

MD-40-X4-R



Dual 40 GHz Modulator Driver/RF Amplifier

DEVICE

The MD-40-X4-R is a quad channel, 40 GHz Bandwidth RF Amplifier, enclosed in a single 1U rackmount housing. Each channel on the MD-40-X4-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 50 Gb/s data input signals to >7.5 Vp-p drive levels. The MD-40-X4-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 40 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

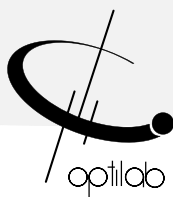
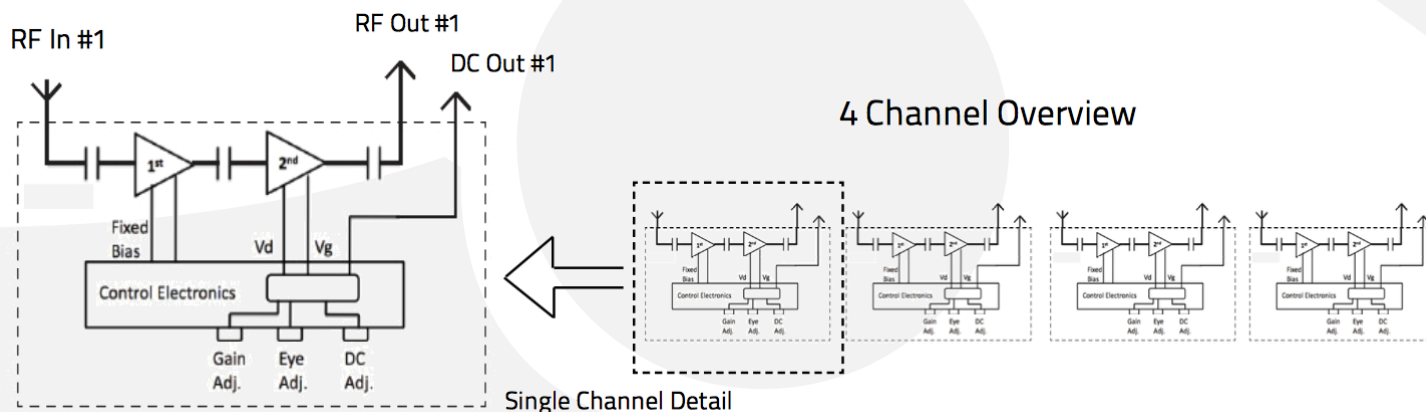
FEATURES

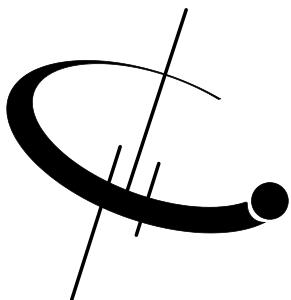
- Quad Channel Driver/Amplifier
- Analog bandwidth exceeds 40 GHz
- Data rates up to 50 Gb/s
- Dual independent RF Channels
- Variable Gain Control built-in
- 2.4 mm connectors (optional K-type)
- Remote control via USB

USE IN

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

FUNCTIONAL DIAGRAM





MD-40-X4-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

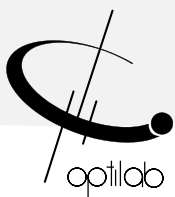
Data Rate	> 40 Gb/s
Pulse Response	20% - 80%, rise time 12 ps typ.
Output Amplitude	7.5 Vp-p max.
Input Range	500 mV to 1.5 V

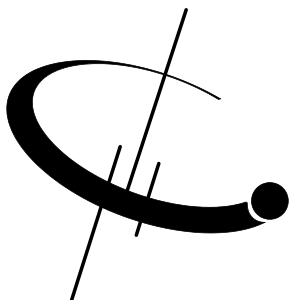
ANALOG APPLICATIONS

Useful Frequency Range	30 KHz to 38 GHz
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

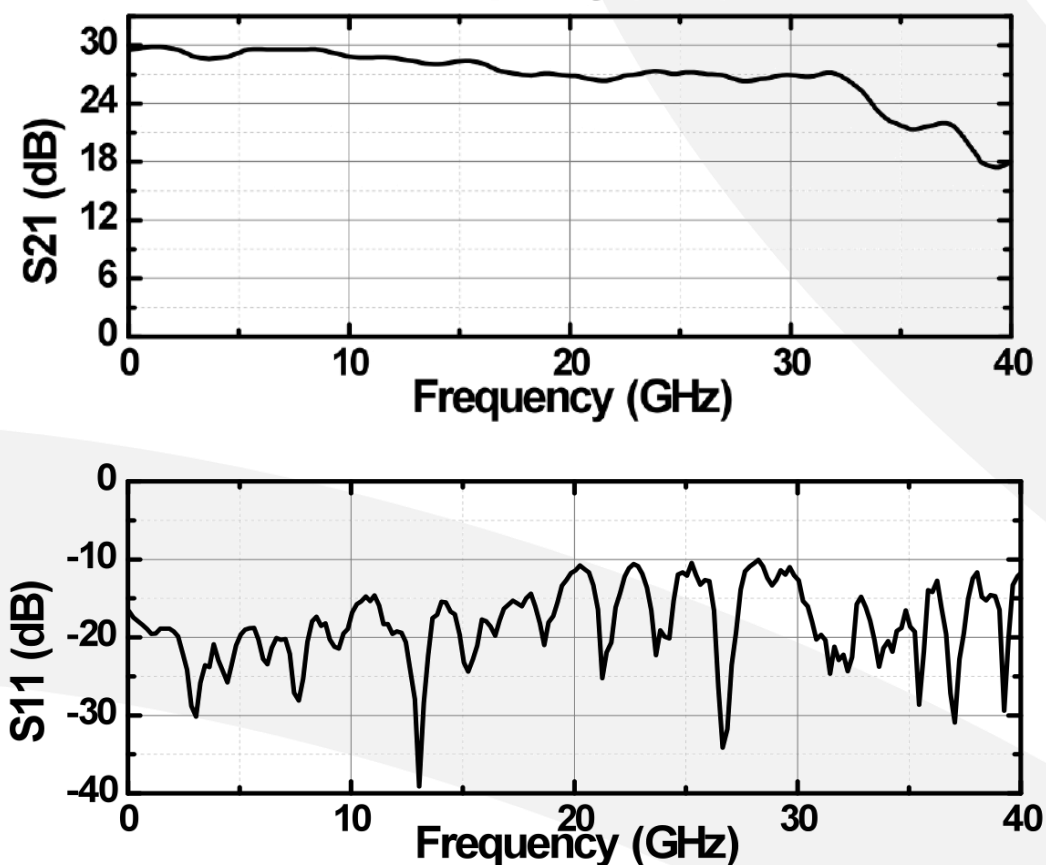
Operating Temperature	0°C to +60°C
Storage Temperature	-40°C to +85°C
Operating Humidity	85%
Power Supply Requirements	100/220 V AC, 50/60 Hz
Accessories Included	AC Power Cord, USB Cord
RF Input/Output Connector	2.4 mm (V), K-Connector optional
Remote Control	USB 2.0
Display Output	Dual LCD



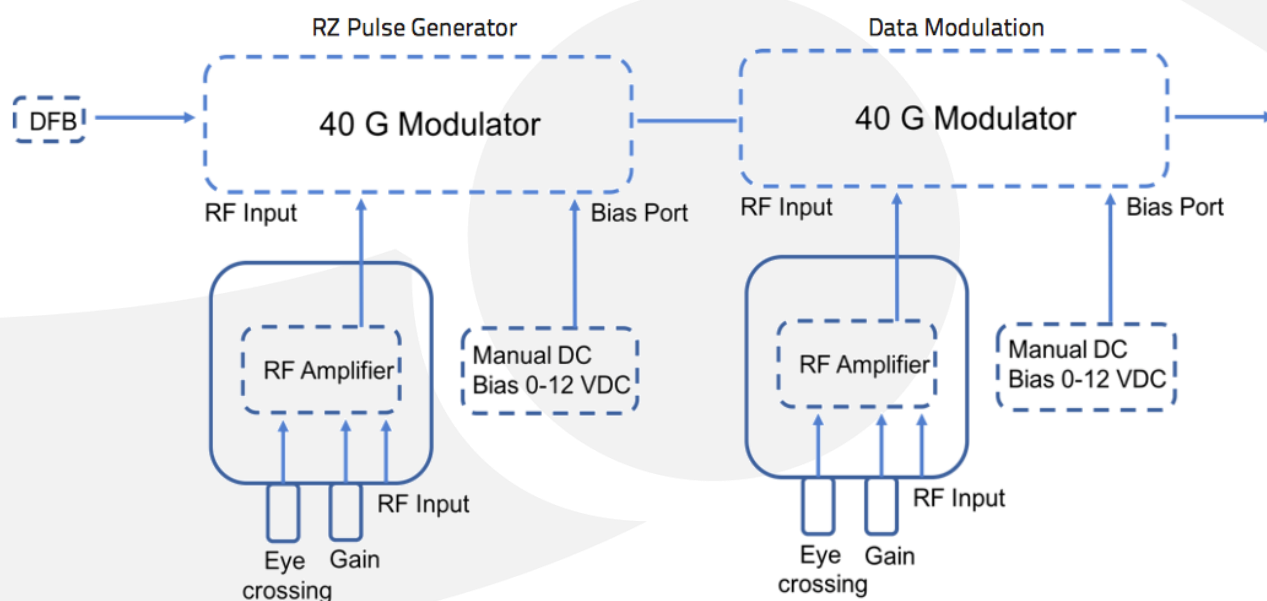


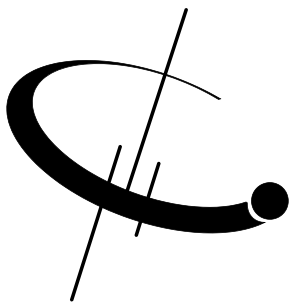
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TYPICAL S21 AND S11
BANDWIDTH



APPLICATION FUNCTIONAL DIAGRAM



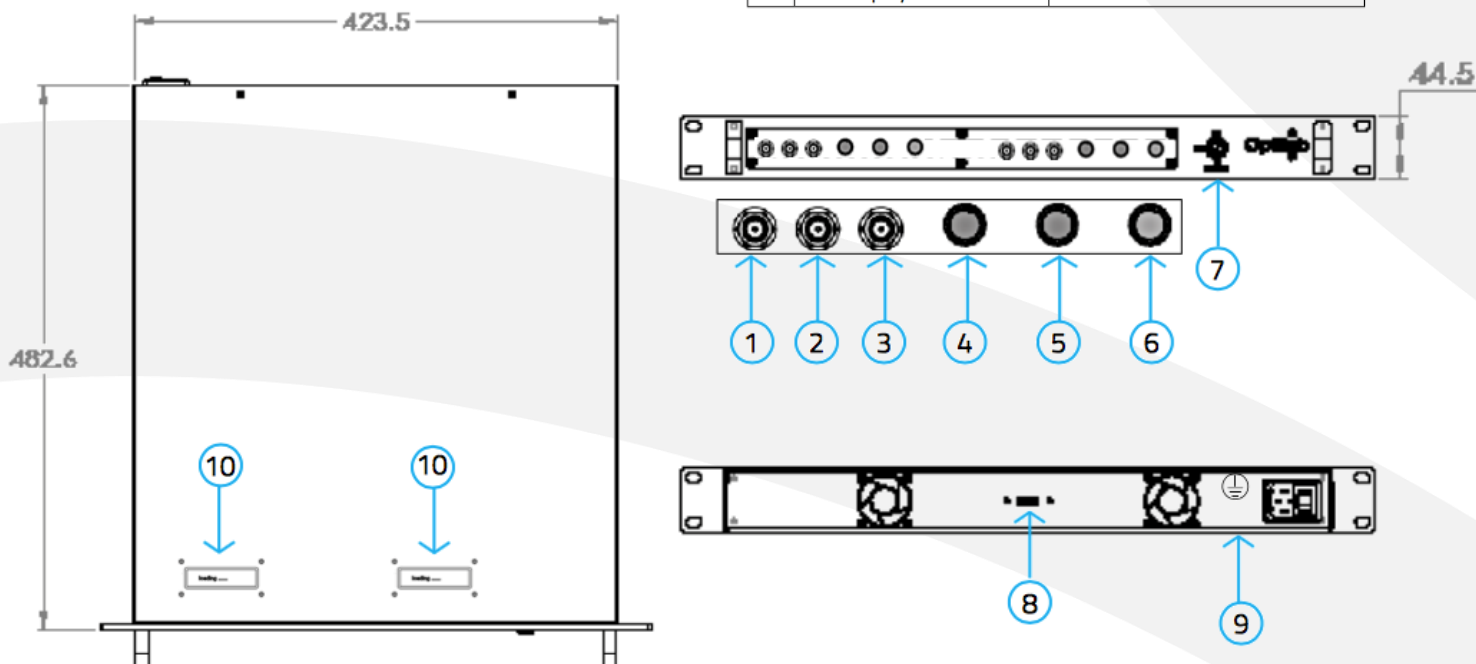


MD-40-X4-R

MD-40 CONTROL FUNCTION

1	RF input	250 mV to 1500 mV
2	RF output	7.5 V peak to peak max.
3	DC output	Up to 10 VDC
4	Gain adjust knob	0-15 dB adjustment range
5	Eye crossing adjust knob	± 10 %
6	DC output adjust knob	0 to 10 V continuous adjustment
7	RF Power Key Switch	
8	USB 2.0	
9	Grounding Post	
10	LCD Display	

MECHANICAL DRAWING



LABVIEW SOFTWARE INTERFACE

