

### **3FE27627AA-OPC**

Alcatel-Lucent Nokia® 3FE27627AA Compatible TAA 100Base-LR2 SFP Transceiver (SMF, 1550nm, 80km, LC, DOM)

#### **Features**

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



#### **Applications:**

- 100Base Ethernet
- Access and Enterprise

#### **Product Description**

This Alcatel-Lucent Nokia® 3FE27627AA compatible SFP transceiver provides 100Base-LR2 throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1550nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Alcatel-Lucent Nokia® 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. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5		4.0	V
Storage Temperature	TS	-40		85	°C
Operating Humidity	RH	5		95	%
Case Operating Temperature	Tc	0		70	°C
Data Rate (Gigabit Ethernet)			155		Mbps
9/125µm G.652 SMF	Lmax2			80	km

## Electrical Characteristics (TOP=25°C, Vcc=3.3V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.13	3.30	3.47	V	1
Power Supply Current	Icc			250	mA	
Transmitter						
Input differential impedance	Rin		100		Ω	1
Single ended data input swing	Vin, pp	250		1200	mV	
TX Disable-High		Vcc-1.3		Vcc	V	
TX Disable-Low		Vee		Vee+0.8	V	
TX Fault-High		Vcc-0.5		Vcc	V	
TX Fault-Low		Vee		Vee+0.5	V	
Receiver						
Single ended data output swing	Vout, pp	300	400	800	mV	2
Data output rise time	tr			1500	ps	3
Data output fall time	tf			1500	ps	3
LOS-High		Vcc-0.5		Vcc	V	
LOS-Low		Vee		Vee+0.5	V	

## Notes:

1. AC coupled.
2. Into 100 ohm differential termination.
3. 20% - 80%

## Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Output Opt. Power	PO	-5		0	dBm	1
Optical Wavelength	$\lambda$	1530	1550	1570	nm	
Spectral Width	$\sigma$			1	nm	
Optical Rise/Fall Time	tr/tf			1500	ps	2
Total Jitter Transmitter Jitter	J <sub>TXp-p</sub>			0.07	UI	3
Total Generated Transmitter Jitter (rms)	J <sub>TXrms</sub>			0.007	UI	
Optical Extinction Ratio	ER	10			dB	
<b>Receiver</b>						
RX Sensitivity @155Mbs	RSENS			-34.5	dBm	4
Maximum Received Power	RX <sub>MAX</sub>	0			dBm	
Optical Center Wavelength	$\lambda_C$	1270		1600	nm	
LOS De-Assert	LOSD			-35	dBm	
LOS Assert	LOSA	-45			dBm	
LOS Hysteresis		0.5		5	dB	

### Notes:

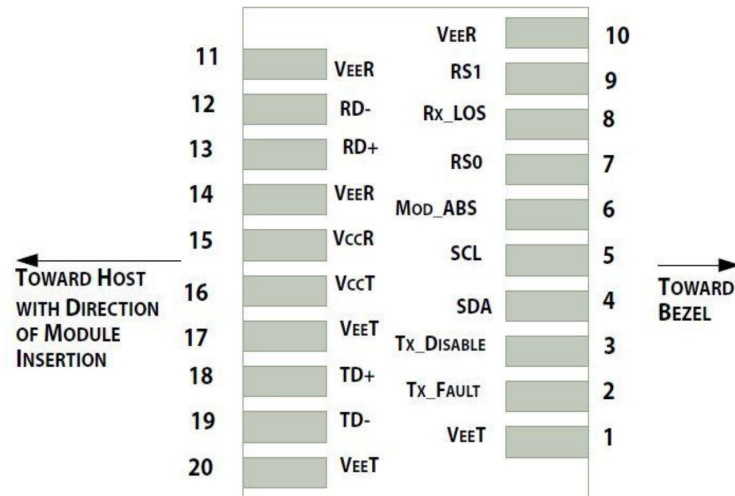
1. Class 1 Laser Safety.
2. Unfiltered, 20%-80%. Complies with OC-3 eye masks when filtered.
3. Measured with DJ-free data input signal. In actual application, output DJ will be the sum of input DJ and  $\Delta DJ$
4. Measured with PRBS 2<sup>23</sup>-1 at 10<sup>-10</sup> BER.

## Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground)	1
2	TX Fault	Transmitter Fault.	
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. Circuit ground is internally isolated from chassis ground.
2. Laser output disabled on TX Disable >2.0V or open, enabled on TX Disable <0.8V.
3. Should be pulled up with 4.7k-10kohms on host board to a voltage between 2.0V and 3.6V. MOD\_DEF (0) pulls line low to indicate module is plugged in.
4. LOS is open collector output. Should be pulled up with 4.7k-10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.



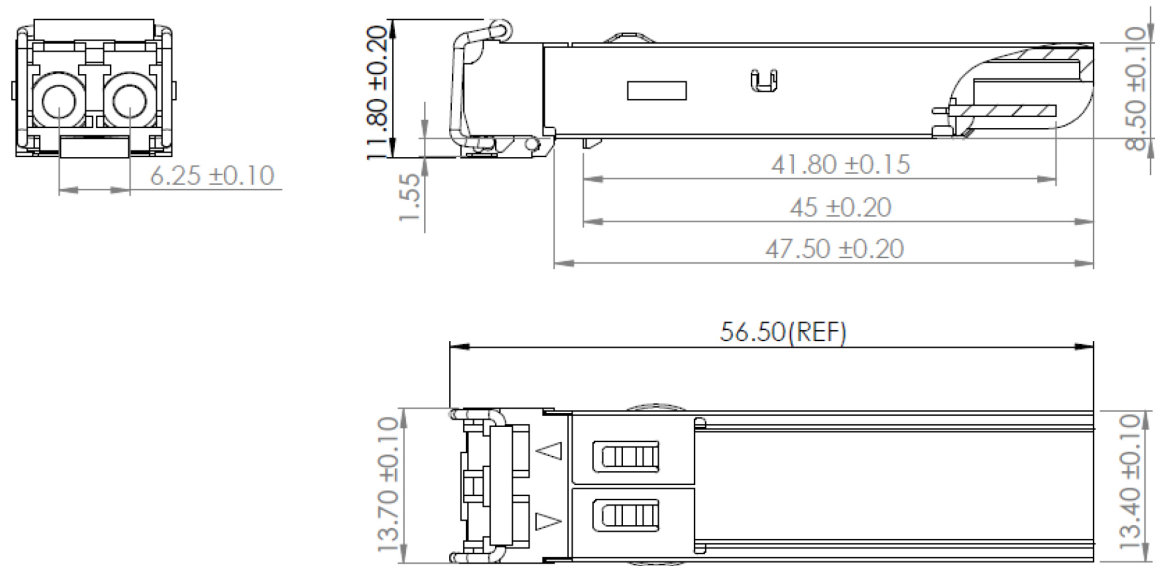
Pin-out of connector Block on Host board

### 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:

