Abstracts

The Matrix Amplifier: A High-Gain Module for Multioctave Frequency Bands

K.B. Niclas and R.R. Pereira. "The Matrix Amplifier: A High-Gain Module for Multioctave Frequency Bands." 1987 Transactions on Microwave Theory and Techniques 35.3 (Mar. 1987 [T-MTT]): 296-306.

The characteristics of a new type of amplifier that makes simultaneous use of the additive and the multiplicative amplification process in one and the same module is discussed. The device, which achieves high-gain performance over multioctave bands, is a relative of the distributed amplifier. Initial experimental results demonstrated a small-signal gain of G = 13.8±0.8 dB with -11.4 dB of maximum return loss between 2.0 and 21.5 GHz when using MESFET's manufactured on ion-implanted substrate material and G = 16.8±0.9 dB gain over the 2.3-20.3-GHz frequency band in the case of vapor-phase-epitaxial material. The principle, the theory, and the experimental results are discussed in detail.

❑ Return to main document.