Abstracts

A High-Efficiency Single-Supply RFIC PHS Linear Power Amplifier with Low Adjacent Channel Power Leakage

B. Nelson, S. Cripps, J.S. Kenney and A.F. Podell. "A High-Efficiency Single-Supply RFIC PHS Linear Power Amplifier with Low Adjacent Channel Power Leakage." 1996 MTT-S International Microwave Symposium Digest 96.1 (1996 Vol. I [MWSYM]): 49-52.

We present the results and simulation for two 1.9GHz GaAs RFIC power amplifiers. Operated from a single 3.0V supply at a power added efficiency of 40%, these RFIC's produce +25 and +27 dBm output power, respectively, at -57 dBc adjacent channel power from a 384 kbps pi/4-DQPSK modulated carrier at 600 kHz offset. When operating in a saturated mode the same RFIC's have an output power greater than 26.5 and 28dBm respectively at over 45% PAE which makes them very attractive for the saturated output applications. We believe this is the best performance reported to date for PHS/PACS mode operation using a single supply RFIC monolithic power amplifier. The design technique, including simulation of spectral regrowth based on AM-AM and AM-PM characteristics, are presented for these amplifiers.

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