Abstracts

Performance of a CMOS Bluetooth transceiver IC with copper RF passives (2002 [RFIC])

M.T. Doan, Q. Yin, K.E. Sze, P.B. Khannur, S.C. Rustagi, S. Jinglin, Pang, D. Foo and A.B. Ajjikuttira. "Performance of a CMOS Bluetooth transceiver IC with copper RF passives (2002 [RFIC])." 2002 Radio Frequency Integrated Circuits (RFIC) Symposium 02. (2002 [RFIC]): 415-418.

On-chip copper inductors, MIM capacitors and precision resistors in a novel, low-cost process are described. A CMOS transceiver for Bluetooth was realized with these new RF passive components and compared with the same IC realized in a commercial 0.35 /spl mu/m CMOS process with Al metalization. In a low-noise amplifier (LNA), a gain improvement of around 5 dB and a noise-figure reduction of 1.2 dB were observed. For the image-reject mixer (IRM), the conversion gain improved by 3.5 dB. The output power of the power amplifier (PA) increased by 1.5 dB. For the phase locked loop (PLL) frequency synthesizer, the settling time was reduced to almost half.

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