



SUCCESS STORY

1 kW Solid State, MMIC-Based Pulsed Power Amplifier

X-Band Microwave Power Module That Uses GaN Technology

Amplifiers are designed in all shapes and sizes, and the choices have only increased as technologies achieve higher output levels in smaller packages. Spectrum Control's 1kW Solid State Power Amplifiers (SSPAs) are MMIC-based and they are designed to overcome the inherent issues with traveling wave tube (TWT), such as single-point-of-failure and limited life.

Minimized Phase Distortion

Minimized phase distortion is one of the key benefits of our Gallium Nitride (GaN) power amplifiers. The distortion is minimized by gating the discrete power supply OFF during pulsed RF operation. Additional advantages of the GaN power module over a TWT counterpart includes increased mean time between failure (MTBF), soft fail vs. catastrophic fail, and lower long term replacement/repair cost.

As a MMIC-based amplifier, our product offers higher component density and minimal signal delay. An integrated controller provides a customer interface and fault-monitoring options. The SSPAs also provide high gain, excellent pulse fidelity, and outstanding spectral performance. With GaN transistor technology, the power amplifiers are more electrically efficient, providing more output power with the use of less input power.

Solid State-based Amplifiers offer a higher MTBF compared to Traveling Wave Tubes (TWT) Amplifiers



Solid State-based Amplifiers offer a lower total cost of ownership



Spectrum Control's MMIC-based pulsed power amplifier can be used in numerous military and high-end commercial applications, including radar, communications jamming. Designed for demanding applications, our SSPAs are designed to operate with output power levels up to 1,000 watts and frequencies to 18 GHz. As a more cost-effective option, the SSPA modules and submodules can be replaced to extend the overall life of the system, thus providing better value and cost efficiency.

Features & Highlights

- 1kW Peak Output Power
- Typical frequency range: 9.2 to 9.8 GHz
- Efficiencies as high as 20%
- Up to 100 μ sec pulse width, 10% duty cycle
- Targeted for TWT Amplifier Replacement
- Military and Commercial Radar Application
- Material: 6061-T6 Aluminum Alloy
- Case Dimensions: 11.8" (L) x 6.1" (W) x 2.2" (H)