

Abstracts

High performance voltage controlled bi-directional amplifiers in support of component reuse for large aperture phase array

J.M. Yang, Y.H. Chung, M. Nishimoto, R. Lai, R. Tsai, R. Kagiwada and C.C. Yang. "High performance voltage controlled bi-directional amplifiers in support of component reuse for large aperture phase array." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 65-68 vol. 1.

The objective of this paper is to provide a novel and innovative solution to reduce the projected high parts count for large aperture phase array (>100,000 elements). Bi-directional amplifiers are ideal for this application since RF amplification, in either transmit or receive directions, are controlled through bias thus eliminating the need for lossy switches that degrades the system noise figure performance. In addition, the size, weight, and cost of the transceiver module can be greatly reduced since only one amplifier is required. Two bidirectional amplifiers are presented here in both common-gate and common-source configurations.

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