Abstracts

A 5-10 GHz, 1-Watt HBT Amplifier with 58% Peak Power-Added Efficiency

M. Salib, F. Ali, A. Gupta, B. Bayraktaroglu and D. Dawson. "A 5-10 GHz, 1-Watt HBT Amplifier with 58% Peak Power-Added Efficiency." 1994 Microwave and Guided Wave Letters 4.10 (Oct. 1994 [MGWL]): 320-322.

Four 0.25-W GaAs Heterojunction Bipolar Transistors (HBT's) were combined in a single-stage hybrid microstrip amplifier. An output power of minimum 1 Watt (W) was achieved over the 5.5-9.5 GHz band with > 48% power-added efficiency (PAE). The peak PAE was 58% at 7 and 9.5 GHz with an average efficiency of 52% over the 5-10 GHz band. This result was reproduced on two more units with a minimum efficiency of 48% and an average efficiency of 51%. To our knowledge, this is the highest efficiency obtained from any 1-W amplifier covering 5-10 GHz bandwidth.

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