



## GZ10G-10G-AXX 10Gbps SFP+ AOC Transceivers

### Features:

- Hot pluggable, SFP+ Structure
- compliant to SFF-8431
- compliant to SFF-8472
- 850nm VCSEL laser and PIN photo-detector
- Operating data rate up to 10.3125Gbps
- Maximum link length of 150m on OM3 MMF
- +3.3V±5% power supply
- Power consumption ≤1W
- Operating temperature: 0~ +70°C
- RoHS compliant



### Applications

- 10GBASE-SR at 10.31Gbps
- 4G and 8G Fibre Channel
- 1 × InfiniBand QDR, SDR, DDR

### Absolute Maximum Ratings

Table2- 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>	-5	-	+75	°C	
Operating Humidity	RH	5	-	85	%	1

Note: 1 No condensation

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## Recommended Operating Conditions

Table 3- Recommended operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	T <sub>c</sub>	0	-	+70	°C	
Power Supply Voltage	V <sub>cc</sub>	3.14	3.3	3.47	V	
Power Supply Current	I <sub>cc</sub>	-	-	300	mA	
Power Dissipation	P <sub>d</sub>	-	-	1.0	W	
Bit Rate	BR	-	10.3125	-	Gbps	

## Electrical Characteristics

Table 4- Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
<b>Transmitter</b>						
Differential Data Input Swing	V <sub>in,P-P</sub>	200	-	1000	mV <sub>pp</sub>	
Input Differential Impedance	Z <sub>IN</sub>	90	100	110	Ω	
Tx_Fault	Normal Operation	V <sub>OL</sub>	V <sub>EE</sub> -0.3	-	0.4	V
	Transmitter Fault	V <sub>OH</sub>	2.0	-	V <sub>CC</sub> +0.3	V
Tx_Disable	Normal Operation	V <sub>IL</sub>	V <sub>EE</sub> -0.3	-	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>	200	-	1000	mV	
Output Differential Impedance	Z <sub>D</sub>	90	100	110	Ω	
Rx_LOS	Normal Operation	V <sub>OL</sub>	V <sub>EE</sub> -0.3	-	0.4	V
	Lose Signal	V <sub>OH</sub>	2.0	-	V <sub>CC</sub> +0.3	V
Bit Error Rate	BER			E-12		1

Note1: PRBS2^31-1@10.3125Gbps

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## Pin arrangement

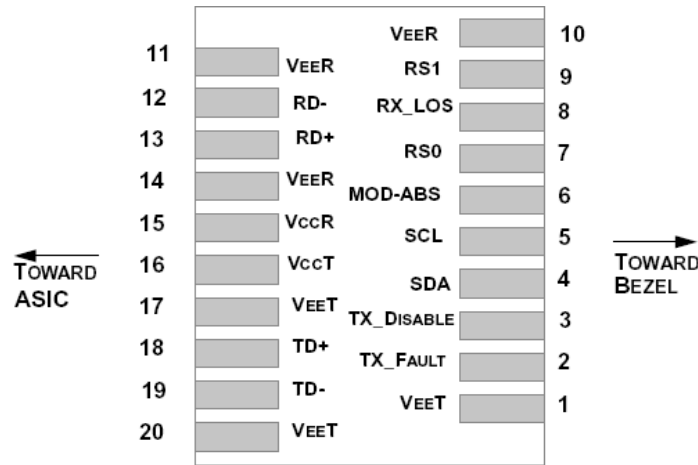


Figure 1, Pin Vie

Table5-Pin Function Definitions

Pin	Symbol	Name/Description	Notes
1	VEET	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	ModuleAbsent, connected to $V_{EE}T$ or $V_{EE}R$ in the module	2
7	RS0	RateSelect0, 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	$V_{EE}R$	Module Receiver Ground	1
11	$V_{EE}R$	Module Receiver Ground	1
12	RD-	Receiver Inverted Data Output	
13	RD+	Receiver Non-Inverted Data Output	
14	$V_{EE}R$	Module Receiver Ground	1
15	$V_{CC}R$	Module Receiver 3.3 V Supply	
16	$V_{CC}T$	Module Transmitter 3.3 V Supply	
17	$V_{EE}T$	Module Transmitter Ground	1
18	TD+	Transmitter Non-Inverted Data Input	

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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-10Kohm to a voltage between 3.14V and 3.46V on host board.
3. The pin is pulled up to VCCT with a 4.7K-10KΩ resistor in the module.

## Monitoring Specification

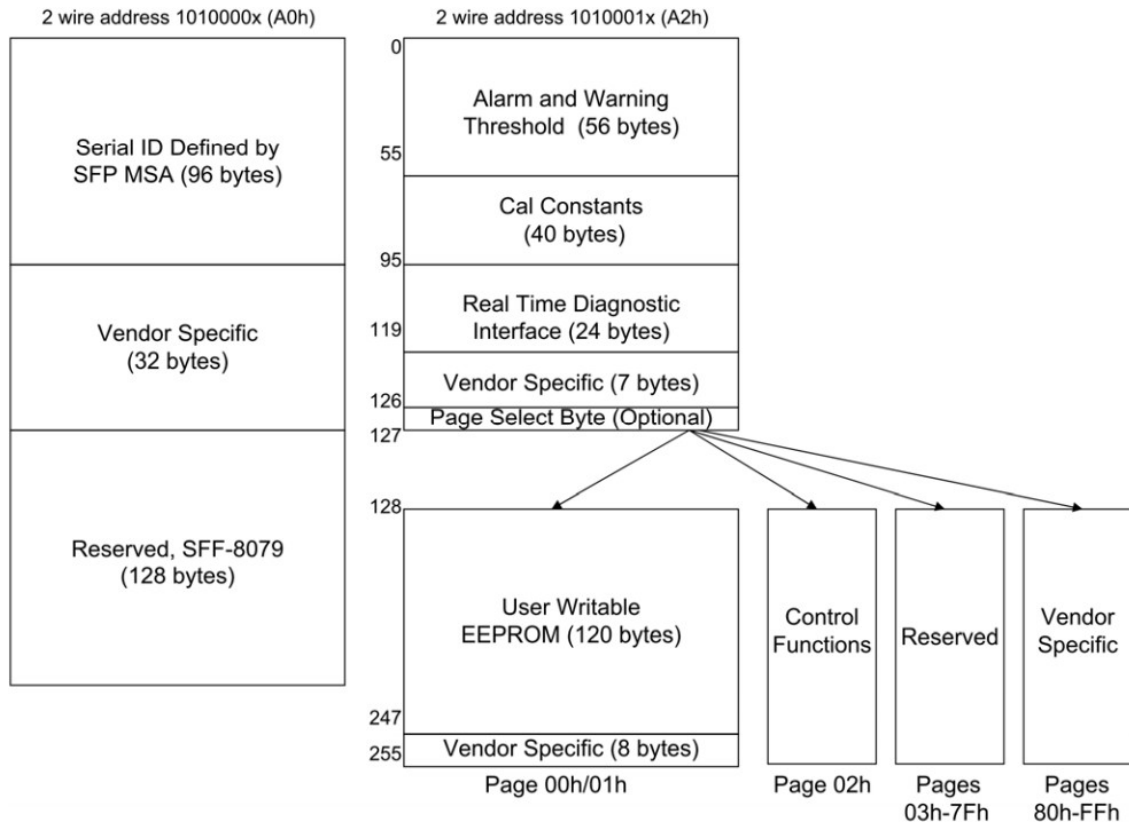


Figure2, Memory Map

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## Recommended Host Board Power Supply Circuit

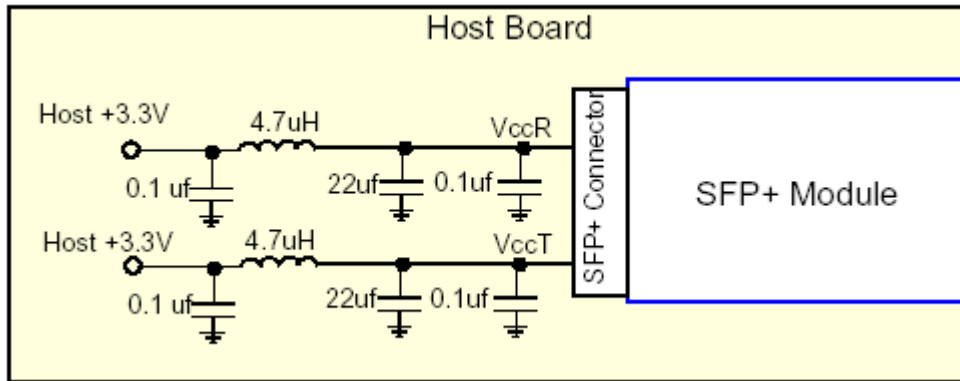


Figure 3, Recommended Host Board Power Supply Circuit

## Recommended Interface Circuit

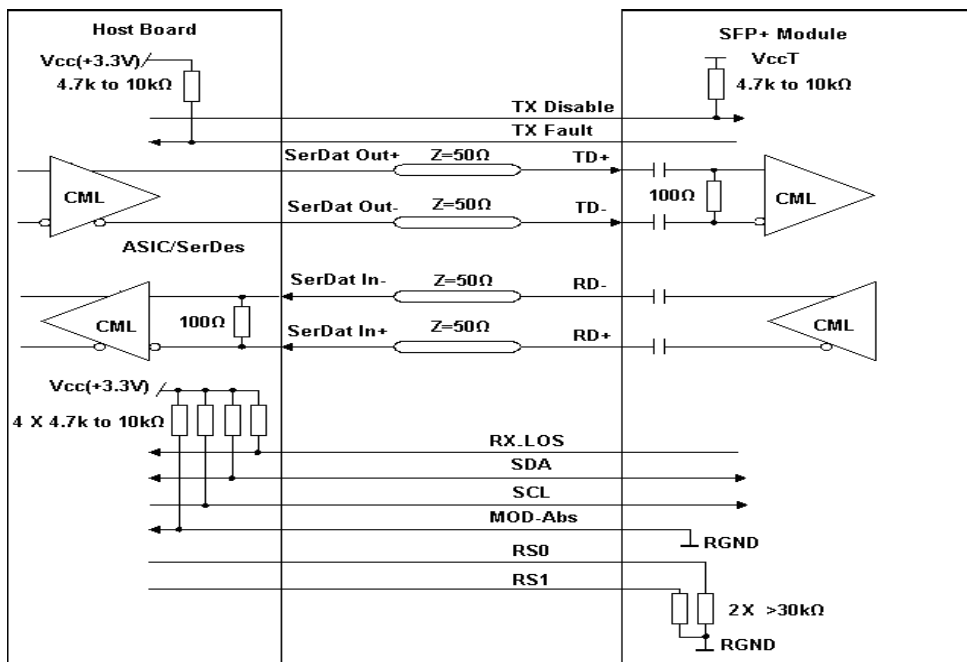


Figure 4, Recommended Interface Circuit

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## Mechanical

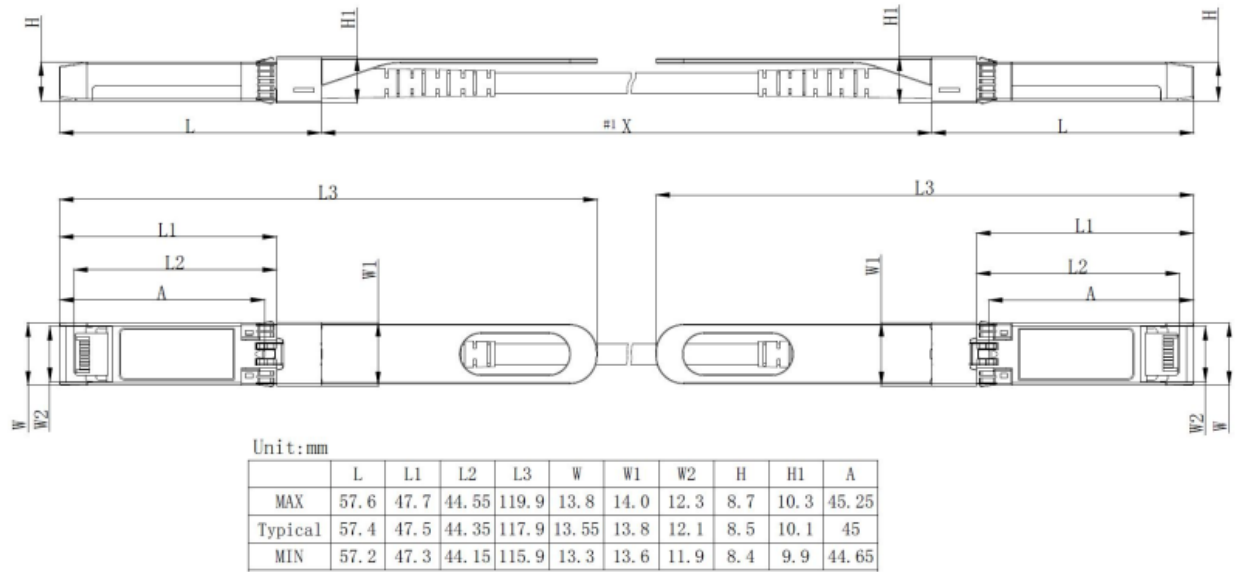


Figure 5, Mechanical Diagram

Table 6- Cable Length

Parameter	Value	Units
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	Orange(OM2),Aqua(OM3),Megenta(OM4)	-

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## Order Information

Table 1-Ordering Information

Part Number	Product Description
GZ10G-10G-AXX	10G SFP+ AOC Transceivers, C-TEMP XX=01 □ cable length=1m XX=03 □ cable length=3m XX=05 □ cable length=5m XX=10 □ cable length=10m XX=15 □ cable length=15m XX=25 □ cable length=25m XX=50 □ cable length=50m XX=A0 □ cable length=100m XX=F0 □ cable length=150m

## Warnings

### Handling Precautions:

This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Please follow guidelines according to proper ESD procedures.

### Laser Safety:

Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

### Notice:

The information provided on this page contains the product target specifications which are subject to change without notice.

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