Abstracts

Analysis of Microstrip Resonators of Arbitrary Shape

K.A. Michalski and D. Zheng. "Analysis of Microstrip Resonators of Arbitrary Shape." 1992 Transactions on Microwave Theory and Techniques 40.1 (Jan. 1992 [T-MTT]): 112-119.

A space-domain approach based on a mixed-potential integral equation formulation is developed for efficient computation of complex resonant frequencies of laterally open microstrip-patch resonators of arbitrary shape. The effects of the substrate--which may consist of any number of planar, possibly uniaxially anisotropic, dielectric layers--are rigorously incorporated in the formulation by means of the vector and scalar potential Green's functions. The current distribution on the conducting patch is approximated in terms of vector basis functions defined over triangular elements. Computed resonant frequencies, quality factors, modal currents, and far-field radiation patterns are presented for several microstrip resonators. For patches of simple, regular shapes, the results are in agreement with published data obtained by specialized techniques, which--unlike the method presented here--are not easily extendable to arbitrary shapes.

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