Abstracts

Equivalent Circuit for Partially Dielectric-Filled Rectangular-Waveguide Junctions

C.T.M. Chang. "Equivalent Circuit for Partially Dielectric-Filled Rectangular-Waveguide Junctions." 1973 Transactions on Microwave Theory and Techniques 21.6 (Jun. 1973 [T-MTT]): 403-411.

The problem of electromagnetic-wave propagation in junctions between two symmetrically, partially dielectric-filled waveguides was investigated, and the solution is presented in the form of a two-port equivalent circuit. This equivalent circuit includes an ideal 1:1 transformer, which is connected to transmission lines with impedances equal to those of the two waveguides, in cascade with a T network. Elements of the T network and the characteristic wave impedances of these partially dielectric-filled waveguides have been studied, and the results are presented in graphs for different dielectric constants, slab thicknesses, and operating frequencies.

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