Abstracts

A Technique for Measuring Individual Modes Propagating in Overmoded Waveguide

D.S. Levinson and I. Rubinstein. "A Technique for Measuring Individual Modes Propagating in Overmoded Waveguide." 1966 Transactions on Microwave Theory and Techniques 14.7 (Jul. 1966 [T-MTT]): 310-322.

A practical measurement technique for determining the relative amplitude and phase of the individual modes propagating in overmoded waveguide is described. A phase-sensitive detector is used to measure the output of fixed probes placed around a single transverse plane in a section of enlarged waveguide. The detected output is directly proportional to the modal components, and data reduction is performed manually. The use of oversize waveguide provides increased accuracy and permits total multimode power measurements in conjunction with mode analysis. The technique can be used for mode measurements up to the fourth harmonic in standard rectangular waveguide. Experiments described in the paper use a single frequency source. However, signal sources with spurious content can be evaluated using appropriate tunable RF band-pass filters.

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