Abstracts

A Dispersion Model for Coupled Microstrips

V.K. Tripathi. "A Dispersion Model for Coupled Microstrips." 1986 Transactions on Microwave Theory and Techniques 34.1 (Jan. 1986 [T-MTT]): 66-71.

The frequency-dependent propagation characteristics of symmetrical, nonsymmetrical, and multiple coupled microstrips are evaluated by utilizing a directly coupled parallel-plate ideal waveguide model. The closed-form expressions for the frequency-dependent parameters of this proposed semi-empirical utility model are derived in terms of the quasi-static parameters of the coupled microstrip structure. These model parameters are then used to evaluate the frequency-dependent propagation characteristics, including the normal-mode effective dielectric constants and impedances of the coupled microstrips. These results are found to be in good agreement with all the published experimental results and the numerically computed values for symmetrical and nonsymmetrical coupled microstrips. The model should be useful in the computer-aided design of coupled microstrip structures at higher frequencies where the dispersion effects become important.

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