3HE11904AA-SKY

Alcatel-Lucent Nokia® 3HE11904AA Compatible 10/100/1000Base-TX SFP Transceiver (Copper, 100m, RJ-45, -40 to 85C)

Product Description

This Alcatel-Lucent Nokia® 3HE11904AA compatible SFP transceiver provides 10/100/1000Base-TX throughput up to 100m over a copper connection via a RJ-45 connector. It is also capable of withstanding -40 to 85C environments and can operate at temperatures between -40C to +85C. This TX module supports 10/100/1000Base auto-negotiation and can be configured to fit your needs. 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. It is built to meet or exceed the specifications of Alcatel-Lucent Nokia®, as well as to comply with MSA (Multi-Source Agreement) standards to ensure seamless network integration. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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

Features:

- INF-8074 Compliance
- RJ-45 Connector
- Industrial Temperature -40 to 85 Celsius
- Copper Media Type
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications:

- 1000Base Ethernet
- Access and Enterprise

For your product safety, please read the following information carefully before any manipulation of the transceiver:

ESD

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.

LASER SAFETY

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Current	Is		320	375	mA	1
Input Voltage	Vcc	3.13	3.3	3.47	V	2
Maximum Voltage	Vmax			4	V	
Surge Current	Isurge			30	mA	3

Notes:

1. 1.2W max power over full range of voltage and temperature. Power consumption and surge current are higher than the specified values in SFP MSA.
2. Referenced to GND
3. Hot plug above steady state current. Power consumption and surge current are higher than the specified values in SFP MSA.

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	BR	10		1000	Mb/sec	3-5
Distance Supported	L			100	m	1
Operating Temperature	Top	-40		85	°C	
Storage Temperature	Tsto	-40		85	°C	

Notes:

1. Category 5 UTP. BER <10-12
2. Clock tolerance is +/- 50 ppm
3. By default, the GE-GB-P is a full duplex device in preferred master mode
4. Automatic crossover detection is enabled. External crossover cable is not required
5. 1000Base-T operation requires the host system to have an SGMII interface with no clocks, and the module PHY to be configured per Application Note AN-2036. With a SERDES that does not support SGMII, the module will operate at 1000Base-T only.

Low-Speed Signals

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
SFP Output LOW	VOL	0		0.5	V	1
SFP Output High	VOH	Host_Vcc-0.5		Host_Vcc+0.3	V	1
SFP Input LOW	VIL	0		0.8	V	2
SFP Input HIGH	VIH	2		Vcc+0.3	V	2

Notes:

1. 4.7k to 10k pull-up to Host_Vcc, measured at host side of connector
2. 4.7k to 10k pull-up to Vcc, measured at SFP side of connector

High-Speed Signals

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmission Line-SFP						
Line Frequency	fL		125		MHz	1
TX Output impedance	Zout, TX		100		Ohm	2
Rx Input Impedance	Zin, RX		100		Ohm	2
Host-SFP						
Single ended data input swing	Vinsing	250		1200	mV	3
Single ended data output swing	Voutsing	350		800	mV	3
Rise/Fall Time	Tr,Tf		175		Psec	4
Tx Input Impedance	Zin		50		Ohm	3
Rx Output Impedance	Zout		50		Ohm	3

Notes:

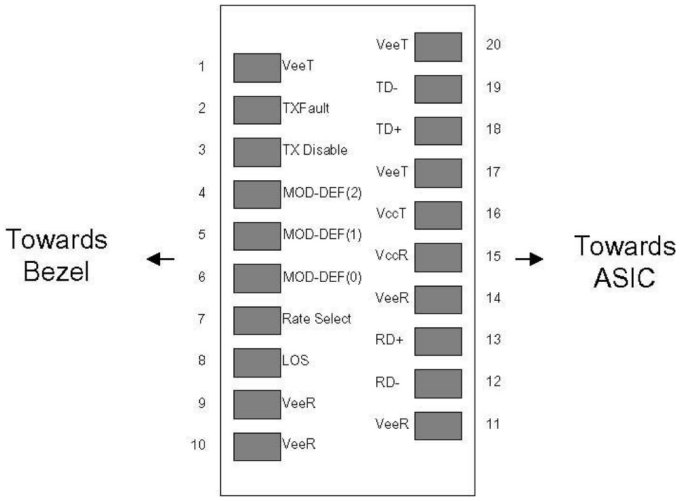
1. 5-level encoding, per IEEE 802.3
2. Differential, for all Frequencies between 1MHz and 125MHz
3. Single ended
4. 20%-80%

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	TX Fault	Transmitter Fault. Not Supported	
3	TDIS	Transmitter Disabled. PHY 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.	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

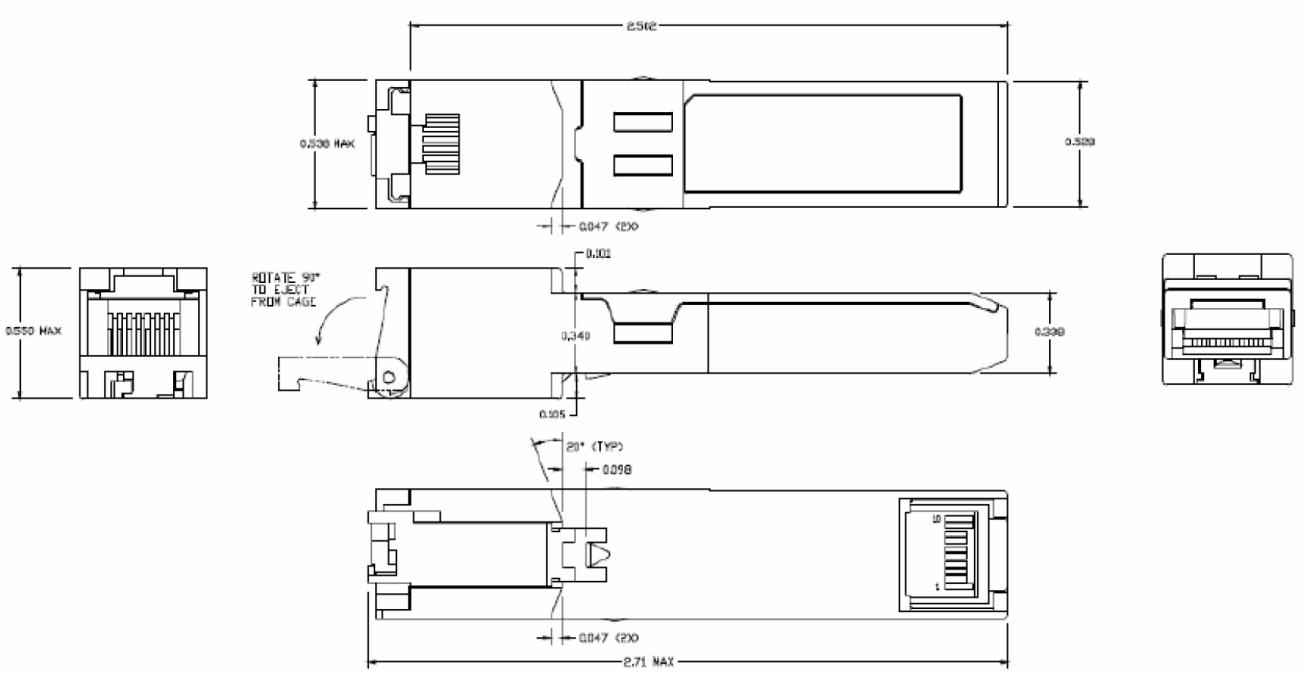
Notes:

1. Circuit ground is connected to chassis ground
2. PHY disabled on TDIS > 2.0V or open, enabled on TDIS <0.8V
3. Should be pulled up with 4.7k-10k Ohms 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. LVTTL compatible with a maximum voltage of 2.5V. Not supported on GE-GB-P



Pin-out of connector Block on Host board

Mechanical Specifications



About Skylane Optics

Skylane is a leading provider of transceivers for optical communication.

We offer an extensive portfolio for the enterprise, access, datacenter and metropolitan fiber optical market as well as for smart home applications and home networks.

We cover the European, South American and North American market with a strong partner network and have offices in Belgium, Brazil, Sweden and USA.

Our offerings are characterized by high quality and performance. In combination with our strong technical support, we enable our customers to build cost optimized network solutions.

We offer an extensive range of high-quality products including transceivers (Optical and copper), Active Optical Cable (AOC), Direct Attach Cable (DAC), Mux/Demux, Coding Box.