Abstracts

Analysis and Design of Slot-Coupled Directional Couplers Between Double-Sided Substrate Microstrip Lines (Dec. 1991 [T-MTT])

M.-F. Wong, V.F. Hanna, O. Picon and H. Baudrand. "Analysis and Design of Slot-Coupled Directional Couplers Between Double-Sided Substrate Microstrip Lines (Dec. 1991 [T-MTT])." 1991 Transactions on Microwave Theory and Techniques 39.12 (Dec. 1991 [T-MTT] (1991 Symposium Issue)): 2123-2129.

This paper proposes to study the characteristics of a slot-coupled directional coupler between two microstrip lines coupled through a rectangular slot in the common ground plane. Firstly, conformal mapping techniques are used to obtain analytic closed-form expressions for the coupler even and odd-mode impedances and propagation constants for any coupler configuration. Secondly, a full-wave analysis is performed using the spectral domain approach to determine the dispersion properties of coupler parameters. Theoretical and experimental results for a 10 dB coupler at 10 GHz are presented.

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