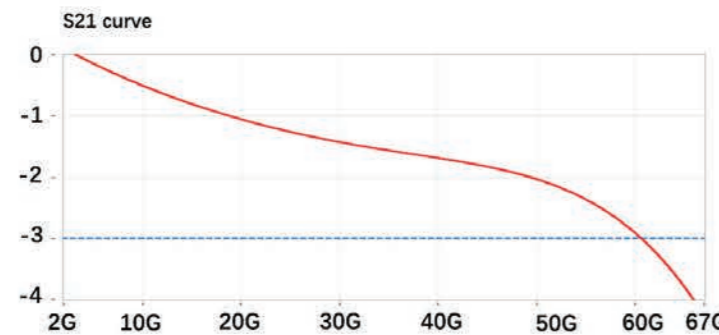




Modulators

IQ Modulator for Coherent Communication (1550)

- Bandwidth up to 70 GHz
- Half-wave Voltage as low as 3.0 V
- Insertion loss as low as 6 dB
- High Stability and Reliability

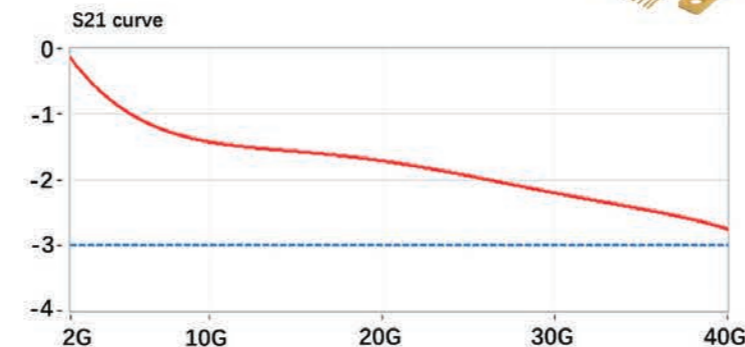


LIQBATE
 Liobate Technologies Limited
 sales@liobate.com

Modulators

Intensity Modulator with Build-in LD (1310/1550)

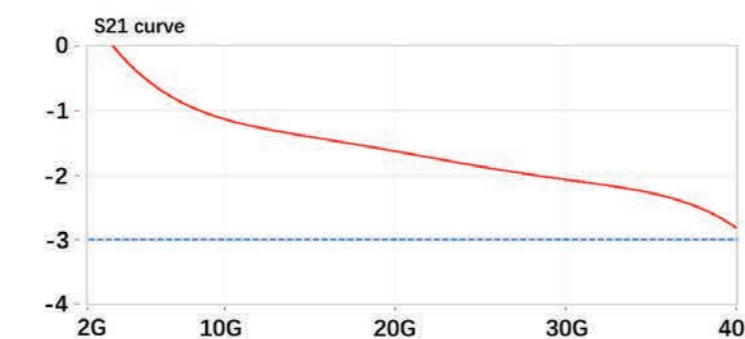
- Integrated low-RIN laser source
- Bandwidth up to 40 GHz
- Half-wave Voltage as low as 3.0 V
- Output Optical Power > 12 dBm
- Operating Temperature: -40 to 70 °C



Phase Modulator (1310/1550)



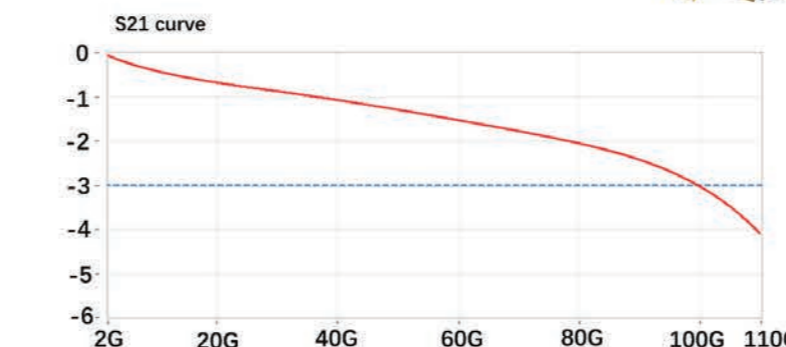
- Bandwidth up to 40 GHz
- Insertion loss as low as 4.5 dB
- Half-wave Voltage as low as 3 V
- Maximum RF Input Power 33 dBm



Modulators

High Bandwidth Intensity Modulator (1310/1550)

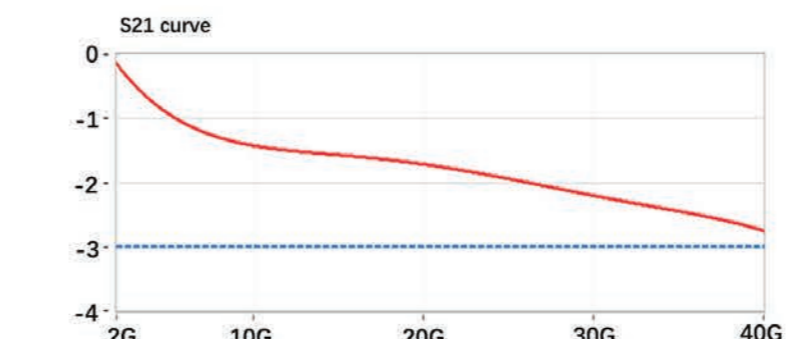
- Compact Size (mm) = 45 * 10 * 7
- Bandwidth up to 110 GHz
- Insertion loss as low as 5 dB



Intensity Modulator (1310/1550)



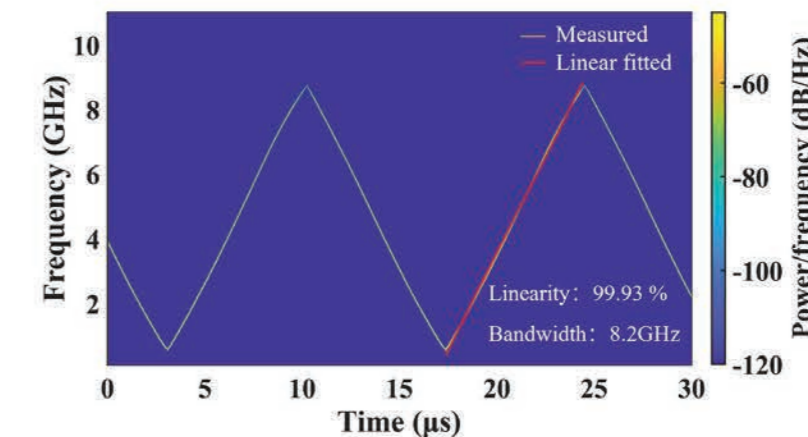
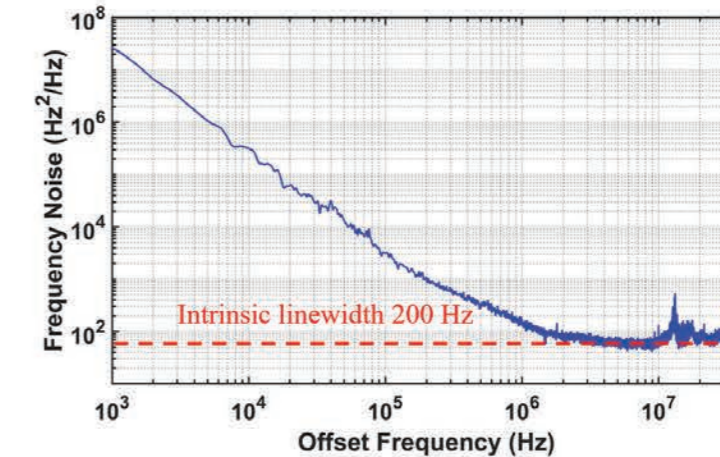
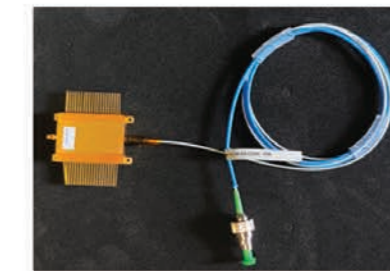
- Bandwidth up to 40 GHz
- Half-wave Voltage as low as 2.5 V
- Insertion loss as low as 4.5 dB
- (Optional) Ultra-low voltage of 0.3/0.5 V



Lasers

Narrow Linewidth Tunable Laser

- Center wavelength: 1551.4 nm
- Output power: 8 dBm
- Intrinsic linewidth: ≤ 200 Hz
- Chirp bandwidth: > 8.2 GHz
- Chirp linearity: > 0.9993



Transmitter

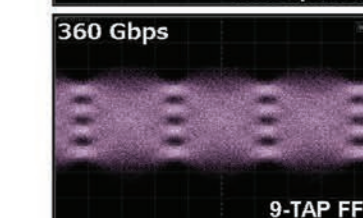
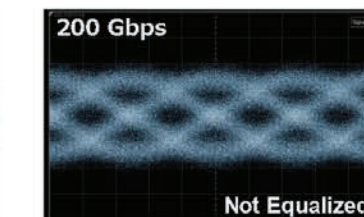
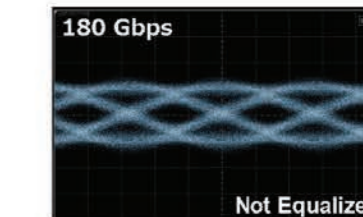
EO Transmitter (1310/1550)

- Bandwidth up to 110 GHz, customizable
- Built-in DFB Laser
- Automatic Bias Control
- Tunable Bias Point / Light Output Attenuation
- Output Optical Power > 10 dBm

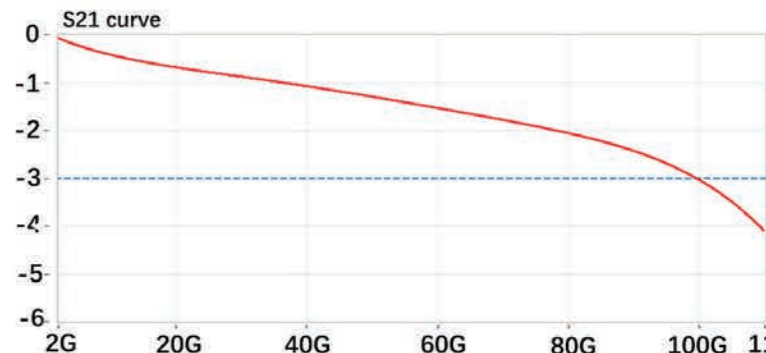


LD Output Power: +15dBm
 MZM Output Power: +6dBm
 MZM: V_{DC}=0.8V, V_{pp}=2.4V (set value)

PD Photocurrent: 1mA
 PD Bandwidth: 200GHz
 Oscilloscope: Pattern Lock



* Measured data from NTT using
 NTT's 200GHz receiver;
 Y. Yamada, et al., OFC2026 (W3E.7)





About Plugtech

Plugtech Precision Systems Limited specializes in the development of advanced optical modulator bias controllers and customized optical modulation modules. Our patented controllers support bulk LiNbO₃ and TFLN MZ, QPSK, and DP-QPSK modulators, with both Electro-Optic (EO) and Thermo-Optic (TO) solutions available. All products are compact, user-friendly, and provide automatic bias stabilization without manual calibration.

Contact

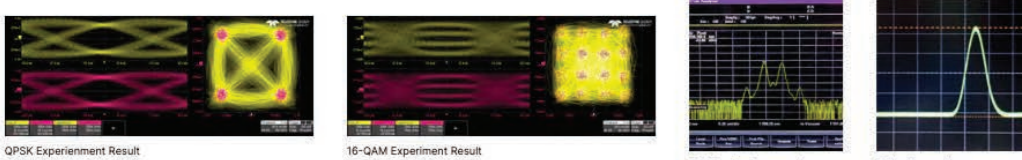
Web: www.plugtechmbc.com Email: info@plugtechmbc.com Tel: +86 13560397160 | +852 66459366

Coin Size* True Automatic Fast and Stable

Products

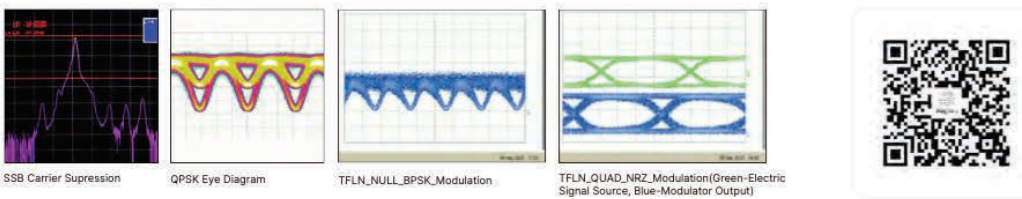
MBC Series (Electro-Optic (EO) Modulator Bias Controller)

- EO Dual Polarization IQ Bias Controller (MBC-DPIQ-02)
- EO Single Polarization IQ Bias Controller (MBC-IQ-03)
- EO MZ Modulator Arbitrary Point Bias Controller (MBC-MZM-05)
- EO MZ Modulator Q Point Ditherless Bias Controller (MBC-HF-01)
- EO MZ Modulator Null Point Bias Controller (MBC-NULL-06)
- EO MZ Modulator Q Point Bias Controller (MBC-Q-06)



TFLN Series (Thermo-optic (TO) Modulator Bias Controller)

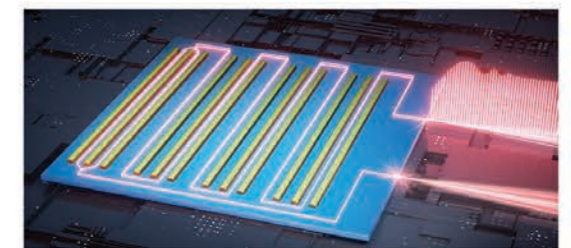
- TO MZ Modulator Quad Point Bias Controller (TFLN-QUAD-01)
- TO Single Polarization IQ Bias Controller (TFLN-IQ-01)
- TO MZ Modulator Null Point Bias Controller (TFLN-NULL-01)
- TO Dual Polarization IQ Bias Controller (TFLN-DPIQ-01)



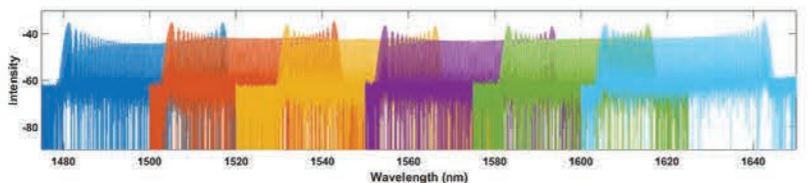
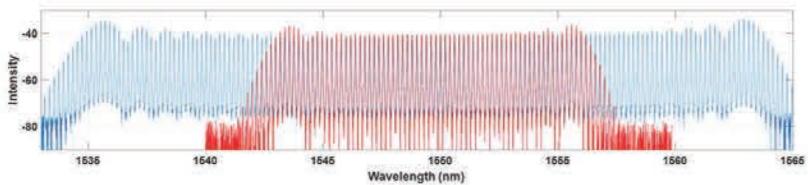
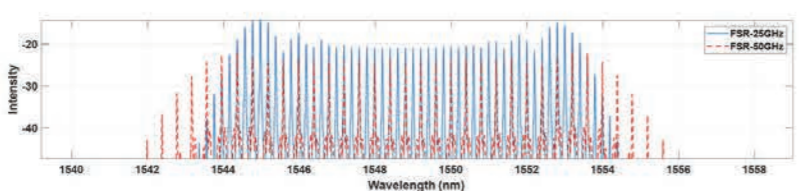
*Standard Size 30mm*40mm, TFLN mini version 55mm*18mm available

EO Combs

- Tunable comb spacing
- Scalable number of comb lines
- Tunable center wavelength



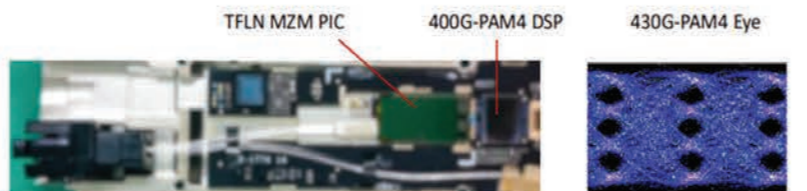
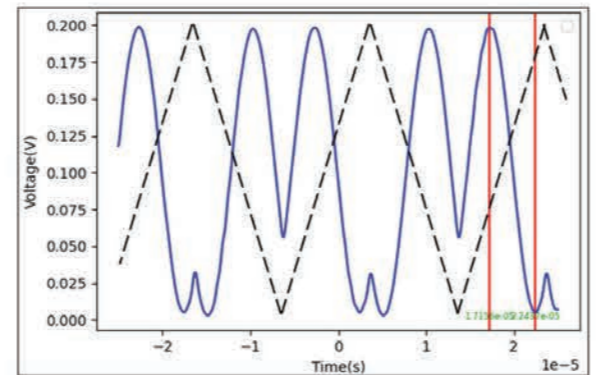
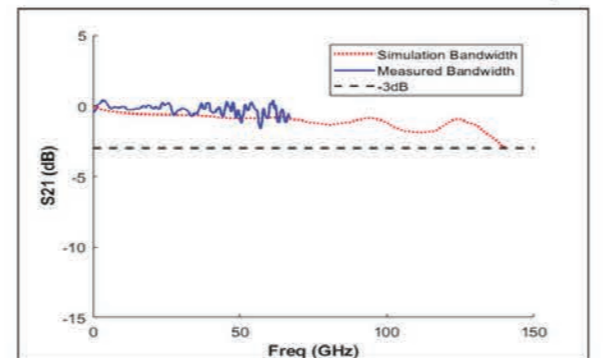
	EO	V _π	IL	Number of comb lines	Notes
Comb-One-drag-one	30G	1.2V	<=9dB	>50	One AM cascaded with one PM
Comb-One-drag-three	25G	2.0V	<=10dB	>100	One AM cascaded with three PM
Dual-Comb	30G	2.0V	<=12dB	>80	【One AM cascaded with two PM】*2



PIC

400G PAM4

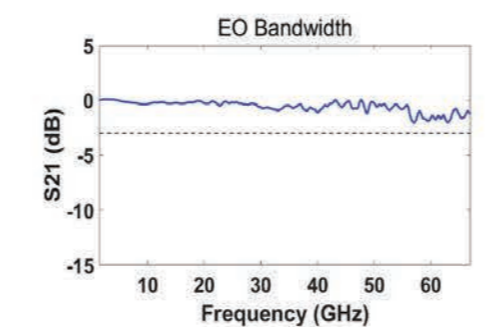
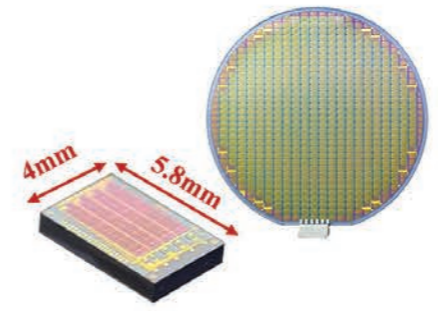
- Bandwidth:>140 GHz (0.5 dB roll-off @70 GHz)
- 4-channel MZM
- Half-wave Voltage:<2.7 V
- Support Differential Drive Mode
- Driver flip-chip



PIC

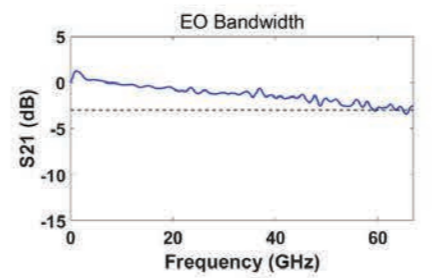
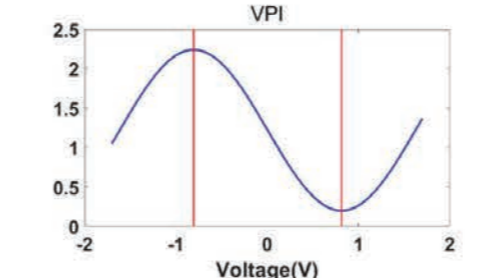
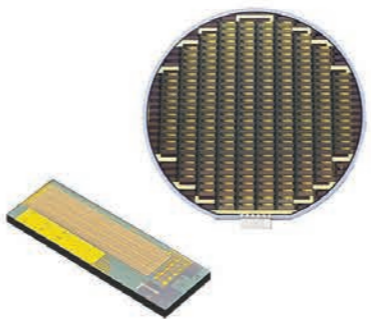
100G/200G IMDD

- Bandwidth:>70 GHz
- Insertion Loss:<11.5 dB (DR4)
- Half-wave Voltage:<3 V
- DC-ER:>40 dB
- MFD:>9 μm
- Chip size:>5.8*4*0.68 mm³
- Support Differential Drive Mode



128GBaud PDMIQ

- Bandwidth:>60 GHz
- Insertion Loss:<6.5 dB
- Half-wave Voltage:<1.7 V @diff.
- DC-ER:>40 dB
- MFD:>9 μm
- Chip size:11.5*4.5*0.68 mm³



COMPANY INTRODUCTION

Liobate Technologies Limited (Liobate) was incorporated in July 2020 as a high-tech enterprise dedicated to developing lithium niobate modulator photonic integrated circuits (PICs) and related optical communications and interconnect sub-assemblies. Liobate is headquartered in Gulou District, Nanjing, in a facility that houses R&D, device pilot testing, and component packaging. Our wholly-owned subsidiary company, Guangzhou Liobate Semiconductor Technology Co., Ltd., is located in Guangzhou and is mainly developing lithium niobate on insulator (LNOI) modulators.

Liobate gathers specialists who worked in top-notch international institutions and enterprises in the field. Prof. Cai, the board chairman and the core technology leader, is the world-known expert in optoelectronics and was awarded the "China Top 10 Breakthroughs in Optics" in 2019, 2020 and 2022. The technical team has made significant breakthroughs in LNOI modulator chip technology and has built a complete process platform and mass production line covering chip design, fabrication, and device packaging. The company owns top-of-the-field level invention patents and leading technologies.

Liobate focuses on the design, fabrication, and sales of PICs and optical modules based on lithium niobate modulators. Liobate specializes in the telecommunication and data interconnect market, creating faster and more energy-efficient physical transmission channels. Liobate is committed to high standards of social and environmental responsibility.

Liobate has key expertise and is well equipped for making significant technical progress in advanced optical communications and interconnects technologies. Liobate adopts a strict product quality assurance system as well as a flexible and efficient management structure.

