

Analytic Determination of the Capacitance Matrix of Planar or Cylindrical Multiconductor Lines on Multilayered Substrates

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An exact analytical expression for the Maxwell capacitance matrix of a multilayer, multistrip planar or cylindrical line is derived by solving the dual series equation system of the problem by means of a Volterra boundary-value problem. The solution is expressed in terms of some infinite matrices with very good convergence properties. Numerical examples show that the method yields accurate results and is also computationally effective for lines having a large number of conductors.

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