

DESIGN OF A NETWORKED MULTICHANNEL ANALYSER (NMCA)

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We have designed a inexpensive networked multichannel pulse height analyzer (nMCA) adapted to remote nuclear spectroscopy experiments. Our instrument is divided in two parts. The first one is a custom developed electronic hardware containing the analogic electronics, the ADC and the microcomputer interface. The second part mainly consists in software: a computer program reads the results of the conversion, constructs the histogram of the pulse height distribution and presents these data to the network. The nMCA is connected to the Internet and can be remotely operated through the network. The integrated microcomputer hosts the acquisition program and a WWW server enables the distribution of a html page in which a JAVA applet is embedded. A JAVA capable browser can be used as a remote control for nMCA from anywhere on the Internet and displays the spectrum in real time. This architecture is very easy to implement and extremely flexible: Several nMCA could be controlled by one remote station, or inversely, the spectrum of a single nMCA could be viewed from different places. We will describe the hardware and software developed for this application and discuss the specifications of our apparatus in terms of stability, speed and overall performances.