Abstracts

Highly integrated, dual band/tri-mode SiGe BiCMOS transmitter IC for CDMA wireless applications

M. Reddy, D. Yates, Chang-Hyeon Lee, G. Taskov, P. Mudge, T. Robinson, L. Li, B. Agarwal and Sung-Sik Hwang. "Highly integrated, dual band/tri-mode SiGe BiCMOS transmitter IC for CDMA wireless applications." 2002 Radio Frequency Integrated Circuits (RFIC) Symposium 02. (2002 [RFIC]): 35-38.

A highly integrated transmitter IC fabricated in Conexant's 0.35 um SiGe BiCMOS process and packaged in a 6 mm /spl times/ 6 mm Land Grid Array (LGA) package provides dual band/tri-mode transmitter functionality in a CDMA handset meeting TIA/EIA 98-D specifications. This chip upconverts the I/Q baseband signals to RF in two stages and delivers the amplified RF signal to the power amplifier. It consists of the following stages: an I/Q modulator, VHF VCO, VHF PLL, IF VGA, UHF LO buffer, UHF PLL, 3 wire serial interface, RF image reject upconverter, a cellular PA driver and dual PCS drivers. It is designed to deliver 8 dBm in CDMA mode in Cellular band, 11 dBm in AMPS mode and 9 dBm in CDMA mode in PCS band at 90 mA, 88 mA and 108 mA respectively at nominal supply and temperature. It also provides IF dynamic range of 80 dB in the IF VGA and RF Gain dynamic range of 20 dB in Cellular band and 15 dB in PCS band. The IC operates from a supply ranging from 2.7 V to 3.3 V and a temperature range of -30C to 85C.

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