CLEARSPEED ANNOUNCES CS301 MULTI-THREADED ARRAY PROCESSOR TO DELIVER HIGH PERFORMANCE COMPUTING AND POWER EFFICIENCY

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Highest Floating Point Performance Chip Executes Complex Mathematical Applications in a Fraction of the Power and Time

San Jose and Bristol, UK, October 14th, 2003 -- ClearSpeed Technology, a leading provider of high performance, low power chip-based solutions, today announced the ClearSpeed CS301, a multi-threaded array processor that enables dramatic improvements in performance and power consumption for intensive floating point applications. At over 25 GFLOPS peak performance, the new chip provides more than twice the processing speed of competitive products. At 10 GFLOPS per Watt, power consumption is also twenty times more efficient. As a result, the CS301 delivers up to a ninety percent reduction in purchase price and running costs, making high performance computing affordable and available to companies of all sizes.

"With conventional processor design, increasing performance has tended to come with real penalties in power consumption and heat dissipation, to the point where computing cannot keep up with the demands of today's emerging applications and rapidly increasing volumes of data," said Tom Beese, CEO of ClearSpeed Technology. "The CS301 is designed specifically to meet those needs with high performance, power efficiency and full programmability in C combined into a single chip. The CS301 is the first in a family of ClearSpeed microprocessors that we believe will challenge present day thinking by creating a world where scientists, bio-informaticians, engineers and content creators alike can have access to high performance computing anywhere, anytime."

The CS301 is based on a multi-threaded array processing (MTAP) architecture and includes 64 processing elements, 384 Kbytes of on-chip SRAM and I/O ports interconnecting through ClearSpeed's ClearConnect® bus. Each processing element has its own floating point units, local memory and I/O capability, making the CS301 ideally suited for applications which have high processing or bandwidth requirements. The ClearConnect bus is a packet switched network that provides high bandwidth and low power consumption, supporting multiple concurrent transfers giving even higher aggregate bandwidth.

As a result, complex mathematically based applications such as, computational biology and drug discovery, digital content creation, nanotechnology development, scientific research and financial modelling can now be executed in a fraction of the time.

 "We are gratified to see the immediate high level of interest displayed by OEM's in the overall system improvements enabled by the CS301," said Mike Calise, president of ClearSpeed U.S. "The dual benefit of performance and efficiency is empowering companies to accelerate existing applications as well as inspiring them to explore new applications that were previously inaccessible."

The CS301 can serve either as a co-processor alongside an Intel or AMD CPU within a high performance workstation, blade server or cluster configuration, or as a standalone processor for embedded DSP applications like radar pulse compression or image processing. In applications where the CS301 is acting as a co-processor, dynamic libraries offload an application's inner loops to the CS301. Although these inner loops only make up a small portion of the source code, these loops are responsible for the vast majority of the application's running time. By offloading the inner loops, the CS301 can bypass the traditional bottleneck caused by a CPU's limited mathematical capability, executing the core of the application more than twice as fast as anything else in the marketplace.

"To deliver such high levels of performance with full programmability and outstanding gains in power efficiency is a very significant achievement," said Chris Piercy, president and chairman of the Northern California Nanotechnology Initiative.   "We believe this technology will accelerate the development of nanotechnology and its applications across various industries by making high performance computing more accessible and scalable than ever before."

The ClearSpeed CS301 is fully programmable in high-level languages and its software development kit is available now with a C compiler, graphical debugger and a full suite of supporting tools and libraries.

About ClearSpeed

ClearSpeed Technology is a semiconductor company focused on delivering high performance, low power, parallel processing solutions for the computing and communications industries. ClearSpeed's advanced multi-threaded array processing technology provides its customers with the ability to significantly accelerate data intensive applications at extremely low power. Privately funded, ClearSpeed has offices in the USA and UK and already has over 40 patents granted and in process.

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