Abstracts

A linearized power amplifier MMIC for 3.5 V battery operated wide-band CDMA handsets

G. Hau, T.B. Nishimura and N. Iwata. "A linearized power amplifier MMIC for 3.5 V battery operated wide-band CDMA handsets." 2000 MTT-S International Microwave Symposium Digest 00.3 (2000 Vol. III [MWSYM]): 1503-1506.

This paper presents a linearized power amplifier (PA) MMIC developed for 1.95 GHz wide-band CDMA handsets. Predistortion linearization was employed to compensate the nonlinearities of a PA, achieving high efficiency, high linearity signal amplification operated at 3.5 V supply voltage. To maintain a compact design, the predistorter was integrated with the PA onto a single MMIC chip. After linearization, the output power (P/sub out/) and power added efficiency (PAE) of the PA MMIC improve significantly from 28.0 dBm and 40.0% to 28.8 dBm and 44.5%, respectively, measured at -38 dBc adjacent channel leakage power ratio (ACPR) with a 3.84 Mcps hybrid phase shift keying signal. By combining with bias control, the linearized PA MMIC also demonstrates an excellent low P/sub out/ (13 dBm) performance, achieving a PAE of 24.0% at the same ACPR criteria.

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