

# Specification of 100Gbps QSFP28 Extension Copper Cable with the Adapter (connector to cage) for Immersion Liquid Cooling System



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↑  
Length: 10cm ... 50cm

### Ordering Information

Model Name	TCP-Q141B-NNE##				Note
	TCP-Q141B-NNE10	TCP-Q141B-NNE22	TCP-Q141B-NNE36	TCP-Q141B-NNE50	
Feature	Adapter (convert connector type to cage type) with extended cable				
Connector type	QSFP28 (SFF-8665)				
Cage type	QSFP28 cage				
Temperature	0°C ~+70°C				
Length	10cm	22cm	36cm	50cm	The length excludes connector and cage
Latch Color	Sky Blue <span style="display: inline-block; width: 20px; height: 10px; background-color: #66b3ff; border: 1px solid black;"></span>				

## ■ General Description

Immersion Cooling completes the immersion of electronic components in a dielectric liquid. All the heat generated by the IT is captured in the liquid. Suitable dielectric liquids can absorb approximately 1500 times more heat energy than air with the same volumes and temperatures. FormericaOE QSFP28 extender with QSFP28 plug vs. QSFP28 cage is designed to be applied for immersion solution. It extends the 100G interfaces to surface, aiming to realize the interconnection of 100G transceivers and AOC.

## ■ Features

- Low EMI radiation
- Insertion Loss < 7.0dB @12.89GHZ/channel within 50cm
- Oil-resistance, dust-proof and anti-corrosion
- 100 ohm differential impedance system
- Low Near-End Crosstalk (NEXT)
- RoHS compliant

## ■ Applications

- Extend the 100Gb/s high speed interconnection for liquid immersion solution
- QSFP28 connector adapter applied at test equipment to link 100G DUT
- Extend the link of 100G transceiver
- Extend the link of 100G AOC

## ■ Applicable Documents

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

- Compliant with QSFP-MSA / SFF-8436 / SFF-8665, IEEE 802.3bj, and Infiniband EDR.
- SFF-8417, EIA-364 Electrical Connector / Socket Test Procedures, including Environmental Classifications.

## ■ Absolute Maximum Rating

Parameter	Symbol	Min	Typ.	Max	Unit
Storage Temperature	Ts	-20		80	°C

## ■ Recommended Operating Conditions

Parameter	Symbol	Min	Typ.	Max	Unit
Operating Case Temperature	Top	0	25	70	°C
Data Rate per lane			25.78125		Gbps

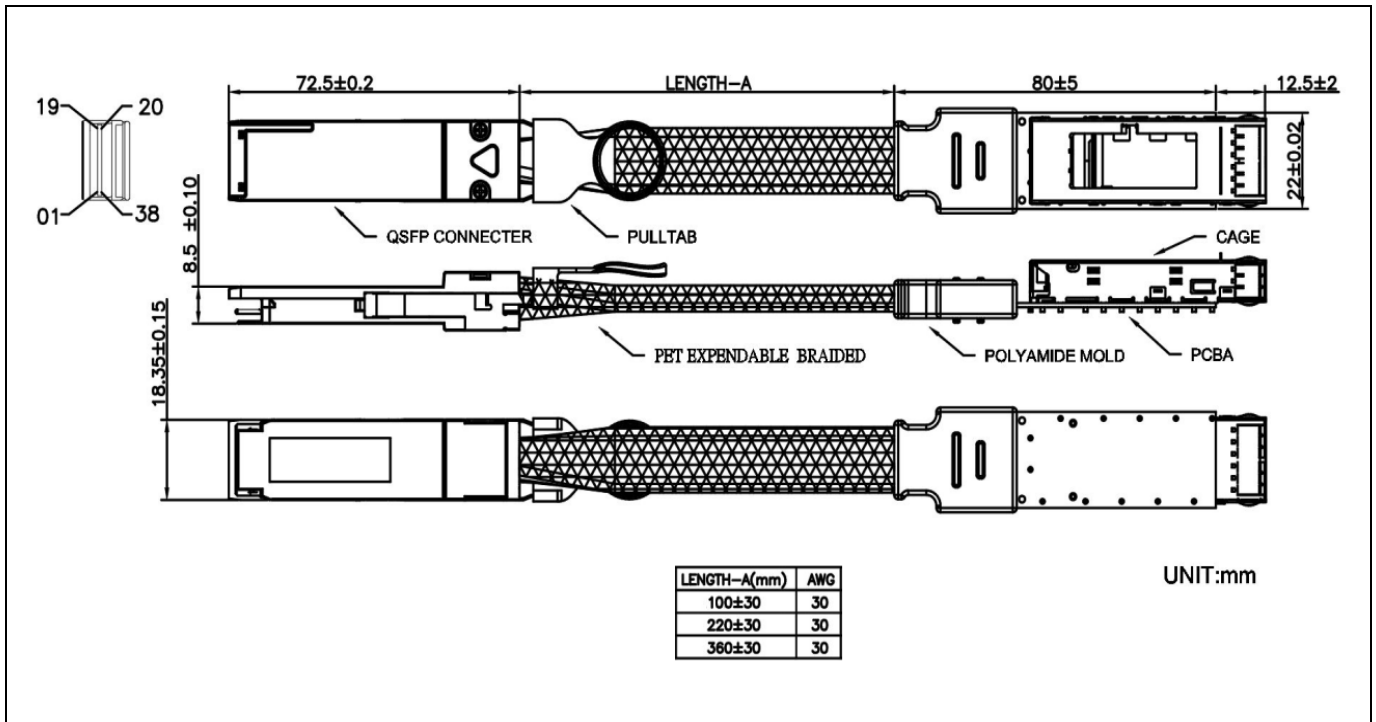
■ PIN Assignment

WIRING DIAGRAM

HIGH SPEED SIGNAL				
P1(QSFP28 PLUG)			P2(QSFP28 RECEPTACLE)	
PAD	SIGNAL		PAD	SIGNAL
02	TX2n		02	TX2n
03	TX2p		03	TX2p
05	TX4n		05	TX4n
06	TX4p		06	TX4p
14	RX3p		14	RX3p
15	RX3n		15	RX3n
17	RX1p		17	RX1p
18	RX1n		18	RX1n
21	RX2n		21	RX2n
22	RX2p		22	RX2p
24	RX4n		24	RX4n
25	RX4p		25	RX4p
33	TX3p		33	TX3p
34	TX3n		34	TX3n
36	TX1p		36	TX1p
37	TX1n		37	TX1n
08	ModSelL		08	ModSelL
09	ResetL		09	ResetL
10	VccRx		10	VccRx
11	SCL		11	SCL
12	SDA		12	SDA
27	ModPrsL		27	ModPrsL
28	IntL		28	IntL
29	VccTx		29	VccTx
30	Vcc1		30	Vcc1
31	LPMode		31	LPMode
GND GROUP	GND		GND GROUP	GND
GND GROUP 01,04,07,13,16,19 20,23,26,32,35,38			GND GROUP 01,04,07,13,16,19 20,23,26,32,35,38	
CONNECTOR SHELL			CONNECTOR SHELL	

\*DC BLOCKING CAPS ON P1,P2 RX END.

■ Module Outline



Note:

1. Standard length as LENGTH-A in drawing with tolerance. Option of LENGTH-A: 22cm and 36cm
2. Unit: mm
3. Compliant with IEEE802.3bj
4. LED function: Once pluggable QSFP28 connector end of the extender plugged into an equipment that support Vcc power 3.3v, the LED will be ON.

**Contact Information**

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**Revision History**

Date	Version	Description
1/5/2021	Preliminary	Initial release
3/18/2021	V1.0	Update the product photo and outline drawing
4/22/2021	V1.1	Add 10cm length option
10/4/2022	V1.2	Add 50cm length option (Length: 10cm – 50cm) Revise length symbol in PN from ** to ##