

**Соединитель, SFP+-SFP+, 10G, AOC, XXm**

Соединители моделей AOC-SFP-Plus-XXm являются сборками двух модулей SFP+ соединенных оптическим кабелем, XX от 1М до 150М (OM3) в зависимости от модели

**Особенности:**

- до 10Gb/s
- 850nm VCSEL лазер и PIN фотоприемник
- одно питание 3.3V
- поддержка горячей замены
- соответствие спецификации SFP+ MSA SFF-8431, SFF-8432

**Области применения:**

- 10GB Ethernet

Part No.	Bit Rate (Gbps)	Laser (nm)	Distance	Fiber Type	DDMI	Connector	Temp
AOC-SFP-Plus-XXm	10.3125	850	1~100m	MMF	NO	N/C	0°C~+70°C

Note:

1. Case Temperature

**Absolute Maximum Ratings****Table1- Absolute Maximum Ratings**

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	V <sub>CC3</sub>	-0.5	-	+3.6	V	
Storage Temperature	T <sub>s</sub>	-40	-	+85	°C	
Operating Humidity	RH	+5	-	+85	%	1
Receiver Damage Threshold	P R <sub>dmg</sub>	+3.4	-	-	dBm	

Note1: No condensation

**Recommended Operating Conditions****Table 2- Recommended operating Conditions**

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
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Operating Case Temperature	Tc	0	-	+70	°C	
Power Supply Voltage	Vcc	3.14	3.3	3.47	V	
Power Supply Current	Icc	-	-	150	mA	
Power Dissipation	Pd	-	-	0.6	W	
Bit Rate	BR	-	10.3125	-	Gbps	
Fiber Bend Radius	Rb	3	-	-	cm	

## Electrical Characteristics

Table 3- Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes	
<b>Transmitter</b>							
Differential Data Input Swing	V <sub>in,P-P</sub>	200	-	1600	mV <sub>PP</sub>		
Input Differential Impedance	Z <sub>IN</sub>	90	100	110	Ω		
Tx_Fault	Normal Operation	V <sub>OL</sub>	0	-	0.8	V	
	Transmitter Fault	V <sub>OH</sub>	2.0	-	V <sub>CC</sub>	V	
Tx_Disable	Normal Operation	V <sub>IL</sub>	0	-	0.8	V	
	Laser Disable	V <sub>IH</sub>	2.0	-	V <sub>CC</sub> +0.3	V	
<b>Receiver</b>							
Differential Data Output	V <sub>out</sub>	370	-	1600	mV		
Output Differential Impedance	Z <sub>D</sub>	90	100	110	Ω		
Rx_LOS	Normal Operation	V <sub>OL</sub>	0	-	0.8	V	
	Lose Signal	V <sub>oH</sub>	2.0	-	V <sub>CC</sub>	V	

## Optical Characteristics

Table 4-Optical Characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Notes
<b>Optical transmitter Characteristics</b>						
Data Rate	DR	Gbps	9.953	10.3125	11.3	
Center Wavelength Range	λc	nm	820	850	880	
Laser Off Power	Poff	dBm	-	-	-45	
Launch Optical Power	P0	dBm	-6.0			1
Extinction Ratio	ER	dB	3	-	-	
Spectral Width(RMS)	RMS	nm	-		0.45	
<b>Optical Receiver Characteristics</b>						
Data Rate	DR	Gbps	9.953	10.3125	11.3	
Bit Error Rate	BER	dBm	-	-	E-12	2

Overload Input Optical Power	$P_{IN}$	dBm	2.4	-	-	2
Center Wavelength Range	$\lambda_c$	nm	820	-	880	
Receiver Sensitivity in Average Power	Sen	dBm	-	-	-9.9	3
Los Assert	LosA	dBm	-26	-	-	
Los De-Assert	LosD	dBm	-	-	-12	
Los Hysteresis	LosH	dB	0.5	-	-	

Note:

1. Coupled into 50/125 MMF.
2. Measured with PRBS  $2^{31}-1$  test pattern @10.3125Gbps.BER=10E-12

### Recommended Host Board Power Supply Circuit

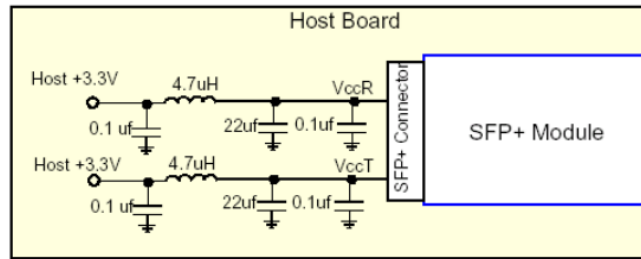


Figure 1, Recommended Host Board Power Supply Circuit

### Recommended Interface Circuit

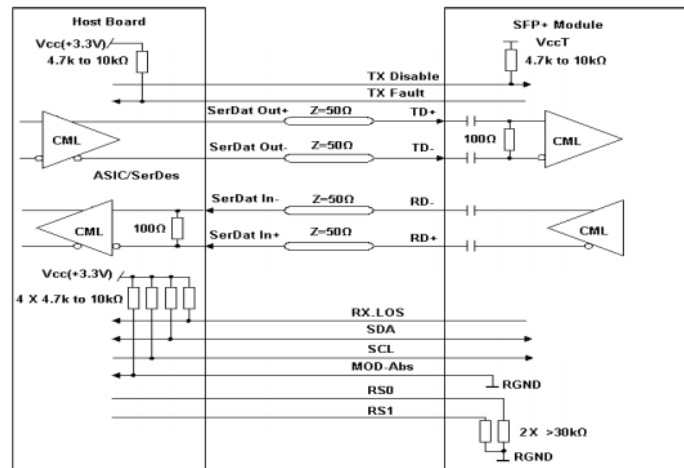


Figure 2, Recommended Interface Circuit

Pin arrangement

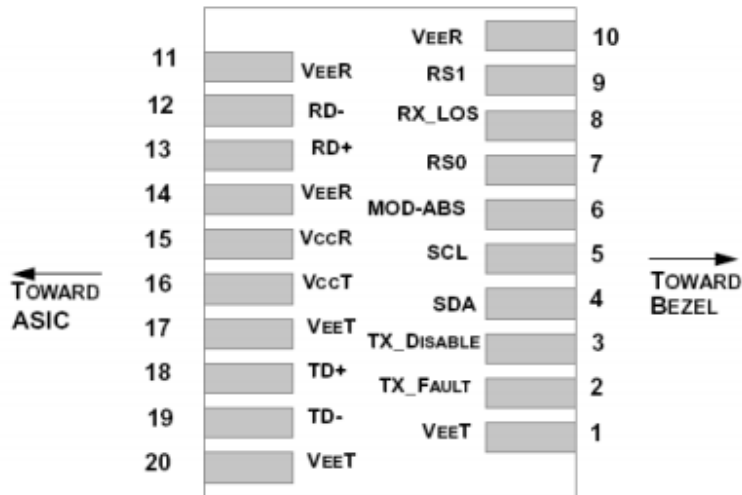


Figure 3, Pin View

Table 5-Pin Function Definitions

Pin	Symbol	Name/Description	Notes
1	V <sub>EE</sub> T	Module Transmitter Ground	1
2	TX_FAULT	Module Transmitter Fault	2
3	TX_DISABLE	Transmitter Disable; Turns off transmitter laser output	3
4	SDA	2-Wire Serial Interface Data Line (MOD-DEF2)	
5	SCL	2-Wire Serial Interface Clock (MOD-DEF1)	
6	MOD_ABS	Module Absent, connected to V <sub>EE</sub> T or V <sub>EE</sub> R in the module	2
7	RS0	Rate Select 0, optionally controls SFP+ module receiver	
8	RX_LOS	Receiver Loss of Signal Indication (In FC designated as Rx_LOS and in Ethernet designated as NOT Signal Detect)	2
9	RS1	Rate Select 1, optionally controls SFP+ module transmitter	
10	V <sub>EE</sub> R	Module Receiver Ground	1
11	V <sub>EE</sub> R	Module Receiver Ground	1
12	RD-	Receiver Inverted Data Output	
13	RD+	Receiver Non-Inverted Data Output	
14	V <sub>EE</sub> R	Module Receiver Ground	1
15	V <sub>CC</sub> R	Module Receiver 3.3 V Supply	
16	V <sub>CC</sub> T	Module Transmitter 3.3 V Supply	
17	V <sub>EE</sub> T	Module Transmitter Ground	1
18	TD+	Transmitter Non-Inverted Data Input	
19	TD-	Transmitter Inverted Data Input	
20	V <sub>EE</sub> T	Module Transmitter Ground	1

Note:

1. The module ground pins are isolated from the module case.
2. The pins shall be pulled up with 4.7K-10Kohms to a voltage between 3.14V and 3.46V on host board.
3. The pin is pulled up to VCCT with a 4.7K-10K  $\Omega$  resistor in the module.

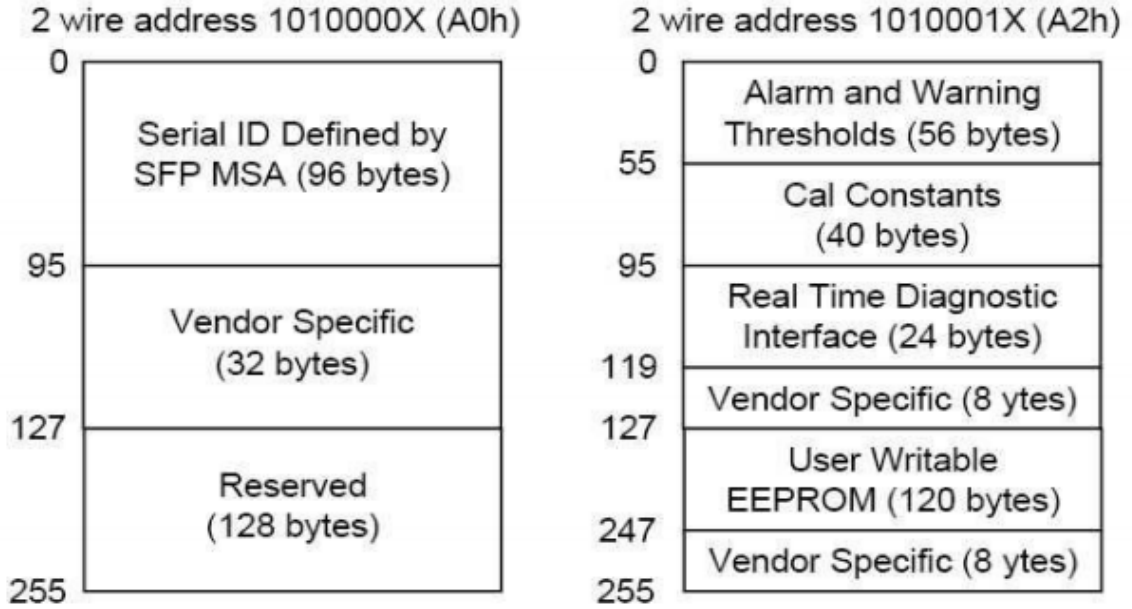


Figure 4, Memory Map

**Mechanical**

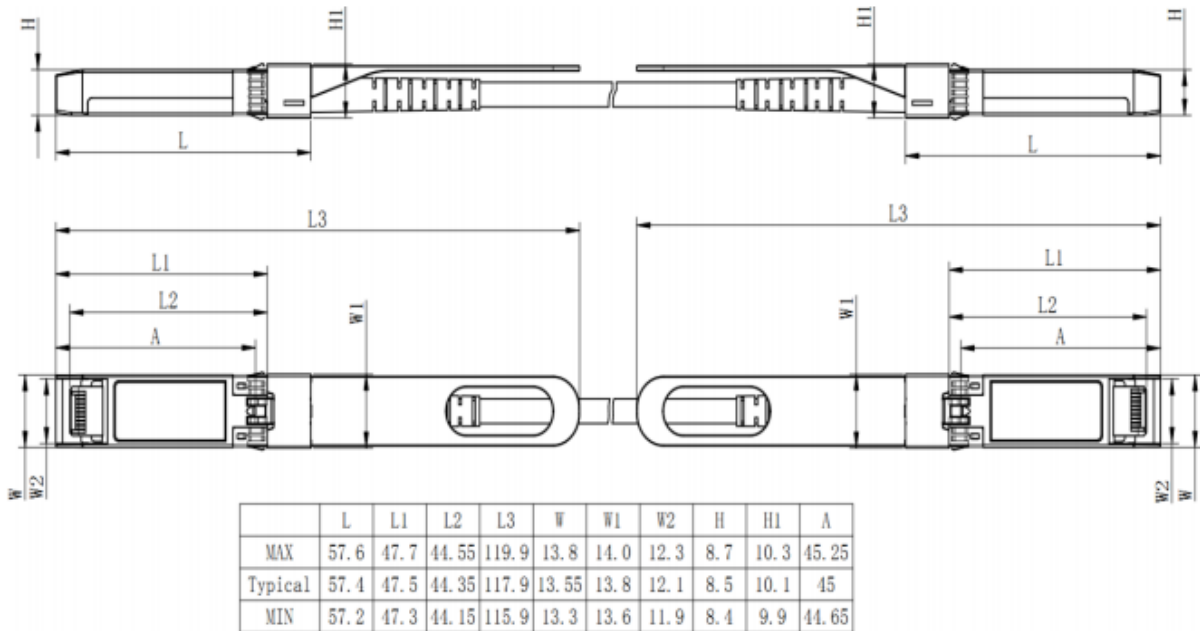


Figure 5, Mechanical Diagram

**Table 6-Cable Mechanical Specifications**

<b>Parameter</b>	<b>Value</b>	<b>Units</b>
Diameter	3	mm
Minimum bend radius	30	mm
Length tolerance	Length < 1 m: +5 / -0	cm
	1 m ≤ length ≤ 4.5 m: +15 / -0	cm
	5 m ≤ length ≤ 14.5 m: +30 / -0	cm
	Length ≥ 15.0 m +2% / -0	m
Cable color	Aqua(OM3);Orange(OM2)	