

Type: **Poster Presentation**

A new high-power RF test facility was developed at the Los Alamos Neutron Science Center (LANSC) to evaluate components of a RF Solid-State Amplifier (SSA) system operating at 805 MHz and targeted for a final output power of 1.25 MW. The system is powered by a 100 V DC supply and stabilized with a 0.1 F capacitor bank to support transient power demands, capable of storing up to 1.125 kJ of energy. The SSA utilizes Gallium Nitride (GaN) on Silicon Carbide (SiC) high electron mobility transistors (HEMTs) and employs water cooling to manage thermal loads and ensure stable operation under high duty-factor pulsed conditions. Multiple HEMT amplifier modules will be power combined to achieve the full 1.25 MW output, with the aim of enhancing reliability, modularity, and maintainability in accelerator RF infrastructure. Integrated protection procedures allow for secure shutdown of RF drive and DC power in the event of overvoltage, overcurrent, or thermal excursions. This test configuration supports ongoing evaluation of solid-state amplifier performance, thermal handling, and integration with RF passive components under realistic operational conditions.

No

No

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Co-authors: VALLADARES, Jesus (Los Alamos National Laboratory); LYLES, John (Los Alamos National Laboratory); SANCHEZ BARRUETA, Maria (Los Alamos National Laboratory); BROWN, Michael (Los Alamos National

Laboratory); RUSSELL, Steven (Los Alamos National Laboratory); HALL, Wesley (Los Alamos National Laboratory)

Presenter: VEGA, Javier (Los Alamos National Laboratory)

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