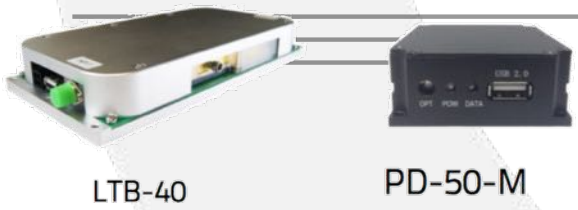
RFLL-40+-L-1



DEVICE

40 GHz + RF over Fiber Lightwave Link, L-1

OVERVIEW

The Optilab RFLL-40-L-1 RF over Fiber Lightwave Link is composed of a LTB-40 transmitter and a PD- 50 receiver unit to form a high-performance RFoF link for greater than 40 GHz applications.

FEATURES

- RFoF Link grater than 40 GHz Bandwidth
- USB Monitor and Control Interface
- High Dynamic Range
- DFB low RIN Source Laser

USE IN

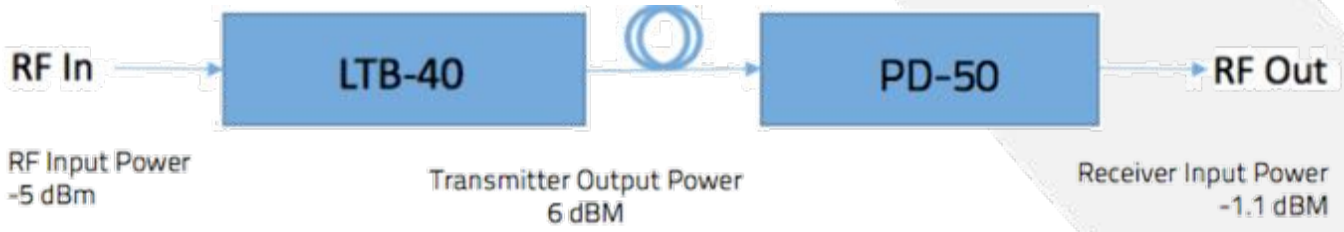
- Satcom microwave antenna signal distribution
- Broadband delay-line and signal processing
- Phased and interferometric array antenna
- Wideband RF Transmission over Fiber
- RF/IF Signal Distribution

LINK PERFORMANCE SUMMARY

Analog Bandwidth	40+ GHz
Link Gain vs Bandwidth	-49 dB/28 GHz, -52 dB/40 GHz
Input 1 dB Comp.	17.6 dBm @ 1 GHz
Gain Flatness	± 1 dB
Noise Figure	44 dB @ 10 GHz, 46 dB@ 30 GHz
SFDR	108.3 dBm x $Hz^{2/3}$
IIP3	34.5 dBm
Group Delay	± 46 ps

RFLL-40+-L-1

CONFIGURATION DIAGRAM



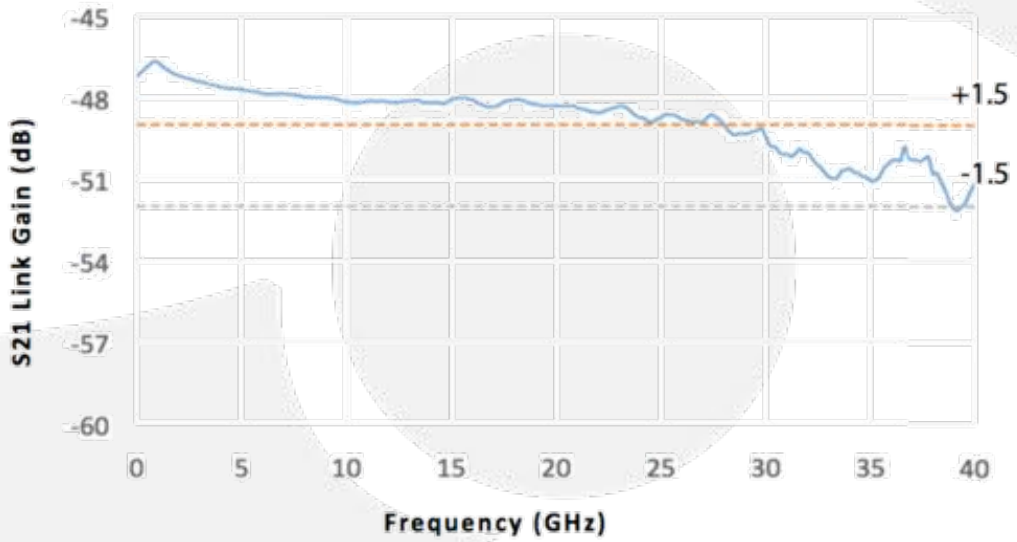
LTB-40, 40 GHZ LIGHTWAVE TRANSMITTER BOARD FOR OEM

The high performance Lightwave Transmitter Board designed for analog photonics applications from DC to 40 GHz

PD-50-M, 50 GHZ LINEAR INGAS PIN PHOTODETECTOR, MODULE

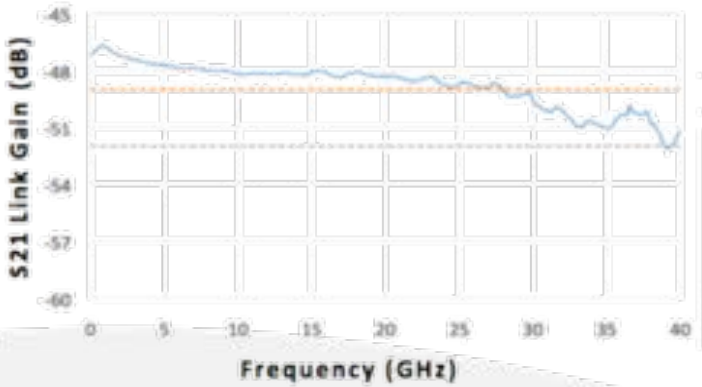
The Optilab PD-50-M is a 50 GHz bandwidth PIN receiver module designed for RF over Fiber, antenna remoting, and broadband RF transmission applications using single mode optical fiber.

LINK GAIN

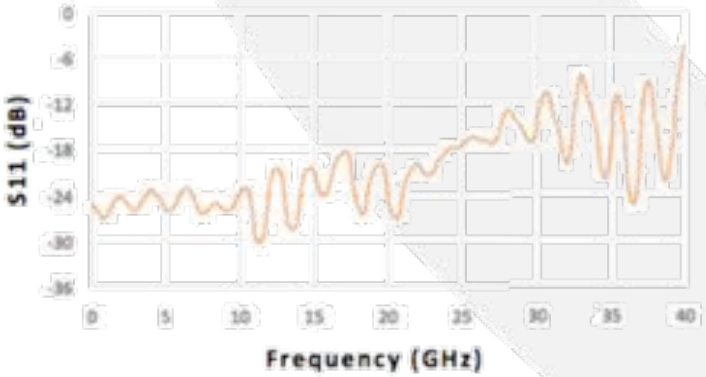


RFLL-40+-L-1

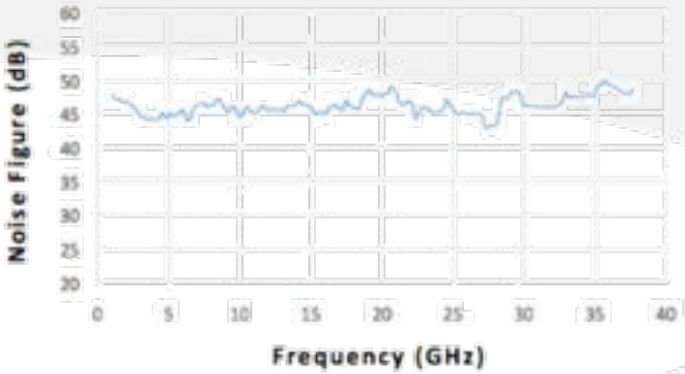
LINK GAIN



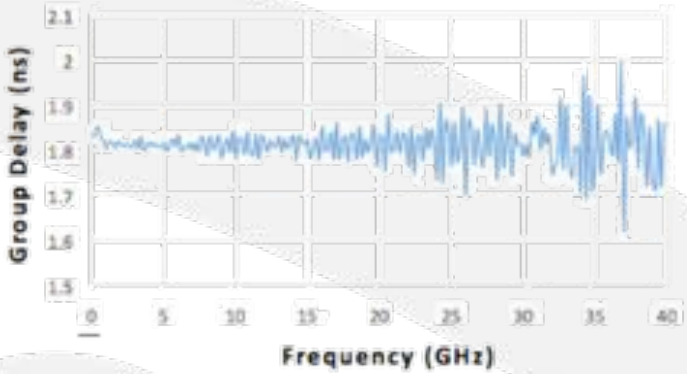
S11 RESPONSE



NOISE FIGURE

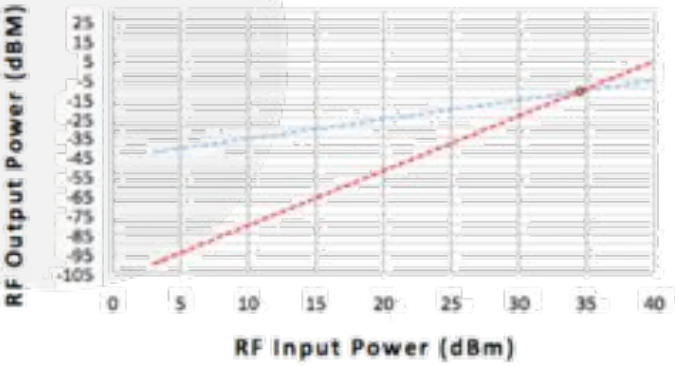


GROUP DELAY



1 DB COMPRESSION

IIP3 PLOT



RFLL-40+-L-1

GENERAL SPECIFICATIONS

LTB-40	Power Supply Requirements	± 5 V, 1 A typ.
	Dimensions	102.4 mm x 200 mm x 31.5 mm
	Accessories	110 V – 240 V AC USB Adaptor and Cable
	Datasheet	Link
PD-50-M	Power Supply Requirements	120 +5 V DC, 500 mA max.
	Dimensions	82 mm x 60 mm x 26.5 mm
RF	S11 Reflection	From DC to 25 GHz < -17.5 dB, From 25 GHz to 40 GHz < -6 dB
	S22 Reflection	From DC to 25 GHz < -11 dB, From 25 GHz to 40 GHz < -5 dB

CONTROL SOFTWARE

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