Abstracts

Performance of a CMOS Bluetooth transceiver IC with copper RF passives (2002 Vol. I [MWSYM])

My The Doan, Qian Yin, Khoo Ee Sze, P.B. Khannur, S.C. Rustagi, Shi Jinglin, Pang Dow Foo and A.B. Ajjikuttira. "Performance of a CMOS Bluetooth transceiver IC with copper RF passives (2002 Vol. I [MWSYM])." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 525-528 vol.1.

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 the 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 almost in half.

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