RFLL-40-M-1

LTB-40

EDFA-16-C

PD-40-DC

40 GHz RF over Fiber Lightwave Link, M-1

The Optilab RFLL-40-M-1 RF over Fiber Lightwave Link is composed of a LTA-A-LD-V lightwave transmitter module, EDFA-16-C low drive consumption and a PD-40 receiver 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 Receiver
- 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	-22 dB / 28 GHz Typical -28 dB / 32 GHz Typical -34 dB / 40 GHz Typical
Input 1dB Comp	13.2 dBm Typical
Gain Flatness	+/- 1.2 dB over 1 GHz
Noise Figure	32 dB @ 10 GHz 29 dB @ 30 GHz
SFDR	116.7 dBm x $Hz^{2/3}$
IIP3	32.3 dBm
Group Delay	+/- 37.8 ps

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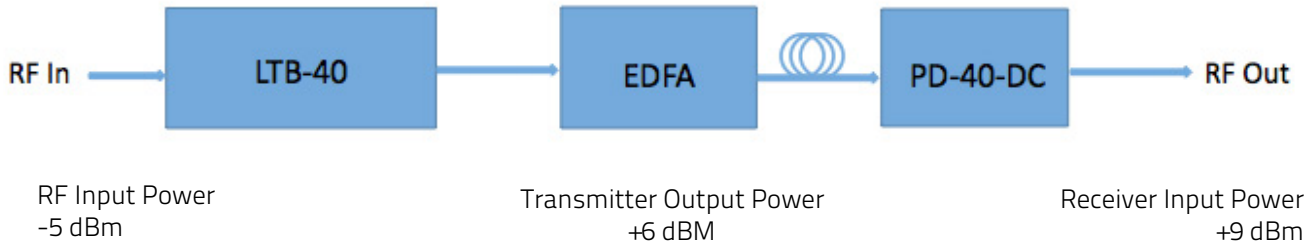
Configuration Diagram



RF Input Power
-5 dBm

Transmitter Output Power
+6 dBM

Receiver Input Power
+9 dBm

- **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.

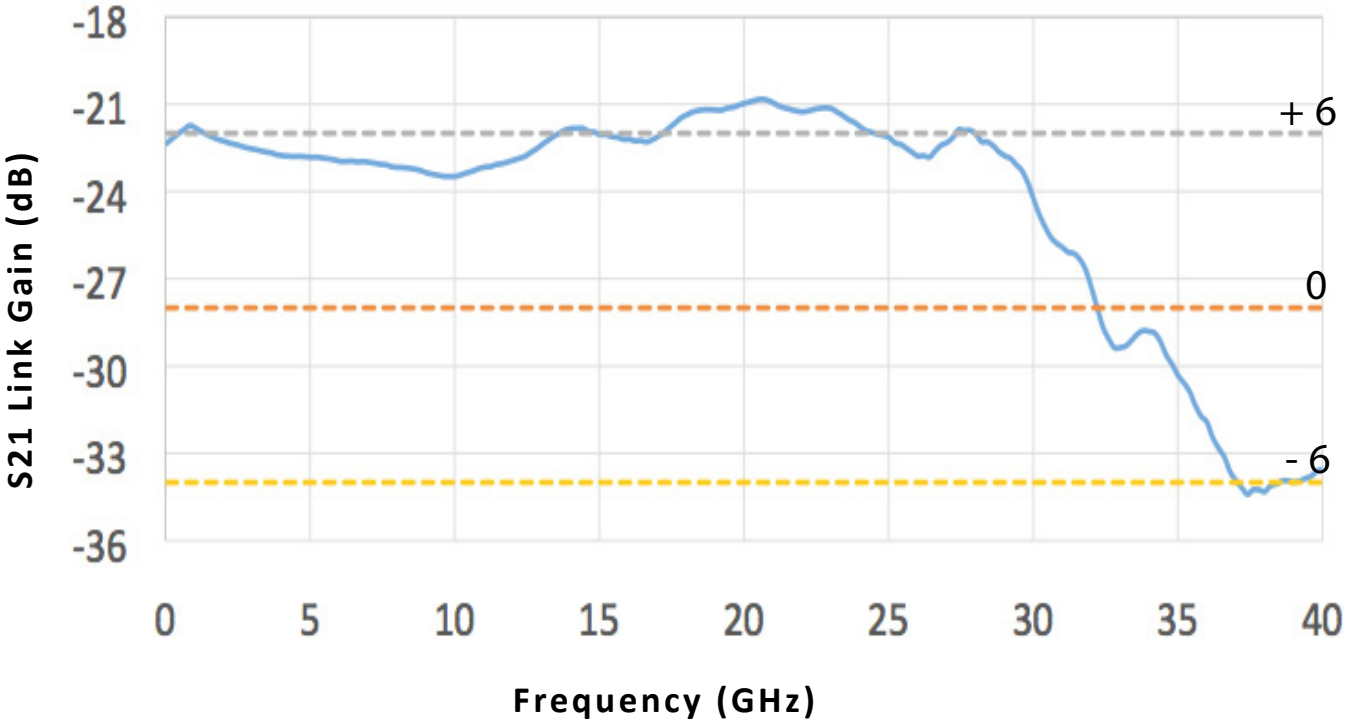
- **EDFA-16-C**, EDFA Module with Low Current Consumption (**Datasheet**)

  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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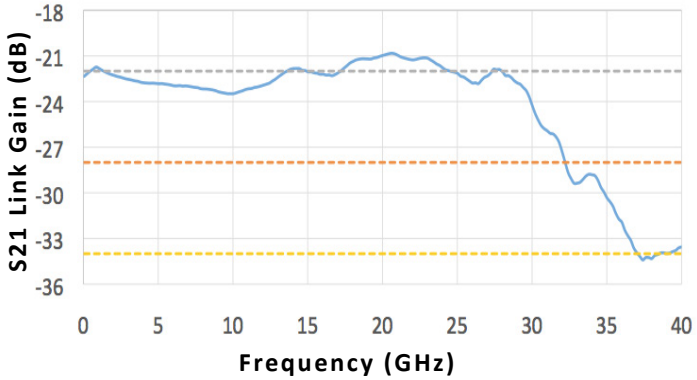
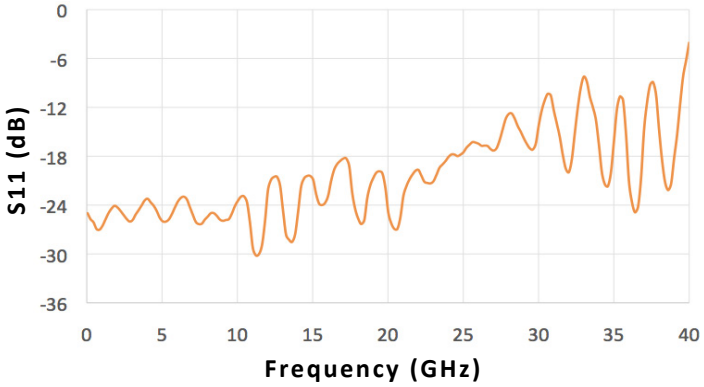
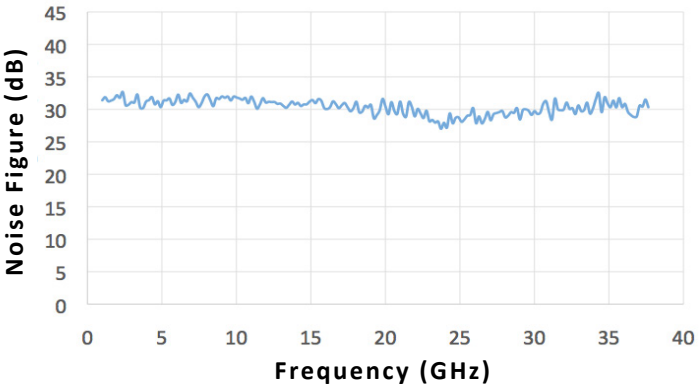
S21 Bandwidth



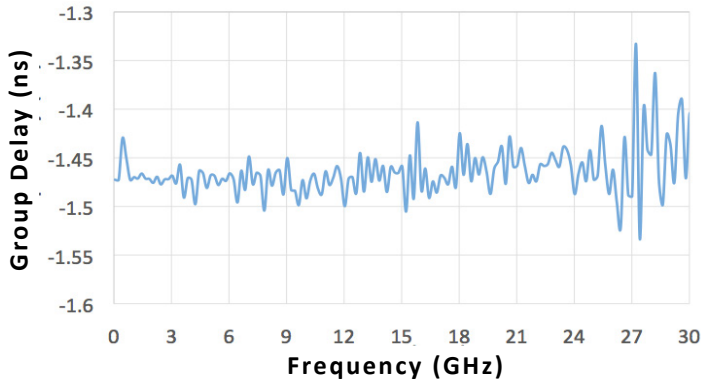
S11 Response



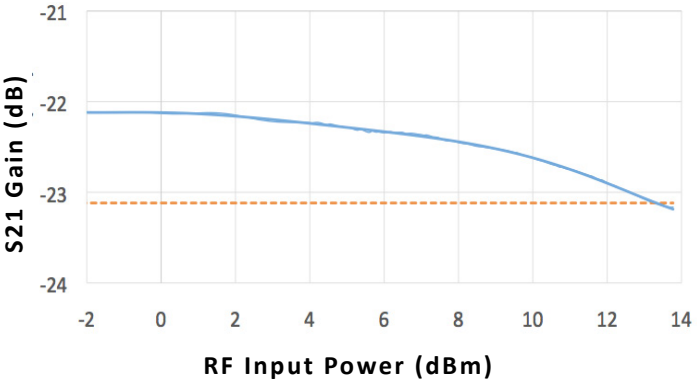
Noise Figure



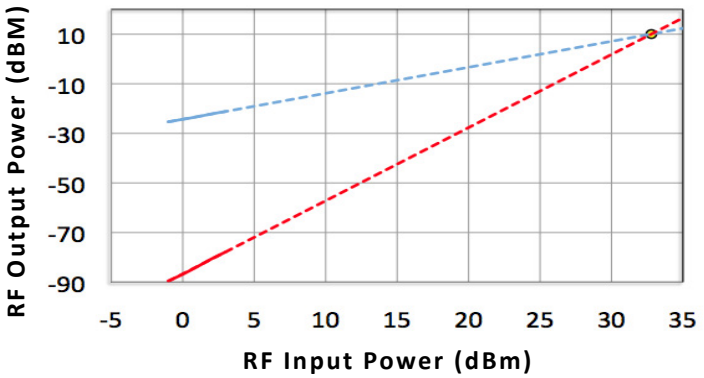
Group Delay



1 dB Compression



IIP3 Plot



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General Specifications

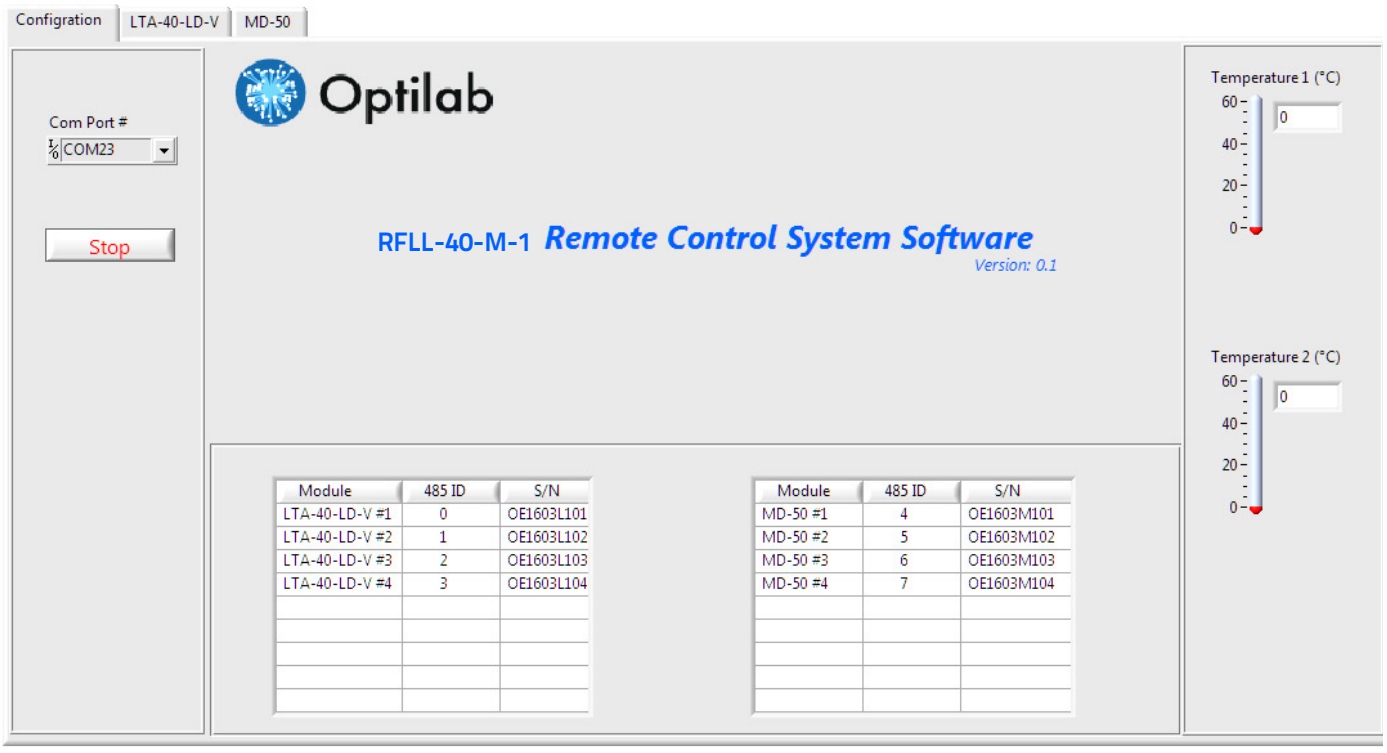
LTA-40-LD-V		**EDFA-16-C**	
Power Supply Requirements	±5V, 1A typ.	Power Supply Requirements	±5V, 1A typ.
Dimensions	206 mm x 102.4 mm x 31.5 mm	Dimensions	90 mm x 70 mm x 18 mm
Accessories	PS-5 & Cables	Accessories	PS-5 & Cables
PD-40-DC			
Power Supply Requirements	+5 V DC, 500 mA max.		
Dimensions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

RF Specifications

S11 Reflection	From DC to 25 GHz < -17.5 dB From 25 GHz to 40 GHz < -4 dB	**S22 Reflection**	From DC to 7 GHz < -18 dB From 7 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 perameters and monitors system performance.



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