Abstracts

Linear high-efficiency microwave power amplifiers using bandpass delta-sigma modulators

A. Jayaraman, P.F. Chen, G. Hanington, L. Larson and P. Asbeck. "Linear high-efficiency microwave power amplifiers using bandpass delta-sigma modulators." 1998 Microwave and Guided Wave Letters 8.3 (Mar. 1998 [MGWL]): 121-123.

A novel amplifier configuration is described, in which a bandpass delta-sigma modulator is used to produce a two-level (digital) signal representing an analog radio frequency (RF) input. Subsequently, a switching-mode amplifier and bandpass filter are used to amplify the signal and remove unwanted spectral components. This configuration has the potential of achieving high efficiency (typical of switching mode amplifiers) together with high linearity. A simulated implementation with GaAs heterojunction bipolar transistors (HBT) is shown.

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