Abstracts

Full Wave Approach for the Analysis of Open Planar Waveguides with Finite Width Dielectric Layers and Ground Planes

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A unified full wave approach based on an extended method of lines is presented for the analysis of open planar waveguides. It can be used to analyze various open planar waveguides and is suitable especially for dielectric substrates with discontinuities andlor with finite ground planes where a frill wave approach is not available yet. The convergence of the method is examined by numerical experiments. As application examples, the dispersion characteristics of open single and coupled microstrip lines with finite dielectric substrates are calculated and compared with the full wave results for structures with infinite width dielectric/conductor and the available quasi-static results for single microstrip line with finite dielectric in the literature. The effect of dielectric width on the characteristics is also discussed.

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