Abstracts

Finite Element Analysis of Planar Microwave Networks

P. Silvester. "Finite Element Analysis of Planar Microwave Networks." 1973 Transactions on Microwave Theory and Techniques 21.2 (Feb. 1973 [T-MTT]): 104-108.

The port admittance matrix of a planar network is formulated in terms of certain harmonic functions related to the port voltages and the network geometry, together with the natural modes of the network with all ports shorted. The necessary harmonic functions and eigenfunctions are found using a finite element technique, for which general-purpose computer programs already exist. An advantage of the method is that the admittance matrix appears in partial-fraction form with geometric data separated from frequency, leading to inexpensive computations where recalculation at various frequencies is required.

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