LMB-40

40 GHz Lightwave Modulator with Bias Control

The Optilab LMB-40 is a high performance Lightwave Modulator Board designed for analog photonics applications from DC to 40 GHz. This unit includes a 32 GHz optical intensity modulator and an Automatic Bias Control (ABC) board with four different operating modes. The external laser source can be any polarization maintaining device, such as tunable laser, narrow linewidth laser, making it a versatille solution for OEM-based system integration. Contact Optilab for more information.

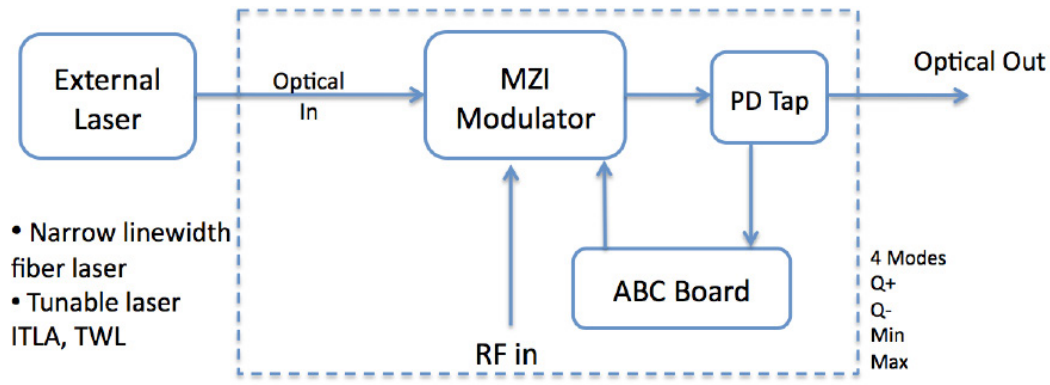
Features

- 32 GHz S21 bandwidth modulator
- 1520 nm to 1610 nm wavelength range
- Automatic Bias Control w/ 4 mode operation
- Accepts external laser source via input
- Customizable options:
  - Low Drive Voltage
  - PM Output
  - High Extinction Ratio (>30 dB)
  - Temperature Qualified (-55 °C to +75 °C)

Applications

- Analog photonics
- 40 GHz RFoF transmission
- RF/IF signal distribution
- Satellite communication
- Optical communications to 43 Gb/s
- Active mode lock (**PM version**)
- Picosecond pulse generation

Functional Diagram



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OPTIONS

LMB-40-XX-YY

XX
LD: Low Drive Voltage
PM: Polarization Maintaining
HE: High Extinction Ratio

YY **TQ**: Temperature Qualifed

TECHNICAL INFO

For technical info and support:

sales@optilab.com

www.optilab.com

WEB ORDER

To order, please click below.

OEQuest.com

Optilab Advantage

- Innovation
- Performance
- Quality
- Customization
- Warranty

General Specifications	
Operating Wavelength	1520 nm to 1610 nm
Laser Source	User's external Input
Optical Input Level	+20 dBm max.
RF Return Loss	>15 dB @ 10 GHz; >10 dB @ 30 GHz
Impedance	50 Ω
Operating Frequency Range	DC to 40 GHz
Input RF Voltage	27 dBm max.
Optical Output Level	7 dBm @ +14 dBm input typ.
S21 Bandwidth	3 dB, 32 GHz typ.
Modulator Bias Mode	4 Automatic bias control modes, selectable by software
Extinction Ratio	25 dB typ.; >30 dB (**HE version**)
Modulator Voltage V_{PI}	6.4 V typ. @10 GHz, 8.3 V typ. @30 kHz;
	2.5 V typ. @10 GHz, 4.3 V typ. @30 GHz (**LD Version**)
Analog Link Performance	
IIP3 @7 GHz	29 dBm typ.; 25 dBm typ. (**LD version**)
1 dB Conpression Point @10 GHz	16 dBm typ.; 8 dBm typ. (**LD version**)
Mechanical Specifications	
Operating Temperature (standard)	-30 °C to +60 °C
Operating Temperature (**TQ version**)	-55 °C to +75 °C
Storage Temperature	-60 °C to +90 °C
Power Supply Requirements	±5V, 1A typ.
Optical Connectors	FC/APC
Fiber Type	PANDA input, SMF-28 output; PANDA input/output (**PM version**)
RF Input Connector	V connector; V connector or GPPO (**LD version**)
Power Connector	4 Pin Molex
Remote Control	USB 2.0 software included

Bias Control Mode

Mode	Operation Conditions
Q+	Set to quadrature point of positive slope for linear analog modulation
Q-	Set to quadrature point of negative slope for linear analog modulation
Min	Set to min. point of operation for pulse generator or digital modulation
Max	Set to max. point of operation for pulse generator or digital modulation

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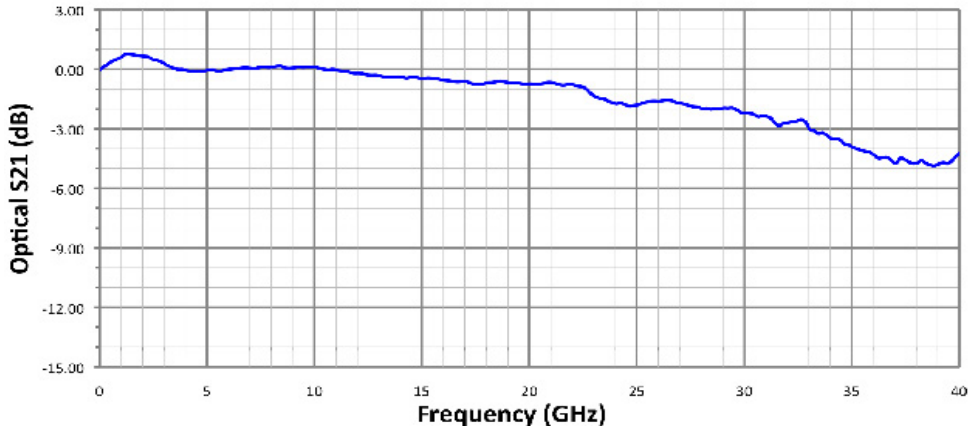
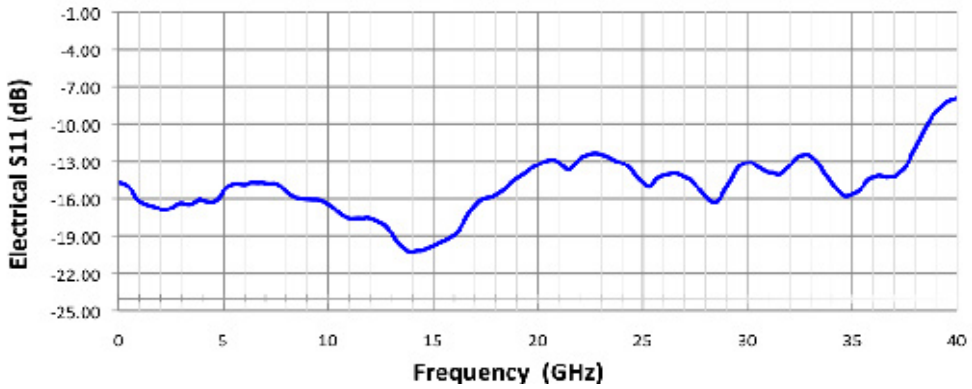
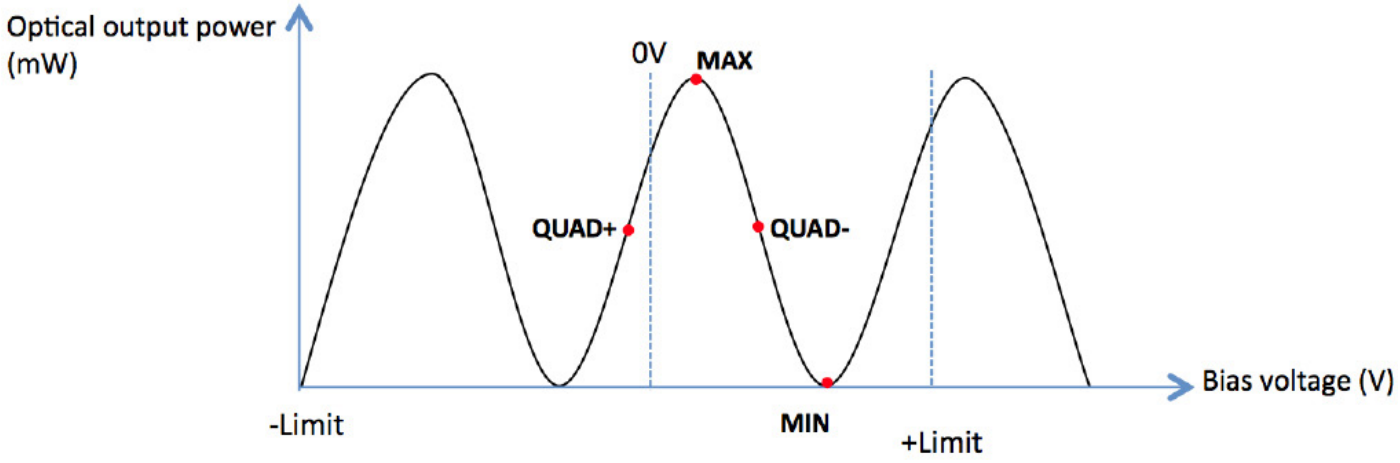
Typical S21 and S11 Bandwidth





Bias Setting Modes for LMB

Based on sophisticated phase measurement of this small dither signal, LMB-20 can provides four selectable operating modes: quadrature (Quad +), inverted quadrature (Quad -), minimum (Min), or maximum (Max) points.



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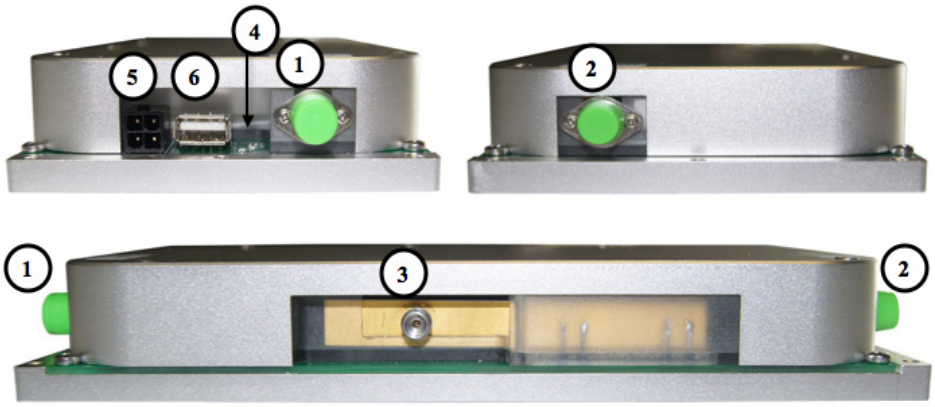
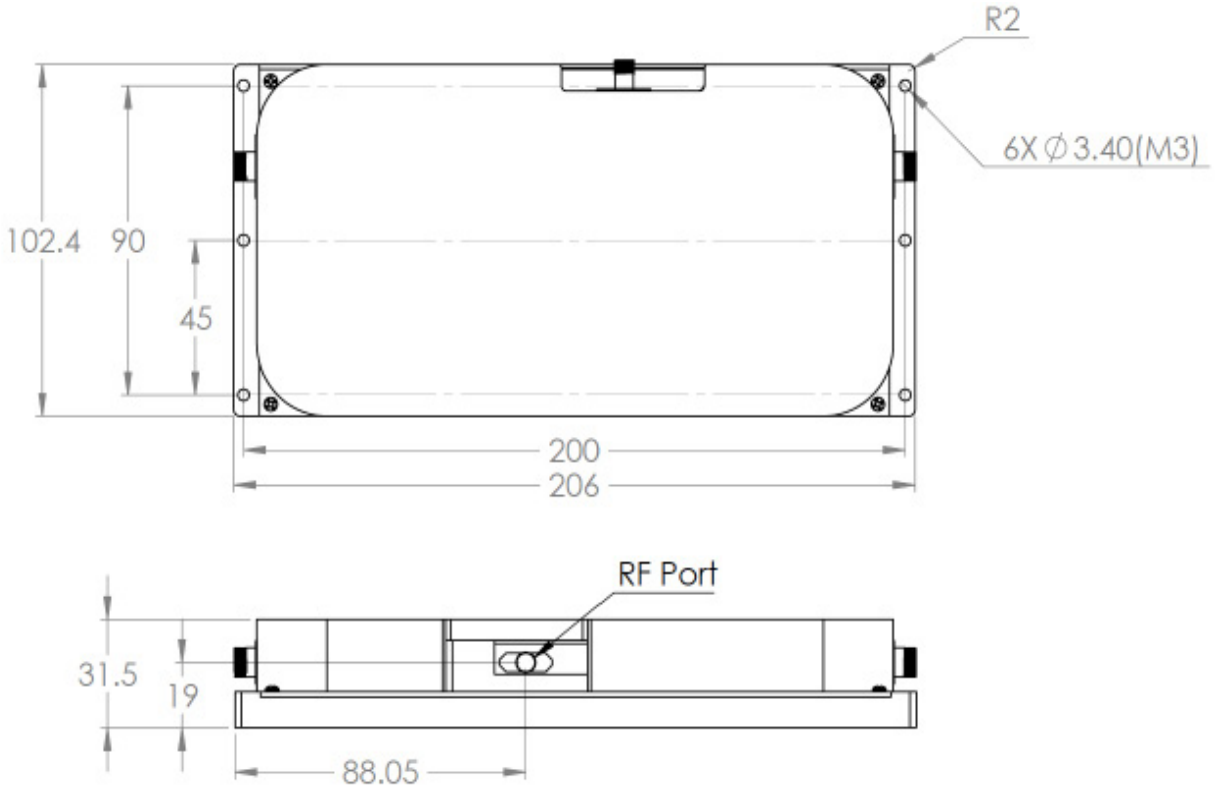
Detailed Layout



No.	Feature
1	Optical Input Port
2	Optical Output Port
3	RF Input Port
4	LED Indicators
5	DC Connection Port
6	USB Control and Monitor Port

Mechanical Drawing



Unit: mm

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Precision Power Supply for LMB (optional)

Front

Back

General Specifications	
Parameters	Specifications
Input AC Voltage (VAC)	85-240
Input AC Current (A)	≤0.5
Input AC Frequency (HZ)	50-60
Transfer Efficiency	≤85%
DC Output Current (A)	4 A max.
DC Output Voltage (V)	±5 V
DC Voltage Ripple	≤2%
DC Connectors	Molex 4 Pin
Communication Connectors	DB-9 and USB 2.0
Dimensions (mm)	153x115x33