Abstracts

A low-power GaAs front-end IC with current-reuse configuration using 0.15-/spl mu/m-gate MODFETs

H. Ishida, H. Koizumi, K. Miyatsuji, H. Takenaka, T. Tanaka and D. Ueda. "A low-power GaAs front-end IC with current-reuse configuration using 0.15-/spl mu/m-gate MODFETs." 2000 Transactions on Microwave Theory and Techniques 48.8 (Aug. 2000 [T-MTT]): 1303-1307.

We have developed a novel current-reuse configuration of a front-end integrated circuit (IC), where the current can be reused in the whole circuit blocks that are a low-noise amplifier, local amplifier, and mixer. The power dissipation of the front-end IC is reduced by the factor of three as compared to conventional front-end ICs. Excellent RF performance such as conversion gain of 30 dB and noise figure of 1.6 dB at 1.5 GHz is attained under the conditions of the supply voltage and current of 3.6 V and 3 mA, respectively.

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