3.3 V Power Supply	2	2
31	LPMoDe	Low Power Mode	3	
32	Ground	Ground	1	1
33	Tx3p	Transmitter Non-Inverted Data Input	3	
34	Tx3n	Transmitter Inverted Data Input	3	
35	Ground	Ground	1	1
36	Tx1p	Transmitter Non-Inverted Data Input	3	
37	Tx1n	Transmitter Inverted Data Input	3	
38	Ground	Ground	1	1

**Notes:**

Plug Seq.: Pin engagement sequence during hot plugging.

1. Module ground pins GND are isolated from the module case.
2. VccRx, Vcc1 and VccTx are the receiver and transmitter power supplies and shall be applied concurrently.

**Mechanical Dimensions**



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

## Ordering information

Part Number	Product Description
YQ21H-AO85Mxx	100G, QSFP28 AOC, Mxx≤70m@OM3
YQ21H-AO85Mxx-OM4	100G, QSFP28 AOC, Mxx≤100m@OM4

### Notes:

1. Mxx denotes the AOC length with unit meter. For example, M01 denotes 1m, M70 denote 70m.

## References

1. QSFP28 MSA.
2. 100GEBASE-SR4.

## Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by YOUTHTON before they become applicable to any particular order or contract. In accordance with the YOUTHTON policy of continuous improvement, specifications may change without notice. The publication of information in this data sheet does not imply freedom from patent or other protective rights of YOUTHTON or others. Further details are available from any YOUTHTON sales representative.

## Contact Information

SHENZHEN YOUTHTON TECHNOLOGY CO., LTD.

ADD: F4, JINMA BUILDING, JINMA INDUSTRIAL PARK, SHIHUAN ROAD NO.4, SHIYAN STREET, BAOAN DISTRICT, SHENZHEN, CHINA

EMAIL: info@youthton.com