



New Gene Sequencer to Break \$1,000 Cost Barrier With NVIDIA Tesla GPU Acceleration

Ion Proton System From Life Technologies Makes Genome-Scale Sequencing More Accessible to Scientists and Medical Researchers Worldwide

SANTA CLARA, CA -- [NVIDIA® Tesla® GPU accelerators](#) are enabling Life Technologies Corporation's new Ion Proton™ System to accelerate primary [genome-sequence analysis](#) -- the computation that generates DNA base pairs -- by over 16 times. This will dramatically reduce the cost to sequence an entire human genome from about \$1 billion a decade ago to \$1,000 in the near future.

"GPU acceleration and other advanced Ion Proton features enable every laboratory in the world to take advantage of human genome sequencing quickly and easily, without costly IT investments," said Alan Williams, vice president of software and engineering in the Ion Torrent unit at Life Technologies Corporation. "By democratizing genome sequencing, we expect to see an unprecedented wave of innovation in life sciences and the advancement of clinical research."

The Ion Proton System's technology builds on the rapid advances in increasing throughput, accuracy and read-length achieved with the Life Technologies Ion Personal Genome Machine® (PGM™) Sequencer, which also uses GPUs to accelerate primary analysis. The Ion PGM sequencer was the first to decode the deadly [2011 E. coli bacteria outbreak in Germany](#) because of its exceptional speed.

Setting new standards for performance, ease of use and affordability, the Ion Proton System enables researchers to rapidly go from multiplex sample sequencing to genome-scale sequencing on a single platform. At one-fifth the cost of light-based genome-scale sequencing systems, it can save researchers hundreds of thousands of dollars.

"GPU acceleration has become pervasive in all aspects of computing for life science applications and will enable research to push the envelope of scientific discovery," said Sumit Gupta, general manager of the Tesla accelerated computing business unit at NVIDIA. "The pace of research has fundamentally been accelerated by the use of GPUs for everything from gene sequencers and sequence analysis to molecular modeling and diagnostic imaging."

About NVIDIA Tesla GPUs

NVIDIA Tesla GPUs are massively parallel accelerators based on the NVIDIA CUDA® [parallel computing platform](#) and programming model. Tesla GPUs are designed from the ground up for power-efficient, [high performance computing](#), computational science, and supercomputing, delivering dramatically higher application acceleration for a range of scientific and commercial applications than a CPU-only approach.

More information about NVIDIA Tesla GPUs is available at the [Tesla website](#). To learn more about CUDA or download the latest version, visit the [CUDA website](#). More NVIDIA news, company and product information, videos, images and other information is available at the [NVIDIA newsroom](#). Follow us on Twitter at [@NVIDIATesla](#).

About NVIDIA

[NVIDIA](#) (NASDAQ: NVDA) awakened the world to computer graphics when it invented the [GPU](#) in 1999. Today, its [processors](#) power a broad range of products from [smartphones](#) to [supercomputers](#). NVIDIA's [mobile processors](#) are used in [cell phones](#), [tablets](#) and [auto infotainment systems](#). [PC gamers](#) rely on GPUs to enjoy spectacularly immersive worlds. Professionals use them to create [3D graphics](#) and visual effects in movies and to design everything from golf clubs to jumbo jets. And researchers utilize GPUs to advance the frontiers of science with [high performance computing](#). The company has more than 5,000 patents issued, allowed or filed, including ones covering ideas essential to modern computing. For more information, see [www.nvidia.com](#).

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Ken Brown
Corporate Communications
+1-408-486-2626
kebrown@nvidia.com