



## 2-Bit Phase Quantization Waveguide

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**WARF: P190281US01**

Inventors: Nader Behdad, John Booske, Hung Luyen, Zongtang Zhang

### The Invention

A waveguide includes a first double-ridge waveguide, a second double-ridge waveguide, and a polarization rotator. The first double-ridge waveguide provides a phase of an input electrical field rotated  $0^\circ$  or  $90^\circ$ . The second double-ridge outputs an electric field with a polarization that is perpendicular to a first polarization of the input electrical field. The polarization rotator is mounted between the first double-ridge waveguide and the second double-ridge waveguide and includes a frame, a dielectric layer, a first conducting pattern layer forming a first conductor and a second conductor, a first switch connected between the first conductor and the second conductor, a second conducting pattern layer forming a third conductor and a fourth conductor, and a second switch connected between the third conductor and the fourth conductor. Wherein a phase rotation of  $90^\circ$  or  $-90^\circ$  is provided by the polarization rotator based on a state of the first and second switch.

### Additional Information

#### For More Information About the Inventors

- [John Booske](#)

#### Tech Fields

- [Information Technology : Hardware](#)
- [Information Technology : Networking & telecommunications](#)

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