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Fact Sheet

Next Generation Intel® Atom™ Processor Platform

Intel has announced the next generation Intel Atom processor platform for netbooks and entry-level desktops. Intel continues to advance its leadership in these categories with a new platform that features integrated graphics and memory controller built directly into the CPU die, enabling lower TDP, lower average power and a significantly smaller footprint for smaller, more compact system designs.

The Intel® Atom™ processor is based on Intel's groundbreaking low-power Intel Atom microarchitecture and manufactured on Intel's 45nm High-k Metal Gate technology. Atom is ideal for netbooks-simple, affordable devices for the Internet with screen sizes of 7-10.2 inches - and also entry-level desktops. Both mobile and desktop versions of the new Atom processors offer consumers in emerging and mature markets a simple, easy-to-use device designed to deliver a great online experience.

What the new platform consists of:

- New low-power Intel Atom processors with integrated graphics built into the CPU.
    - Intel® Atom™ processor N450 for netbooks
    - Intel® Atom™ processors D410 and D510 (dual core) for entry level desktop PCs
- Low power chipset
    - Intel® NM10 Express Chipset
- Integration and 45nm manufacturing enables significantly smaller overall package size, improved performance, and lower power.

Key features in the Intel® Atom™ processor N450 for netbooks:

- **Small Form Factor Processor Package Size:** the lead-free[2], halogen-free[3] Micro-Flip chip package is 60% smaller (22mm x 22mm) than a typical notebook CPU (35mm x 35 mm). This saves system board real estate in a much thinner and smaller industrial design, enabling smaller form factors.
- **Low Thermal Design Power (TDP):** Low TDP of 5.5 watts enables thinner, lighter, more compact and portable netbooks by reducing the cooling requirements.
- **Enhanced Intel® Deeper Sleep (C4/C4E):** Saves power by flushing cache data to system memory during periods of inactivity to reduce power consumption and enable longer battery life.
- **Enhanced Intel SpeedStep® Technology:** Multiple voltage and frequency operating points provide optimal performance at the lowest power, allowing for better matching of performance to application demand.
- **Integrated Graphics and Memory Controller:** Integrated Intel® Graphics Media Accelerator 3150 combined with the integrated memory controller provides enhanced performance and system responsiveness.
- **HD Playback:** Supports smooth 720p HD local playback on optimized players such as CyberLink* PowerDVD*; supports full 1080p playback with optional third-party HD video decoder chip.
- **Enhanced Data Prefetcher and Enhanced Register Access Manager**: Anticipates data the processor is likely to need and stores the information within the processor's L2 cache, resulting in improved performance since the processor doesn't have to wait as long for data.
- **Intel® Smart Cache:** Cache and bus design for efficient data sharing, providing enhanced performance, responsiveness, and power savings.

A typically configured netbook with the new Atom platform includes the Intel® Atom™ processor N450 at 1.66GHz paired with the Intel® NM10 Express Chipset, a 7-10.2" screen, 802.11b/g WLAN or 3G connectivity, 667MHz memory, 1GB-2GB RAM, Moblin™ Linux or Microsoft* Windows* 7 Starter or Home Basic operating system, SSD or HDD storage, and no optical drive, at an estimated system price point of ~$350.

Key features in the Intel® Atom™ processor D410 and D510 for entry-level desktops:

- **Small Form Factor CPU Package:** The new lead free[2], halogen free[3] Micro-Flip Chip package is 70% smaller (22mm x 22mm) than a desktop CPU (37.5mm x 37.5mm), saving system board real estate in a much thinner and smaller industrial design, enabling small entry-level desktop form factors.
- **Low Thermal Design Power (TDP)**: Low TDP (10 watts for D410 and 13 watts for D510) enables smaller form factor computing devices due to the lower cooling requirements.
- **Integrated Graphics and Memory Controller:** Integrated Intel® Graphics Media Accelerator 3150 combined with the integrated memory controller provides enhanced performance and system responsiveness.
- **Enhanced Data Prefetcher and Enhanced Register Access Manager**: Anticipates data the processor is likely to need and stores the information within the processor's L2 cache, resulting in improved performance since the processor doesn't have to wait as long for data.
- **Intel® Smart Cache:** Cache and bus design for efficient data sharing, providing enhanced performance, responsiveness, and power savings.

A typically configured entry-level desktop includes the Intel® Atom ™ processor D410 or D510 (dual core) at 1.66GHz, the Intel® NM10 Express Chipset, 667 or 800MHz memory, 1GB-2GB RAM, Moblin™ Linux or Microsoft* Windows* 7 Starter or Home Basic operating system at an estimated system price point of less than $300.

Key features in the Intel® NM10 Express Chipset for netbooks and entry-level desktops:

- **Small Form Factor Chipset Package:** The new lead free[2], halogen free[3] 17x17mm single package is 85% smaller than the traditional two device chipset used in the prior generation.[4]
- **Serial ATA (SATA):** High-speed storage interface supports faster transfer rate for improved data access with up to 2 SATA ports.
- **Universal Serial Bus (USB):** Hi-Speed USB 2.0 provides greater enhancement in performance with a design data rate of up to 480 megabits per second (Mbps) with up to 8 USB 2.0 Ports.
- **Intel® High Definition Audio:** Integrated audio support enables premium home theater sound and delivers advanced features such as multiple audio streams and jack re-tasking. The Dolby* PC Entertainment Experience[5] is available exclusively on systems with Intel® High Definition Audio.
- **PCI Express:** Offers up to 4 PCI Express root ports
- **Intel® integrated 10/100 MAC:** Support for the Intel® 82552V Fast Ethernet PHY.

[1] Wireless connectivity is not an Intel® Atom™ processor brand requirement. See your manufacturer for details.

[2] Intel 45nm product is manufactured on a lead-free process. Lead-free per EU RoHS Directive (2002/95/EC, Annex A). Some RoHS exemptions may apply to other components used in the product package.

[3] Applies to components containing flame retardants and PVC only. Halogens are below 900 PPM bromine, 900 PPM chlorine, and 1500 PPM combined bromine and chlorine.

[4] 17x17mm Intel® NM10 Chipset is 85% smaller than the prior generation Intel® 945GC chipset with 37.5x40mm GMCH and 31x31mm ICH7.

[5] Intel® High Definition Audio requires a system with an appropriate Intel chipset and a motherboard with an appropriate codec and the necessary drivers installed. System sound quality will vary depending on actual implementation, controller, codec, drivers and speakers. For more information about Intel® HD audio, refer to http://www.intel.com/design/chipsets/hdaudio.htm.

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