Abstracts

New empirical unified dispersion model for shielded-, suspended-, and composite-substrate microstrip line for microwave and mm-wave applications

A.K. Verma and R. Kumar. "New empirical unified dispersion model for shielded-, suspended-, and composite-substrate microstrip line for microwave and mm-wave applications." 1998 Transactions on Microwave Theory and Techniques 46.8 (Aug. 1998 [T-MTT]): 1187-1192.

By introducing the concept of "virtual relative permittivity," this paper reports several closed-form dispersion models for a multilayered shielded/unshielded microstrip line over 1</spl epsiv//sub r//spl les/20, 0.1/spl les/(w/h)/spl les/10, (h/sub 3//h)/spl ges/2 in the frequency range up to 4 GHz.cm. The maximum deviation of the one model against the results of the spectral-domain analysis (SDA) is limited to 3%, while for the other three models, the maximum deviation is <2% and the root-mean-square (rms) deviation is <0.8%. This paper also reports improvement in the closed-form model of March for the determination of /spl epsiv//sub eff/(O) of the shielded microstrip line.

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