LTB-1310-20

DEVICE

20 GHz, 1310 nm Lightwave Transmitter Board for Low Noise Photonics Link

OVERVIEW

The Optilab LTB-1310-20 is a 1310 nm low noise lightwave transmitter board designed for analog photonics applications from DC to 20 GHz. This unit includes a 18 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 tunable laser, narrow linewidth laser, making it a versatile solution for analog photonics system integration. The LTB-1310-20 requires a single ±5 Volt DC power supply for operation. Contact Optilab for more information.

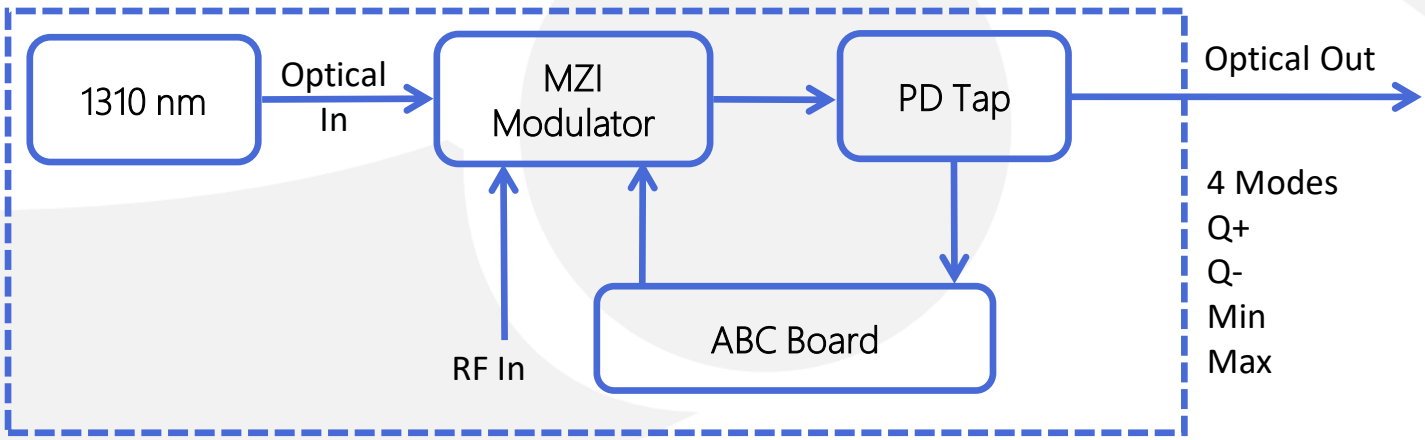
FEATURES

- 1310 nm Wavelength Range, 1270 nm, 1290 nm, 1330 nm Available
- 18 GHz S21 Bandwidth Modulator
- Automatic Bias Control w/4 Mode Operation
- Internal DFB Laser up to 100 mW
- Zero Dispersion Operation
- Low Drive Voltage
- PM Output Available
- High Extinction Ratio (> 30 dB)

USE IN

- Sub-nanosecond Pulse Generation
- Optical Communications to 25 Gb/s
- 20 GHz RFoF Transmission
- Analog Photonics
- RF/IF Signal Distribution
- Satellite Communication

FUNCTION DIAGRAM



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SPECIFICATIONS

GENERAL

Operating Wavelength	1270 nm to 1330 nm
Laser Source	1310 nm Standard, 1270 nm, 1290 nm, 1330 nm Available;
Laser Power Level	40 mW, 60 mW, 80 mW, 100mW
RF Return Loss	> 15 dB @ 10 GHz; > 10 dB @ 20 GHz
Impedance	50 Ω
Operating Frequency Range	DC to 20 GHz
Input RF Voltage	27 dBm max.
Optical Output Level	7 dBm, 9 dBm, 10 dBm Available
S21 Bandwidth	3 dB, 2 GHz to 18 GHz typ.
Modulator Bias Mode	4 Automatic Bias Control Modes, Selectable by Software
Extinction Ratio	25 dB typ.; > 30 dB (HE Versions)
Modulator Voltage V_{PI}	4 V typ. @ 100 KHz; 6 V typ. @ 10 GHz

MECHANICAL

Operating Temperature (Standard)	-30 °C to +60 °C
Storage Temperature	-60 °C to +90 °C
Power Supply Requirements	± 5 V DC, 1 A typ.
Optical Connector	FC/APC
Fiber Type	SMF-28 Output; PANDA Output (PM Version)
Alignment	Slow Axis
RF Input Connector	K Connector
Power Connector	4 Pin Molex
Remote Control	USB 2.0 Software Included
Alarm	LED Bias Mode Status
Dimensions	206 mm x 102.4 mm x 31.5 mm

BIAS CONTROL MODE

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

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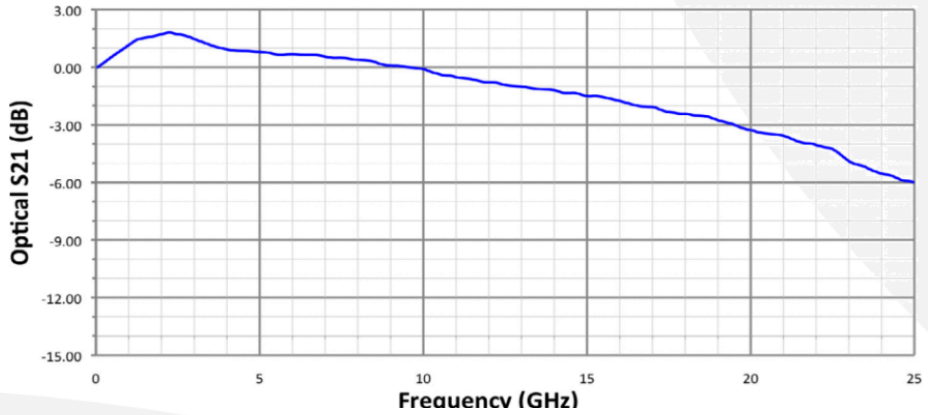
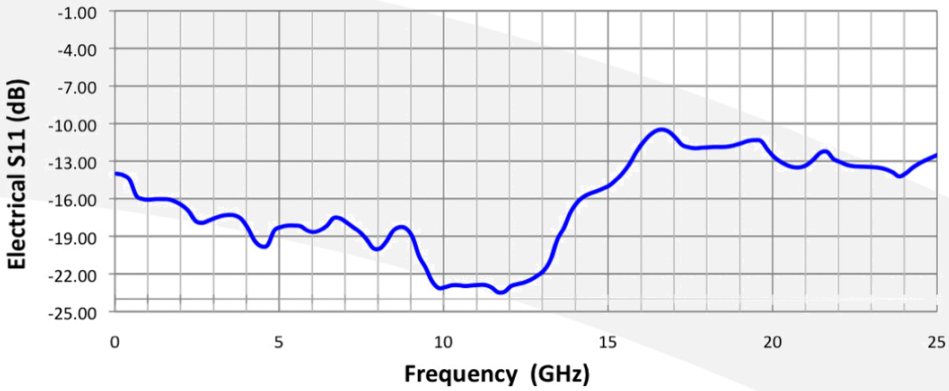
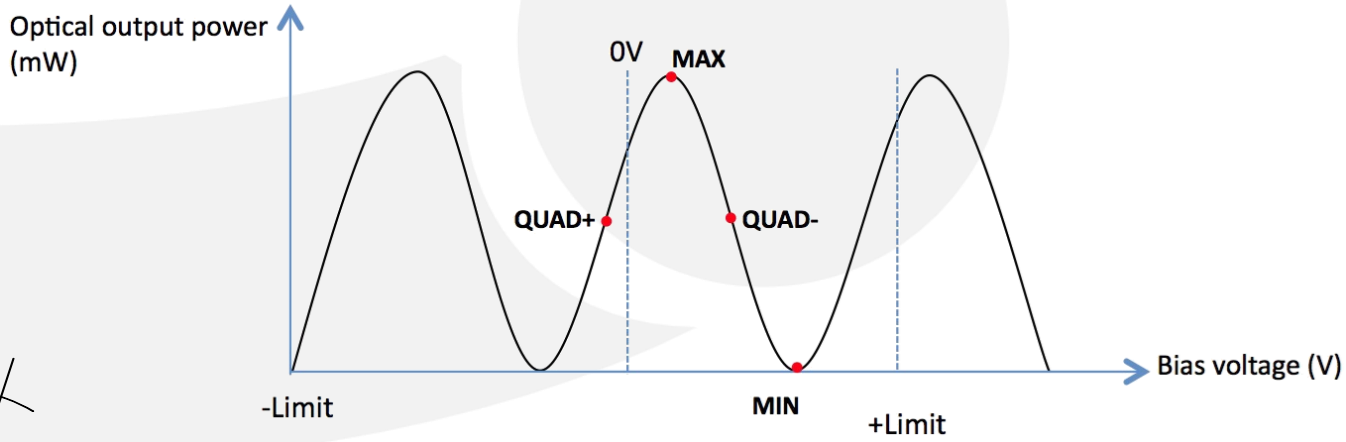
TYPICAL S21 AND S11 BANDWIDTH





BIAS SETTING MODES FOR LTB

Based on a sophisticated phase measurement of this small dither signal, LTB-1310-20 provides four selectable operating modes: quadrature (Quad +), inverted quadrature (Quad -), minimum (Min), and maximum (Max) points.



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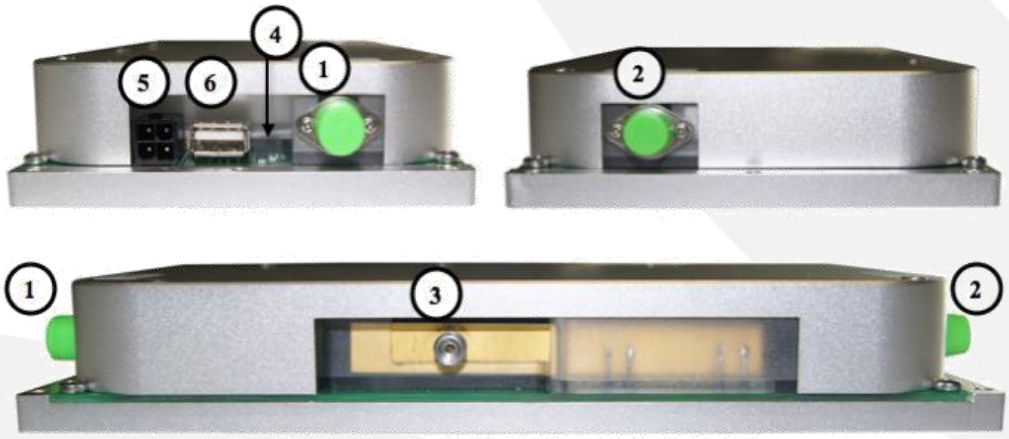
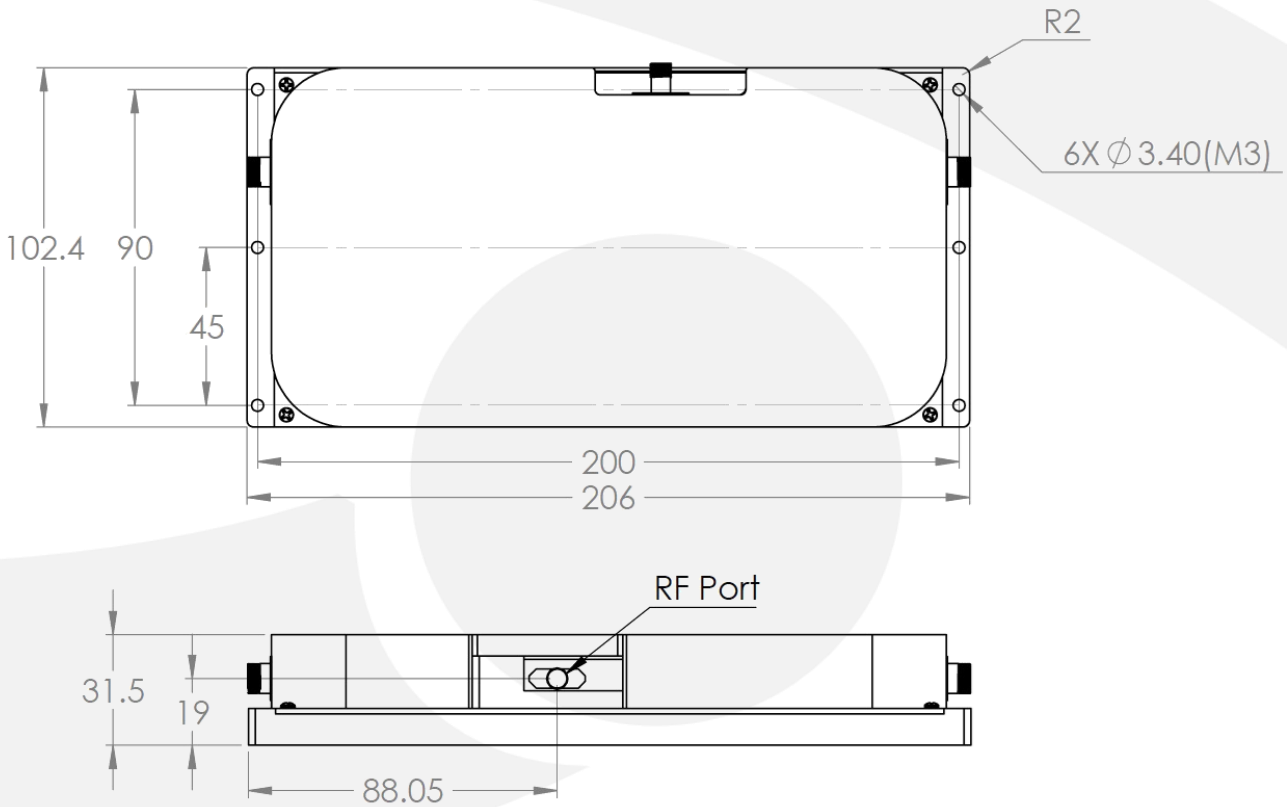
DETAILED LAYOUT

No.	Feature
1	Optical Input Port
2	Optical Output Port
3	RF Input Port
4	LED Indicators
5	DC Connection Port
6	USB Control and Monitor Port



MECHANICAL DRAWING



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PRECISION POWER SUPPLY

FRONT

BACK

General Specifications	
Parameters	Specifications
Input AC Voltage (VAC)	85-240
Input AC Current (A)	≤0.5
Input AC Frequency (HZ)	50-60
Transfer Efficiency	≤85%
DC Output Current (A)	4 A max.
DC Output Voltage (V)	±5 V
DC Voltage Ripple	≤2%
DC Connectors	Molex 4 Pin
Communication Connectors	DB-9 and USB 2.0
Dimensions (mm)	153x115x33

ORDERING OPTIONS

LTB-XXXX-20-YY

XXXX Wavelength: 1270 nm, 1290 nm, 1310 nm, 1330 nm

YY PM: Polarization Maintaining
HE: High Extinction Ratio