Abstracts

High power S-band solid-state amplifiers for surveillance and traffic control radars

T. Murae, K. Fujii and T. Matsuno. "High power S-band solid-state amplifiers for surveillance and traffic control radars." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 653-656 vol.2.

This paper describes development of a 1.8 kW solid-state amplifier operating over 2.7 to 2.9 GHz, for surveillance and traffic control radars. A 1.8 kW peak power with a pulse width of 100 /spl mu/s and 10% duty cycle is achieved by combining four 550 W solid-state power amplifiers. Modular configuration of the 1.8 kW amplifier can realize improvement of maintainability, productivity, and low cost. This paper also describes development of a 180 W output power with 40 dB gain. Linear amplifier using GaAs MMICs to realize the temperature compensation, short pulse (1 /spl mu/s) generation, high gain, and precise gain control for the 1.8 KW amplifier. The 180 W GaAs MMIC amplifier has capability of driving up to twelve 1.8 kW amplifiers, and drastically simplifies solid-state transmitter confguration.

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