

# RFLL-30-L-1



LTB-40



PD-40-DC

## 30 GHz RF over Fiber Lightwave Link, L-1

The Optilab RFLL-30-L-1 RF over Fiber Lightwave Link is composed of a LTB-40 transmitter and a PD-40 receiver unit to form a high-performance RFoF link up to 30 GHz applications.

### Features

- RFoF Link up to 30 GHz Bandwidth
- High Dynamic Range
- DFB low RIN Source Laser
- High linearity Reciver
- USB Monitor and Control Interface

### Applications

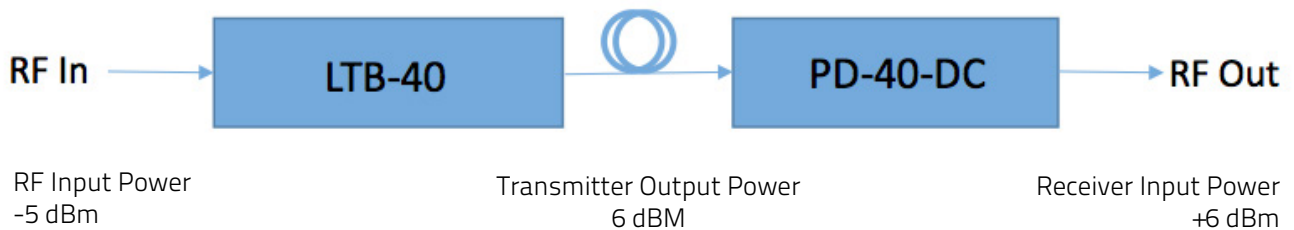
- Wideband RF Transmission over Fiber
- RF/IF Signal Distribution
- Satcom microwave antenna signal distribution
- Broadband delay-line and signal processing
- Phased and interferometric array antenna

### Link Performance Summary

Analog Bandwidth	32 GHz
Link Gain Vs Bandwidth	-30 dB / 26 GHz Typical -36 dB / 32 GHz Typical -42 dB / 40 GHz Typical
Input 1dB Comp	15.9 dBm @ 1 GHz
Gain Flatness	+/- 1 dB
Noise Figure	29.5 dB @ 10 GHz 27 dB @ 30 GHz
SFDR	117.9 dBm x Hz <sup>2/3</sup>
IIP3	32.3 dBm
Group Delay	+/- 39.7 ps

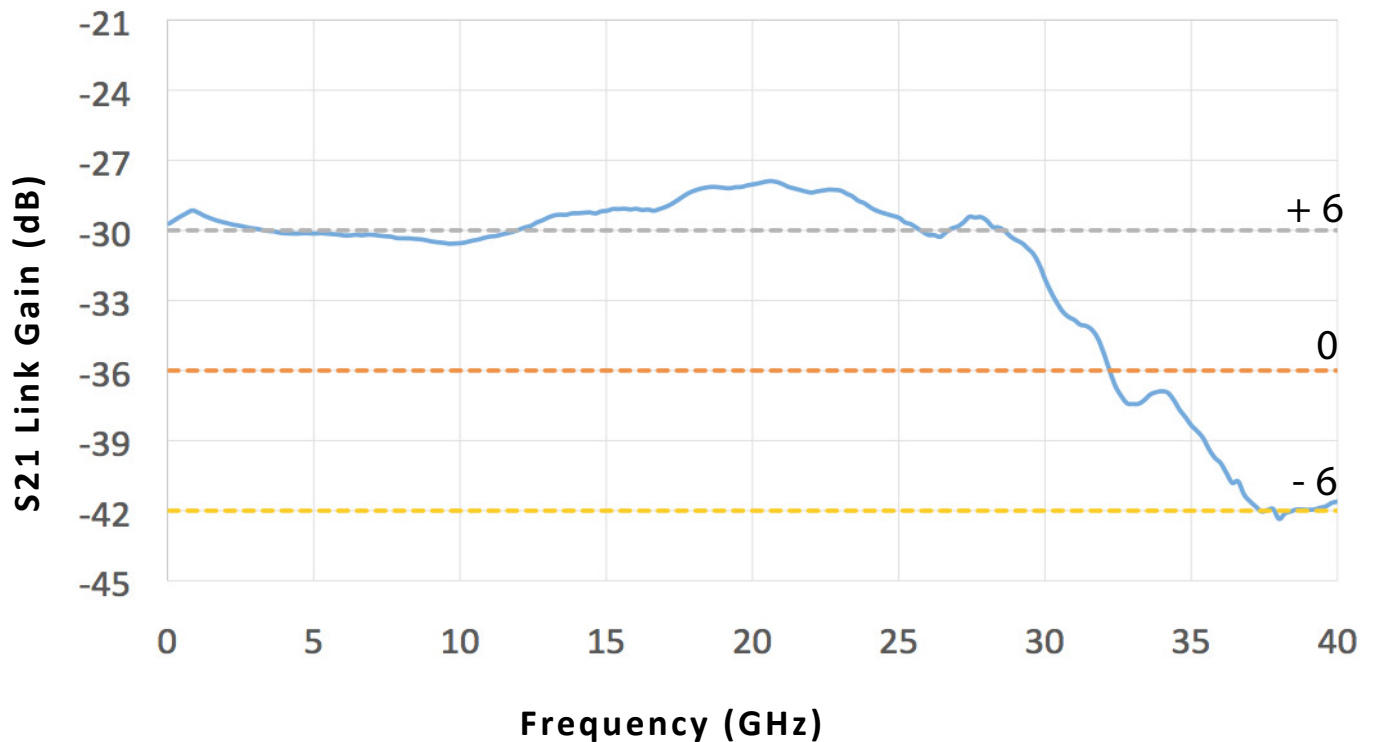
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## Configuration Diagram



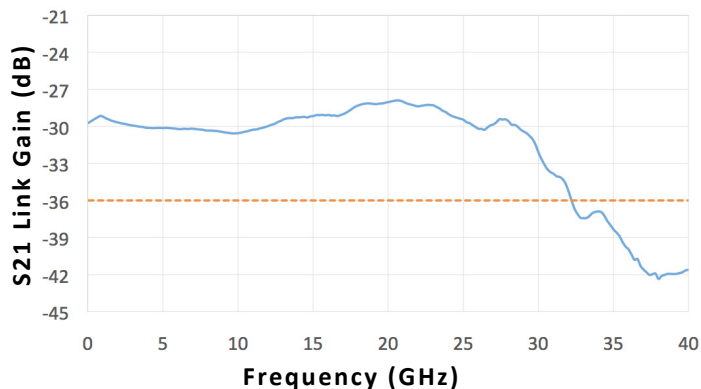
- **LTB-40**, 40 GHz Lightwave Transmitter Board for OEM ([Datasheet](#))  
The high performance Lightwave Transmitter Board designed for analog photonics applications from DC to 40 GHz.
- **PD-40-DC**, 40 GHz Linear InGaAs PIN Photodetector, Module ([Datasheet](#))  
The Optilab PD-40-M is a 40 GHz bandwidth PIN receiver module designed for RF over Fiber, antenna remoting, and broadband RF transmission applications.

## Link Gain

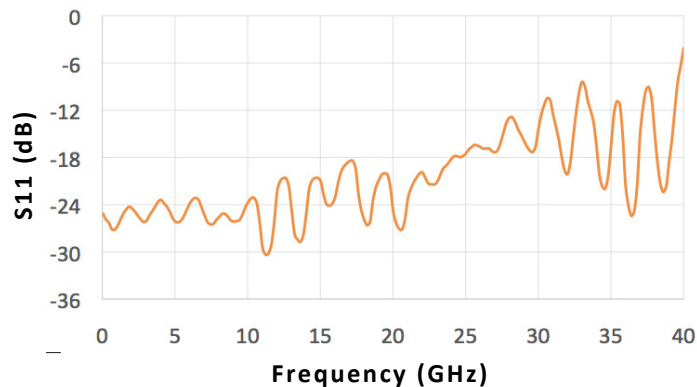


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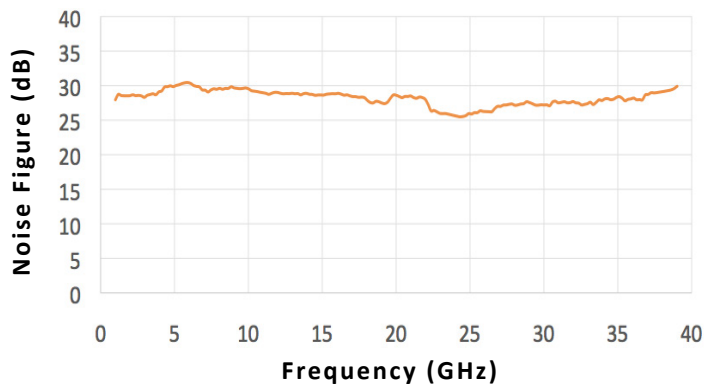
### S21 Bandwidth



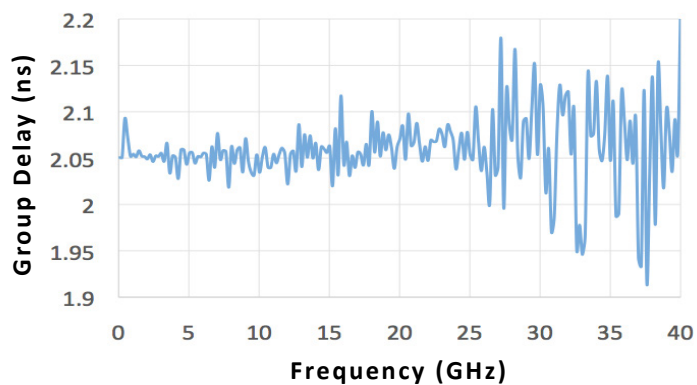
### S11 Response



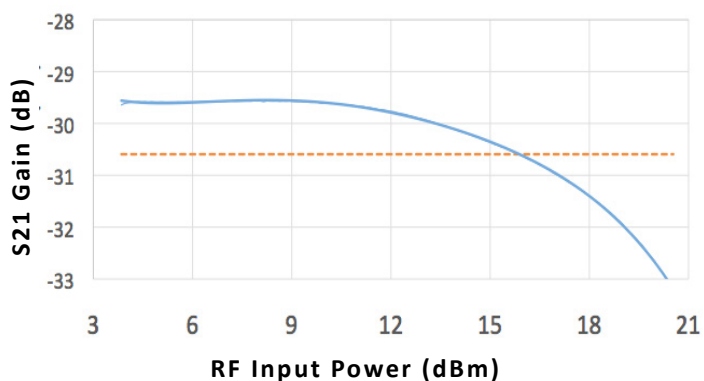
### Noise Figure



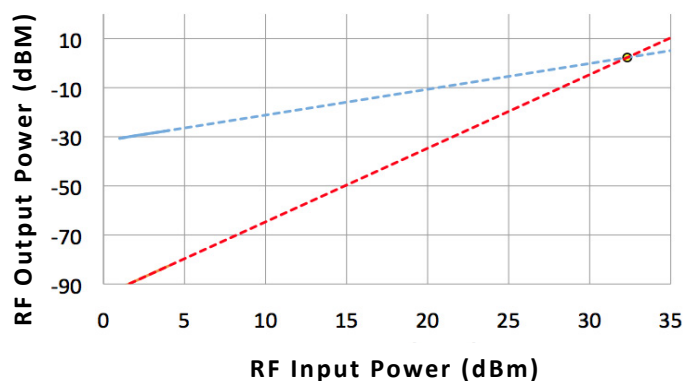
### Group Delay



### 1 dB Compression



### IIP3 Plot



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## General Specifications

LTB-40	
Power Supply Requirements	±5V, 1A typ.
Dimensions	102.4 mm x 200 mm x 31.5 mm
Accessories	PS-5 <a href="#">USB</a> Adaptor & Cable
PD-40-DC	
Power Supply Requirements	+5 V DC, 500 mA max.
Dimensions	82 mm x 60 mm x 26.5 mm
Accessories	<a href="#">USB</a> Adaptor & Cable

## RF Specifications

<b>S11 Reflection</b>	From DC to 25 GHz <-17 dB	<b>S22 Reflection</b>	From DC to 8 GHz < -12 dB
	From 25 GHz to 40 GHz <-4 dB		From 8 GHz to 25 GHz <-6 dB
			From 25 GHz to 40 GHz <-4.5 dB

## Control Software

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

Configuration: LTA-40-LD-V | MD-50

Com Port #  
COM23

Stop

**Optilab**

RFL-30-L-1 **Remote Control System Software**  
Version: 0.1

Module	485 ID	S/N
LTA-40-LD-V #1	0	OE1603L101
LTA-40-LD-V #2	1	OE1603L102
LTA-40-LD-V #3	2	OE1603L103
LTA-40-LD-V #4	3	OE1603L104

Module	485 ID	S/N
MD-50 #1	4	OE1603M101
MD-50 #2	5	OE1603M102
MD-50 #3	6	OE1603M103
MD-50 #4	7	OE1603M104

Temperature 1 (°C): 0

Temperature 2 (°C): 0

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