Abstracts

A 5.8 GHz fully integrated low power low phase noise CMOS LC VCO for WLAN applications (2002 [RFIC])

J. Bhattacharjee, D. Mukheijee, E. Gebara, S. Nuttinck and J. Laskar. "A 5.8 GHz fully integrated low power low phase noise CMOS LC VCO for WLAN applications (2002 [RFIC])." 2002 Radio Frequency Integrated Circuits (RFIC) Symposium 02. (2002 [RFIC]): 475-478.

A fully integrated low power and low phase noise 5.8 GHz VCO is designed and fabricated in standard 0.24 /spl mu/m single-poly, 5-metal digital CMOS process. The VCO-core draws 2 mA of current from a 2.5 V supply. Measured phase noise at 1 MHz offset from the center frequency is -112 dBc/Hz. It has a tuning range of 810 MHz with low phase noise performance throughout the tuning range. It meets the requirements for IEEE802.11a WLAN standard. Low power and low phase noise have been achieved simultaneously by the use of np complementary cross-coupled topology. The novel orientation of the inductor pair used in the design minimizes the effect of any unwanted common-mode magnetic coupling that may arise from other on-chip inductors in an integrated environment.

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