Abstracts

CMOS RF ICs for 900 MHz-2.4 GHz band wireless communication networks

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The present paper concerns with the design consideration and performance results for a series of CMOS RF ICs for 900 MHz-2.4 GHz wireless access front-end application. Developed ICs include an antenna switch, RF amplifier, down- and up-mixers, IF amplifier, driver amplifier, as well as transceiver chips incorporating these ICs using a 0.25 /spl mu/m CMOS process. These ICs operate with a supply voltage higher than 4 V and a current of 2-4 mA per transistor. Without utilizing any off-chip matching, a transceiver chip possesses down- and up-conversion gains higher than 40 dB, 32 dB, and 25 dB, at 900 MHz, 1.9 GHz, and 2.4 GHz, respectively, representing applicability of CMOS technology for the 900 MHz-2.4 GHz frequency band.

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