

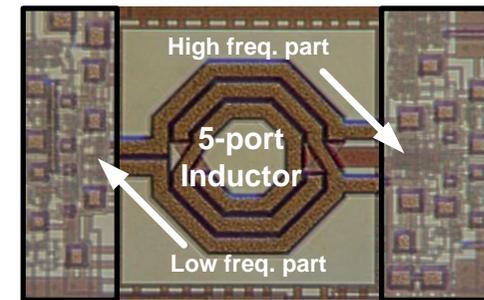
A 25MHz-6.44GHz LC-VCO Using a 5-port Inductor for Multi-band Frequency Generation

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In order to support the frequency agility, synthesizers for SDR and CR are required to provide all necessary local-oscillator frequencies with proper channel spacing. Thus, wide-band voltage-controlled oscillators (VCOs) are necessary for multi-band frequency generation. In this report, a wide tuning range VCO is proposed for multi-band frequency generation [1]. The wide band oscillator consists of a dual-mode LC-VCO using a 5-port inductor, and a divider chain. The proposed 5-port inductor provides two different inductances, which could support two resonances in a compact chip area. Thus, for LC-VCO, two operation modes are obtained to increase the tuning range. The experimental results achieve 25MHz-to-6.44GHz of continuous tuning range with a FoMT of -209 dBc/Hz.



[1] W. Deng, K. Okada, and A. Matsuzawa, "A 25MHz-6.44GHz LC-VCO Using a 5-port Inductor for Multi-band Frequency Generation," *IEEE Radio Frequency IC Symposium (RFIC)*, Jun. 2011.