

LT-20/40



20 GHz/40 GHz Lightwave Transmitter, Standard

The Optilab LT-20/40 is a 20 GHz/40 GHz bandwidth lightwave transmitter module output designed for RF over fiber, antenna remoting and broadband RF transmission applications using single mode optical fiber. This convenient, cost-effective module uses a low noise, narrow linewidth, 1550 nm distributed feedback (DFB) laser diode as Continuous Wave (CW) light source. A broadband Lithium Niobate (LiNbO₃) optical modulator is employed to provide the linear modulation capability that exceeds 20 GHz in its modulation bandwidth, and the externally modulated transmitter design provides a high spur-free dynamic range and high input intercept point performances. The low drive series of transmitters offers superior v_{π} values for increased E/O conversion efficiency. The LT-20/40 can be utilized for digital transmission when driven by a wideband modulator driver, and can be paired with the LR-30 /45series of 30 GHz/ 45 GHz receivers for a high-speed RF over Fiber Link.

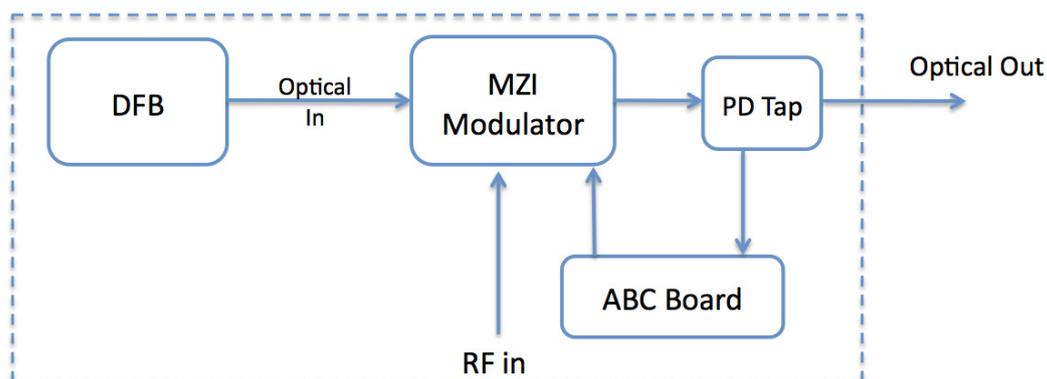
Features

- RFoF Transmitter with 20 GHz/40 GHz Bandwidth
- High Dynamic Range with low RIN Source Laser
- Highly Linear for Analog Transmission
- RS-232 Monitor Interface
- Low drive voltage and PM versions are available
- Housing limits RF and thermal interference

Applications

- Wideband RF Transmission over Fiber
- RF/IF Signal Distribution
- Satcom microwave antenna signal distribution
- EW Systems
- Broadband delay-line and signal processing
- Radar system calibration phased
- Phased and interferometric array antenna

Functional Diagram



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OPTIONS

LT-20/40-XX-YY

XX **LD:** Low Drive Voltage
PM: Polarization Maintaining

TECHNICAL INFO

For technical info and support:

sales@optilab.com

www.optilab.com

WEB ORDER

To order, please visit OEQuest.com.



Optilab Advantage

- Innovation
- Performance
- Quality
- Customization
- Warranty

General Specifications	
DFB Laser Wavelength	1550 nm ± 10 nm, Can be ordered w/ ITU wavelength
Operational Bandwidth	0.01 to 20 GHz/40 GHz
Optical Output Level	+6 dBm typ.
Optical Return Loss	50 dB typ.
Linewidth (FWHM)	1 MHz typical
DFB Side Mode Suppression Ratio	50 dB typ.
Drive Voltage (V_{π}) for LT-20	7 V typ. @ 10 GHz; 5.5 V typ. @ 10 GHz (LD version)
Drive Voltage (V_{π}) for LT-40	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)
Laser Relative Intensity Noise (RIN)	-145 dB/Hz max.
Impedance	50 Ω
Frequency Response Flatness	±0.5 dB in any 1 GHz bandwidth
Input Damage Level	26 dBm max.
Link Performance with PD-30	
SFDR	113 dB Hz ^{2/3}
Link Loss	-20 dB @ 10 dBm optical
Mechanical Specifications	
Operating Temperature	-30 °C to +60 °C
Storage Temperature	-60 °C to +85 °C
Power Supply Requirements	+12 V DC, 2 A max.
Optical Connector	FC/APC, other optional
Fiber Type	PANDA input, SMF-28 output; PANDA input/output (PM version)
RF Input Connector	K Connector Female, 50 Ω
DC Connector	DB-15
Local Alarm	LED: Optional Input Power
Remote Alarms	RS-232 Interface

Typical S21 Bandwidth

