



单芯片多处理器系统任务并行处理设计

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Design of Task Parallel Processing in Single Chip Multi-processor System

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摘要

根据单芯片多处理器的基本架构,围绕如何提高单芯片多处理器的性能,提出一种基于任务库的任务并行处理方法,给出了任务加载和调度策略,并用硬件予以实现.以4个基于51体系结构的MCU子处理器为单芯片多处理器架构,进行了任务分配调度实例验证.结果表明,提出的方法切实可行,能够提高单芯片多处理器的并行处理能力和工作效率.

关键词: [单芯片多处理器](#); [任务调度](#); [并行处理](#)

Abstract:

To enhance performance of single chip multi-processor (SCMP) system, this paper proposes a method of parallel processing based on a task library, and presents a method of task distribution and scheduling. It has been implemented with hardware, and verification of task loading and task scheduling made using a single chip multi-processor system comprised of 4 subprocessors, all based on the architecture of Intel 8051. Verification results indicate that this method can improve efficiency and the ability of parallel computation of SCMP systems.

Keywords: [single chip multi-processor\(SCMP\)](#); [task scheduling](#); [parallel processing](#)

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