

Abstracts

Analysis of Automatic Homodyne Method Amplitude and Phase Measurements (Short Papers)

B.A. Howarth and T.J.F. Pavlasek. "Analysis of Automatic Homodyne Method Amplitude and Phase Measurements (Short Papers)." 1972 Transactions on Microwave Theory and Techniques 20.9 (Sep. 1972 [T-MTT]): 623-626.

A system employing RF substitution techniques for automatic phase and intensity measurement of microwave fields is described. The system uses homodyne detection to generate error signals for servomechanisms which balance the attenuation and phase secondary standards. Accuracy and dynamic range of this method of measurement can be strongly dependent on the method of modulation employed. This paper analyzes errors from this cause and indicates what means are available to minimize them. This method of measurement is less expensive than some alternate techniques, and, at the present stage in the evolution of microwave near field measurements, its errors are less serious than uncertainties introduced by absorber reflections, probe characteristics, and mechanical positioning errors.

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