

Multi-Purpose Radio-Frequency Amplifier System

The multi-purpose radio-frequency (rf) amplifier system (MPA) is a complete rf power amplifier system for use as an rf power source for testing and conditioning accelerator components, or as a test bed for testing and evaluating rf power amplifier devices. The MPA is designed to be a universal support platform for various rf power amplifier devices, including conventional gridded vacuum tubes, inductive output tubes, and conventional klystrons, independent of operating frequency. The system consists of a low-ripple, low-stored-energy, high-voltage power supply; deionized water cooling system with instrumentation; a complete rf interlock system including output arc detector, rf driver amplifier, bias power supplies, focus power supplies, and heater power supply. As presently configured, the MPA is fitted with a tunable inductive output tube, tunable to operate over a frequency range of 470 to 815 MHz, and capable of a maximum rf power output of 50-kW CW and 75-kW pulsed. An accessory to the MPA is an L-band inductive output tube capable of producing a maximum rf output power of 30-kW CW and 90-kW pulsed at 1.3 GHz. The MPA can support operation of this output tube with minor modification.

Examples of use:

- Testing cavities and rf components at different frequencies



The multipurpose rf amplifier system