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Title: Portable computer power management design

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Are portable devices getting more power hungry?

Devices are continuously getting more power hungry, outpacing battery development. Written by leading engineers in the field, this cutting-edge resource helps you overcome this challenge, offering you an insightful overview and in-depth guide to the many varied areas of battery power management for portable devices.

How does power management affect processor design?

1 Fundamentals of Power Management
1.1 Power Consumption in Processors
Modern processor design is deeply influenced by the challenge of managing power consumption without sacrificing performance. As computational workloads grow in complexity--especially with the surge in AI, high-performance computing, and mobile platforms--the need

How is power management handled at both hardware and software levels?

how power management is handled at both the hardware and software levels. Traditionally, power management strategies, such as Dynamic Voltage and Frequency Scaling (DVFS) and power gating, required predefined configurations and static thresholds. AI brings the ability to dynamically adapt these strategies i

What makes a CPU a power-aware system?

Awareness) Modern CPUs are power-aware across thermal and power envelopes. Processional Design Power (TDP) constraints
Skin temperature (in mobile devices)
Platform-wide power budgets (e.g., shared with GPU or memory controllers)
Advanced CPUs continuously rebalance power allocation across their units. For example, a GP

Powering Your Portable Design
Linear Regulators
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AN693: Understanding A/D Converter Performance Specifications
AN793: Power Management in Portable Applications: Understanding the Buck Switchmode Power Converter
AN960: New Components and Design Methods Bring Intelligence to Battery Charger

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