# Abstracts

## A Ferrimagnetically-Tuned Parametric Amplifier

*K.L. Kotzebue and L.B. Fletcher. "A Ferrimagnetically-Tuned Parametric Amplifier." 1965 Transactions on Microwave Theory and Techniques 13.6 (Nov. 1965 [T-MTT]): 773-776.*

A parametric amplifier can normally be tuned only over relatively restricted frequency ranges. One of the basic reasons for this tuning difficulty is that more than one frequency range is of importance for, in addition to the signal frequency, a pump frequency and one or more sum or difference frequencies must be considered. In this paper a tunable negative-resistance parametric amplifier is described which uses ferrimagnetically-tuned signal and idler circuits, together with a fixed-frequency pump source. This amplifier is unique in two respects. One is that the amplifier is electrically tuned through the use of yttrium iron garnet (YIG) resonators. Secondly, useful low-noise performance has been achieved over a tuning range of almost one octave, this amplifier thus successfully demonstrates that the technique of magnetic tuning with YIG resonators can be applied to a device as complex as a parametric amplifier in much the same manner as it has been applied in the past to microwave band-pass and band-stop filters.

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