

LMC-40



DEVICE

40 GHz Lightwave Modulator with Bias Control

OVERVIEW

The Optilab LMC-40 is a high-performance Lightwave Modulator Board designed for analog photonics applications from 10 MHz to 40 GHz. This unit includes a 30 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 a tunable laser or narrow linewidth laser, making it a versatile solution for OEM-based system integration. Contact Optilab for more information.

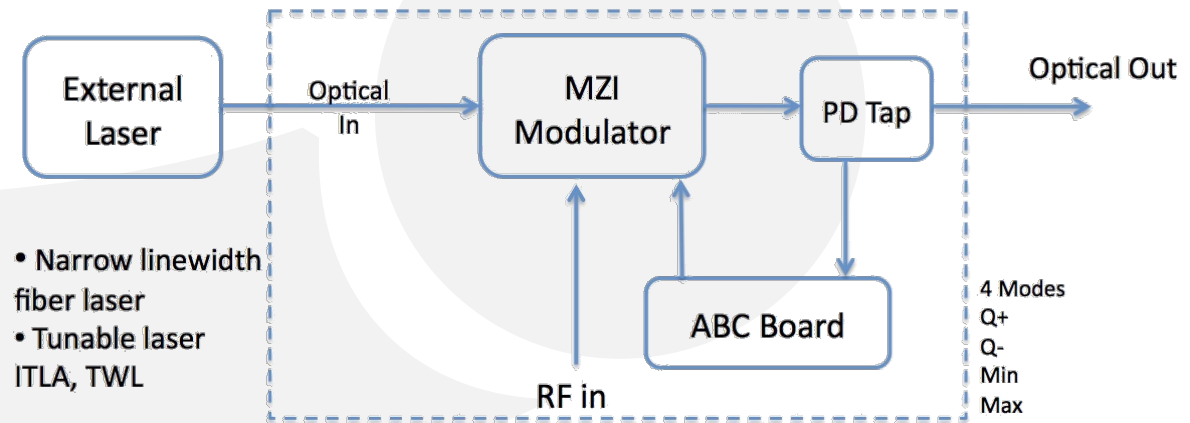
FEATURES

- 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)
 - Temp. Qualified (-55°C to +75°C)

USE IN

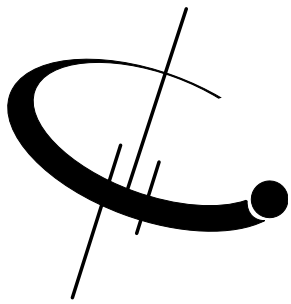
- Picosecond pulse generation
- Optical communications to 43 Gb/s
- Active mode lock (PM version)
- Analog photonics
- 40 GHz RFoF transmission
- RF/IF signal distribution
- Satellite communication

FUNCTIONAL DIAGRAM



- Narrow linewidth fiber laser
- Tunable laser
- ITLA, TWL





LMC-40

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 |
| Operating Frequency Range | 10 MHz to 40 GHz |
| Input RF Voltage | 27 dBm max. |
| Optical Output Level | 6.5 dBm typ. w/ 20 mW DFB |
| S21 Bandwidth | 3 dB, 28 GHz typ. |
| Modulator Bias Mode | 4 Automatic bias control modes, selectable by software |
| Extinction Ratio | 25 dB typ., >30 dB (HE version) |
| Modulator Voltage | 2.5 V typ. @ 10 GHz, 4.3 V typ. @ 30 GHz |

GENERAL

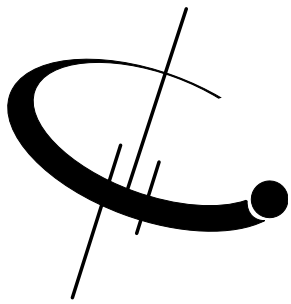
| | |
|------------------------------------|---|
| Operating Temperature (standard) | -30 °C to +60 °C |
| Operating Temperature (TQ version) | -55 °C to +75 °C |
| Storage Temperature | -60 °C to +90 °C |
| Power Supply Requirements | ± 5 V DC, 1 A max. |
| Optical Connector | FC/APC |
| Fiber Type | PANDA input, SMF-28 output; PANDA input/output (PM version) |
| RF Input Connector | 2.92mm Female |
| Power Connector | 4 Pin Molex |
| Remote Control | USB 2.0 software included |
| Alarm | LED bias mode status |
| Dimensions | 241 mm x 152 mm x 41 mm |

MECHANICAL

| 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 generation or digital modulation |
| Max. | Set to max. point of operation for pulse generation or digital modulation |

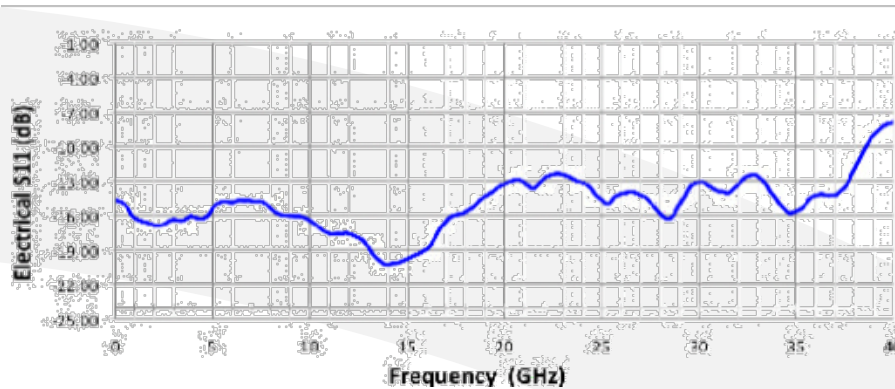
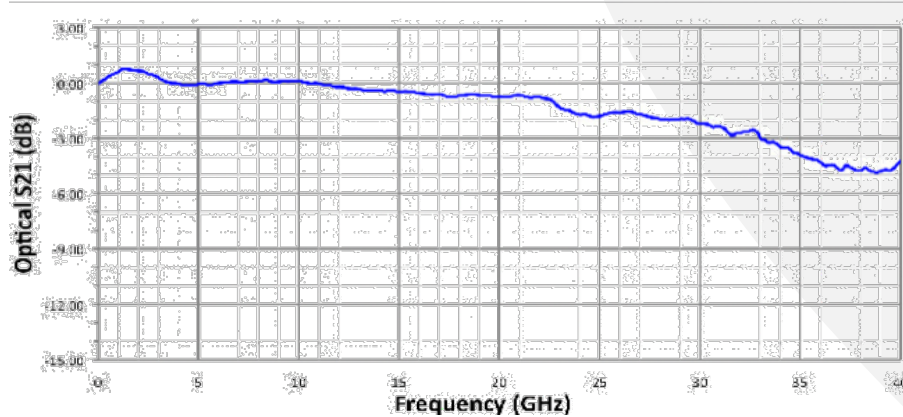
BIAS CONTROL MODE





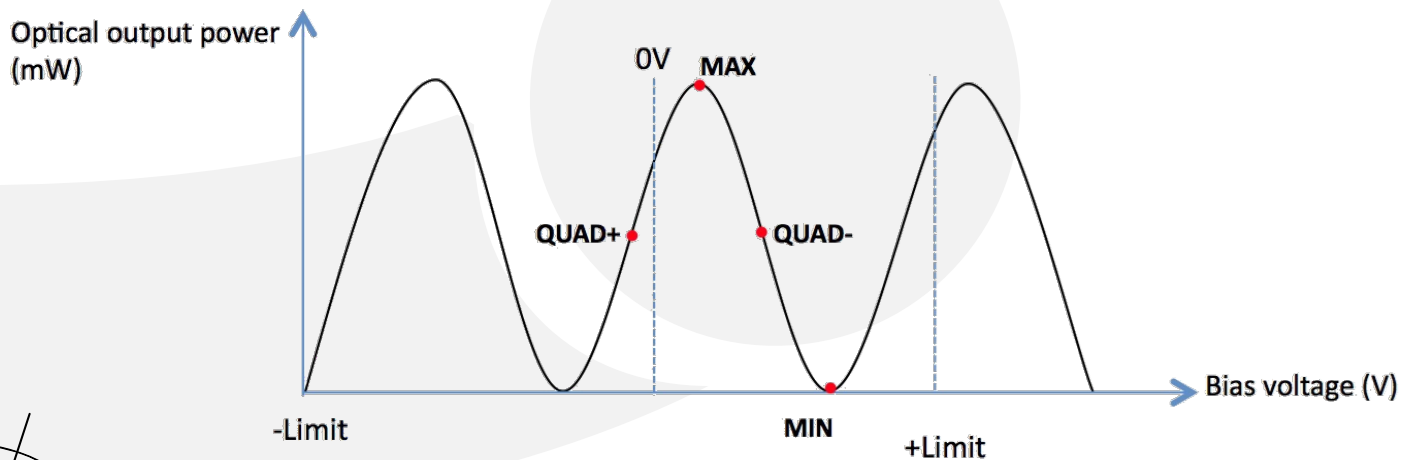
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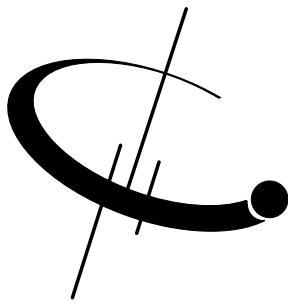
TYPICAL S21 AND S11 BANDWIDTH



BIAS SETTING MODES FOR LMB

Based on sophisticated phase measurement of this small dither signal, LMC-40 provides four selectable operating modes: quadrature (Quad +), inverted quadrature (Quad -), minimum (Min), or maximum (Max) points.





LMC-40

ORDERING OPTIONS

LMC-40-XX-YY

XX PM: Polarization Maintaining
HE: High Extinction Ratio

YY DC: DC +/- 5V Power Supply (Option 1)
AC: AC 100/240 VAC (Option 2)

Option 1 : DC +/- 5V



Option 2 : 100/240 VAC

