



PD-30B-M



DEVICE

30 GHz Photodiode Module, Low Responsivity

OVERVIEW

The Optilab PD-30B-M is a 30 GHz photodiode module designed for RF over Fiber, antenna remoting, and broadband RF transmission applications using single mode optical. The PD-30B-M can accept input power of up to 20 mW. The PD-30B-M utilizes a high input power, low distortion PIN photodiode that provides optical to RF conversion out to the frequency range beyond 20 GHz. This compact, cost-effective receiver module can provide users with status monitoring through the use of an on-board processor that communicates to a host computer over an RS-232 I/O interface via a standard USB 2.0 port. When the PD-30B-M RF over fiber receiver module is linked with the LT 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.

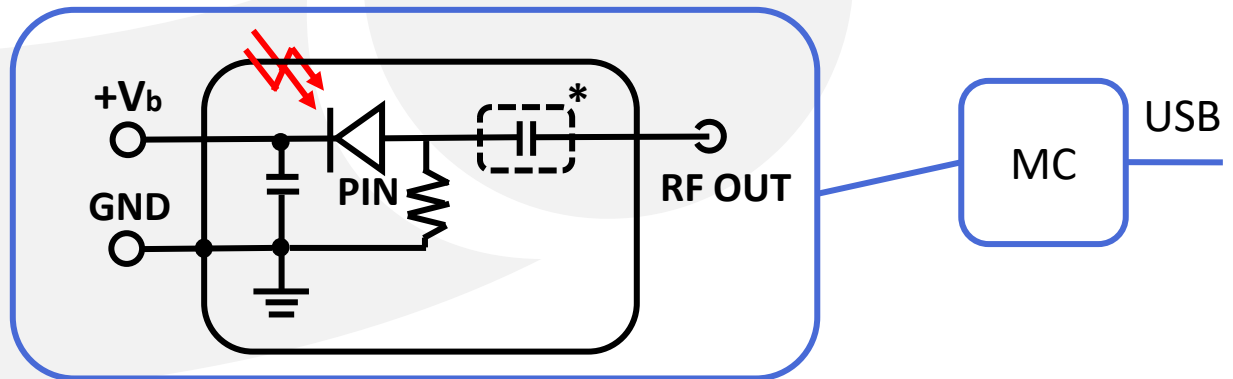
FEATURES

- Ultra-wide Bandwidth up to 30 GHz
- High Dynamic Range
- High Input Power Handling Capacity of 20 mW
- Highly Linear for Analog Signals Transmission
- No TIA for Intrinsic Phase Linearity
- Status Monitoring: RS-232
- Power and Remote Monitoring via USB Port

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

FUNCTIONAL DIAGRAM





PD-30B-M

SPECIFICATIONS

Optimized Operating Wavelength	1260 nm to 1610 nm
Useful Operating Wavelength	850 nm to 1650 nm
Optical Input Level	10 mW average, 20 mW peak
S21 3 dB Bandwidth	28 GHz min., 30 GHz typ.
S22 Characteristics	< -10 dB @ 20 GHz
Low Frequency Cut Off	60 KHz; DC for DC version
Responsivity	0.70 A/W @ 1550 nm typ., 0.65 A/W @ 1550 nm min.
Dark Current @ 25°C, 5 V	10 nA typ., 100 nA max.
Optical Return Loss	-30 dB typ.
Optical PDL @ 1550	0.05 dB max.
Optical Fiber	SMF-28
Bias Voltage	5 V typ.
Impedance	50Ω
Coupling	AC-Coupled; DC Coupled is available

GENERAL

ANALOG APPLICATIONS

Ripple over any 1 GHz	± 1.0 dB max.
Group Delay	< 7.0 ps
2 nd Harmonics Distortion	-70.0 dBc max.
3 rd Harmonics Distortion	-75.0 dBc max.

LINK PERFORMANCE WITH LT-20

SFDR	113 dB Hz _{2/3}
Link Loss	-25 dB @ 10 dBm optical input

MECHANICAL

Operating Temperature (standard)	-10°C to +60°C
Storage Temperature	-55°C to +75°C
Operating Humidity	85%
Power Supply Requirements	+5 V DC, 500 mA max.
Optical Connector	FC/APC, SC/APC Optional
RF Connector	SMA or K Connector Female, 50Ω
Local Alarm	LED: Optional Input Power
Remote Alarm	RS-485 Interface (standard) via USB
Dimensions	82mm x 60mm x 26.5mm
Accessories Included	110 V - 240 V AC USB Adaptor & Cable
Housing	Precision Mach. Anodized Aluminum

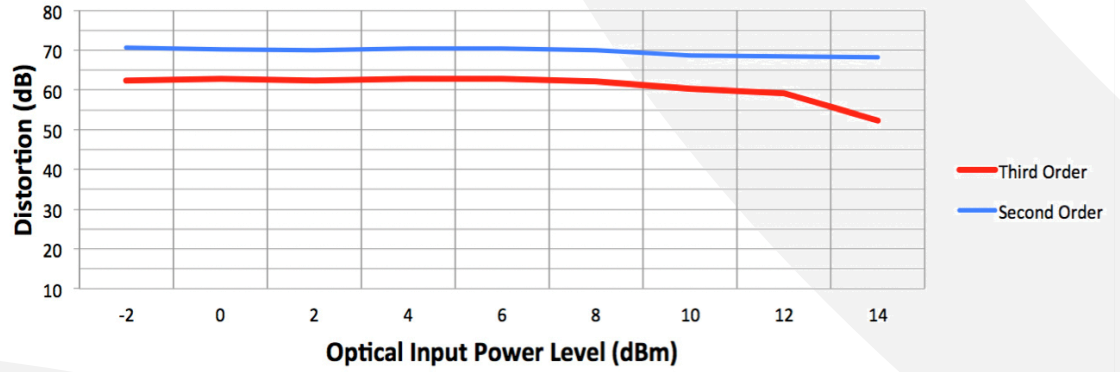




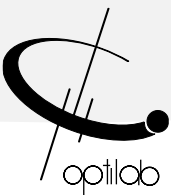
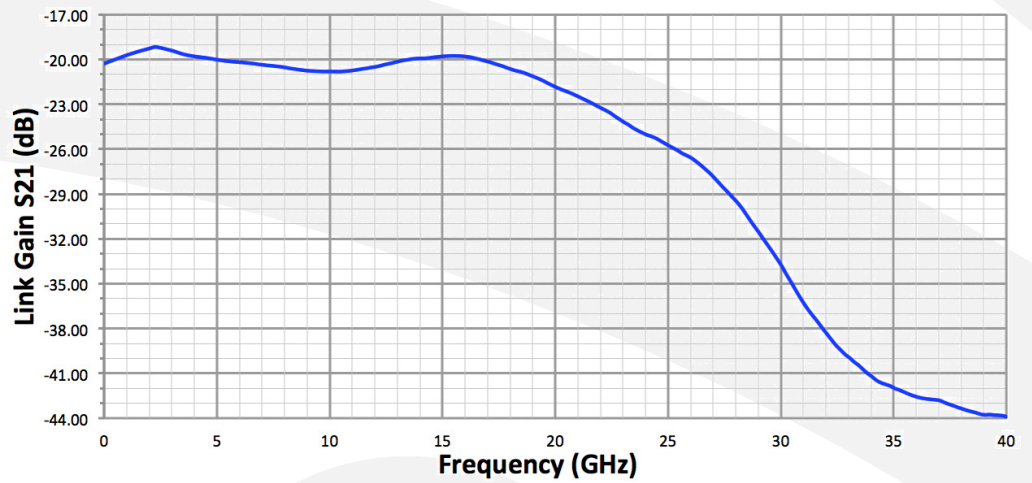
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CSO, CTB LINEARITY
MEASUREMENT

Second and Third Order Distortion vs. Optical Input



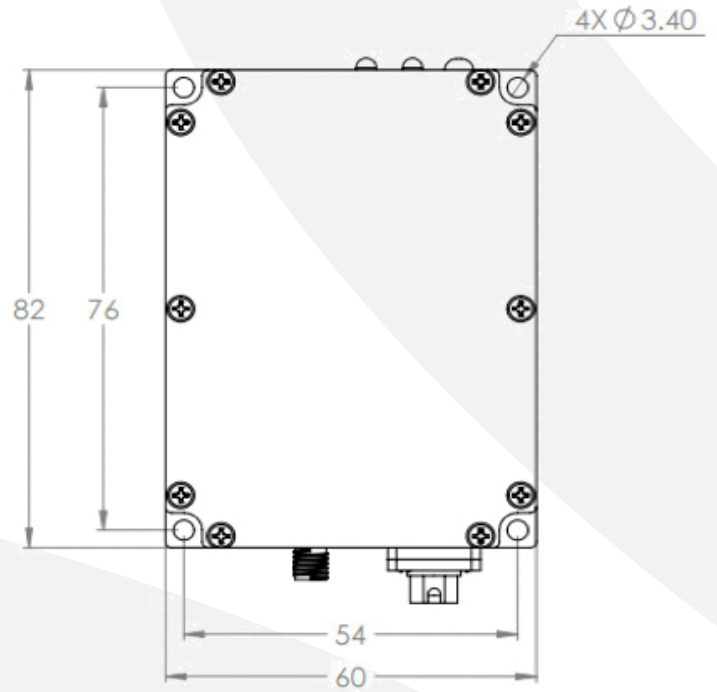
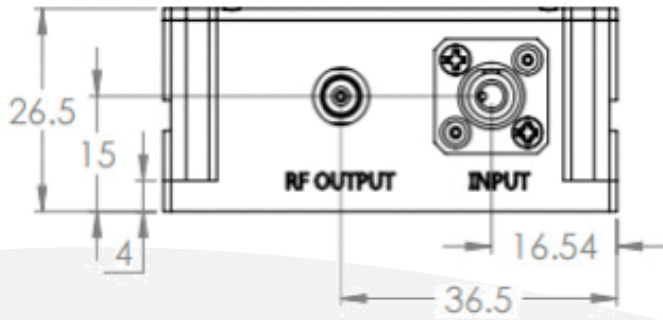
LINK GAIN WITH
IM-1550-20





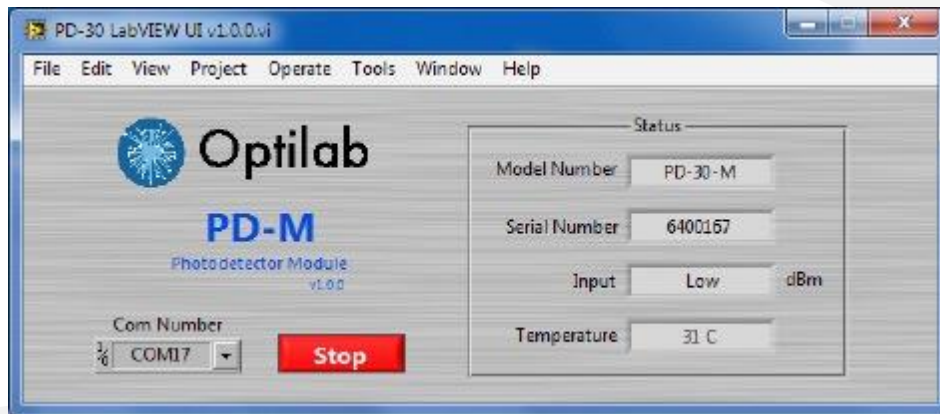
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MECHANICAL DRAWINGS



PD-30B-M MODULE POWER AND REMOTE INTERFACE

The PD-30B-M product series offers a turn-key modular solution with a USB 2.0 interface, which can be operated with the provided AC/DC adapter included with each PD-30B-M unit or through a PC for optical power monitoring. Contact Optilab for more information.



ORDERING OPTIONS

PD-30B-M-X-YY

X : K - K RF connector, A - SMA RF connector

YY : AC - AC coupled, DC - DC coupled

