Abstracts

A 60-watt X-band spatially combined solid-state amplifier

Nai-Shuo Cheng, Thai-Phuong Dao, M.G. Case, D.B. Rensch and R.A. York. "A 60-watt X-band spatially combined solid-state amplifier." 1999 MTT-S International Microwave Symposium Digest 99.2 (1999 Vol. II [MWSYM]): 539-542 vol.2.

In this paper, we present our continued effort in the development of broadband spatial power combining systems implemented in a standard WR-90 waveguide environment. With sixteen commercial MMIC amplifiers integrated with tapered-slot antenna arrays, a new combining circuit renders a 61-watt maximum power output and a gain variation less than /spl plusmn/1.4 dB within the entire band of interest. Higher output power can be achieved by introducing more MMIC amplifiers but still maintaining the same circuit topology, thanks to the modular design of the spatial combiner.

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