Abstracts

A nonlinear capacitance cancellation technique and its application to a CMOS class AB power amplifier

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A nonlinear cancellation technique is developed specifically for MOS class AB power amplifiers. This technique utilizes a PMOS transistor at the amplifier input to cancel the variation of the input capacitance, thus improving the overall amplifier linearity. A monolithic CMOS RF power amplifier with this technique is designed and fabricated in a standard 0.6 /spl mu/m CMOS technology. The prototype single-stage amplifier has a measured drain efficiency of 40% and a power gain of 7 dB at 1.9 GHz. Linearity measurements show that the new amplifier has over 10 dB of IM/sub 3/ improvement and 6 dB of ACPR improvement compared with the traditional NMOS class AB power amplifier.

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