

40 GHz EAM Lightwave Transmitter Module

OVERVIEW

The Optilab LT-40-E-M is a 40 GHz lightwave transmitter module designed for RF over fiber, antenna remoting and broadband digital communication. It utilizes a C-band distributed feedback (DFB) laser monolithically integrated with a high-speed electro-absorption modulator (EAM), together with an integrated DC bias circuit for lightwave modulation. Its USB port provides bias setting and status monitoring function based on RS485 protocol. Contact Optilab for more details.

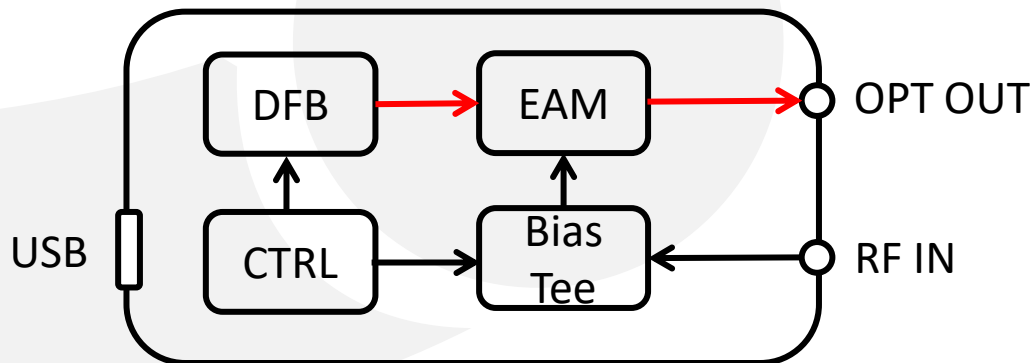
FEATURES

- Wide Bandwidth up to 40 GHz
- RS485 Control and Monitor via USB
- Integrated Bias-Tee Design
- Low RF Drive Voltage

APPLICATIONS

- 40 GHz RF over Fiber
- Phased and Interferometric Array Antenna
- 40 Gb/s NRZ / RZ Data Communication
- RF/IF Signal Distribution

FUNCTIONAL DIAGRAM





LT-40-E-M

GENERAL

Output Wavelength	1545 nm \pm 20 nm
Output Power	8.5 dBm typ
Side Mode Suppression Ratio	40 dB typ
LD Operation Current	100 mA
RF Bandwidth (S21)	34 GHz typ
Low Cutoff Frequency	500 Hz max
Electrical Return Loss (S22)	-10 dB @18GHz
RF Input Impedance	50 Ω
Static Extinction Ratio	15 dB min
EAM Operation Bias Voltage	-1.5 V typ
RF Input Amplitude	3V max

ABSOLUTE MAXIMUM

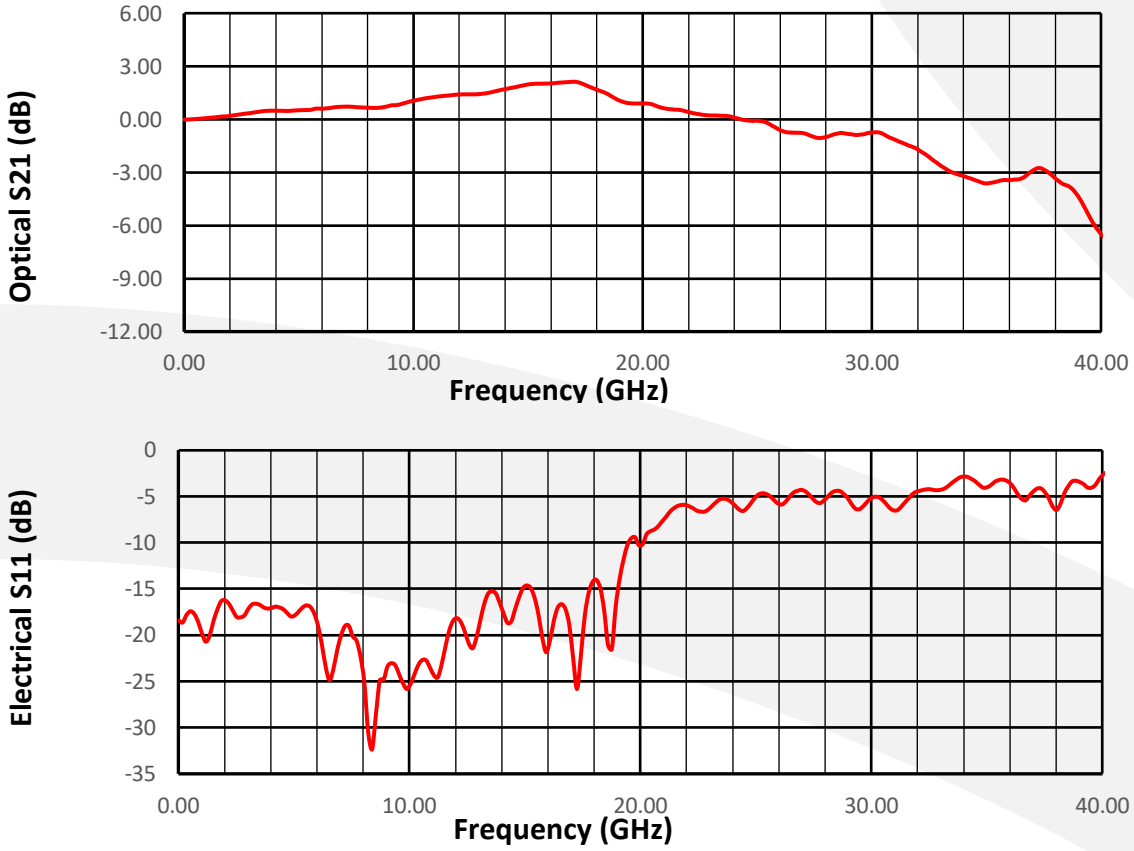
Operation Temperature	50 $^{\circ}$ C
Storage Temperature	75 $^{\circ}$ C
LD Forward Current	110 mA
EAM Bias Voltage	0.5 V
RF Input Power*	13.5 dBm

MECHANICAL

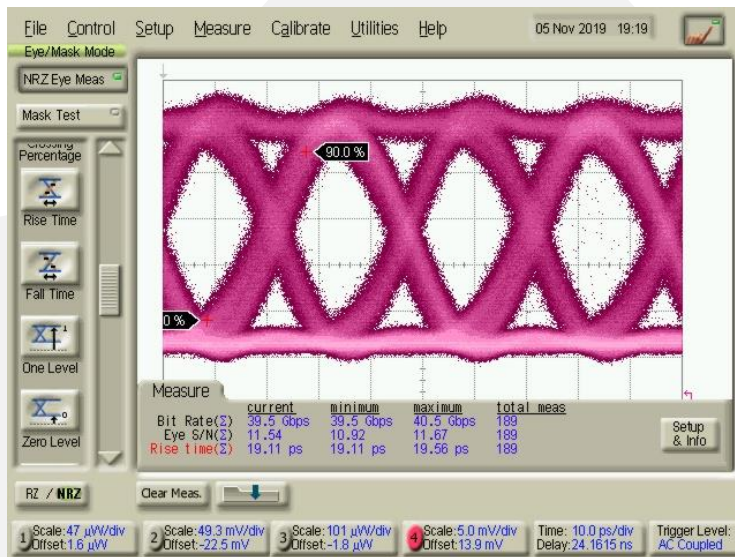
Module Size	115 mm x 106 mm x 24.5 mm
Fiber Type	9/125 μ m B625.D Equivalent Single Mode
Fiber Connector	FC/APC by default, Other options available
RF Output Connector	GPPD male
Power Supply Requirement	+/- 5 VDC, 2A max
Power Supply Connector	4-pin Molex Connector (Power cable included)
Remote Control	RS485 via USB
Accessories Included	Power Cable & USB Cable
Matching Power Supply	+/- 5VDC Power Supply PS-5-M (sold separately)



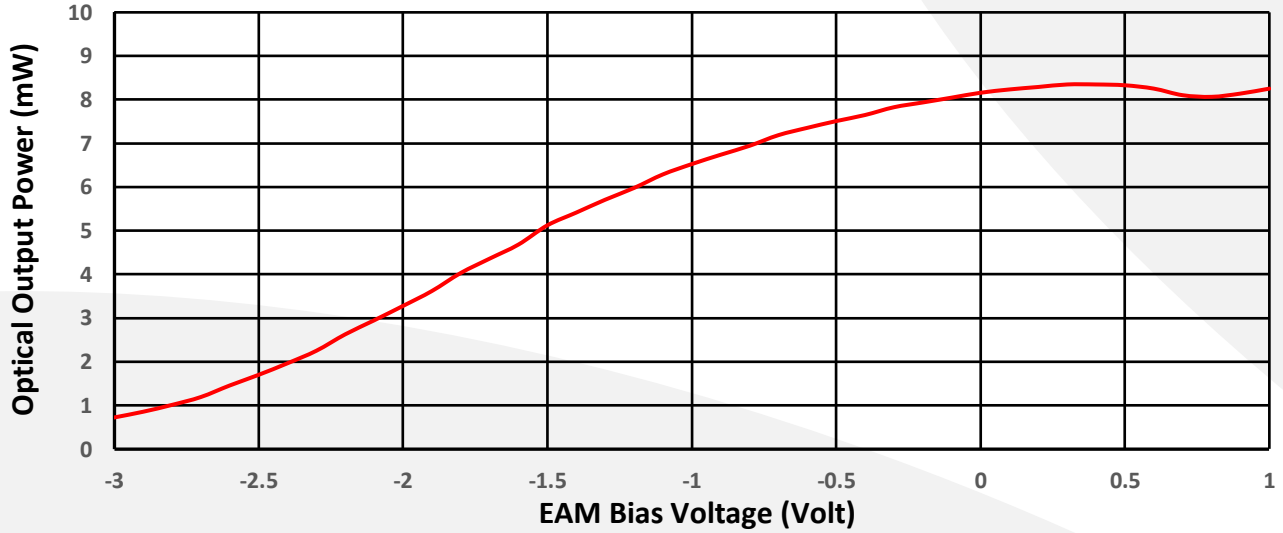
TYPICAL FREQUENCY RESPONSE



40 Gbps NRZ EYE DIAGRAM

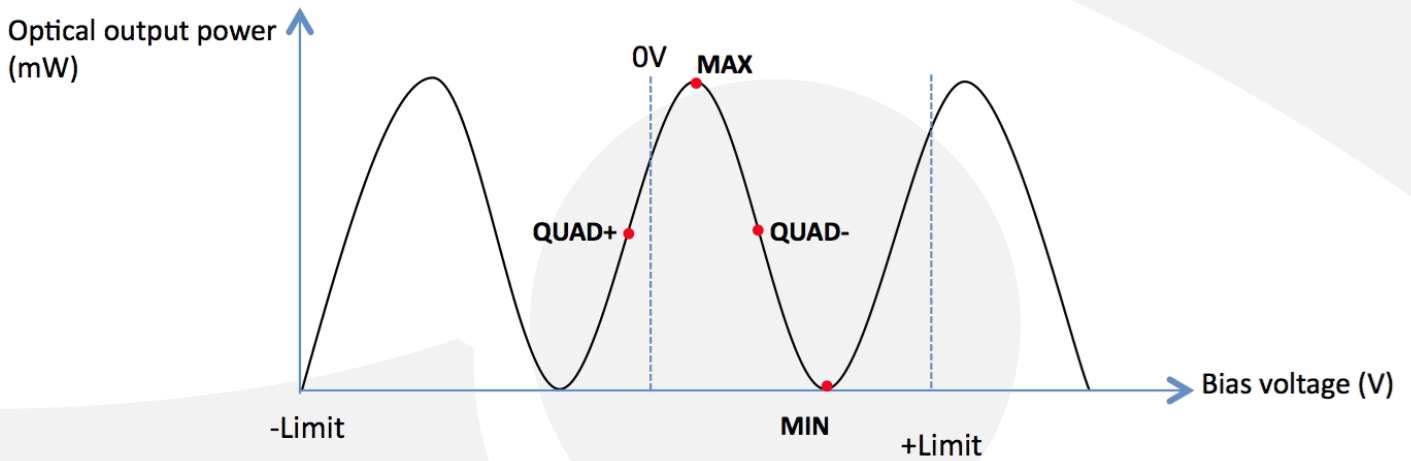


TYPICAL TRANSFER FUNCTION



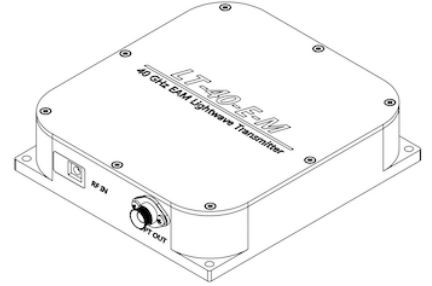
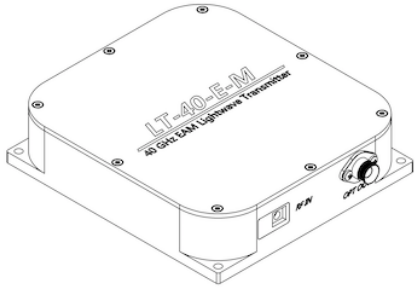
BIAS SETTING MODES FOR LT

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

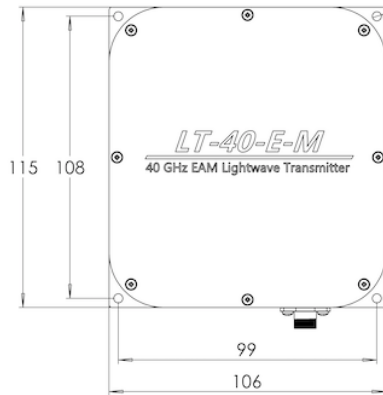


LT-40-E-M

MECHANICAL DRAWING



Unit: mm



Power Connector Pinout

