Semiconductor Mach-Zehnder modulator

Motivation

The conventional Mach-Zehnder optical modulator composed of dielectric materials was large in both size and driving voltage. Even when using semiconductor materials, it was difficult to realize small size and low driving voltage modulators.

Originality

We have introduced a novel waveguide structure in semiconductor Mach-Zehnder modulator and succeeded in coping with both
✓ small size (one-tenth as small as conventional one)
✓ low driving voltage (half as small as conventional one)

Impact

Our modulator can provide network flexibility by generating various kind of optical signals including special formats using coherent technology. Using the modulator, network capacity can be increased with less size and power consumption.

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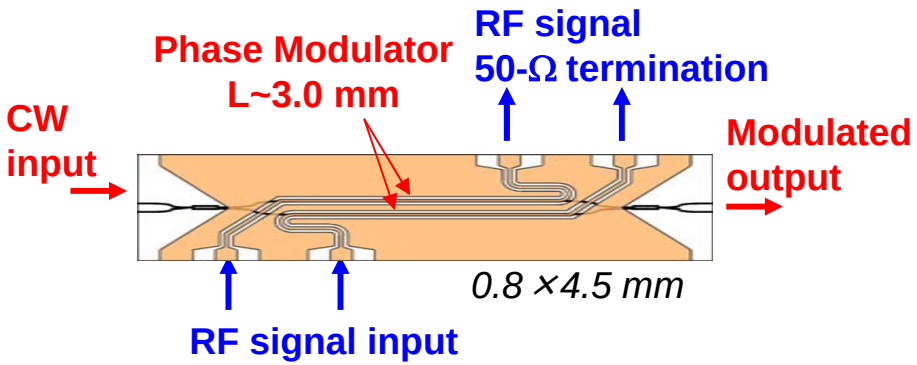

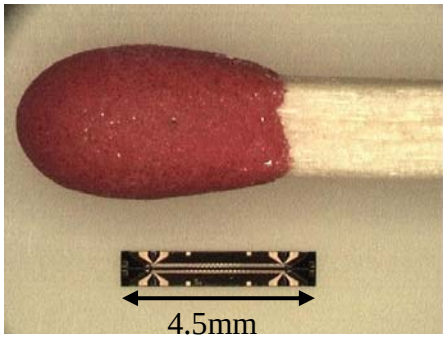

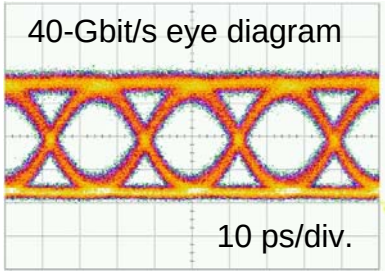

1.3Vpp push-pull drive