基于**FPGA**和**WSN**的**TNT**爆炸时刻采集及存储系统

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基金项目：

摘　要：

火药的爆炸时刻是火药试验的重要测量参数，精确的测量值可以为火药性能的评估提供准确的时间数据。针对爆炸冲击波参
场可编程门阵列FPGA和zigbee无线传感网络的TNT爆炸时刻采集及存储系统。该系统可通过无线网络检测系统的工作状态，
度，模拟环境下，采集到的瞬时闪光波形上升时间小于20us，靶场试验表明：TNT爆炸时刻记录装置采集到的闪光波形上升
有体积小、功耗低、耐冲击等优点，适合恶劣环境下的数据采集和存储。

关键词：存储测试 爆炸时刻 无线传感网络 光电器件 FPGA

An acquisition and storage system for TNT Explosion time based on FPGA and WS

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Abstract:

TNT Explosion time is an important parameter ,and its precise measurements can provide accurate time for TNT powder evaluation. T
introduced in the paper which is based on Field Programmable Gates Array (FPGA) and Zigbee wireless sensor networks.Particularl
wireless sensor networks, and experimental results show the system has high measuring accuracy.In a simulated environment, the ris
this recording device is less than 20us. The field tests prove the rise time is less than 15 us and the test error is less than 2% .The re
small size,low power consumption,impact resistance,which is suitable for data acquisition and storage in harsh environments.

Keywords: storage testing explosion time WSN photoelectric device FPGA

投稿时间： **2013-04-05**

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