3FE46232AA-SKY

Alcatel-Lucent Nokia® 3FE46232AA Compatible 10GBs XGS-PON OLT XFP Transceiver with Burst Mode (SMF, 1577nmTx/1270nmRx, SC, N1, DOM)

Product Description

This Alcatel-Lucent Nokia® 3FE46232AA Compatible OLT XFP transceiver provides 10GBase-N1 throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1577nmTx/1270nmRx via an SC connector. It is built to meet or exceed Alcatel-Lucent Nokia® standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. 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:

- Single fiber bi-directional data links TX 9.953Gbps, Burst Mode RX 9.953G/2.488Gbps application
- Complies with ITU G.987.2, ITU G.9807.1
- Complies with INF-8077i
- XFP package with SC Receptacle connector
- Hot Pluggable
- 3.3V power supply
- Single-mode Fiber
- High power 1577nm EML LD & High sensitivity 1270nm APD
- Low EMI and excellent ESD protection
- SD indication
- Digital diagnostic monitor interface
- RoHS compliant and Lead Free
- Operating Temperature: 0C to 70C

Applications:

- XGS PON OLT
- 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.	Max.	Unit
Maximum Supply Voltage	VCC3	0	3.6	V
Storage Ambient Temperature	Tstg	-40	+85	°C
Operating Case Temperature	Tc	0	70	°C
Relative Humidity Storage	RH_S	5	90	%
Relative Humidity Operating	RH_O	5	85	%

Note:

Exceeding the Absolute Maximum Ratings may cause irreversible damage to the device. The device is not intended to be operated under the condition of simultaneous Absolute Maximum Ratings, a condition which may cause irreversible damage to the device.

Absolute Maximum Ratings: Control Function Logic Levels

Parameter	Symbol	Min.	Max.	Unit	Notes
Tx_DISABLE	Tx_DIS	0	V_{CC3}+0.5	V	LVTTL
Transmitter FAULT	Tx_FAULT	0	V_{CC3}+0.5	V	LVTTL
Burst Mode Signal Detect	Rx_SD	0	V_{CC3}+0.5	V	LVTTL
Receive Reset	Rx_Reset	0	V_{CC3}+0.5	V	LVTTL
Receive Data Rate Select	Rate_Select	0	V_{CC3}+0.5	V	LVTTL
Digital RSSI Trigger Input	TRI	0	V_{CC3}+0.5	V	LVTTL
I^2C Serial Data	SDA	0	V_{CC3}+0.5	V	LVTTL
I^2C Serial Clock	SCL	0	V_{CC3}+0.5	V	LVTTL
I2C Clock frequency	t_{SCL}		400	Khz	
Data hold time	tHD:DAT	120		ns	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc3	3.135	3.30	3.465	V	
Power Supply Current	Icc3		500	750	mA	
Transmitter						
Tx Differential Input Amplitude	V_{IN}	120		820	mV	
Tx Differential Input Impendence	Z_{IN}	90	100	110	Ω	
Tx_DIS = HIGH (Transmitter OFF / DISABLED)	VIH	$0.7*V_{CC3}$		VCC3	V	1
Tx_DIS = LOW (Transmitter ON / ENABLED)	VIL	0		0.8	V	1
TX_Fault=HIGH (Fault)	VOH	2.4		VCC3	V	2
TX_Fault=Low (Normal)	VOL	0		0.4	V	2
Receiver						
Rx Differential Output Impendence	ZOUT	90	100	110	Ω	
Rx_Data Differential Output Voltage Amplitude	VOUT	300		800	mV	LVCML
Rx_SD=HIGH	VOH	2.4		VCC3	V	2
Rx_SD=LOW	VOL	0		0.4	V	2
Rx_Reset=HIGH	VIH	2.0		VCC3	V	1
Rx_Reset=LOW	VIL	0		0.8	V	1
Rate_Select=HIGH	VIH	2.0		VCC3	V	1
Rate_Select=LOW	VIL	0		0.8	V	1
TRI=HIGH	VIH	$0.7*V_{CC3}$		VCC3	V	1
TRI=LOW	VIL	0		0.8	V	1

Notes:

1. LVTTL (Control INPUT)
2. LVTTL (Monitor OUTPUT)

I^2C Serial Logic

Parameter	Symbol	State	Logic	Min.	Max.	Unit
I^2C Serial Data	SDA	HIGH	LVTTL	$0.7*V_{CC3}$	VCC3	V
	SDA	LOW	LVTTL	0	0.8	V
I^2C Serial Clock	SCL	HIGH	LVTTL	$0.7*V_{CC3}$	VCC3	V
	SCL	LOW	LVTTL	0	0.8	V

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Transmitter Type		CW Mode EML				
Coupling Mode		AC				
Transmitter Signal Rate	Sdown	9.953			Gb/s	
Average Launch Power	POUT	2		5	dBm	N1
Tolerance to the Transmitter Incident Light Power	Tt	-15			dB	
Optical Center Wavelength	λ	1575	1577	1580	nm	
Spectral Width	Δλ			1	nm	
Side Mode Suppression Mode	SMSR	30			dB	
Extinction Ratio	ER	8.2			dB	
Receiver						
Receiver Type		Burst Mode APD/TIA				
Optical Center Wavelength	λ	1260	1270	1280	nm	
Damage Optical Power	P_d	-3			dBm	
Receiver Sensitivity	P_{IN}			-26	dBm	@9.953Gbps, N1
	P_{IN}			-27.5	dBm	@2.488Gbps, N1
Receiver Optical Overload	P_{IN}(MAX)	-5			dBm	@9.953Gbps, N1
	P_{IN}(MAX)	-7			dBm	@2.488Gbps, N1
Reflectance of Rx	ORL			-20	dB	@1260~1360nm
Dynamic Range	DR	15			dB	
Immunity from Continuous Identical Digits	CID	72			Bits	

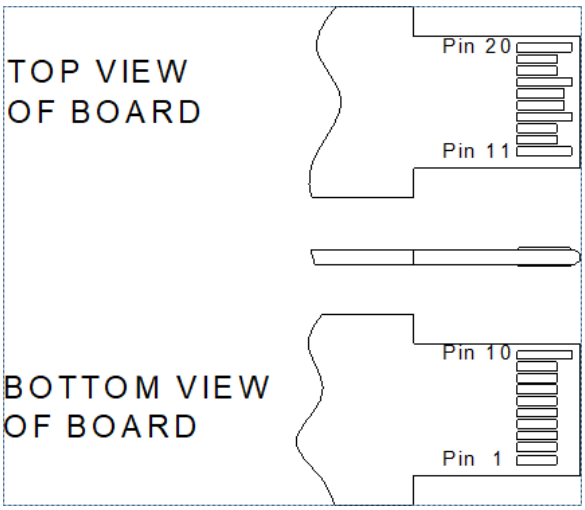
Notes:

Sensitivity and Overload Test Condition:

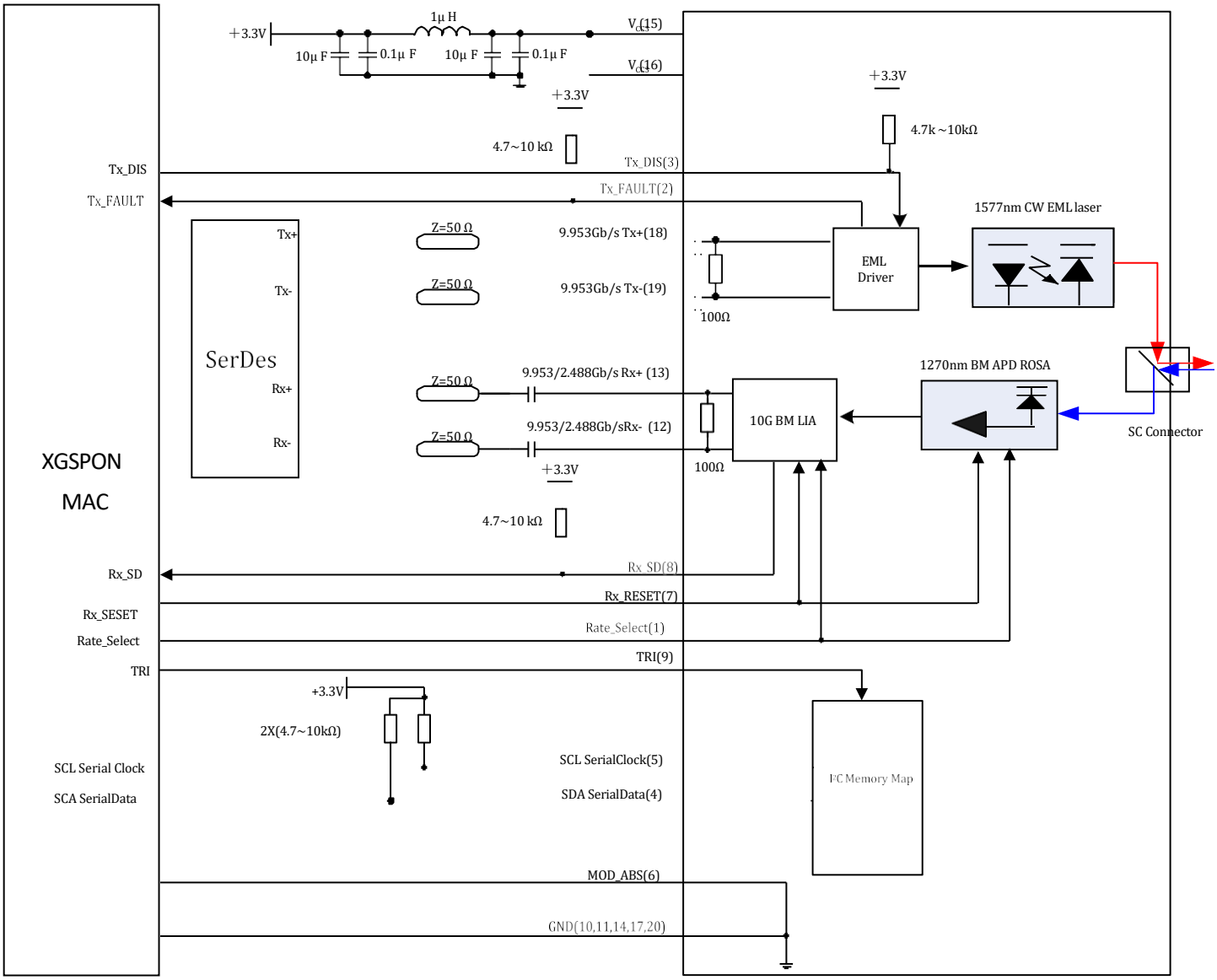
- 1.9.953Gbps: BER@10^{-3} PRBS 2^{31}-1 ER=6.0dB;
- 2.2.488Gbps: BER@10^{-4} PRBS 2^{23}-1 ER=8.2dB ;

Pin Descriptions

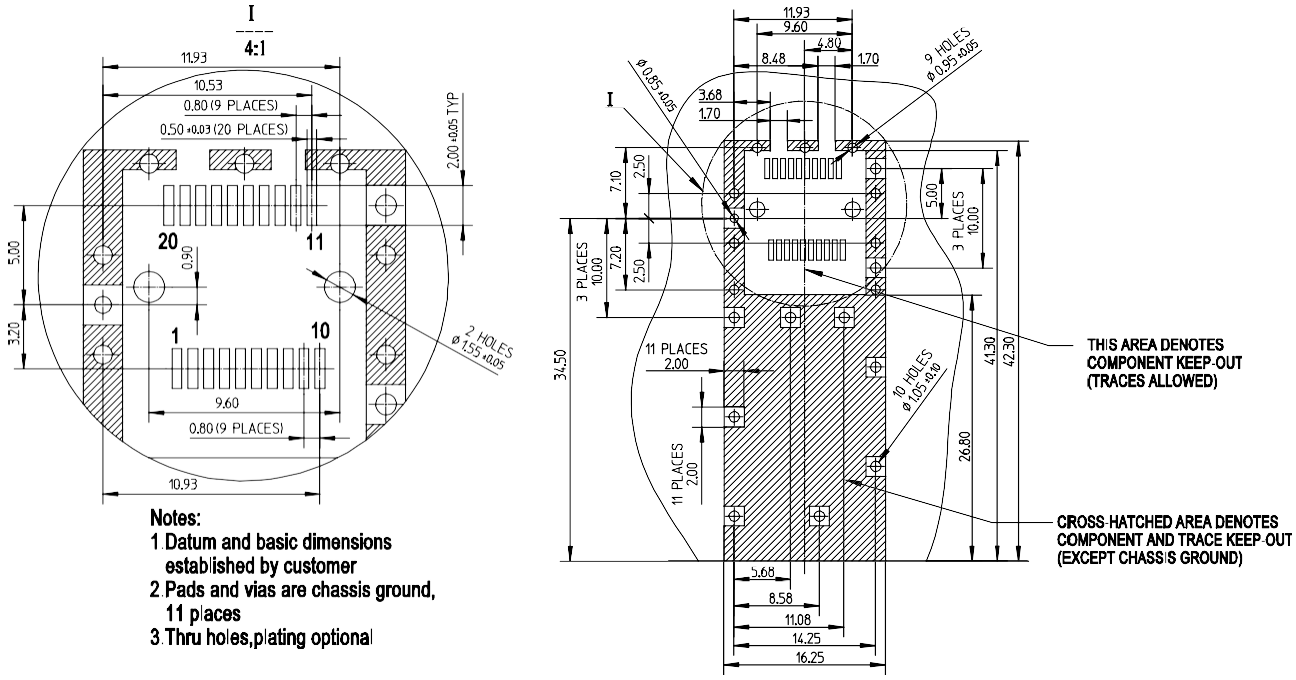
Pin	Symbol	Name/Descriptions	Ref.
1	Rate_Select	Rate selection, Dedicated upstream speed indication. High=10G; LOW=2.5G	
2	Tx_FAULT	Transmitter Fault, LOW = Normal Operation, HIGH = Fault Indication	
3	Tx_DIS	Transmit Disable, LOW = Normal Operation, HIGH = Disables Module	
4	SDA	2-Wire Serial Interface - Serial Data	
5	SCL	2-Wire Serial Interface - Clock Signal	
6	MOD_ABS	Module absent indicate pin. Grounded inside the module.	
7	Rx_RESET	RX Reset Pulse Input for TIA/LIA	
8	Rx_SD	Rx Signal Detect, Assert High when Burst Packet Coming	
9	RSSI_TRI	Receiver Signal Strength Indication trigger input	
10	GND	Module Ground.	
11	GND	Module Ground.	
12	RD-	Receiver Inverted 9.953Gb/s and 2.488Gb/s Data Output; DC coupled inside the module.	
13	RD+	Receiver Non-Inverted 9.953Gb/s and 2.488Gb/s Data Output; DC coupled inside the module.	
14	GND	Module Ground.	
15	VCC3	+3.3V DC Power Supply Input.	
16	VCC3	+3.3V DC Power Supply Input.	
17	GND	Module Ground.	
18	TD+	Transmitter Non-Inverted 9.953Gb/s Data Input.	
19	TD-	Transmitter Inverted 9.953Gb/s Data Input.	
20	GND	Module Ground.	



Electrical Interface

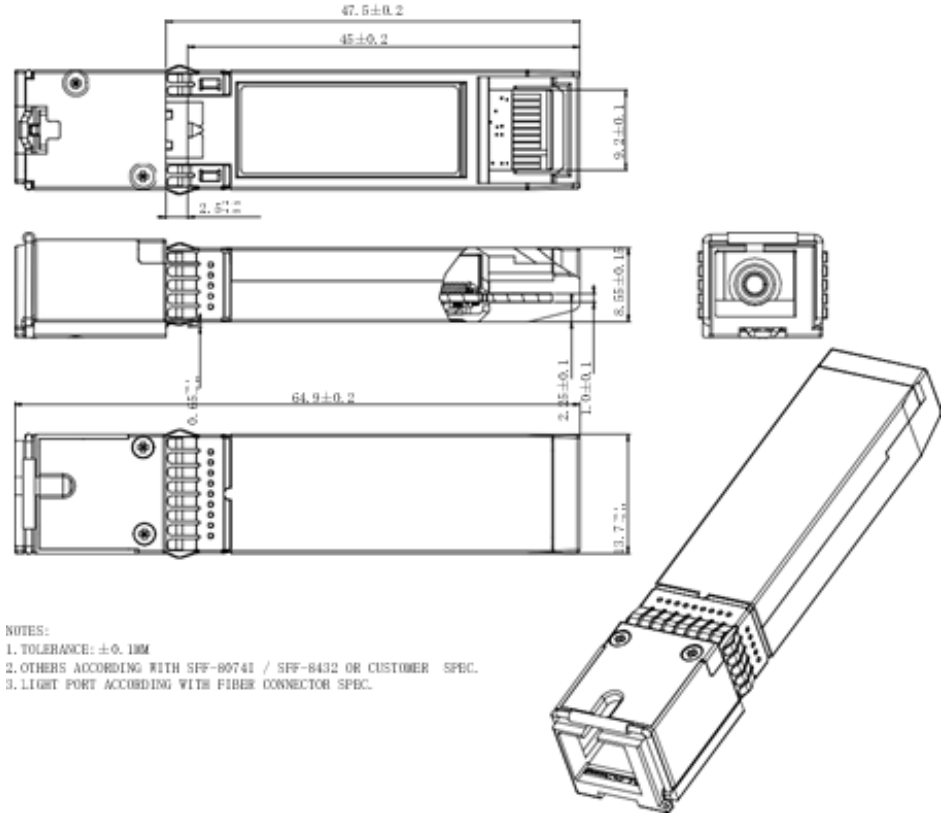


SFP+ Connector Dimensions



Notes:
1. Datum and basic dimensions established by customer
2. Pads and vias are chassis ground, 11 places
3. Thru holes, plating optional

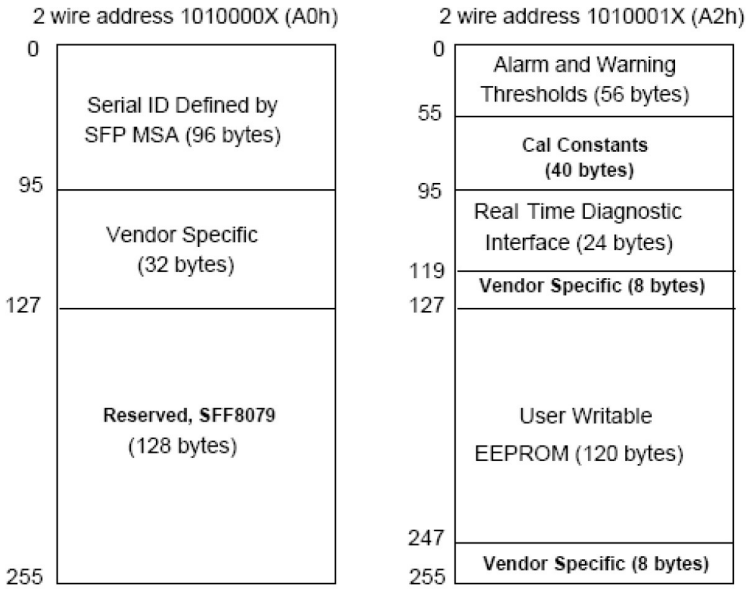
Mechanical Specifications



NOTES:
1. TOLERANCE: ±0.10M
2. OTHERS ACCORDING WITH SFF-8074I / SFF-8432 OR CUSTOMER SPEC.
3. LIGHT PORT ACCORDING WITH FIBER CONNECTOR SPEC.

EEPROM Information

EEPROM memory map specific data field description is as below:



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.