Abstracts

Distortion Characteristics of Optical Directional Coupler Modulators (Short Papers)

T.R. Halemane and S.K. Korotky. "Distortion Characteristics of Optical Directional Coupler Modulators (Short Papers)." 1990 Transactions on Microwave Theory and Techniques 38.5 (May 1990 [T-MTT] (Special Issue on Applications of Lightwave Technology to Microwave Devices, Circuits, and Systems)): 669-673.

Waveguide electrooptic modulators are of much interest for analog optical transmission. Here, a theoretical analysis of the nonlinearities of the intensity modulation response of the optical directional coupler as a function of bias point for the case of phase-mismatch modulation is made and the results are compared with those of interferometric modulators. The interferometric, standard 2 x 2 directional coupler and the 1 X 2 y-fed directional coupler modulators are shown to exhibit very similar intermodulation distortion effects. At 4% optical modulation depth, the third-order intermodulation products are -74 dB, -72 dB, and -73.6 dB, respectively, below the carrier level.

❑ Return to main document.