Abstracts

Scattering Parameters Measurement of a Nonreciprocal Coupling Structure

P. Kwan and C. Vittoria. "Scattering Parameters Measurement of a Nonreciprocal Coupling Structure." 1993 Transactions on Microwave Theory and Techniques 41.4 (Apr. 1993 [T-MTT]): 652-657.

A novel ferrite image guide was designed and tested from 26.5 to 40 GHz. The nonreciprocal structure consisted of two dielectric image guides separated by a ferrite slab. M-type hexagonal ferrite was used with its C-axis oriented parallel and perpendicular to the direction of propagation. Electromagnetic scattering S -parameters of the device were measured for a nonuniform external biasing magnetic field applied parallel to the C-axis of the ferrite slab. Nonreciprocal effects were observed for all cases considered above. Our results implied applications for ferrite devices operating at millimeter wavelength frequencies, such as: isolators, filters, modulators, switches, phase shifter etc.

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