



# NVIDIA Tesla K10 GPU Accelerates Search for Oil and Gas Reserves, Signal and Image Processing for Defense Industry

## First Kepler GPU for Compute Tackles Massively Complicated Tasks With Ultra-Efficiency, Unprecedented Throughput and Memory Bandwidth

**Editorial Note:** Update has been made to list of OEMs that are shipping Tesla K10 GPU accelerators in "Availability" section.

SAN JOSE, CA -- **GPU Technology Conference** -- NVIDIA today announced availability of the NVIDIA® Tesla® K10 GPU accelerator, designed to address the most difficult challenges in two high-performance computing (HPC) markets: seismic data processing in oil and gas exploration, and signal and image processing in the defense industry.

The Tesla K10 is based on the new [NVIDIA Kepler™ computing architecture](#), the fastest, most efficient, highest-performance computing architecture ever built.

The Kepler architecture enables two high-performance Tesla K10 GPUs to be placed on a single accelerator board. Delivering an aggregate performance of 4.58 teraflops of single-precision floating point and 320 gigabytes per second memory bandwidth, the Tesla K10 is the world's highest throughput GPU accelerator.

The Tesla K10 GPU was introduced at the GPU Technology Conference (GTC), as part of a series of announcements from NVIDIA, all of which can be accessed in the [GTC online press room](#).

### Seismic Data Processing -- Oil and Gas

Seismic processing uses large data centers to crunch through petabytes of information about the Earth's subsurface area, generated from reflected seismic waves. Geophysicists analyze the resulting 2D and 3D images to discover oil and gas deposits, and to determine the best and safest locations to drill.

NVIDIA GPUs improve the accuracy of seismic processing by enabling the use of more detailed, computationally intensive seismic processing software algorithms such as reverse time migration, full waveform inversion and Kirchhoff time / depth migration.

Leading seismic processing companies -- including Schlumberger, CGGVeritas, and TGS -- and oil and gas companies -- such as Chevron, Petrobras, Total, ENI, Repsol and Saudi Aramco -- are using GPUs to dramatically increase their success rate in the identification of new reserves. By generating higher-quality images in a more affordable and timely fashion, GPUs give these companies a much greater degree of accuracy and confidence in drilling decisions.

"The Tesla K10 is simply amazing," said Paulo Souza, developer in the Geophysical Technology Group at Petrobras RTM. "My seismic application is 1.8x faster on the K10, compared with the Tesla M2090 GPU within the same power envelope. This transformational technology will dramatically accelerate our ability to find and safely reach new oil and gas reserves, as 90 percent of our computational power comes from the GPUs."

### Signal and Image Processing -- Defense

The NVIDIA Tesla K10 GPU can help agencies increase national security by improving the quality, and speeding the delivery of, actionable video analytics and image forensics to security and law-enforcement officials. GPUs speed up by as much as 100x the process of analyzing thousands of video feeds generated by security cameras and drones, enabling analysts to better identify events and individuals of interest.

"The massive amount of video data being generated from security cameras and UAVs presents a 'new big data' problem for the defense industry," said Yiannis Antoniadis, director of ISR Technology at BAE Systems. "We now have broad access to robust, high-quality video, but often we cannot analyze it quickly enough to generate actionable intelligence. GPUs are being used to accelerate nearly every aspect of video analytics, from video stabilization to orthorectification, enabling us to provide real, valuable data to the field quicker than ever before."

### Availability

The new NVIDIA Tesla K10 GPU Computing Accelerator is available beginning this month from leading OEMs, including Appro Supercomputer Solutions, HP, IBM, SGI and Supermicro, as well as through NVIDIA distribution partners. More information about the Tesla K10 is available on the NVIDIA [Tesla website](#).

### About NVIDIA Tesla GPUs

NVIDIA Tesla GPUs are massively parallel accelerators based on the NVIDIA CUDA® parallel computing platform. 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. Today, Tesla GPUs power three of the world's top five supercomputers.

To learn more about CUDA or download the latest version, visit the [CUDA website](#). Follow us on [Twitter](#) (@NVIDIATesla).

### About GTC

The [GPU Technology Conference](#) (GTC) advances global awareness of GPU computing and visualization, and their importance to the future of science and innovation. View the latest news from NVIDIA and its partners in the [GTC press room](#).

### 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 4,500 patents issued, allowed or filed, including ones covering ideas essential to modern computing. For more information, see [www.nvidia.com](http://www.nvidia.com).

Certain statements in this press release including, but not limited to statements as to: the availability, benefits and impact of NVIDIA Tesla K10 GPUs; and the effects of the company's patents on modern computing are forward-looking statements that are subject to risks and uncertainties that could cause results to be materially different than expectations. Important factors that could cause actual results to differ materially include: global economic conditions; our reliance on third parties to manufacture, assemble, package and test our products; the impact of technological development and competition; development of new products and technologies or enhancements to our existing products and technologies; market acceptance of our products or our partners' products; design, manufacturing or software defects; changes in consumer preferences or demands; changes in industry standards and interfaces; unexpected loss of performance of our products or technologies when integrated into systems; as well as other factors detailed from time to time in the reports NVIDIA files with the Securities and Exchange Commission, or SEC, including its Form 10-K for the fiscal period ended January 29, 2012. Copies of reports filed with the SEC are posted on the company's website and are available from NVIDIA without charge. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, NVIDIA disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

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