

2412

HARDWARE STRUCTURE OF A MULTISLICE ECT-
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The HEADTOME II is a multislice emission computed tomograph which consists of 3 64-Nal detector rings. The output signals from the detectors, after being discriminated by the pulse height analyzer, feed into the coincidence circuit and the address generation block for the single photon measurement. In the address generation block, the detector number from which signals arise is coded with both 6 bits (to produce a data acquisition memory address) and 7 bits of collimator address (which indicates the collimator position). The coincidence circuits are independent for each slice. Two 8kw memories for single photon study and two 4kw for positron study are prepared for each slice to allow fast data acquisition. The computer system mainly consists of NOVA 4/X made by Nippon D.G. It has an interface capable for accepting digital and/or analog signals from various monitors of radioactivity which are optionally adopted to the system. The convolution method is used as the reconstruction algorithm and dedicated hardware i.e. convolver and backprojector is adopted to save the reconstruction time. The convolver can be also used for data processing that includes convolution integrals, which results in increased system efficiency. These hardwares of the system will be presented.
