

# LRC-23



## DEVICE

## Lightwave Receiver Module, 23GHz

## OVERVIEW

The Optilab LRC-23 is a 23 GHz Lightwave Receiver module designed for RF over Fiber, antenna remoting, and broadband RF transmission applications using single mode optical. The LRC-23 can accept input power of up to 35 mW. The LRC-23 utilizes a high input power, low distortion PIN photodiode that provides optical to RF conversion out to the frequency range beyond 20 GHz. This cost-effective receiver module can provide users with status monitoring through OLED status display that communicates to a host computer over an RS-232 I/O interface via a standard USB 2.0 port. When the LRC-23 RF over fiber receiver module is linked with the LTC series of RF over fiber transmitter modules, the combination provides an excellent solution for ultra-wideband RF to fiber conversion applications. Contact Optilab for more information.

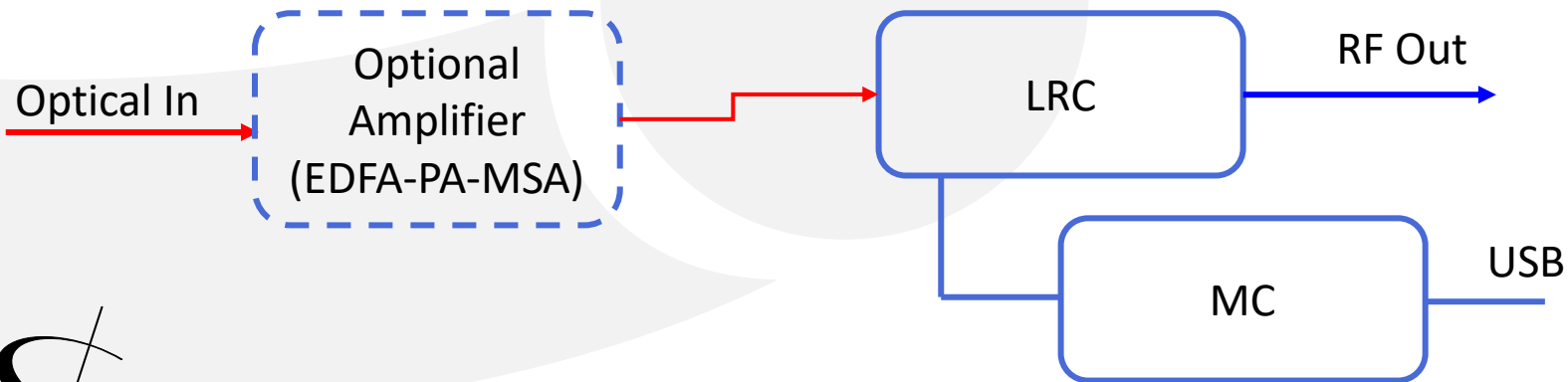
## FEATURES

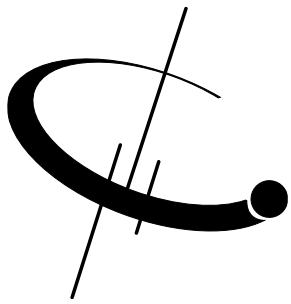
- Bandwidth 60 KHz to 23 GHz
- High Dynamic Range
- High Input Power Handling Capacity of 35 mW
- AC 110V to 240V Power
- No TIA for Intrinsic Phase Linearity
- OLED Status Display
- Highly Linear for Analog Signals Transmission

## USE IN

- EW Systems
- Broadband Delay-line and Signal Processing
- LIDAR Receivers
- Phased and Interferometric Array Antenna
- Wideband RF Transmission over Fiber
- RF/IF Signal Distribution
- Satcom Microwave Antenna Signal Distribution
- 5G Antenna to Base Station

## FUNCTIONAL DIAGRAM





# LRC-23

## SPECIFICATIONS

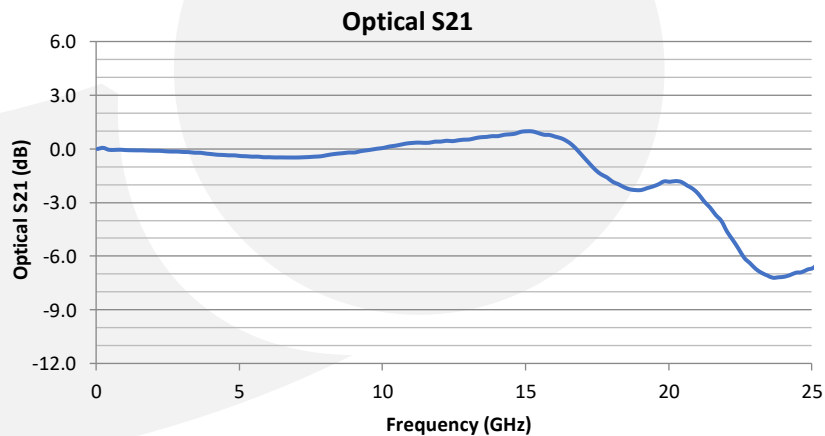
Photodiode Wavelength Range	1260 nm to 1600 nm
Operational Bandwidth	60 KHz to 23 GHz
Optical Input Level	35 mW max.
Responsivity	0.85 A/W @ 1550 nm typ., 0.90 A/W @ 1310 nm typ., 0.40 A/W @ 850 nm typ.
S21 3 dB Bandwidth	19 GHz min., 21 GHz typ.
S22 Characteristics	< -10 dB @ 20 GHz
Optical Return Loss	-30.00 dB typ.
2 <sup>nd</sup> Harmonics Distortion	-70.00 dBc max.
3 <sup>rd</sup> Harmonics Distortion	-75.0 dBc max.
Optical PDL @ 1550 nm	0.05 dB max.
RF Impedance	50 Ω
Ripple over Bandwidth	± 1.0 dB max.

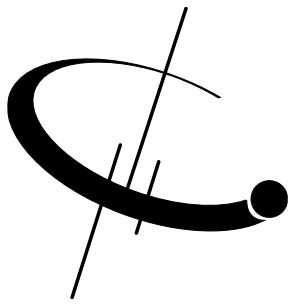
## GENERAL

Operating Temperature (standard)	-10°C to +50°C
Storage Temperature	-20°C to +80°C
Power Supply Requirements	AC 110-240V (+ 5 V DC Available Upon Request)
Optical Connectors	FC/APC
RF Input Connectors	SMA Connector Female, 50 Ω
Local Alarm	OLED Display
Remote Alarm	RS232 Interface (standard) via USB
Dimensions	280mm x 90mm x 340mm

## MECHANICAL

## TYPICAL S21 BANDWIDTH





# LRC-23

## ORDERING OPTIONS

### LRC-23-XX

**XX** DC: DC coupled  
AC: AC coupled

## RELATED TRANSMITTER

- **LTC-20**



The Optilab LTC-20 is a high-performance Lightwave Transmitter Modulator that can be used with LRC-23 for RFoF conversion application.

## RELATED AMPLIFIER

- **EDFA-PA-MSA**



The Optilab EDFA-PA-MSA is a high gain pre-amplifier module that can be used for amplifying the LRC-23's receiving signal.

## AMPLIFIER INCLUDED VERSION

- **LRC-23-PA**



The Optilab LRC-23-PA is a 23 GHz Lightwave Receiver module with integrated pre amplified EDFA, designed for RF over Fiber application

