Abstracts

Electromagnetic Simulation of Microstrip Structures with Symmetrically Coupled Microstrip Ports

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An electromagnetic simulation, based on a triangular grid and a rectangular grid, is applied to the analysis of coupled microstrip structures, and a standing wave detection algorithm is developed for the S-parameter extraction of symmetrically coupled microstrip lines. The process extracts the ratios of the reflected waves over the incident waves and the propagation constants of the two modes (even and odd) from the numerically solved electric current standing wave distributions. Presented in this paper is a full-wave analysis of coupled microstrip structures and a de-embedding technique that solve for the propagation constants and S-parameters based on the guided wave modes of the feed structures. The technique can also be applied to other symmetrically coupled structures.

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