Abstracts

Synchronous Branch Guide Directional Couplers for Low and High Power Applications

L. Young. "Synchronous Branch Guide Directional Couplers for Low and High Power Applications." 1962 Transactions on Microwave Theory and Techniques 10.6 (Nov. 1962 [T-MTT]): 459-475.

Branch-guide directional couplers can be built in most types of transmission line. A design procedure is here developed which gives predictable and superior performance over a specified frequency band. A new chart was constructed from which the coupler impedances or admittances can be calculated quickly and with sufficient accuracy for nearly all practical applications. A five-branch, 6-db coupler and a thirteen-branch, 0-db coupler were constructed in waveguide. The measured points and computed curves were in excellent agreement. Over the frequency band of 1300 ±130 Mc, the 0-db coupler had a VSWR of less than 1.07, its insertion loss was better than 0.05 db, and the couplings into the two remaining arms were weaker than 20 db. This coupler can pass at least 5 Mw of peak power in air at atmospheric pressure.

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