

Silverthorne and Menlow

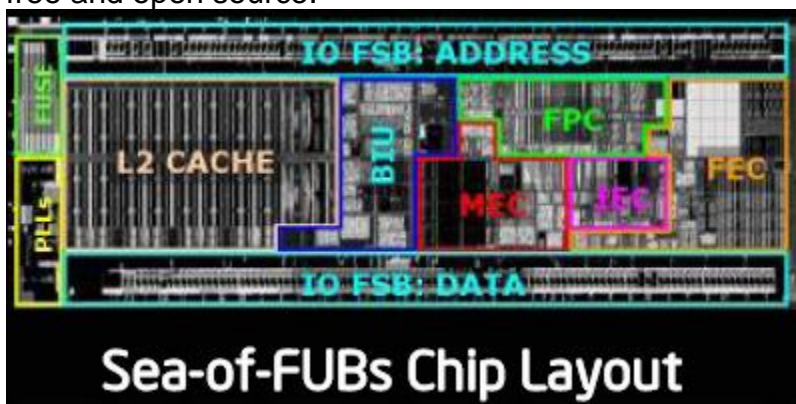
(Article by: Diane Duhe)

No, it's not a new crime-fighting duo...no, it's not a Law Firm!

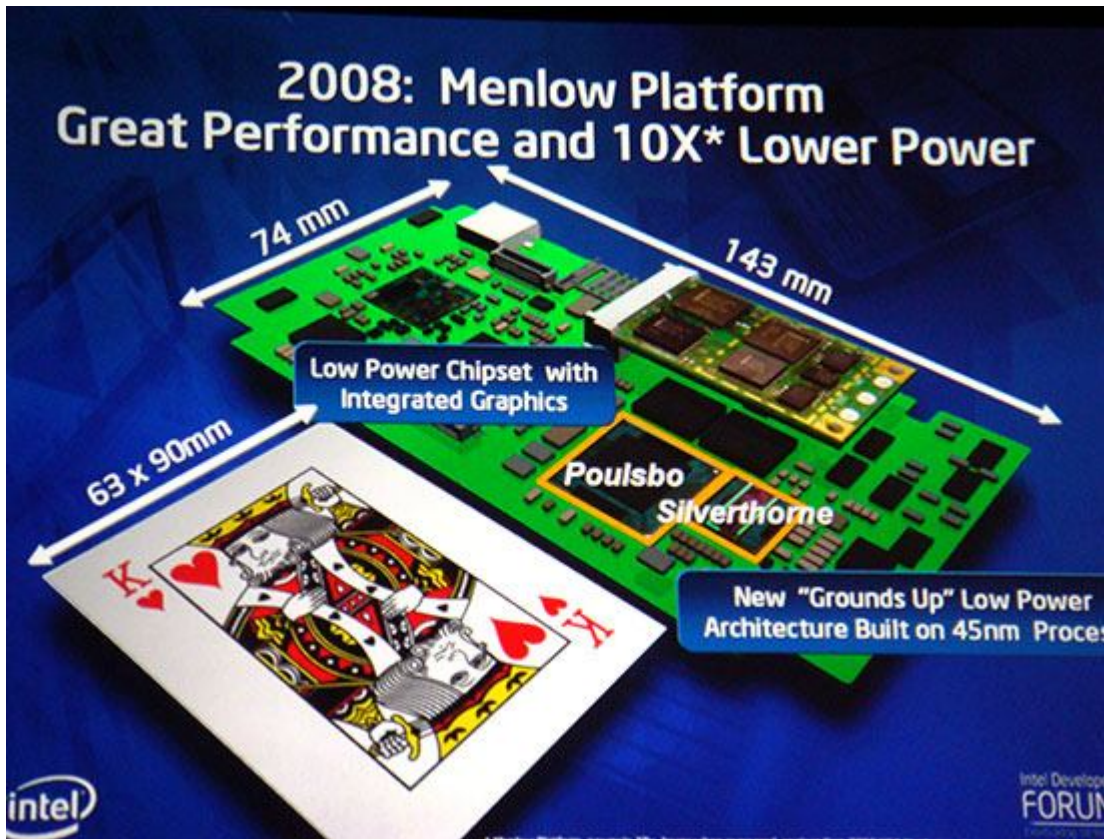
Intel's new 45nm "Silverthorne" is an x86 processor for the Menlow platform- (The Menlow Platform is famous for its low power dispersement, small form factor, fan-less design, and high performance per watt/cost . The platform was designed for low-cost/low power applications including Ultra Mobile PCs, Mobile Internet Devices, set-top applications, some embedded applications, and eventually for smart phone applications. <http://www.pcworld.com/video/id,529-page,1-bid,0/video.html>)

Silverthorne is tiny in size- 25mm² die on a 45nm processor, allows 2500 chips and a record 2 billion transistors to fit on a single 300mm diameter wafer. (The former record for transistors on a microprocessor was 1.7 billion.) and is extremely economic to produce. The "quad-core" Itanium chip operates at up to 2 gigahertz and has four processing engines. (Current models have two. More engines boost the chip's performance and improve multitasking.) Silverthorne also boasts a dual-issue in-order pipeline architecture with SMT (Simultaneous Multithreading.) Its extremely low power state was designed to maximize battery life in Smart Phones. Power consumption is between 1W and 2W, but doesn't factor in chipset power consumption.

Silverthorne is the best candidate to use in the low-cost laptop initiatives such as "Classmate PC" initiated by Intel (low-cost personal computers for children in the developing world, originally quoted at less than \$150 but were revised to around \$200) and OLPC ("One laptop per child") by MIT , which espouses five core principles: 1) child ownership; 2) low ages; 3) saturation; 4) connection; and 5) free and open source.



Credit: Intel Corporation



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More on the Menlow Platform:

http://www.xbitlabs.com/articles/editorial/display/idf-f2007-2_5.html#sect1