

Abstracts

A 2-GHz RF front-end transceiver chipset in CMOS technology for PCS and IMT-2000 applications (2002 Vol. I [MWSYM])

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This paper describes RF front-end transceiver chipset for the dual-mode operation of PCS and IMT-2000. The transceiver chipset has been implemented in a 0.25 μm single-poly five-metal CMOS technology. The receiver IC consists of a LNA and a down-mixer, and the transmitter IC integrates an up-mixer. Measurements show that the transceiver chipset covers the wide RF range from 1.8 GHz for PCS to 2.1 GHz for IMT-2000. The LNA has 2.5/spl dB NF, 13/spl dB gain and 6-4 dBm IIP3. The down mixer has 15.5/spl dB DSB NF, 15-13 dB power conversion gain and 2-0 dBm IIP3. The up-mixer has 0/spl dB power conversion gain and 6/spl dBm OIP3. With a single 3.0 V power supply, the LNA, down-mixer, and up-mixer consume 5 mA, 30 mA, and 25 mA, respectively.

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