Abstracts

High-efficiency harmonic-control amplifier

B. Ingruber, W. Pritzl, D. Smely, M. Wachutka and G. Magerl. "High-efficiency harmonic-control amplifier." 1998 Transactions on Microwave Theory and Techniques 46.6 (Jun. 1998 [T-MTT]): 857-862.

A half-sinusoidally driven class-A harmonic-control amplifier (hHCA) combines the advantage of high gain of class A with the advantage of high drain efficiency of class F. Consequently, power-added efficiency is increased as compared with state-of-the-art high-efficiency amplification techniques. As this innovative amplifier concept consists of a pulse-forming class-B amplifier stage followed by a class-A power-amplifier stage, intermodulation distortion is low even in saturation. The realization of such a two-stage hHCA offers 71% overall efficiency, 27.9 dBm output power, and 22.4 dB gain at 1.62 GHz. Two-tone measurements at 1 dB gain compression, where the amplifier's single-carrier (SC) overall efficiency is still 64%, has demonstrated thirdand fifth-order intermodulation distortion of -29 and -21 dBc, respectively.

❑ Return to main document.