Abstracts

20 GHz High Power IMPATT Transmitter

Y.C. Ngan, J. Chan and C. Sun. "20 GHz High Power IMPATT Transmitter." 1983 MTT-S International Microwave Symposium Digest 83.1 (1983 [MWSYM]): 487-488.

The development of a 20 GHz proof-of-concept (POC) high power solid state transmitter sponsored by NASA Lewis Research Center and USAF Space Division is described. The transmitter utilizes GaAs INPATT diodes for high power output and high efficiency, and operates in the constant-voltage injection-locked mode to achieve high dc-to-rf conversion efficiency. The transmitter is a three-stage design consisting of a single-diode driver, a dual-cliode intermediate driver, and a twelve-diode rectangular waveguide power combiner in the output stage to achieve 29 dB gain and 16 W power output.

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