Abstracts

Optimum Efficiency of a Cascade of Low-Gain Amplifiers

D.H. Steinbrecher. "Optimum Efficiency of a Cascade of Low-Gain Amplifiers." 1970 Transactions on Microwave Theory and Techniques 18.11 (Nov. 1970 [T-MTT] (Special Issue on Microwave Circuit Aspects of Avalanche-Diode and Transferred Electron Devices)): 951-956.

A low-gain amplifier dc-to-RF conversion efficiency analysis is presented. Three power-amplifier-efficiency definitions are compared, and it is shown that the generation efficiency is a useful quality factor for low-gain power amplifiers only if it can be assumed to be constant over a wide operating range. In the most frequently occurring case the generation efficiency is a function of drive and the dc operating point, and no single number provides enough information to characterize amplifier-efficiency performance. A graphical technique is presented for selecting the most efficient operating point for an amplifier with variable gain and generation efficiency.

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