Abstracts

A Novel MMIC Power Amplifier for Pocket-Size Cellular Telephones

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A novel MMIC power amplifier for cellular telephones is proposed. The amplifier which is named UBIC-PA (Unbalanced Bias Cascode Power Amplifier) enables making very compact monolithic integration in spite of the considerably low frequency of 900 MHz-band. The MMIC UBIC-PA has more than 40 dB gain, 29 dBm output power and 62% power added efficiency at the supplied voltage of 6V. The chip size of the MMIC without an output matching circuit is 2.4 x 2.4 mm. The size and cost of the UBIC-PA module is estimated at about 1/6 (0.2 cc) and 1/2 that of the former hybrid PA module. Moreover, the UBIC-PA improves power dissipation by more than 50% under medium and low output power conditions. This is very important for cellular telephones employing adaptive transmitter power control for battery saving.

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