

IV. Image Processing

Systems for Data Processing in Nuclear Medicine Using a Small General Purpose Computer

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We have interfaced a scintillation camera in real time to a small general purpose computer (PDP-12C).

This system consists of a dual AD converter, a interface module, a computer, a storage scope and a teletypewriter.

Position signals of a scintillation camera are converted into a digital format and are fed to a interface module.

Data area of RI image for a predetermined matrix size is 40×40 , and is displayed on a storage scope.

The interface module has a multi-channel-

scaler mode and it is useful for dynamic function study of RI image. The time base of this module is 1msec to 40 sec and the data of 2 channels are acquired up to 512 points. Output data of a computer are recorded by a teletypewriter and displayed on a storage scope. Soft wear for this system is divided into three classes. The first is for data acquisition, the second is for data display and the third is for data processing. These program-mings are available when the memory of this computer is built up to 8K.

A Model of Data Processing System in Nuclear Medicine

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Models of multi-channel-pulse-height-analyser type data processor which are used in nuclear medicine have usually fixed manipulation mechanisms, and are often inconvenient for the research purpose in this field.

In this paper, a new model of data processing system was outlined. The system was developed by cooperative study of authors, and was designed to have a widely flexible pro-

gramming system.

The system was arranged to be able to offer connections with many kinds of RI instruments, e.g., a whole-body counter, a four channel renogram apparatus, a scinti-scanner, a scinti-camera, etc., and capable of on-line data storage, manipulation and display.

The outline of the system consisted of fol-