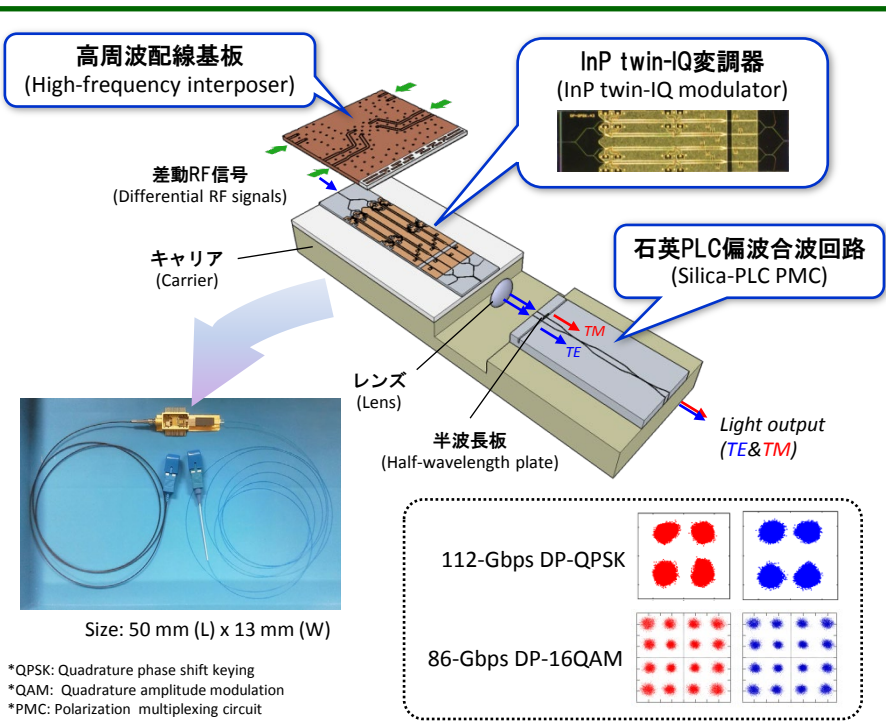


小型半導体偏波多重光IQ変調器

A compact semiconductor optical dual-polarization IQ modulator

大容量光通信トランシーバの小型化・低消費電力化を可能にする高速変調器

A high-speed semiconductor modulator enabling ultra-compact and low-power consumption transceiver for high capacity optical communication



- 半導体InP材料を用いた光IQ変調器と低損失の石英PLC偏波合成回路をハイブリット集積した超小型の偏波多重光IQ変調器を開発
- 100G超級の大容量光通信を支える多値変調信号生成に対応可能
- 進行波型電極構造の採用により高速動作を実現(～ 40 Gbaud)
- 低駆動電圧動作を実現($V_{\pi} < 2.5V$)

* V_{pp} : 差動振幅, Volt peak-to-peak differential

- Ultra compact dual-polarization IQ modulator was developed by hybrid integration of InP twin-IQ modulator and low-loss silica-PLC polarization multiplexing circuit.
- Applicable to multilevel advanced modulation formats for high-capacity (> 100G) optical communication networks.
- Traveling-wave electrode was introduced into modulator to achieve very high-speed operation (~ 40Gbaud).
- Very low driving voltage of $6 V_{ppd}$ for phase shift keying (PSK) modulation.