

PD-30-MM-M



DEVICE

30 GHz Photodiode, Multimode Fiber, Module

OVERVIEW

The Optilab PD-30-MM-M is a 30 GHz bandwidth PIN receiver module designed for RF over Fiber, antenna remoting, and broadband RF transmission applications using multimode optical fiber. The PD-30-MM-M can accept input power of up to 10 mW, utilizing a high input power, low distortion PIN photodiode that provides optical to RF conversion out to the frequency range beyond 30 GHz. This compact, cost-effective receiver module can provide users with status monitoring using 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-30-MM-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 details.

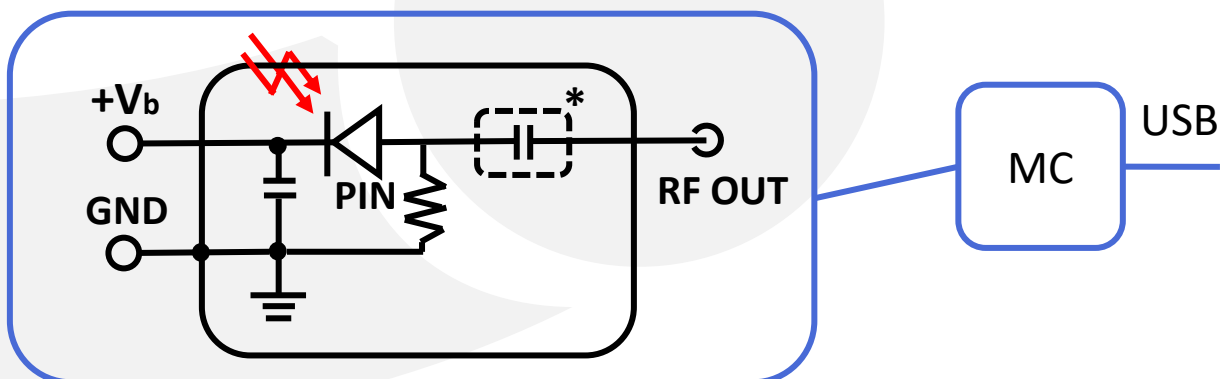
FEATURES

- Wide bandwidth 60 KHz to 30 GHz
- Highly Linear to 10 mW+ input power
- Operating Temp. from -10°C to +50°C
- Flat frequency response, +/- 1 dB
- Useful Spectral Range 850 nm – 1650 nm
- Power and Remote Monitoring via USB port

USE IN

- Analog RF over Fiber
- Coherent Lightwave Systems
- RZ and NRZ up to 30 Gb/s
- LIDAR Measurements
- Front-End O/E Converter for Test Instruments
- Satcom microwave antenna signal distribution

FUNCTIONAL DIAGRAM





PD-30-MM-M

SPECIFICATIONS

Optimized Operating Wavelength	1260 nm to 1610 nm
Useful Operating Wavelength	850 nm to 1650 nm
Optical Input Level	10 mW max.
S21 3 dB Bandwidth	28 GHz min., 30 GHz typ.
S22 Characteristics	< -10 dB @ 20 GHz
Responsivity	0.85 A/W @ 1550 nm typ., 0.4 A/W @ 850 nm typ.
Noise Equivalent Power (NEP)	45 pW/Hz ^{1/2} typ.
Conversion Gain	22 V/W @ 1550 nm typ.
Dark Current @ 23°C, 5 V	10 nA typ., 100 nA max.
Optical Return Loss	-30 dB typ.
Optical PDL @ 1550 nm	0.05 dB max.
Optical Fiber	MMF, 50/125 μm
Bias Voltage	5 V typ.
Impedance	50 Ω
Coupling	DC Coupled

GENERAL

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.

ANALOG

LINK PERFORMANCE W/ LT-20

SFDR	113 dB Hz ^{2/3}
Link Loss	-25 dB @ 10 dBm Optical Input

Operating Temperature	-10 °C to +50 °C (standard)
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 Connector Female, 50 Ω; K connector available upon request
Local Alarm	LED: Optional Input Power
Remote Alarm	RS-232 Interface (standard) via USB
Dimensions	82 mm x 60 mm x 26.5 mm
Accessories Included	110 V - 240 V AC USB Adaptor & Cable
Housing	Precision Mach. Anodized Aluminum

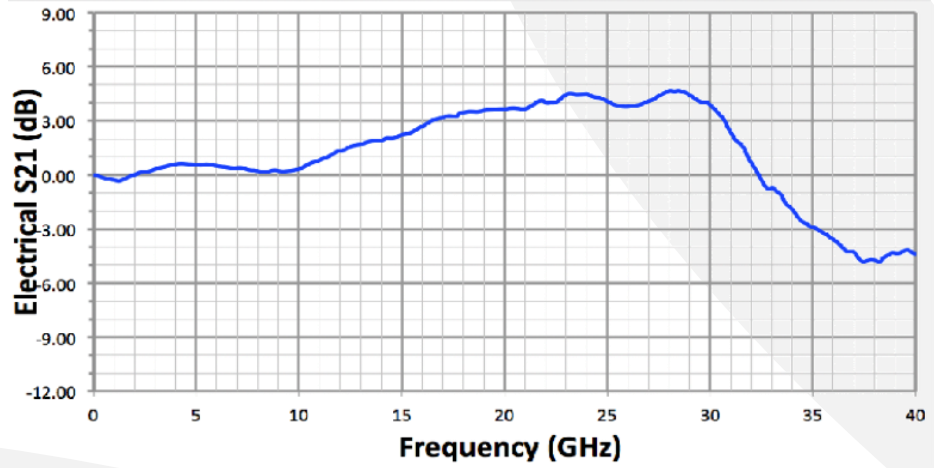
MECHANICAL





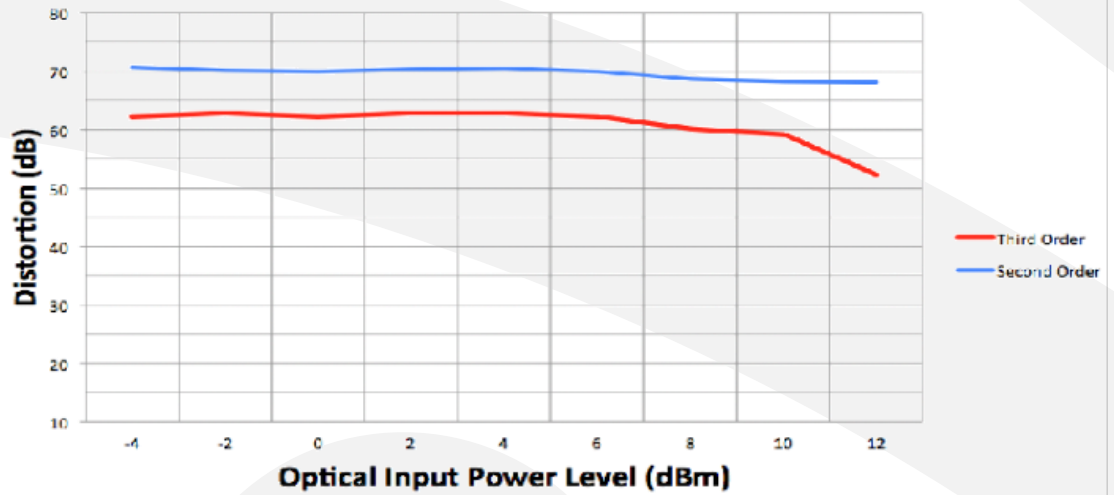
PD-30-MM-M

S21 O/E RESPONSE

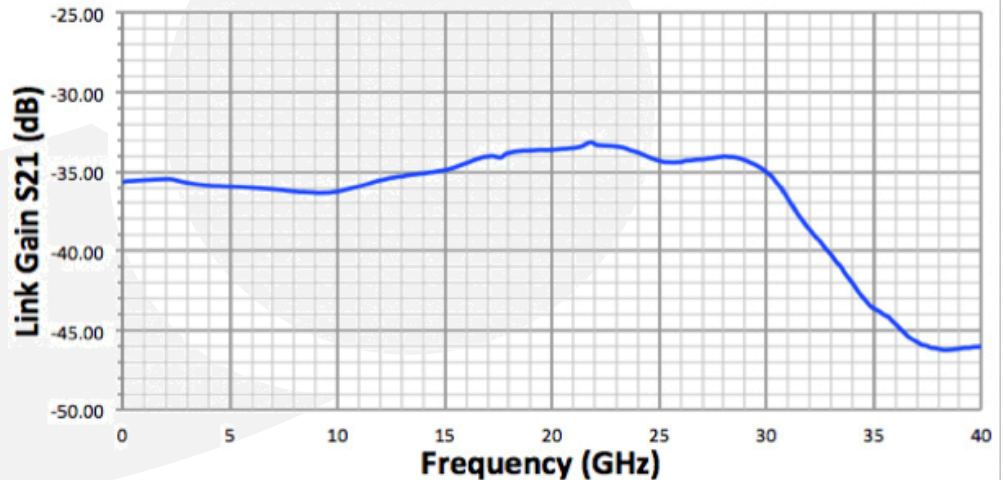


CSO, CTB LINEARITY MEASUREMENT

Second and Third Order Distortion vs. Optical Input



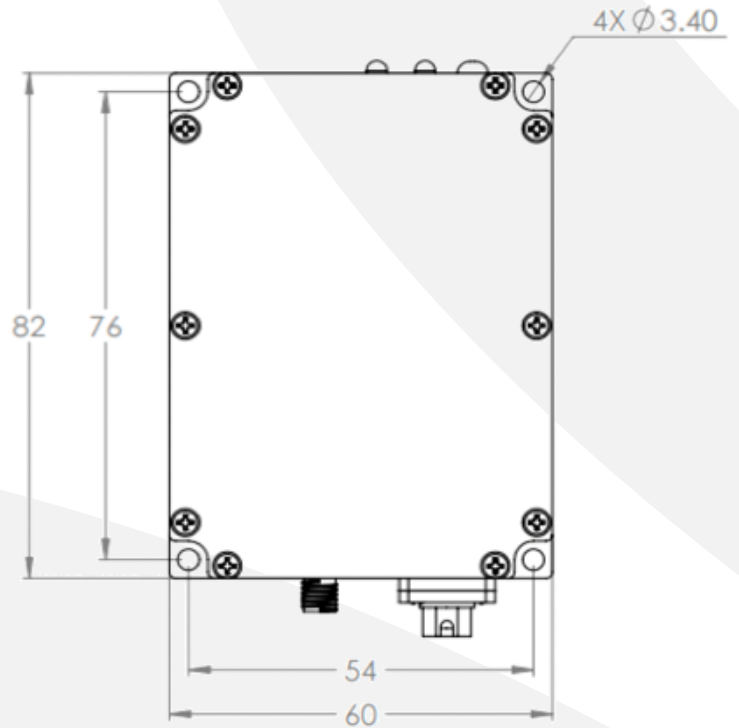
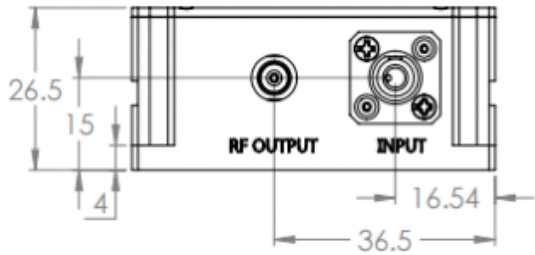
LINK GAIN W/
IM-1550-40-PM





PD-30-MM-M

MECHANICAL DRAWING



PD-30-MM-M MODULE HOUSING POWER AND INTERFACE

The PD-30-MM-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-40-MM-M unit or through a PC for optical power monitoring. Contact Optilab for more information.

