# Abstracts

## UHF Backward-Wave Parametric Amplifier

*S. Okwit, M.I. Grace and E.W. Sard. "UHF Backward-Wave Parametric Amplifier." 1962 Transactions on Microwave Theory and Techniques 10.6 (Nov. 1962 [T-MTT]): 558-563.*

This paper describes a breadboard model of a UHF varactor diode backward-wave parametric amplifier that can be electronically tuned over an octave tuning range (250-500 Mc). It operates in a mode that has a relatively constant idler frequency; however, it uses two forward-wave transmission lines in contrast to the backward-wave transmission line requirement previously reported. A theoretical discussion on the design considerations of this mode is presented and applied to the UHF model. Measurements taken in the conventional mode of operation (output frequency equal to the input frequency) yielded voltage gain bandwidth products in excess of 100 Mc and over-all effective receiver noise temperatures of less than 140°K. Detailed measurements in the mode where the constant idler frequency is used as the output were not taken because directional filters and circulators, which are necessary in this mode, were not available.

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