

LT-12-E-M



12 GHz Low Drive Voltage Lightwave Transmitter

The Optilab LT-12-E-M Lightwave Transmitters (LT) utilize a linear, Electro Absorption Modulator (EAM) designed for RF over Fiber, antenna remoting and broadband RF transmission over optical fiber. This easy to drive module incorporates a low noise, 1550 nm distributed feedback (DFB) laser diode as a Continuous Wave (CW) light source. The input RF signal is applied to EAM directly for E/O conversion. The compact, cost-effective transmitter design provides a high spurious-free dynamic range and high modulation bandwidth. LT-12-E-M can be paired with PR-12-M or PD-30 for 12 GHz RFoF link applications. Contact Optilab for more information.

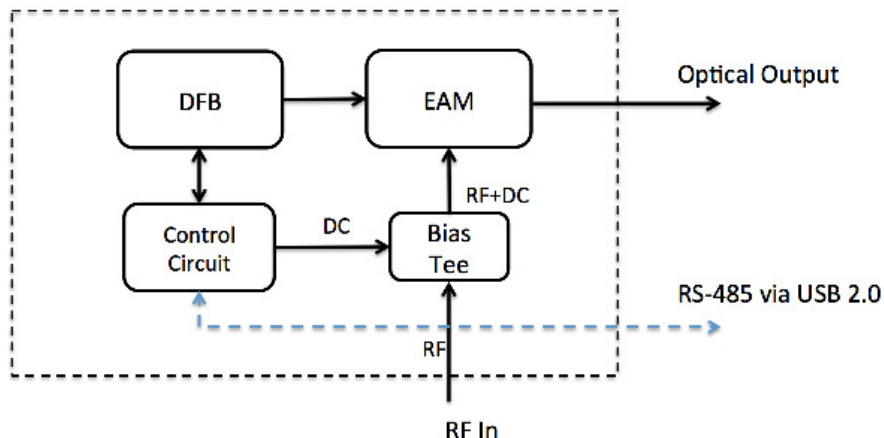
Features

- 12 GHz operation bandwidth
- Low RF drive voltage
- High dynamic range
- Built in 10 GHz Bias tee
- USB 2.0 /RS-485 monitor interface
- Labview driver included

Applications

- 12 GHz RF over Fiber
- RF/IF signal distribution
- Satellite antenna signal distribution
- Broadband delay-line and signal processing
- Radar system link
- Phased and interferometric array antenna

Functional Diagram



12 GHz Low Drive Voltage Lightwave Transmitter | LT-12-E-M

OPTIONS

LT-12-E-M-x-yy

- x Optical Output Power: +3 dBm

TECHNICAL INFO

For technical info and support:

sales@optilab.com

www.optilab.com

WEB ORDER

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Optilab Advantage

- > Innovation
- > Performance
- > Quality
- > Customization
- > Warranty

General Specifications	
DFB Laser Wavelength	1550 nm ± 10 nm
S21 3 dB Bandwidth	10 GHz typ. (includes bias-T)
Optical Output Level	+3 dBm min.
Optical Return Loss	30 dB typ.
DFB Linewidth (FWHM)	3 MHz max.
DFB Side Mode Suppression Ratio	40 dB typ.
Relative Intensity Noise (RIN)	-135 dB/Hz max.
Input Impedance	50 Ω
Frequency Response Flatness	<±0.5 dB in any 1 GHz bandwidth
VSWR	2.0 : 1 max.

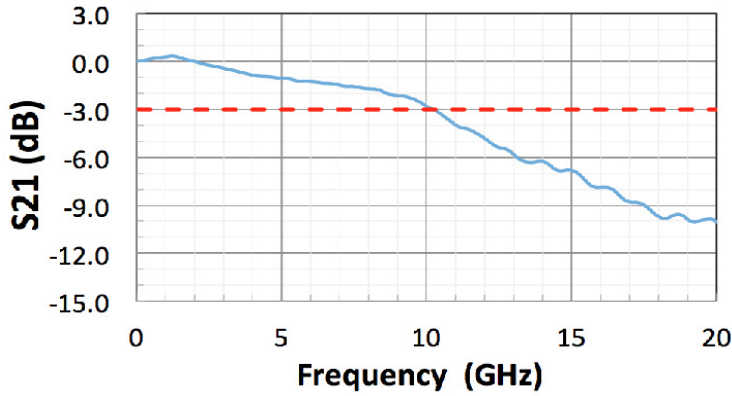
Analog Specifications	
Operational RF Bandwidth	12 GHz typ.
Max. RF Input	+ 13 dBm
1 dB Compression Point	+8 dBm
Harmonic Distortion	-40 dBc typ. @ 0 dBm RF input
Input IP3	12 dBm typ.

Digital Applications	
Data Rate	12.5 Gb/s typ.
Drive Voltage	3 Vp-p typ.
Pulse Response	10%, rise time 40 ps typ.
Extinction Ratio	10 dB typ.

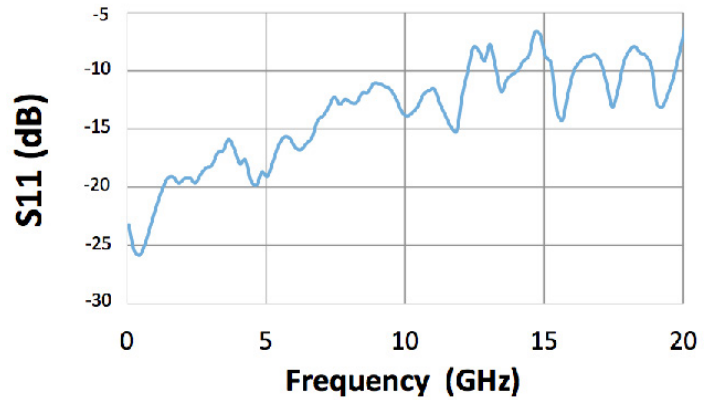
Mechanical Specifications	
Operating Temperature	-20° C to +70° C
Storage Temperature	-55° C to +85° C
Operating Humidity	85%
Power Supply Requirements	+/- 5 V DC, 2 A max.
Optical Connector	FC/APC, other optional
RF Input Connector	SMA, Female
Electrical Power Connector	4-pin Molex
Remote Interface	RS-485 via USB
Dimensions	115 mm x 106 mm x 24.5 mm
Accessories Included	PS-5-M power supply

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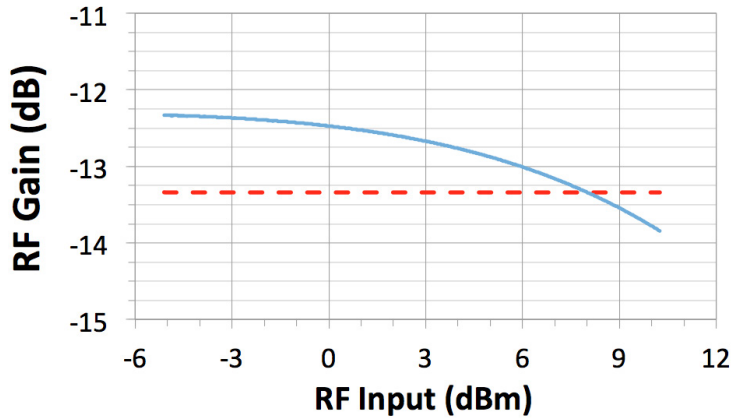
Typical S21 Response



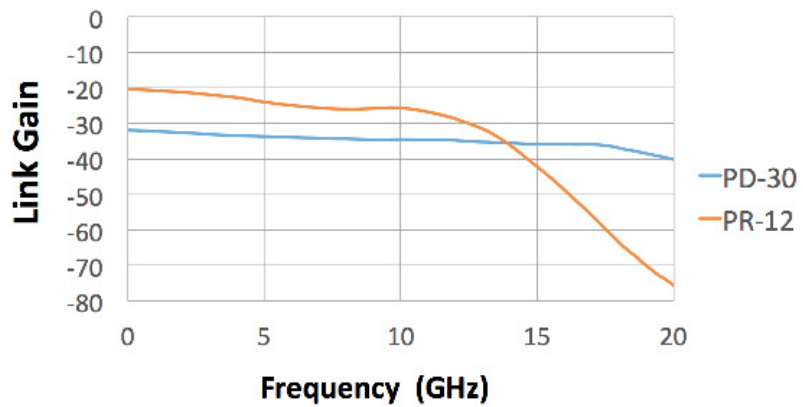
Typical S11 Response



1 dB Compression

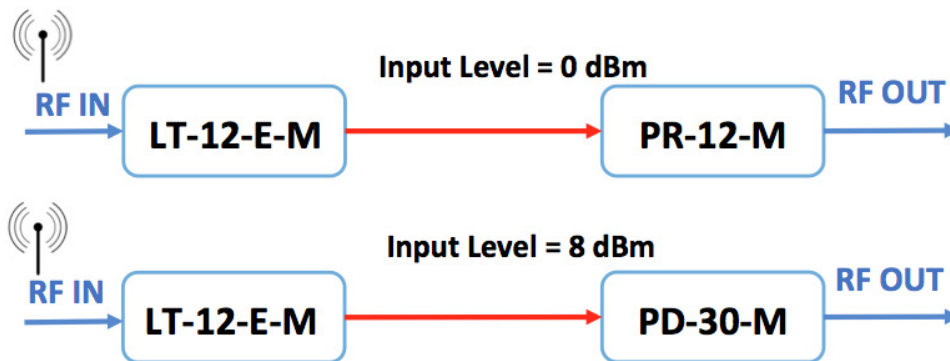


Link Gain Comparison



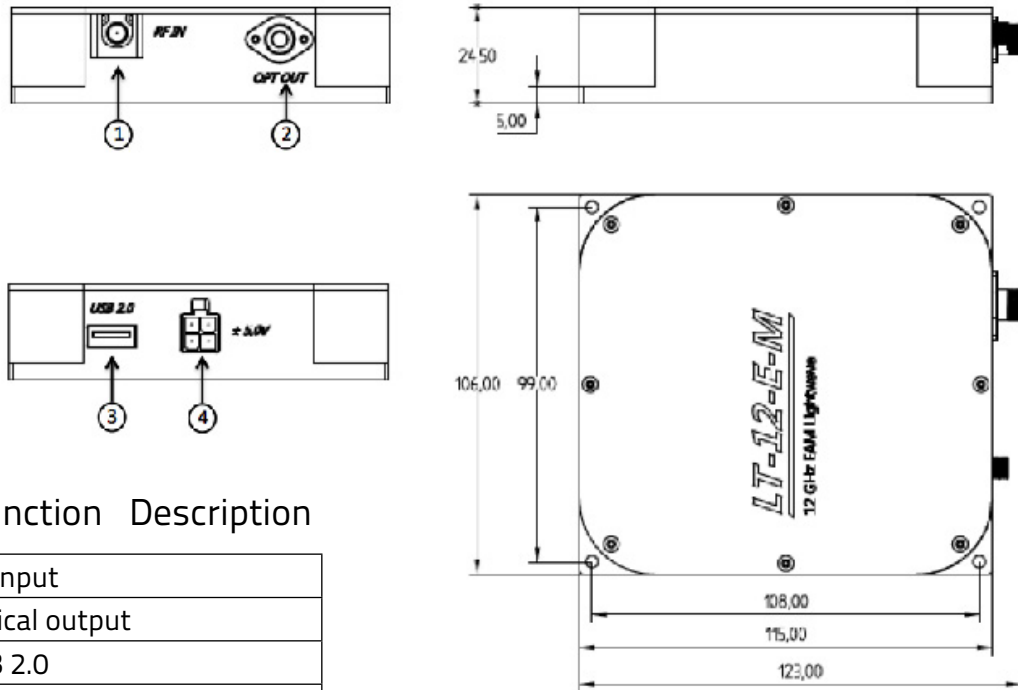
Test Conditions & Link Gain Measurements

LT-12-E-M Output = 3.5 dBm
 Link Gain w/PR-12 = -20 dB @ 1 GHz
 Link Gain w/PD-30 = -32 dB @ 1 GHz



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Mechanical Drawing



Port Function Description

1	RF input
2	Optical output
3	USB 2.0
4	± 5 VDC input

Unit: mm

Remote Labview Interface

Optilab offers remote interface via Labview software, for parameter adjustment and status monitoring, contact Optilab for more details.

