

New 2010 !

Expanded Product Line

λ (0.65, 0.75, 0.85, 0.98, 1.06, 1.3, 1.55, 1.7, ..., 2.0+ μm)

- Ultra-Low- $V\pi$: X- & Z-cut Intensity (<4V, <3.5V and <3V); Phase (<4V, <3V)
- Very-High Extinction-Ratio (>30, >40, >50, >60dB) Modulators
- Very-Low- $V\pi$ 1x2, 2x2 X- & Z-cut Modulators (<3V, 10/20Gb/s, 3-4dB)
- Dual-drive (10/20/40Gb/s) • QPSK (10/20/40/100Gb/s) Modulators

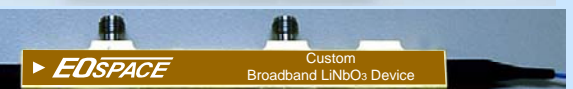
General Polarization Control, Tracking, Scrambling



Polarization MUX, PMD/PDL Compensation Systems



($\lambda = 2000, 1700, 1550, 1310, 1060, 980, 830, 750, 650\text{nm}$)



High-speed Polarization Controllers

- Low Insertion Loss < 3 dB, (< 2 dB option)
- Response Time << 100 ns
- Multiple Integrated Device Stages: 1, 3, 4, 5, 6, 7, 8 etc.
- Available for $\lambda = 2000^+, 1550, 1310, 1060, 850\text{ nm}, \dots$ etc.

Shorter- λ 10-40+ GHz Modulators

- Phase & Intensity & High Extinction Ratio (>30, >40 & >50dB)
- Low Insertion Loss < 4 dB, (< 3 dB option, 2 dB custom)
- Longer- λ (>1550nm) versions: 1700, 2000+ nm

10-40+ GHz Phase Modulators

- Ultra-Low- $V\pi$ version: < 3V@1GHz, >20 GHz, < 4 & < 3dB
- Extra-Bandwidth version: < 4V@1GHz, >30 GHz, < 4 & < 3dB
- Ultra-Low-Loss versions: < 2 & < 3 dB, < 5V@1GHz, >10-20GHz
- Custom: $V\pi$ < 2.5 V; Integrated Polarizer

40+ Gb/s (Z-cut & X-cut) Modulators

- Z-cut: Pre-chirp, Very-Low- $V\pi$ (new! ~3V available)
 - $V\pi$ < 3.5V@1GHz, BW >30-40GHz, < 4 dB, (< 3 dB option)
- X-cut: Zero-chirp, Very-Low- $V\pi$ (new! ~4V available)
 - $V\pi$ < 5.0V@1GHz, BW >30-40GHz, < 5 dB, (< 4 dB option)
- Ultra-Low- $V\pi$ Dual-Drive (with GPPO) version

10-20 Gb/s (Z-cut & X-cut) Modulators

- Z-cut: Pre-chirp: Low-Loss < 3 dB, (< 2 dB option)
 - BW >12.5 GHz, (>18 GHz version); $V\pi$ < 4 V@1GHz
 - Lower- $V\pi$ Version: $V\pi$ < 3.5 V; and < 3V @1GHz (custom)
- X-cut: Zero-chirp: Low-Loss < 4 dB, (< 3 dB option)
 - BW >12.5 GHz, (>18 GHz version); $V\pi$ < 5 V@1GHz
 - Lower- $V\pi$ Version: $V\pi$ < 4 V; and < 3V @1GHz (custom)

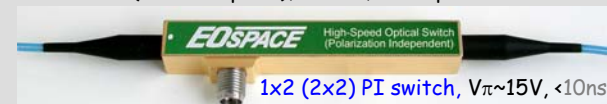
- Other available : • 1x2 (& 2x2) Dual-Output Modulators • Dual- λ : 1300/1550nm • Integrated Polarizer • Integrated PD
device versions: • High Extinction (>30 & >40 & >60 dB) • Extended Temperature Range (-40° & -55°C → +100°C) Modulator

High-speed (ns) 1xN, NxN Switches

Single-Polarization (SP) or Polarization-Independent (PI)



1x2 (2x2) Ultra-high-speed SP Switch/Modulator
>10GHz (>18GHz option), $V\pi \sim 5\text{V}$, <<100ps



1x2 (2x2) PI switch, $V\pi \sim 15\text{V}$, <10ns

+ Custom Electro-optic IC Modules



8x8 switch

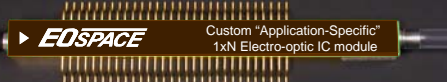
8x8 Strictly Non-blocking Switch

1xN SP Switches
($\lambda = 1.55, 1.3, 1.06\mu\text{m}, \dots$)

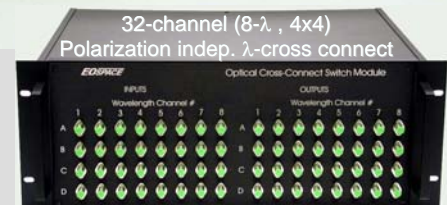


1x8 SP switch, 10ns

Custom Integrated -
Multi-stage LiNbO_3
electro-optic IC module



Custom "Application-Specific"
1xN Electro-optic IC module



32-channel (8- λ , 4x4)
Polarization indep. λ -cross connect