

12 GHz PhotoReceiver, Module



SK-PR-12-B-M

The Optilab SK-PR-12-B-M is a 12 GHz bandwidth amplified PIN photodiode receiver module, designed for RF over fiber, antenna remoting, and broadband RF signals transmission applications using single mode optical fiber. The SK-PR-12-B-M utilizes a wide bandwidth PIN photodiode plus a linear Trans-Impedance Amplifier (TIA) that provides optical to RF conversion to the frequency range beyond 12 GHz. The SK-PR-12-B-M is a highly linear O/E converter that can be used for every type of analog and digital signal, with remote status monitoring through an RS-485 interface. When the SK-PR-12-B-M RF over fiber receiver module is linked with the LTA-20-M lightwave transmitter module, the combination provides an excellent solution for cost-effective 12 GHz RF over fiber applications.

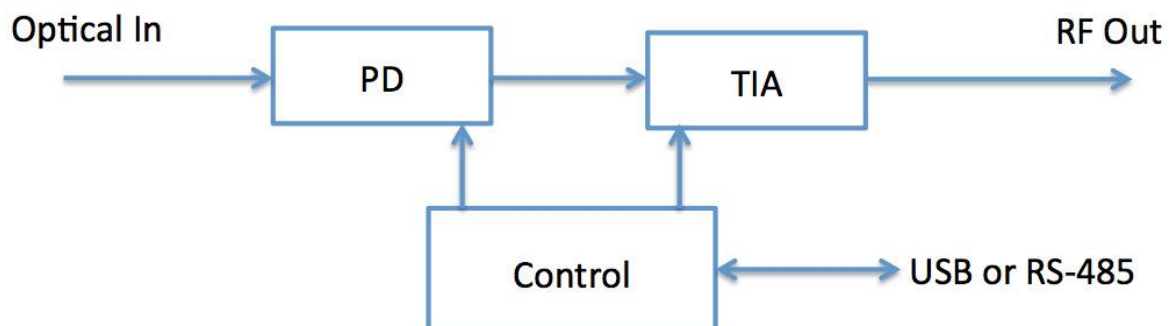
Features

- RFoF Receiver, 0.01 GHz to 12 GHz
- Highly Linear for analog transmission
- Linear TIA Gain of 500
- Remote monitor through USB 2.0 or RS-485
- Housing designed for RF shielding
- Labview interface

Applications

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

Functional Diagram

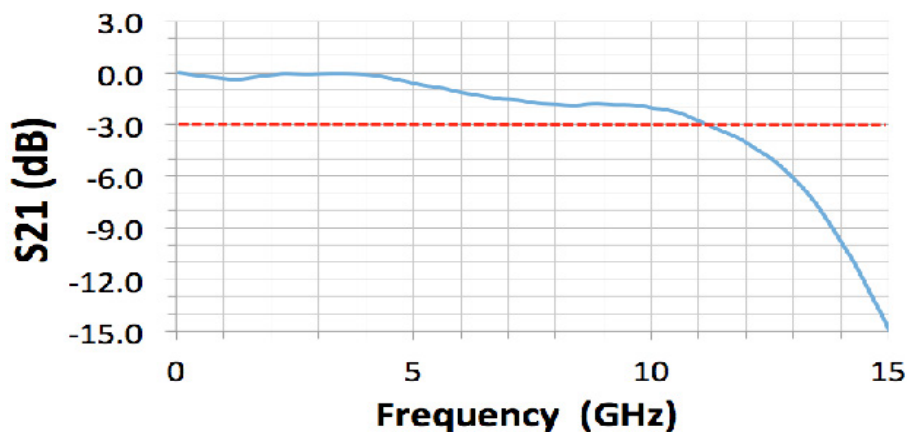


General Specifications	
Photodiode Wavelength Range	1250 nm to 1650 nm
Operational Bandwidth	0.01 GHz to 12 GHz
Optical Input Level	+3 dBm max.
Repsonsitivity	0.85 A/W @ 1550 nm typ.
Trans-Impedance Gain	500 typ.
S21 3 dB Bandwidth	12 GHz typ.
S22 Characteristics	< -10 dB to 10 GHz typ.
Optical Return Loss	-30.00 dB typ.
2nd Harmonics Distortion	-60.0 dBc max.
3rd Harmonics Distortion	-70.0 dBc max.
Optical PDL @ 1550 nm	0.05 dB typ., 0.1dB max.
Output Coupling	AC Coupled
RF Impedence	50 Ω
Ripple over Bandwidth	< \pm 1.0 dB

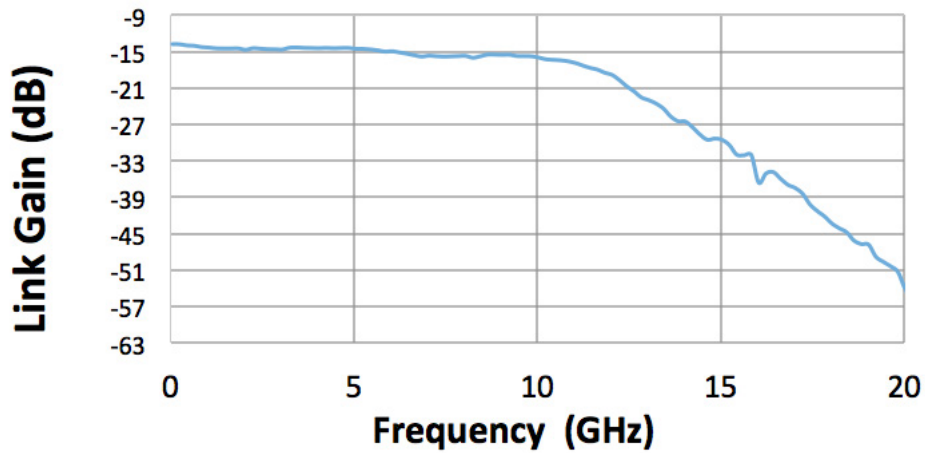
Mechanical Specifications	
Operating Temperature	-20° C to +70° C
Storage Temperature	-55° C to +85° C
Power Supply Requirements	\pm 5 V DC, 1 mA max.
Optical Connector	FC/APC
RF Input Connector	K Connector Female, 50 Ω
DC Connector	USB 2.0
Local Alarm	LED: Optional Input Power
Remote Alarms	RS-485 Interface (Optional)
Dimensions	90 mm x 80 mm x 22 mm
Accessories Included	110 V - 240 V AC Adaptor & Cable
Housing	Precision Mach. Anodized Aluminum

e

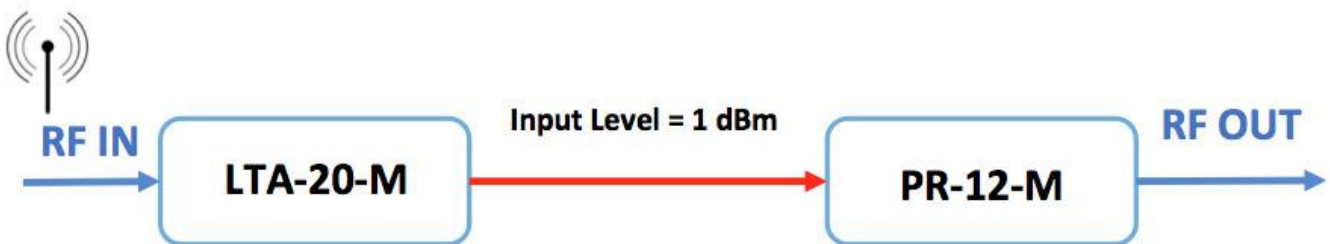
Typical S21 Response



Link Gain

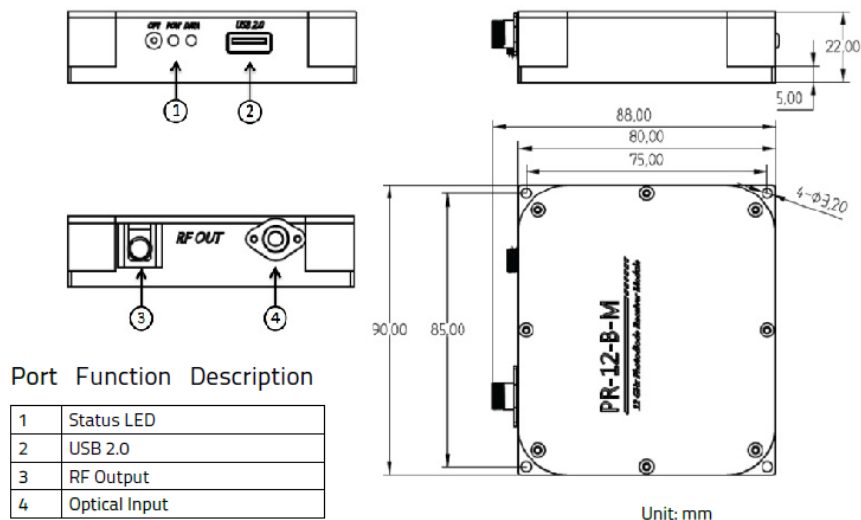


Test Conditions & Link Gain Measurements



12 GHz PhotoReceiver, Module

Mechanical Drawing



Port Function Description

1	Status LED
2	USB 2.0
3	RF Output
4	Optical Input

Unit: mm

Remote Labview Interface

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

