	• LTA-6-M GHz Lightwave Transmitter Module
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	<ul> <li>RS-232 Monitor Interface</li> <li>Compact MZI optical modulator</li> <li>Housing limits RF and thermal interface</li> <li>RFoF Transmitter with 6 GHz Bandwidth</li> <li>High Dynamic Range with low RIN Source Laser</li> <li>Highly Linear for Analog Transmission</li> </ul>
USE IN FUNCTIONAL	<ul> <li>Wideband RF Transmission over Fiber</li> <li>RF/IF Signal Distribution</li> <li>Satcom microwave antenna signal distribution</li> <li>DIAGRAM</li> <li>Broadband delay-line and signal processing</li> <li>Radar system calibration phased</li> <li>Phased and interferometric array antenna</li> <li>EW Systems</li> </ul>
	1550 nm 3 GHz Optical Out DFB Compact Tap
	DFB Compact Tap Laser Modulator
optilob	Bias Control RF In

Product specifications and description are subject to change without notice. © 2018 Optilab, LLC. LTA-6-M Aug 2018 Rev. 1.0

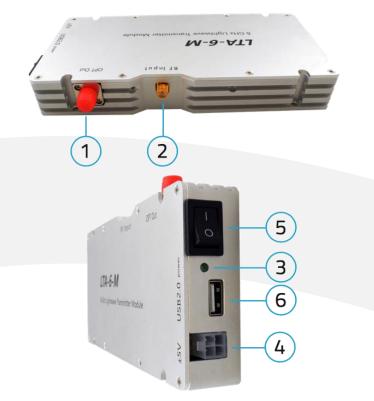


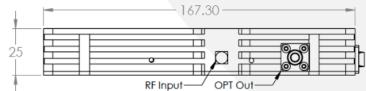
# LTA-6-M

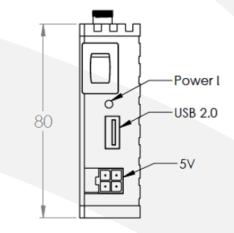
Local Alarm       Power LED         Remote Alarm       RS-232 via USB 2.0         Dimensions       IG7.3mm x 80mm x 25mm         Accessories Included       IID V - 240 V AC Adaptor & Cable         Housing       Precision Mach. Anodized Aluminum         TYPICAL S21       70 - 3.00	1		-			
A CONTONION Optical Output Level 44 dBm ta +8 dBm Optical Return Loss 50 dB typ. Linewidth (FWHM) 38 Mtz DFB Side Mode Suppression Ratio 50 dB typ. Relative Intensity Noise (RIN) -145 dB/Hz max. Impedance 50 O Frequency Response Flatness ±01 dB/IB0 Mtz Phase Flatness ±01 dB/IB0 Mtz Phase Flatness ±01 dB/IB0 Mtz Spurious Free Dynamic Range (SFDR) III db-Hz <sup>23</sup> VSWR 2.11 max Input Damage Level 23 dBm max. Operating Temperature (standard) -40°C to +70°C Storage Temperature -55°C to +85°C Power Supply Requirements ±5 V 0C. 24 max. Optical Connector SH2/APC, other sptinol RF Input Connector 3MA Dameter Femile. SD O DC Connector 4PIn Molex Local Alarm Power LBD Remote Alarm 882.20 DD Dimensions 1673m x BBm 253m Accessories Included 10V - 240 V & Adaptor & Eable Housing Precision Mach. Anodized Aluminum Accessories Included 10V - 240 V & Adaptor & Eable Housing Precision Mach. Anodized Aluminum			th			
AENERAL Optical Return Loss 50 dB typ. Linewidth (RWHM) <3 MHz DFB Side Mode Suppression Ratio 50 dB typ. Relative Intensity Noise (RIN) -46 dB/Hz max. Impedance 50 0 Frequency Response Flatness ±01 dB/I00 MHz Phase Flatness ±02 degree/I00 MHz Spurious Free Dynamic Range (SFDR) 100 de-Hz <sup>27</sup> VSWR 2.0 It max Input Damage Level 23 dBm max. Operating Temperature (standard) -40°C to +70°C Storage Temperature -55°C +85°C Power Supply Requirements ±5 VDC, 24 max Optical Connector SMA Connector Female, 50 0 DC Connector 40°N Main Max Accessories Included 10°V -240 VAC Adaptor & Elable Housing Precision Mach. Anadized Auminum Precision Mach. Anadized Auminum (9) 1, 2, 0, 1, 2, 3, 4, 5, 6 Frequency (GHz)	SPECIFICATIONS					
AENERAL Linewidth (FWHM) <3 MHz DTB Side Mode Suppression Ratio Relative Intensity Noise (RIN) 445 dB/Hz max. Impedance 50 0 Frequency Response Flatness ±0.1 dB/100 MHz Phase Flatness ±0.2 dgree/100 MHz Spurious Free Dynamic Range (SFDR) 10 db-Hz <sup>2/2</sup> VSWR 2.0.1 max Input Damage Level 23 dBm max. Operating Temperature (standard) -40°C to +70°C Storage Temperature -55°C to +85°C Power Supply Requirements ±5 V0.2 A max. Optical Connector SMA Connector Female, 50 O DC Connector 4 Pin Malex Local Alarm Power LEO Remote Alarm R8:282 w USB 2.0 DD Imensions 6573mm x BBm x 25mm Accessories Included -100 Y -240 VAC Adaptor & Dable Housing Precision Mach. Anadized Aluminum TYPICAL S21 300 1 2 3 4 5 6 Frequency (GHz)						
APPLICAL S21 Prevents						
Relative Intensity Noise (RIN) Impedance SD 0 Frequency Response Flatness + 0.1 d8/100 MHz Phase Flatness + 0.1 d8/100 MHz Spurious Free Dynamic Range (SFDR) 10 d+H-Z <sup>4</sup> VSWR 2.0:1 max Input Damage Level 23 d8m max. Operating Temperature (standard) -40°C to -70°C Storage Temperature -55°C to +85°C Power Supply Requirements + 5 V 0C, 2 A max. Optical Connector Storage Temperature -55°C to +85°C Power Supply Requirements + 5 V 0C, 2 A max. Optical Connector Storage Temperature -55°C to +85°C Power Supply Requirements -55°C to 40°C to -70°C Storage Temperature -55°C to +85°C Power Supply Requirements -55°C to +70°C Storage Temperature -55°C to +70°C -50°C						
MENERAL       Impedance       50 Ω         Impedance       50 Ω         Frequency Response Flatness       ± 0.1 dB/000 MHz         Phase Flatness       ± 0.2 degree/000 MHz         Spurious Free Dynamic Range (SFDR)       100 b-Hz <sup>24</sup> VSWR       2.D±I max         Input Damage Level       2.3 dBm max.         Operating Temperature (standard)       -40°C to +70°C         Storage Temperature       -55°C to +85°C         Power Supply Requirements       ± 5 V 00, 2 A max.         Optical Connector       SMA Connector Field RE         ODC Connector       4 Pin Molex         Local Alarm       R5-222 via US82.0         Dimensions       167.3mm x 80mm x 25mm         Accessories Included       10 V - 240 V AC Adoptor 6 Gable         Housing       9.000         1.100       1.000         1.100       1.000         1.100       1.000         1.100       1.000         1.100       1.000         1.100       1.000         1.100       1.000         1.100       1.000         1.100       1.000         1.100       1.000         1.100       1.000         1.100						
MECHANICAL Project S21 SanDWIDTH TYPICAL S21 Syntain State Sintain State Sta	SENERAL					
Phase Flatness ± 0.2 degree/I00 MHz Spurious Free Dynamic Range (SFDR) HII db-Hz <sup>27</sup> VSWR 2.0.1 max Input Damage Level 23 dBm max. Operating Temperature (standard) - 40°C to +70°C Storage Temperature (standard) - 40°C to +70°C Power Supply Requirements ± 55 °C to +85°C Power Supply Requirements ± 55 °C to +85°C Power Supply Requirements - 55°C to +85°C DC Connector SMA Connector Female, 50 Ω DC Connector - 40°M to +70°C SMA Connector Female, 50 Ω DC Connector - 80°C DC Connector - 80°C - 90°C DC Connector - 90°C - 90°						
Spurious Free Dynamic Range (SFDR) III db-Hz <sup>23</sup> VSWR 2.0:1 max Input Damage Level 23 dBm max Operating Temperature (standard) -40°C to +70°C Storage Temperature (standard) -40°C to +70°C Storage Temperature -55°C to +85°C Power Supply Requirements ± 5 V 0C. 2 A max. Optical Connector SMA Connector Female. 50 Ω DC Connector MA 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 100 V - 240 V AC Adaptor & Cable Housing Precision Mach. Anodized Aluminum TYPICAL S21 SANDWIDTH						
VSWR 2.B1 max Input Damage Level 23 dBm max Operating Temperature (standard) -40°C to -70°C Storage Temperature (standard) -40°C to -70°C Power Supply Requirements ± 5 V DC, 24 max. Optical Connector SMA Connector Female, 50 Ω DC Connector 4 Pin Molex Local Alarm RS-232 via USB 2.0 Dimensions 167.3mm x 80mm x 25mm Accessories Included 100 V -240 V AC Adaptor & Cable Housing Precision Mach. Anodized Aluminum Stypical Storage Temperature Storage Te						
Input Damage Level       23 dBm max.         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       SMADonnector Female, 50 Ω         DC Connector       4 Pin Molex         Local Alarm       Power LD         Remote Alarm       R5-232 via USB 2.0         Dimensions       67.3mm x Bbmm x 25mm         Accessories Included       IID Y - 240 V AC Adaptor & Cable         Housing       Precision Mach. Anodized Aluminum						
Coperating Temperature (standard) Operating Temperature (standard) Storage Temperature Storage Temperature St			_			
MECHANICAL Storage Temperature -55°C to +85°C Power Supply Requirements ± 5 V 0C. 2 A max. Optical Connector SMA Danneatur Female. 50 Q DC Connector 4 Pin Malex 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. Analized Aluminum Storage Temperature -55°C to +85°C Power Supply Requirements ± 5 V 0C. 2 A max. Optical Connector SMA Danneatur Female. 50 Q DC Connector 4 Pin Malex Local Alarm RS-232 via USB 2.0 Dimensions 167.3mm x 80mm x 25mm Accessories Included 110 V - 240 V AC Adaptor & Cable Housing 9 Precision Mach. Analized Aluminum Storage Temperature -5 6 Frequency (GHz)		Input Damage Level 23 dBm max.				
MECHANICAL Storage Temperature -55°C to +85°C Power Supply Requirements ± 5 V DC. 2 A max. Optical Connector SMA Connector Female. 50 Q 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 8 Cable Housing Precision Mach. Anolized Aluminum Storage Temperature -55°C to +85°C Power Supply Requirements ± 5 V DC. 2 A max. Optical Connector SMA Connector Female. 50 Q DC Connector 4 Pin Molex Local Alarm RS-232 via USB 2.0 Dimensions 167.3mm x 80mm x 25mm Accessories Included 110 V - 240 V AC Adaptor 8 Cable Housing 9 Precision Mach. Anolized Aluminum Storage Temperature -5 °C to +85°C SMA Connector 5 0 C 2 A max. Power Supply Requirements ± 5 V DC. 2 A max. Power Supply Requirements ± 5 V DC. 2 A max. DC Connector 4 Pin Molex Local Alarm RS-232 via USB 2.0 Dimensions 167.3mm x 80mm x 25mm Accessories Included 110 V - 240 V AC Adaptor 8 Cable Housing 9 Precision Mach. Anolized Aluminum Storage Temperature -5 °C Accessories Included -5 °C Storage Temperature -5 °C Accessories Included -5 °C Storage Temperature -5 °C Storage Temper						
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Remote Alarm RS-232 via USB 2.0 Dimensions I67.3mm x 80mm x 25mm Accessories Included II0 V - 240 V AC Adaptor & Cable Housing Precision Mach. Anodized Aluminum Supplical S21 BANDWIDTH TYPICAL S21 Company of the second	MECHANICAL					
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### MECHANICAL DRAWING

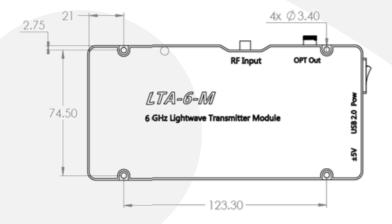






### PORT FUNCTION DESCRIPTION

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







#### SOFTWARE INTERFACE

🔁 LTA-6-M LabVIEW UI v1.0.0.vi									×
<ul> <li>II</li> </ul>									?
Optilab LTA-6 6GHz Lightwave Tran		C	OM Nun COM16		Selec	t ID#		Stop	
Note: The relationship between the TEC temperature and the	STA	rus —		-		SETTI	vgs —		
internal DAC voltage is not linear, therefore the set temperature is represented by the internal DAC input	MAX Current	145	mA	-	ent ()	140		SET	-
point. The minimum value of 412 corresponds to a	Laser Current	140	mA	Curr	ent M	140	mA	SET	_
TEC temperature of about 35°C, the maximum value of 612 corresponds to a TEC temperature of about	Laser Output	07.22	dBm	TEC Po	oint ()	512		SET	
15°C, and a set value of 512 cooresponds to a TEC temperature of about 25°C.	TEC Point	512						,	1.0.0

## OPTIONS

#### LTA-6-M-x-yy

x:	Optical Output Power: +4 to +6 dBm ITU 100 GHz Wavelength
уу:	Grid Number: Channels 20 (1561 nm) – 60 (1529 nm)

