Abstracts

A simple method for calculating the reflection coefficient of open-ended waveguides

This paper presents a simple but effective method for the analysis of open-ended waveguides. The method begins with the introduction of a large waveguide to approximate the half-space. In order to avoid the convergence problem lossy dielectric is assumed to homogeneously fill the large waveguide. After obtaining a number of convergent data for different values of the loss tangent an extrapolation technique is employed to calculate the solution to the original problem-a waveguide terminated by an infinite conducting range and radiating into a lossless or low-loss half-space. Numerical results are given to show the validity of the proposed method. The behavior of the effect of the loss tangent on the size of the large waveguide and on the final results are also examined.

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