Abstracts

Finite-Element Analysis of Overmoded Waveguide Using Silvester's Algorithm (Short Papers)

R.W. Cravey, R. Sternlicht and C.E. Ryan, Jr.. "Finite-Element Analysis of Overmoded Waveguide Using Silvester's Algorithm (Short Papers)." 1987 Transactions on Microwave Theory and Techniques 35.2 (Feb. 1987 [T-MTT]): 205-206.

A general, high-order finite-element waveguide analysis program originated by Silvester has been used to analyze overmoded waveguides. The algorithm approximates arbitrarily shaped waveguides by triangular subsections and solves the Hehnholtz equation subject to homogeneous Dirichlet or Neumann boundary conditions to obtain the eigenvalues (cutoff wavelengths) and the eigenvectors (scalar potentials). During these investigations of arbitrarily shaped overmoded waveguides, a computer program error was identified. This error resulted in incorrect higher-order mode potential functions. As this algorithms has been rather widely disseminated, it is the purpose of this communication to inform users of a correction which yields the correct higher-order-mode potential functions.

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