

■ Infrastructure Issues Slow Athlon Ramp in Q3

In announcing its third-quarter results, AMD disclosed the first data about Athlon shipments. The company produced about 350,000 Athlon chips but sold only about 200,000, because of a lack of motherboards on which to install them. AMD did not detail the factors that led to the motherboard shortage, but the Taiwan earthquake was surely one factor toward the end of the quarter.

AMD said there are plenty of Irongate chip sets available, but some Athlon systems use a Via south-bridge chip that has been in short supply. Ironically, availability of the Via chip has been further worsened by Intel's 820 chip-set delay: Via's Apollo Pro133A chip set has suddenly become a popular choice for Pentium III systems with a 133-MHz bus, raising concerns over the availability of Via's south bridge for Athlon customers. AMD's chip set is built by UMC in Taiwan, so there may be some supply constraints on the chip set in the fourth quarter due to the quake.

At 200,000 units, Athlon processors were in well under 1% of PCs that were shipped in the third quarter. AMD hopes to ship about 800,000 in the fourth quarter, or about 2.5% of the market, but the company cautioned that the Taiwan situation makes fourth-quarter shipments hard to predict. AMD's total third-quarter shipments of 4.5 million units, predominantly K6-2s, give it a market share of about 15%—similar to the share it has held for most of the past year.

AMD's average selling price for the quarter was a mere \$65, including both the K6 family and Athlon. The ASP for Athlon alone, however, was nearly \$300—a dramatic indication of how important it is for AMD to shift its mix toward higher-performance processors. The ASP for the K6 family was about \$55, a drop of more than \$20 from a year ago. The Athlon ASP will fall as it moves into higher-volume segments, but at least it is starting from a level AMD has never seen in its entire PC-processor history.

Athlon may also be having an impact on Intel, which reported lower than expected third-quarter earnings, due to sagging ASP. Intel cut Pentium III prices three times last quarter, in part responding to Athlon, causing the drop in ASP.

AMD plans to start its last 0.25-micron wafers this month, with all future production in 0.18-micron technology. The company's Dresden fab has already produced test wafers using copper metallization, and it plans to begin shipping this version in 2Q00. By the end of 2000, AMD expects Athlon to reach 1 GHz, using the copper process.

The Athlon shortfall contributed about half of AMD's more than \$100 million loss for the quarter. The heavily leveraged company now plans to sell its communications group, having already sold its programmable-logic business the previous quarter. With its strategic focus firmly on PCs, AMD hopes to fund its losses long enough for Athlon to start raking in the cash. Optimistically, AMD hopes to break even

in the fourth quarter, but it is not likely to see significant profits until at least 1Q00. —M.S.

■ Merced Becomes Itanium

Hoping to bulletproof its IA-64 products, Intel will use the brand Itanium for Merced and, potentially, its follow-ons. The new name starts with the same letter as Intel (just like the AMD Athlon combination) and ends with the same sound as Pentium, Intel's current mainstream brand name. It is an obvious play on titanium, a rare metal that is difficult to work with. We are waiting to see whether Intel eventually rolls out a complete periodic table of new products.

Itanium sounds funny now, but we will undoubtedly get used to it, as we got used to Celeron and Xeon, which have become accepted industry nomenclature. Intel needed a new brand, given Merced's completely new instruction set and high-end target market; Itanium is as good as any. —L.G.

■ ATI Mobility Moves to 128 Bits

ATI's new Rage Mobility128 graphics accelerator is based on a 128-bit rendering engine derived from the company's Rage 128 Pro graphics chip (see MPR 9/14/98, p. 16). The Mobility128's 345-contact BGA houses a graphics chip along with 8M of SGRAM or SDRAM, externally expandable to 16M.

The Mobility128 supports essentially all available flat-panel displays, making it suitable for use in both laptops and LCD-equipped desktops. The chip includes a high-quality scaling circuit to support multiple resolutions on a single LCD display, and both low-voltage differential signaling (LVDS) and transition-minimized differential signaling (TMDS) flat-panel interfaces. The dual-channel LVDS interface operates at up to 85 MHz, while the TMDS transmitter supports speeds up to 165 MHz. Both can be used simultaneously to drive independent LCDs at up to 1,600 × 1,200-pixel resolution with 32-bit color. The Mobility128's 3D engine uses the same dual-pipeline design of the desktop Rage 128 Pro, and can draw up to 200 Mpixels/s. ATI says its new chip is substantially faster than S3's Savage/MX and /IX (see MPR 8/2/99, p. 4) on standard 2D and 3D industry benchmarks. The Savage/IX is available with up to 16M of in-package SDRAM, however, reducing the board space needed for high-end configurations.

The Rage Mobility128 extends ATI's mobile graphics-chip family, joining the previously announced Rage Mobility M, M1, and P (see MPR 12/7/98, p. 4). The Mobility128's pinout is a superset of the 328-contact BGA footprint of its predecessors, allowing OEMs to use both new and old products in the same motherboards. ATI asks \$55 for the Mobility128, a dollar less than the price of S3's 8M Savage/IX. Price alone will not decide which of these chips are selected by laptop OEMs; performance, features, and vendor reputation will have a greater say in the matter. —P.N.G. □