INTEL NOT TIMID ON TIMNA

By Kevin Krewell {2/28/00-05}

This year's Intel Developers Conference (IDF) provided the first public demonstration of Intel's integrated Timna processor. A supposedly more-integrated solution for sub-$600 PCs, Timna systems require the Timna processor, a memory translation hub (MTH), and an I/O controller hub (ICH)—exactly the same number of chips required for a nonintegrated Celeron system (Celeron + 810 + ICH). Timna was designed for RDRAM, but, due to the well-known issues with RDRAM prices and availability, Intel will support only SDRAM, which requires the memory translation hub. This translation from an RDRAM bus to SDRAM will hurt Timna performance by introducing additional memory latency and reducing the memory bandwidth available to the CPU and graphics cores. Intel stated that in 2001, Timna will probably be offered with the RDRAM channel, but not until RDRAM prices become acceptable for the value segment.

The Timna processor will use a 370-pin socket, with one pin keyed to prevent it from being plugged into a Celeron or PIII Socket 370 motherboard. Timna requires a different pinout because it integrates the memory and graphics controllers and eliminates the P6 bus, but it will leverage the low-cost infrastructure created by Socket 370. The 0.18-micron Timna will support SSE, but the P6 core was apparently not taken directly from the Coppermine core; rather, it may have started as the Mendocino core, which was enhanced with SSE. The processor, memory controller, and 752-derived graphics controller were laid out to reach a manufacturable die size—which would indicate that it is less than 125mm^2. The L2 size was not revealed, but we expect it to be 128K. Intel would not reveal whether Timna will support an external display cache (Z-buffer), as did the 810DC chip set. Timna will be branded under the Celeron name and should be offered at speeds comparable to those of the nonintegrated Celeron products. First silicon appeared in November, and we expect it to be sampling to OEMs shortly. Timna will be priced below the combination of a nonintegrated Celeron + 810e chip set and will have to be significantly below $100 to reach its intended market of sub-$600 PCs. ◊