Abstracts

Miniaturized Multistage Power Amplifiers for the 10.95- to 12.75-GHz Communications Satellite Band

P.E. Goettle, B.D. Geller, F.R. Phelleps, A.I. Zaghloul, R.M. Sorbello and F.T. Assal. "Miniaturized Multistage Power Amplifiers for the 10.95- to 12.75-GHz Communications Satellite Band." 1991 MTT-S International Microwave Symposium Digest 91.3 (1991 Vol. III [MWSYM]): 1157-1160.

This paper describes the design and performance of three prototype power amplifiers that use a combination of MMICs and "quasi-monolithic" circuits, and which are intended for use in a satellite multibeam phased-array antenna. The amplifiers are designed to maximize DC-to-RF conversion efficiency and linearity while satisfying additional requirements for output power and minimum size. The four-stage, 30-dB gain modules deliver an output power of 2 W at 2-dB compression, with an efficiency of 25 percent and a two-tone, carrier-to-third-order intermodulation distortion (C/I/sub 3/) level of 16 dB.

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