PD-20-M

DEVICE

20 GHz Photodiode Module

OVERVIEW

The Optilab PD-20-M is a 20 GHz photodiode module designed for RF over Fiber, antenna remoting, and broadband RF transmission applications using single mode optical. The PD-20-M can accept input power of up to 35 mW. The PD-20-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-20-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.

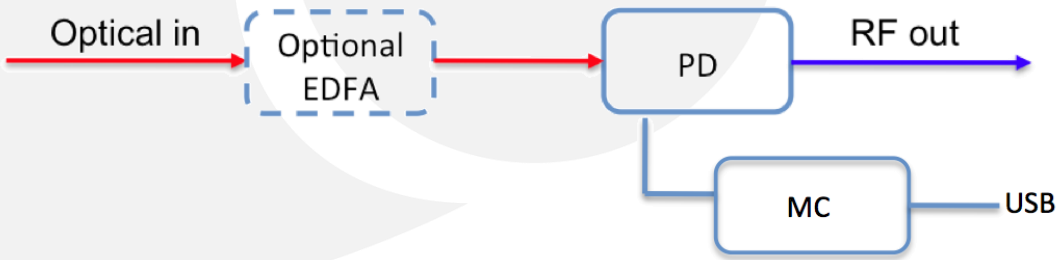
FEATURES

- Ultra-wide Bandwidth up to 20 GHz
- High Dynamic Range
- High Input Power Handling Capacity of 35 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-20-M

SPECIFICATIONS

GENERAL

Photodiode Wavelength Range	1260 nm to 1600 nm
Operational Bandwidth	60 KHz to 20 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	17 GHz min., 19 GHz typ.
S22 Characteristics	< -10 dB @ 20 GHz
Optical Return Loss	-30.00 dB typ.
2nd Harmonics Distortion	-70.00 dBc max.
3rd Harmonics Distortion	-75.0 dBc max.
Optical PDL @ 1550 nm	0.05 dB max.
Output Coupling	AC Coupled
RF Impedance	50 Ω
Ripple over Bandwidth	± 1.0 dB max.

LINK PERFORMANCE WITH LT-20

SFDR	113 dB $Hz_{2/3}$
Link Loss	-20 dB @ 10 dBm optical

MECHANICAL

Operating Temperature (standard)	-10°C to +50°C
Storage Temperature	-20°C to +80°C
Power Supply Requirements	+ 5 V DC, 500 mA max.
Optical Connectors	FC/APC, SC/APC Optional
RF Input Connectors	K Connector Female, 50 Ω
DC Connector	Plug-in typ.
Local Alarm	LED: Optional Input Power
Remote Alarm	RS-485 Interface (standard) via USB
Dimensions	82mm x 56mm x 25mm
Accessories Included	110 V – 240 V AC USB Adaptor & Cable
Housing	Precision Mach. Anodized Aluminum

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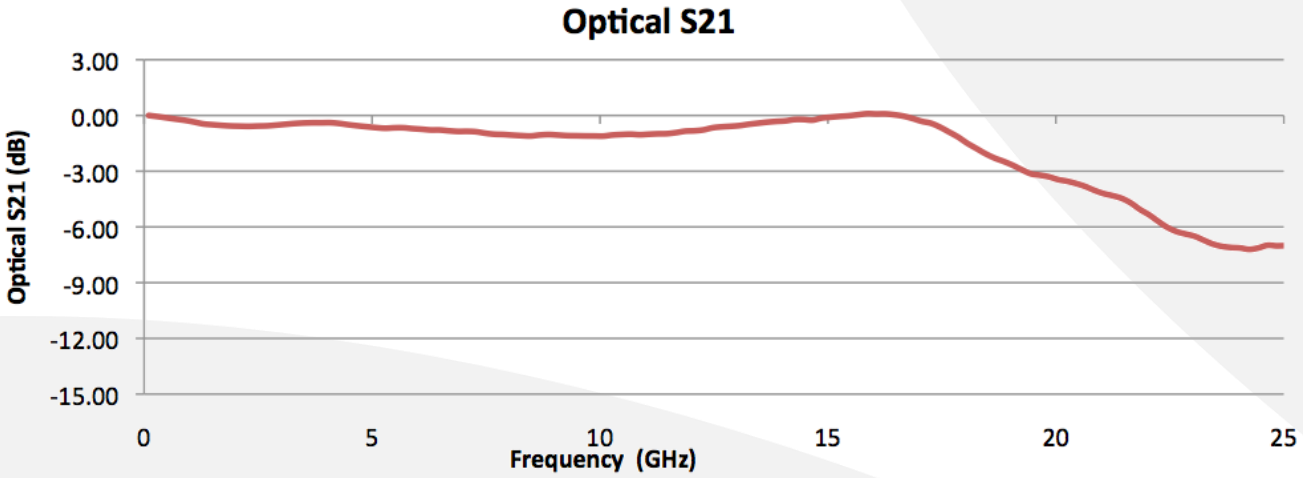
TYPICAL S21 BANDWIDTH



MECHANICAL DRAWING