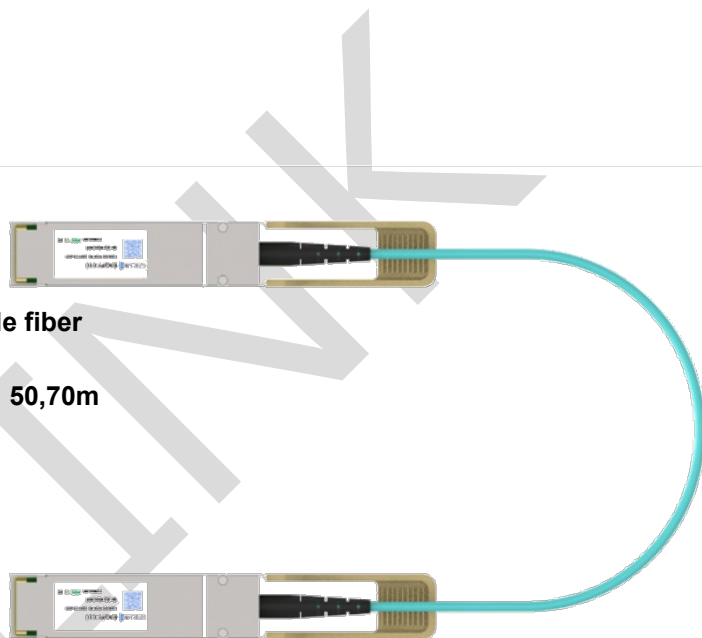


## EAQPY-xx

### 100Gbps QSFP28 to QSFP28 Active Optical Cables

#### PRODUCT FEATURES

- Four-channel full-duplex active optical cable
- Transmission data rate up to 26Gbit/s per channel
- Reliable VCSEL array technology using multimode fiber
- Available in standard lengths of 3, 5, 10, 15, 20, 30, 50,70m
- Low power consumption <3.5W
- Operating case temperature 0°C to +70°C
- 3.3V power supply voltage
- RoHS 6 compliant
- Hot Pluggable QSFP form factor



#### APPLICATIONS

- 100G Ethernet
- Data center
- Infiniband QDR/DDR/SDR
- 4G/8G/10G Fibre Channel

## DESCRIPTIONS

The ETU-LINK QSFP28 active optic cables are a high performance, low power consumption long reach interconnect solution supporting 100G Ethernet or Infini Band QDR/DDR/SDR,12.5G/10G/8G/4G/2G fiber channel ,PCIe and SAS. It is compliant with the QSFP MSA and IEEE P802.3ba. QSFP AOC is an assembly of 4 full-duplex lanes, where each lane is capable of transmitting data at rates up to 25.78125Gb/s, providing an aggregated rate of 104Gb/s. ETU-LINK QSFP28 AOC is one kind of parallel transceiver which provide sin creased port density and total system cost savings.

## Ordering Information

Part No.	Description
EAQPY-xx	100Gbps QSFP28 to QSFP28 Active Optical Cables (AOC) OM3 0~70m

Notes:

- where "x" denotes cable length in meters. Examples are as follows:
- x = 1 for 1m, xx=10 for 10m

## Absolute Maximum Ratings

The operation in excess of any absolute maximum ratings might cause permanent damage to this module.

Parameter	Symbol	Min	Max	Unit	Note
Storage Temperature	TST	-40	85	°C	
Relative Humidity(non-condensing)	RH	0	85	%	
Operating Case Temperature	TOPC	0	70	°C	
Supply Voltage	VCC	-0.3	3.6	V	
Input Voltage	Vin	-0.3	Vcc+0.3	V	

## Recommended Operating Conditions and Supply Requirements

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	TOPC	0		70	°C
Power Supply Voltage	VCC	3.13	3.3	3.47	V
Power Consumption		-		3.5	W
Data Rate	DR		25.78125		Gbps
Data Speed Tolerance	ΔDR	-100		+100	ppm
Link Distance with OM3 fiber	D	0		70	m

## Electrical Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Differential input impedance	Zin	90	100	110	ohm
Differential Output impedance	Zout	90	100	110	ohm
Differential input voltage amplitude	$\Delta V_{in}$	300		1100	mVp-p
Differential output voltage amplitude	$\Delta V_{out}$	500		800	mVp-p
Input Logic Level High	V <sub>IH</sub>	2.0		VCC	V
Input Logic Level Low	V <sub>IL</sub>	0		0.8	V
Output Logic Level High	V <sub>OH</sub>	VCC-0.5		VCC	V
Output Logic Level Low	V <sub>OL</sub>	0		0.4	V

## Optical and Characteristics

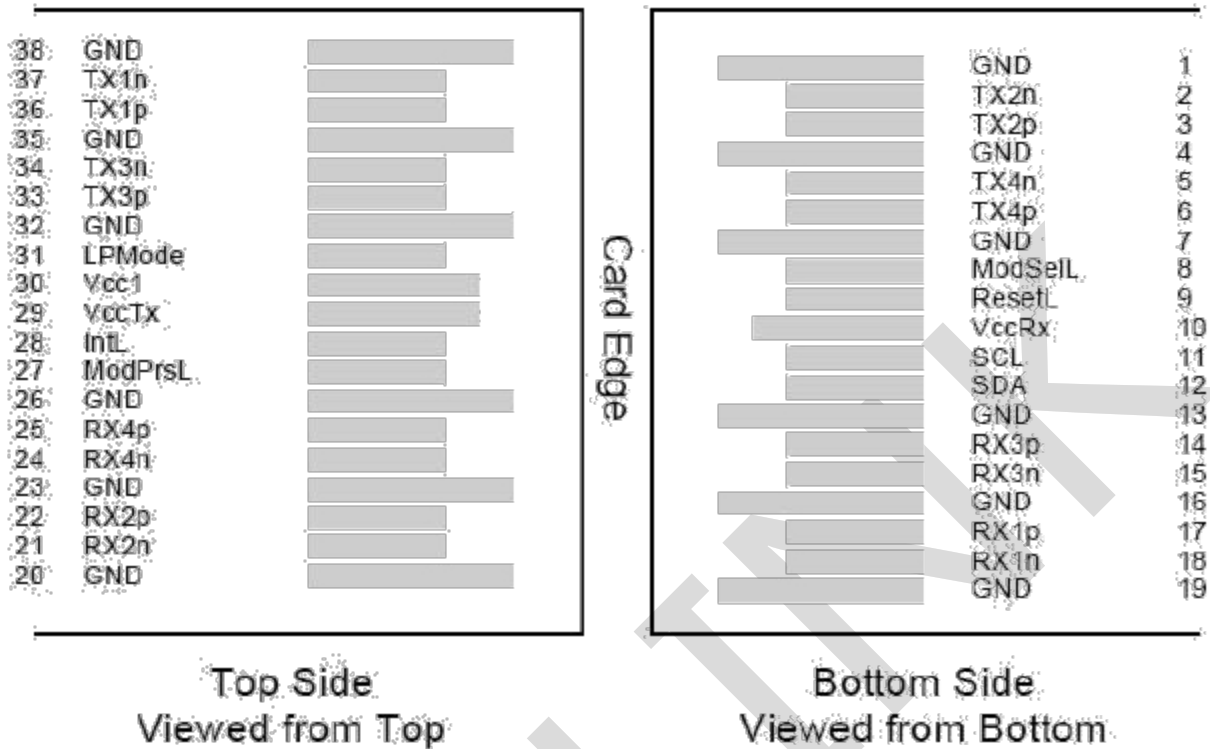
All parameters are specified under the recommended operating conditions with PRBS31 data pattern unless otherwise specified.

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
<b>Transmitter</b>						
Output Opt. Pwr	POUT	-8.4		2.4	dBm	
Optical Wavelength	$\lambda$	840	850	860	nm	
Optical Extinction Ratio	ER	3.0			dB	
RIN	RIN			-128	dB/Hz	
Output Eye Mask	Compliant with IEEE 0802.3ae					
<b>Receiver</b>						
Rx Sensitivity	RSENS			-10	dBm	1
Input Saturation Power (Overload)	Psat	2.4			dBm	
Wavelength Range	$\lambda_c$	770	850	860	nm	
Bit Error Rate	BR	BER<5.0*10 <sup>-5</sup>				

Notes:

1) Measured with a PRBS 231-1 test pattern, @25.78Gb/s, BER<5.0\*10<sup>-5</sup>

## Pin Diagram



## Pin Descriptions

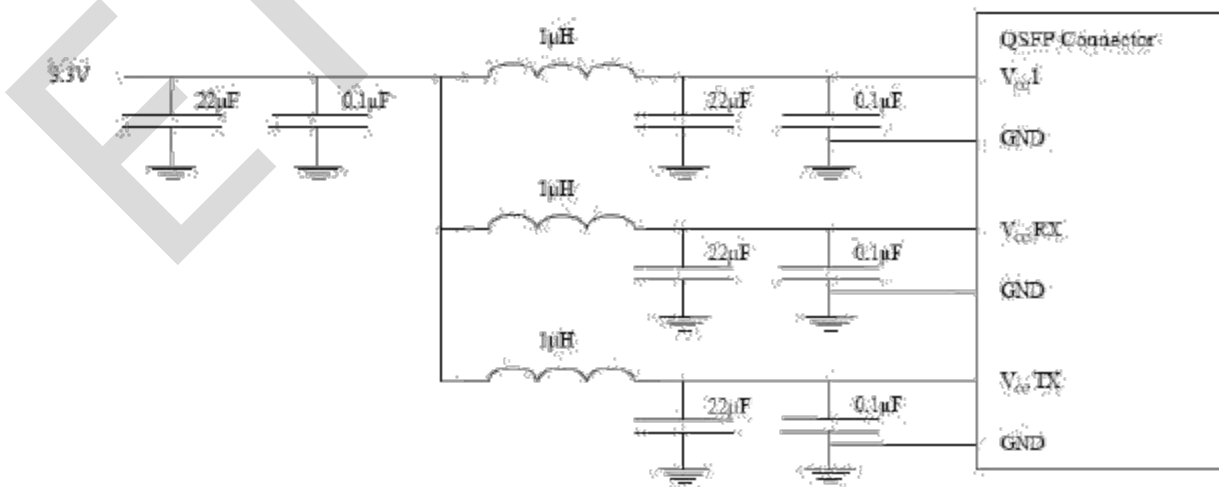
PIN	Logic	Symbol	Name/Description	Note
1		GND	Ground	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data output	
4		GND	Ground	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data output	
7		GND	Ground	1
8	LVTLL-I	ModSelL	Module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

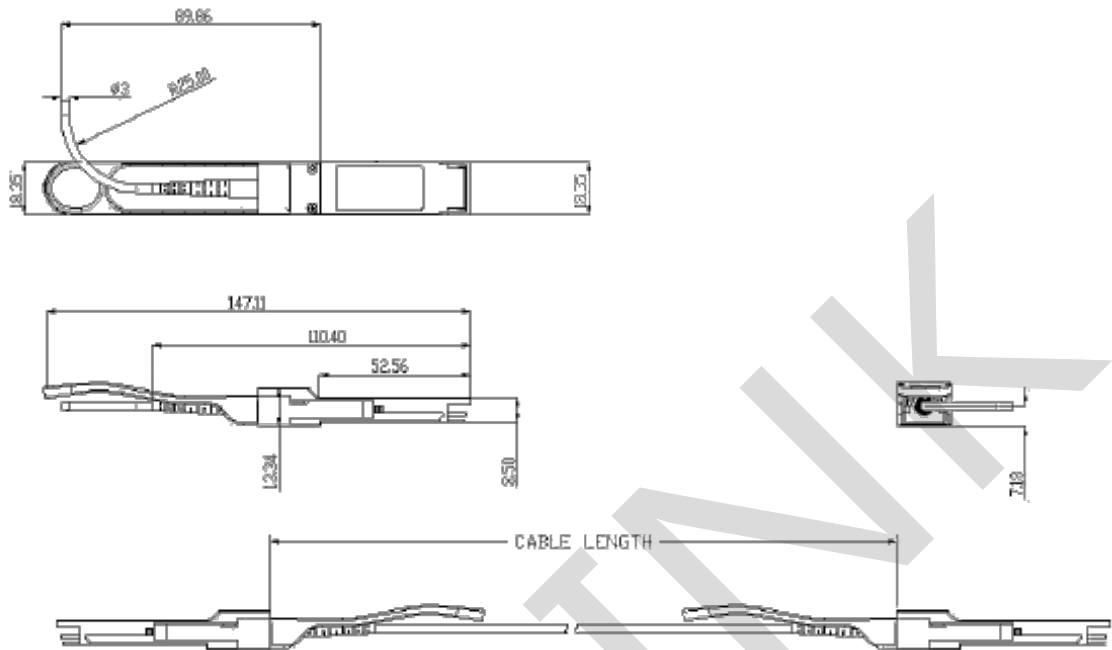
**Notes:**

1. Module circuit ground is isolated from module chassis ground within the module. GND is the symbol for signal and supply (power) common for QSFP modules.
2. The connector pins are each rated for a maximum current of 500mA.

**Power Supply Filtering**



## Mechanical Dimensions



Dimensions in Millimeters

## Revision History

Version No.	Date	Description
1.0	May 18, 2018	Preliminary datasheet
1.1	Aug 12, 2024	Product upgrades

Company: ETU-Link Technology Co., LTD

Production base: Right side of 3rd floor, No. 102 building, Longguan expressway, Dalang street, Longhua District, Shenzhen city, Guangdong Province, China 518109

R&D base: Floor 4, Building 4, Nanshan Yungu Phase LI, Taoyuan Community, Xili Street, Nanshan District, Shenzhen

Tel: +86-755 2328 4603

Addresses and phone number also have been listed at [www.etulinktechnology.com](http://www.etulinktechnology.com).

Please e-mail us at [sales@etulinktechnology.com](mailto:sales@etulinktechnology.com) or call us for assistance.