Specification

Small Form Factor Pluggable

Duplex LC Receptacle – SFP+

10GbE SFP+ AOC

TAS–A1NH8–X13xx

Fiber Length (M)

Model Name	Voltage	Category	Device type	Interface	Temperature	Distance	Latch Color
TAS-A1NH8-X13xx	3.3V	With DDMI	850nm VCSEL/ InGaAs PIN	AC-AC / TTL	0 °C~+70 °C	N/A	Black

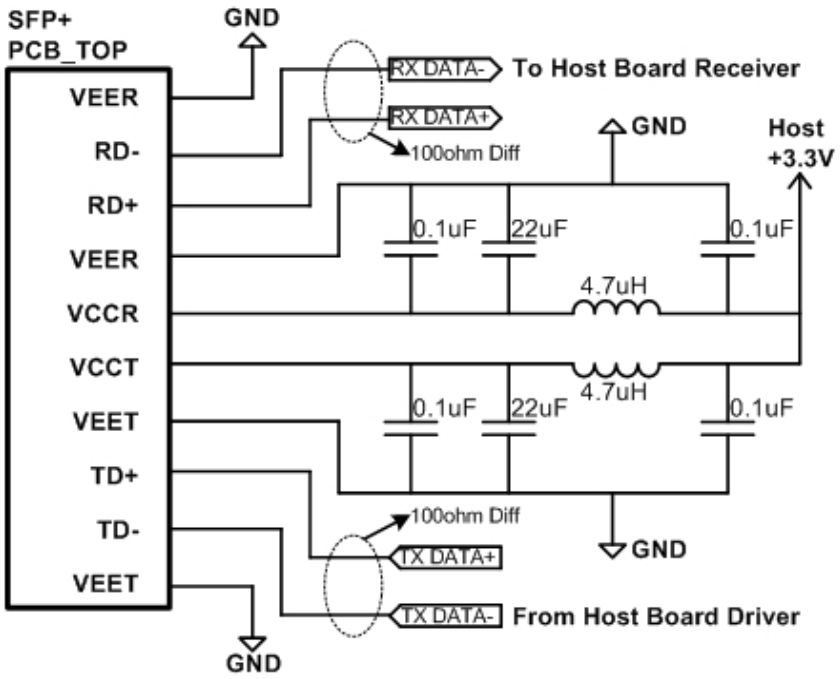
Features

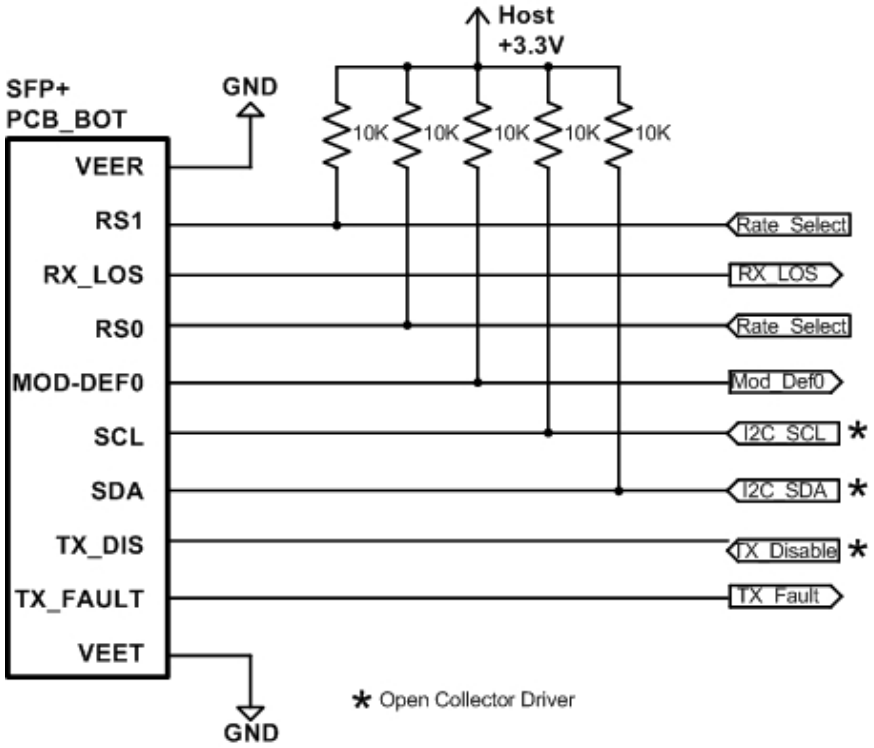
- Compliant with SFP+ MSA SFF-8431 & SFF-8472
- Operating data rate up to 10.3125 Gbps
- Fiber link up to 100m
- Low power @ 800 mW typical
- Hot Pluggable 20pin connector
- All-metal housing for superior EMI performance
- Built in digital diagnostic functions
- Operating case temperature range: 0 ~ 70℃
- Fully RoHS Compliant

Applications

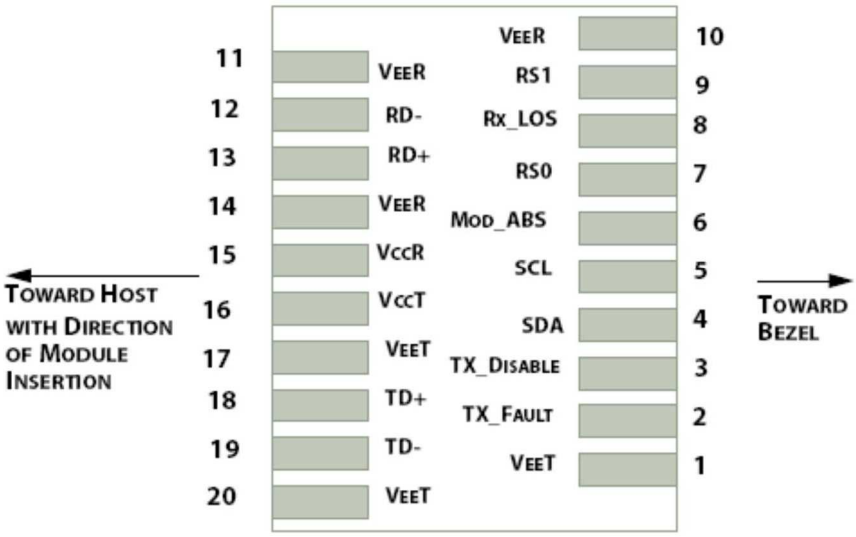
- 10G AOC SFP+
- High-performance computing clusters
- 10G Ethernet applications (10GbE)
- Servers, switches, storage and host card adapters (NIC)

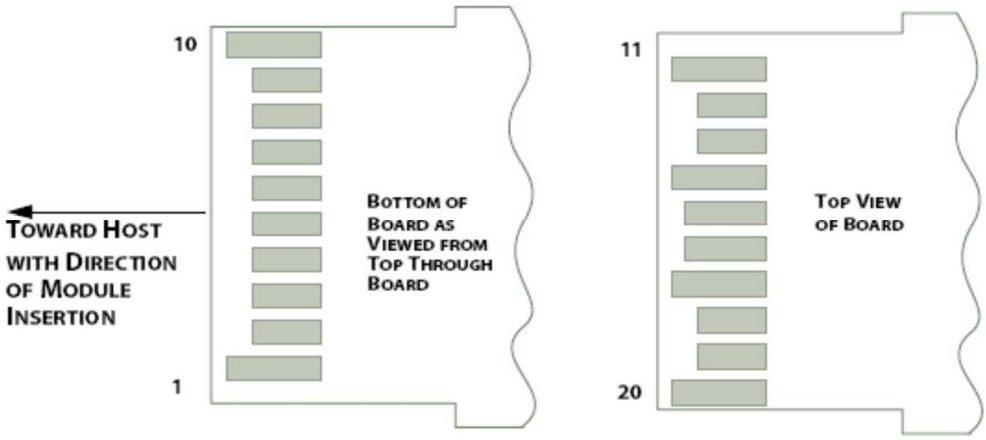
Proposed Applications Schematics





Pin Definition and Descriptions





PIN	Logic	Symbol	Name / Description	Note
1		VeeT	Module Transmitter Ground	1
2	LVTTL-O	TX_Fault	Module Transmitter Fault	2
3	LVTTL-I	TX_Dis	Transmitter Disable; Turns off transmitter laser output	3
4	LVTTL-I/O	SDA	2-Wire Serial Interface Data Line	
5	LVTTL-I	SCL	2-Wire Serial Interface Clock	
6		Mod_ABS	Module Absent, connected to VeeT or VeeR in the module	2
7	LVTTL-I	RS0	NA	
8	LVTTL-O	RX_LOS	Receiver Loss of Signal Indication	2
9	LVTTL-I	RS1	NA	
10		VeeR	Module Receiver Ground	1
11		VeeR	Module Receiver Ground	1
12	CML-O	RD-	Receiver Inverted Data Output	
13	CML-O	RD+	Receiver Data Output	
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	CML-I	TD+	Transmitter Non-Inverted Data Input	
19	CML-I	TD-	Transmitter Inverted Data Input	
20		VeeT	Module Transmitter Ground	1

Note:

1. **Module ground pins are isolated from the module case and chassis ground within the module.**
2. **Shall be pulled up with 4.7k to 10k ohm to a voltage between 3.15V and 3.45V on the host board.**
3. **Shall be pulled up with 4.7k to 10k ohm to VccT in the module.**

Absolute Maximum Ratings

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	V_{CC}	0	3.6	V
Storage Temperature	Tc	-40	85	C
Relative Humidity	RH	5	95	%
Optical Receiver Power (Damage)		-	4	dBm

Recommended Operating Environment

Parameters	Symbol	Min.	Typical	Max	Unit
Power Supply Voltage	V_{CC}	3.135	3.3	3.465	V
Operating Case Temperature	T_C	0	25	70	C

Digital Diagnostic Functions

The following digital diagnostic characteristics are defined over the Recommended Operating Environment unless otherwise specified. It is compliant to SFF8472 Rev10.2 with internal calibration mode. For external calibration mode please contact our sales stuff.

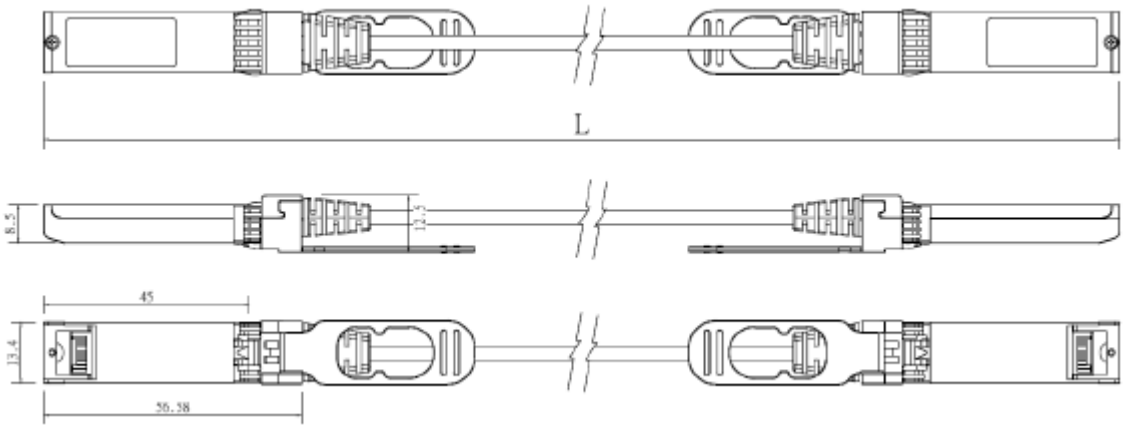
Parameter	Symbol	Min.	Max	Unit	Notes
Temperature monitor absolute error	DMI_Temp	-3	3	degC	Over operating temp
Laser power monitor absolute error	DMI_TX	-3	3	dB	
RX power monitor absolute error	DMI_RX	-3	3	dB	-1dBm to -12dBm range
Supply voltage monitor absolute error	DMI_VCC	-0.08	0.08	V	Full operating range
Bias current monitor	DMI_Ibias	-10%	10%	mA	

Electrical Characteristics

The following electrical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Data Rate			10.3125		Gbps	
Power Consumption			600	800	mW	
Receiver						
Single Ended Output Voltage Tolerance		-0.3		4	V	
Rx Output Diff Voltage	Vo	300		850	mV	
Rx Output Rise and Fall Time	Tr/Tf	30			ps	20% to 80%
Total Jitter	TJ			0.7	UI	
Deterministic Jitter	DJ			0.42	UI	

Mechanical (mm)



ESD

Normal ESD precautions are required during the handling of this module. This transceiver is shipped in ESD protective packaging. It should be removed from the packaging and handled only in an ESD protected environment.

LASER Safety

This is a Class 1 Laser Product according to IEC/EN60825-1:2014 (Third Edition). This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, June 24, 2007.

Ordering Information

T A S – A 1 N H 8 – X 1 3 x x

PRODUCT NUMBER	Fiber Length (M)
TAS-A1NH8-X1303	3
TAS-A1NH8-X1305	5
TAS-A1NH8-X1307	7
TAS-A1NH8-X1309	9
TAS-A1NH8-X1310	10
TAS-A1NH8-X1315	15
TAS-A1NH8-X1320	20
TAS-A1NH8-X1327	27
TAS-A1NH8-X1335	35
TAS-A1NH8-X1339	39
TAS-A1NH8-X1347	47
TAS-A1NH8-X1353	53
TAS-A1NH8-X1357	57
TAS-A1NH8-X1359	59
TAS-A1NH8-X1363	63
TAS-A1NH8-X1373	73
TAS-A1NH8-X1379	79
TAS-A1NH8-X1383	83

Contact Information

Formerica OptoElectronics Inc.
5F-11, No.38, Taiyuan St., Zhubei City,
Hsinchu County 30265, Taiwan
Tel: +886-3-5600286
Fax: +886-3-5600239

San Diego, CA
Tel: 1-949-466-8069

inquiry@formericaoe.com
www.formericaoe.com

Revision History

Date	Version	Description
10/25/2018	0.0	Preliminary release
02/15/2019	1.0	Initial release.Correct pin description on Pin7 and Pin9.
04/26/2019	1.1	Add TAS-A1NH8-X1315