Abstracts

Passive Elimination of Polarization Sensitivity of Fiber-Optic Microwave Modulators

R.D. Esman and M.J. Marrone. "Passive Elimination of Polarization Sensitivity of Fiber-Optic Microwave Modulators." 1995 Transactions on Microwave Theory and Techniques 43.9 (Sep. 1995, Part II [T-MTT] (Special Issue on Microwave and Millimeter Wave Photonics)): 2208-2213.

The polarization sensitivity of a bidirectional fiber-optic modulator is passively eliminated by incorporating the modulator in an orthoconjugate loop mirror or in an in-line fiber loop. We describe and analyze these fiber loop configurations which allow remote interrogation of polarization-sensitive devices with either one or two conventional singlemode fibers. For bulk single-drive modulators, the polarization sensitivity is reduced to ±0.15 dB out to 2 GHz. By utilizing a balanced, dual-drive feed to a bidirectional traveling-wave modulator, residual polarization sensitivity of ±2 dB is demonstrated for ultrawideband operation to 25 GHz and ±0.3 dB for narrowbands.

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