

DATA ACQUISITION AND CONTROL SYSTEM FOR SAMSUNG SUPERCONDUCTOR TEST FACILITY

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Samsung Advanced Institute of Technology has completed the construction of Samsung Superconductor Test Facility (SSTF), one of the largest superconductor and superconducting magnet test facilities in the world. The main purpose of SSTF is to manufacture and test superconducting magnets for the Korea Superconducting Tokamak Advanced Research (KSTAR) tokamak that will be in operation from 2002. Data Acquisition and Control (DAC) system for SSTF is composed of UNIX workstations, VMEbus boards running VxWorks real time OS and PLCs. VME Digital Signal Processors are used to determine the quench in superconducting magnets and produce the fault protection signals. Signals for monitoring the SSTF status and slow valve control by PLCs are sampled and stored in every one minute while, for the fast control such as quench protection, sampling is performed in about 100 kHz. EPICS tool kit is used for the acquisition and distribution of experimental data via. TCP/IP. A script-based interpretive shell program and commercial Mathematica are used to manipulate the experimental raw data produced by EPICS in the Channel Access (CA) server. We present here the SSTF DAC system and the recent result of commissioning and superconductor sample test.