

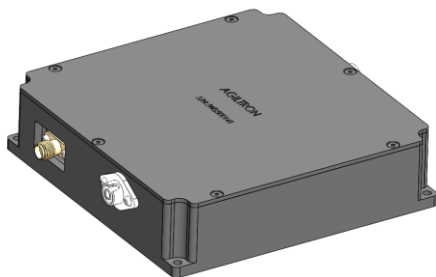
Lithium Niobate Modulator Transmitter Module 14 GHz

4 operation modes, up to 40 mW



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Features

- 14 GHz S21 bandwidth modulator
- 1527 nm to 1567 nm LD wavelength range
- Automatic Bias Control w/ 4 mode operation
- PM Output (customizable option)
- High Extinction Ratio (>30 dB) (customizable option)

Applications

- Analog photonics
- 20 GHz RFoF transmission
- RF/IF signal distribution
- Satellite communication
- Optical communications to 25 Gb/s
- Picosecond pulse generation



The LNTM is a high-performance laser transmitter/converter module designed for analog photonics applications spanning 10 MHz to 14 GHz, featuring high extinction >20dB. It integrates a lithium niobate waveguide modulator, a distributed feedback (DFB) laser, and an automatic bias controller. The automatic bias controller eliminates drifts caused by environmental temperature variations or extended operation, having four operation modes: Q+ and Q- for quadrature points with positive or negative slopes, ideal for linear analog modulation, and Min and Max for minimum or maximum points, optimized for pulse generation in digital modulation. Powered by a single 12V DC supply, the LNTM provides a versatile, reliable solution for RF-over-fiber (RFoF) system integration, enabling precise and stable signal transmission. Further integrating a >20dBm RF broadband modulator driver is an option.

Specifications (Signal Processor)

Parameter	Min	Typical	Max	Unit
Modulator Operating Wavelength	1520		1610	nm
Operating Frequency Range (@3dB)	0.01		14	GHz
Input RF Voltage			27	dBm
RF Return Loss		> 15		dB
Laser Power Level		20	40	mW
Extinction Ratio	20	25	30	dB
S21 Bandwidth (@3dB)		14 GHz		dB
Modulator Voltage (no amplifier)		7 V typ. @ 10 GHz		V
Operating Temperature (standard)	-30		+60	°C
Storage Temperature	-60		+90	°C
Power Supply Requirements		+ 12 V DC, 1 A typ.		
Optical Connectors		FC/APC		
RF Input Connector		GPPO or V connector		
Remote Control		USB/RS232		
Analog Link Performance				
IIP3 @ 7 GHz		32		dBm
1 dB Compression Point @ 10 GHz		16.5		dBm

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

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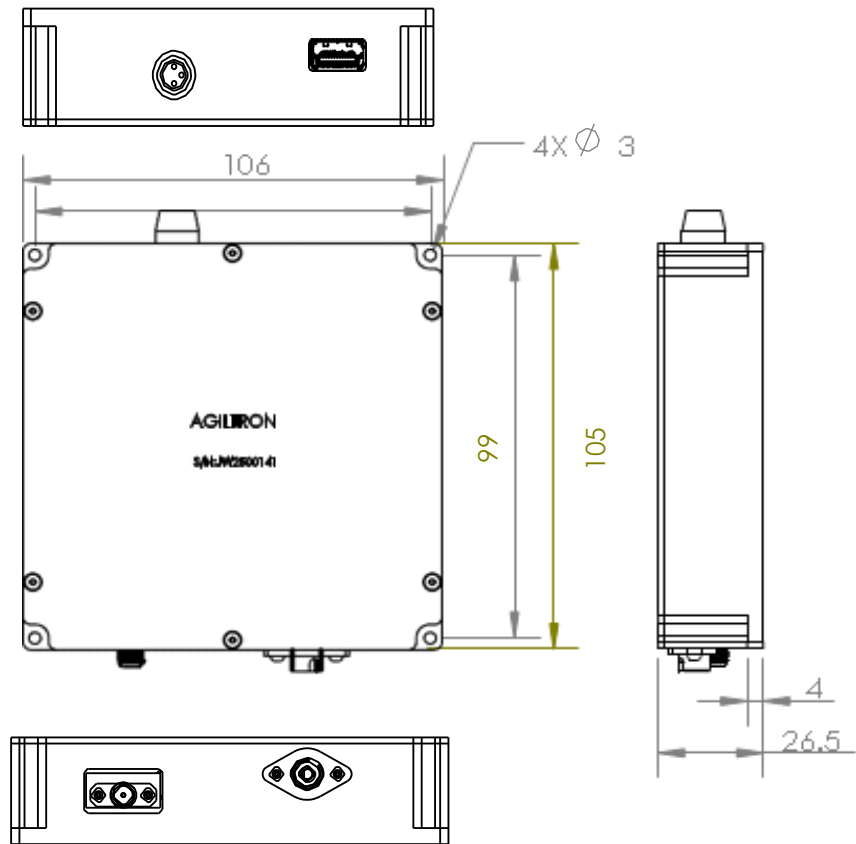
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Mechanical Dimension (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information (Part Number)

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Prefix	RF Frequency	Laser Wavelength	Tunable Laser	Package	RF Amplifier	Fiber Connector ^[1]
LNTM-	14GHz = 1 30GHz =3 40GHz=4	1551.11 nm = 55111 1562.22 nm = 56222 External Laser = 00000	None = 1 Yes = 2	Module = 1 Special = 0	Non =1 >20dBm=2	FC/APC = 2 FC/UPC = U Special = 0

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

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Typical S21 and S11 Bandwidth

