



# RFL-20-H



MD-20-M



LTA-20-M



PD-30-M

## DEVICE

## 20 GHz RF over Fiber Lightwave Link

## OVERVIEW

The Optilab RFL-20-H RF over Fiber Lightwave Link is composed of a MD-20-M modulator driver, LTA- 20-M lightwave transmitter module and a PD-30-M receiver to form a high-performance RFoF link for up to 20 GHz applications.

## FEATURES

- RFoF Link up to 20 GHz Bandwidth
- USB Monitor and Control Interface
- High Dynamic Range
- Low Noise Figure
- High Linearity Receiver

## USE IN

- Satcom microwave antenna signal distribution
- Broadband delay-line and signal processing
- Phased and interferometric array antenna
- RF/IF Signal Distribution
- RF to 20 GHz Transmission over Fiber

## LINK PERFORMANCE SUMMARY

Analog Bandwidth	20 GHz
Link Gain vs Bandwidth	-4 dB/5 GHz typ., -7 dB/15 GHz typ., -11 dB/20 GHz typ.
Input 1 dB Comp.	-6.0 dBm @ 1 GHz
Gain Flatness	± -0.5 dB over 1 GHz
Noise Figure	14.4 dB @ 10 GHz, 16.6 dB @ 20 GHz
SFDR	-105 dBm x Hz <sup>2/3</sup>
Group Delay	± 69.6 ps





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## CONFIGURATION DIAGRAM



### MD-20-M, 20 GHZ MODULATOR DRIVER WITH ADJUSTABLE DC BIAS

The Modulator Driver (MD) is a 20 GHz Bandwidth RF Amplifier in a compact and user- friendly module that provides a high-quality, single-ended voltage to drive an optical modulator.

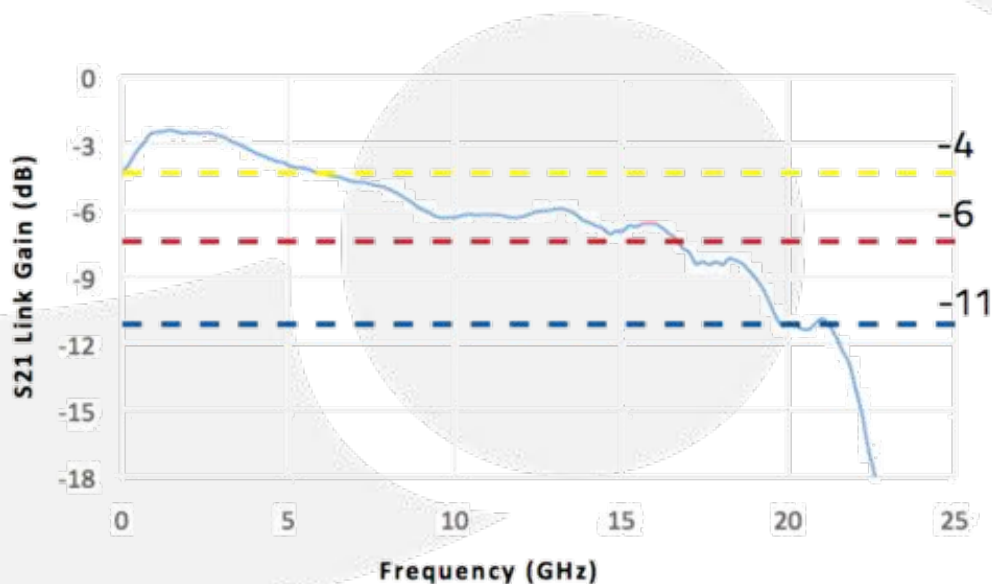
### LTA-20-M, 20 GHZ LIGHTWAVE TRANSMITTER MODULE FOR RFOF

The high performance Lightwave Transmitter Module designed for analog photonics applications from DC to 20 GHz.

### PD-30-M, 30 GHZ LINEAR INGAS PIN PHOTODETECTOR, MODULE

The bandwidth PIN receiver module designed for RF over Fiber, antenna remoting, and broadband RF transmission applications.

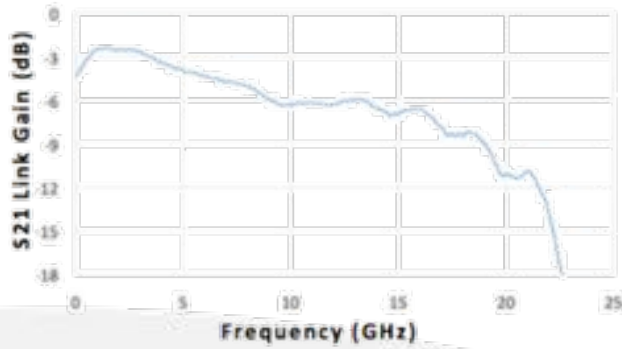
## LINK GAIN



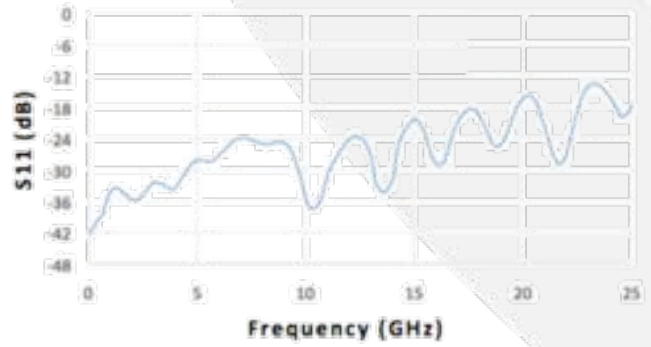


# RFL-20-H

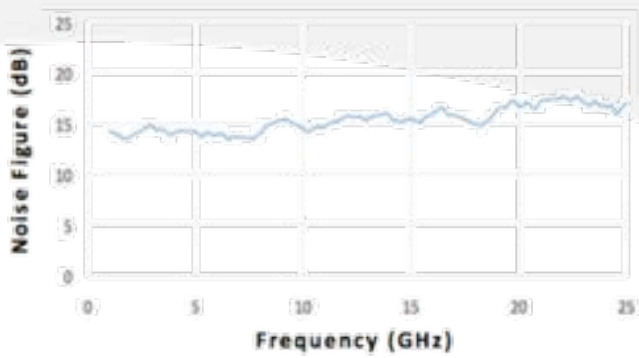
S21 BANDWIDTH



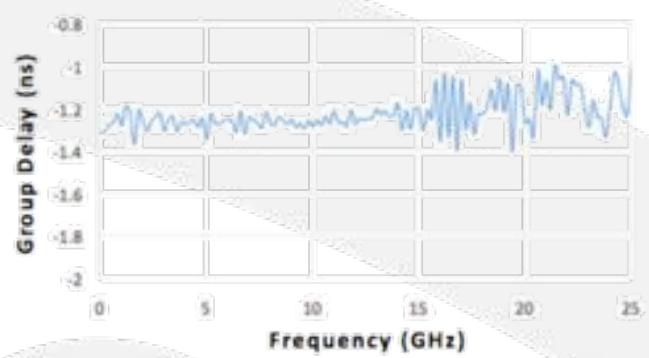
S11 RESPONSE



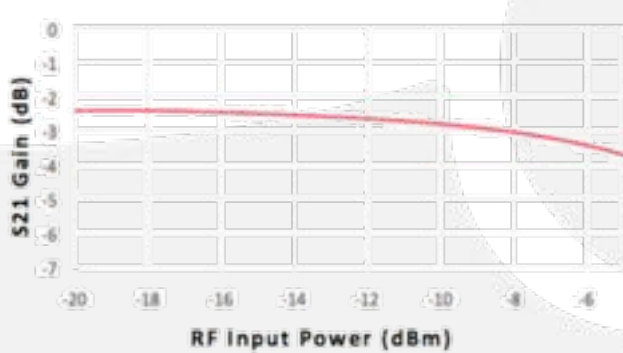
NOISE FIGURE



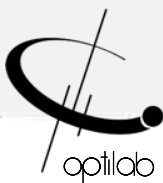
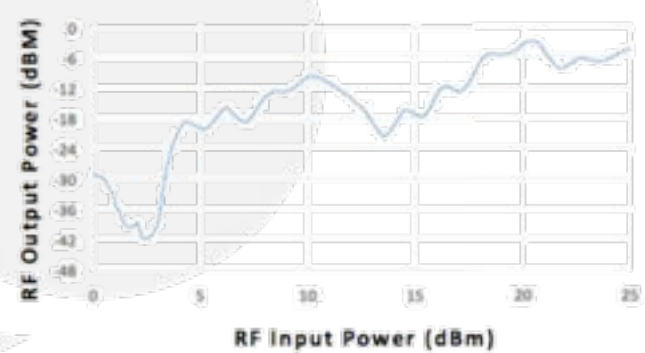
GROUP DELAY



1 DB COMPRESSION



S22 ELECTRICAL





# RFL-20-H

## GENERAL SPECIFICATIONS

MD-20-M	Power Supply Requirements	$\pm 5$ V, 1 A typ.
	Dimensions	160 mm x 65 mm x 32.5 mm
	Accessories Included	PS-5 & Cables
PD-30-M	Power Supply Requirements	$\pm 5$ V DC, 500 mA max.
	Dimensions	82 mm x 60 mm x 26.5 mm
	Accessories Included	USB Adaptor and Cables
LTA-20-M	Power Supply Requirements	$\pm 5$ V, 1 A typ.
	Dimensions	206 mm x 201.4 mm x 31.5 mm
	Accessories Included	PS-5 & Cables
RF	S11 Reflection	From DC to 17 GHz < -18, From 17 GHz to 25 GHz < -12 dB
	S22 Reflection	From DC to 9 GHz < -12 dB, From 9 GHz to 17 GHz < -9 dB, From 17 GHz to 25 GHz < -3 dB

## CONTROL SOFTWARE

A LabView TM based control software is used to set the RF over Fiber system parameters and monitors system performance.

