Abstracts

A fully-integrated low-power low-noise 2.6-GHz bipolar VCO for wireless applications

C. Samori, A. Zanchi, S. Levantino and A.L. Lacaita. "A fully-integrated low-power low-noise 2.6-GHz bipolar VCO for wireless applications." 2001 Microwave and Wireless Components Letters 11.5 (May 2001 [MWCL]): 199-201.

The low quality factor of the inductors fabricated in fully-integrated LC tanks results in a poor indirect stability of the oscillators, which are therefore highly sensitive to low-frequency noise and disturbances coupled through substrate and supply lines. The paper addresses the design of a 2-V voltage-controlled oscillator (VCO) at 2.6 GHz fabricated in a Si-bipolar process with f/sub T/ of 20 GHz. The circuit bias and the transistor layout have been specifically optimized to minimize the phase noise degradation due to the intrinsic low indirect stability. A single sideband-to-carrier ratio (SSCR) of -104 dBc/Hz at 100 kHz is demonstrated with less than 14 mW power consumption.

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