

RF Test Station Data Acquisition System Upgrade

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Abstract

Fermilab has numerous RF power devices and amplifiers that are used to accelerate particles in its accelerator complex. It is essential that the RF power amplifiers be highly reliable since a failure necessitates a shutdown of the accelerators for repair in the tunnels. To ensure reliability after repairs, each amplifier is tested on an automated test station prior to being placed back into service. The existing test station data acquisition was originally built more than 10 years ago on a PC platform using LabVIEW 6.1 and various A/D and D/A cards along with GPIB control of some hardware component. This project aims to update the entire acquisition system to modern hardware using the most recent version of LabVIEW. Additional control and I/O components will also be added to take advantage of the newer, more robust RF-related components.