Abstracts

A 1.24-GHz monolithic CMOS VCO with phase noise of -137 dBc/Hz at a 3-MHz offset

C.-M. Hung and K.K. O. "A 1.24-GHz monolithic CMOS VCO with phase noise of -137 dBc/Hz at a 3-MHz offset." 1999 Microwave and Guided Wave Letters 9.3 (Mar. 1999 [MGWL]): 111-113.

For the first time, a 1.24-GHz CMOS voltage-controlled oscillator (VCO) with an integrated resonator which satisfies the Global System for Mobile communications (GSM) phase noise requirement at a 3-MHz offset is presented. The measured phase noise is -88, -125, and -137 dBc/Hz at 10-kHz, 600-kHz, and 3-MHz offsets, respectively. The VCO is implemented in a low-cost 0.8-/spl mu/m foundry CMOS process exclusively using pMOS transistors which have greater than one order of magnitude lower 1/f noise than that of nMOS transistors. The tuning range is /spl sim/130 MHz for the control voltages between 0.5 and 3.0 V. The VCO core runs on 22 mA from a 3-V power supply.

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