LTA-6-M

DEVICE

6 GHz Lightwave Transmitter Module

OVERVIEW

The Optilab LTA-6-M is a 6 GHz bandwidth lightwave transmitter module output designed for RF over fiber, antenna remoting and broadband RF transmission applications using single mode optical fiber. This convenient, cost-effective module uses a low noise, narrow linewidth, 1550 nm distributed feedback (DFB) laser diode as Continuous Wave (CW) light source. A compact Mach-Zehnder Interferometer (MZI) optical modulator is employed to provide the linear modulation capability that exceeds 6 GHz in its modulation bandwidth, and the externally modulated transmitter design provides a high spurious-free dynamic range and high input intercept point performances. With useful bandwidth up to 6 GHz, the LTA-6-M can be utilized for digital transmission when driven by a wideband modulator driver, and can be paired with the PR-12-B-M series of 12 GHz amplified receivers for a high-speed RF over Fiber Link. Contact Optilab for more information.

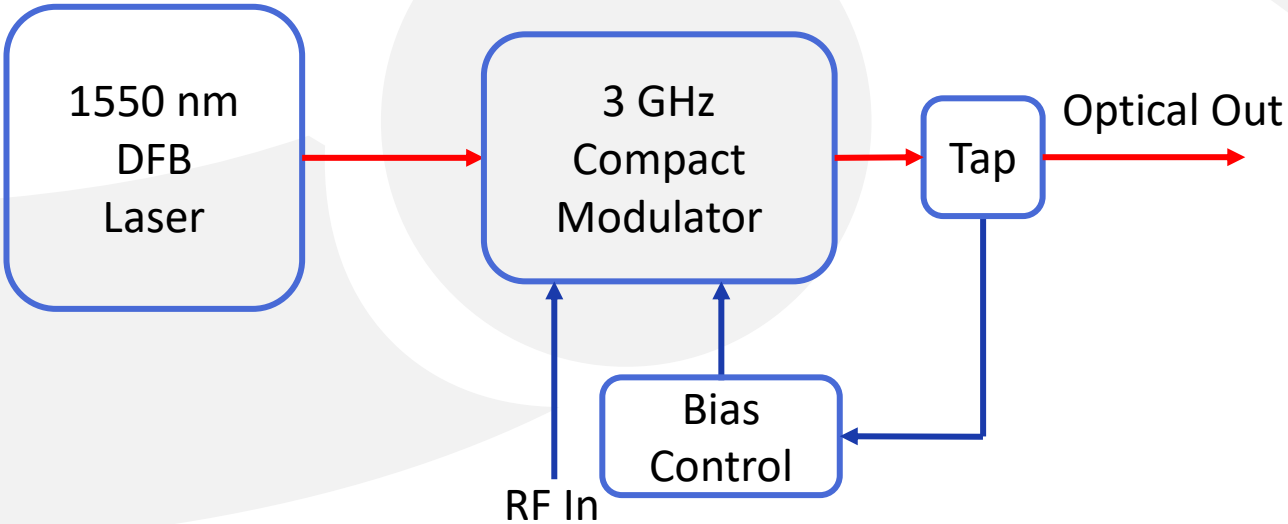
FEATURES

- RS-232 Monitor Interface
- Compact MZI optical modulator
- Housing limits RF and thermal interface
- RFoF Transmitter with 6 GHz Bandwidth
- High Dynamic Range with low RIN Source Laser
- Highly Linear for Analog Transmission

USE IN

- Wideband RF Transmission over Fiber
- RF/IF Signal Distribution
- Satcom microwave antenna signal distribution
- Broadband delay-line and signal processing
- Radar system calibration phased
- Phased and interferometric array antenna
- EW Systems

FUNCTIONAL DIAGRAM



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SPECIFICATIONS

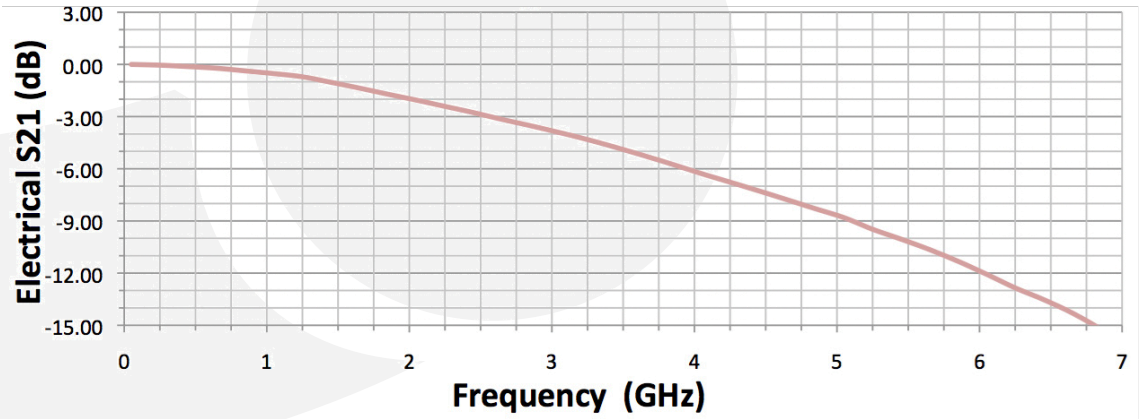
GENERAL

DFB Laser Wavelength	1550 nm ± 10 nm, can be ordered w/ ITU wavelength
Operational Bandwidth	0.01 to 6 GHz
Optical Output Level	+4 dBm to +6 dBm
Optical Return Loss	50 dB typ.
Linewidth (FWHM)	< 3 MHz
DFB Side Mode Suppression Ratio	50 dB typ.
Relative Intensity Noise (RIN)	-145 dB/Hz max.
Impedance	50 Ω
Frequency Response Flatness	± 0.1 dB/100 MHz
Phase Flatness	± 0.2 degree/100 MHz
Spurious Free Dynamic Range (SFDR)	110 db-$Hz^{2/3}$
VSWR	2.0:1 max
Input Damage Level	23 dBm max.

MECHANICAL

Operating Temperature (standard)	-40°C to +70°C
Storage Temperature	-55°C to +85°C
Power Supply Requirements	± 5 V DC, 2 A max.
Optical Connectors	FC/APC, other optional
RF Input Connector	SMA Connector Female, 50 Ω
DC Connector	4 Pin Molex
Local Alarm	Power LED
Remote Alarm	RS-232 via USB 2.0
Dimensions	167.3mm x 80mm x 25mm
Accessories Included	110 V - 240 V AC Adaptor & Cable
Housing	Precision Mach. Anodized Aluminum

TYPICAL S21 BANDWIDTH



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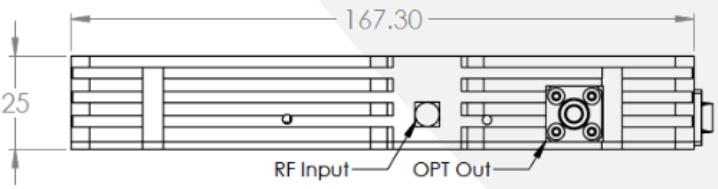
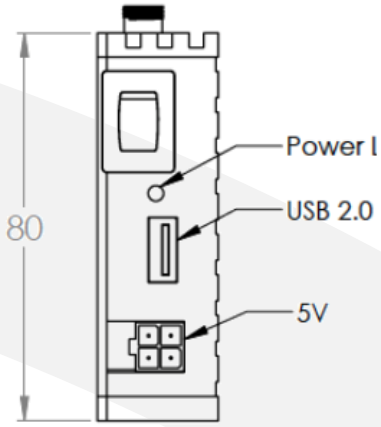
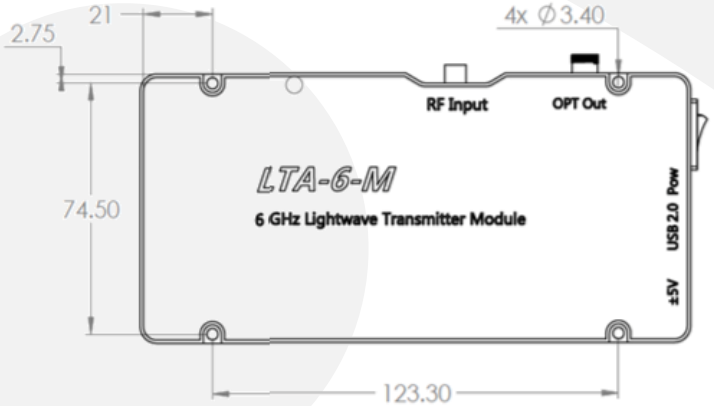
MECHANICAL DRAWING





PORT FUNCTION DESCRIPTION

1	Optical Output
2	RF In
3	Power LED
4	DC Power Socket
5	Power Switch
6	USB 2.0



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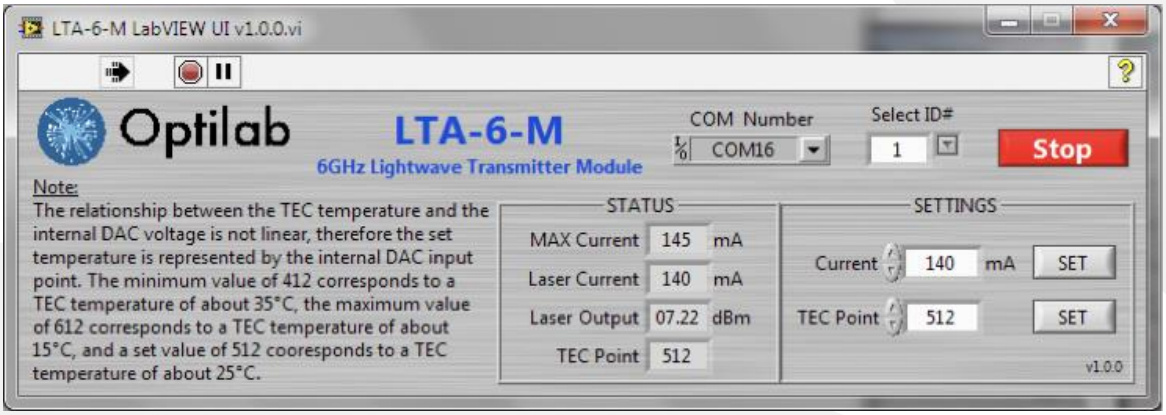
SOFTWARE INTERFACE



OPTIONS

LTA-6-M-x-yy

x: Optical Output Power: +4 to +6 dBm
ITU 100 GHz Wavelength
Grid Number: Channels

yy: 20 (1561 nm) – 60 (1529 nm)