

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



T C P - Q 1 4 1 B - N N E x x

↑ Length

Ordering Information

Model Name	TCP-Q141B-NNExx		Note
	TCP-Q141B-NNEx22	TCP-Q141B-NNEx36	
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	22cm	36cm	The length excludes connector and cage
Latch Color	Sky Blue 		

■ 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. Formerica's 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
- Extend the link of 100G AOC
- Extend the link of 100G transceiver

■ 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

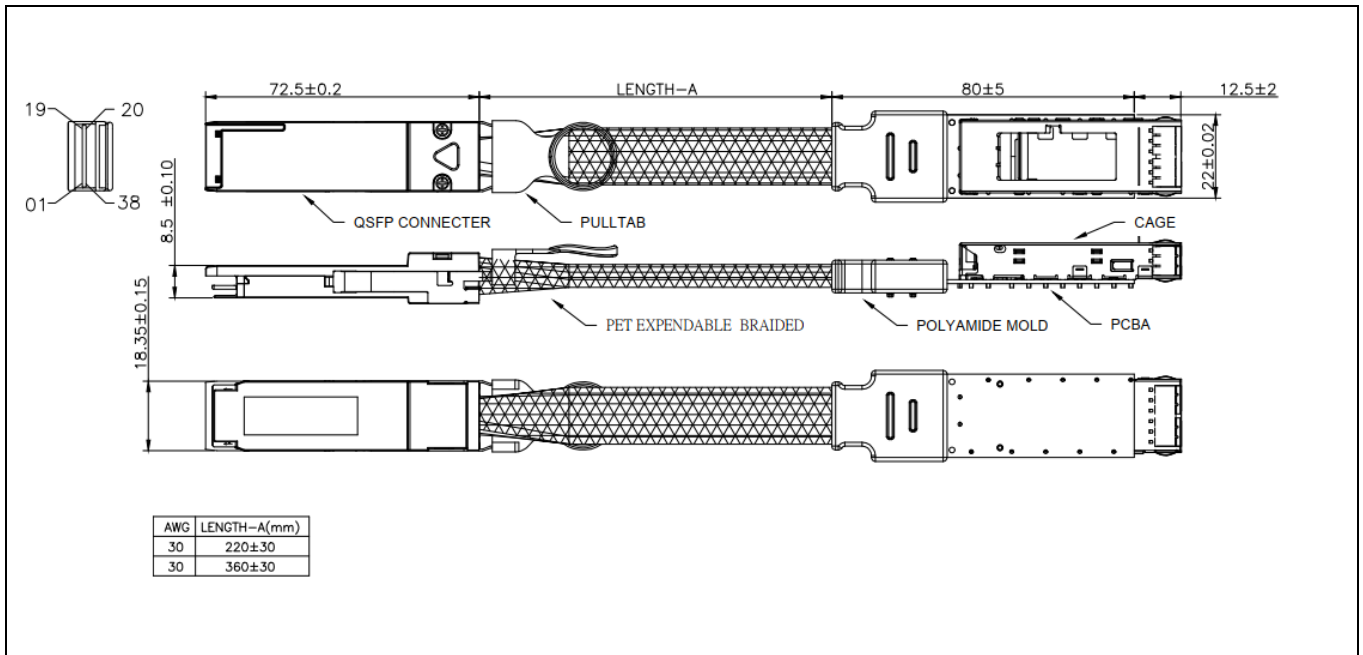
■ PIN Assignment

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

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