Abstracts

Radiation from an Infinite Array of Parallel-Plate Waveguides with Thick Walls

S.W. Lee. "Radiation from an Infinite Array of Parallel-Plate Waveguides with Thick Walls." 1967 Transactions on Microwave Theory and Techniques 15.6 (Jun. 1967 [T-MTT]): 364-371.

A semi-infinite array of parallel-plate waveguides with walls of finite thickness is excited by incident TEM modes in every waveguide identically. By proper application of the boundary conditions, two Wiener-Hopf equations are obtained which, however, cannot be solved by the standard techniques. A method originated by Jones is applied to recast these two equations so that the forms of the solutions are found. The solntions involve constants to be determined by an infinite set of linear simultaneous equations which converge absolutely. When the thickness of the walls b is small compared with the wavelength lambda, explicit solutions in the order of 0(b/lambda) are found in very simple forms.

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