Abstracts

A Reflex Klystron Amplifier for Microwave Spectroscopy (Correspondence)

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There are situations in microwave resonance studies when the microwave power level must be kept very low in order not to seriously disturb the systems being studied. Electron spin resonance of many systems at low temperature where saturation effects occur and cyclotron resonance of carriers at low temperatures when it is important not to heat the carrier systems appreciably, are two examples of such situations. Operation at these low power levels creates a demand for an increase in sensitivity of the detection system for the microwave spectrometer. Usually this is accomplished by employing a superheterodyne detection system in place of the more usual video detector. The complexity of such an arrangement led us to consider the possibility of using a reflex klystron to amplify the microwave bridge output signal prior to the video detector.

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