Abstracts

A micro-power CMOS RF front-end for embedded wireless devices

R. Rofougaran, Tsung-Hsien Lin, F. Newberg and W.J. Kaiser. "A micro-power CMOS RF front-end for embedded wireless devices." 1999 Radio Frequency Integrated Circuits (RFIC) Symposium 99. (1999 [RFIC]): 17-20.

Motivated by the emerging needs for low power narrow-band wireless communication systems, the first micro-power RFIC front-end has been designed using weak inversion CMOS techniques. The front-end, a low-noise amplifier (LNA) combined with a downconversion mixer, has been implemented in a standard 0.8 /spl mu/m CMOS process. The front-end supply current is less than 110 /spl mu/A at 3 V supply bias for operation at 450 MHz. High-Q inductors, used in the front-end design, have been manufactured using low-temperature cofired ceramic technology. The front-end's gain is 25 dB with an IP3 of -15 dBm. This is the lowest current consumption reported to date for a CMOS front-end operating at this frequency.

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