Abstracts

Coupled-Mode Analysis of Nonuniform Coupled Transmission Lines

The transmission-line equations describing propagation along coupled transmission lines are cast in coupled-mode form so that the roles of the different coupling coefficients and the impedance variation are more directly observable. Restrictions on the various parameters for obtaining directional coupling with nonuniform lines are then discussed and exact solutions for the coupling response of two nonuniform coupled lines with particular variations of the coupling coefficients are presented. The results obtained from the exact closed-form solutions should aid in the design of tapered couplers.

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