

MD-12-DC



12 GHz Modulator Driver w/ Adjustable DC Bias

The Optilab MD-12-DC Modulator Driver (MD) is a 12 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 wideband RF amplifier with useable bandwidth of up to 12 GHz, including its +26 dBm adjustable output, making it suitable for many RF link applications. The MD-12-DC amplifies 12.5 Gb/s data 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. Featuring a 12 V DC power supply, 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-12-DC also features a manually adjustable DC bias output voltage port, to further compliment its effectiveness when used with a standard LiNbO₃ external modulator. Contact Optilab for more information.

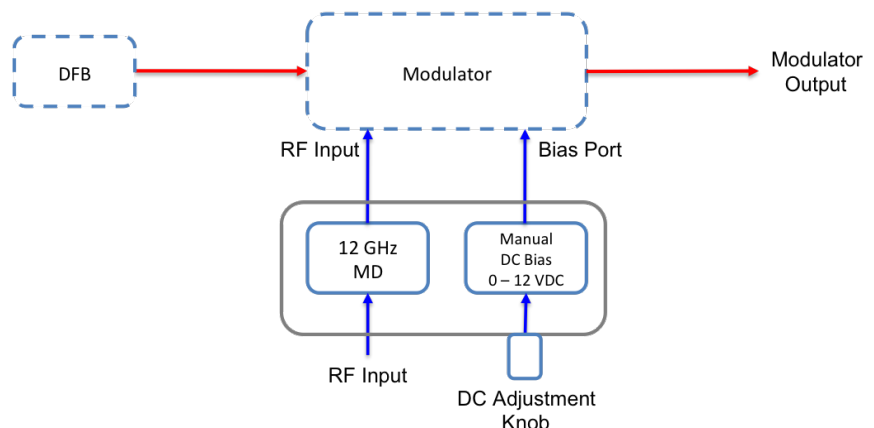
Features

- Bandwidth up to 12 GHz
- Data rates exceed 12.5 Gb/s
- Manual DC Bias Output Port to 12 Volt
- Compact size
- Variable Gain Control built-in
- Single 12 V Power supply included
- Built in heat sink

Applications

- 12.5 Gb/s Digital Modulation
- SONET/SDH
- Analog RF Amplification to 15 GHz
- RF over Fiber Link Amplified
- General Laboratory Testing

Functional Diagram



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OPTIONS

MD-12-DC

TECHNICAL INFO

For technical info and support:

sales@optilab.com

www.optilab.com

WEB ORDER

To order, please click below.



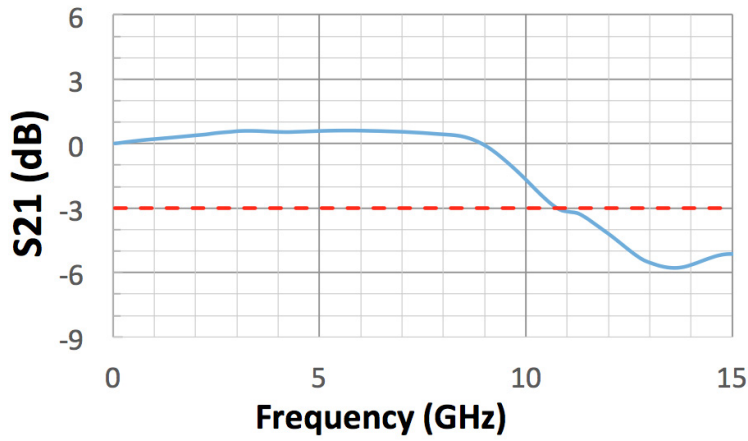
Optilab Advantage

- > Innovation
- > Performance
- > Quality
- > Customization
- > Warranty

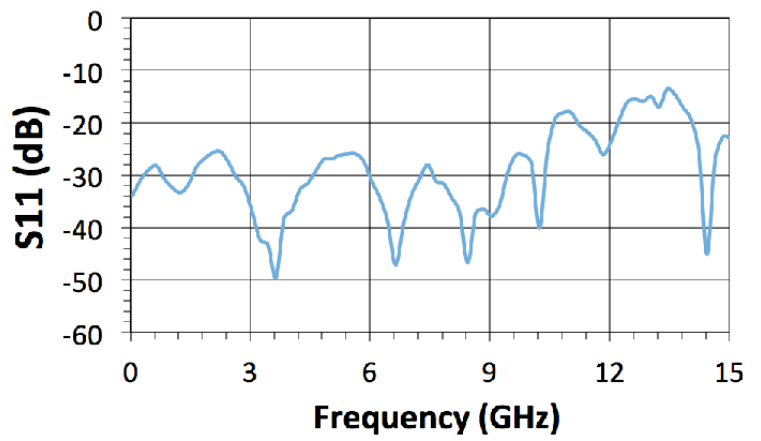
General Specifications	
3dB S21 Bandwidth	10 GHz min, 12 GHz typ.
S11 Characteristics	< -10 dB at 10 GHz
Saturated Output Power	>26 dBm typ.
RF Gain	14 db to 26 dB, variable
Gain Ripple	±1.5 dB
Input, Output Impedance	50 Ω
Input VSWR to -10 GHz	1.6:1 typ.
Output VSWR	2.0:1 typ.
Total Power Dissipation	7 W max.
Gain Adjustment Range	6 dB typ.
DC Control	
Manual DC Control Adjustment	-12 V to +12 V
Manual Bias Adjustment Range	-12 V to +12 V
Additional features	On/off switch
Digital Applications	
Data Rate	Up to 12.5 Gb/s
Pulse Response	10%, rise time 35 ps typ.
Output Amplitude	7.5 Vp-p typ.
Input Range	500 mV to 1.5 V
Analog Applications	
Useful Frequency Range	75 KHz to 15 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 Specifications	
Operating Temperature	0° C to +70° C
Storage Temperature	-45° C to +100° C
Operating Humidity	85%
Power Supply Requirements	+12 V DC, 1 A max.
Accessories Included	110 V - 240 V AC Adaptor and Cable
RF Input/Output Connector	K Connector Female
Electrical Connector	4-pin Molex
Dimensions	126 mm x 37 mm x 26 mm

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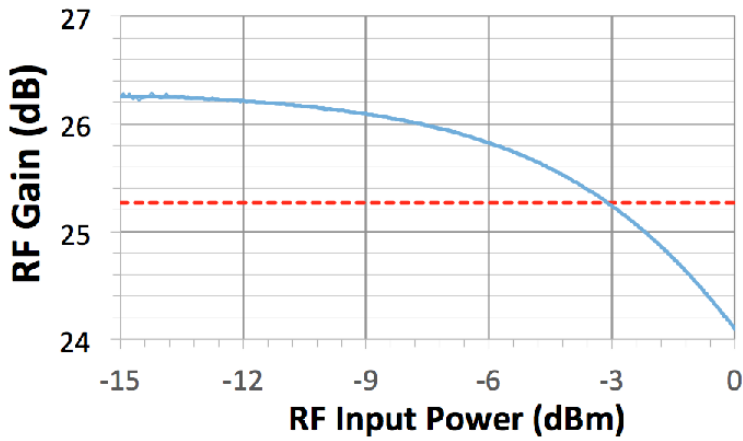
Typical S21 Response



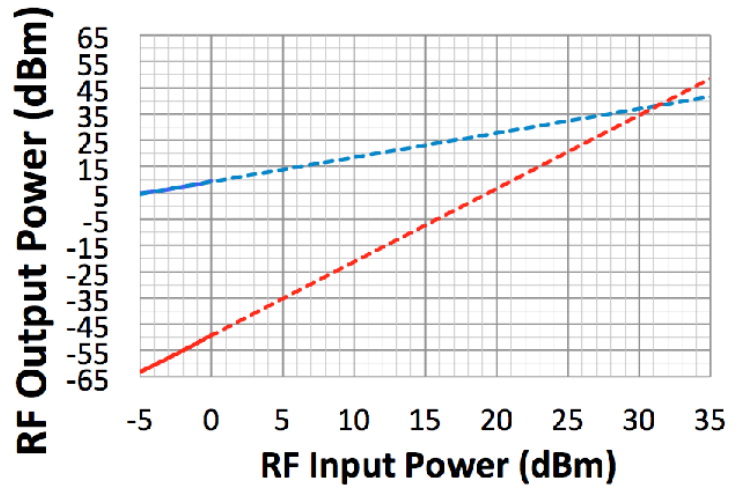
Typical S11 Response



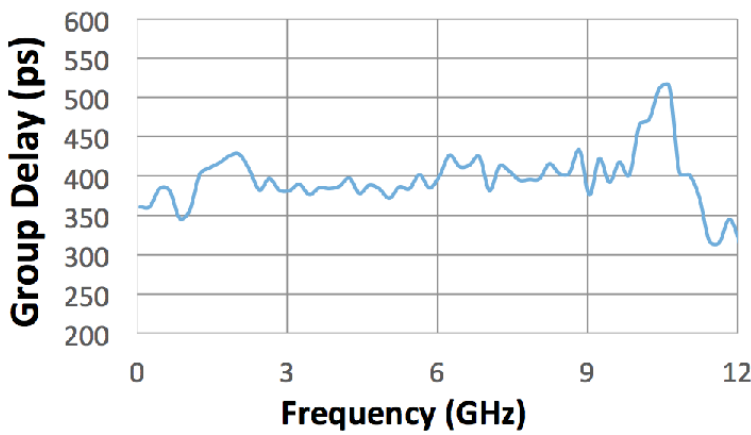
1 dB Compression



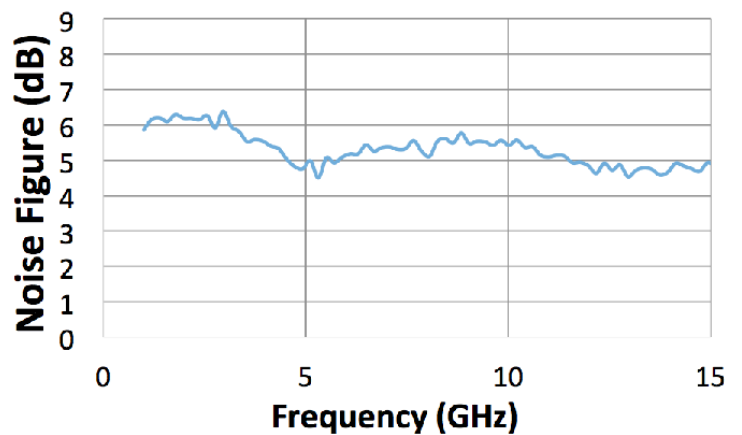
Third Order Intercept



Group Delay

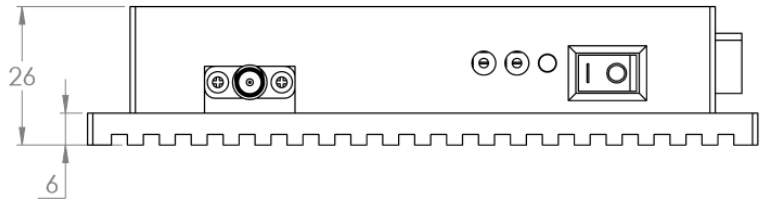


Noise Figure



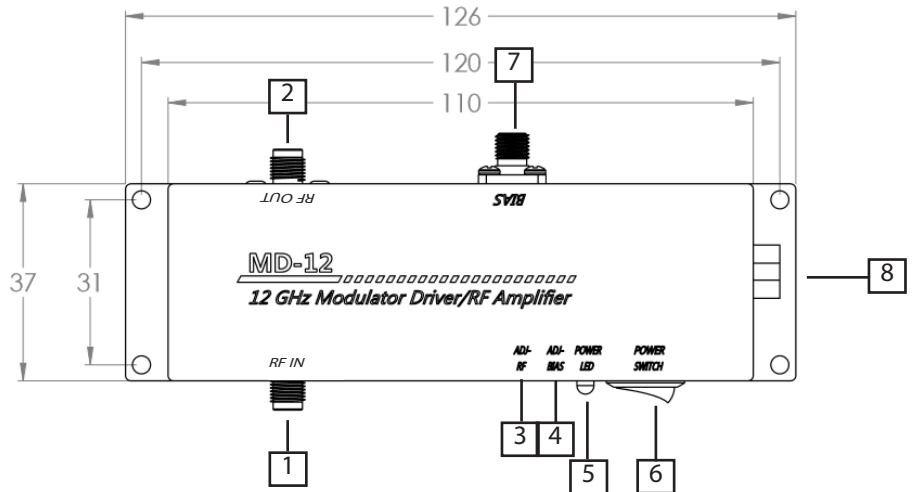
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Mechanical Drawing



Port Function Description

1	RF input
2	RF output
3	RF gain adjust
4	DC bias adjust
5	Power LED
6	Power switch
7	Bias out
8	DC power input, molex



Unit: mm