

# SFP-GIG-EXTND-PRO

Alcatel-Lucent Nokia<sup>®</sup> SFP-GIG-EXTND Compatible TAA Compliant 1000Base-SX SFP Transceiver (MMF, 1310nm, 2km, 0 to 70C, LC)

### Features

- INF-8074 and SFF-8472 Compliance
- Fabry Perot transmitter and PIN receiver
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



### Applications:

- 1000Base-MX Ethernet
- 1x Fibre Channel
- Access and Enterprise

### **Product Description**

This Alcatel-Lucent Nokia<sup>®</sup> SFP-GIG-EXTND compatible SFP transceiver provides 1000Base-SX throughput up to 2km over multi-mode fiber (MMF) using a wavelength of 1310nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Alcatel-Lucent Nokia<sup>®</sup> transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. It is built to meet or exceed the specifications of Alcatel-Lucent Nokia<sup>®</sup>, as well as to comply with MSA (Multi-Source Agreement) standards to ensure seamless network integration. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Proline's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products.



Rev. 031924

# **Absolute Maximum Ratings**

Parameter	Symbol	Min.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5	4.0	V
Storage Temperature	Tstg	-40	85	°C
Operating Case Temperature	Тс	0	70	°C
Operating Humidity	RH	5	85	%
Receiver Power	R <sub>MAX</sub>		0	dBm
Maximum Bitrate	B <sub>max</sub>		1.25	Gbps

# Electrical Characteristics (Tc=25°C, Vcc=3.3 Volts)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.15	3.30	3.43	V	
Power Supply Current	lcc			303	mA	
Power Consumption				1	W	
Transmitter						
Differential Data Input Swing	VIN,pp	120		850	mV	
Input Differential Impedance	ZIN	80	100	120	Ω	
Receiver						
Differential Data Output Swing	VOUT,pp	300		850	mV	
Output Differential Impedance	ZIN	80	100	120	Ω	

### **Optical Characteristics**

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes	
Transmitter							
Optical Power (Average)	P <sub>AVE</sub>	-9.5		-3	dBm	1	
Optical Extinction Ratio	ER	9			dB		
Optical Wavelength	Τλ	1270	1310	1355	nm		
Insertion Loss	IL		0.6				
Receiver							
Receiver Sensitivity (Average)	R <sub>AVE</sub>			-24	dBm	3	
Receiver Overload	P <sub>max</sub>	0			dBm	4	
Optical Return Loss	ORL	12			dB		
Receiver Wavelength	Rλ	1260		1565	nm		

### Notes:

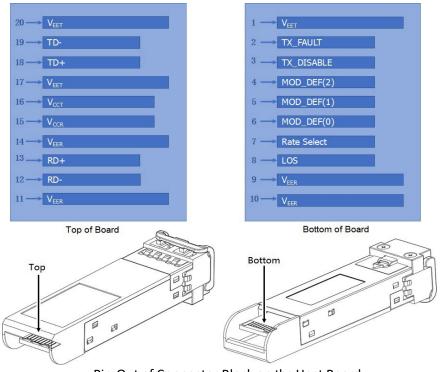
- 1. Coupled into a single-mode fiber.
- 2. Per IEEE 802.3ah specification.
- 3. Average power, back-to-back, @1.25Gbps, BER 1E<sup>-12</sup>, and PRBS 2<sup>31</sup>-1.
- 4. Exceeding the Receiver Overload can physically damage the module. Please use appropriate attenuation.

# **Pin Descriptions**

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Fault. Not Supported.	
3	Tx_Disable	Transmitter Disable. Laser output disabled on "high" or "open."	2
4	MOD_DEF (2)	Module Definition 2. Data Line for Serial ID.	3
5	MOD_DEF (1)	Module Definition 1. Clock Line for Serial ID.	3
6	MOD_DEF (0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No Connection Required.	
8	LOS	Loss of Signal Indication. "Logic 0" indicates normal operation.	4
9	VeeR	Receiver Ground (Common with Transmitter Ground).	1
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted Data Out. AC Coupled.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted Data In. AC Coupled.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

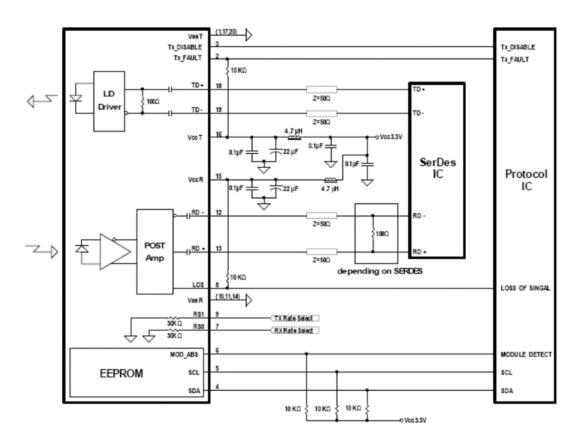
# Notes:

- 1. The circuit ground is isolated from the chassis ground.
- 2. Disabled: T<sub>DIS</sub>>2V or Open, Enabled: T<sub>DIS</sub><0.8V.
- 3. Should be pulled up with  $4.7k\Omega$  to  $10k\Omega$  on the host board to a voltage between 2V and 3.6V.
- 4. LOS is an open collector output.



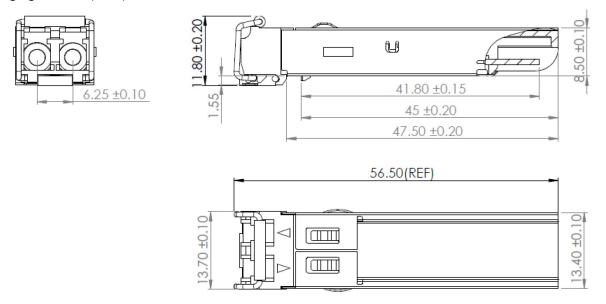
# Pin-Out of Connector Block on the Host Board

### **Recommended Circuit Schematic**



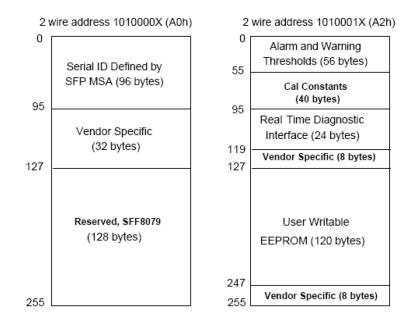
### **Mechanical Specifications**

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



### **EEPROM Information**

EEPROM memory map-specific data field description is as below:



# About Us:

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.



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