Abstracts

Measurement of Harmonic Power Generated by Microwave Transmitters

V.G. Price. "Measurement of Harmonic Power Generated by Microwave Transmitters." 1959 Transactions on Microwave Theory and Techniques 7.1 (Jan. 1959 [T-MTT]): 116-120.

A measurement technique is described that can be used to determine quantitatively the power levels of the higher order modes propagating in a straight, Iossless, rectangular waveguide. The technique employs a number of small calibrated electric probes which are fied on the broad and narrow walls of the waveguide measurement section to sample the electric fields within. The method used to calibrate these probes is briefly discussed, and information on accuracy and limitations of the probe technique is presented. Some measurement results on the power levels in the modes of the second and third harmonic frequencies in the outputs of high power S-band magnetrons and klystrons are presented. The multiple-probe technique has reduced the time required to take measurements at a given frequency to about one-half hour. An automatic computer has been programmed to perform all of the required mathematical operations and has reduced the computation time to less than one-half hour for each measurement frequency.

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