

CPU Consumption, from Real-Time Embedded Systems to Mobile Devices

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Abstract: The energy consumption is a key factor for the life duration of a mobile device. Minimizing it requires to pay attention to the hardware architecture and its components, and to the design of mobile applications. Our goal is to show connections between theoretical results, mobile devices and experimental measures of energy consumption. The elements of theory concern optimal computing architecture for real time task scheduling. The theoretical ideas are confirmed by nowadays mobile devices.

Keywords: CPU, energy consumption, real time scheduling, computing hardware, embedded system, mobile device

ACM classification: • **General and reference~Surveys and overviews** • **Information systems~Mobile information processing systems** • **Computer systems organization~Multicore architectures** • *Computer systems organization~Real-time system architecture* • **Hardware~Chip-level power issues** • **Hardware~Operations scheduling** • *Hardware~Platform power issues* • **Software and its engineering~Scheduling** • **Software and its engineering~Power management** • **Software and its engineering~Real-time schedulability**