Abstracts

An Accurate Field Matching Analysis of Waveguides of Complex Cross-Sectional Geometry Loaded with Magnetized Ferrite Rods

M. Okoniewski and J. Mazur. "An Accurate Field Matching Analysis of Waveguides of Complex Cross-Sectional Geometry Loaded with Magnetized Ferrite Rods." 1995 Transactions on Microwave Theory and Techniques 43.4 (Apr. 1995, Part I [T-MTT]): 880-886.

Many structures, such as ferrite phase shifters and rectangular waveguides loaded with ferrite or dielectric rods of circular cross-section are difficult to analyze. We have developed a field-matching technique capable of analysis of waveguides of complex cross-sectional geometry comprising longitudinally magnetized ferrite rods. The method has been implemented on a PC computer equipped with a Microwave i860 board. Computations of inner products by FFT resulted in three-fold increase in computational speed and two-fold reduction of computer memory required. The method provides results with high accuracy and within a reasonable computing time. Convergence properties, numerical and experimental results are presented.

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