Abstracts

Rectangularly driven class-A harmonic-control amplifier

B. Ingruber, J. Baumgartner, D. Smely, M. Wachutka, G. Magerl and F.A. Petz. "Rectangularly driven class-A harmonic-control amplifier." 1998 Transactions on Microwave Theory and Techniques 46.11 (Nov. 1998, Part I [T-MTT]): 1667-1672.

A rectangularly driven class-A harmonic-control amplifier (rHCA) is studied, which combines the advantage of high device drain efficiency (/spl eta//sub D/) of a switched-type amplifier with the advantage of high gain (G) of class-A operation, thus maximizing its power-added efficiency (PAE). In this rHCA, harmonics are controlled such that drain-to-source voltage becomes half-sinusoidal. This reduces the necessary supply voltage without degrading output power. In comparison with a class-F amplifier using the same transistor, the realization of such an rHCA has demonstrated 0.4-dB larger output power, 3.8-dB increased gain, 4% higher PAE, and 22% lower drain supply voltage at 1.62 GHz.

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