

MD-50



50 GHz Modulator Driver/RF Amplifier

DEVICE

The Optilab MD-50 Modulator Driver (MD) is a 50 GHz Bandwidth RF Amplifier in a compact and user friendly module that provides a high-quality, single-ended voltage to drive an external LiNbO3 modulator. Typical applications include driving EML, EAM, and Mach-Zehnder devices, and it can also be used as a wide band RF amplifier with useable bandwidth of up to 50 GHz. MD-50 amplifies 60 Gb/s input signals to >7.5 Vp-p drive levels, and the flat gain and group delay response yield a high quality, low-jitter electrical drive signal for digital applications. The RF gain and eye crossing level can be easily adjusted using the knobs on front panel or remotely from the USB interface. It also integrates a LCD display to show status information. Featuring a single 12V DC control and a built in heat sink, this versatile module also has an anodized, precision-machined aluminum housing designed for efficient heat dissipation during prolonged use. In addition to its amplification function the MD-50 also features a manually adjustable DC bias output voltage port, to further complement its effectiveness when used with a standard LiNbO3 modulator. Contact Optilab for more information.

OVERVIEW

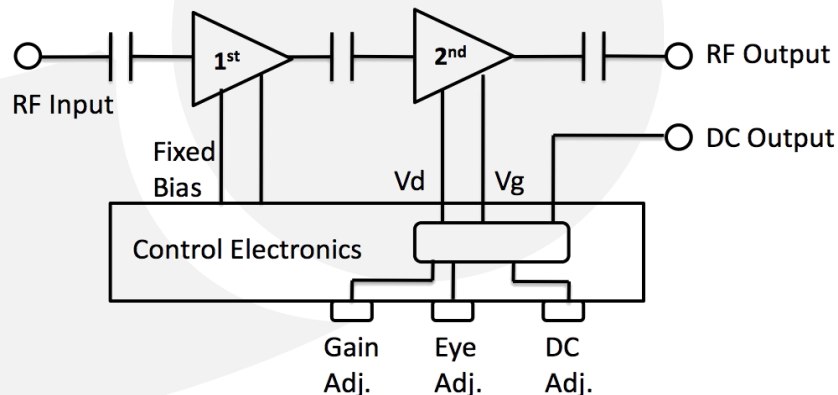
FEATURES

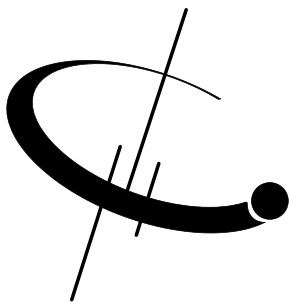
- Analog bandwidth exceeds 50 GHz
- Data rates up to 60 Gb/s
- Compact size
- Variable Gain Control built-in
- Single 12 V power supply included
- Built in LCD display
- 2.4 mm connectors (optional K)
- Remote control via USB

USE IN

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

FUNCTIONAL DIAGRAM





MD-50

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
Input, Output Impedance	50Ω
Input VSWR to -10 GHz	1.6 : 1 typ.
Output VSWR	2.0 : 1 typ.
Total Power Dissipation	7 W max.
Gain Adjustment Range	15 dB typ.

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 mV to 1.5 V

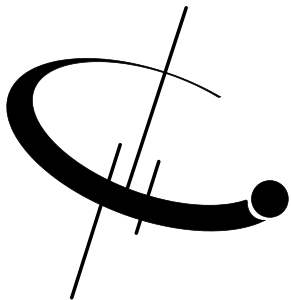
ANALOG APPLICATIONS

Useful Frequency Range	50 KHz to 45 GHz
P1dB Output	> 23 dBm max.
Group Delay (2 to 10 GHz)	± 25 ps
Noise Figure	11 dB
Small Signal Gain	30 dB typ.

MECHANICAL

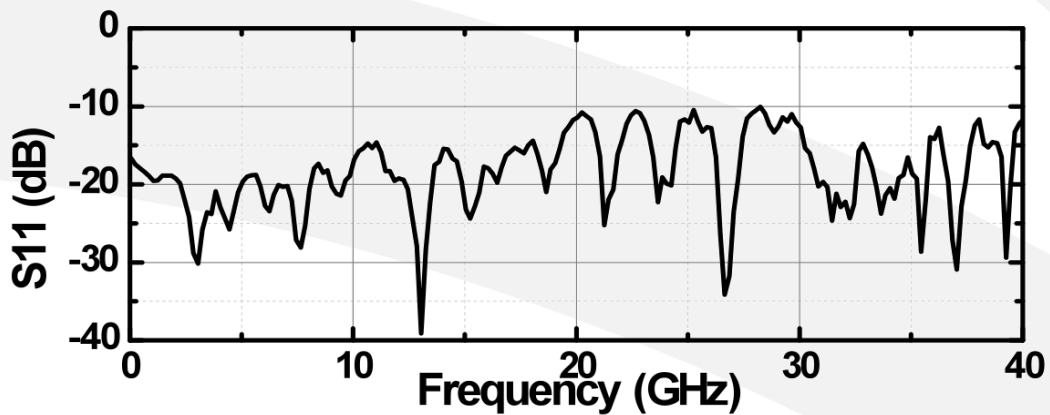
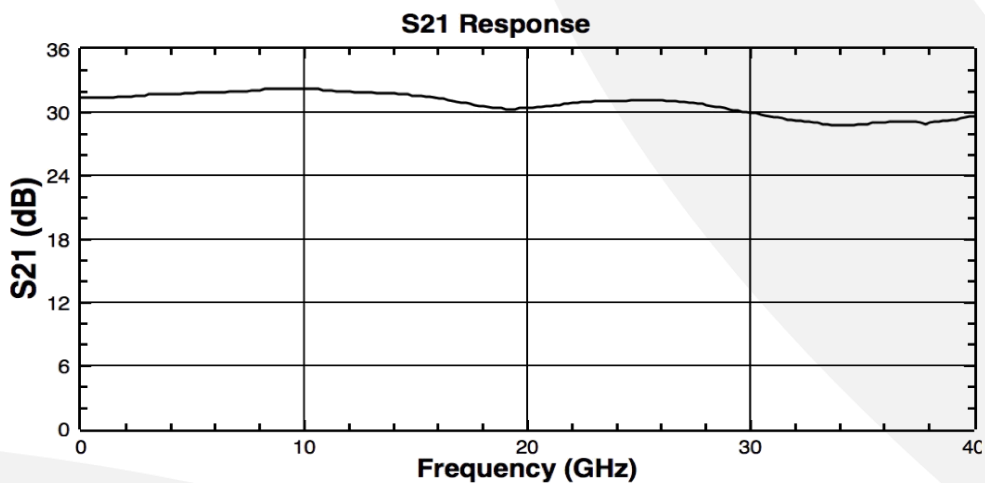
Operating Temperature	0°C to +60°C
Storage Temperature	-40°C to +85°C
Operating Humidity	85%
Power Supply Requirements	+12 V DC, 2 A max.
Accessories Included	110 V – 240 V AC Adaptor and Cable
RF Input/Output Connector	2.4 mm (V compatible)
Electrical Connector	Molex 4 pin
Dimensions	150mm x 150mm x 30mm



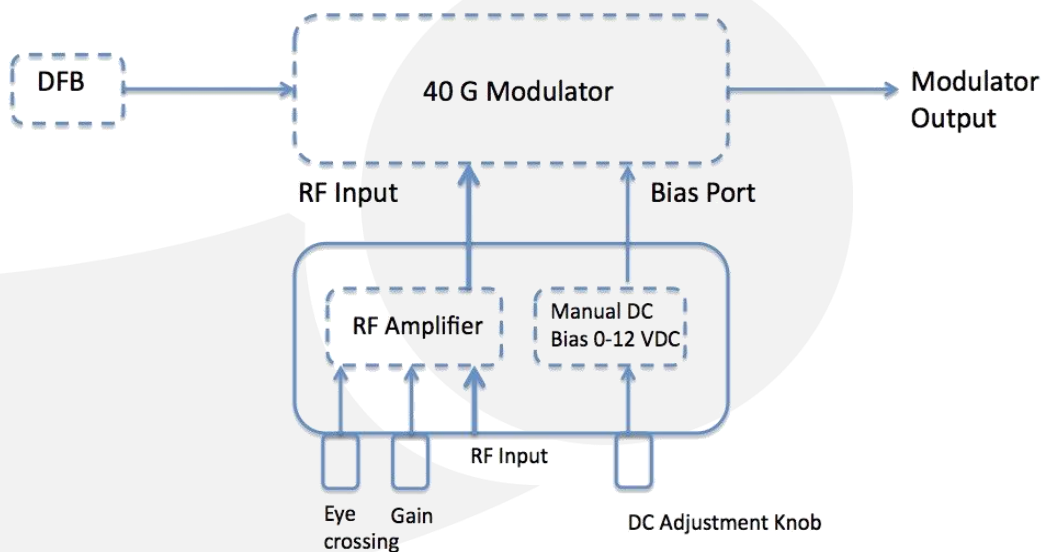


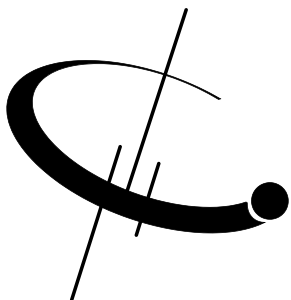
MD-50

TYPICAL S21 AND S11 BANDWIDTH



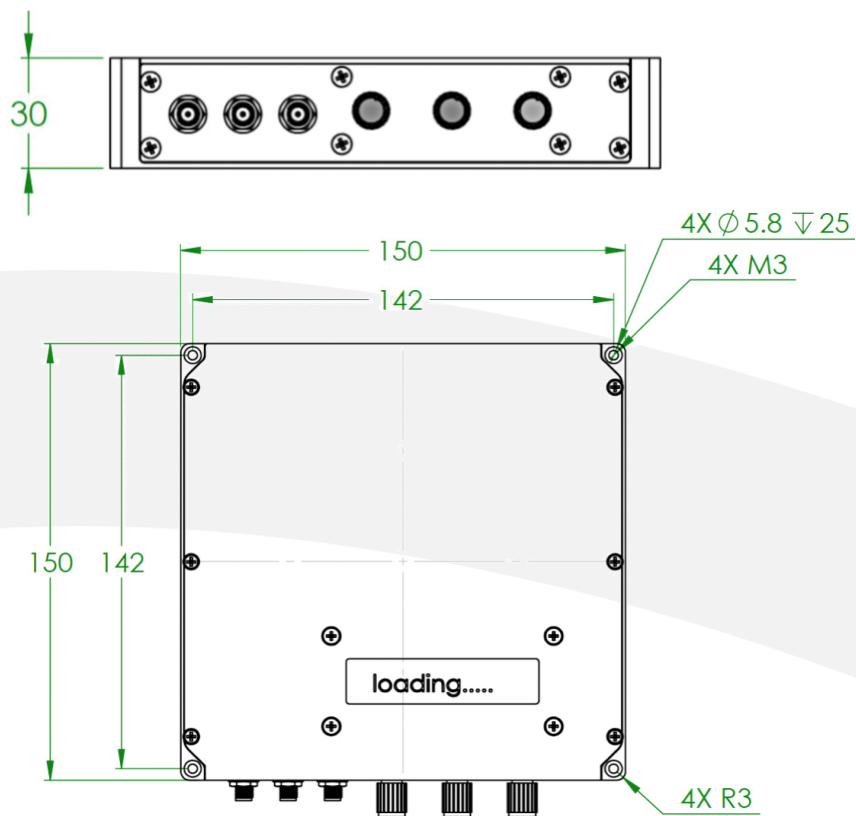
APPLICATION FUNCTIONAL DIAGRAM





MD-50

MECHANICAL DRAWINGS



PRECISION POWER SUPPLY PS-12-M



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	\pm 10 %
6	DC output adjust knob	0 to 10 V continuous adjustment

