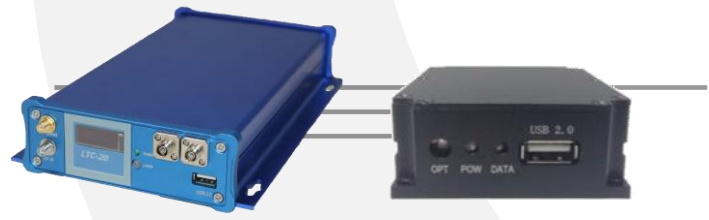


RFLL-40-L-3



LTC-40

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 LTC-40 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

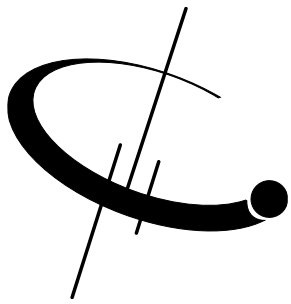
USE IN

- 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

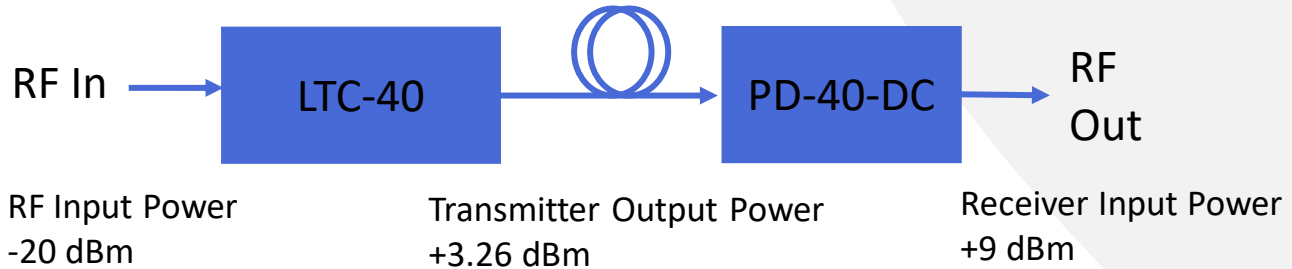
| | |
|------------------------|---|
| Analog Bandwidth | 32 GHz |
| Link Gain Vs Bandwidth | -30 dB / 29 GHz Typical -36 dB / 32 GHz Typical -42 dB / 40 GHz Typical |
| Input 1dB Comp | 14 dBm @ 1 GHz |
| Gain Flatness | +/- 0.5 dB over 1 GHz |
| Noise Figure | 25 dB @ 10 GHz 33 dB @ 30 GHz |
| SFDR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



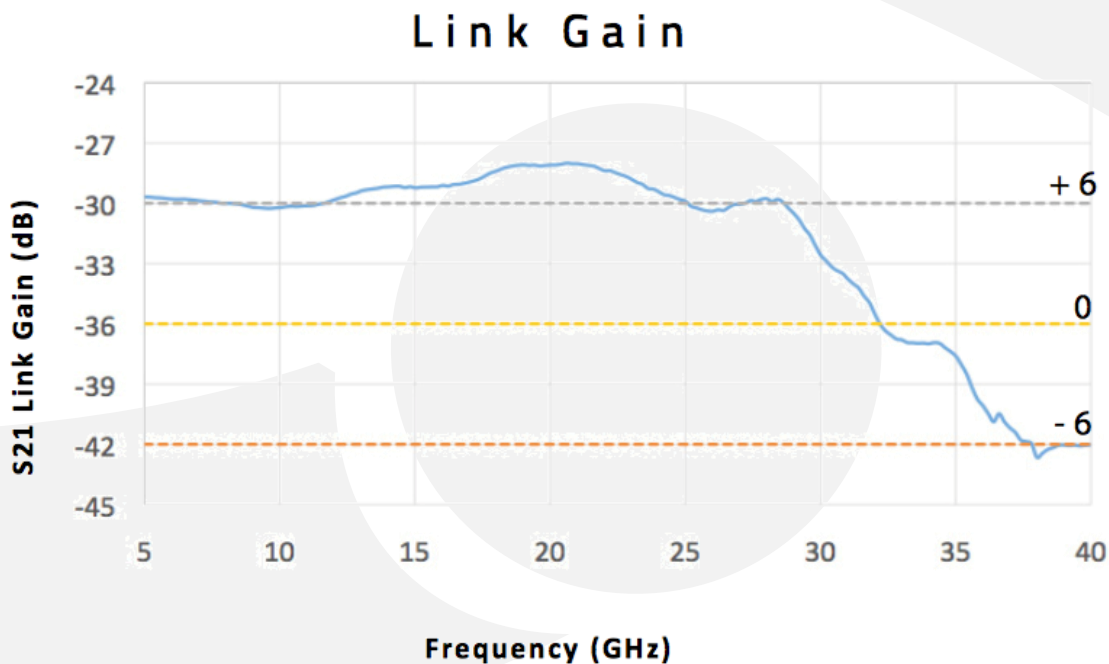


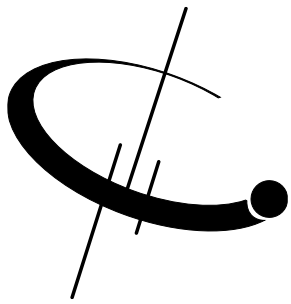
RFL-40-L-3

CONFIGURATION DRAWING



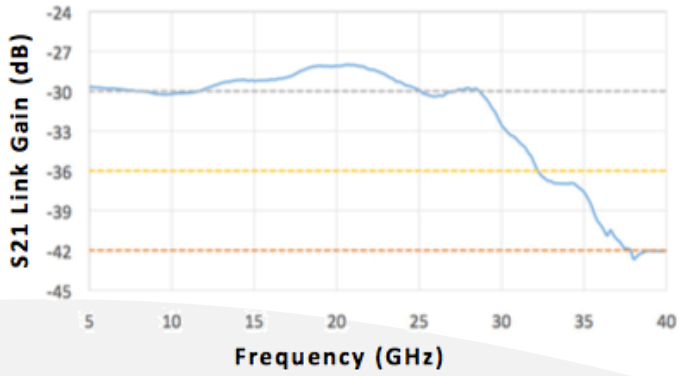
- **LTC-40**, 40 GHz Lightwave Transmitter Module for RFoF
The unit is a high performance Lightwave Transmitter Module designed for analog photonics applications from DC to 40 GHz.
- **PD-40-DC**, 40 GHz Linear InGaAs PIN Photodetector, Module
The Optilab PD-40-M is a 40 GHz bandwidth PIN receiver module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



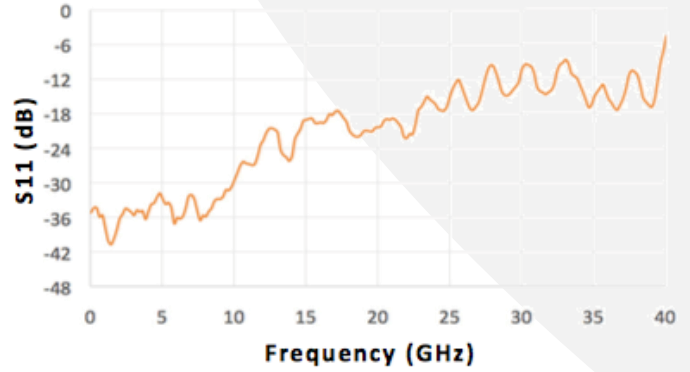


RFL-40-L-3

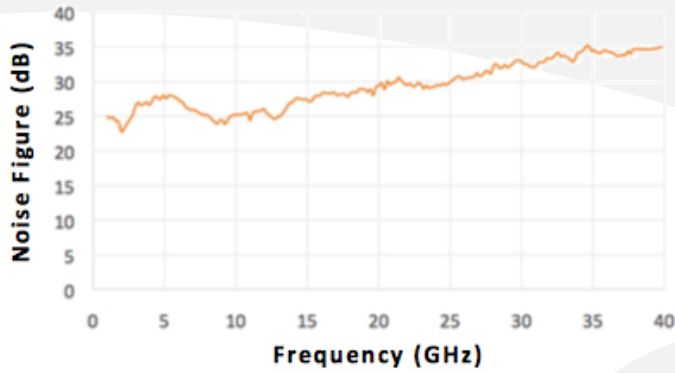
S21 Bandwidth



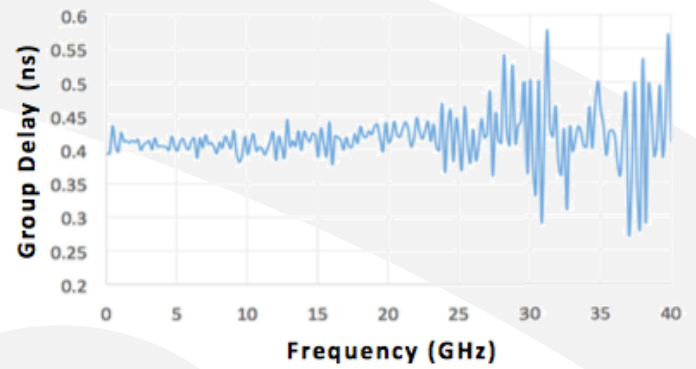
S11 Response



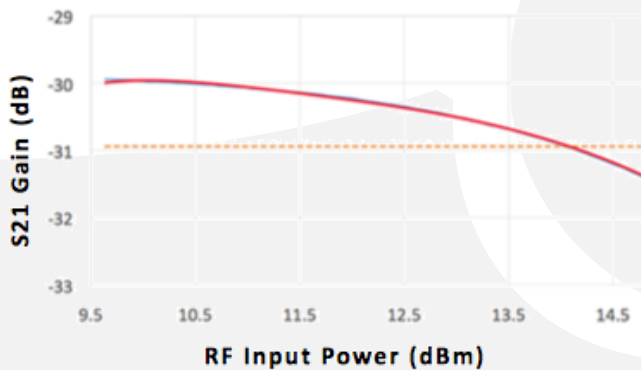
Noise Figure



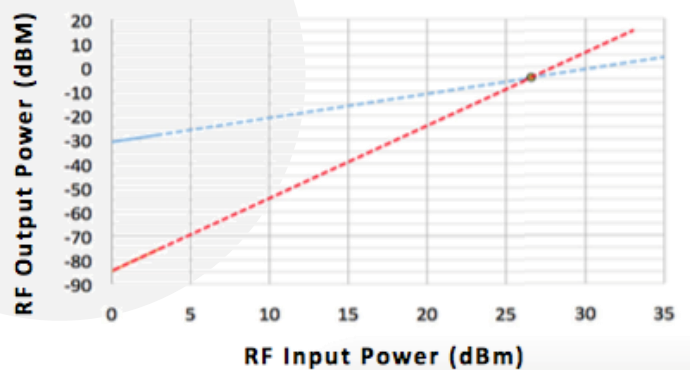
Group Delay

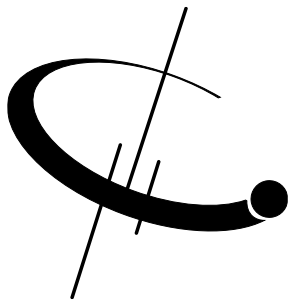


1 dB Compression



IIP3 Plot





RFL-40-L-3

GENERAL SPECIFICATIONS

| | LTC-40 | PD-40-DC |
|--------------|----------------------|----------------------|
| Power Supply | AC Power Cord | +5 V DC, 500 mA max. |
| Dimensions | 241 x 152 x 41 (mm) | 82 x 60 x 26.5 (mm) |
| Accessories | 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 (OPTIONAL)

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

