

Abstracts

Analysis of Inductive Dielectric Posts in Rectangular Waveguide

Y. Leviatan and G.S. Sheaffer. "Analysis of Inductive Dielectric Posts in Rectangular Waveguide." 1987 Transactions on Microwave Theory and Techniques 35.1 (Jan. 1987 [T-MTT]): 48-59.

A rapidly converging moment solution for the complete analysis of homogeneous dielectric posts of the inductive type in rectangular waveguide is presented. The moment method approach uses filamentary currents to simulate both the field scattered by the post and the field inside the post and in turn point-matches the continuity conditions for the tangential components of the electric and magnetic fields across the post surface. The procedure is simple to execute and is general in that inductive posts of arbitrary smooth shape, size, location, and number, lossless as well as lossy, can be handled effectively. Data are given and compared with the few cases for which approximate results are available. The technique is further applied to other situations where no experimental data or other analytic results are available.

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