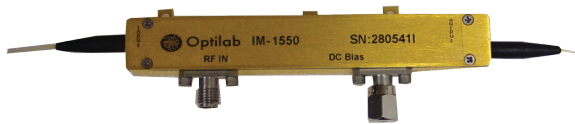


1550 nm, 20 GHz Bandwidth Intensity Modulator

The Optilab IM-1550-20-M Series Intensity Modulator is designed for TDM and WDM 25 Gb/s transmission. The IM-1550-20-M can also be incorporated for analog modulation up to 25 GHz for satellite links, antennae remoting, and RF over Fiber.

1550 nm, 20 GHz Bandwidth Intensity Modulator



Product Description

The Optilab IM-1550-20-M Series Intensity Modulator is designed for TDM and WDM 25 Gb/s transmission. The IM-1550-20-M can also be incorporated for analog modulation up to 25 GHz for satellite links, antennae remoting, and RF over Fiber. It is a hands-on bias-stabilized lithium modulator that proves to be extremely stable for long periods of time. It features excellent stability in a biased circuit and operates from 1530 to 1600 nm. It has an excellent operating temperature tolerance ranging from -30° C to +85° C. Its low insertion loss provides for its maximum transmission power. IM-1550-20-M uses a Polarization Maintaining (PM) input fiber and a Single Mode (SM) output fiber. It features separate RF and bias ports.

Features

- Excellent stability in a biased circuit
- Low Drive Voltage
- 1530 nm to 1600 nm operation
- Low insertion loss
- Useful bandwidth up to 25 GHz
- Wide Operating Temperature Range of -30° C to +85° C

Applications

- TDM and WDM up to 25 Gb/s
- Analog Transmission up to 25 GHz
 - Satellite Link
 - Antenna Remote
 - RF over Fiber

PRODUCT SPECIFICATIONS

Mechanical Specifications

Operating Temperature	-30° C to +85° C
Storing Temperature	-40° C to +95° C
Operating Humidity	0% to 90% Relative Humidity
Housing Dimensions	3.783" x 0.981" x 0.640"
Input Fiber Type	PANDA - PM
Output Fiber Type	SMF-28
Input Connector	PM FC/APC, PM FC/UPC
Output Connector	FC/APC, FC/UPC
Material	LiNbO ₃
Crystal orientation	X-cut, y-propagating
Waveguide process	Ti-indiffused
Bias Port Connector	SMA
RF Port connectors	Wiltron K
Cabling	900 μ m tubing

Technical Specifications

Input optical power	100 mW max.
Operating wavelength	1530 to 1600 nm
Chirp Value α	< 0.1 (zero chirp design)
Insertion Loss	\leq 5.0 dB max.
Extinction Ratio	\geq 25 dB min.
Optical return loss	\leq -45 dB
PRBS Electrical drive voltage	6.0 Vpp typ.
S21 Bandwidth (RF Port)	Up to 25 GHz
S11 Return Loss (RF Port)	\leq 10 dB @ 10 GHz
V_{π} (RF Port)	\leq 5.7 V typ. @ DC
RF Input power	\geq 27 dBm max.
Impedance (RF Port)	50 Ω typ.
S21 Bandwidth (Bias Port)	500 MHz typ.
V_{π} (Bias Port)	\leq 10 V @ DC
Impedance (Bias Port)	$>$ 1 M Ω

Ordering Information

	IM-1550-20-xx-y
	S21 3dB Bandwidth
xx	15, 15 GHz;
	18, 18 GHz;
	20, 20 GHz
	Connector Type:
y	a, FC/APC;
	u, FC/UPC



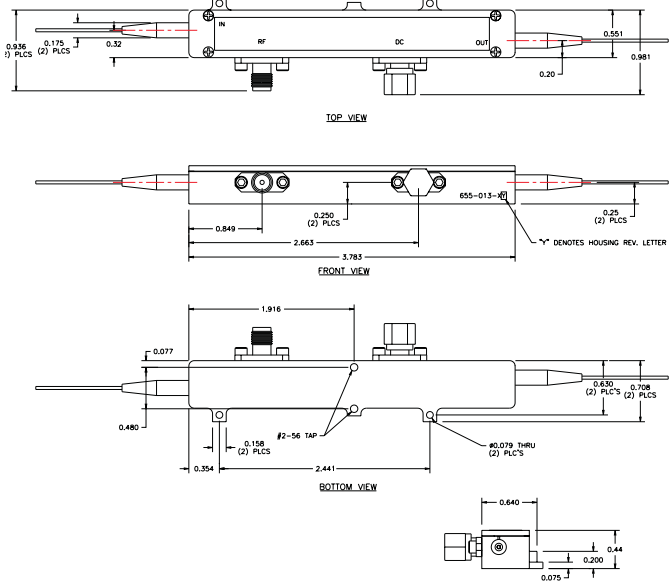
Optilab

5110 N 44th St, Ste 200L, Phoenix AZ 85018

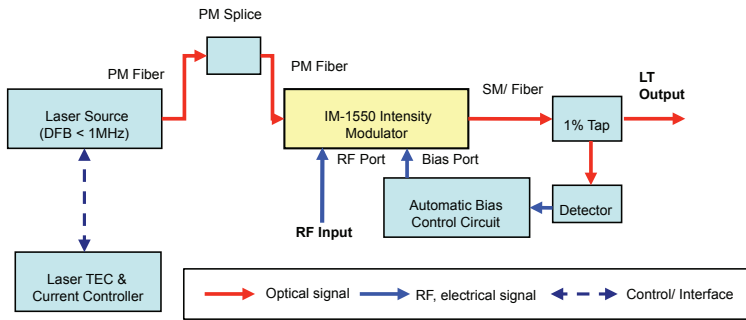
optilab.com 888-553-3888 602-343-8228 sales@optilab.com

Product specifications and description are subject to change without notice.
© 2010 Optilab, LLC. January 2010 Rev. A

Product Drawings

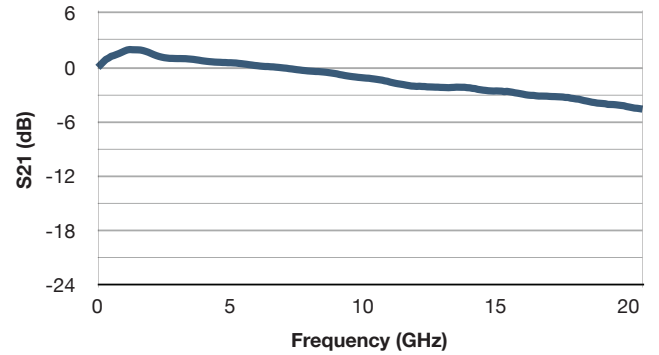


Application Diagram for IM-1550-20-M Modulator Series

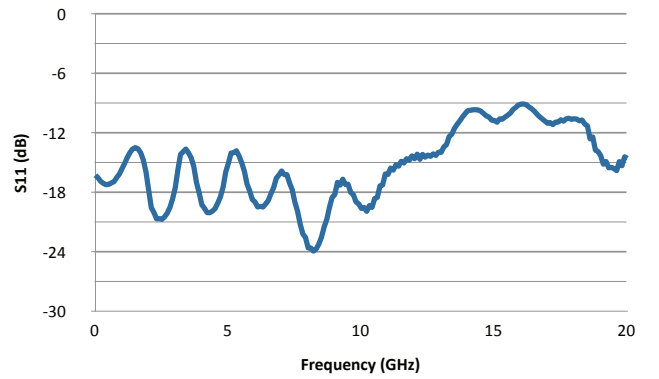


1550 nm, 20 GHz Bandwidth Intensity Modulator

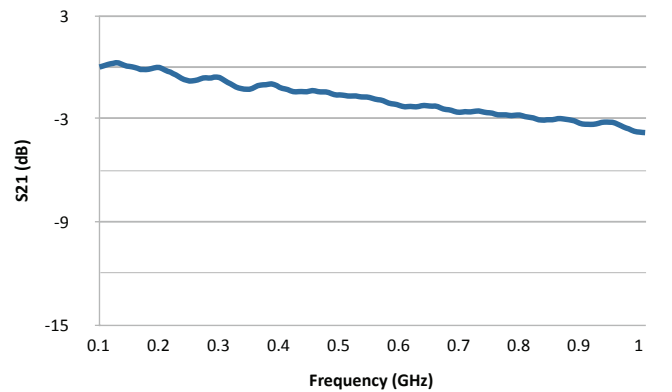
Typical Test Results



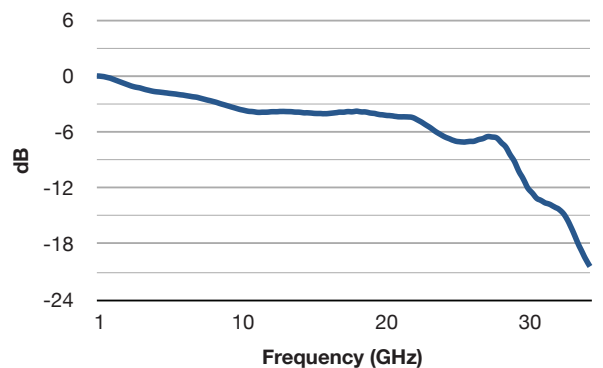
RF Port S21 Data



RF Port S11 Data



Transmission Bandwidth (with Receiver)



S21 Data (with Optilab PD-30)