Abstracts

An active pulsed RF and pulsed DC load-pull system for the characterization of HBT power amplifiers used in coherent radar and communication systems

C. Arnaud, D. Basataud, J. Nebus, J. Teyssier, J. Villotte and D. Floriot. "An active pulsed RF and pulsed DC load-pull system for the characterization of HBT power amplifiers used in coherent radar and communication systems." 2000 Transactions on Microwave Theory and Techniques 48.12 (Dec. 2000 [T-MTT] (Special Issue on 2000 International Microwave Symposium)): 2625-2629.

This paper presents a new automated and vector error-corrected active load-pull system allowing the characterization of microwave power transistors under coherent pulsed RF and pulsed DC operating conditions. In this paper, the use of this system is focused on the characterization of a 240-/spl mu/m/sup 2/ GaInP-GaAs heterojunction bipolar transistor (HBT) (Thomson CSP-LCR, Orsay, France). On one hand, source and load-pull measurements of such a transistor are reported for different pulsewidths. On the other hand, nonlinear simulations based on an electrothermal model of an HBT have been performed and are compared with experiments. Power variations and RF carrier phase shift within the pulse versus input power and junction temperature of the transistor are shown.

❑ Return to main document.