

## 1550nm LiNbO3 2.5Gb/s Intensity Modulator



### ● Product Description

Idealphotonics' lithium niobate (LiNbO<sub>3</sub>) intensity modulator is made of titanium diffusion or proton exchange process. The Mach-Zehnder type optical waveguide, the input and output optical fiber and the waveguide are precisely obliquely coupled, and the electro-optical effect of lithium niobate material is used to achieve intensity modulation of optical signals.

### ● Product features

TX-cut Y-transmitted lithium niobate 、 Titanium diffused or proton exchange waveguide 、 Low driving voltage 、 Independent bias



electrode • Zero chirp、 Precise oblique coupling between fiber and chip,  
 greatly reducing、 Backlight reflection、 Excellent long-term stability

## ● Part Number

MP-EOM-IM-1550-3G-FA

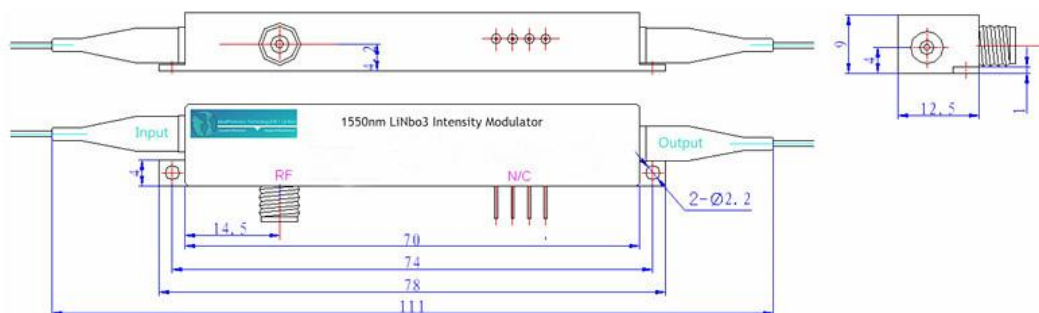
## ● Application area

Pulse generation, pulse shaping, pulse picking、 Carrier suppression、 Fiber  
 optic sensing system、 Pulse application、 Analog transmission、 LiDAR

## ● Core parameters

Wavelength	Bandwidth	Connector
1550nm	3GHz	FC/APC

## ● Dimension Drawing





## ● General Parameters

### Parameter

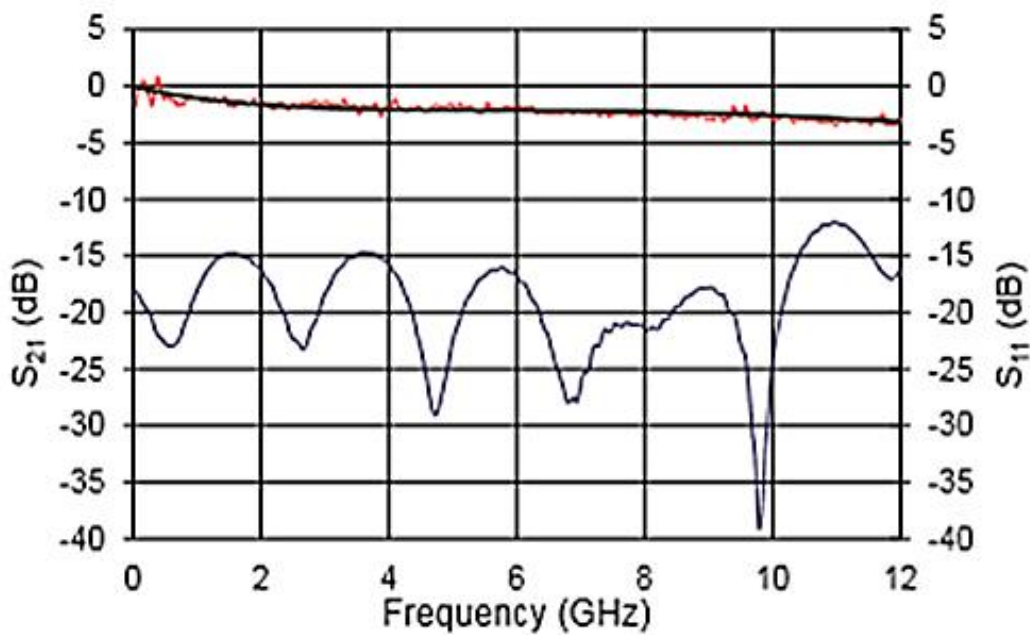
Condition	Unit	Min.	Typical	Max.
Half-wave voltage DC electrode	V		6.5	7.0
Electro-optical bandwidth S21@-3dB	GHz	3		
RF half-wave voltage@DC	V		3.5	4.0
Bias half-wave voltage	V			5.0
Jitter	dB		0.5	1
Electrical return loss S110-20GHz	dB		-12	-10
RF connector input resistance	$\Omega$		40	
Input impedance DC connector	$\Omega$		>1M	
Crystal: Lithium Niobate	.	X-cut Y-propagation		
Waveguide process		APE Process		
Insertion loss	dB		3.0	4.0
Optical return loss	dB		<-45	
Wavelength dependent loss (1480-1600nm)	dB		0.5	1.0
DC extinction ratio	dB	20	22	
Input fiber		Panda polarization-maintaining fiber 1.5 meters long, 900um		
Output fiber		SMF-28 single-mode fiber 1.5 meters long, 900um (PMF optional)		



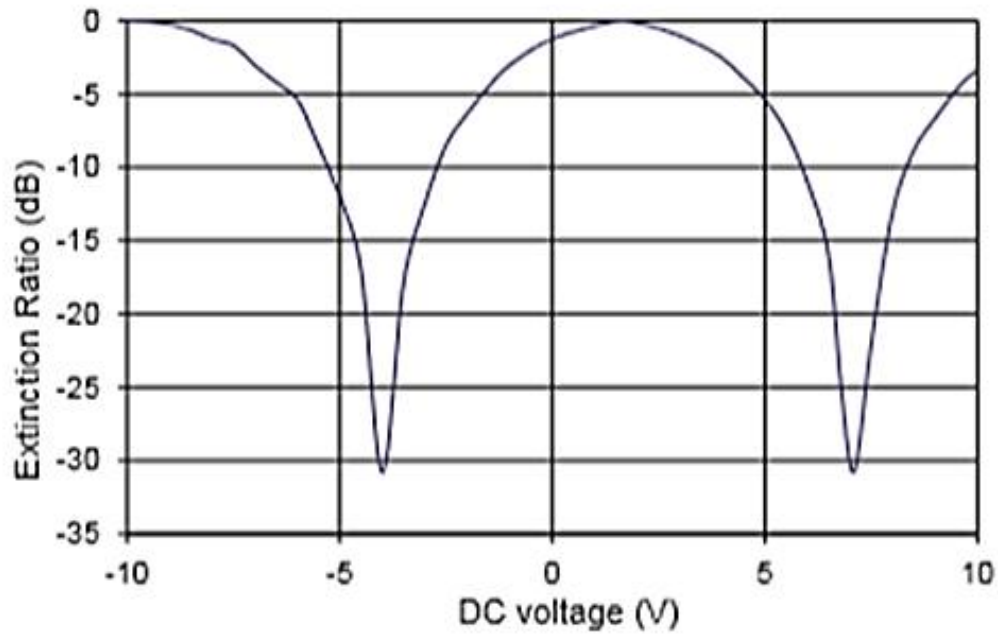
Condition	Unit	Min.	Typical	Max.
Input RF connector		SMA		
DC connector		Pin feed-through diameter: 1.0mm		
Package size	mm	110 x12.5 x9.0		
Operating temperature	°C	0~ +70		
Storage temperature	°C	-40 ~ +85		
DC input maximum voltage	V	±20		
Maximum RF input power	dBm	+28		
Maximum input optical power	mW	200 (APE process)		

Note: 1310nm、1064nm、850nm can optional

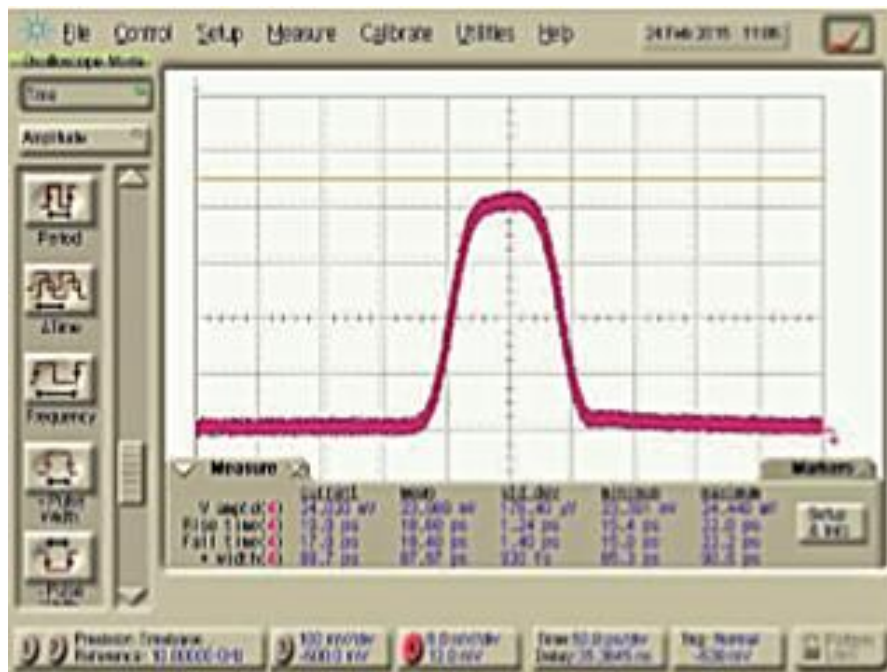
## Performance Display



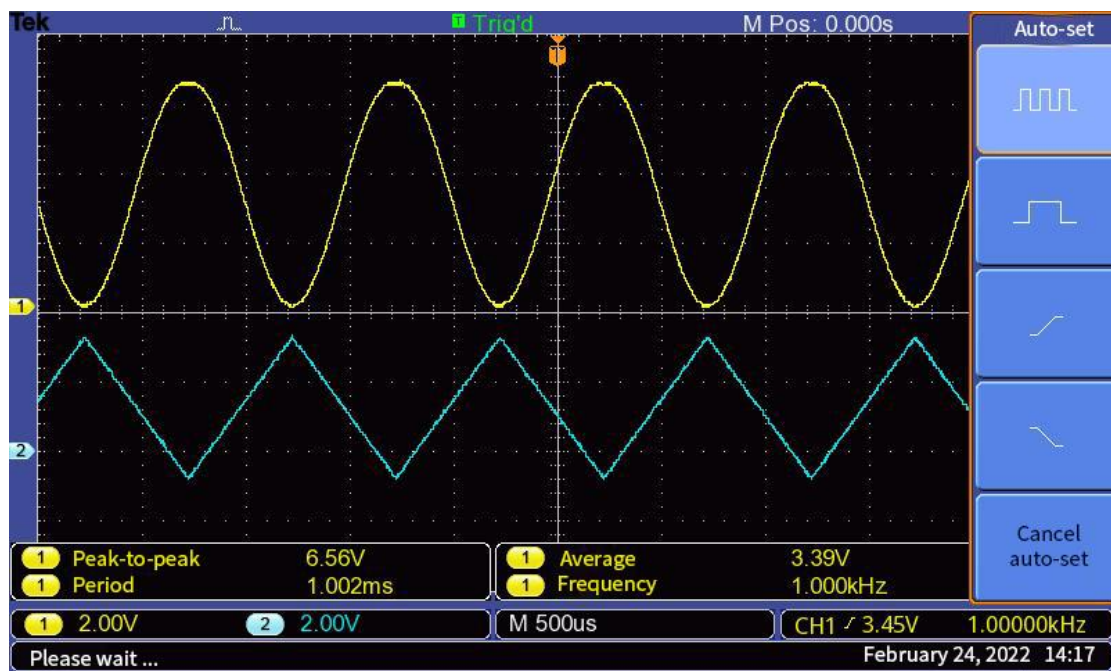
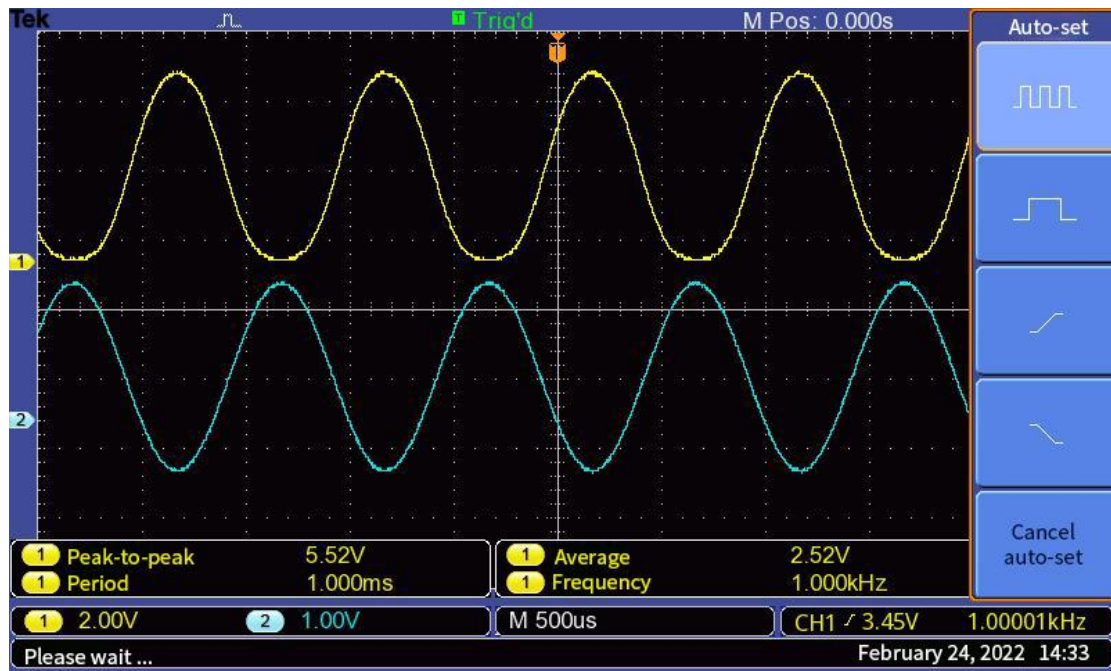
## S21 and S11 curve

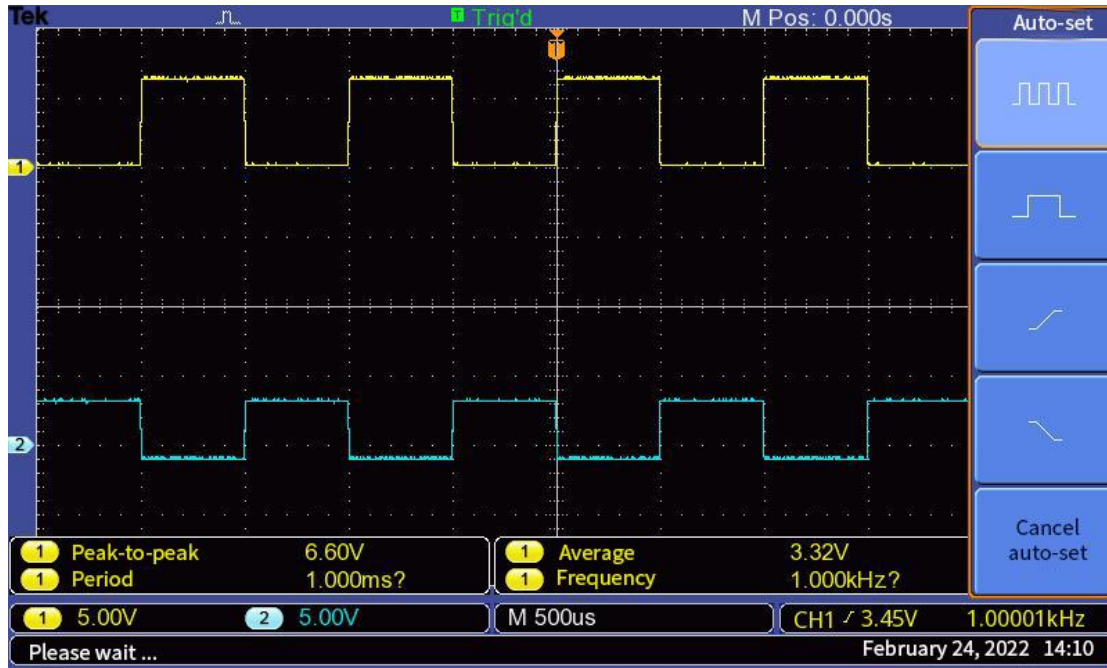


## Pulse extinction ratio



# 100ps square wave pulse generation





## Ordering Information

MP-EOM-IM-W -BW -XX -Y -Z-AB-CD

W wavelength:

0850: 850nm

1064: 1064nm

1550: 1550nm

BW: Electro-optical bandwidth

3G stands for >03GHz

10G stands for >10GHz

Y: Input fiber

P: stands for polarization-maintaining fiber

S: stands for single-mode fiber



**Z: Output fiber**

**P: stands for polarization-maintaining fiber**

**S stands for single-mode fiber**

**AB: Input fiber connector**

**00 stands for bare fiber**

**FA stands for FC/ APC**

**FC stands for FC/ SPC**

**CD: Output fiber connector**

**00 stands for bare fiber**

**FA stands for FC/ APC**

**FC stands for FC/ SPC**