

Low-phase-noise low-power IC VCOs for 5-8-GHz wireless applications

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A set of fully integrated voltage-controlled oscillators (VCOs) in the 5-8 GHz frequency range has been designed and manufactured in Si bipolar and Si-SiGe-heterojunction-bipolar-transistor technology. A minimum phase noise of -100 dBc/Hz at 100-kHz off carrier was measured for 2-V supply voltage and 16 mW of power consumption. SiGe VCOs give considerably better phase-noise performance than Si bipolar VCOs for the technologies investigated herein, using similar topologies.

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