

A CONTROL AND DATA ACQUISITION SYSTEM BASED ON THE PXI BUS FOR THE NEW PHOTON BEAM POSITION MONITOR PROTOTYPE

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Usually, in large experimental physics facilities, systems based on the VME bus are widely used both for the lower level of the control system and for data acquisition. It is common to use this environment also for those applications that do not really need its features. The PXI bus is an industrial extension of the well known PCI bus used in the desktop computer industry. It may represent a less expensive alternative platform for controlling a complex experimental set-up increasing also the system performances. The development of a new generation of diagnostic detectors at Elettra, allows to investigate this opportunity. The design of its control and data acquisition system is based on the PXI bus and it is fully described in the paper. The benefits and the inconveniences of this platform are then discussed. Besides a real-time application, based on a commercial DSP board, is also presented with its integration in the PXI system.