Abstracts

Improved Analysis Method for Multiport Microstrip Annular-Ring Power-Dividers

F. Tefiku and E. Yamashita. "Improved Analysis Method for Multiport Microstrip Annular-Ring Power-Dividers." 1994 Transactions on Microwave Theory and Techniques 42.3 (Mar. 1994 [T-MTT]): 376-382.

An improved analysis method for multiport microstrip annular-ring power-dividers is presented which is essentially based on the planar circuit theory assuming a magnetic walls at conductor edges. The generalized impedance matrix of the power-dividers is evaluated using two approaches, the Green's function approach and the circular harmonic function approach. The concept of effective dimensions is adopted for taking into account fringing fields to compensate the planar circuit theory. The properties of the power-dividers can be controlled by varying the width of the conductor ring in contrast to those of disk structures. Characteristics of a four-port power-divider in the form of microstrip lines calculated with the present approach are in good agreement with experimented data.

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