Abstracts

Accurate Analysis of Arbitrarily Shaped Patch Resonators on Thin Substrates

Based on a generalized edge boundary condition (GEBC), an accurate analysis method for arbitrarily shaped microstrip patch resonators is developed. The edge of the patch and its feeding line are first discretized as a series of connected segments. Next, an equivalent voltage and an equivalent current are defined on each segment. This boundary of the patch and the feeding line can be viewed as an interface between two networks. The first takes into account the coupling under the patch. The second represents the dynamical edge effects and the coupling over the top side of the patch. This general and computer-efficient approach is then successfully applied to determine the input impedance of some commonly used probe-fed and strip-fed patch resonators.

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