

技术及应用

^{60}Co 船只辐射成像嵌入式数据获取系统设计

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摘要 介绍了 ^{60}Co 辐射成像检查系统中嵌入式数据获取系统的设计, 重点介绍了基于模块化驱动和网络传输的嵌入式数据获取系统的组成, 采用分时复用方式简化了系统各部分接口设计。嵌入式系统作为数据采集系统的控制中心, 通过以太网接收上位机的控制命令, 产生采集控制时序, 从前置放大器读取数据并缓存、传输至上位机。经过对系统性能的测试, 验证了该嵌入式数据获取系统具有连接接口简洁、便于扩展、性能稳定可靠的特点。

关键词 [\$^{60}\text{Co}\$](#) [辐射成像](#) [数据获取](#) [嵌入式系统](#)

分类号

Design of Embedded Data Acquisition System for ^{60}Co Boat Radiation Imaging

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Abstract The embedded data acquisition system for ^{60}Co boat radiation imaging was designed, and the components of data acquisition system based on the modular drive and network transmission were introduced. Interface design of the system is simplified by multiplexing signal. As a control center, the embedded system receives control commands through Ethernet from PC, forms collect and control cycle timing, reads data from preamplifiers, stores and transmits the buffer data to PC. This data acquisition system has following performances, such as simple interface, easy to expand, reliable.

Key words [\$^{60}\text{Co}\$](#) [radiation](#) [imaging](#) [data](#) [acquisition](#) [embedded](#) [system](#)

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