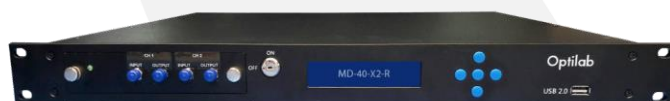


MD-40-X2-R



Dual 40 GHz Modulator Driver/RF Amplifier

DEVICE

The MD-40-X2-R is a dual channel, 40 Gb/s Bandwidth RF Amplifier, enclosed in a single 1U rackmount housing. Each channel on the MD-40-X2-R provides a high-quality, single-ended voltage to drive an external LiNbO₃ modulator, with independent control and monitoring on all amplified signals. Typical applications include driving EML, EAM, and Mach-Zehnder modulators, and amplifies 40 Gb/s data input signals to >7.5 Vp-p drive levels. The MD-40-X2-R flat gain and flat group delay response yields a high-quality, low-jitter electrical drive signal, that can also be used as a wideband RF amplifier with useful bandwidth of up to 38 GHz. Its high gain of 27 dB makes it suitable for many RF link applications, and is a perfect match to Optilab's extensive optical transmitter catalog, with remote accessibility via a single USB port. Contact Optilab for more information.

OVERVIEW

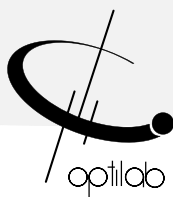
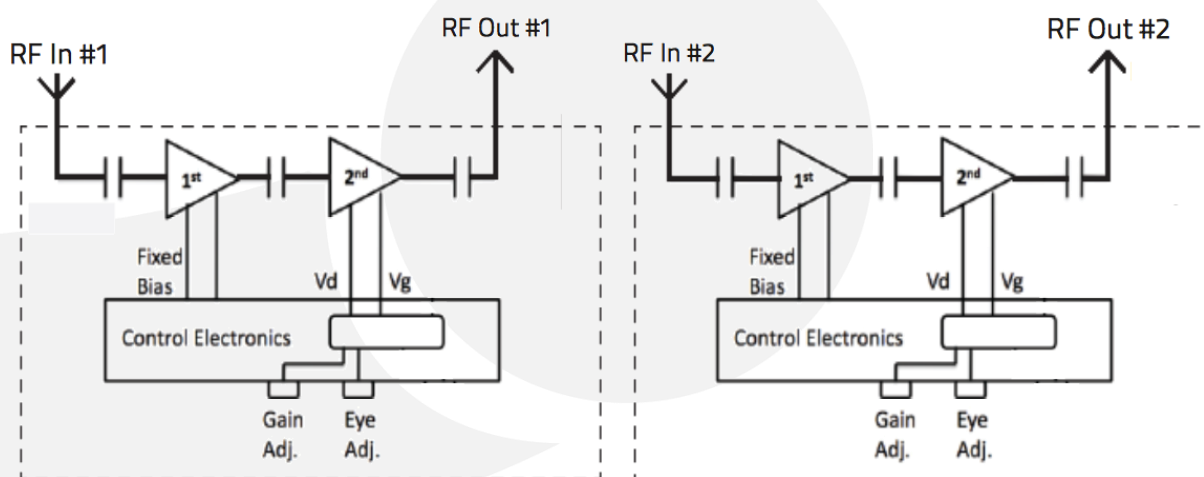
FEATURES

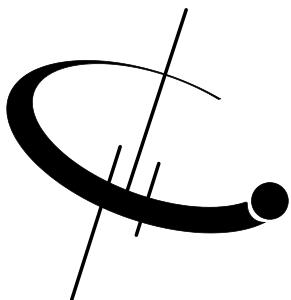
- Dual Channel Driver/Amplifier
- Analog bandwidth exceeds 32 GHz
- Data rates up to 40 Gb/s
- Dual independent RF Channels
- Variable Gain Control built-in
- 2.92 mm connectors, K-type
- Remote control via USB

USE IN

- 40 Gb/s digital modulation
- OC-768 SONET/SDH
- Analog RF amplification to 38 GHz
- RF over Fiber Link Amplifier
- General laboratory testing

FUNCTIONAL DIAGRAM





MD-40-X2-R

SPECIFICATIONS

3 dB S21 Bandwidth	32 GHz typ.
S11 Characteristics	< -8 dB @ 40 GHz
Saturated Output Power	> 21 dBm typ.
RF Gain	27 dB available
Gain Ripple	±2.5 dB over 26GHz
Input, Output Impedance	50Ω
Input Return Loss	10 dB min.
Output Return Loss	10 dB min.
Total Power Dissipation	2 W max.
Gain Adjustment Range	10 dB min.

GENERAL

DIGITAL APPLICATIONS

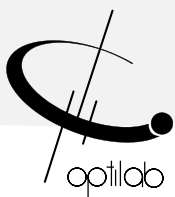
Data Rate	> 40 Gb/s
Pulse Response	20% - 80%, rise time 12 ps typ.
Output Amplitude	7.5 V _{p-p} max.
Input Range	500 mV to 1.5 V

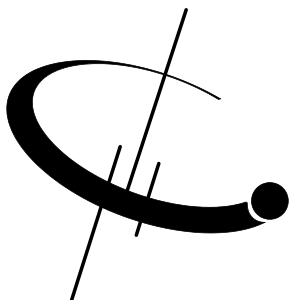
ANALOG APPLICATIONS

Useful Frequency Range	30 KHz to 38 GHz (-6 dB)
P1dB Output	> 23 dBm typ.
Group Delay (2 to 10 GHz)	± 25 ps
Noise Figure	11 dB typ.
Small Signal Gain	30 dB typ.

MECHANICAL

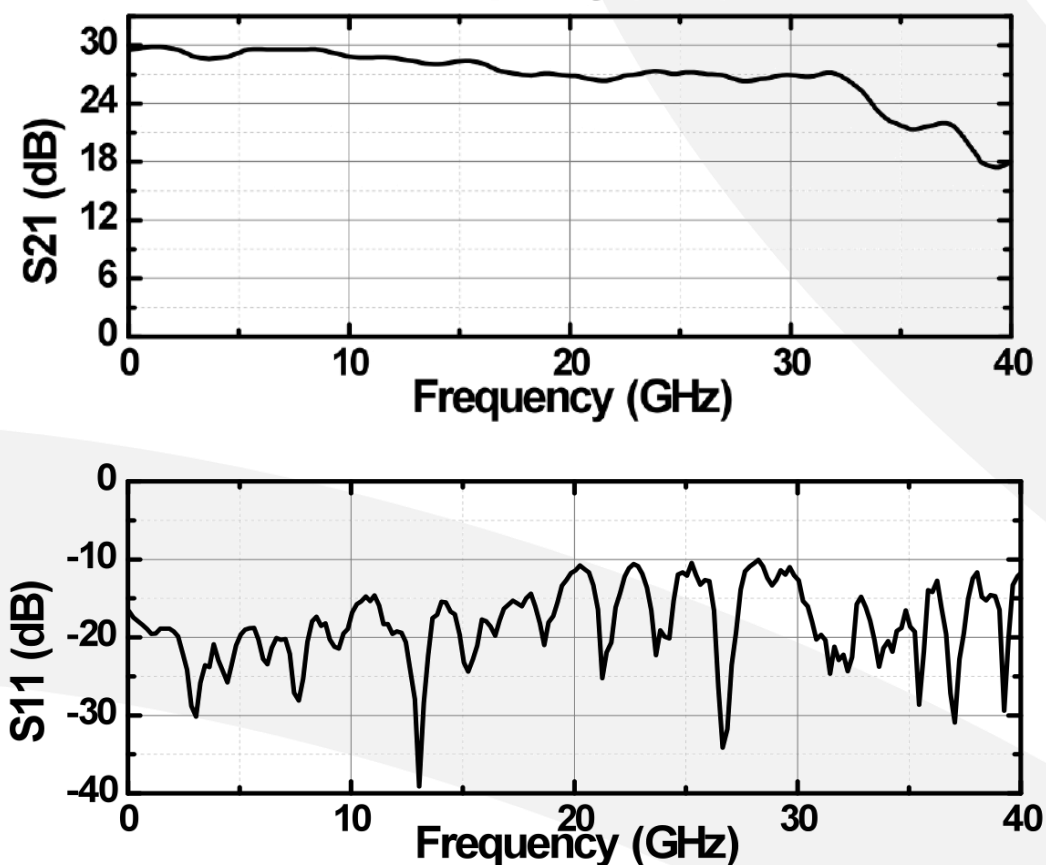
Operating Temperature	0°C to +60°C
Storage Temperature	-40°C to +85°C
Operating Humidity	85%
Power Supply Requirements	100/220 V AC, 50/60 Hz
Accessories Included	AC Power Cord, USB Cord
RF Input/Output Connector	2.92 mm, K-Connector
Remote Control	USB 2.0
Display Output	Dual LCD



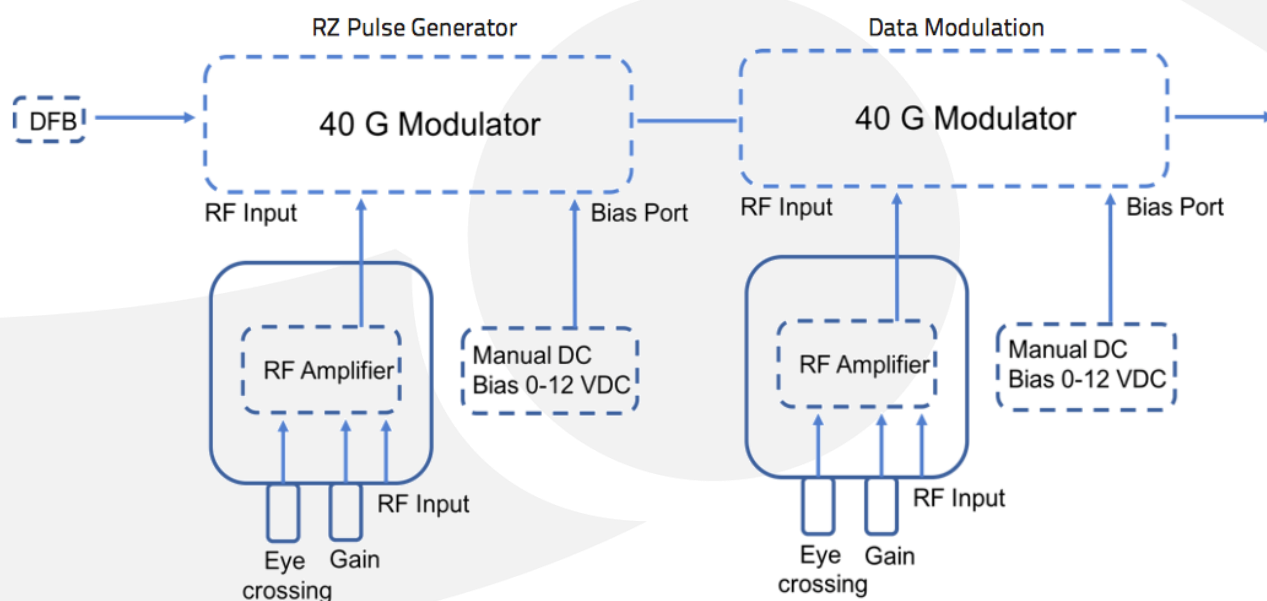


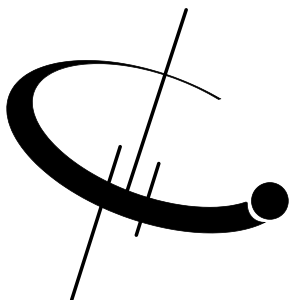
MD-40-X2-R

TYPICAL S21 AND S11 BANDWIDTH



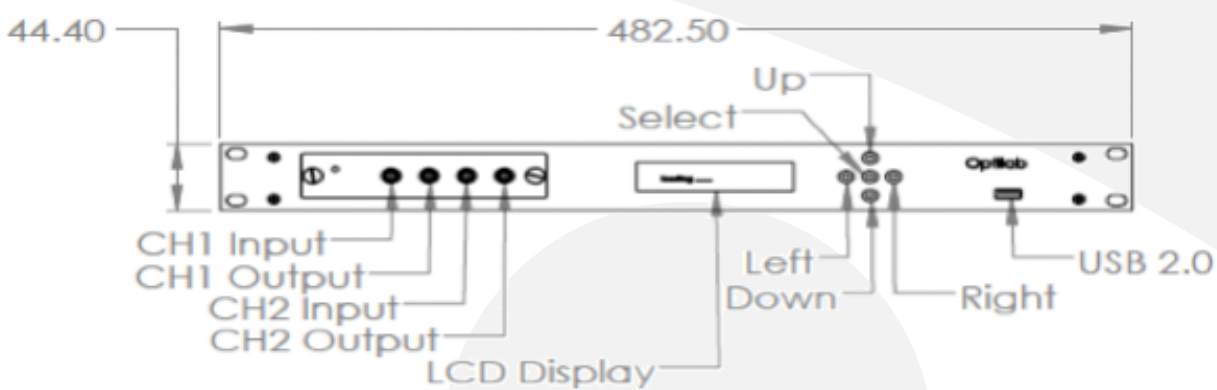
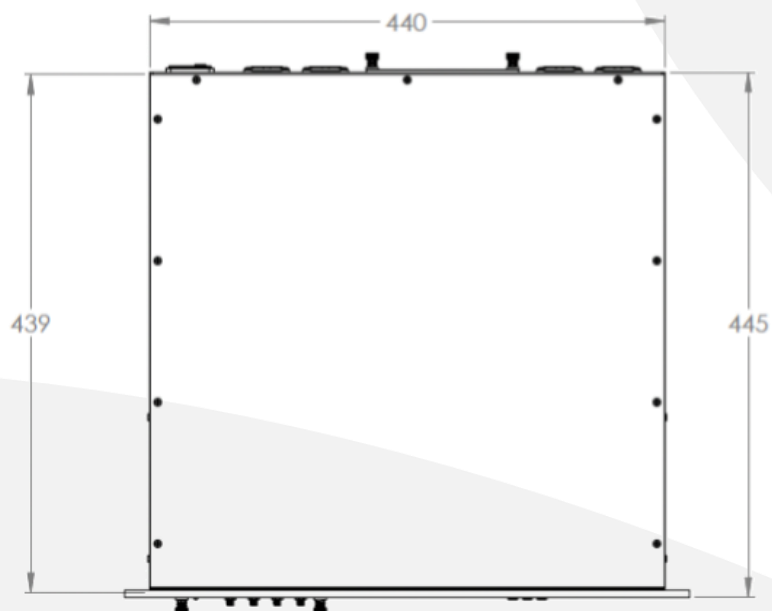
APPLICATION FUNCTIONAL DIAGRAM

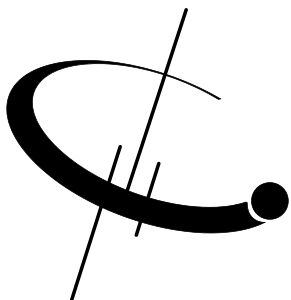




MD-40-X2-R

MECHANICAL DRAWING





MD-40-X2-R

FRONT PANEL DIAGRAM



MD-40 CONTROL FUNCTION

1	RF input	250 mV to 1500 mV
2	RF output	7.5 V peak to peak max.
3	RF Power Key Switch	
4	LCD Display	
5	Selector Buttons	
6	USB 2.0	

LABVIEW SOFTWARE INTERFACE

