Abstracts

Dispersion characteristics of open microstrip lines using closed-form asymptotic extraction

A full-wave spectral-domain method with an asymptotic extraction technique is formulated for multilayer microstrip lines. This formulation provides a simple closed-form representation of the asymptotic part of the impedance matrix by using Chebyshev polynomial basis functions with the square-root edge condition and the asymptotic behaviour of the Green's function. The formulation is applied to open microstrip lines. Numerical results, in the form of the effective dielectric constants, are presented for the dominant mode. It is shown that the proposed method significantly reduces the computational time and improves the accuracy over the conventional spectral-domain approach (SDA).

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