RFLL-40-H-2

MD-50

LTA-40-LD-V

EDFA-PA-MSA

PD-40-DC

DEVICE

40 GHz RF over Fiber Lightwave Link, H-2

OVERVIEW

The Optilab RFLL-40-H-2 RF over Fiber Lightwave Link is composed of a MD-50 RF amplifier, LTA-40-LD-V lightwave transmitter module, EDFA-PA-MSA pre-amplifier module and a PD-40 receiver to form a high- performance RFoF link for up to 40 GHz applications.

FEATURES

- Bandwidth up to 40 GHz
- Low Noise Figure
- High Linearity Receiver
- USB Monitor and Control Interface

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

LINK PERFORMANCE SUMMARY

Analog Bandwidth	31 GHz
Link Gain Vs Bandwidth	+3 dB / 30 GHz -3 dB / 35 GHz -6 dB / 40 GHz
Input 1dB Comp	-18.5 dBm Typical @ 1 GHz
Gain Flatness	+/- 1 dB over 1 GHz
Noise Figure	8 dB @ 10 GHz 10 dB @ 30 GHz
SFDR	105.1 dBm x $Hz^{2/3}$
IIP3	-1.8 dBm
Group Delay	+/- 73 ps

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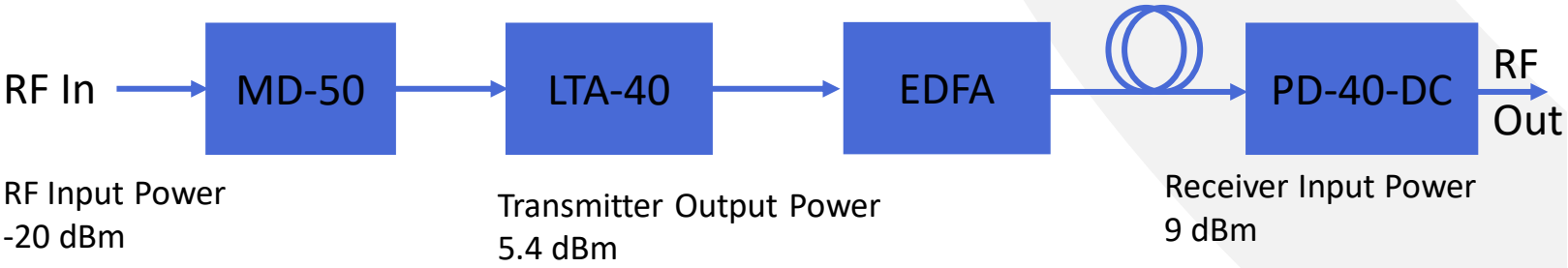
CONFIGURATION DRAWING

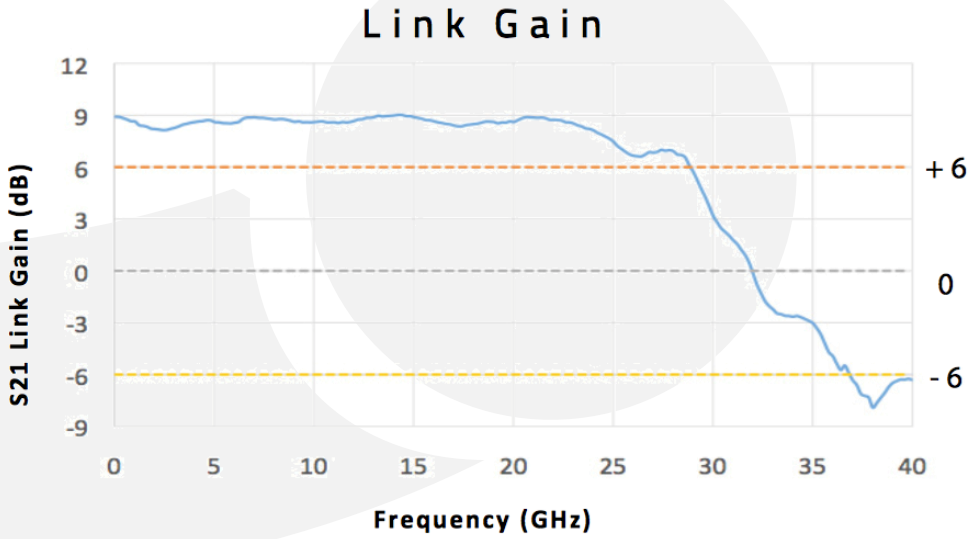


RF Input Power
-20 dBm

Transmitter Output Power
5.4 dBm

Receiver Input Power
9 dBm

- **MD-50**, 50 GHz Modulator Driver/RF Amplifier
  The Modulator Driver (MD) is a 50 GHz Bandwidth RF Amplifier in a compact and user friendly module that provides a high-quality, single-ended voltage to drive an external LiNbO3 modulator.
- **LTA-40-LD-V**, 40 GHz Lightwave Transmitter Module for RFoF
  The unit is a high performance Lightwave Transmitter Module designed for analog photonics applications from DC to 40 GHz.
- **EDFA-PA-MSA,** high-gain pre-amplifier module
  The EDFA-PA-MSA is a high-gain pre-amplifier module in a multiple source agreement footprint housing.
- **PD-40-DC**, 40 GHz Linear InGaAs PIN Photodetector, Module
  The Optilab PD-40-M is a 40 GHz bandwidth PIN receiver module designed for RF over Fiber, antenna remoting, and broadband analog photonics link.



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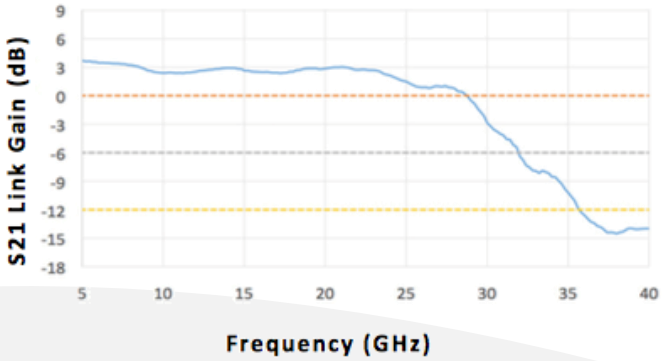
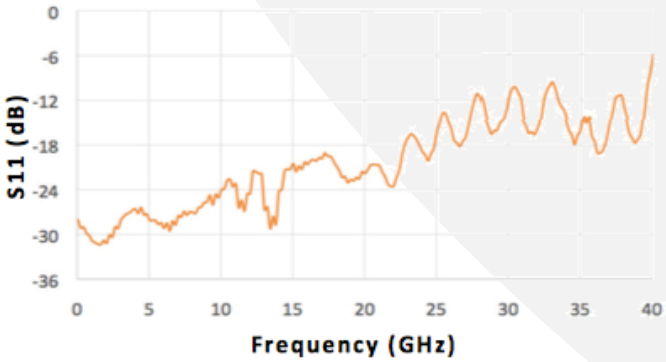
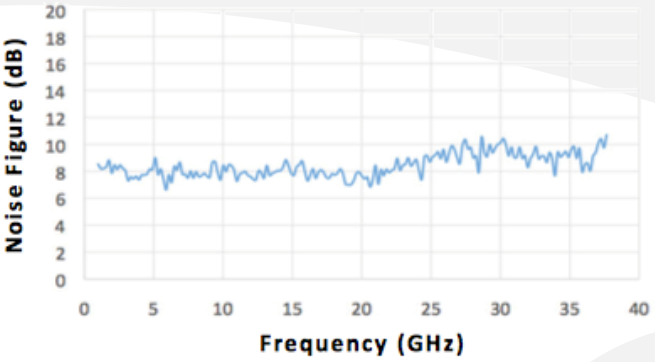
Link Gain



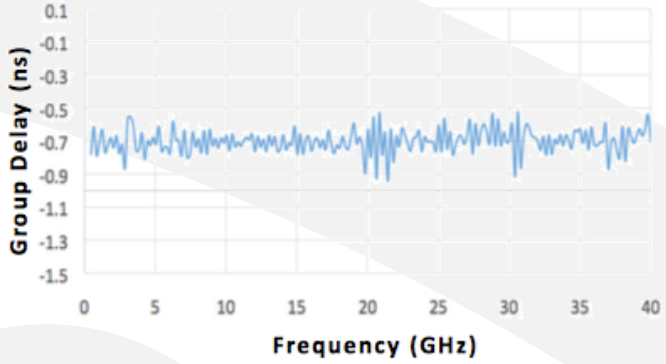
S11 Response



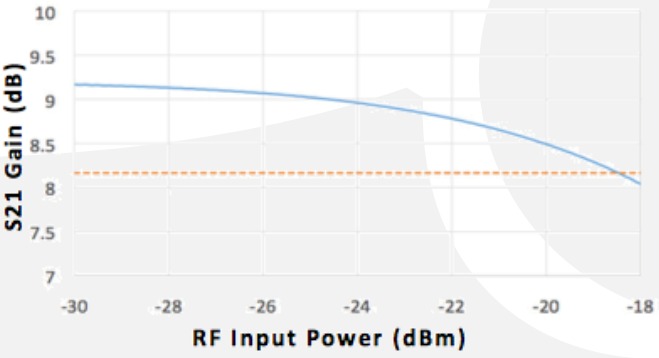
Noise Figure



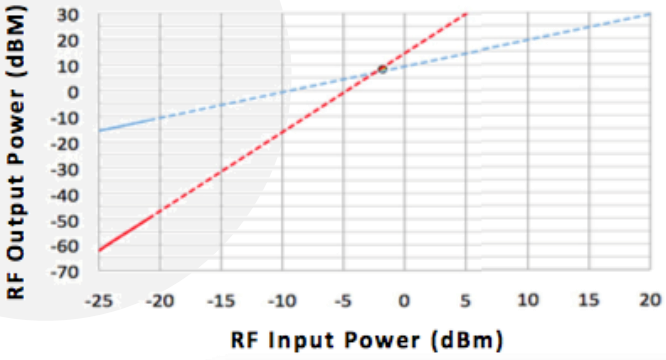
Group Delay



1 dB Compression



IIP3 Plot



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GENERAL SPECIFICATIONS

	MD-50	LTA-40-LD-V	EDFA-PA-MSA	PD-40-DC
Power Supply	+12 V DC, 2 A max.	±5 V, 1A typ.	±5 V DC, 4.0 A max.	+5 V DC, 500 mA max.
Dimensions	150 x 150 x 30 (mm)	206 x 102.4 x 31.5 (mm)	90 x 70 x 20 (mm)	82 x 60 x 26.5 (mm)
Accessories	Cables	Cables	Cables	USB adaptor & Cables

RF SPECIFICATIONS

S11 Reflection	< -18 dB from DC to 22 GHz < -6 dB from 22 GHz to 40 GHz	S22 Reflection	< -5 dB from DC to 25 GHz < -3 dB from 25 GHz to 40 GHz

CONTROL SOFTWARE (OPTIONAL)

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