

Abstracts

Shuttle Pulse Measurement of Mode Coupling and Conversion (Short Papers)

P. Bernardi, F. Bertolani and F. Valdoni. "Shuttle Pulse Measurement of Mode Coupling and Conversion (Short Papers)." 1976 Transactions on Microwave Theory and Techniques 24.5 (May 1976 [T-MTT]): 264-266.

The measurement of weak coupling between two guided modes, for which the usual TE/sub 10/setsups cannot be directly used, is dealt with. This problem mainly arises in coupling between different waveguides and in overmoded waveguides. In both cases a representation by means of two coupled lines is chosen, described by a directional coupler scattering matrix. In addition to the well-known resonant Klinger method, a new one, in the time domain, is suggested. This new method makes use of a shuttle pulse test set and starts from the observation of the envelope of an output signal, which under suitable conditions shows zeros related to the coupling to be measured. Experimental results, with frequencies up to 90 GHz and couplings as low as -40 dB, confirm the accuracy and the sensitivity of the new method.

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