Abstracts

Modeling planar arbitrarily shaped microstrip elements in multilayered media

Ming-Ju Tsai, F. De Flaviis, O. Fordham and N.G. Alexopoulos. "Modeling planar arbitrarily shaped microstrip elements in multilayered media." 1997 Transactions on Microwave Theory and Techniques 45.3 (Mar. 1997 [T-MTT]): 330-337.

Microstrip elements of arbitrary shape are modeled in multilayered media. The Green's function for the multilayered structure is developed in a form useful for efficient computation for interacting microstrip elements, which may be located at any substrate layer and separated by an arbitrarily large distance. This result is of significant value to a variety of applications in wave propagation besides those discussed in this paper. The mixed-potential integral-equation (MPIE) method is developed in the spatial domain. Examples for regularly/arbitrarily shaped geometries in single and multilayered media are presented. These involve the optimization of an open-end microstrip, a radial-stub microstrip, a five-section overlay-gap-coupled filter, and a circular-patch proximity-coupled microstrip antenna. Very good agreement with measurement and other published data is observed.

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