

# IM-1550-20-TQ



## DEVICE

## 1550nm, 20 GHz Intensity Modulator, Temp. Qualified

## OVERVIEW

The Optilab IM-1550-20-TQ Intensity Modulator is designed for TDM and WDM 20 Gb/s transmission, and can also be incorporated for analog modulation of up to 20 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, and features excellent stability in a biased circuit, operating from 1530 nm to 1610 nm. It has an excellent operating temperature tolerance ranging from -55 °C to +80 °C, and its low insertion loss provides for its maximum transmission power. The IM-1550-20-TQ uses a Polarization Maintaining (PM) input fiber and a Single Mode (SM) output fiber. It features separate RF and bias ports. Contact Optilab for more information.

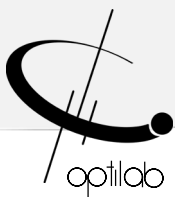
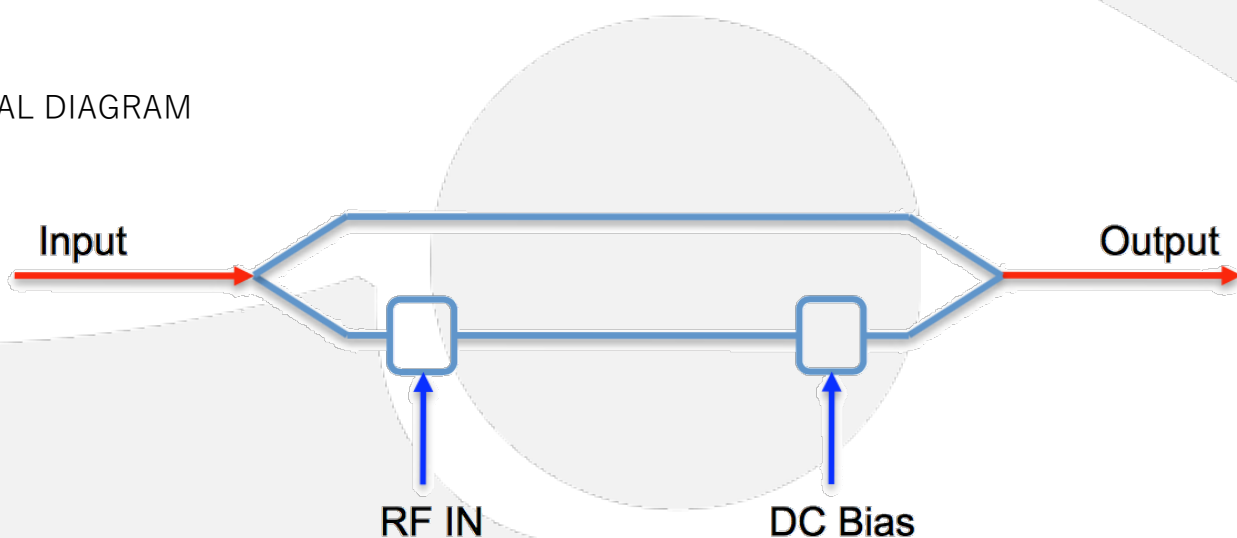
## FEATURES

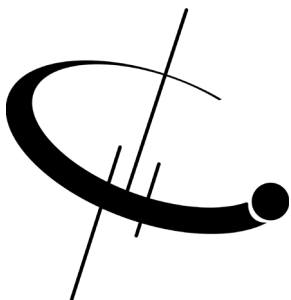
- Excellent stability in a biased circuit
- 1530 nm to 1610 nm operating wavelength
- Wide operating temp: -55°C to +80°C
- Low insertion loss
- Useful bandwidth up to 20 GHz

## USE IN

- TDM and WDM up to 25 Gb/s
- Analog Transmission up to 20 GHz
- Satellite Link
- Antenna Remote
- RF over Fiber

## FUNCTIONAL DIAGRAM





# IM-1550-20-TQ

## SPECIFICATIONS

Input Optical Power	100 mW max. available
Operational Wavelength	1530 to 1610 nm
Chirp Value	$< \pm 0.2$ (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	Up to 20 GHz
S11 Return Loss	$\leq 10$ dB @ 10 GHz
$V \pi$ (RF Port)	$\leq 5.7$ V typ. @ DC
RF Input Power	27 dBm max.
Impedance (RF Port)	50 $\Omega$ typ.
S21 Bandwidth (Bias Port)	500 MHz typ.
$V \pi$ (RF Port)	$\leq 10$ V @ DC
Impedance	$> 1$ M $\Omega$

## GENERAL

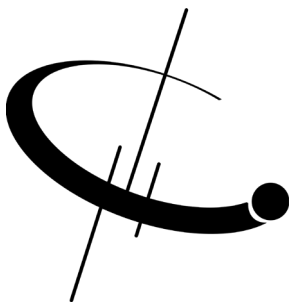
## ANALOG LINK PERFORMANCE

IIP3 @ 7 GHz	32 dBm typ.
1 dB Compression Point @ 10 GHz	16 dBm typ.

## MECHANICAL

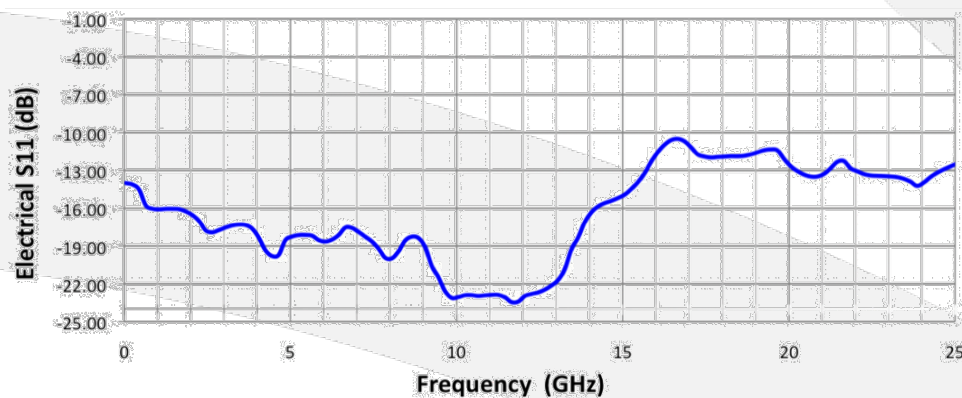
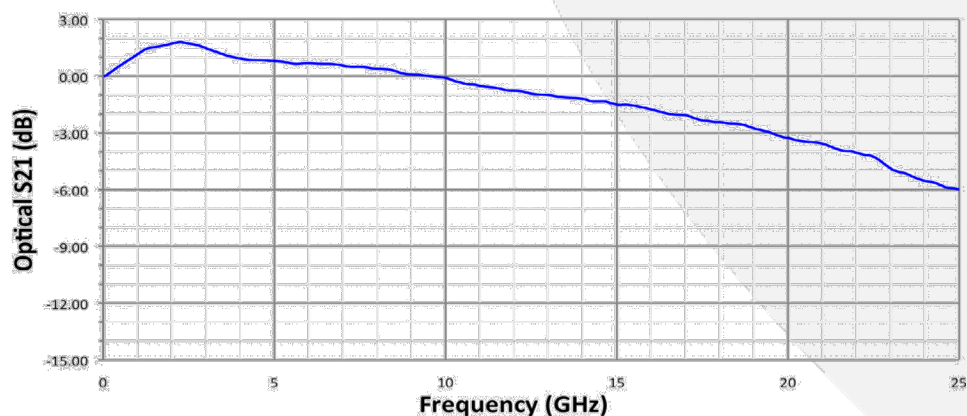
Operating Temperature	-55°C to +80°C
Storage Temperature	-60°C to +85°C
Operating Humidity	0% to 90% Relative Humidity
Input Fiber Type	PANDA - PM
Output Fiber Type	SMF-28
Input Connector	PM FC/APC, PM FC/UPC
Output Connector	FC/APC, FC/UPC
Material	LiNbO3
Crystal Orientation	X-cut, y-propagating
Waveguide Process	Ti-indiffused
Bias Port Connector	Pin
RF Port Connectors	K type (compatible w/ SMA)
Cabling	900 $\mu$ m tubing
Dimensions	3.783" x 0.981" x 0.64"





# IM-1550-20-TQ

TYPICAL S21 AND  
S11 BANDWIDTH



MECHANICAL DRAWING

