Abstracts

On the Analysis of General Parallel Coupled TEM Structures Including Nonadjacent Couplings

C.-L. Ren. "On the Analysis of General Parallel Coupled TEM Structures Including Nonadjacent Couplings." 1969 Transactions on Microwave Theory and Techniques 17.5 (May 1969 [T-MTT]): 242-249.

In this paper a rigorous but relatively straightforward procedure is presented for obtaining equivalent circuits of general parallel coupled TEM transmission lines that includes coupling to adjacent as well as nonadjacent lines. The procedure is illustrated in detail by several examples. It provides a means of analyzing these structures without the need of neglecting coupling between any nonadjacent lines and is therefore particularly helpful in the case where the nonadjacent couplings become significant. In fact, for obtaining optimum device performance from a given number of lines, it may be desirable to include the nonadjacent couplings. As an illustration of its usefulness in an exact analysis, the proposed method is applied to the analysis of interdigital filters. It is demonstrated that certain properties can be shown to exist when nonadjacent couplings are included.

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