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Presents

An Energy Profiling Platform for Real-Time DVFS Scheduling
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With the development of the embedded systems, lots of consuming equipments, such as Personal Digital Assistant (PDA), wireless sensors, smart cellular phones and Table PCs are entering people's life. The computational energy consumption of these embedded equipments is becoming more and more. However, the energy resources are limited since most of them are battery powered for mobile convenience. Dynamic voltage and frequency scaling (DVFS) technology has been developed to reduce the energy consumption for computer systems. In the past two decades, DVFS has been extensively studied and lots of energy aware scheduling algorithms for real-time embedded system have been proposed. Most of them were evaluated through simulations. However, the experimental results from simulations may not be accurate since hardware is complex and simulation models may not be able to reflect all aspects of hardware platforms. In this thesis, we will present a platform to measure the actual power consumption of real-time tasks. The platform will serve as a basis for evaluating DVFS algorithm for real-time embedded systems.