Abstracts

A fully monolithic SiGe quadrature voltage controlled oscillator design for GSM/DCS-PCS applications (2002 [RFIC])

D. Cordeau, J.-M. Paillot, H. Cam, G. De Astis and L. Dascalescu. "A fully monolithic SiGe quadrature voltage controlled oscillator design for GSM/DCS-PCS applications (2002 [RFIC])." 2002 Radio Frequency Integrated Circuits (RFIC) Symposium 02. (2002 [RFIC]): 455-458.

This paper describes the design and optimization in terms of phase noise of a fully monolithic SiGe voltage controlled oscillator (VCO) with quadrature outputs. The proposed circuit is made of two cross-coupled differential VCOs, with integrated resonator, to ensure the quadrature outputs. The quadrature VCO core runs on 13 mA from a 2.7 V power supply. The simulated phase noise is about -140 dBc/Hz at 3 MHz frequency offset almost all over the tuning range. The oscillator is tuned from 1.44 GHz to 1.76 GHz with a tuning voltage varying from 0 to 3 V.

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