



# PR-12-B-M



## DEVICE

# 10 GHz High-Gain Photo Receiver

## OVERVIEW

The Optilab 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 PR-12-B-M utilizes a wide bandwidth PIN photodiode plus a limiting Trans-Impedance Amplifier (TIA) that provides optical to RF conversion to the frequency range beyond 12 GHz. When the 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.

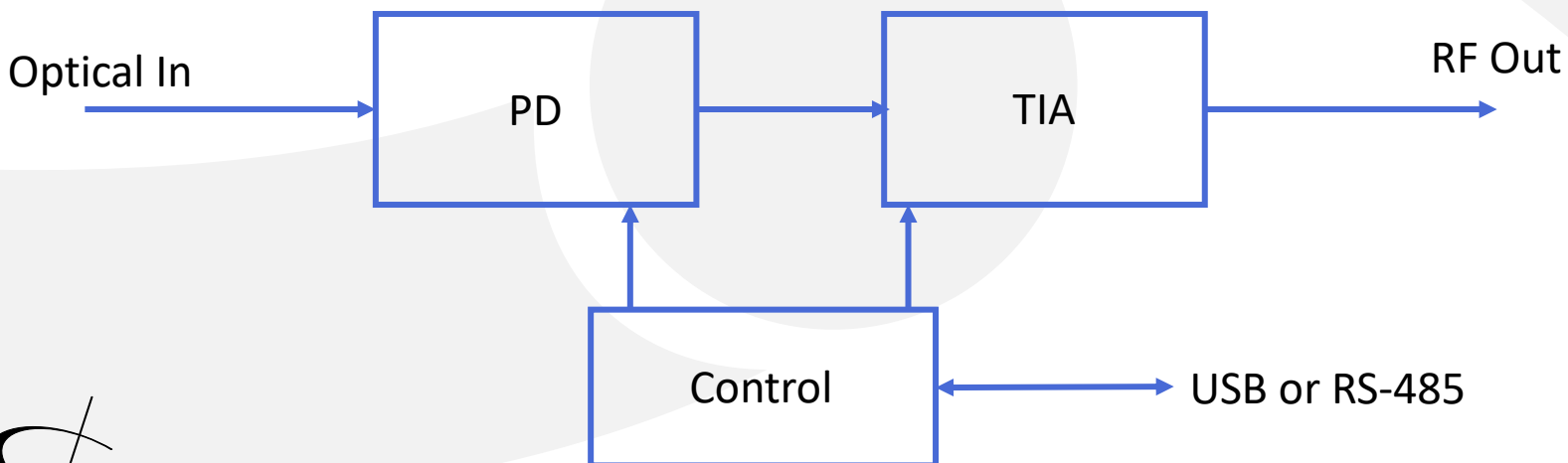
## FEATURES

- RFoF Receiver, 0.01 GHz to 12 GHz
- Remote monitor through USB 2.0 or RS-485
- Housing designed for RF shielding

## USE IN

- 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

## FUNCTION DIAGRAM





# PR-12-B-M

## SPECIFICATIONS

Photodiode Wavelength Range	1250 nm to 1650 nm
Operational Bandwidth	0.01 GHz to 12 GHz
Optical Input Level	+3 dBm Maximum
Responsivity	0.85 A/W @ 1550 nm Typical
Conversion Gain	300 V/W typ.
Bandwidth	12 GHz typ.
S22 Characteristics	<-10 dB to 10 GHz typ.
Optical Return Loss	-30.0 dB typ.
2 <sup>nd</sup> Harmonic Distortion	-60.0 dBc max.
3 <sup>rd</sup> Harmonic Distortion	-70.0 dBc max.
Optical PDL @ 1550 nm	0.05 dB typ., 0.1 dB max.
Output Coupling	AC Coupled
RF Impedance	50 Ω
Ripple Over Bandwidth	± 1.0 dB
Noise Equivalent Power (NEP)	11 pW/√Hz @ 1 GHz

## GENERAL

Operating Temperature	-20°C to +70 °C
Storage Temperature	-55 °C to +85 °C
Power Supply Requirements	±5 V DC, 2 A 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-232 Interface (optional)
Dimensions	90mm x 80mm x 22mm
Included Accessories	110 V - 240 V AC Adaptor & Cable
Housing	Precision Mach. Anodized Aluminum

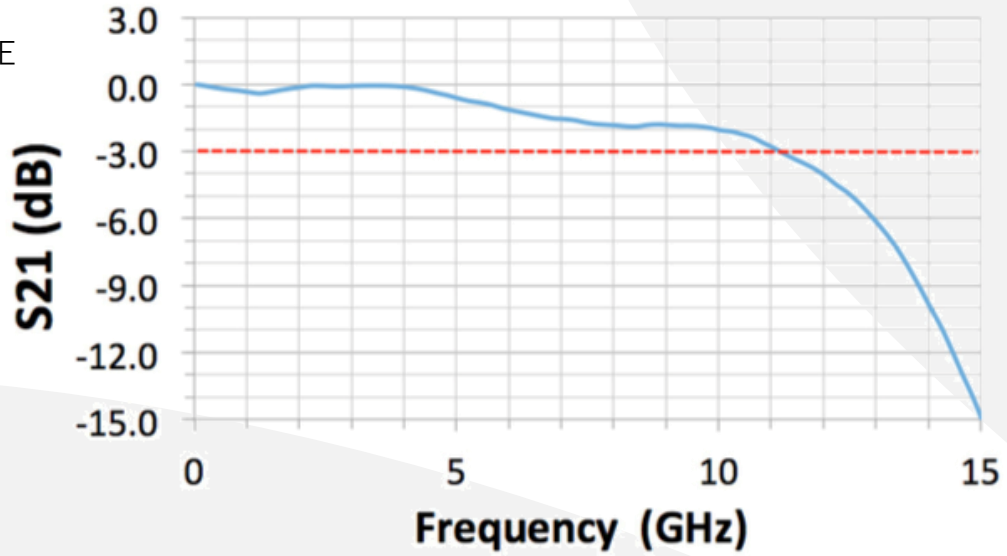
## MECHANICAL



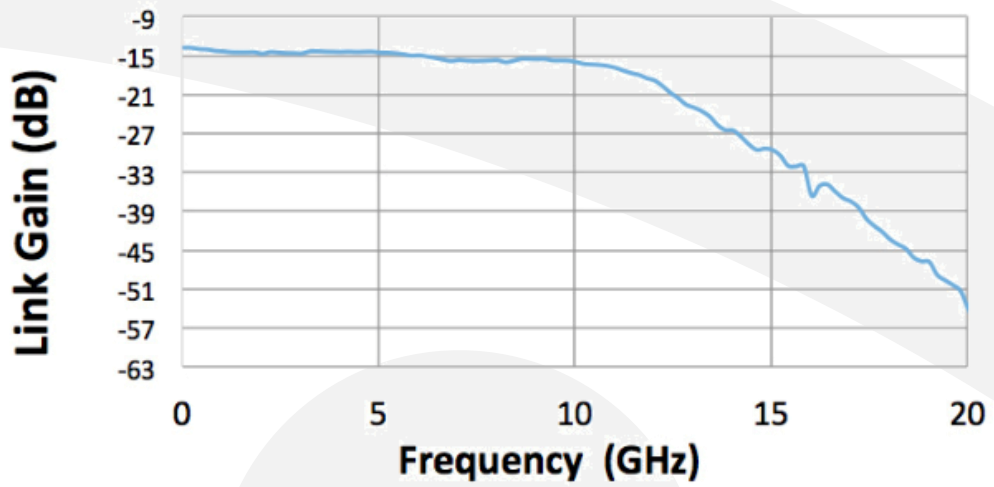


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TYPICAL S21 RESPONSE



LINK GAIN



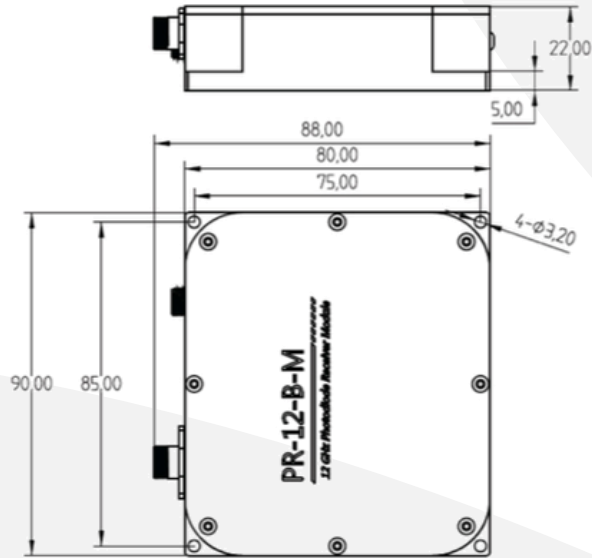
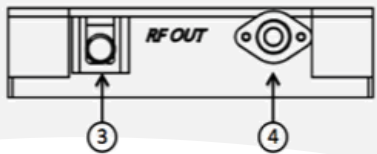
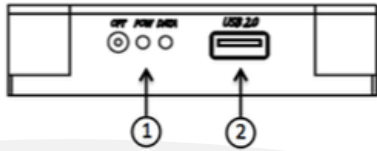
TEST CONDITIONS & LINK GAIN MEASUREMENTS





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## MECHANICAL DRAWING



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

Unit: mm

