Abstracts

Microwave power amplifiers with digitally-controlled power supply voltage for high efficiency and high linearity

M. Ranjan, K.H. Koo, G. Hanington, C. Fallesen and P. Asbeck. "Microwave power amplifiers with digitally-controlled power supply voltage for high efficiency and high linearity." 2000 MTT-S International Microwave Symposium Digest 00.1 (2000 Vol. I [MWSYM]): 493-496.

A power amplifier architecture is presented which comprises a basic amplifier with an efficient, high modulation bandwidth DC-DC converter. The amplifier and the DC-DC converter are controlled by a digital signal processor that provides input signal pre-distortion, supply voltage optimization and equalization. Experimental results at 950 MHz showed ACPR values acceptable for IS-95 CDMA handset applications. With variable power supply, the overall efficiency improved by a factor of 1.4/spl times/ (when averaged over representative conditions of usage).

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