



# OC-12/STM-4 SFP Transceiver Bi-Directional 1310nm Tx/1550nm Rx 40km P/N AL13P0x-3155



## Description

Menara Networks' AL13P0x-3155 bi-directional transceivers are designed for use in links of 40km over a single strand of single mode fiber. The SFP module supports SONET/SDH OC-12 and STM-4 applications along with lower speed OC-3/STM-1 and IEEE 802.3 100M Ethernet.

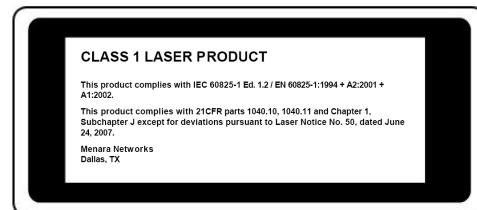
Digital Optical Monitoring interfaces are provided via the SFP SFF-8472 standards compliant I2C interface. The receiver features differential ac-coupled data outputs and LVTTTL for LOS (Loss of Signal) output. Circuit ground is internally isolated from frame ground.

## Applications

- 40km OC-12/STM-4 bi-directional single fiber transport

## Features

- Hot-pluggable SFP footprint
- RoHS compliant
- Bi-directional optical data links over a single strand of single mode fiber
- Compliant with SFP MSA
- Digital diagnostic SFF-8472 compliant
- 1310nm DFB transmitter
- 1550nm wavelength specific receiver
- Very low jitter
- Metal package for lower EMI
- Single power supply voltage : +3.3V
- Low power dissipation
- LC diplexer connector
- Laser Class 1 IEC/CDRH compliant
- Distances of 40km



### Transmitter E-O Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Support data rate	-	100	622	622	Mb/s	
Center Wavelength	$\lambda$	1260	1310	1360	nm	
Spectral Width (RMS)	$\Delta\lambda$			1.0	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Average Optical Output Power	P <sub>o</sub>	-5		0	dBm	1
Extinction Ratio	Er	9			dB	
Optical Rise/Fall Time (20%~80%)	tr/tf			0.35	ns	
Output Eye Diagram	Compliant with Eye Mask Defined in GR-253 standard					
Data Input Swing Differential	V <sub>IN</sub>	400		1800	mV	2
Input Differential Impedance	Z <sub>IN</sub>	90	100	110	$\Omega$	
TX Disable	Disable	2.0		V <sub>CC</sub>	V	
	Enable	0		0.8	V	
TX Fault	Fault	2.0		V <sub>CC</sub>	V	
	Normal	0		0.8	V	

1. The optical power is launched into SMF.
2. PECL input, internally AC-coupled and terminated

### Receiver O-E Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Support data rate	-	100	622	622	Mb/s	
Operating Wavelength	$\lambda$	1480	1550	1580	nm	
Receiver sensitivity	S <sub>en</sub>			-26	dBm	3
Saturation	P <sub>sat</sub>	-3			dBm	3
Receiver Optical Return Loss	-			-27	dB	
LOS Assert	LOS <sub>A</sub>	-35			dBm	
LOS Deassert	LOS <sub>D</sub>			-26	dBm	
LOS Hysteresis		1		4	dB	
Data Output Swing Differential	V <sub>OUT</sub>	400		1800	mV	4
LOS	High	2.0		V <sub>CC</sub>	V	
	Low	0		0.8	V	

3. Measured with a PRBS 2<sup>23</sup>-1 test pattern @ 622Mbps, BER  $\leq 1 \times 10^{-10}$
4. Internally AC-coupled

### Ordering Information

Part Number	ROHS Compliant	Operating Case Temperature
AL13P0x-3155	ROHS-6	0°C ~ +70°C
AL13P2x-3155		-40°C ~ +85°C

x = J for Juniper  
x = C for Cisco  
x = A for Alcatel  
x = O for Cisco ONS



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