Abstracts

Criteria for the Design of Loop-Type Directional Couplers for the L Band

P.P. Lombardini, R.F. Schwartz and P.J. Kelly. "Criteria for the Design of Loop-Type Directional Couplers for the L Band." 1956 Transactions on Microwave Theory and Techniques 4.4 (Oct. 1956 [T-MTT]): 234-239.

For many years the design of loop type directional couplers has relied heavily on experiment. One of the most common varieties has been the loop coupler much shorter than a wavelength and having a built-in termination (vestigial arm). In this paper the criteria for the design of loop couplers of any length are considered, and their application to either coaxial line or waveguide are discussed. The theoretical basis for design is established by first considering the theory of coupled transmission lines. Several designs which utilize a quarter-wavelength or shorter loops and which have very desirable features with regard to coupling, directivity, and band-width are illustrated. Typical performance of couplers having couplings of 20-40 db and directivities of over 30 db are presented.

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