Abstracts

An active SiGe sub-harmonic direct-conversion receiver front-end design for 5-6 GHz band applications (2002 [RFIC])

R. Svitek, D. Johnson and S. Raman. "An active SiGe sub-harmonic direct-conversion receiver front-end design for 5-6 GHz band applications (2002 [RFIC])." 2002 Radio Frequency Integrated Circuits (RFIC) Symposium 02. (2002 [RFIC]): 395-398.

This paper describes a packaged SiGe RF front-end design for use in the Unlicensed National Information Infrastructure (U-NII) bands. The front-end is based on a sub-harmonic direct-conversion architecture and is composed of an LNA, I and Q x2 sub-harmonic mixers (SHMs), and an LO conditioning chain. The receiver is completely differential and is designed for operation from a 3.3 V supply. Simulated performance shows >25 dB conversion gain, 6.8 dB noise figure (cascode LNA), 0/spl deg/ I/Q phase imbalance, and 39.1 mA total current consumption. To the authors' knowledge, this is the first 5-6 GHz SiGe active sub-harmonic direct-conversion receiver design presented in literature.

❑ Return to main document.