

DEVELOPMENT OF MICROCONTROLLER-BASED COMPUTER INTERFACE BOARD AND LOCAL DISPLAY UNIT FOR STEERING MAGNET POWER SUPPLIES

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Abstract

A microcontroller-based computer interface board and a local display unit have been designed and developed to monitor and control the power supplies from local panel as well as from the remote console. The main objective of this development is to provide support for the computer control of the indigenously developed bipolar X-Y steering magnet power supplies for the injection line of the K=500 Super Conducting Cyclotron at VECC, Kolkata. The interface board is designed around an Intel 8051 microcontroller which is programmed with firmware of different tasks like setting the current of the power supply through 12-bit DAC, reading the output current of the power supply through 12-bit ADC and communicating with remote computer through an optically isolated RS 485 port following a customized command-response protocol. This facilitates the operation of 12 number of power supplies connected in a multi-drop fashion from a remote centralised control panel. Through the local front panel, a user can set the current of the power supply, monitor the output current and the status of the power supply.

**CONTRIBUTION NOT
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