

PD-20-HP-M



DEVICE

20 GHz Photodiode, High Input Power to 100 mW

OVERVIEW

The Optilab PD-20-HP-M is a 20 GHz highly linear photodiode module designed for RF over Fiber, antenna remoting, and broadband RF transmission applications using optical fiber. It can accept optical input power levels of up to 100 mW, with a linear operation up to 50 mW input level. With high input power, the PD-20-HP-M can be used to replace a TIA-based photoreceiver with a comparable RF output power. When the PD-20-HP-M RF over fiber receiver module is linked with the LTA series of transmitter modules, the combination provides an excellent solution for wideband RF to fiber conversion applications. Contact Optilab for more information.

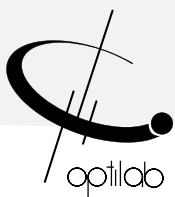
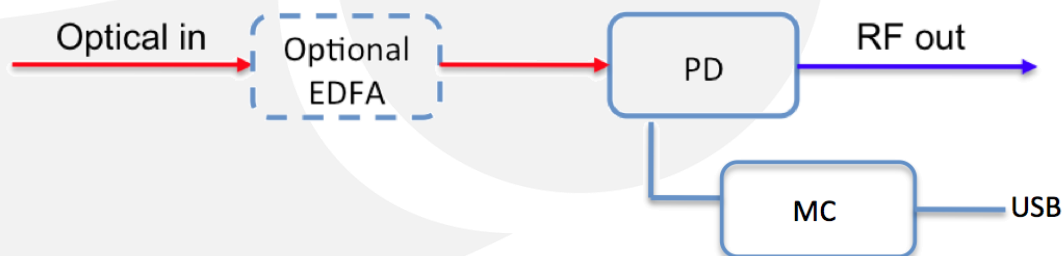
FEATURES

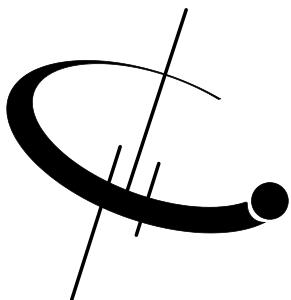
- Bandwidth up to 20 GHz
- High dynamic range
- High Input Power handling of 100 mW
- Linear Operation up to 50 mW Optical Input
- Link gain of -5 dB @ 10 GHz, @ 16 dBm input

USE IN

- Wideband RF transmission over fiber
- RF/IF signal distribution
- Satcom microwave antenna signal distribution
- Broadband delay-line and signal processing
- Phased and interferometric array antenna
- LIDAR receivers

FUNCTIONAL DIAGRAM





PD-20-HP-M

SPECIFICATIONS

GENERAL

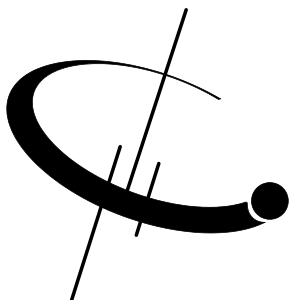
ANALOG APPLICATIONS

LINK PERFORMANCE WITH LTA-20

MECHANICAL

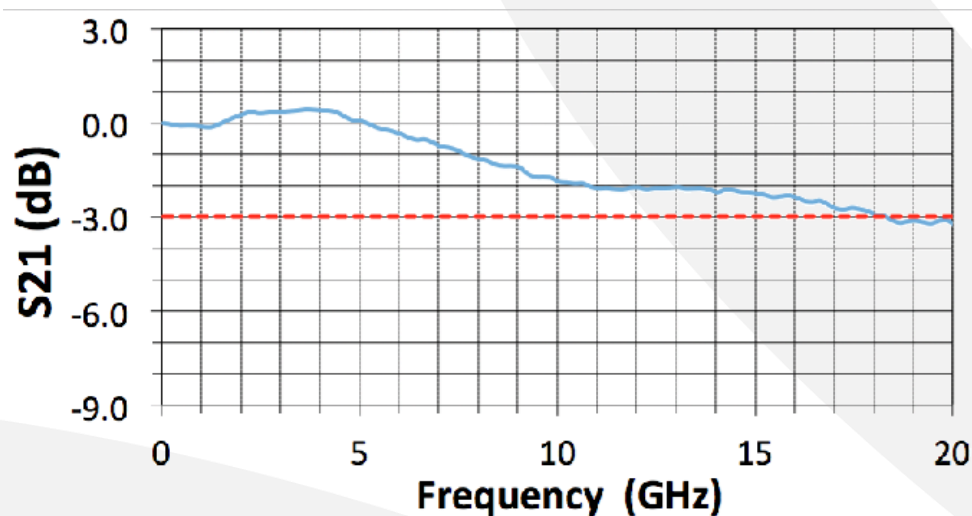
Operating Wavelength	1450 nm to 1610 nm
Optical Input Level	100 mW max.
S21 3 dB Bandwidth	17 GHz min., 20 GHz typ.
S22 Characteristics	< -10 dB @ 10 GHz
Low Frequency Cut Off	60 KHz
Responsivity	0.95 A/W @ 1550 nm typ.
Dark Current @ 25°C	50 nA typ., 100 nA max.
Optical Return Loss	-30 dB typ.
Optical PDL @ 1550 nm	0.2 dB max.
Optical Fiber	SMF-28
Impedance	50 Ω
Coupling	AC-Coupled
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.
SFDR	113 dB Hz _{2/3}
Link Loss @ 10 GHz	-11 dB @ 17 dBm Optical Input
Operating Temperature	-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, other optional
RF Output Connector	SMA Connector Female, 50 Ω
Electrical Power Connector	4-PIN Molex
Remote Alarms	RS-485 Interface (standard) via USB
Dimensions	115mm x 106mm x 24.5mm
Accessories Included	PS-5-M Power Supply and Cables
Housing	Precision Mach. Anodized Aluminum



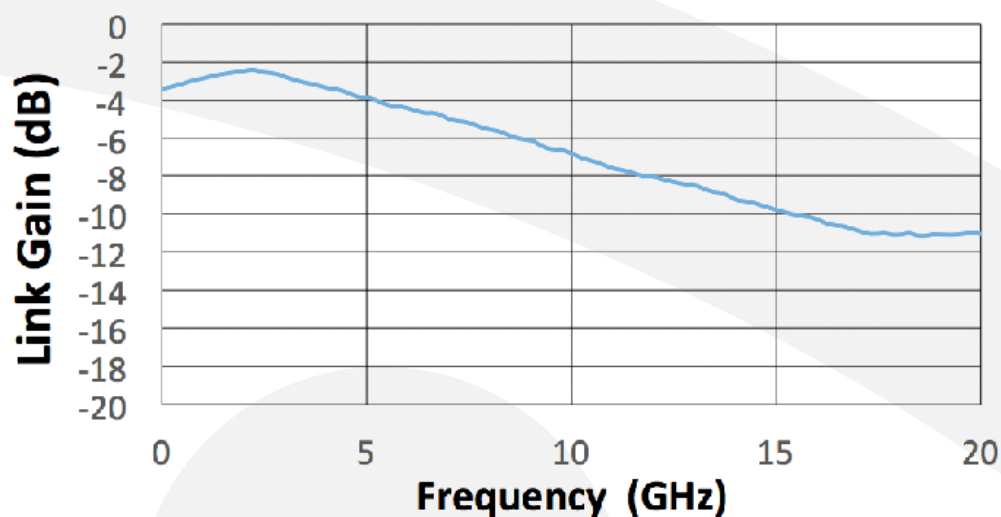


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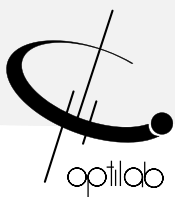
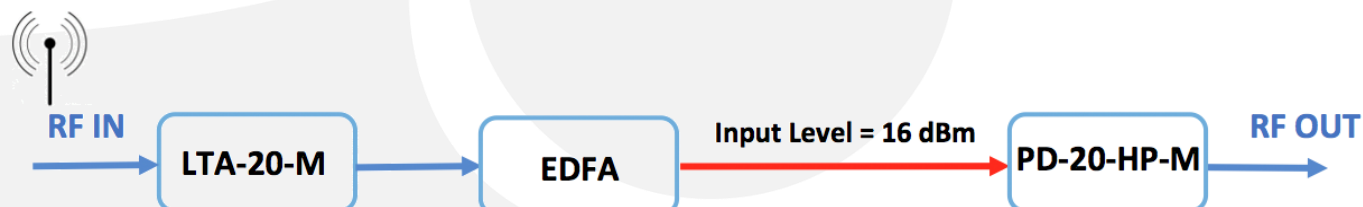
TYPICAL S21 RESPONSE

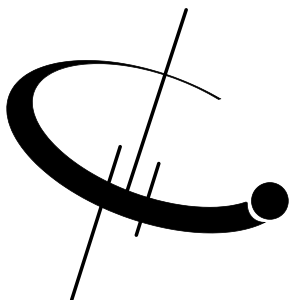


LINK GAIN WITH LTA-20-M



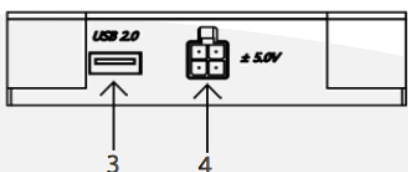
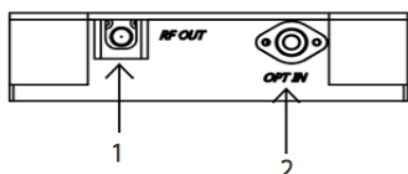
TEST CONDITIONS & LINK GAIN MEASUREMENTS





PD-20-HP-M

MECHANICAL DRAWINGS



Port Function Description

1	RF Output
2	Optical Input
3	USB 2.0
4	±5 VDC In

