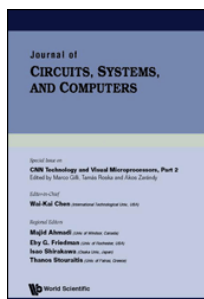


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A. FATHIANPOUR and S. SEYEDTABAI, *J CIRCUIT SYST COMP* DOI: 10.1142/S021812661450011X

EVOLUTIONARY SEARCH FOR OPTIMIZED LNA COMPONENTS GEOMETRY

This paper was recommended by Regional Editor Piero Malcovati.

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In this paper, an optimized design procedure based on genetic algorithm (GA) for automatic synthesis of integrated low-noise amplifiers (LNA) targeted to 802.16d @ 3.5 GHz and 802.11b, g @ 2.4 GHz standard delivers the circuit elements geometry, rather than their values, and bias levels to secure the best level output matching and power consumption. Working on the components geometry level aims at considering effects. The basic cascode and a current reuse folded cascode LNA's are tried. GA as an optimization engine and performance evaluation in 0.18 μm RF CMOS TSMC technology is ceded to HSPICE. Results indicate well computes the desired circuit in an acceptable time span; otherwise, it may be explored by either the error or astronomical cycles of an exhaustive search. This is not accomplished without imposing certain constraints.

Keywords: Genetic algorithm; evolutionary computing; concurrent dual-band LNA; low-noise amplifier

