Abstracts

High performance microwave power modules for military and commercial systems

M. Basten, D. Whaley, J. Duthie, V. Heinen, K. Kreischer, J. Tucek, A. Ferek, F. Trimble and B. Gannon. "High performance microwave power modules for military and commercial systems." 2002 MTT-S International Microwave Symposium Digest 02.2 (2002 Vol. II [MWSYM]): 629-632 vol.2.

The desirable attributes of solid state and vacuum electronics have been combined in Microwave Power Module (MPM) technology to create miniaturized amplifiers for high power transmitter applications in the 2-40 GHz range. These modules have demonstrated an order of magnitude increase in RF output power per unit weight when compared to conventional traveling wave tube amplifiers (TWTAs) and solid state power amplifiers (SSPAs). In this paper, the recent performance improvements of MPMs developed by Northrop Grumman are described. These improvements include power booster efficiencies that have reached in excess of 60%, and bandwidths that have reached almost three octaves.

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