Abstracts

Losses on Multiconductor Transmission Lines in Multilayered Dielectric Media

R.F. Harrington. "Losses on Multiconductor Transmission Lines in Multilayered Dielectric Media." 1984 Transactions on Microwave Theory and Techniques 32.7 (Jul. 1984 [T-MTT]): 705-710.

For the transmission-line modes, a multiconductor transmission line in a multilayered dielectric medium can be characterized by four matrix parameters the capacitance matrices [C], the inductance matrix [L], the shunt conductance matrix [G], and the series resistance matrix [R]. The first two matrices [C] and [L] can be obtained from equivalent electrostatic and magnetostatic problems. The conductance matrix [G] can be obtained by changing all dielectric constants epsilon/sub i/ to complex dielectric constants /angle over epsilon/sub i/ in the equivalent electrostatic problem. The resistance matrix [R] can be obtained by applying a perturbation method to each mode of the transmission line. A computer program has been written for an arbitrary line, and sample computations are presented.

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