Abstracts

Acoustic Surface Wave Directional Couplers

L.R. Adkins and A.J. Hughes. "Acoustic Surface Wave Directional Couplers." 1970 G-MTT International Microwave Symposium Digest of Technical Papers 70.1 (1970 [MWSYM]): 375-379.

A theoretical and experimental investigation leading to the design and fabrication of surface wave directional couplers is discussed. A simple theoretical model for surface acoustic waveguides developed by Adkins and Hughes serves as the foundation for the present investigation. In this model guidance is achieved by thin gold strips deposited on fused quartz. This single guide model was then extended to the double guide structure which serves as a basis for coupled mode devices. A preliminary account of this work has been previously reported. Calculated coupling lengths, decay lengths, and modal amplitude ratios were found to be in good agreement with experiment. The double guide model was then employed for the design and fabrication of directional coupler devices. A brief account of this work is reported in Ref. 3. The general agreement between theory and experiment indicates that the model constitutes the basic foundation for design of practical coupled mode devices.

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