Abstracts

A completely integrated 1.9 GHz receiver front-end with monolithic image reject filter and VCO

J.W.M. Rogers, J.A. Macedo and C. Plett. "A completely integrated 1.9 GHz receiver front-end with monolithic image reject filter and VCO." 2000 Radio Frequency Integrated Circuits (RFIC) Symposium 00. (2000 [RFIC]): 143-146.

A 19 GHz monolithic superheterodyne receiver front-end with 300 MHz IF, on-chip tunable image reject filter and VCO is presented. The receiver was fabricated on a 0.5 um bipolar process. The 2.2 GHz VCO was realized with ground-shielded inductors. The performance is as follows: conversion gain: 25.6 dB, noise figure: 4.5 dB, image rejection: 65 dB, and phase noise of -103 dBc/Hz at 100 kHz offset. The LO-IF isolation improved compared to a previously fabricated front-end with off-chip VCO. This receiver front-end has NF, linearity, and phase noise suitable for DCS-1800.

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