

MD-50-X4-R



DEVICE

Dual 50 GHz Modulator Driver/RF Amplifier

The MD-50-X4-R is a four channel, 50 GHz Bandwidth RF Amplifier, enclosed in a single 1U rackmount housing. Each channel on the MD-50-X4-R provides a high-quality, single-ended voltage to drive an external LiNbO3 modulator, with independent control and monitoring on both amplified signals. Typical applications include driving EML, EAM, and Mach-Zehnder modulators, and amplifies 60 Gb/s data input signals to >7.5 Vp-p drive levels. The MD-50-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 50 GHz. Its high gain of 26 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

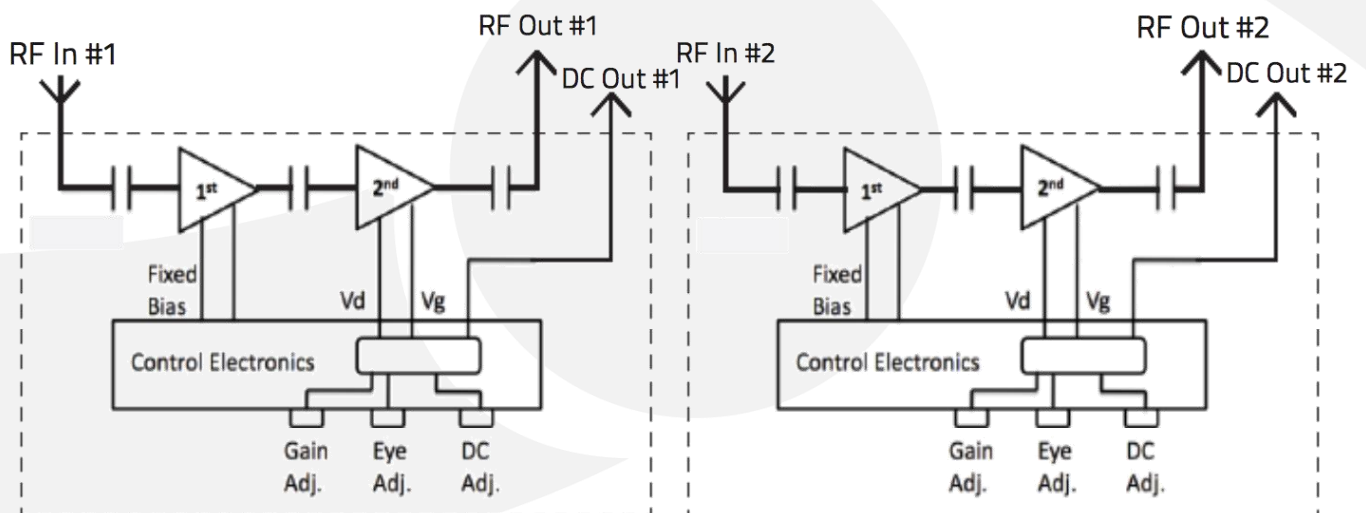
FEATURES

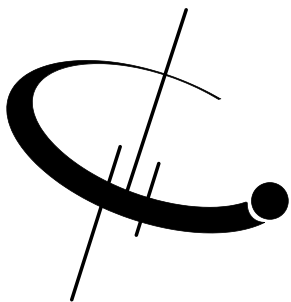
- Dual Channel Driver/Amplifier
- Analog bandwidth exceeds 50 GHz
- Dual Independent RF Channels
- Data rates up to 60 Gb/s
- Variable Gain Control built-in
- 2.4 mm connectors (optional k)
- Remote control via USB

USE IN

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

DUAL CHANNEL FUNCTIONAL DIAGRAM





MD-50-X4-R

SPECIFICATIONS

3 dB s21 Bandwidth	50 GHz typ.
S11 Characteristics	< -10 dB at 30 GHz
Saturated Output Power	> 23 dBm typ.
RF Gain	15 dB to 30 dB, variable
Gain Ripple	± 1.5 dB over 20 GHz
Input, Output Impedance	50 Ω
Input VSWR to -10 GHz	1.6 : 1 typ.
Output VSWR	2 : 1 typ.
Total Power Dissipation	20 W typ.
RF-Gain Adjustment Range	15 dB typ.
DC Output Adjustable	0-10 V DC

GENERAL

DIGITAL APPLICATIONS

Data Rate	Up to 60 Gb/s
Pulse Response	10%, rise time 8 ps typ.
Output Amplitude	7.5 Vp-p typ.
Input Range	500 mW to 1.5 V

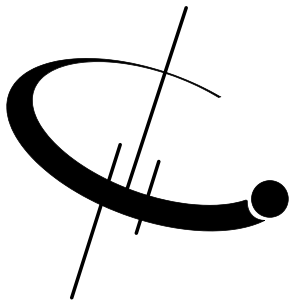
ANALOG APPLICATIONS

P1 dB Output	> 23 dBm max.
Group Delay (2 to 10 GHz)	± 25 ps
Noise Figure	11 dB
Small Signal Gain	30 dB typ.

MECHANICAL

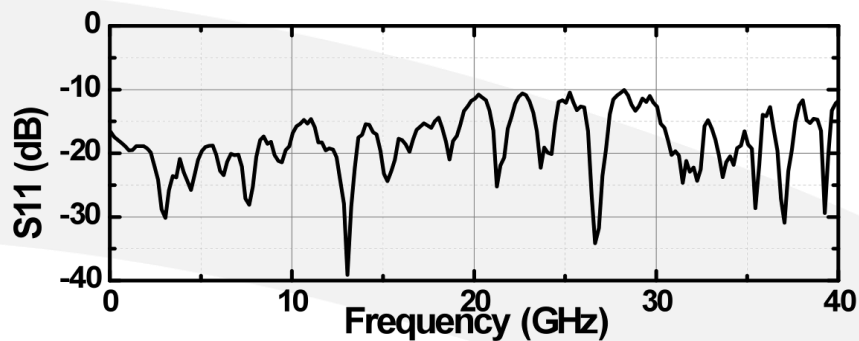
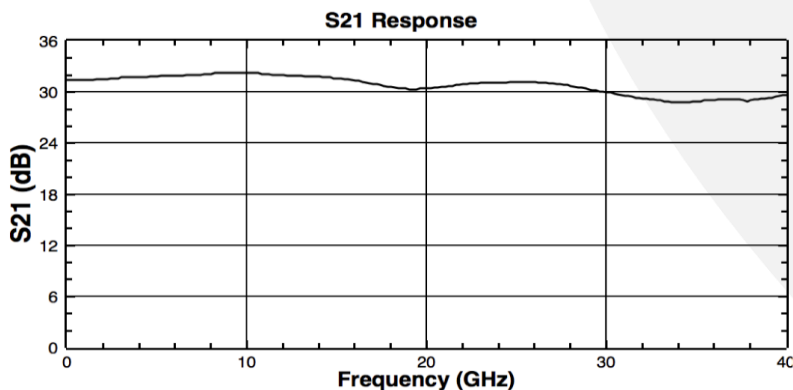
Operating Temperature	0 °C to +60 °C
Storage Temperature	-40 °C to +85 °C
Operating Humidity	85%
Power Supply Requirements	110/220 V AC, 50/60 Hz
Accessories Included	AC Power Cord, USB Card
RF Input/Output Connector	2.4 mm (V), K-Connector Optional
Remote Control	USB 2.0
Display Output	Dual LCD



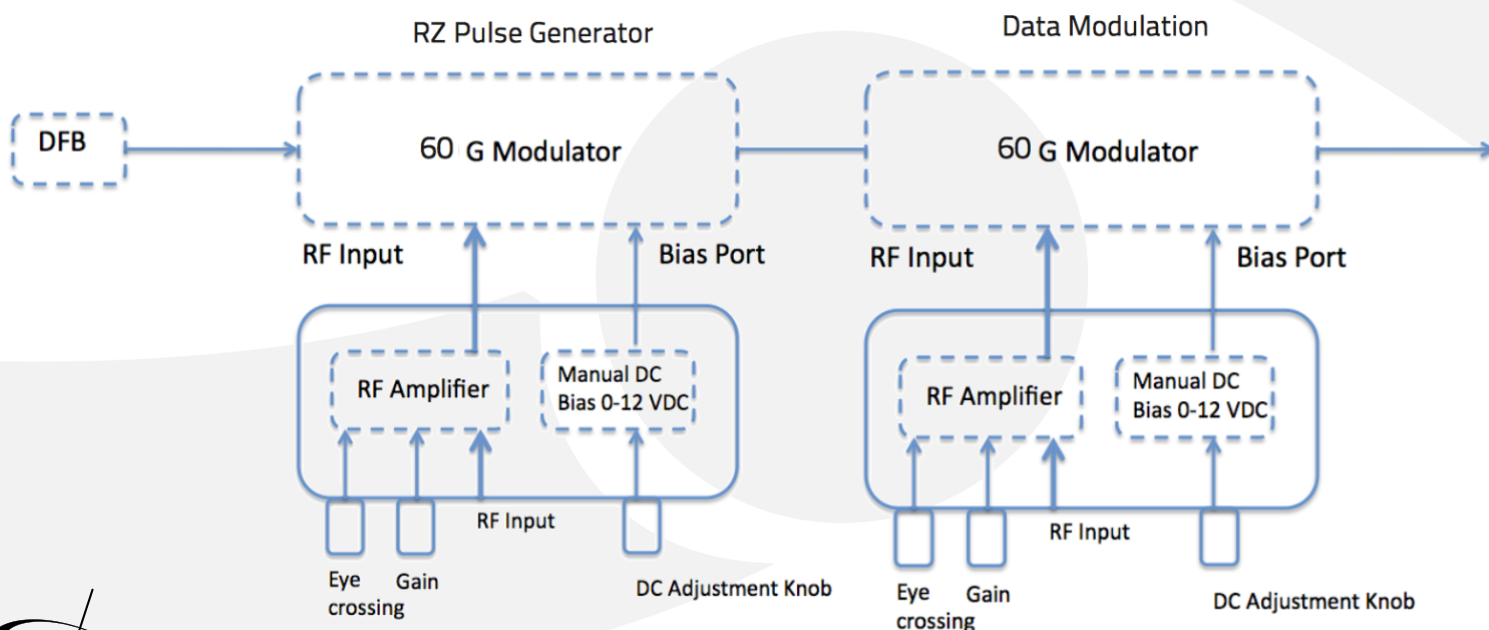


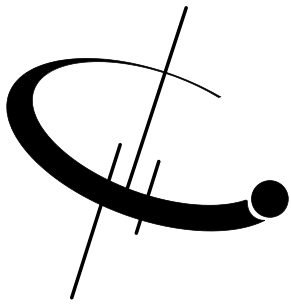
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TYPICAL S21 AND S11 BANDWIDTH



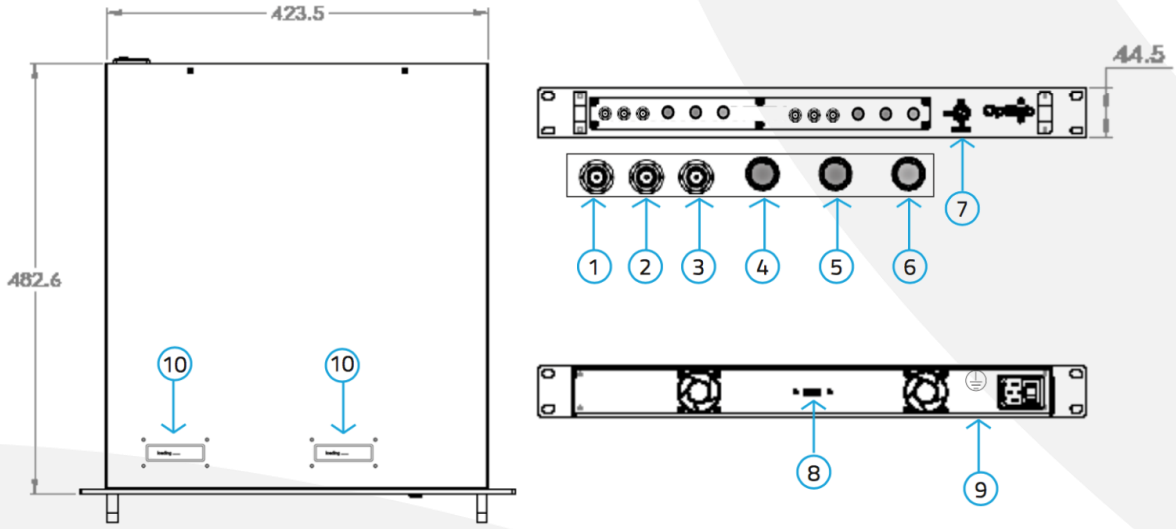
APPLICATION FUNCTIONAL DIAGRAM





MD-50-X4-R

MECHANICAL DRAWING



Unit: mm

MD-50 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	

LABVIEW SOFTWARE INTERFACE

