Abstracts

A High Power and High Efficiency Amplifier with Controlled Second-Harmonic Source Impedance

M. Maeda, H. Takehara, M. Nakamura, Y. Ota and O. Ishikawa. "A High Power and High Efficiency Amplifier with Controlled Second-Harmonic Source Impedance." 1995 MTT-S International Microwave Symposium Digest 95.2 (1995 Vol. II [MWSYM]): 579-582.

A novel technology that drastically improves output power and efficiency of amplifiers has been developed. A record high 74% power added efficiency (PAE) with an output power (Pout) of 31.4dBm (1.4W) has been achieved from an ion-implanted GaAs MESFET at a low supply voltage of 3.5V and 930MHz, by optimally terminating second-harmonic source impedance as well as second-harmonic load impedance. By using this technology, a small sized (0.4cc) power amplifier module for cellular phones has been developed. It has realized a high PAE of 66% with Pout of 31dBm (1.25W) under the condition of 3.5V around 915-945 MHz band.

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