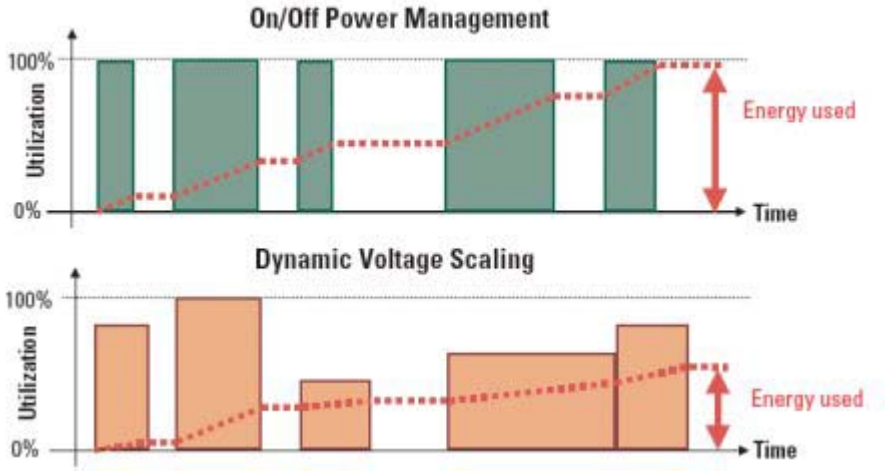
Windows CE gets ARM power management support

Feb. 13, 2006

Intrinsyc Software has released what it calls the first Windows CE 5.0 implementation of ARM Ltd.'s processor-level power management technology. The company says that ARM's Intelligent Energy Manager (IEM) voltage and frequency scaling technology can reduce system-level power and energy consumption by as much as 15 to 20 percent.

Conventional "On/Off" power management techniques reduce power consumption by putting the device to sleep when there is no work to do, according to ARM. Then, when processing activity is required, the processor comes out of sleep mode and runs at full speed, regardless of the performance level needed to get the work done (see diagram).



IEM saves power by scaling voltage and clock frequency
(Source: ARM Ltd.)

IEM software uses information provided by the operating system to create a profile of application execution on the system, ARM explains. Various algorithms are then used to classify the types of activity and analyze their processor utilization patterns, resulting in a prediction of future performance requirements. This information allows dynamically scaling CPU voltage and clock frequency.

Intrinsyc says its IEM implementation is compatible with Soleus, the company's new mobile software platform for low-cost feature phones. It is also claimed to be the first implementation on the high-performance ARM11 processor family targeted at high-performance, real-time applications requiring low power consumption.

"IEM software controls and optimizes Dynamic Voltage and Frequency Scaling (DVFS) hardware techniques to increase energy savings in ARM processor-based system-on-chip (SoC) designs," said Lance Howarth, general manager of Embedded Software, ARM. "Together, ARM and Intrinsyc are working to take IEM software into the Windows CE 5.0 market. This move builds on Intrinsyc's expertise in mobile embedded development and is a natural extension of their product line."