

A LOW-COST AND MOVABLE DISPLAY SYSTEM OF
RADIOLOGIC IMAGE USING MICRO-PROCESSOR

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A high precision digital image display system with a micro-processor has been made by authors for the radioisotope and the CT images. This display device is movable in the hospital. Image size of display is a 512 x 512 points and gray level is 32 steps mono-chrome and colors.

Image is transferred from open-reel magnetic-tape to digital cassette tape or diskett. Image is always displayed by the color and the mono-chrome CRT monitor, and mixture displayed two kind of radiologic images.

Four CT images or 64 radioisotopic images is displayed by a CRT monitor with patient name or other alpha-numeric character, and is hard copied by a multi-format camera.

By this display system, very low cost and movable image display system for radiology was realized.

DEVELOPMENT OF RADIONUCLIDE CARDIAC EXAMINATION
SYSTEM USING CASSETTE V.T.R

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We designed the radionuclide cardiac examination system using cassette VTR. This system is composed of scintillation camera, multi gammamager, cassette VTR, ECG gated unit, 4ch ROI unit, 4096ch analyser. This system get many cardiac information as follow: Angio cardioimage, Angio cardiac curve, Cardiac pool image, ECG gated multi image, ECG time activity curve and left ventricle ejection fraction etc. The characteristic of the system are (a) the operation is easy and many cardiac data is obtained at short time and this system is inexpensive. (b) cardiac examination is over in 30 minutes, and data processing time is 1 hour.

(c) when VTR play backed, 4ch ROI can be set up and 4ch ROI data records at the same time.

(d) it is very useful to analysis the curve that ECG curve is recorded on cardiac time activity curve.

The fault of this system are (a) the reproduced image (128x128) is compare unfavorably to the original image. (b) count rate characteristic is a little down to use cassette VTR.

We evaluated left ventricle ejection fraction to use first pass method and time activity curve count method.

As a result, two methods were correlated ($r=0.66$) at 24 hypertention patients without heart diseases.