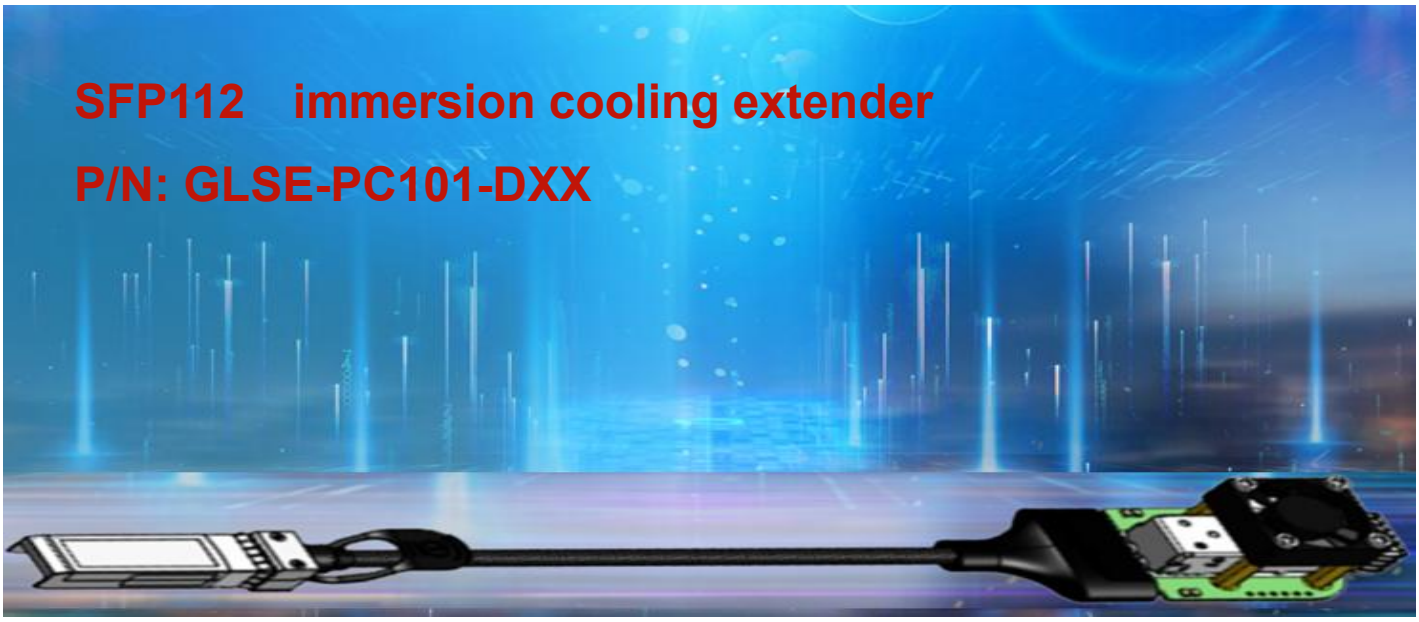


Features

- Compliant SFP MSA
- Typical insertion loss less 6dB@26.56GHz with 0.3m length
- 100ohm differential impedance system
- 3.3V power supply
- I2C R/W function
- Status indicators with LED
- Low EMI radiation and crosstalk
- 3.3V/0.6W fan and heat sink for contact cooling
- RoHS compliant(lead free)

Applications

- Extend SFP112 transceiver/AOC for liquid immersion link environment
- Protect device SFP SMT connector
- provide I2C R/W and some status indicators with LED

Description

Gigalight can offer rich experience of immersion solution, that includes different form and speed transceivers/AOC/product. Gigalight SFP112 immersion cooling extender (GLSE-PC101-DXX) is an important part of liquid immersion solution, normal SFP112 form transceiver/AOC can be used for immersion environment with this product. This product include extender cage, cable, SFP112 housing three parts, the cable length can be customized no more than 0.3m for extension, that can avoid the optical lens/engine/interface exposure to the liquid indirectly.

In addition, this product can provide I2C read/write, also can show the status indicators with LED for low speed electrical hardware pins. When insertion and removal frequently, this product can effectively protect the SFP112 SMT connector of switch/NIC.

Liquid cooling Advantage

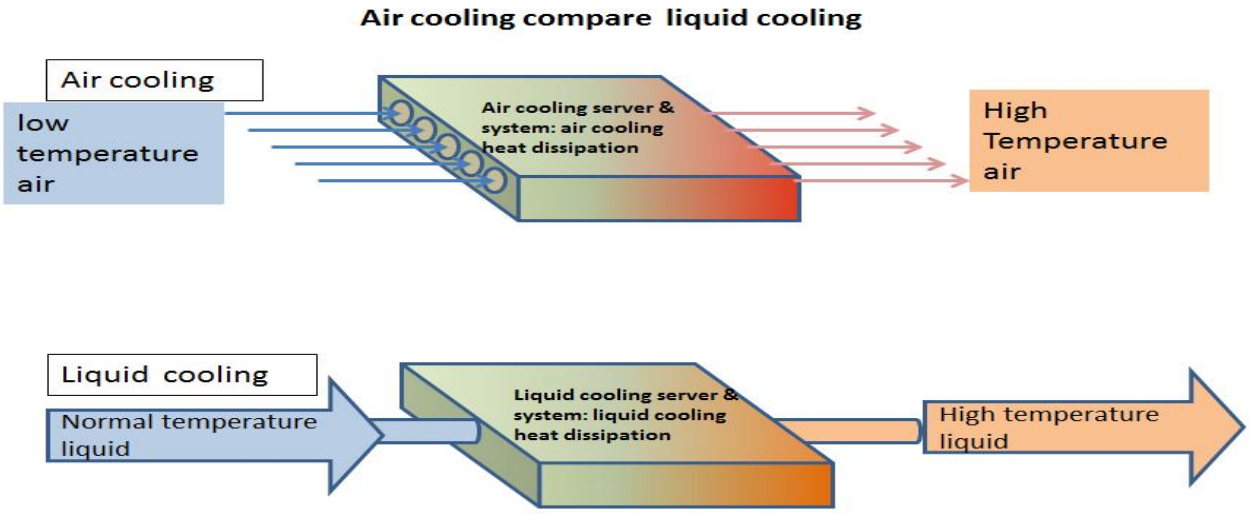


Figure 1. Liquid cooling advantage

As the requirement of data traffic keeping growth and the heat flux emitted by datacenter internal chips increases constantly, traditional air cooling methods are under pressure. Liquid cooling technologies removes the heat more efficiently with dielectric fluids that have high heat capacity to improve the efficiency of energy in datacenter.

Gigalight solved the lack of optical transceivers which perform reliability in immersion even liquid immersion depth up to 10m, the Liquid cooling optical series transceiver is suitable for liquid cooling server & system, this series product are compatible with fluorinated liquid and mineral oils well.

Immersion cooling extender can also be a important role in liquid immersion solution, existing normal OSFP form transceiver/AOC can be adapted for immersion indirectly.

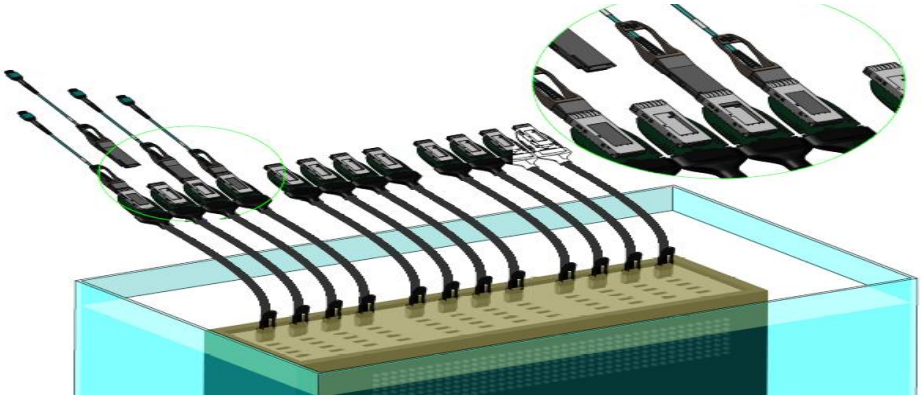


Figure 2 Immersion cooling extender under liquid

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	T_s	-20	85	ºC
Case Operating Temperature	T_c	0	70	ºC
Humidity (non-condensing)	Rh	5	95	%

Recommended Operating Conditions

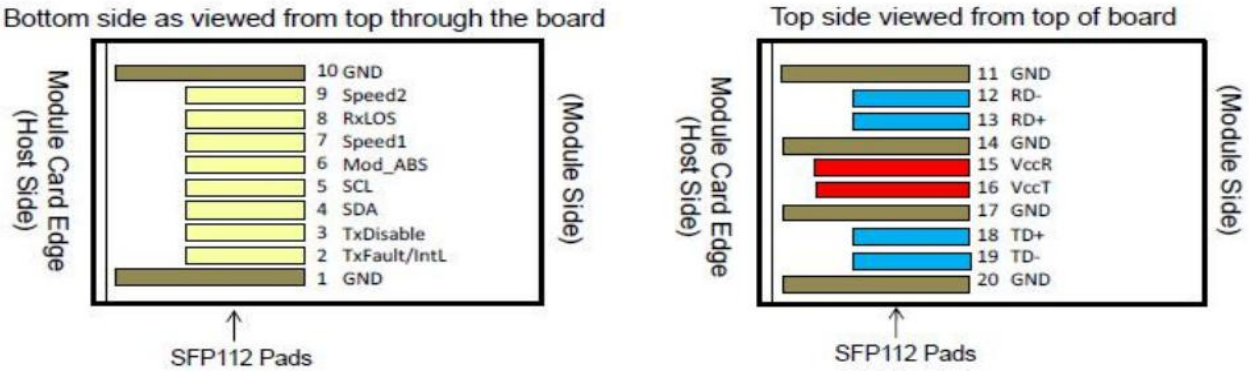
Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	Vcc	3.13		3.47	V
Support Power Dissipation	Pm			5	w
Operating Case Temperature	T_c	0		70	ºC
Baud Rate per Lane	fd		53.12		GBaud/s

Main Part assembly

P1:Extender contact P2:Extender cable P3:Extender housing

Figure 3 SFP112 extender main part assembly

Electrical pinout



Electrical Pin-out Details

PIN	Logic	Symbol	Name / Description	Note
1		GND	Module Transmitter Ground	1
2	LVTTL-O	TX_Fault/IntL	Module Transmitter Fault (Default setting indicates TxFault,but optionally can be configured as IntL through CMIS.)	2
3	LVTTL-I	TX_Disable	Transmitter Disable; Turns off transmitter laser output	
4	LVTTL-I/O	SDA	2-Wire Serial Interface Data Line	2
5	LVTTL-I	SCL	2-Wire Serial Interface Clock	2
6		MOD_ABS	Module Definition, Grounded in the module	
7	LVTTL-I	RS0	Receiver Rate Select	
8	LVTTL-O	RX_LOS	Receiver Loss of Signal Indication Active LOW	
9	LVTTL-I	RS1	Transmitter Rate Select (not used)	
10		GND	Module Receiver Ground	1
11		GND	Module Receiver Ground	1
12	CML-O	RD-	Receiver Inverted Data Output	
13	CML-O	RD+	Receiver Data Output	
14		GND	Module Receiver Ground	1
15		VccR	Module Receiver 3.3 V Supply	
16		VccT	Module Receiver 3.3 V Supply	
17		GND	Module Transmitter Ground	1
18	CML-I	TD+	Transmitter Non-Inverted Data Input	
19	CML-I	TD-	Transmitter Inverted Data Input	
20		GND	Module Transmitter Ground	1

Notes:

1. Module ground pins GND are isolated from the module case.

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

Mechanical Dimensions

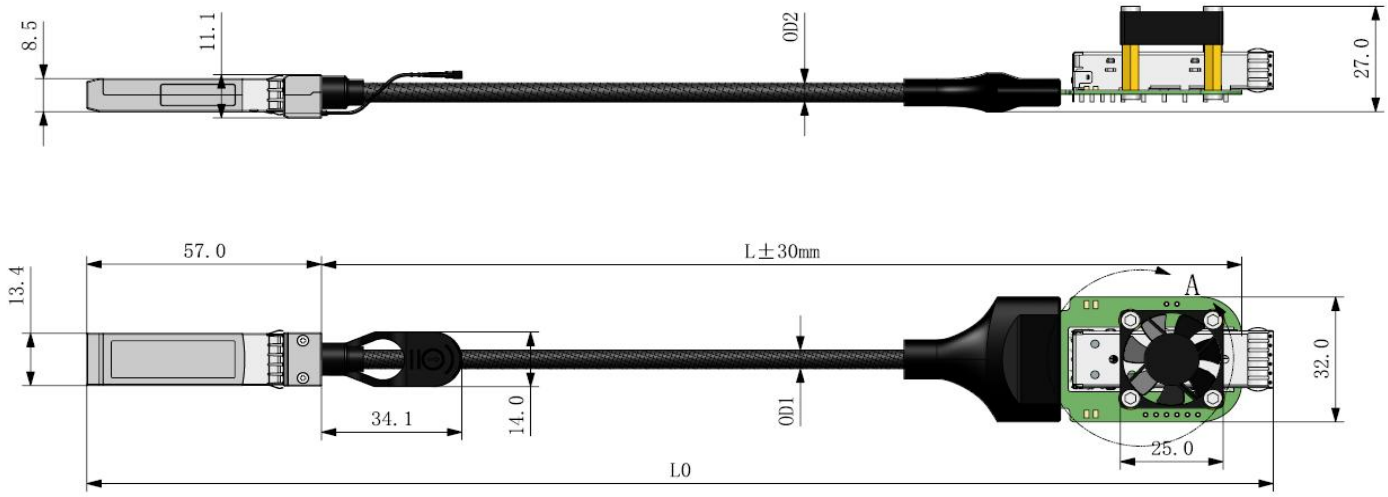


Figure 4. SFP112 extender Mechanical Specifications

Extender housing pin

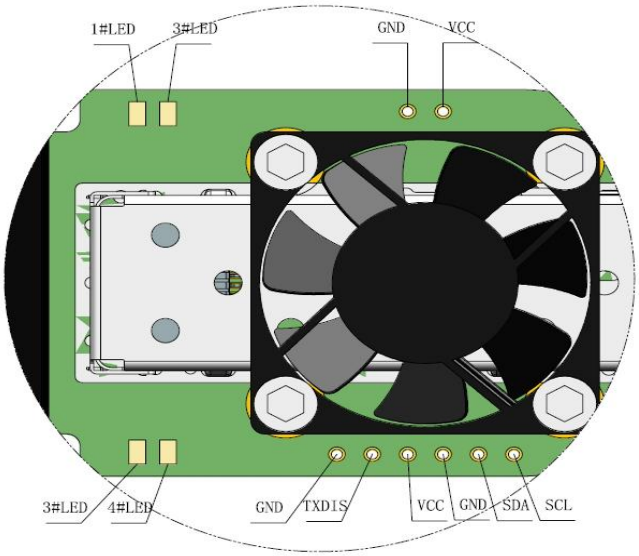


Figure 5. Extender housing pin

Regulatory Compliance

Gigalight's SFP112 immersion cooling extender meet the requirements of the following standards:

Feature	Standard
Electrical Safety	EN 62368-1: 2014 IEC 62368-1:2014 UL 62368-1:2014

Environmental protection	Directive 2011/65/EU with amendment(EU)2015/863
CE EMC	EN55032: 2015 EN55035: 2017 EN61000-3-2:2014 EN61000-3-3:2013
FCC	FCC Part 15, Subpart B; ANSI C63.4-2014

Ordering information

Part Number	Length	Description
GLSE-PC101-D03	30cm	SFP112 extender with high speed cable, with PET jacket ,with fan,0.3 meter length as of Figure 4.

1.The length (meter) and wire gage of GLSE-PC101-DXX is decimal and can be customizable

2.Length as “L” of Mechanical Specifications

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by GIGALIGHT before they become applicable to any particular order or contract. In accordance with the GIGALIGHT policy of continuous improvement specifications may change without notice.

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Revision History

Revision	Date	Description
V0	24-Dec-2025	Advance Release.