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# Fact Sheet

## Intel's Bay Trail: Multicore SoC Family for Mobile Devices

Sept. 11, 2013 – Intel Corporation continues to make waves in the mobility space and [officially launched](#) its latest system-on-a-chip (SoC) processor family, formally codenamed “Bay Trail.” With people living an increasingly mobile lifestyle, Intel is developing technology to provide the best possible experience for people on the go, and the “Bay Trail” family of processors does that and more.

Based on a new low-power, high-performance microarchitecture “Silvermont,” ([announced in May 2013](#)), “Bay Trail” is Intel’s first tri-gate 3-D 22nm quad core SoC and its most powerful processor<sup>1</sup> to-date for tablets and other sleek devices that provide a balance of performance, features and battery life. The flexibility of the Silvermont microarchitecture allowed Intel to deliver multiple variants of the platform to market for the tablet, 2 in 1, entry laptop and desktop and all-in-one (AIO) segments. “Bay Trail-T” is the next-generation 22nm quad-core Intel® Atom™ SoC for tablets and 2 in 1 devices. The “Bay Trail-M” and “Bay Trail-D” parts are for innovative entry-level laptops, 2 in 1s, desktops and AIOs that will be branded Intel® Pentium® and Intel® Celeron®.

### Intel Atom Processor Z3000 Series

“Bay Trail-T,” now known as the Intel Atom Processor Z3000 Series, is Intel’s most capable, high-performance SoC to-date for tablets and other sleek mobile devices and the lowest-power platform of the Bay Trail family, featuring<sup>1</sup>:

- *A More Powerful SoC* – The new low-power, high-performance 22nm microarchitecture does not sacrifice energy efficiency, with an out-of-order execution engine, 22nm tri-gate transistors that bring performance increases and improved efficiency and power sharing across the CPU and GPU, including graphics, camera and display processes. The SoC also includes Intel® Burst Technology 2.0 with four cores, four threads and 2MB L2 cache.
- *Advanced Graphics* – The Intel Atom SoC now features Intel® HD Graphics Technology with Intel® Clear Video HD Technology, giving you smooth, immersive gaming and vivid visual entertainment, and offering triple the graphics capabilities of previous-generation Intel Atom processors. It also supports DX11 for expanded PC application, game support and an unparalleled mobile multimedia experience.
- *Amazing Visuals* – End users can immerse themselves in vibrant graphics and imagery for a rich experience with support for display resolutions of up to 2560x1600, dual independent displays, Intel Quick Sync Video and Intel Wireless Display.
- *Ecosystem Flexibility* – Intel Atom Processor Z3000 Series is the first mobile platform solution that supports both Windows 8 and Android, allowing device manufacturers to design once and offer multiple solutions to their customers. This flexibility also allows OEMs to offer a selection of slim and light Windows and Android devices that range from 7 to 11.6 inches and are as thin as approximately 8mm and under a pound at a variety of prices.
- *Lowest Power* – Optimizing the entire platform and SoC for low power consumption, Intel managed to get double the CPU performance while maintaining the same low-power thermal envelope, enabling devices as thin as approximately 8mm that remain cool to the touch while holding them or using them on your lap.

- *Outstanding Battery Life* – Devices running on the new Intel Atom processors will have more than 10 hours of active battery life and three weeks of standby<sup>2</sup>, letting people cut the cord and enjoy the best of what the device has to offer without worrying about plugging in.
- *A More Secure Environment* – The platform also features a more robust security engine and support for McAfee® DeepSAFE\*, a digital life protection suite that keeps online identities private, protects from phishing attacks and keeps data secure.
- *Business-Ready Experience* – Tablets running on the newest Intel Atom SoC have full application and peripheral compatibility and enterprise-grade management with support for Windows Pro\* features such as Domain Join and Group Policy. Intel will release a version of the SoC with 64-bit support in the first quarter of 2014. It will allow for a more seamless deployment into enterprise environments, and include no VPN password with Intel® Identity Protection Technology with PKI<sup>2</sup>.
- *Advanced Connectivity on the Go* – Features include support for Intel Wireless Display, Miracast and Microsoft Instant Go for long battery life while keeping content fresh in standby.

### **Intel Pentium Processor and Intel Celeron Processor Series for Mobile**

The “Bay Trail M” line will be available in four SKUs: Intel Pentium N3510 and Intel Celeron N2910, N2810 and N2805 processors. Specific features of the Intel Pentium and Intel Celeron Processor series include:

- Ability to power innovative detachable and convertible devices as well as touch-enabled notebooks at lower price points, as well as fanless designs less than 11mm thin and less than 2.2 pounds with up to 8 hours of battery life.
- Up to two times faster performance in productivity applications and up to three times improvement in graphics over the previous Pentium and Celeron processors for these devices<sup>4</sup>.
- Systems running on these series will start from \$199 for a clamshell device, \$250 for a notebook with touch capabilities and \$349 for a 2 in 1 device.

### **Intel Pentium Processor and Intel Celeron Processor Series for Desktops**

The “Bay Trail D” line will be available in three SKUs: Intel Pentium J2850, Intel Celeron J1850 and Intel Celeron J1750, and are Intel’s smallest-ever package for desktop processors. Features of the Intel Pentium and Intel Celeron Series include:

- Ability to support fanless designs, opening the way for smaller form factors for entry-level desktop computing and vertical uses such as intelligent digital displays.
- Up to three times faster performance than the previous processors in these devices<sup>4</sup>.
- Systems running on these series will start at \$199.

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<sup>1</sup> Based on the geometric mean of a variety of power and performance measurements across various benchmarks. Benchmarks included in this geomean are measurements on browsing benchmarks and workloads including SunSpider\* and page load tests on Internet Explorer\*, FireFox\*, & Chrome\*; Dhrystone\*; EEMBC\* workloads including CoreMark\*; Android\* workloads including CaffineMark\*, AnTutu\*, Linpack\* and Quadrant\* as well as measured estimates on SPECint\* rate\_base2000 & SPECfp\* rate\_base2000; on Silvermont preproduction systems compared to Atom processor Z2580. Individual results will vary. SPEC\* CPU2000\* is a retired benchmark. Performance tests, such

as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more information go to: <http://www.intel.com/performance>

<sup>2</sup> Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performances of that product when combined with other products.

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