■ AMD Outlines Processor Roadmap

During its November analyst meeting, AMD outlined its PC processor roadmap for 2000, including a new version of the K6-2 and several new Athlon family members.

By the end of 1999, AMD will begin shipping its 0.18-micron "K75," which is functionally identical to the initial Athlon but uses the more advanced process. All Athlon production in 2000 will be 0.18-micron. AMD demonstrated two different 0.18-micron chips, one using the aluminum-interconnect process running at Fab 25 and another using the copper process from Fab 30. Both chips were shown running at 900 MHz with normal cooling, showing considerable frequency upside. AMD is now shipping 750-MHz Athlons for $799 (1,000 units) and promises to ship 800 MHz in 1Q00.

Around midyear, AMD plans to debut two new Athlons with on-chip level-two cache. One, code-named Thunderbird, is aimed at performance-oriented users and presumably will have a relatively large cache. The other, code-named Spitfire, is the first Athlon processor for the value segment and will have a smaller L2 cache. AMD refused to be specific about the cache sizes. Both processors will be offered in "Socket A," a PGA version of the Slot A interface that is AMD's conceptual equivalent of Socket 370 (but with the EV6/Slot A bus, of course). In addition, Thunderbird will be offered in the Slot A module to provide an upgrade path for existing system designs. AMD expects these processors to reach 900 MHz.

Sometime in the second half of 2000, AMD plans to introduce new processors based on an enhanced core, code-named Mustang. AMD would not discuss the core enhancements but said this chip is optimized for the copper process and will run at approximately 1 GHz. Chips based on this core will cover a range of price/performance points; versions with an on-chip L2 of up to 2M will aim at servers, and smaller L2 versions will serve the performance and value PC segments.

A Mustang-based chip will be the first mobile Athlon product. In addition to the design's being optimized for low power consumption, it will offer a dual-speed mode similar to Intel's SpeedStep (previously known as Geyserville); AMD's code name for this technology is Gemini.

The K6-2, now at 533 MHz in 0.25 micron, will move into the 0.18-micron process early in 2000 and gain an on-chip L2 cache and Gemini power management, resulting in the K6-2+. AMD did not state the cache size, but since this product must fit below the K6-III with its 256K cache, an L2 size of 128K seems likely. The K6-III will evolve into the K6-III+, using the 0.18-micron process; the L2 will remain unchanged, but the chip will gain Gemini power management and run at higher speeds than today's 0.25-micron version. AMD must depend on these chips to serve the mobile market until Mustang arrives late in the year.

AMD expressed confidence that it will meet its previously stated goal of 800,000 Athlon processor shipments in 4Q99. Furthermore, the company expects that strong demand and a good speed mix in the K6 line will enable it to achieve a roughly break-even quarter, with five million units (for all PC processors combined) in 4Q99 now considered a "floor."   —M.S.

■ NeoMagic Adds 3D to Mobile Graphics

NeoMagic, the pioneer of embedded DRAM for mobile 2D-graphics accelerators, has finally released a 3D-capable mobile graphics chip. Though most competing products, such as ATI's Mobility 128 (see MPR 10/25/99, p. 4), use package-scale DRAM integration to support larger integrated frame buffers, NeoMagic (www.neomagic.com) uses true embedded DRAM to minimize power consumption.

NeoMagic's new MagicMedia256XL+ adds a simple 3D core to the company's mature 2D core and 6M of 256-bit-wide embedded DRAM. The chip lacks a 3D setup engine, increasing CPU-processing and bus-bandwidth demands over almost every other 3D chip on the market.

The chip, which is available now, offers a few features not found elsewhere, including integrated audio support, but its key selling points will be its low 1-W power and pinout compatibility with previous NeoMagic chips.   —P.N.G

■ Acer, ArtX Announce Core Logic With Graphics

Acer Laboratories has announced a deal to sell ArtX's integrated-graphics north bridge along with its own south bridge, creating a Socket 7 chip set called Aladdin 7. The product complements the Aladdin TNT2 (see MPR 10/6/99, p. 4), a P6-bus chip set with integrated graphics from Nvidia's TNT2.

The $32 Aladdin 7, which supports the 100-MHz bus of AMD's K6-family processors, represents ArtX's debut in the PC graphics market. ArtX is also designing the graphics accelerator for Nintendo's next-generation video-game console, code-named Dolphin (see MPR 5/31/99, p. 5).

ArtX (www.artxinc.com) developed the 128-bit 2D/3D/video-graphics core for the Aladdin 7, along with the Socket 7 interface and a memory controller that can address up to 1G of SDRAM. The 128-bit memory interface gives the chip set the equivalent of an 8× AGP interface between the 3D core and main memory, allowing the core to draw 250 Mpixels/s, 25% faster than the Aladdin TNT2. The wide memory bus will also improve overall application performance.

The Aladdin 7's most interesting feature is a geometry engine that offloads 3D transform and lighting calculations from the host processor. Acer says the engine can process up to 12.5 Mpolys/s, further increasing 3D performance for those few applications that support geometry acceleration.

Acer contributes its M1535D south-bridge chip and the crucial marketing experience ArtX lacks. Though the days of Socket 7 systems are waning, the Aladdin 7 is likely to be well received among OEMs of low-cost PCs.   —P.N.G.   Ⓜ