

Abstract: Single Photon Counting X-ray Imaging System Using Gigabit Transmission

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Abstract

High-performance computing capability enabled the development of a multi-energy X-ray imaging system which includes a data-acquisition, pre-processing and transmission module, followed by image reconstruction module. The data acquisition, pre-processing and transmission module are located at the pixel sensor side, and the image reconstruction is completed by using a GPU on a host PC. Thus, it requires a high-speed communication channel between the sensor side and the host PC. In this paper, we introduce our prototype multi-energy X-ray system focusing on the data acquisition block, pre-processing block and transmission module. The experimental results demonstrate the feasibility of our proposal to the single photon counting X-ray system.

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