

# **High Power Microwave Generation using a Repetitive Electron Gun with a Ferroelectric Cathode \***

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An electron gun using a ferroelectric cathode driven by a ferrite core transformer-pulse line system produces a 500kV, 50-200A, 250ns long beam. The beam is used to drive an X-band amplifier. The amplifier consists of a single stage disk loaded type structure. At the end of the amplifier, a coaxial mode converter is used to decouple the beam from the microwave radiation. The amplifier operates at a repetition rate of 0.1Hz. The beam emission is controlled by a voltage pulse applied to the back of the ferroelectric.

Results will be reported on the amplifier performance characteristics with a 50A beam and the results compared with simulation data. An improved gun design, which gives a uniform cross section 200A beam is being built, and early results obtained, using the high current gun, will also be presented

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