

Abstracts

A Nondegenerate Traveling-Wave Parametric Amplifier

K.P. Grabowski. "A Nondegenerate Traveling-Wave Parametric Amplifier." 1962 Transactions on Microwave Theory and Techniques 10.2 (Mar. 1962 [T-MTT]): 103-107.

The traveling-wave parametric amplifiers reported to date are not sufficiently competitive to ensure their use in advanced radar systems. The major hindrance is the relatively high-radar noise figure which is due to the fact that the signal and idler frequencies are about equal; i.e., the amplifier is degenerate. Initial experiments directed toward obtaining a nondegenerate microwave traveling-wave parametric amplifier are reported in this paper. A promising circuit has been developed and an S-band nondegenerate amplifier has been built and tested. In the first part of the paper the circuit is described and the experimental results are given. The second part of the paper describes procedures which have proved useful in the development of the circuit and which should also prove useful in future investigations.

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