

# **A Complete Single-Chip GPS Receiver with 1.6-V 24-mW Radio in 0.18-um CMOS**

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We have developed a complete single-chip GPS receiver using 0.18-um pure CMOS. This is the first case in which a radio has been successfully combined with a baseband processor. This single-chip consumes 57-mW from a 1.8-V supply. The total sensitivity as a single-chip is -150dBm( $f_{\text{TCXO}}=19.8\text{MHz}$ ). The radio part includes the LNA, the mixer, the PLL synthesizer, the IF filter and the digitizer. The radio part consumes 24-mW with a 1.6-V supply voltage.