



# NVIDIA Launches First GeForce GPUs Based on Next-Generation Kepler Architecture

## GeForce GTX 680 for PC Gamers Is Fastest, Most Efficient GPU Ever Built; GeForce GT 640M for Notebooks Puts the "Ultra" in Ultrabooks

SANTA CLARA, CA -- NVIDIA today launched the first GPUs based on its next-generation Kepler™ graphics architecture, which deliver dramatic gaming performance and exceptional levels of power efficiency.

The result of some 1.8 million man-hours of work over five years, the Kepler architecture's first offerings bring unprecedented technical capabilities to both gaming desktops and Ultrabooks.

For desktop gaming, the NVIDIA® GeForce® GTX 680 GPU provides a faster, smoother and richer experience. For notebooks, the new lineup of GeForce 600M GPUs puts the "ultra" in Ultrabooks, enabling smaller, more powerful designs than were previously possible. Both are available immediately.

"The Kepler architecture stands as NVIDIA's greatest technical achievement to date," said Brian Kelleher, senior vice president of GPU engineering at NVIDIA. "It brings enormous performance and exceptional efficiency. Gamers will love the GTX 680's performance, as well as the fact that it doesn't require loud fans or exotic power supplies. Ultrabook users will love the GT 600M family for its performance and power efficiency."

Kepler is based on 28-nanometer (nm) process technology and succeeds the 40-nm NVIDIA Fermi architecture, which was first introduced into the market in March 2010.

### GeForce GTX 680: A Marriage of Speed and Extreme Efficiency

The GeForce GTX 680 GPU brings impressive performance and extreme efficiency to the desktop gaming market, delivering a quiet, smooth, extremely fast experience.

Compared with the closest competitive product, the GeForce GTX 680 GPU is more than 300 percent faster in DirectX 11 tessellation performance<sup>(1)</sup> and up to 43 percent faster in cutting-edge games such as *Elder Scrolls V: Skyrim*<sup>(2)</sup>, yet consumes 28 percent *less* power<sup>(3)</sup>. It also provides twice the performance per watt of the GeForce GTX 580, the flagship Fermi-based processor that it replaces.

Setting the standard for future enthusiast-class GPUs, the GeForce GTX 680 is built on an array of new technologies, including:

- A new streaming multiprocessor block, known as SMX, that delivers twice the performance per watt of previous-generation products
- Special board components, including acoustic dampeners, high-efficiency heat pipes and custom fins, that create a quiet gaming experience
- NVIDIA GPU Boost technology, which dynamically adjusts GPU speeds to maximize gaming performance
- New FXAA and TXAA antialiasing and Adaptive VSync technologies to enrich visual quality without compromising gaming performance
- Support for up to four separate displays -- three of them in 3D -- off a single card for a massive 3D gaming experience
- Manufactured on TSMC's new 28-nm process, with support for PCI-E Gen 3 and DX11.1

Kelt Reeves, president of Falcon Northwest, a leading producer of high-end gaming systems, said: "The GTX 680 lays down what should be whiplash-inducing speed at the sound of a whisper. Even at full throttle, it doesn't heat up. In the immortal words of Obi-Wan describing a lightsaber, it's 'an elegant weapon for a more civilized age.'"

Mark Rein, vice president of Epic Games, creators of the award-winning *Unreal Engine* and billion-dollar "*Gears of War*" franchise, said: "The GTX 680 is amazing and completely redefines what an enthusiast-class GPU is. We have already shown outstanding success with the GTX 680, recently presenting our real-time Samaritan demonstration running on it along with a special preview of Unreal Engine 4 for select developers."

### GeForce 600M GPU Family: Putting the "Ultra" In Ultrabooks

The NVIDIA GeForce 600M family of GPUs, when paired with the latest processor technology from Intel, enables Ultrabook and notebook PC designs that are thin, light and fast. Technological advances that set them apart from the competition include:

- NVIDIA Optimus™ technology enables extra-long battery life by automatically switching the GPU on and off so it runs only when needed

- NVIDIA Verde™ notebook drivers provide frequent performance improvements and rock-solid stability
- NVIDIA PhysX® engine support brings games to life with realistic physics
- Optional NVIDIA 3D Vision™ technology automatically converts more than 650 titles into immersive 3D
- Optional NVIDIA 3DTV Play™ software connects 3D Vision-based notebooks to 3D TVs
- NVIDIA SLI® technology links two NVIDIA GTX GPUs up to double gaming performance

"The Acer Aspire Timeline Ultra M3 brings a superior level of performance to the Ultrabook category," said Sumit Agnihotry, vice president of product marketing at Acer America. "With a GeForce GPU onboard, our thin and light Ultrabook does everything our customers want it to do, with no compromises."

Rene Haas, general manager of notebook products at NVIDIA, said: "Customers are about to see notebook manufacturers unveil a host of Ultrabooks that are truly worthy of the 'ultra' moniker. The more efficient and powerful GeForce 600M GPUs will raise performance from the Ultrabook segment all the way up to gaming notebooks. And they will be the most popular discrete GPUs used with Intel's upcoming Ivy Bridge processor."

### Availability

The NVIDIA GeForce GTX 680 GPU is available now from the world's leading add-in card suppliers, including ASUS, Colorful, EVGA, Gainward, Galaxy, Gigabyte, Innvision 3D, MSI, Palit, Point of View, PNY, and Zotac. Expected pricing is \$499.

The following manufacturers will be shipping Ultrabooks and notebooks based on the GeForce 600M family of GPUs: Acer, Asus, Dell, HP, Lenovo, LG, Samsung, Sony and Toshiba.

For more information about the new GeForce GTX 680, please visit <http://www.geforce.com/News/articles/introducing-the-geforce-gtx-680-gpu>. For more information about GeForce 600M-Series GPUs, please visit: <http://www.geforce.com/News/articles/geforce-600m-notebooks-efficient-and-powerful>.

For more NVIDIA news, company and product information, videos, images and other information, please visit the [NVIDIA newsroom](http://www.nvidia.com/newsroom).

### About NVIDIA

[NVIDIA](http://www.nvidia.com) (NASDAQ: NVDA) awakened the world to computer graphics when it invented the [GPU](http://www.nvidia.com) in 1999. Today, its [processors](http://www.nvidia.com) power a broad range of products from [smartphones](http://www.nvidia.com) to [supercomputers](http://www.nvidia.com). NVIDIA's [mobile processors](http://www.nvidia.com) are used in [cell phones](http://www.nvidia.com), [tablets](http://www.nvidia.com) and [auto infotainment systems](http://www.nvidia.com). [PC gamers](http://www.nvidia.com) rely on GPUs to enjoy spectacularly immersive worlds. Professionals use them to create [3D graphics](http://www.nvidia.com) 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](http://www.nvidia.com). 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).

- (1) Based on the Microsoft sub D11 DX11 SDK benchmark with patch divisions set to 31. Comparing GTX 680 to Radeon HD 7970. Run at full screen 25x16 resolution with no AA. Graphics driver for HD 7970 was Catalyst 12.2 pre-certified. NVIDIA driver used was development driver 300.70.
- (2) Based on Elder Scrolls V: Skyrim "Indoors level." Comparing GTX 680 to Radeon HD 7970. Run at full screen 19x10 resolution with "Ultra" game settings. Graphics driver for HD 7970 was Catalyst 12.2 pre-certified. NVIDIA driver used was development driver 300.99.
- (3) Comparing TDP of 250 watts for the HD 7970 versus the 195 watts consumed by the GTX 680.

Certain statements in this press release including, but not limited to statements as to: the impact, benefits and availability of the Kepler graphics architecture and GeForce GTX 680 and GeForce 600M 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 product 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-Q 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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## Additional Supporting Quotes

### **Falcon Northwest**

"In my 20 years at the helm of Falcon Northwest, I have seen the evolution of 3D cards from the very start. Every generation has increased speeds and added features, but always with another toll on livability for the user: More heat. More power consumption. More noise. It's been both the price of admission and the barrier that made enthusiast PCs too much for the average consumer.

"GTX 680 is the start of a quiet revolution, both literally and figuratively. When I say GTX 680 produces 30 to 40% speed increases over the last generation, you've probably come to expect that from NVIDIA. We've almost become inured to such consistent achievements.

"But what makes 680 unlike anything that's come before it is that it lays down what should be whiplash-inducing speed at the sound of a whisper. At full throttle, it refuses to heat up. It sips power. Push it to 110% and the only way you'll know it worked is that the frame rate goes up. It is technology that executes so effortlessly you probably won't notice the sheer brilliance of what it is doing.

"GTX 680 is most easily summarized like Obi-Wan described a lightsaber, 'An elegant weapon, for a more civilized age.'"  
-- Kelt Reeves, President of Falcon Northwest

### **MAINGEAR**

"NVIDIA had the balls to design a sub-200 watt flagship product, and they pulled it off. Also, since it's so damn quiet they should pipe some artificial fan noise through the PC speakers for everyone who's used to jet engine-level noise at this level of performance. The NVIDIA GeForce GTX 680, just like our own MAINGEAR products, offers the kind of breakthrough innovation to deliver a quiet and smooth gaming experience that is supercharged with maximum performance."

-- Wallace Santos, CEO of Maingear

### **Digital Storm**

"NVIDIA's GeForce GTX 680 has set the bar for performance and it is by far the fastest video card we've ever road tested here at Digital Storm. Combining GTX 680 with our high-performance gaming PCs has allowed Digital Storm to truly push the boundaries of graphical fluidity and detail beyond what we previously thought was possible."

-- Harjit Chana, CMO at Digital Storm

### **Origin PC**

"Every once in a while a new computer component comes out that is so powerful it changes the game completely. The NVIDIA GTX 680 is that type of graphics card and it's the must have upgrade of 2012. Innovative new technology, faster and smoother gameplay, 4 display outputs in one card, and all while being more power efficient, is just ridiculously amazing."

-- Kevin Wasielewski, CEO of Origin PC

### **iBUYPOWER**

"With all the improvements in the GeForce GTX 680 from the previous generation, it feels like it should have been called the new GTX 780. Much better performance, lower power usage, lower heat dissipation and noise, and a physically shorter card... it's almost as if NVIDIA skipped a generation in technology."

-- Darren Su, Executive VP of iBUYPOWER

### **Cyberpower PC**

"We're extremely excited to incorporate NVIDIA's GeForce GTX 680, the world's fastest single GPU, into our lineup of extreme gaming PCs. As a gamer myself, the enhanced performance combined with the reduced power consumption is a welcomed trend in high-end gaming graphics."

-- Eric Cheung, CEO of Cyberpower PC

### **V3 Gaming**

"The GeForce GTX 680 finally brings together all of the features that our customers ask for, like multi-display support of up to 4 displays on a single card, great power efficiency and awesome acoustics. In our testing even the most demanding 3D games play silky smooth on just a single card, which made the performance SLI and 3-way SLI stupid fast! This is one bad ass graphics card and is the best choice for a new high-end gaming PC from V3. The card is frigging great but I think 'bad ass' is about as expletive as we want to get!"

-- Steven Chien, CEO of V3 Gaming

### **Velocity Micro**

"The performance of the GTX 680 shows NVIDIA's passion for the PC and their dedication to creating remarkable GPUs. We're thrilled to be a part of the launch and can't wait for our customers to begin experiencing this bleeding edge hardware in our ultra-performance systems."

-- Randy Copeland, President & CEO of Velocity Micro

### **Geekbox**

"After salivating for months over rumors surrounding the GeForce GTX 680, NVIDIA delivered a graphics card which has

shattered the bench scores of every system Geekbox has built to date. Not only does this card shatter our previous best benchmark and in-game frame-rate scores, but it does so with less power and a HUGE reduction of heat output placing the GeForce GTX 680 in a class of its own, and at the top of our list. After loading up the GeForce GTX 680's in BF3, it had us all repeating 'Holy S#!@' as though it was some kind of ritualistic chant. The frame rates and graphics quality are superior to anything we've touched!"

-- Adrian Hunter, CEO of Geekbox

#### **AVADirect**

"NVIDIA once again proves to be the ultimate visual innovator and the GeForce GTX 680 is no exception. More frame rates, less power consumption, improved acoustics and great price point is a perfect combination for any enthusiasts and professionals alike. AVADirect is excited to participate in GTX 680 launch and looks forward to a great partnership with NVIDIA to bring tremendous value for its customers across the market place."

-- Misha Troshin, CMO of AVADirect

Bryan Del Rizzo

GeForce Desktops and Notebooks, eSports

NVIDIA Corp.

+1-408-486-2772

[bdelrizzo@nvidia.com](mailto:bdelrizzo@nvidia.com)