Abstracts

Optimization of Aperture Transitions for Multiport Microstrip Circuits

C. Chen, M.-J. Tsai and N.G. Alexopoulos. "Optimization of Aperture Transitions for Multiport Microstrip Circuits." 1996 Transactions on Microwave Theory and Techniques 44.12 (Dec. 1996, Part II [T-MTT] (1996 Symposium Issue)): 2457-2465.

The introduction of printed aperture into multiport microstrip circuits as a vertical transition proves to be practical in the design as well as manufacturing process of multilayered circuits. With the mixed-potential integral equation-based moment method, it becomes possible to analyze and optimize the performance of this arbitrary shape aperture transition for multiport circuit applications. Bandwidth enhancement is obtained by changing the shape of the slot for two-port and three-port microstrip transitions. Also, the influence of slot size, orientation, and mutual coupling have been thoroughly studied in order to reach an optimal circuit performance. Using the transition, a three-port power divider with 180 degree phase difference and a directional coupler with various degree of coupling have been designed.

❑ Return to main document.