Polariton is Ready for 400G/lane

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Zurich, Switzerland

Polariton Technologies announces having achieved experimental IM/DD data rate in excess of 400 GBit/s per lane using commercial off-the-shelf ring resonator modulators in a collaboration with its research partner ETH Zurich and material supplier Lightwave Logic Inc. These are to be used in products such as 1.6T and 3.2T transceivers. This significant milestone sets a paradigm shift for the optical communication industry and paves the way for next-generation connectivity.

“ETH Zurich already demonstrated 400G per lane at OFC this year employing Mach-Zehnder modulators (MZM). This novel achievement is performed using ring resonator modulators (RRM), which are the better fit for the application because of considerably lower losses. The device loss is in the range of best-in-class modulators at 1.2 dB. Polariton is well-positioned for the 1.6T and 3.2T transceiver market with the 400G per lane products” explained Claudia Hoessbacher, CEO of Polariton.

The measurements were performed earlier in 2024 using devices optimized for 1550 nm operation. They demonstrate top performance with extinction ratio of 11.2 dB and a flat electro-optic response up to 110 GHz. “The reason we stopped measuring at 110 GHz is because we did not have calibrated instruments above 110 GHz at that time. In the meantime, we started characterizing the devices at 145 GHz and we developed devices optimized for 1310 nm wavelength operation”, commented Benedikt Bauerle, co-CTO of Polariton.

In an industry that has been forced to go parallel because of technological limitations, Polariton provides immediate relief for the next-generation products. Parallel lines fall short with reliability problems, are costly and consume more power than compact approaches that support higher transmission per lane.

Starting in October 2024, Polariton will offer early access to customers with sample quantities of 1310 and 1550 devices. This week, the company is also highlighting the advancement of its commercial devices at the European Conference for Optical Communication (ECOC) in Frankfurt.

About Polariton

Polariton is a Swiss designer and manufacturer of high-performance photonic integrated circuits (PICs) for ultra-high-bandwidth and low-power applications in communication, computing, test & measurement, space and quantum technologies markets. Exceptional performance is achieved by combining the established silicon photonics platform with plasmonic active devices enabling operation in sub-THz regimes, in particular with Mach-Zehnder and ring resonator modulators.

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