Abstracts

The Scattering Parameters and Directional Coupler Analysis of Characteristically Terminated Three-Line Structures in an Inhomogeneous Medium

V.K. Tripathi. "The Scattering Parameters and Directional Coupler Analysis of Characteristically Terminated Three-Line Structures in an Inhomogeneous Medium." 1981 Transactions on Microwave Theory and Techniques 29.1 (Jan. 1981 [T-MTT]): 22-26.

The scattering parameters of coupled-symmetrical three-line structures in an inhomogeneous medium, e.g., microstrip lines, are derived in terms of the normal mode parameters of the system. The structure is terminated in a set of impedances which allow for the excitation of the individual normal modes of the system. The scattering parameters are used to study directional coupler properties including possible matching and isolation conditions for six-port and interdigitated-four-port couple consisting of symmetrical three-line structures. It is shown that the solutions obtained reduce to known results for the case of four-port couplers in a homogeneous medium.

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