

The LLRF System for Wisconsin Superconducting RF Electron Gun

The University of Wisconsin-Madison has completed installation and begun testing of a superconducting electron gun. This VHF (199.6 MHz) superconducting configuration holds the promise of the highest performance for CW injectors. With the cathode inserted CW operation has been achieved at 20 MV/m with good control of microphonics and a $Q_0 > 3 \times 10^9$ at 4 K. Bunch charges of ~ 100 pC have been delivered, and first simple beam measurements made. The LLRF system for this gun was designed and built at Jefferson Lab as a result of collaboration between the two organizations. The LLRF system is a modified version of the system that was designed for CW high QL cavity control in the CEBAF SC LINAC. This poster presents design and features of the LLRF system along with challenges and results of intense testing of the gun.

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