LTR-12

12 GHz Lightwave Transceiver Module

OVERVIEW

The Optilab LTR-12 series of wideband laser transceivers is designed for RF over Fiber (RFoG), optical link, microwave over fiber applications. It features a high-linearity optical link for RF over fiber up to 12 GHz or 17 Gb/s digital link. Based on our proprietary design, the LTR-12 incorporates a broadband optical transmitter and linear receiver into one compact module. Using a Optilab IMP-1550-12 modulator, the LTR-12 transmit port converts input microwave/RF signals to optical waveform linearly from frequency range 60 kHz up to 12 GHz. With a broadband linear PIN receiver, LTR-12 receive port converts the optical waveform back to RF/microwave signals with minimal distortion. The LTR-12 maintains excellent gain flatness in wide frequency range

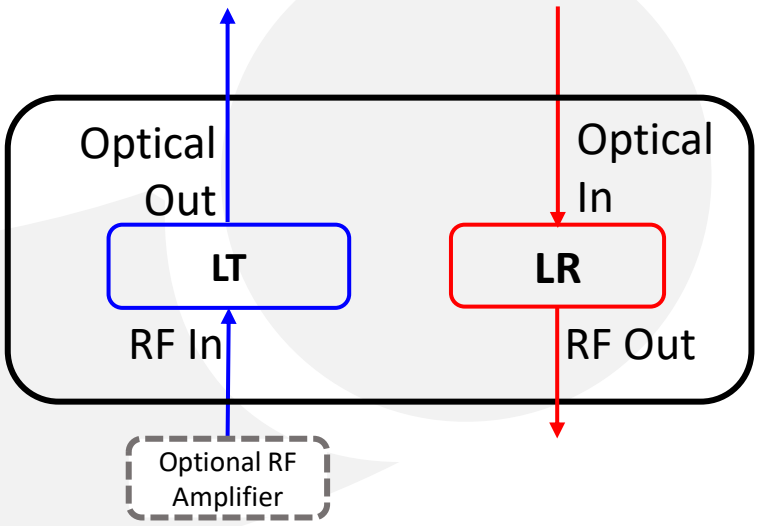
FEATURES

- Fully Integrated 12 GHz Transmitter and Receiver
- 3dB Bandwidth of 8 GHz typ.
- Highly Linear for Analog Transmission
- Low Noise Power Supply
- Wide Bandwidth Optical Modulator

USE IN

- Antenna to Base Station
- Optical communications
- 12 GHz RFoF transmission
- Analog photonics
- RF/IF signal distribution
- Satellite communication

FUNCTIONAL DIAGRAM



LTR-12

SPECIFICATIONS

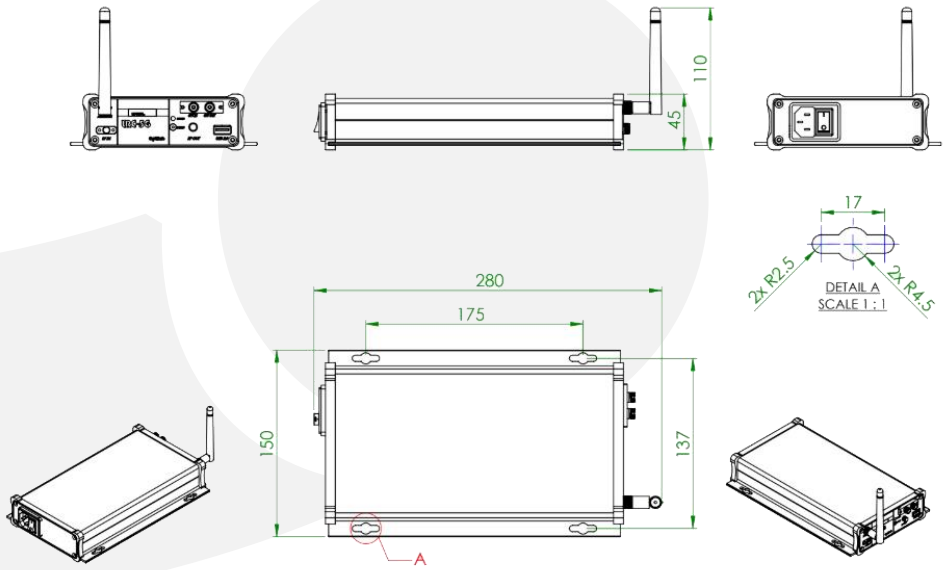
GENERAL

Operating Wavelength	1520 nm to 1610 nm
Laser Source	Internal DFB laser, 1550 ± 10 nm; (other wavelengths & narrow linewidth < 1 MHz are available)
Laser Power Level	20, 30, 40, 50 mW
Impedance	50Ω
Operating Frequency Range	DC to 12 GHz
Input RF Voltage	27 dBm max.
Optical Output Level	6.5 dBm typ. With 20 mW DFB
S21 Bandwidth	3 dB, 8 GHz typ.
Modulator Bias Mode	4 Automatic bias control modes, selectable by software
Extinction Ratio	25 dB typ
Modulator Voltage Vpi	7V typ @10GHz

MECHANICAL

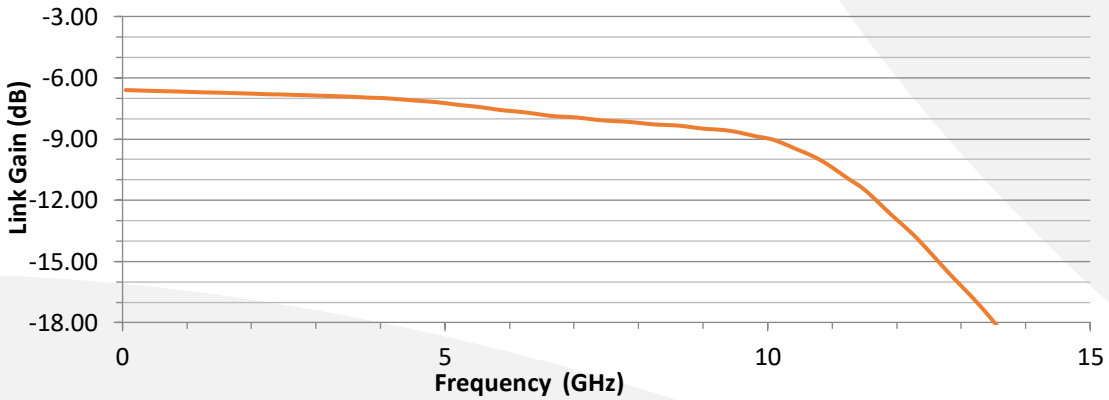
Operating Temperature (standard)	-30 °C to +60 °C
Storage Temperature	-60 °C to +90 °C
Fiber Type	SMF-28 (PANDA for PM version)
RF Input Connector	K connector
Power Supply Requirements	AC 110-240V (+ 5 V DC Available Upon Request)
Remote Control	USB 2.0 software included
Alarm	LED bias mode status
Dimensions	280 mm x 150 mm x 45 mm

MECHANICAL DRAWING



LTR-12

TYPICAL S21 AND S11 BANDWIDTH



RELATED RF DRIVER

- **MD-12-DC**

The Optilab MD-12-DC Modulator Driver (MD) is a 12 GHz Bandwidth RF Amplifier in a compact and user-friendly module that provides a high-quality, single-ended voltage to drive an LTR-12.