$LiNbO_3$ Modulator

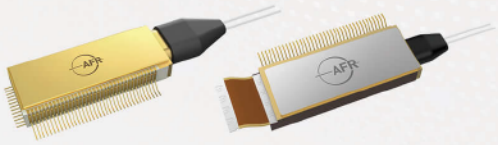
Advanced Fiber Resources

Thin-Film

96/130 GBaud CDM

- Insertion loss < 8 dB
- Compatible with OIF-HB-CDM

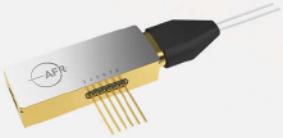
For Long-Haul, Metro and DCI



70 GHz Intensity Modulator

- Low Drive Voltage
- Optical Extinction Ratio ≥ 25 dB

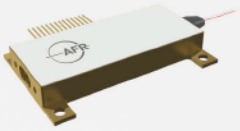
For Digital/Analog Transmission



40 GHz TFLN IQ Modulator

- Bandwidth > 40 GHz
- Excellent Linearity

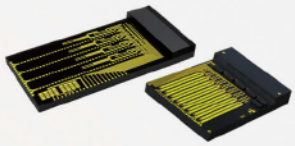
For OFDM, QPSK, QAM Coding and FMCW LiDAR



100/200/400 Gbps/Lane O-Band Modulator Chip

- Low Drive Voltage
- Low Optical Insertion Loss

For QSFP-DD/OSFP/OSFP-XD Type Transceiver Modules



Bulk

20/40 GHz Intensity Modulator

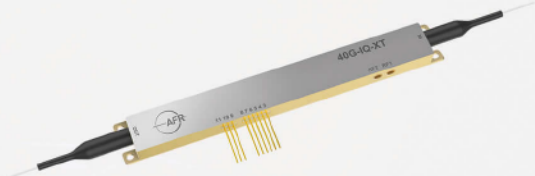
- Electro-Optic Bandwidth > 32 GHz
- Low Optical Insertion Loss & Low Drive Voltage
- Extended Operating Temperature at - 55 to + 85 °C

For Digital/Analog Transmission

40 GHz IQ Modulator

- Electro-Optic Bandwidth > 30 GHz
- Optical Insertion Loss: 5 dB (typ.)
- Optical Extinction Ratio ≥ 24 dB

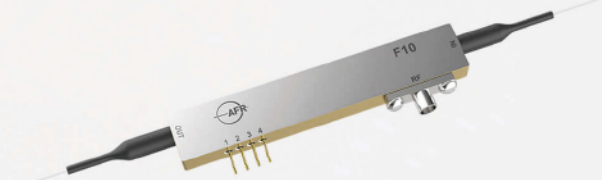
For Satellite Communication and LiDAR Applications



10 GHz Zero-Chirp Modulator

- Electro-Optic Bandwidth > 12.5 GHz
- Optical Insertion Loss < 4.5 dB
- RF V_π Voltage: 5 V (typ. @ 1 kHz)

For High Frequency RF Signal Over Fiber Optic Links



Phase Modulator

- Low Optical Insertion Loss @ 1060 nm Band or C-Band
- Frequency Response up to 10 GHz
- Extended Operating Temperature at - 55 to + 85 °C

For Ultra-Fast High Power Lasers and Quantum Applications

AFR Company Profile

Founded in 2000 and publicly listed in China in 2017, Advanced Fiber Resources (AFR) has expanded to over 4,000 employees, including 500 engineers and technicians. AFR designs and manufactures fiber optic components and lithium niobate modulators across 136,000 m² of global facilities, including AFR Zhuhai, AFR Jinding, AFR Wuhan, and B&A in China, AFR Milan in Italy, and AFR Thailand. Our products are widely applied in telecommunications, data centers, fiber lasers, fiber sensing, autonomous driving, and biomedical equipment, and have been delivered to more than 600 customers in over 40 countries and regions worldwide.

26
Years of History

500
Technical Expertise

4,000
Employees

600
Customers

6
Sites (China/Italy/Thailand)

136,000
m^2 Facility

AFR MILAN: A world leader in LN modulators with 40+ years of history

- **1988** — Part of Pirelli LN FAB Construction
- **1993** — First Field Installed 2.5 Gb/s Modulators
- **1994** — CATV Modulator Installation
- **1998** — Part of Corning Field Deployed 10 Gb/s Modulator
- **2001** — 40 Gb/s Modulators
- **2002** — Part of Avanex Integrated Modulator & Driver Module
- **2007** — Z-Cut Modulators
- **2010** — Part of Oclaro 40G DQPSK Modulators
- **2011** — 100G Modulators PM-QPSK
- **2016** — 400G Modulators
- **2018** — Part of Lumentum
- **2019** — Acquired by AFR
- **2020** — Production Restart
- **2021** — 96 GBaud TFLN CDM
- **2023** — 130 GBaud TFLN CDM and PAM-4 Modulators
- **2025** — TFLN Products Shipment to Tier-1 Customers

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