Abstracts

A Nonreciprocal Circular Polarizer

M.L. Reuss, Jr.. "A Nonreciprocal Circular Polarizer." 1967 Transactions on Microwave Theory and Techniques 15.1 (Jan. 1967 [T-MTT]): 37-41.

A nonreciprocal circular polarizer has been developed. This ferrite device converts linear polarization propagating in rectangular waveguide into circular polarization propagating in circular waveguide. The sense, right- or left-hand, of the circular polarization is determined by the direction of a longitudinal magnetic field applied to the ferrite. If one sense of circular polarization, e.g., right-hand, is transmitted, then only left-hand circular polarization can be received. Performance data indicate good ellipticity with reasonable loss and VSWR for two models of the circular polarizer, and for two devices--a circulator and a nonreciprocal antenna element--based on the polarizer. The antenna element permits one antenna to be used both to transmit and to receive the reflected circularly polarized signals from a target.

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