Abstracts

A Method of Calculating the Characteristic Impedance of a Strip Transmission Line to a Given Degree of Accuracy

R.G. de Buda. "A Method of Calculating the Characteristic Impedance of a Strip Transmission Line to a Given Degree of Accuracy." 1958 Transactions on Microwave Theory and Techniques 6.4 (Oct. 1958 [T-MTT]): 440-446.

The calculation of the characteristic impedance of the strip transmission line TEM-mode can be reduced to the solution of a two-dimensional potential equation with the strip cross section determining the boundary conditions. Usually this potential equation is solved by conformal mapping, but only the most simple shapes permit exact mapping. Approximations may require considerable work and their accuracy is uncertain. This paper describes an alternative numerical method which is particularly suitable for boundaries consisting of any number of straight lines and right angles. It is based on relaxation methods, but by using also variational principles it derives an approximate value for the impedance, and an upper and lower bound with a difference as small as desirable.

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