Abstracts

Predistortion Linearize Using GaAs Dual-Gate MESFET for TWTA and SSPA Used in Satellite Transponders

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Present traveling-wave tube amplifiers (TWTA) and solid-state power amplifiers (SSPA) used in communication systems both at ground stations and on-board satellites should be highly efficient and provide linear amplification. The performance of these microwave power amplifiers is limited, however, by intrinsic nonlinearities which result in undesirable distortions. In this paper, a new predistortion technique using GaAs dual-gate MESFET's is presented to linearize the TWTA's and SSPA's. The results of a Ku-band (11.7-12.2 GHz) linearized 16-W TWTA and C-band (3.8-4.2 GHz) linearized SSPA are presented.

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