Abstracts

63.2% high efficiency and high linearity two-stage InGaP/GaAs HBT power amplifier for personal digital cellular phone system

T. Iwai, S. Ohara, T. Miyashita and K. Joshin. "63.2% high efficiency and high linearity two-stage InGaP/GaAs HBT power amplifier for personal digital cellular phone system." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 435-438.

This paper reports on a high efficiency and high linearity two-stage InGaP/GaAs heterojunction bipolar transistor (HBT) power amplifier for the Japanese personal digital cellular phone system (PDC). Our power-stage HBT amplifier exhibited a high power added efficiency (PAE) of 68.8% and an adjacent channel leakage power (ACP) of -48 dBc. The ACP of the two-stage amplifier was improved enough for PDC with keeping a high PAE by combining of a driver-stage and this power-stage amplifiers. Our two-stage HBT power amplifier exhibited the highest PAE of 63.2% ever reported and an ACP at a 50-kHz offset frequency of -52 dBc in 1.5 GHz PDC standard at a Pout of 31 dBm under a supply voltage of 3.5 V.

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