

# Nvidia Tegra 3 quad-core chip stokes tablet wars

November 10 2011, by Nancy Owano

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(PhysOrg.com) -- Nvidia has launched its Tegra 3, the quad-core chip designed for mobile devices. Tech and investor blogs were busy yesterday assessing what this means for upcoming tablets and smartphones as to performance and power efficiency. The Tegra 3 processor provides up to three times the graphics performance of Tegra 2, and up to 61 percent lower power consumption, according to the Santa Clara-based company.

Its design is based on the ARM Cortex-A9 processor, an [architecture](#) that addresses the need for better control over power consumption in [mobile computing](#). As ARM has said in its [Cortex](#) A-9 white paper, "Consumers don't just expect their products to do more; they also expect longer battery life for portable products. To achieve all-day use, which is

now a minimum requirement, phone, smart phone and PDA manufacturers must deliver extra performance and features more efficiently than before."

Similarly, while there is good reason to be enthusiastic about the performance features of the Tegra 3, a potentially attractive feature for mobile business users of tablets and smartphones will most likely center on what Tegra 3 can promise in battery savings.

The Tegra 3 uses what Nvidia calls "Variable SMP" (Variable Symmetric Multiprocessing) for low power and high performance. All five CPU cores are individually enabled and disabled based on the work load. Nvidia in its press release refers to its "aggressive power-gating."

The four main cores are specifically designed for work requiring high performance, During tasks that require less power consumption -- listening to music or playing back video-- the Tegra 3 processor shuts down its four performance-tuned cores and instead uses the companion core. This adds up to the big battery savings, up to 61 percent. The Tegra 3 also has a 12-core GeForce graphics processing unit, for enhanced multimedia performance.

First to the plate for the Tegra 3 is Asus, which has announced its new tablet that will use the quad-core Tegra 3 chip. This is the Asus Eee Pad Transformer Prime, a device with a pricetag of \$499 for the 32GB version and \$599 for 64GB. An optional keyboard is priced at \$149.



The ASUS Eee Pad Transformer Prime is the first quad-core tablet with Tegra 3.

The Asus tablet, with Tegra 3 processor's power-management features combined with its own optimizations, is reported to have a battery life of up to 12 hours. This 10.1-inch tablet will appear in stores by the end of the year.

As exceptional as both the Nvidia and Asus debuts are, observers note the competitiveness of the tablet market. Nvidia will not be the one and only player in the quad-core arena for a very long time. Reports point to Qualcomm, an [Nvidia](#) competitor, which is expected to bring out its quad-core processors early next year.

**More information:** [Nvidia press release](#), [Asus press release](#)

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