

TITLE 25G SFP28 AOC (Active Optical cable)	DOC No.	DTRX-180028
	REVISION : 02	AUTHORIZED BY : Mike Sun
	DATE : 2020.08.05	CLASSIFICATION : CONFIDENTIAL

1. Purpose

This document validates solely for the product of JPC (Jess-Link) , SFP28 25Gbps Active Optical Cable (AOC), with its basic information and electronic characteristics. With continuous performance improvement purpose, the document might subject to change without notice.

2. General Description

JPC's Small Form-Factor Pluggable plus Active Optical Cables (SFP28 AOC) serve short-reach high-speed transmission applications with a data rate up to 10Gb/s per channel. These active optical cables support 25Gb ethernet is compliant with the Multi-Source Agreement (MSA) for product development. These solutions will benefit you with longer distances, good signal integrity, and better bit error rate performance.

3. Feature

- Bit rate support from 25.78Gbps
- Pre-terminated fiber cable
- Operating environment temperature 0 ~ 70°C
- Low power consumption
- SFP+ housing with enhanced EMI shielding
- Single 3.3V power supply
- Programmable EEPROM for serial identification

4. Applications

- 25G Ethernet

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5. Revision History

Rev.	Comments	Date	Originator	Approval
01	Preliminary Draft	2018.10.12	Mike Sun	Ray Yang
02	Add Length 0.3m P/N	2020.08.05	Mike Sun	Ray Yang

6. Absolute Maximum Rating

Not necessarily applied together. Exceeding these values may cause permanent damage. Functional operation under these conditions is not implied.

Parameter	Min	Max	Unit
Storage Temperature	-40	85	°C
Relative Humidity(non-condensing)	5	85	%
Operating Case Temperature	0	70	°C
Supply Voltage	-0.3	3.6	V

7. Recommended Operating Conditions

Parameter	Min	Typical	Max	Unit
Case Operating Temperature	0		70	°C
Power Supply Voltage	3.14	3.3	3.46	V
Power Supply Current			300	mA
Data Rate per Channel		25.78		Gbps
Differential Data Input / Output Load		100		Ohms
Standard Cable Lengths	1		100	m
Power Dissipation(Per terminal)		1		W

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8. Electrical Characteristics

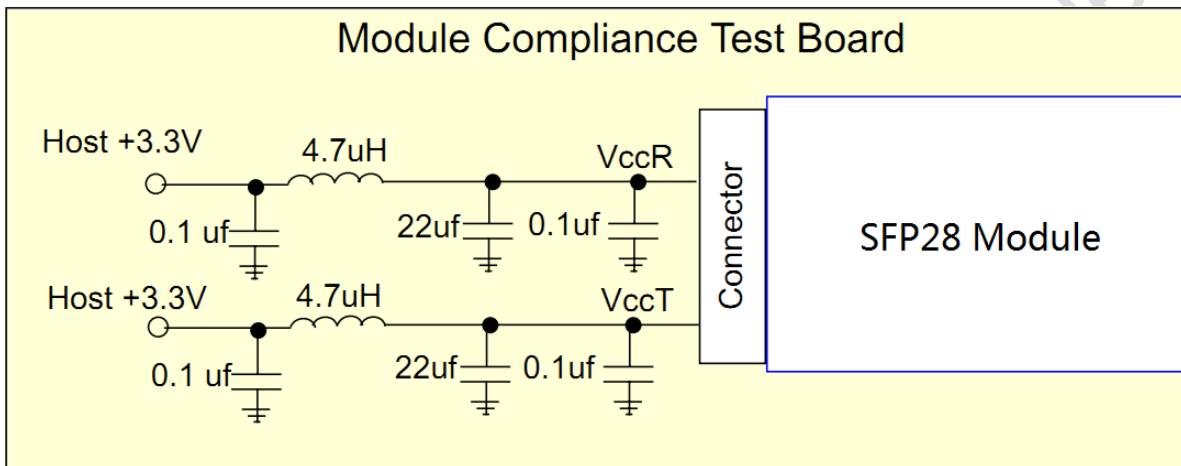
Parameter		Min.	Typ.	Max.	Units	
Transmitter						
Differential Data Input Swing		200		1600	mV _{PP}	
Input Differential Impedance			100		Ω	
Tx_Fault	Normal Operation	0		0.8	V	
	Transmitter Fault	2.0		V _C C	V	
Tx_Disable	Normal Operation	0		0.8	V	
	Laser Disable	2.0		V _{CC} +0.3	V	
Receiver						
Differential Date Output		400		800	mV	
Output Differential Impedance			100		Ω	
Bit Error Rate			10 ⁻¹²	-	-	
Rx_LOS	Normal Operation	0		0.8	V	
	Lose Signal	2.0		V _{CC} +0.3	V	

9. General Cable Characteristics

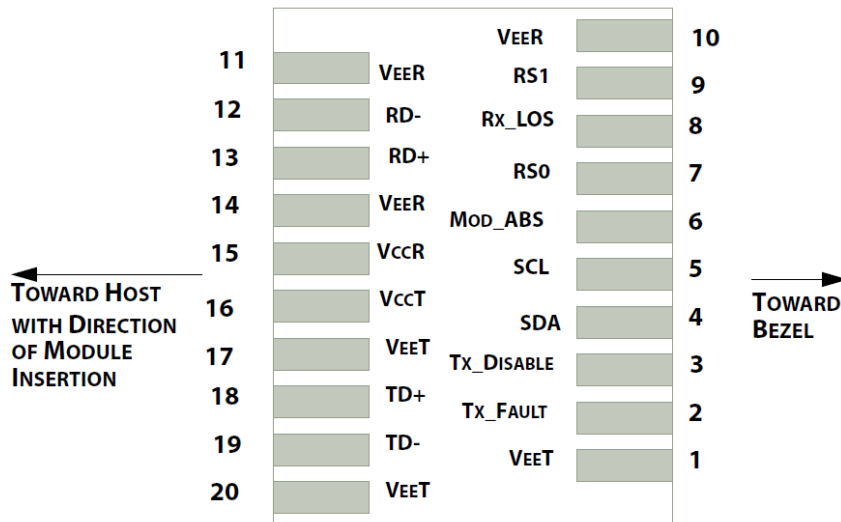
Parameter	Value	Units
Diameter	3±0.2	mm
Minimum bend radius	30	mm
Length tolerance	Length < 5m: +300mm /-0 5m < Length < 50m: +500mm / -0 50m < Length: +1000mm /-0	mm
Cable color	Aqua	

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10. Power supply and voltage detection circuitry

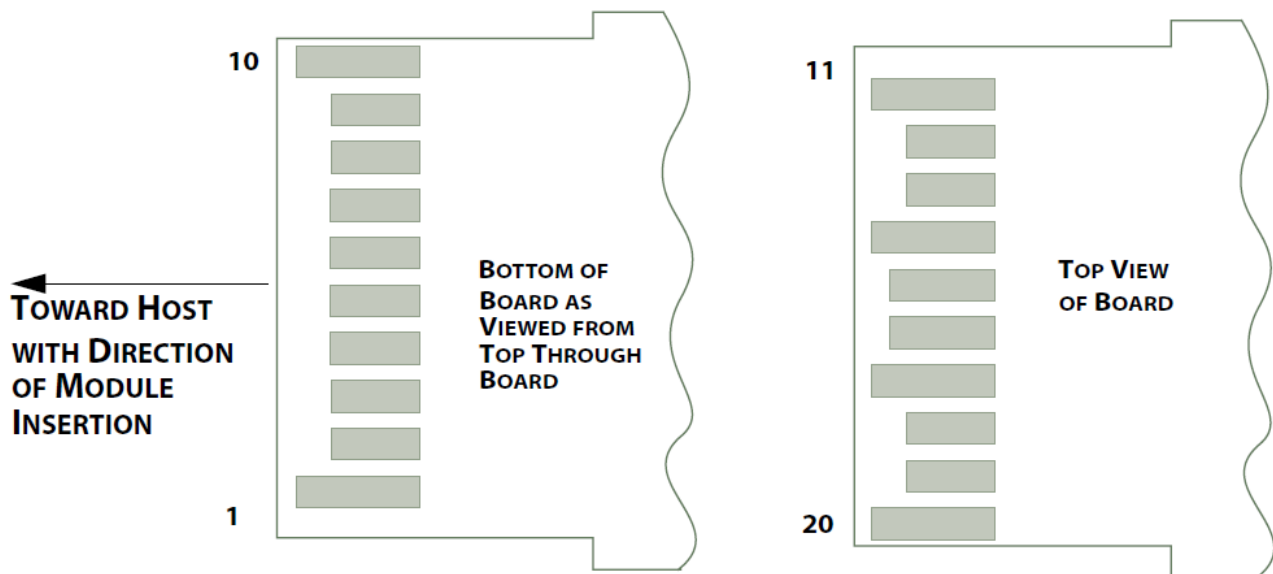


11. Host Board Connector Pin (Top View)



Note: For detail information, please refer to SFF-8083 0.8mm Card Edge Connector for 8/10 Gbps Applications

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12. Module Pin Definitions

Pin	Symbol	Name/Description	Note
1	VeeT	Transmitter Ground (Common with Receiver Ground)	1
2	Tx_Fault	Transmitter Fault.	2
3	Tx_Disable	Transmitter Disable. Laser output disabled on high or open.	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	Mod_ABS	Module Absent	4
7	RS0	Not supported.	
8	Rx_LOS	Loss of Signal indication. Logic 0 indicates normal operation	5
9	RS1	Not supported.	
10	VeeR	Module Receiver Ground	1
11	VeeR	Module Receiver Ground	1
12	RD-	Receiver Inverted Data Output	
13	RD+	Receiver Non-Inverted Data Output	

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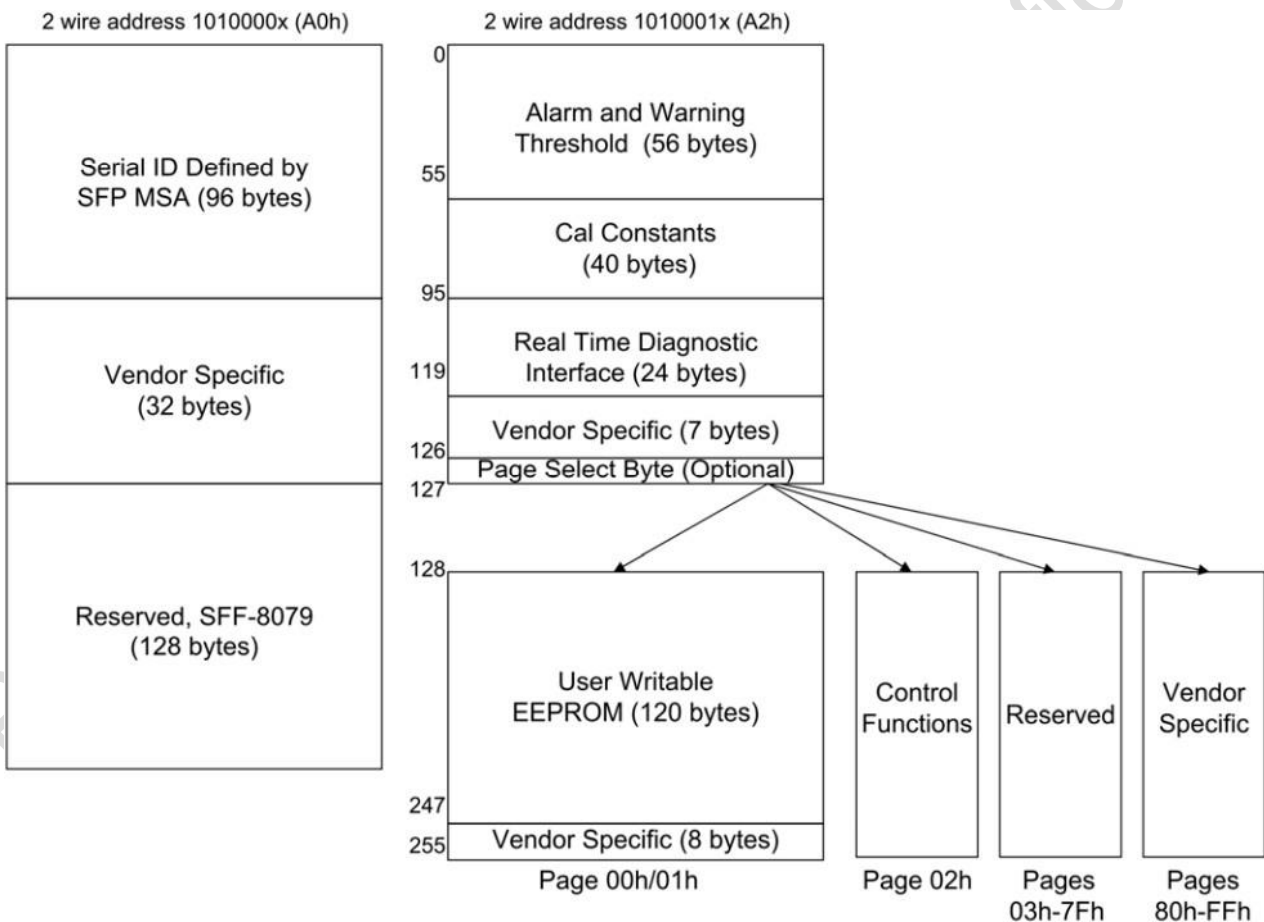
14	VeeR	Module Receiver Ground	1
15	VccR	Module Receiver 3.3 V Supply	
16	VccT	Module Transmitter 3.3 V Supply	
17	VeeT	Module Transmitter Ground	1
18	TD+	Transmitter Non-Inverted Data Input	
19	TD-	Transmitter Inverted Data Input	
20	VeeT	Module Transmitter Ground	1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. T_{FAULT} is an open collector/drain output, which is pulled up with a 4.7kΩ – 10kΩ resistor on the host board, but is grounded inside the SFP28 cable plug.
3. Laser output disabled on T_{DIS} > 2.0V or open, enabled on T_{DIS} < 0.8V.
4. Should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. MOD_ABS pulls line low to indicate module is plugged in.
5. LOS is open collector output. Should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

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13. Monitoring Specification



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14. Product description &P/N List

Part Number	Description
P5700FC0020-1	JPC 25G active fiber cable, SFP28, OM3, 0.2m
P5700FC0001M-1	JPC 25G active fiber cable, SFP28, OM3, 1m
P5700FC0003M-1	JPC 25G active fiber cable, SFP28, OM3, 3m
P5700FC0005M-1	JPC 25G active fiber cable, SFP28, OM3, 5m
P5700FC0007M-1	JPC 25G active fiber cable, SFP28, OM3, 7m
P5700FC0010M-1	JPC 25G active fiber cable, SFP28, OM3, 10m
P5700FC0015M-1	JPC 25G active fiber cable, SFP28 OM3, 15m
P5700FC0020M-1	JPC 25G active fiber cable, SFP28, OM3, 20m
P5700FC0025M-1	JPC 25G active fiber cable, SFP28, OM3, 25m
P5700FC0030M-1	JPC 25G active fiber cable, SFP28, OM3, 30m
P5700FC0050M-1	JPC 25G active fiber cable, SFP28, OM3, 50m
P5700FC0075M-1	JPC 25G active fiber cable, SFP28, OM3, 75m
P5700FC0100M-1	JPC 25G active fiber cable, SFP28, OM3, 100m