

# RFLL-40-M-3



LTA-40-LD-X



EDFA-16-C



PD-40-DC

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

The Optilab RFLL-40-M-3 RF over Fiber Lightwave Link is composed of a LTA-40-LD transmitter module, EDFA-16-C low drive consumption and a PD-40 receiver unit to form a high-performance RFoF link for up to 40 GHz applications.

### Features

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

### Applications

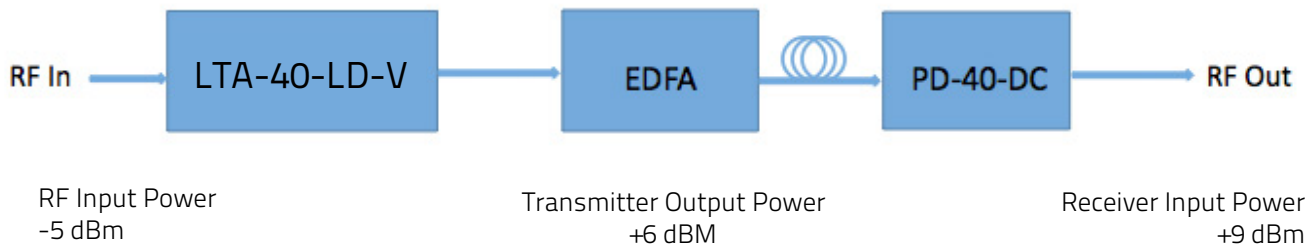
- Wideband RF Transmission over Fiber
- RF/IF Signal Distribution
- Satcom microwave antenna signal distribution
- Broadband delay-line and signal processing
- Phased and interferometric array antenna

### Link Performance Summary

Analog Bandwidth	32 GHz
Link Gain Vs Bandwidth	-21 dB / 29 GHz Typical -27 dB / 35 GHz Typical -32 dB / 40 GHz Typical
Input 1dB Comp	8.3 dBm @ 1 GHz
Gain Flatness	+/- 1 dB over 1 GHz
Noise Figure	29 dB @ 10 GHz 34 dB @ 30 GHz
SFDR	112.4 dBm x Hz <sup>2/3</sup>
IIP3	28.6 dBm
Group Delay	+/- 39 ps

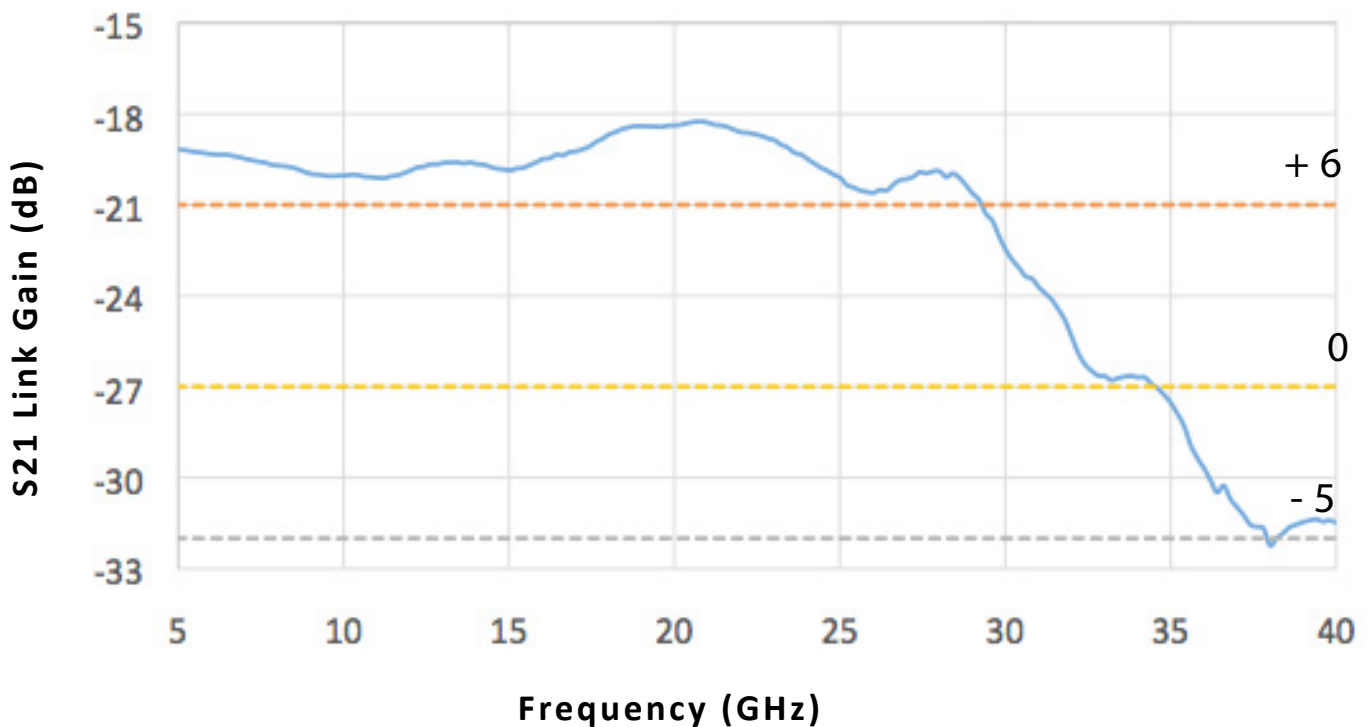
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## Configuration Diagram



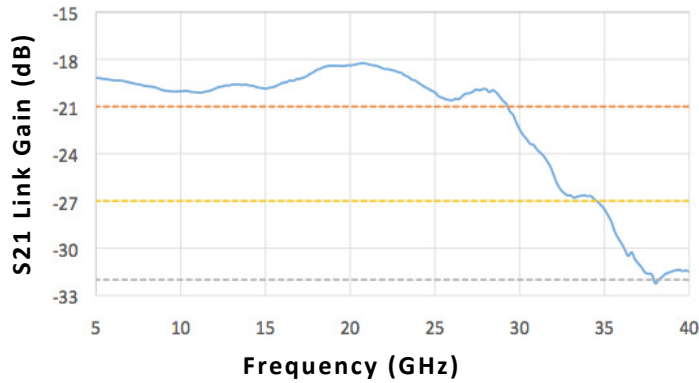
- **LTA-40-LD-X**, 40 GHz Lightwave Transmitter Module for RFoF ([Datasheet](#))  
The high performance Lightwave Transmitter Module designed for analog photonics applications from DC to 40 GHz.
- **EDFA-16-C**, EDFA Module with Low Current Consumption ([Datasheet](#))  
The EDFA-16-C with a Low Drive Consumption (LD) is an ideal building block for photonic subsystems and OEM system integration.
- **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

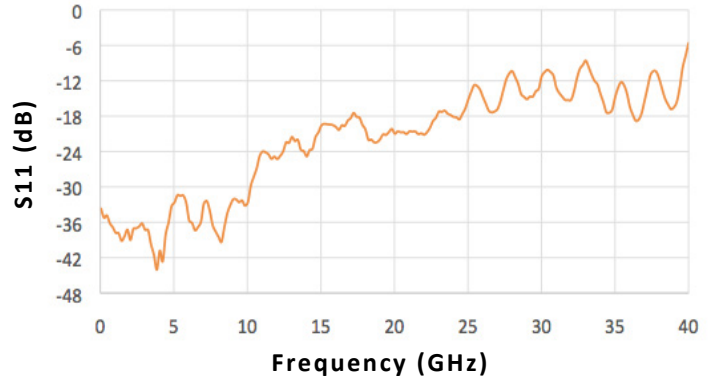


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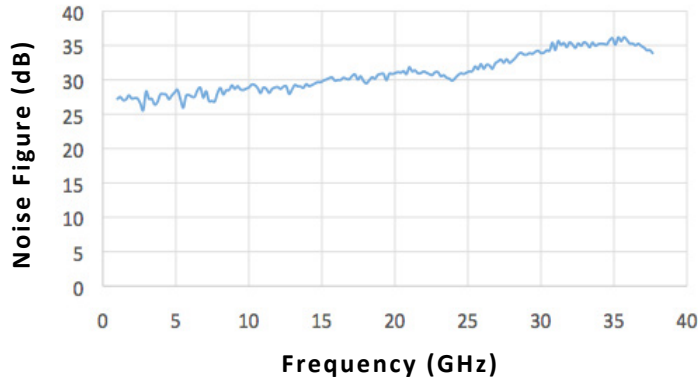
S21 Bandwidth



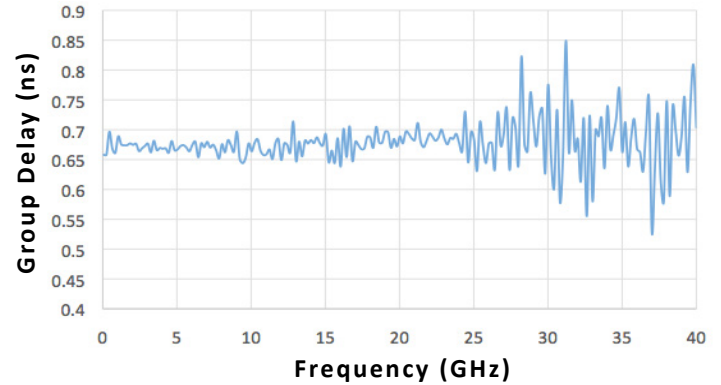
S11 Response



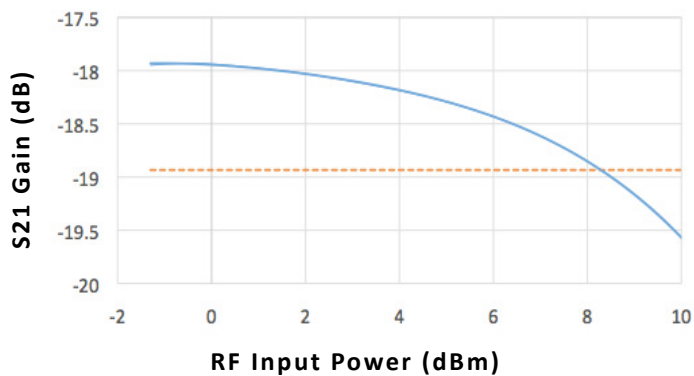
Noise Figure



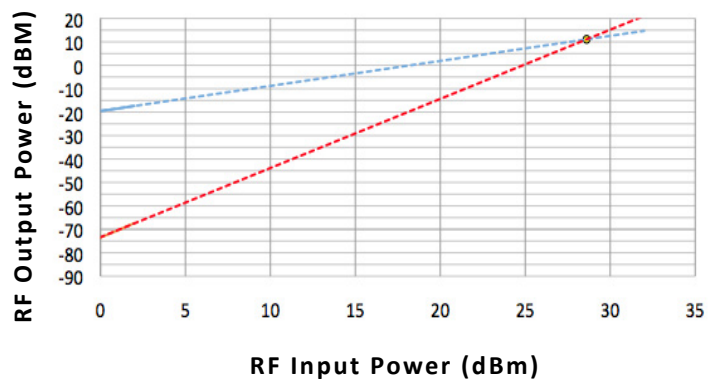
Group Delay



1 dB Compression



IIP3 Plot



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## General Specifications

<b>LTA-40-LD-V</b>		<b>EDFA-16-C</b>	
Power Supply Requirements	±5V, 1A typ.	Power Supply Requirements	±5V, 1A typ.
Dimensions	206 mm x 102.4 mm x 31.5 mm	Dimensions	90 mm x 70 mm x 18 mm
Accessories	PS-5 & Cables	Accessories	PS-5 & Cables
<b>PD-40-DC</b>			
Power Supply Requirements	+5 V DC, 500 mA max.		
Dimensions	82 mm x 60 mm x 26.5 mm		
Accessories	USB adaptor & Cables		

## RF Specifications

<b>S11 Reflection</b>	< -17 dB From DC to 24 GHz < -5 dB From 24 GHz to 40 GHz	<b>S22 Reflection</b>	< -6 dB From DC to 25 GHz < -5 dB From 25 GHz to 40 GHz
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## 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-40-M-3 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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