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DVS algorithm which supported task scheduling information

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1 Introduction

Mobil devices which operated by a battery look for low power consumption CPU. Power supply voltage for CPU can dynamicaly change DVS technology.

This paper proposes the DVS algorithm which concern task dead-line for Real-Time System. This is added to exterior of a processore core.

2 Real-Time System

Real-time is not that calculation processing speed is only quick and that response time is short, but satisfles the defined requirements for time, and operates. When only singlen processing should be performed in a real-time system, a computer can be concentrated on the processing. But, when there are two or more processing which should be performd and the timing that should perform processing is given from the outside, the real-time system must be multitasking.

3 DVS

Dynamic Voltage Scaling is popularly way for cut processor energy consumption. DVS is a technology which is changing voltage and frequency under CPU just run. This paper propose DVS control algorithm which supported task scheduling information.

4 Hard-Ware Scheduler Include DVS Controller

In this paper, a part of Scheduler is imprimatur as a high efficiency interruption controller. A high efficiency interruption controller run in parallel with main processor. Therefore the overhead by scheduling is cut down. And there is an effect which cut down the number of tasks used as a deadline-over.

5 Evaluation

Hardware scheduler run simultaneous main processor run task processing. So main processor drive at slowly clock, but scheduler and DVS algorithm run regular speed.

6 Conclusion

The hardware scheduler/DVS Controller proposed and the task scheduling information and DVS clock speed. This paper report cut main processor energy consumption.