Abstracts

Optimum termination networks for tightly coupled microstrip lines under random and deterministic excitations

S. Amari and J. Bornemann. "Optimum termination networks for tightly coupled microstrip lines under random and deterministic excitations." 1997 Transactions on Microwave Theory and Techniques 45.10 (Oct. 1997, Part I [T-MTT]): 1785-1789.

A general method to determine the termination network of multiple coupled lines for lowest input return loss is presented. Each line is connected to the ground and its nearest neighbors by resistors whose values are determined by minimizing the reflected power. It is demonstrated that under these conditions the optimum termination network depends on the excitation. The inequality of the modal propagation constants requires that the length of the lines be properly taken into account when designing a termination network which ensures maximum power delivery to the loads. Matching networks for five and seven coupled transmission lines under different excitations are presented. For the more practical case of unknown excitations, a design procedure based on minimizing the reflected power for independent random-incident voltage variables is presented.

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