

Design and implementation of an embedded system for particles detector based on multi-anode PMTs

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Abstract

The aim of this work is to describe the design and implementation of an embedded system that provides control and monitoring to particle detectors based on multi-anode Photomultiplier tubes. The embedded system uses a microcontroller with an uCLinux operative system and Ethernet interface. The front-end to digitalize the PMT signals is basically made with discriminators, a FPGA, and a memory bank. The electronics has a low power consumption design to allow its usage in detectors feeded with solar power. The development and performance verification of this system is also shown.