Abstracts

A low-power-consuming SOM for wireless communications

M. Ghanevati and A.S. Daryoush. "A low-power-consuming SOM for wireless communications." 2001 Transactions on Microwave Theory and Techniques 49.7 (Jul. 2001 [T-MTT]): 1348-1351.

This paper presents theoretical and experimental results of a low-power-consuming hybrid push-pull self-oscillating mixer (SOM) circuit at the UHF frequency band. The frequency-stable SOM circuit is designed and fabricated using matched-pair Si bipolar junction transistors and high-Q resonators, where measured phase noise of this free-running voltage-controlled oscillator is -101.2 dBc/Hz at 100-kHz offset. A 20-dB up-conversion gain, a compression dynamic range (CDR) of 65 dB/spl middot/MHz, and a spurious-free dynamic range of 50 dB/spl middot/MHz/sup 2/3/ are also measured for the mixer portion of this SOM. Moreover, a down-conversion gain of /spl ap/-2 dB with a CDR of 100 dB/spl middot/MHz is also measured.

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