

Abstracts

A second harmonic class-F power amplifier in standard CMOS technology

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For personal communications systems, the highest possible integration on monolithic technology of all RF functions is desirable. The most difficult component to be monolithically integrated with all other functions is the output power amplifier. This paper describes the design and test of an integrated class-F power amplifier with 200-mW output power at 1.9 GHz and a 3 V power supply based on a 0.6 μm CMOS standard technology. A theoretical study of class-F operation that highlights the influence of nonideal active devices and output network topology on the circuit behavior was performed to have guidelines for amplifier optimization.

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