

Abstracts

Multiport Network Model for Evaluating Radiation Loss and Spurious Coupling Between Discontinuities in Microstrip Circuits

A. Sabban and K.C. Gupta. "Multiport Network Model for Evaluating Radiation Loss and Spurious Coupling Between Discontinuities in Microstrip Circuits." 1989 MTT-S International Microwave Symposium Digest 89.2 (1989 Vol. II [MWSYM]): 707-710.

This paper presents a convenient method for evaluating radiation from microstrip discontinuities. The multiport network model is used to find voltage distribution around discontinuity edges and an equivalent magnetic current model is used to compute the external fields produced. As an example, the results show that for a 90° bend in 50 Omega line on 10 mil thick substrate with $\epsilon_{\text{sub r}} = 2.2$, the radiation loss is 0.1 dB at 30 GHz. Electromagnetic coupling between two discontinuities is evaluated by finding the currents induced by the fields of one of the discontinuities at the location of the second discontinuity.

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