Abstracts

A New Microstrip Dispersion Model (Short Papers)

P. Bhartia and P. Pramanick. "A New Microstrip Dispersion Model (Short Papers)." 1984 Transactions on Microwave Theory and Techniques 32.10 (Oct. 1984 [T-MTT]): 1379-1384.

A new unified analysis technique is presented for dispersion in microstrip at high frequencies. The technique exploits the fact that the dispersion in microstrips is due to coupling between a surface-wave mode and the LSE mode of an appropriate model of the microstrip. The analysis uses an effective dielectric constant (EDC) approach to evaluate the mode coupling in the LSE model. Unlike previously reported models, all the parameters of the model are exactly determined from the quasistatic parameters of the microstrip, which takes the fringing field into account. Approximate closed-form equations are derived for the prediction of microstrip dispersion. The results agree within 1.50 percent with the experimental and previously published data over a wide useful range of microstrip dimensions and substrate permittivities.

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