

# **A Fully-Integrated 900-MHz CMOS Wireless Receiver with On-Chip RF and IF Filters and 79-dB Image Rejection**

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## **Abstract**

A truly-monolithic 900-MHz CMOS wireless receiver with on-chip RF and IF filters and a fully-integrated fractional-N synthesizer is presented. Implemented in standard 0.5- $\mu\text{m}$  CMOS process and without any off-chip component, the receiver measures an image rejection of 79dB, sensitivity of -90dBm, IIP3 of -24dBm and NF of 22dB with power of 227mW and a chip area of 5.7mm<sup>2</sup>. The synthesizer achieves a phase noise of -118dBc/Hz at 600kHz offset and settling time of less than 150 $\mu\text{s}$ .