

# 分离式弹载图像采集系统设计

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**摘要:** 导弹飞行试验中, 弹载图像采集系统随弹钻入地下导致回收困难, 针对这一现状, 提出了一种图像采集与数据存储分离的设计方案。从系统的设计思路、工作流程及硬件结构出发, 利用 LVDS 总线信号传输时速度快、噪声小、误码率低等特点, 解决了图像信号在高噪声、高振动等恶劣环境下长距离可靠性传输的问题。经试验验证, 高振动环境下该系统工作性能稳定, 在 10m 的传输距离内采集的图像清晰可辨。所提设计方案为弹载图像采集工作提供了参考。

**关键词:** LVDS; 弹载; 图像采集

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## Design of Missile-Borne Image Acquisition Separated System

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**Abstract:** When missile hit the target, warhead bores into the underground, it's difficult to recycle test system. In order to solve this problem, this paper proposes a kind of design scheme about separation of image acquisition and data storage. LVDS bus has many advantages such as fast transmission speed, little noise and low bit error rate. To ensure the reliability of long distance transmission of image data in high noise and vibration condition, this paper do research from the system design idea, hardware structure and working process by taking advantage of LVDS bus. Through experimental verification, system work stably under the high vibration environment. Clear image can be acquired within the transmission distance less than 10 meters. This design provides reference for missile-borne image acquisition.

**Key words:** LVDS; missile-borne; image acquisition

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