Abstracts

A 1.9 GHz-Band Ultra Low Power Consumption Amplifier Chip Set for Personal Communications (1995 [MCS])

M. Muraguchi, M. Nakatsugawa, H. Hayashi and M. Aikawa. "A 1.9 GHz-Band Ultra Low Power Consumption Amplifier Chip Set for Personal Communications (1995 [MCS])." 1995 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 95.1 (1995 [MCS]): 145-148.

An ultra low power consumption amplifier chip set for the 1.9 GHz Japanese Personal Handy-phone System (PHS) is presented. The chip set includes a linear power amplifier, a driver amplifier, and an LO switch amplifier. These amplifiers use Cascode FETs that provide low phase distortion, high gain, and low current operation. The power amplifier uses a new concept of a self-phase distortion compensation to achieve a record performance of 45 % power added efficiency with sufficient linearity. The driver amplifier has a gain of 13.5 dB with a low power consumption of 3mW (1mA, 3V). The LO switch amplifier is a new MMIC that has both switch and buffer amplifier functions. The switch amplifier has an output power of 3 dBm, a forward gain of 15 dB, and a reverse isolation of 35 dB with a low power consumption of 6mW (2mA, 3V).

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