Abstracts

Shielded Coupled-Strip Transmission Line

S.B. Cohn. "Shielded Coupled-Strip Transmission Line." 1955 Transactions on Microwave Theory and Techniques 3.5 (Oct. 1955 [T-MTT]): 29-38.

An analysis is made of the odd and even TEM modes on a pair of parallel co-planar strips midway between ground planes. Rigorous formulas are presented for the case of zero-thickness strips, while approximate formulas are given for strips of finite thickness and for strips printed on opposite sides of a thin dielectric sheet supported in air between ground planes (AIL construction). The characteristic impedances and the phase velocities of the two modes are necessary and sufficient information for the design of directional couplers, coupled-line filters, and other components utilizing the coupling between parallel-strip lines. In order to facilitate design work, nomograms are included in the paper which give the dimensions of the coupled-strip cross section in terms of the odd- and even-mode characteristic impedances. The characteristic-impedance scales of these nomograms may be read to an accuracy of better than one per cent over a wide range of values that is sufficient for most purposes.

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