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## [Intel to Unleash New Low-Cost, Ultra-Efficient Atom Processor](#)

*The new brand will power Mobile Internet Devices and low-cost PCs*



The new Atom logo  
Intel

Intel has just released its brand name for the Silverthorne and Diamondville-based processors that will power the next generation of mobile Internet devices (MIDs). The new processors will be paired under the "Atom" name and will ultimately be the base of cheap PC systems aimed at the emerging markets.

The idea behind the Atom processor has been previously tackled by AMD with its Geode processor, as well as VIA with the energy-efficient C7-M chip. The Atom CPU is Intel's own response to the constantly increased demand in mobile devices and low-cost computing systems.

Intel will release two versions of the same Atom product, namely the Silverthorne core-based chip for mobile devices and the Diamondville core-based processor aimed at low-cost computers. Silverthorne is a Diamondville derivative that comes with multiple optimizations for desktop applications.

The Silverthorne processor is built on the 45-nanometer production node and packs 47 million transistors on a single 5x5 millimeter die. Intel often compares Silverthorne's performance with that of the 90-millimeter Pentium M with a single Dothan core, despite the fact that the Silverthorne packs less L1 and L2 cache (24 KB and 512 KB, respectively).

The Atom processor is not impressive in its performance, given the fact that it will be launched at a core frequency of only 1.8 GHz. The most important aspect of the chip is its extreme energy-efficiency, that will allow it to reach power consumption values of 0.6 – 2.5 watts. Intel will be working on yet another family of processors called Atom Centrino, a breed of x86 CPUs that will apparently be produced for a few dollars only.

The movement is part of an older Intel strategy focused on dropping production costs as much as possible, while providing the maximum performance and capabilities. For instance, the new Atom Centrino chip will provide graphics, Wi-Fi, 3G and WiMax connectivity for the Menlow platform.

Paul Otellini, Intel's chief executive officer claims that the Silverthorne chip is the lowest-cost processor in 20 years, and there's the possibility of integrating the chip in sub-\$100 systems. Otellini also estimated that the company can fit about 2500 Atom chips on a single 300-millimeter wafer.

"This is our smallest processor built with the world's smallest transistors," said Intel's Executive Vice President and Chief Sales and Marketing Officer Sean Maloney. "This small wonder is a fundamental new shift in design, small yet powerful enough to enable a big Internet experience on these new devices. We believe it will unleash new innovation across the industry."