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By: Traian Teglet, Hardware Editor



ASUS UL50Vf  
notebook  
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## [ASUS UL50Vf Notebook Review](#)

### *Putting NVIDIA Optimus to good use*

The notebook market is probably the most interesting segment in the computer industry, as the entire market appears to be drawn to the adoption of new portable computer systems. The undeniable popularity of netbooks, tablets and other portable computer systems is becoming the catalyst for fresh technologies, essentially designed to improve the overall computing experience. On that principle, NVIDIA launched its [ION platform](#) at the end of 2008.

The ION was essentially NVIDIA's debut in the netbook space, one that Intel had been dominating for a while and that was becoming one of the most dynamic segments in the portable computer industry. Despite the warm welcome received from the media, ION-based systems were very slow, in terms of adoption rate, mostly because manufacturers weren't that quick to bring them to the market. In spite of various issues NVIDIA had with Intel, the graphics chip maker carried on developing new solutions for the portable market, where the latter still has the dominant position.

Before the [second generation of ION](#) was introduced, NVIDIA surprised everybody by announcing a fresh solution that could be adopted for all portable platforms with an Intel chip inside. We are talking about the [NVIDIA Optimus](#), a technology that basically allowed NVIDIA's product to be inside all those Intel-powered laptops, even those with integrated Intel graphics. In addition, the Optimus technology brought back a solution that hasn't managed to become very popular, namely that of hybrid graphics.

Optimus was introduced back in early February, just one month ahead of the annual CeBIT show in Hanover, Germany. This basically meant that NVIDIA gave little time to its partners to adopt the new solution, ahead of the expo. However, that didn't stop ASUS from enabling NVIDIA's Optimus technology on a bunch of fresh portable computer systems, which it showcased back at CeBIT.

On that note, we start our review of one of the first laptops to have been featured with said technology, namely the [UL50Vf](#), which paired one of Intel's low-voltage processors with an NVIDIA GeForce 210 graphics processor, inside a 15-inch laptop designed for both portability and everyday computing. We first took a look at this model a few days after NVIDIA launched its Optimus technology, but we are now ready to provide you with a more detailed review of its features and capabilities.

[[BREAK=NVIDIA Optimus]]

Before we dive into the different bits and pieces of our review of the ASUS UL50Vf, we thought it's best to lean our attention towards the technology that made this laptop what it is. More specifically, we will try to cover a couple of things about the Optimus technology that has been built inside the 15-inch laptop. We believe we will see a fair amount of new Optimus-based laptops rolled out in the near future, which is why this technology has gotten our attention.

When I was asked by NVIDIA to join their Optimus launch event, I immediately thought the company was basically showing me what the next-generation ION platform was going to look like. However, things weren't as I hoped, as the Optimus was a solution that enabled NVIDIA's product to be inside all the latest Intel-powered laptops, in spite of the licensing disagreements the Santa Clara, California-based companies had.

Optimus, as the name suggests, is designed to optimize the graphics performance of a system featured with integrated Intel graphics. It does so by providing better graphics, without sacrificing battery life, something that most ultraportable systems will likely take advantage of. In essence, the Optimus is an evolution of traditional switchable graphics, a hybrid solution that should ultimately provide the end-user with a better computing experience.

We've seen switchable graphics before, most of which required a system reboot and a manual switch that made the entire operation rather uncomfortable. That's where the Optimus comes into play. NVIDIA has managed to develop the switchable graphics that everybody will want inside their laptops, as it works for the end-user, without them even knowing that. Although most of what's behind Optimus is on a software level, there is a hardware feature that NVIDIA integrated: Copy Engine. This allows the data that would have otherwise been handled by the 3D Engine to be transferred over the PCI-E bus and into the IGP frame buffer, without stressing the 3D engine.

When NVIDIA explained how Optimus works, we did raise an eyebrow because of the simplicity behind this technology. What's even more impressive is that, despite its simplicity, the Optimus solves a lot of issues for NVIDIA, which would have otherwise been left out of the notebook graphics market.

Now, the Optimus works on different levels. When we tested the ASUS laptop, NVIDIA provided us with a software tool that would indicate when the discrete GPU comes into play and when we are running on the integrated graphics. We should note that without this tool, you will likely not see when the NVIDIA GPU takes over the graphics side of a certain application. This is a strong selling point, as it essentially eliminates the frustration of having to manually switch between the discrete and the integrated GPU, depending on what you require from your laptop.

In its current state, the technology manages to recognize a number of applications, so the notebook will know exactly when you need the extra power or not. Obviously, NVIDIA will continue to add applications to the support list, as users are likely to notice and report those that don't work.

NVIDIA told us that it expects more than 50 Optimus-based notebooks and laptops to surface on the market this summer. The success rate of this solution is significantly based on its simplicity, so you'll see this in everything from ION netbooks to CULV laptops or fully-fledged notebooks.

[[BREAK=Hardware Specifications and Testing Methodology]]

Chipset: Intel Cantiga GS45

CPU: Intel Core 2 Duo SU7300, 1.3GHz

GPU: Intel HD Graphics / NVIDIA GeForce G210M with 512MB of dedicated video memory

Memory: 4GB DDR2

Storage: Seagate 320GB Momentus 5400.6 SATA 3Gb/s hard drive

Display: 15.6-inch (1366 x 768 pixels)  
Operating System: Windows 7  
I/O: 3 x USB 2.0  
1 x VGA port  
1 x HDMI  
1 x Ethernet  
1 x Media Card Reader (3-in-1)  
1 x 8x DVD Drive  
1 x Microphone-Out  
1 x Headphone-In  
1 x Kensington lock  
Battery: ASUS A42-UL50, 5800mAH battery pack  
Other features: webcam, integrated microphone, ASUS ExpressGate.

We have to admit that a fair amount of time has passed since we were given a chance to test a 15-inch laptop. With the ASUS UL50Vf, we tested out a new platform and technology. We went through the basic synthetic tests we do with each of the products we are given the chance to try out, but we also took into consideration the fact that this laptop's main feature is the integration of Optimus. This essentially means that we played a bit with the laptop to determine how it would handle some gaming graphics.

Aside from the regular benchmarks like PCMark Vantage and 3DMark Vantage, we also played a little with our Crysis Warhead benchmark, which is still one of the most demanding graphics benchmarks on the market. Additionally, we recorded the temperatures of the system, while running CPU and GPU demanding benchmarks, in order to establish how hot the laptop would get when running at full speed.

We also dug a bit around the inside of the system, mainly to find out how easy it is to upgrade the laptop and access the various components that are subject to malfunction. Now, without further ado, we will be heading to detail our findings about the laptop itself.

[[BREAK=Aesthetics and Design]]

For those of you that are fans of ASUS' notebooks, the UL50Vf isn't very surprising in terms of external design and overall look. The laptop is based on the same chassis as the UL50Vt, released by the company a while back, but comes with a significant change in hardware specifications. Unlike the previous model, this one is featured with the added support for NVIDIA's Optimus switchable graphics technology.

As far as ultraportables go, ASUS did a very good job with the UL50Vf, featuring a brushed aluminium lid and a Chiclet keyboard that also includes a numeric pad. Although the lid is brushed aluminium on the exterior, opening up the laptop will reveal a glossy palm rest and bezel. Despite the nice feeling it provides, at first, the glossy palm rest will ultimately become a magnet for fingerprints.

As we are talking about the palm rest, we should also move our attention to the trackpad. Now, thanks to the Chiclet keyboard mentioned above, the 15-inch ASUS laptop could be compared a bit with some of the Apple MacBooks available on the market. However, the comparison doesn't stop here, as the multi-touch trackpad also borrows a couple of design elements you'd normally find on a MacBook laptop. The trackpad features a textured finish, accompanied by a single mouse button that spreads on the entire width of the trackpad. To

us, this solution felt pretty nice, but I guess this is a matter of taste.

Because it comes with Optimus inside, there are no other buttons that will enable the end-user to switch between the discrete graphics and integrated solution. The laptop only has two buttons, one designed to power the system, while the other will enable the end-user to access ASUS' ExpressGate pre-boot operating system.

[IMG=21][IMG=22][IMG=26]

Unlike some of the other CULV-based laptops on the market, this 15.6-inch design was large enough to enable ASUS to bundle an integrated optical drive, which is also very thin and integrates very well into the overall system design. Now, it's exactly this thin design that got us a bit worried about the sturdiness of the system. We managed to easily bend the entire laptop by applying a bit of pressure. This is an indication of the fact that ultraportability comes at a price. We are only hoping that the system will resist inside a backpack with a few extra books or other devices.

[IMG=31][IMG=32][IMG=33]

What we should also mention here is the way you will be able to upgrade your system's hardware. As you can see in the pictures below, the laptop allows the user to upgrade or change the system's memory or storage solution. The upgrade experience should be fairly straightforward.

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[IMG=27][IMG=28][IMG=29][IMG=30]

[[BREAK=Hardware and Real-Life Performance]]

As we have mentioned above, the ASUS UL50VF's major feature is the integration of NVIDIA's Optimus technology, which basically pairs one of Intel's latest mobile processors with NVIDIA's GeForce mobile graphics in a way that enhances graphics performance but with minimal cost on the battery life. As we went through our benchmarks, we noticed how the discrete GPU was taking over when the application was more demanding on the graphics side.

As you'll see in the pictures below, the laptop managed to pull a score of E4488 3DMark Vantage points, with a GPU score of 5,034 points. 3DMark Vantage is one of the applications that require a considerable effort on the part of the graphics processing unit, which means we had to manually switch off the GPU, from the NVIDIA Control Panel, to see how the Intel HD graphics would handle said application. Unfortunately, we weren't able to run the application on the integrated GPU to get a comparable score.

We continued by putting the laptop through a couple of runs of PCMark Vantage, HD Tune Pro and the Lavalys Everest Cache and memory benchmark. These applications are about the overall performance of a specific computer system, especially PCMark, which is in essence a collection of test suites that put the entire system to use. The score in PCMark Vantage is rather decent, while our own experience tells us that the UL50VF will do just fine as an everyday portable PC. As we did mention Crysis in our benchmarks, we do have to note that the UL50Vf succeeded in scoring an average of 5FPS, at a resolution of 1,280 x 768 in DirectX 10 mode. No, you can't play Crysis, but we're fairly sure you can play less demanding games.

[IMG=34][IMG=35][IMG=35][IMG=36]

Aside from the aforementioned benchmarks, we also recorded the temperatures of the system, while running at full load and when idle. When the laptop was struggling with the rendering of the Crysis Warhead graphics, the laptop's exhaust was blowing air at about 43 degrees Celsius. While running on the integrated wireless chip and looking at HD movies on the Internet, we didn't notice any discomfort, for the first hour. However, if you are planning on keeping the laptop on your lap, for a longer period of time, you might want to consider an external cooling pad.

[IMG=37][IMG=38][IMG=39][IMG=40]

[[BREAK=Conclusions]]

### The Good

One of the best things we can say about the UL50Vf is that it fully takes advantage of NVIDIA's new Optimus switchable graphics technology. The fact that you'll no longer have to manually switch between the discrete and the integrated graphics is a major plus for any new portable computer. Optimus makes the switch for the end-user with minimal to no visible changes to the computing experience.

Enabling your laptop to decide when you need the extra graphics performance is something that all portable computers should be featured with. Because it automatically switches off when the extra power isn't required, Optimus also allows the user to take advantage of a longer battery life.

### The Bad

In terms of performance, the UL50Vf offers everything you'd expect from such a system. It delivers support for gaming, HD graphics, full Internet experience and a nice keyboard to top it all. Unfortunately, because of the materials used for the system's chassis, the laptop feels a bit cheap. As we mentioned in our review, we feared we might break something inside the laptop if we continued putting pressure on it. In addition, the glossy rest pad isn't exactly a strong point, as it becomes a place for fingerprints.

At 15.6 inches, the maximum supported resolution is a bit of a letdown. However, we think this is something reflected in the pricing of the laptop, which you should be able to pick up for just short of \$1,000.

### Overall Impressions

The ASUS UL50Vf is a nice laptop, offering a good combination of decent specifications, build and useful features. For its price segment, the UL50Vf is one we'd recommend. However, if you are looking for a better resolution, a more sturdy design, then you should probably look somewhere else. With a bit more effort, the UL50Vf could have become one of the best 15-inch laptops on the market.

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