Abstracts

Method of Analysis of Planar Networks Including Radiation Loss

R. Sorrentino and S. Pileri. "Method of Analysis of Planar Networks Including Radiation Loss." 1981 Transactions on Microwave Theory and Techniques 29.9 (Sep. 1981 [T-MTT] (Special Issue on Open Guided Wave Structures)): 942-948.

A general approach to the analysis of microwave planar structures, specifically intended to account for radiation loss is presented. By expanding the internal electromagnetic (EM) field in terms of resonant modes, also the external field is obtained in the form of a series, each term of which corresponds to the field radiated by a resonant mode excited in the structure. Neglecting the effect of the thin dielectric substrate on the power radiated and the coupling between the modes, occurring at the lateral surface of the structure, a simplified formulation is obtained which is shown to be in very good agreement with experiments, performed in the frequency range 2-12.4 GHz, which could not be explained on the basis of a lossless model.

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