Abstracts

A Duplexer Using the Zero Permeability Characteristics of Ferrite (Correspondence)

L.K. Wilson and G.J. Neumann. "A Duplexer Using the Zero Permeability Characteristics of Ferrite (Correspondence)." 1961 Transactions on Microwave Theory and Techniques 9.6 (Nov. 1961 [T-MTT]): 578-578.

It has been shown by Polder and others that a ferrite material can be made to exhibit an effective zero permeability to a wave that has a positive sense of circular polarization (positive wave) and a corresponding nonzero permeability to a wave with polarization in the negative sense (negative wave). Melchor, et al., and Duncan and Swern have demonstrated that a ferrite material which is magnetically biased such that the real part of its positive wave permeability is zero will largely exclude the positive wave. The negative wave, however, will be concentrated in the ferrite; and, under certain conditions of ferrite geometry and operating frequency, the negative wave will propagate through the ferrite in a dielectric mode.

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