Abstracts

Tunable Passive Multicouplers Employing Minimum-Loss Filters

J.F. Cline and B.M. Schiffman. "Tunable Passive Multicouplers Employing Minimum-Loss Filters." 1959 Transactions on Microwave Theory and Techniques 7.1 (Jan. 1959 [T-MTT]): 121-127.

Several multicoupler techniques are described for operating twenty or more UHF transmitters and receivers simultaneously with a single localized antenna system. The types of multi-couplers considered include the simple parallel-connected filter type and several distributed-line types, in which the individual branches are separately tuned. The filters used are of the symmetrical, narrow-band, direct-coupled resonator type, designed to obtain minimum center-frequency insertion loss for a given insertion loss in the adjacent channels. Design formulas are given for these filters, and characteristic response shapes are presented. The extra-channel susceptance, which is the principal factor limiting the number of channels obtainable in a single multicoupler, is discussed in terms of the input coupling coefficient, the resonator parameters, and the lengths of the connecting lines.

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