

# 基于异构处理器的视频传输系统设计

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**摘 要:** 为了克服多处理器系统传输效率低的问题, 满足高分辨率视频的实时编码传输需求. 采用单片 FPGA+ARM 架构处理器, 提出一种视频传输系统设计方法, 在 FPGA 中实现视频的采集和编码, 在 ARM 中实现码流的网络封装及传输. 该设计方法充分利用了 FPGA 高速处理大量数据的优势和 ARM 丰富的设计资源, 能以较小的体积实现较高效的视频传输系统, 相较于使用多处理器搭建的系统, 具有更高的集成度和灵活性. 测试结果表明系统运行流畅, 基本可以实现视频的实时编码传输.

**关键词:** 异构处理器; H.265/HEVC; 嵌入式 Linux; 视频传输

## Design of video transmission system based on heterogeneous processor

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**Abstract:** In order to overcome the problem of low transmission efficiency of multi-processor systems and meet the requirements of high-resolution video real-time encoding and transmission. Proposes a design method of video transmission system based on single-chip FPGA+ARM processor. Using FPGA to complete video capture and encoding; using ARM to implement bitstream encapsulation and transmission. The method take full advantage of FPGA processing mass data and the design resources of ARM, achieve a high efficiency video transmission system in a small volume, compared with the systems built by multi-processor, this system has higher integration and flexibility. Test results show that the system runs smoothly and can basically achieve real-time video encoding and transmission.

**Key words:** heterogeneous processor; H.265/HEVC; embedded Linux; video transmission

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