

# RFLL-40-L-3



LTA-40-LD-X



PD-40-DC

DEVICE

## 40 GHz RF over Fiber Lightwave Link, L-3

OVERVIEW

The Optilab RFLL-40-L-3 RF over Fiber Lightwave Link is composed of a LTB-40-LD transmitter and a PD-40 receiver unit to form a high-performance RFoF link for up to 30 GHz applications.

FEATURES

- High Dynamic Range
- DFB low RIN Source Laser
- High Linearity Receiver
- RFoF Link up to 40 GHz Bandwidth
- USB Monitor and Control Interface

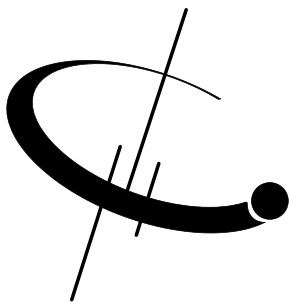
USE IN

- 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

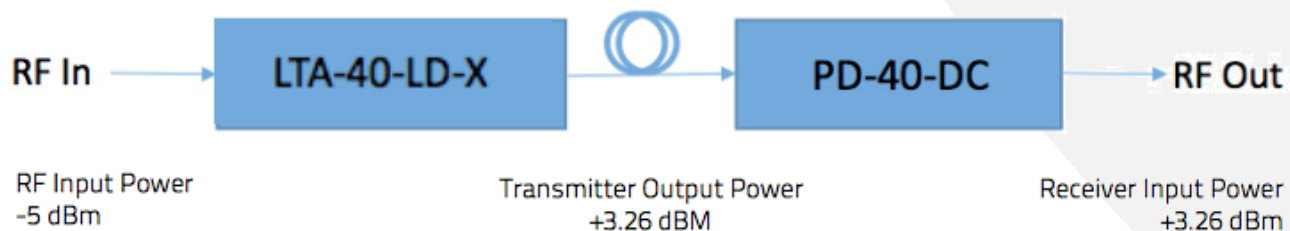
Analog Bandwidth	32 GHz
Link Gain Vs Bandwidth	-30 dB / 29 GHz Typical -36 dB / 32 GHz Typical -42 dB / 40 GHz Typical
Input 1dB Comp	14 dBm @ 1 GHz
Gain Flatness	+/- 0.5 dB over 1 GHz
Noise Figure	25 dB @ 10 GHz 33 dB @ 30 GHz
SFDR	111.7 dBm x Hz <sup>2/3</sup>
IIP3	26.6 dBm
Group Delay	+/- 40 ps



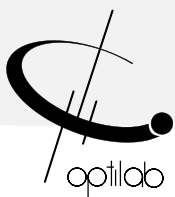
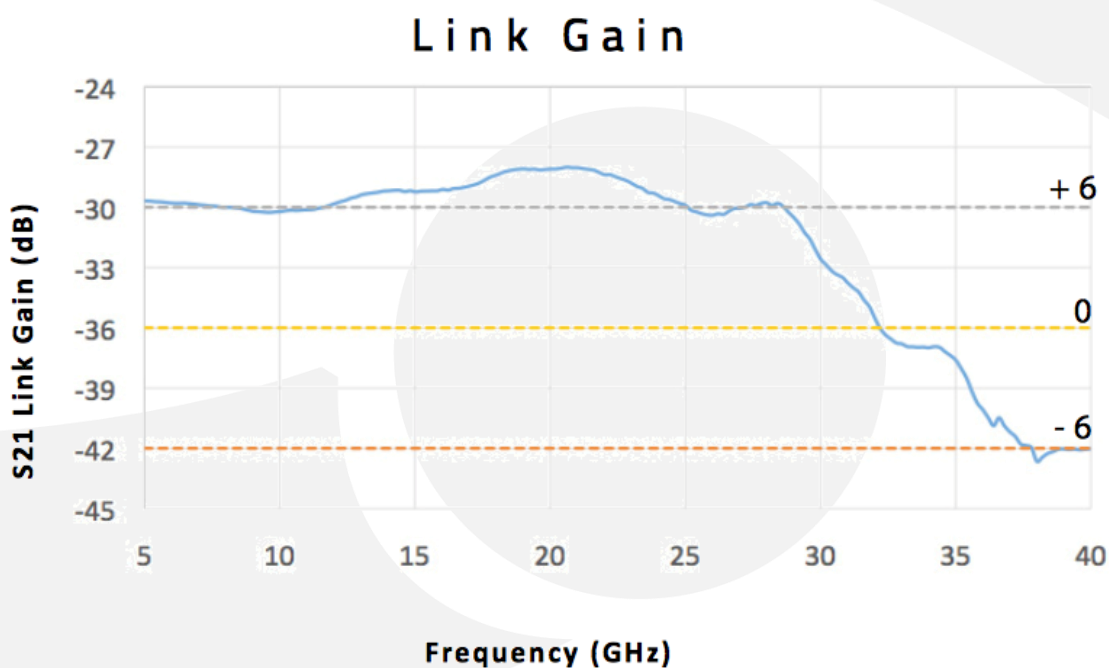


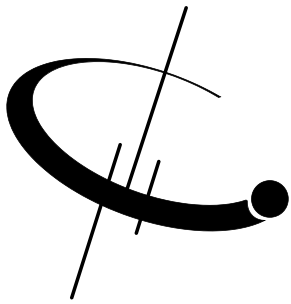
# RFL-40-L-3

## CONFIGURATION DRAWING



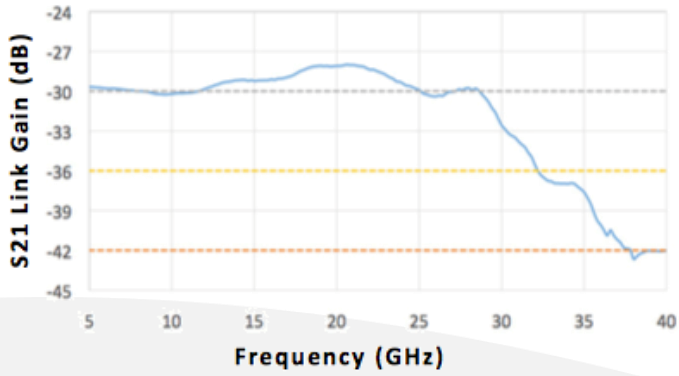
- **LTA-40-LD-X**, 40 GHz Lightwave Transmitter Module for RFoF  
The unit is a high performance Lightwave Transmitter Module designed for analog photonics applications from DC to 40 GHz.
- **PD-40-DC**, 40 GHz Linear InGaAs PIN Photodetector, Module  
The Optilab PD-40-M is a 40 GHz bandwidth PIN receiver module designed for RF over Fiber, antenna remoting, and broadband analog photonics link.



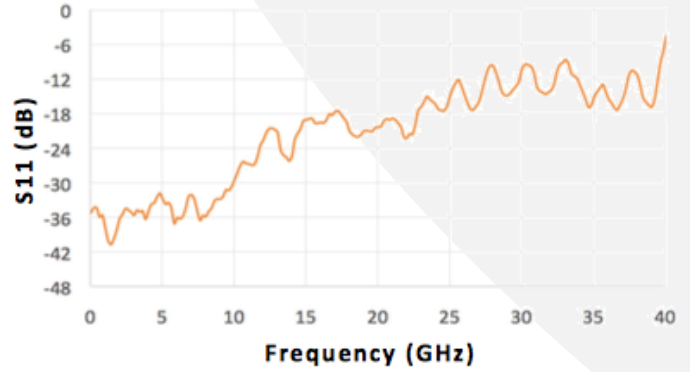


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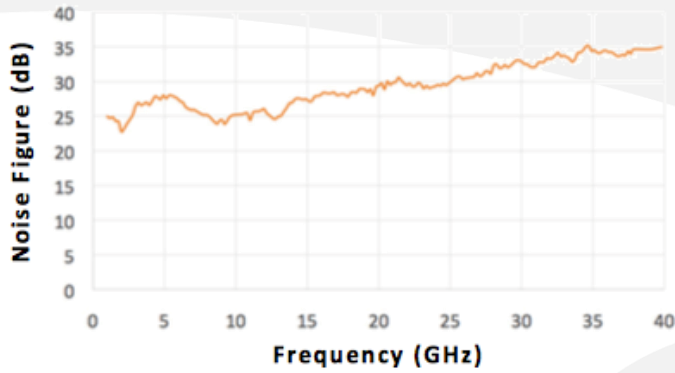
### S21 Bandwidth



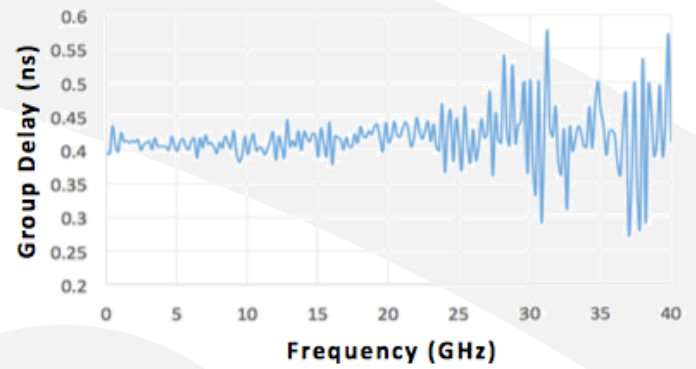
### S11 Response



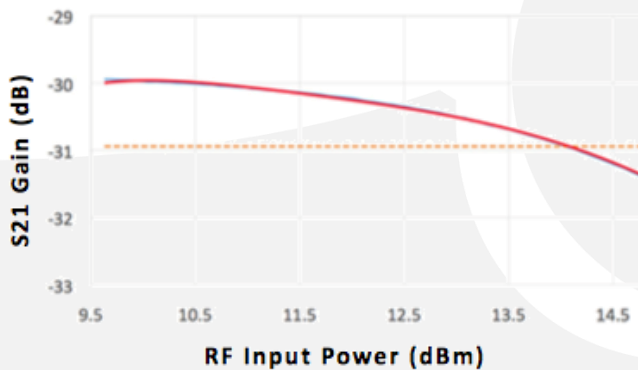
### Noise Figure



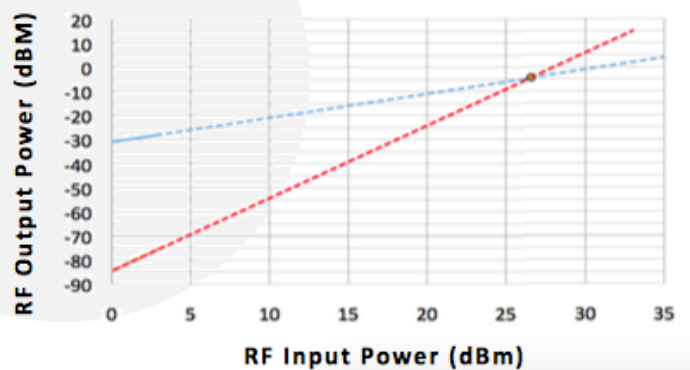
### Group Delay

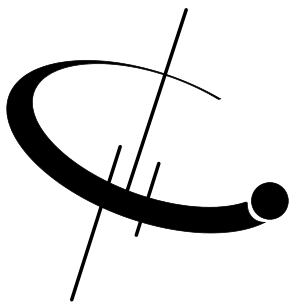


### 1 dB Compression



### IIP3 Plot





# RFL-40-L-3

## GENERAL SPECIFICATIONS

	LTA-40-LD-X	PD-40-DC
Power Supply	±5 V, 1A typ.	+5 V DC, 500 mA max.
Dimensions	206 x 102.4 x 31.5 (mm)	82 x 60 x 26.5 (mm)
Accessories	PS-5 USB Adaptor & Cables	USB Adaptor & Cables

## RF SPECIFICATIONS

S11 Reflection	<-17 dB from DC to 23 GHz	S22 Reflection	< -6 from DC to 25 GHz
	< -9 dB from 23 GHz to 39 GHz		< -3 dB from 25 GHz to 40 GHz

## 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-H-40-A 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

