

A Highly-Tunable 12 GHz Quadrature LC VCO in SiGe BiCMOS Process

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Abstract

This paper describes a 12 GHz fully-integrated, fully-differential quadrature LC VCO. Fabricated in a 0.35 μm SiGe BiCMOS process with 55 GHz f_T , the oscillator achieves 37% tuning range (9.62 to 14.0 GHz) and exhibits -113.5 and -112.3 dBc/Hz phase noise at 10 MHz away from 11 and 13 GHz oscillation frequencies, respectively. The oscillator draws 39 mA current from a 3.3 V supply and occupies 0.36 mm² active die area.