Abstracts

Device and circuit approaches for improved linearity and efficiency in microwave transmitters

P.M. Asbeck, T. Itoh, Y. Qian, M.F. Chang, L. Milstein, G. Hanington, P.F. Chen, V. Schultz, D.W. Lee and J. Arun. "Device and circuit approaches for improved linearity and efficiency in microwave transmitters." 1998 MTT-S International Microwave Symposium Digest 98.1 (1998 Vol. I [MWSYM]): 327-330.

This paper presents several power amplifier approaches that promise to significantly improve efficiency, while meeting the linearity requirements of advanced, spectrally efficient wireless systems. The approaches include: a) use of active integrated antenna structures that provide harmonic terminations for high efficiency Class F amplifiers; b) integrated dc-dc converters for power conditioning and envelope restoration; c) switching mode amplifiers based on bipolar transistors with controlled saturation; and d) the use of band-pass delta-sigma modulators to tailor input signals.

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