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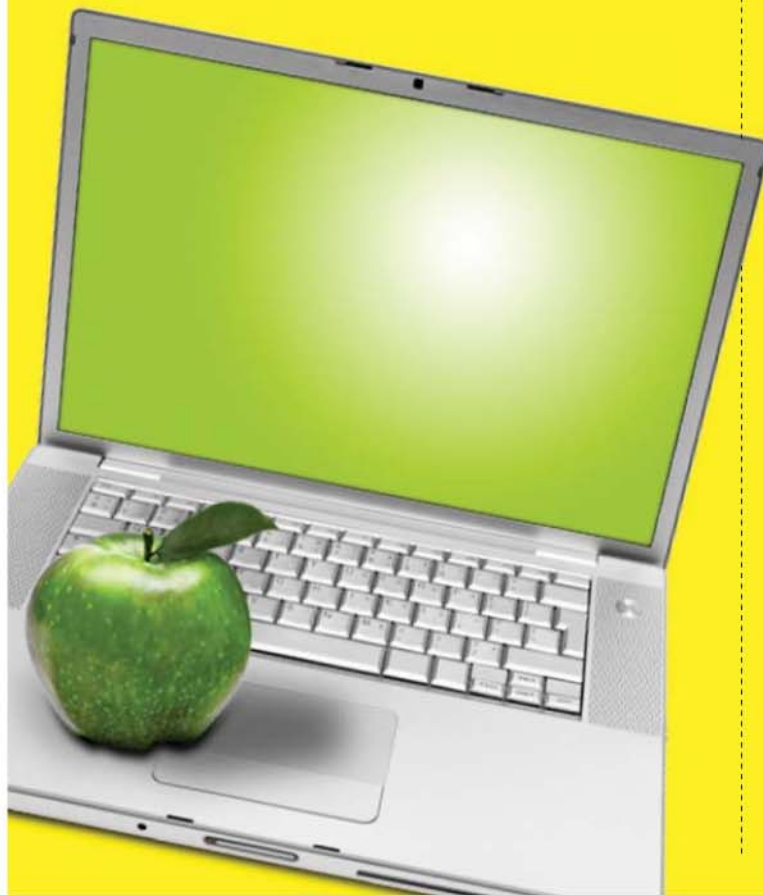
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# ONLINE

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## Back to School

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## EDITOR'S NOTE



**IF YOU'VE FILLED UP YOUR CAR AT THE pump or boarded a plane recently, you don't need us to tell you that prices for everyday goods and services have risen significantly. Whether it's fuel or food, consumers are finding themselves spending a bit more these days.**

But one place where you can still get a great deal is in new desktop computers. In "The Budget Beat" (p. 64), Senior Editor Matthew Murray takes a close look at five budget systems, designed for different needs, that are less than \$750. The results? While low-priced computers often mean sacrifices like fewer features and slower performance, some broke from the norm, like the Cyberpower Gamer Infinity 1000 that surprised us with good gaming performance. The Infinity 1000 even comes with a designer case that's far from the standard issue. For more budget desktop reviews, go to our online archives at [computershopper.com/desktops](http://computershopper.com/desktops).

Perhaps you're more attracted to the benefits of a laptop computer. In recent years, the laptop category has morphed into myriad subsets, and no longer is a notebook the one-size-fits-all device we remember from a decade ago. There are now budget models that are wallet friendly, ultraportables that are ridiculously thin, and gaming machines that can give their high-performance desktop cousins a run for their money. To help you find the right laptop for your needs, Associate Editor Erin Kandel created a buying guide based on five laptop categories. In "How to Shop for a Laptop" (p. 73), Erin points out the nuances of each category using recently reviewed models as examples. This guide will be incredibly helpful for first-time buyers; in fact, we recommend taking this issue with you when you make a purchase.

For a bit of downtime, we turn to gaming. As the video games editor, I've seen more bad games than good. The same is true for gaming peripherals. The market is flooded with accessories that are designed specifically for gaming, yet most of them are ill-conceived and just plain unnecessary. Then there are the exceptions, gear so unique that every gamer should add it to his or her collection. Editorial Assistant Serguei Servianov spoke with experts and gamers about what they like to use, and brings us a few choice items in "Gamer's Delight" (p. 83).

And just as summer begins to wind down, Contributing Editor David English shows you how to upload your warm-weather video footage and post it online in this month's Weekend Project, "Upload Your Videos to YouTube" (p. 92). David goes through the steps it takes to get your video from camera to the popular video-sharing service (though the steps can be modified for whichever online service you prefer), including how to edit them in Windows Movie Maker.

The end of summer also means school is almost back in session. This issue's features provide buying advice and product recommendations that are perfect for students and parents purchasing new tech for the coming academic year. And our Back to School guide at [computershopper.com/back-to-school](http://computershopper.com/back-to-school) offers even more great content for those preparing for the upcoming semester. Make sure to check it out before the first class bell rings. —Les L. Shu, Associate Editor



**We want to hear from you!**

What do you think of this issue? Let us know: [feedback@computershopper.com](mailto:feedback@computershopper.com)

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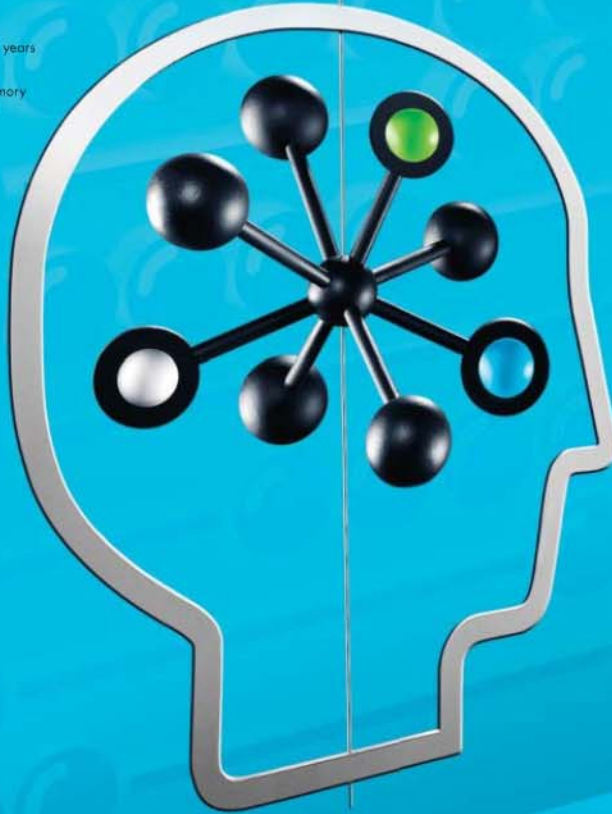


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## Asus, ATI Unveil External Mobile Graphics Modules

LAPTOP GAMERS dissatisfied with the performance of mobile graphics cards will soon have a new option thanks to Asus and ATI: external units that house one or more graphics cards and that can be plugged into a notebook.

ATI's solution is called XGP (short for External Graphics Platform), and consists of a thin case that will initially ship with a card from ATI's recently announced Mobility Radeon 3800 series. XGP features a proprietary PCI Express 2.0 connector and cable, so it will only work on laptops with a similar connector, which is available solely on notebooks utilizing AMD's new PUMA mobile platform. The card found in the XGP unit

can work in tandem with a laptop's onboard graphics card in CrossFire mode. It also features a USB port that can be used to attach a TV tuner card or a Blu-ray drive, and it



Fujitsu-Siemens Amilo GraphicsBooster will use ATI's XGP technology.

offers DVI and HDMI outputs. It can be used to power up to four displays.

Asus has created a similar solution with its ROG XG Station, which uses a card based on nVidia's GeForce 8600GT desktop GPU and connects to a laptop via an

Express Card connector. It also packs audio features from Dolby Laboratories, including Dolby Virtual Speaker, which simulates surround-sound audio from a laptop's pair of built-in speakers. The ROG XG

Station comes with four USB ports and a built-in LED display to let you monitor the graphics card's clock speed, temperature, and fan speeds.

At press time, pricing and availability

of XGP products had not been announced, though Fujitsu-Siemens plans to use the technology in its Amilo GraphicsBooster product.

Asus has also not yet announced the ROG XG Station's price and release date.

—Josh Norem & Sean Portnoy

### STATS

How much do we spend on ink?

**6 billion**

The amount, in dollars, that consumers spend on ink every year

**42%**

Percentage of HP's \$2.63 billion total operating profit derived from its ink business in late 2007

**30%**

Percentage of money parents spend on ink during back-to-school shopping

**1 milliliter**

Ink costs more per milliliter than luxury items such as champagne and perfume, as well as gasoline.

—Source: American Consumer Institute, Kodak, MSNBC

## nVidia's Tegra Mobile Processor to Compete with Intel Atom

NVIDIA IS ENTERING the race to bring a more PC-like experience to mobile computing.

The graphics company claims its new processor, the Tegra 650, is the world's first single-chip processor capable of providing rich multimedia features on mobile devices.

The Tegra processors, with their computer-on-a-chip build, are as small as a dime. Each will feature a GeForce GPU, HD video processor, system memory, audio processor, and a CPU. nVidia says the 650 is 10 times more efficient than other current products, able to play 130 hours of audio or 30 hours of high-

definition (HD) video on one battery charge.

The Tegra 650 is the second product in the Tegra line, the first being the nVidia Tegra APX 2500 processor, released a few months ago. The Tegra 650 ups the ante, though, by including HD image processing; optimized hardware support for Web 2.0 applications; display support for 1080p-capable screens; direct support for Wi-Fi, disk drives, key-

boards, mice and other peripherals; and, of course, that impressive battery life and low power draw.

nVidia plans to have the Tegra 650 in devices by the end of the year.

Tegra could prove stiff competition for Intel's new Atom chips, which Intel hoped would define the mobile computing market. The Tegra

and the new VIA Nano platforms are looking to fill the same role.

—Jonathan Rougeot



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## Cable Companies Test Bandwidth Access Limits

COMCAST HAS RECENTLY begun testing a new way to deal with shrinking bandwidth: slowing usage, during peak times, for the heaviest Internet users.

The tests will be first conducted in Chambersburg, Pa., and Warrenton, Va., and later in Colorado Springs, Colo. They will run in each market for a month as the company tries to find the best way to manage its network.

Comcast developed the plan after coming under scrutiny for slowing down peer-to-peer (P2P) traffic on its network because, it said,

file-sharing was using too much bandwidth and causing a slowdown for other customers. In March, however, Comcast announced



it would stop targeting specific file-sharing applications by the end of 2008. Instead, it will find heavy users at high-traffic times and slow their Internet access until the network is less congested.

Time Warner Cable is also fighting network congestion by measuring the Internet usage of new subscribers in Beaumont,

Tex. Subscribers can choose from packages in which they can pay \$29.95 per month for service at 768Kbps,

with a 5GB monthly cap, or \$54.90 per month for service at 15Mbps, with a 40GB cap. The cable company will charge users \$1 a gigabyte for usage that exceeds the monthly allowance.

—Jonathan Rougeot

## The End May Be Near for TV Set-Top Boxes

FUTURE SONY televisions with built-in cable capabilities may spell the beginning of the end for set-top cable boxes.

The electronics giant and the National Cable and Telecommunications Association recently struck a deal that will allow home viewers with the still-unnamed Sony TV sets to ditch their cable boxes while still receiving advanced cable services such as on-demand and pay-per-view.

The agreement could lead to many new interactive services, such as personalized programming guides, customized news and sports tickers, live on-screen chats, and increased on-demand choices. Customers will still be able to attach their own devices, such as digital video re-

orders, to the Sony sets.

The deal involves the country's six largest cable companies: Bright House Networks, Cablevision Systems,

Charter Communications, Comcast,



CableCard

Cox Communications, and Time Warner Cable. The companies serve more than 82 percent of cable subscribers in the United States.

In 1996, the cable industry was ordered by Con-

gress to allow electronics companies to compete for cable boxes, the result of which was the CableCard. The cards are provided by a cable company and then inserted into competing boxes to unscramble the cable signal; TV sets currently can only receive a signal from a cable company, but not vice versa. The cards have proved unreliable and unpopular.

The new TV sets will still require CableCards, but technical problems are expected to be eliminated, and two-way services will be available using the cable industry's tru2way technology.

Although Sony has agreed to start producing the new televisions as soon as possible, the company has not committed to a time frame in which the sets will be available in stores. —J.R.

## Intel, SanDisk Introduce Cheaper SSDs

In the laptop market, solid-state drives (SSD) have primarily been available as costly options for ultraportables like the Apple MacBook Air or the Lenovo ThinkPad X300. Now, Intel and SanDisk are looking to bring the components downstream to the emerging category of tiny budget notebooks like the Asus Eee PC.

Both Intel's Z-P230 and SanDisk's pSSD drives will be offered to notebook makers in 4GB, 8GB, and 16GB capacities. The pSSD drives are expected to become available in August, while 4GB and 8GB Z-P330s should emerge in the third quarter of 2008. The 16GB Z-P230 is expected to ship in the fourth quarter of 2008.

Though the storage capacities of Intel and SanDisk's SSDs are meager compared to laptop hard drives, they provide a few key advantages. The drives are smaller and lighter than hard drives, making them (literally) the perfect fit for notebooks designed for maximum portability. They also consume less power, which can help extend battery life. And because they don't use any moving parts, SSDs won't skip or suffer damage from a drop like laptop hard drives can.

According to market research firm Gartner, low-cost notebooks with SSDs will account for 33 million units sold by 2012.

—Sean Portnoy



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## NEW PRODUCTS PCs

BY SERGUEI SERVIANOV



### Computing the breeze

Budget ultraportables have been booming this year, and now it's MSI's turn to get in on the action. The **MSI Wind** is a business notebook available for both Linux (\$399) and Windows (\$499). You get mostly the same components in each model: A 1.33GHz Intel Atom processor, a 10-inch display, an 80GB 2.5-inch SATA hard drive, 802.11b/g Wi-Fi, and a 1.3-megapixel Webcam. Battery life and memory vary between models, but each weighs less than three pounds—perfect for slipping into your briefcase. MSI Computer, [www.msimobile.com](http://www.msimobile.com)

### Ready for attack

Think Acer is just known for its budget systems? Think again. The company's new **Predator** will be the flagship system in its new Aspire G line of gaming desktops and notebooks. Pricing wasn't available at press time, though the specs and the design—which resembles an intergalactic battleship—offer lots to gawk at: Intel Core 2 Extreme and Core 2 Quad processors, up to 8GB of RAM, and an nVidia nForce 780i SLI motherboard primed to run 3-Way SLI with the most powerful of new nVidia graphics cards. Acer, [us.acer.com](http://us.acer.com)



### Mini Avenger

If you're looking for a notebook that doesn't sacrifice performance for the sake of portability, check out Hypersonic's **Avenger AG2**. It's small—the display measures only 12.1 inches—but it packs a big punch with the latest Intel Core 2 Duo processors, up to 4GB of RAM, and as much as 250GB of hard drive space. The Avenger, which starts at \$1,239, also comes in a variety of vibrant colors, so wherever you take it, you'll be sure to arrive in style. Hypersonic PC Systems, [www.hypersonic-pc.com](http://www.hypersonic-pc.com)



For more new PC coverage, go to [computershopper.com/new-systems](http://computershopper.com/new-systems)





### Personal touch

HP is aiming to revolutionize touch-screen computing once again with the **TouchSmart IQ500** series, its expansion of the living-room-friendly TouchSmart line. The eye-catching all-in-one units, which start at \$1,299, feature 22-inch high-definition displays operable either by touch (through a special HP software interface), or with the included wireless keyboard and mouse in Windows Vista. Intel processors, 4GB of RAM, 320GB of hard drive space, and integrated Wi-Fi and Bluetooth may give these systems legs, but you should really let your fingers do the walking. *Hewlett-Packard, [www.hp.com](http://www.hp.com)*

### Slim, fast

At just 2.5 pounds, Toshiba's sleek new **Portégé R500-S5007V** won't weigh you down on the road. But this 12.1-inch notebook is no lightweight: Powered by a 1.33GHz Core 2 Duo processor, it has 2GB of RAM and a 128GB solid-state drive for safe and efficient storage. Built-in 802.11a/g/n Wi-Fi, Bluetooth 2.0, and a double-layer DVD±RW optical drive will help you stay productive on the road. The price: \$2,999. *Toshiba, [www.toshiba.com](http://www.toshiba.com)*



### Shuttle blasts off again

Shuttle launched its KPC (short for Korporate Perfect Cube) line of cheap, Linux-powered small-form-factor desktops earlier this year, and the new **KPC K58** offers more of the same. This time, however, the unit is shipping with a new Intel Atom processor. (Shuttle offers the KPC K48 as a bare-bones unit.) Part of Shuttle's line of low-power-consumption units — the K58 runs at just 55 watts when in use — the PC also comes with "MyKover" swappable front panels. Pricing was not available at press time, though you can expect the K58 to cost well-under \$500. *Shuttle Computer Group, [us.shuttle.com](http://us.shuttle.com)*



BY ERIN KANDEL

### Stone player

Striking in its simplicity, the \$39.99 **Samsung S2 Pebble** music player looks like a rounded, polished stone—and a colorful one at that. Available in five colors, the 1GB device offers MP3, WMA, and OGG file playback and includes support for a mobile playlist. All controls are located on its back face, and a hidden LED along the bottom edge flashes in different colors and patterns to indicate your selected playback mode and EQ setting. *Samsung, [www.samsung.com](http://www.samsung.com)*



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## Retro cans

Your cell phone may be fashion forward, but the \$52 **Boosted Stiloso** headset looks decidedly last century with its tan leather headband and shiny, bulbous ear cups. We dig the vintage styling, especially when it's accompanied with useful features like an answer/end call button, in-line microphone, and iPhone-compatible jack adapter that make hands-free calling a cinch.

Boost Mobile Worldwide, [www.boostedmobile.com](http://www.boostedmobile.com)



## Triangular speaker

While other manufacturers churn out rectangular and cylindrical speakers, Bang & Olufsen has gone for a completely different shape: the triangle. Once it's mounted under a flat-screen television, the **BeoLab 10** uses its proprietary Acoustic Lens Technology and twin amplifiers to disperse 180-degree sound. No pricing has been set yet, but given B&O's reputation, this unique-looking speaker will likely cost a small fortune.

Bang & Olufsen, [www.bang-olufsen.com](http://www.bang-olufsen.com)



## Color drive

Making a good-looking hard drive is no easy feat, but SimpleTech has pulled it off with its **Signature Mini Portable USB 2.0** series of bite-size external drives. Designed by Italian sports-car maker Pininfarina, the drives are available in seven colors and four capacities—120GB, 160GB, 250GB, and 320GB. Plus, they come with both local and online backup options to keep your data safe.

SimpleTech, [www.simpletech.com](http://www.simpletech.com)



## Bjorn bag

Made from lightweight neoprene and breathable air mesh, BuiltNY's ultraslim **Laptop Backpack** comes in two sizes (medium and large) and three colors, including this funky wood-grain pattern. The main compartment of this \$80 pack accommodates and protects laptops up to 17 inches, with room to spare for books, folders, or other essentials. BuiltNY, [www.builtny.com](http://www.builtny.com)

## Geo phone

The **Sony Ericsson Z555** has diamonds, and lots of them. The \$179.99 clamshell phone will draw you in with its striking geometric design, but it's more than just a pretty face. The handset comes with a rich feature set that includes the company's handy Gesture Control technology: When a call comes in, simply sweeping your hand over the phone will mute the ringtone. Sony Ericsson, [www.sonyericsson.com](http://www.sonyericsson.com)



# REVIEWS

THE LATEST HARDWARE AND SOFTWARE PRODUCTS

## Acer Aspire 8920G

18.4-inch laptop will turn heads with its stellar display

THE \$2,599 ACER ASPIRE 8920G is a snappy-looking desktop-replacement notebook that features one of the nicest displays we've seen. Its high-end Penryn processor will handle anything you throw at it, although serious gamers will likely require more 3D muscle.

Decorated in an attractive, dark blue metallic finish, the centerpiece of the 9-pound Aspire 8920G is its beautiful 18.4-inch glossy wide-screen TFT, which can display 90 percent of the color gamut. The result is an exceptional picture with deep, rich colors and excellent viewing angles. Even better, the display has a native resolution of 1,920x1,080 pixels and an aspect ratio

of 16-to-9, so you can view high-definition (HD) movies in their native format, without having to deal with black bars or stretched images. Using the built-in Blu-ray optical drive, we were blown away by the image quality, especially when it came to skin-tone accuracy and color reproduction. Complementing the HD screen is Acer's CineSurround sound system, which provided true six-channel sound that's among the best we've heard from a notebook-size system. The 8920's full-size



EDITORS' RATING **8.5**



**PROS** Solid productivity, performance; brilliant HD display; sleek design

**CONS** Average 3D-gaming performance; lacks TV tuner; CineDash console can be tricky to use

**SPECS** 2.6GHz Core 2 Duo T9500; 4GB DDR2; 320GB hard drive; Blu-ray burner/DVD±RW; 18.4-inch TFT; nVidia GeForce Go 9650 GS (512MB); Windows Vista Ultimate

Acer, 800-733-2237  
us.acer.com

Mfr. Est. Price **\$2,599**

black keyboard is responsive and comfortable, but the real eye-catcher is the CineDash media player console, which contains white-backlit, touch-sensitive media controls and a dial that raises and lowers the speaker volume. (We found the latter a bit difficult to master.)

As for connectivity, the system has both VGA and HDMI video outputs, but FireWire and S-Video connections are nowhere to be found. Even more glaring is the absence of a TV tuner, an odd omission, considering the 8920G is billed as an entertainment system. With its 2.6GHz Core 2 Duo T9500 processor, 4GB of RAM, and a dedicated 512MB nVidia GeForce 9650 GS graphics card, the system performed well on our productivity and multimedia benchmark tests. Gaming performance wasn't as

stellar—we managed just 23.8 frames per second (fps) on Company of Heroes at the 8920G's native resolution. While that isn't good news for hardcore fraggers, this system should satisfy casual gamers. —John R. Delaney

### What's the Deal?

The 18.4-inch Acer Aspire 8920G is a real head-turner that will dominate your media collection, even if it is lacking some entertainment features and gaming prowess.

**What it's for:** This 9-pound desktop-replacement notebook can handle just about any media or productivity chore with ease. It's fine for casual gaming, too, though enthusiast gamers will want to look elsewhere.

**Who it's for:** Users who want a stay-at-home system that's built for showcasing HD movies, playing music, rendering video, and other media-intensive tasks.

**What's included:** 2.6GHz Core 2 Duo T9500 CPU; 4GB of RAM; 320GB hard drive; Blu-ray burner; 18.4-inch TFT; Acer's CineSurround sound system; touch-sensitive media buttons; HDMI out.

**The bottom line:** Though it's missing a few entertainment options, the big, brawny, and beautiful Aspire 8902G is still one of the hottest multimedia notebooks around.



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# Intel Core 2 Duo E8400

Excellent midrange CPU primed for overclocking

**EDITORS' RATING** 8.5



**PROS** Inexpensive; large cache; runs cool; highly overclockable

**CONS** Slower than quad-core CPUs in apps that can use more than two cores

Intel, 408-765-8080  
www.intel.com

**Direct Price** \$183

WHEN A NEW \$999 quad-core processor hits the market and sets benchmark records, it's front-page news, but it's just as exciting when you get first-rate performance for a fifth of that price. With a clock speed of 3GHz, 6MB of L2 cache, SSE 4.1 instructions, and impressive overclockability, Intel's Core 2 Duo E8400 leaves last year's top-of-the-line processors in the dust—and yet this "midrange" chip costs under \$200.

The E8400 is based on Intel's 45-nanometer (nm) process. This Socket 775 chip runs on a 1,333MHz system bus, so you'll need a motherboard with a recent chipset, such as the Intel P35 or X38, though you can also use them with nVidia nForce 680 boards, as well as newer 780 and 790 boards.

The chip's performance is excellent. In tests that don't take advantage of more

than two cores, the E8400 bested a quad-core QX9650, though applications that can use more than two cores didn't fare as well, of course. Still, only a small percentage of today's applications currently take advantage of more than two cores.

The E8400 has lots of overclocking headroom. Using a Thermalright 120 Ultra Extreme CPU cooler with a 120mm fan and an Asus P5E3 Premium motherboard, we were able to easily take the chip to 4GHz and run our full suite of benchmark tests. Even overclocked, the CPU peaked at a temperature of 44 degrees Celsius at full load—and the E8400 proved a real speed demon in tasks like iTunes conversion and MPEG-2 encoding.

As far as gaming goes, the majority of today's games rely more on graphics-card performance than CPU speed. Except for the very few games that can take advantage of more than two cores (such as Microsoft Flight Simulator X and Supreme Commander), the E8400 should provide as good a basis for running today's most demanding games as a more expensive quad-core chip.

Intel does have a faster Core 2 Duo chip—the 3.16GHz E8500—but this \$266 chip adds a large price premium for a mere 166MHz of additional speed. Overall, the Core 2 Duo E8400 is an impressive value. —Denny Atkin

Intel's Core 2 Duo E8400 leaves last year's top-of-the-line processors in the dust—and costs under \$200.



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## Gateway FX541XT

Moderately powerful desktop is also an earful

GATEWAY'S FX541XT has much in common with its predecessor, the FX540XT: While it's a fine performer with DX9 titles, it's best avoided if you're playing DX10 games at high resolutions. Still, the FX541XT has a great component lineup, even if it sounds

**EDITORS' RATING** 7.9



**PROS** Terrific DX9 gaming performance; includes Blu-ray/HD DVD combo optical drive

**CONS** Frustratingly loud, even when idle; poor DirectX 10 performance at highest resolutions

**SPECS** 3GHz Core 2 Extreme QX6850 (overclocked to 3.66GHz); 4GB DDR2; two 750GB hard drives (RAID Level 0); Blu-ray/HD DVD combo reader/double-layer DVD±RW; no monitor; two nVidia GeForce 8800 GT cards (512MB, SLI); Windows Vista Home Premium

Gateway, 800-369-1409  
www.gateway.com

**Direct Price \$3,499**

like Cape Canaveral during a space-shuttle launch. Plus, the three major differences between the models are nothing to sneeze at.

First is price. Coming in at \$3,499, the FX541XT is a slightly better bargain, despite having nearly identical specifications, such as a 3GHz Core 2 Extreme QX6850 processor (overclocked to 3.66GHz), 4GB of DDR2 RAM, the ever-handy Blu-ray/HD DVD combo optical drive (which also burns conventional DVDs), and Windows Vista Home Premium. Also included is the second major upgrade: a total of 1.5 terabytes of



hard drive space, spread across two 750GB drives in a RAID Level 0 configuration. Already, you have a lot more room for storing applications, music, and photos, as well as any TV programs you've recorded using the included TV tuner.

The third big change is probably the most significant: the graphics cards. Gateway has ditched the previous pair of 768MB nVidia GeForce 8800 GTX cards in favor of two 512MB GeForce 8800 GT cards in a Scalable Link Interface (SLI) configuration, offering more speed—at least in some respects—for less money.

Although you'll get better DX9 performance, you'll also wind up with worse DX10 performance at extreme resolutions, which is a downer if you go nuts over the latest gaming titles. Because of the reduced price and the bumped-up feature set, however, we still recommend the FX541XT, albeit with a pair of earplugs to drown out its distractingly loud running noise—even when it's idle. —Matthew Murray

## iBuypower Gamer Paladin 795-CX

A powerful gaming investment—for today only

IBUYPOWER'S GAMER PALADIN 795-CX is the first system we've tested that uses two dual-GPU ATI Radeon HD 3870 X2 cards in a CrossFireX configuration, which means it's powered by the equivalent of four high-caliber graphics chips. We expected it to be pretty terrific, but we weren't prepared for it to be quite so powerful—or be available for a refreshingly un-extreme price of \$2,999.

iBuypower has stuffed it with plenty of potent technologies: a 3GHz Core 2 Extreme QX9650 Intel Penryn processor (overclocked to 3.6GHz), 2GB of DDR2 RAM (which remains a must for Windows Vista Home Premium), a 150GB hard drive for programs, a 750GB drive for storage, a Blu-ray/HD DVD combo optical drive, and



a more mundane DVD±RW drive. Also included are an eight-channel sound card and a TV-tuner card.

The Gamer Paladin 795-CX returned record results in our DirectX 9 (DX9) 3DMark06 benchmark and excellent numbers in the newer, DX10 3DMark Vantage. Performance in actual games

was likewise exceptional, particularly in DX9 titles, but lost ground with DX10 at high resolutions. This means the system isn't quite future-proof, so serious gamers might not be satisfied with its performance for long. Also, because the motherboard uses DDR2 RAM, there's no chance of the extra performance boost (and insurance against obsolescence) that newer, faster DDR3 RAM would provide. —M.M.

**EDITORS' RATING** 8.5



**PROS** Generally superb gaming performance

**CONS** Doesn't support bleeding-edge DDR3 RAM; DX10 frame rates poor at high resolutions

**SPECS** 3GHz Core 2 Extreme QX9650 (overclocked to 3.6GHz); 2GB DDR2; 150GB hard drive; 750GB hard drive; Blu-ray/HD DVD dual-read combo; DVD±RW; no monitor; dual ATI Radeon HD 3870 X2 (512MB, CrossFireX); Windows Vista Home Premium

iBuypower, 888-462-3899  
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## Dell Vostro 410

Performance-oriented, service-rich desktop

WE CAN APPRECIATE Dell wanting to devote one of its product lines to small- or home-business users, but let's face it: Sometimes you need power at work, too. And with the \$1,508 performance-oriented Vostro 410, Dell is making it easier to get it.

The Vostro 410 is a few inches taller than the 200 we reviewed last year, allowing for more future potential. There are now a total of three front-accessible 5.25-inch and six internal 3.5-inch drive bays free. (A double-layer DVD±RW drive, a multiformat memory-card reader, and a 320GB hard drive occupy the remaining slots.) The case is also roomier to work in, which is

**EDITORS' RATING** **8.4**

0 BETTER >> 10

**PROS** Increased expandability; good overall performance; ample support, services included

**CONS** Slot-based expansion marginal at best

**SPECS** 2.5GHz Core 2 Quad Q9300; 2GB DDR2; 320GB hard drive; double-layer DVD±RW; no monitor; nVidia GeForce 8800 GT (512MB); Windows Vista Business

Dell, 800-915-3355  
www.dell.com

**Direct Price \$1,508**

another plus. You don't get much in the way of interesting expansion slots, however—two PCI Express x1 and three regular PCI slots are it. The primary components affecting performance have been given a jolt, as well. You still get 2GB DDR2 of RAM, but the 2.5GHz Core 2 Quad Q9300 processor and nVidia GeForce 8800 GT graphics card will help boost almost every application. (Including, yes, games, which you shouldn't be playing when you're supposed to be working.)

But the support and service packages Dell throws in are where it's at for the Vostro: Among them are Dell ProSupport, around-the-clock help for those without IT staff (or technical expertise); the DellConnect remote troubleshooting and repair system; Dell Automated PC TuneUp, for keeping the system in top working order; one year of 10GB Dell DataSafe Online backup; the Dell Network Assistant, for demystifying the networking-setup process; and the Dell Support Center desktop-based reference tool. —Matthew Murray

## Alienware Area-51 7500

Outer-space style at a down-to-earth price

THE NEW VERSION of Alienware's Area-51 7500 desktop, which rings in at a "mere" \$1,499, isn't just a good deal by the high (and expensive) standards of Alienware—it's a good deal, period.

Admittedly, you don't get every perk you do with the company's more expensive machines. But you get what matters most: good performance for the money. The Area-51 7500 came out well-ahead of other systems we've recently seen in the same general price range, turning in some flat-out great results in our DirectX 9 (DX9) gaming tests.

(In our DX10 tests at high resolutions, the numbers slacked off a bit.)

The Alienware does so well by virtue of the now-ubiquitous 512MB GeForce 8800 GT graphics card, which just about every manufacturer has discovered as a way to pack a tremendous, inexpensive punch. There are two of them here, set up in a Scalable Link Interface (SLI) configuration. The other components are somewhat more mundane, including the 2.66GHz Intel Core 2 Duo E8200 processor, which is

decidedly middle-tier (and responsible for the merely acceptable results in our productivity benchmark tests), and a hard drive with 250GB of space—adequate, but not much more. At least you get 2GB of DDR2 RAM, which you need for smooth Windows Vista performance. Integrated eight-channel audio is also provided for a surround-sound experience.

These are nice additions, to be sure, but when you get a good computer at a very good price, as you do with the Area-51 7500, there's not much of a blow that needs to be cushioned.

—M.M.

**EDITORS' RATING** **7.5**

0 BETTER >> 10

**PROS** Excellent gaming performance for the price; stylish design

**CONS** Lacks the all-around polish of more expensive Alienware systems; unexciting processor; smallish hard drive

**SPECS** 2.66GHz Core 2 Duo E8200; 2GB DDR2; 250GB hard drive; double-layer DVD±RW; no monitor; two nVidia GeForce 8800 GT cards (512MB, SLI); Windows Vista Home Premium

Alienware, 800-254-3692  
www.alienware.com

**Direct Price \$1,499**



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## Dell Vostro 1310

A solid business laptop for frequent travelers

DELL'S \$1,416 VOSTRO 1310 offers a business-friendly mix of features, dedicated tech support, and handy utilities—with no preloaded trialware. We just wish it were a touch more portable.

Built around a 13.3-inch screen, the 4.8-pound Vostro 1310 is smaller than Dell's 14.1-inch and 15.4-inch Vostro models, but it's bulkier than other 13.3-inch models we've seen. We do like, however, the look of the notebook's subdued, black metallic chassis.

**EDITORS' RATING** 8.0



**PROS** Solid performance; subtle good looks; bright, sharp screen; no trialware

**CONS** Not as compact as other 13.3-inch notebooks; terrible sound quality from built-in speaker; no modem jack; no mute button

**SPECS** 2.1GHz Core 2 Duo T8100; 2GB DDR2; 160GB hard drive; DVD±RW; 13.3-inch TFT; nVidia GeForce 8400M GS (128MB); Windows Vista Business

Dell, 800-999-3355  
www.dell.com

**Direct Price \$1,416**

The Vostro 1310 has touch-sensitive multimedia control and volume buttons—rare on a business notebook. Oddly, however, there's no mute button. Not that it matters much, since the monaural speaker is tinny and muffled. The screen, on the other hand, is a winner: bright and crisp. Dell has included the ports you would expect in a business notebook, save for one you might need on the road: a modem jack.

Beyond the hardware, the Vostro line is just as much about the software. We like the inclusion of 10GB of



online storage via Dell's DataSafe Online backup-and-recovery service, as well as a one-year subscription to Dell Automated PC TuneUp. Refreshingly absent is all the 30-day trial software many PCs are laden with.

Performance is solidly above average for a mid-price business notebook, though as we expected, the Vostro 1310's 3D capabilities won't thrill gamers. The system lasted a decent 2 hours and 15 minutes on our DVD-rundown test. —Jamie Bsales



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## Asus Eee PC 900

Budget model has bigger screen, higher price than predecessor

THE ASUS EEE PC 900 offers a larger screen and more storage space than its predecessor, the Eee PC 4G, but you'll have to pay more for a few of the same trade-offs.

At first blush, the Eee PC 900 looks identical to the 4G. It features the same pearly white plastic case, and, at 8.9x6.7x1.3 inches and 2.2 pounds, the chassis is only marginally larger and a few ounces heavier. To accommodate the bigger 8.9-inch screen, Asus moved the two speaker grilles, which framed the display on the 7-inch model, to the front edge of the Eee PC 900. The company also boosted the screen resolution from 800x480 to 1,024x600, and the Eee PC 900 features a larger touch pad that supports gesture controls. Unfortunately, Asus stuck the laptop with the same cramped 8-inch keyboard we saw on the 4G.

The Eee PC 900 is available in Windows XP and Xandros Linux flavors (our evaluation unit featured the latter),



and both models have 1GB of RAM and more onboard storage: The \$599 XP version has a 12GB solid-state drive (SSD), while the \$549 Linux version gets a 20GB SSD. Processing power is still limited to the same 900MHz Celeron processor, another component we hoped Asus would pump up. Still, for basic Web surfing and productivity work, the Eee PC's underpowered CPU delivers just enough oomph—as long as you keep your expectations in check.

As for battery life, we eked out 3 hours and 30 minutes while writing using OpenOffice.org (with Wi-Fi and the speaker disabled). —Erin Kandel

**EDITORS' RATING** 7.6



**PROS** Larger screen with higher resolution, more storage space, RAM than previous model; available with Windows XP, Linux; small, light, inexpensive

**CONS** Cramped keyboard; low-end CPU hasn't changed; costs more than original model; XP version has less storage space

**SPECS** 900MHz Celeron CPU; 1GB DDR2; 20GB solid-state drive; no optical drive; 8.9-inch TFT; integrated graphics; Xandros Linux

AsusTek Computer, 888-678-3688  
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## Toshiba Satellite A305-S6845

Midrange laptop is ready to game

IF PORTABILITY ISN'T KEY, the \$1,399 Toshiba Satellite A305-S6845 is a jack-of-all-trades laptop that can accommodate mainstream users' needs. It can even handle gaming, thanks to ATI's latest mobile GPU.

The notebook's sleek, futuristic design truly stands out: Our eyes were drawn to the reflective, gunmetal-gray case. Of course, all this shininess comes with a price—the unit smudges all too easily. The notebook's bright 15.4-inch display, which runs at a native resolution of 1,280x800 (meaning it supports high-def playback at 720p), is certainly pleasant on the eyes. It never gets distracting when you're watching a film with the machine's DVD±RW drive, which features Labelflash disc-labeling technology. What's more, the system's Harman Kardon speakers deliver heavy, bassy audio. Also

noteworthy for a laptop in this price range is the inclusion of a pair of 200GB hard drives instead of a single drive. The A305-S6845 comes with a standard array of connectivity options, including HDMI output and 802.11n Wi-Fi, but no Bluetooth. The system blasted through our multimedia benchmark tests, and its nine-cell battery (a \$149.99 add-on) lasted 2 hours and 30 minutes in our demanding DVD-rundown test. We can't imagine wanting to carry this system around much, however: It was difficult to fit into a stan-

standard laptop bag, and its 6.5-pound weight gets heavy fast.

The A305-S6845 delivered good scores on our productivity benchmark tests, and, thanks to ATI's new 512MB Mobility Radeon 3650 GPU, it offered impressive gaming performance for its price. One caveat: Because the GPU is located right below the touch pad, the GPU can make the pad uncomfortably hot.

—Serguei Servianov



**PROS** Good performance for the price; large, bright screen; sleek design

**CONS** Smudges easily; touch pad gets hot; somewhat bulky; no built-in Bluetooth

**SPECS** 2.1GHz Core 2 Duo T8100; 3GB DDR2; two 200GB hard drives; DVD±RW; 15.4-inch TFT; ATI Mobility Radeon HD 3650 (512MB); Windows Vista Home Premium

Toshiba America, 800-915-1849  
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**Direct Price \$1,399**

## Gateway M-1626

Budget model looks good, but performance lags

THE \$849.99 GATEWAY M-1626 offers a sleek design and good features for a low price, but performance issues put it behind other notebooks in its class.

The retail-only M-1626 looks rather dapper with its metallic case and 15.4-inch glossy screen, which is clear and appropriately bright. We're also enamored with the softy, springy keyboard. The system's built-in speakers, however, are on the weak side.

Examining the sides of the case, you'll find a good selection of ports, slots, and jacks for a budget system, including three USB 2.0 ports and an HDMI output. You also get an on/off switch for the 802.11b/g Wi-Fi radio and a Kensington lock slot. The only notable omission is a FireWire jack.

Considering that the M-1626's specs—4GB of RAM, 2GHz AMD Turion 64 X2 TL-60 CPU and discrete

graphics—are slightly above those of other budget notebooks, its scores on our benchmark tests were on the disappointing side. (3D performance was especially poor.) That said, like most low-cost laptops, the M-1626 should handle basic productivity and media tasks with ease. What's more, its 250GB hard drive offers plenty of storage space.

**EDITORS' RATING** 7.1

0 BETTER >> 10

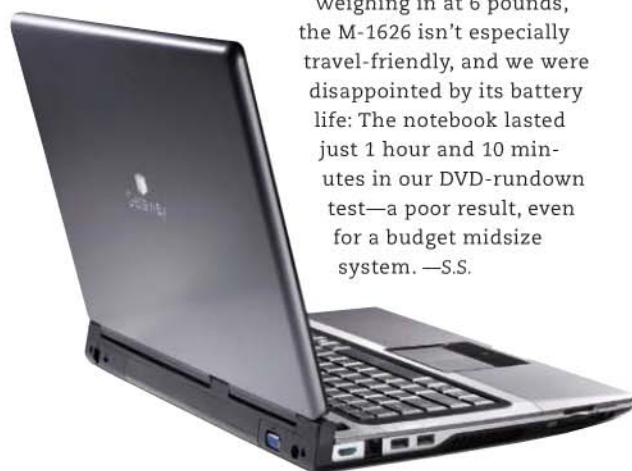
**PROS** Sleek design; comfortable keyboard; low price; HDMI port

**CONS** Average performance; poor battery life, speakers; lackluster 3D performance

**SPECS** 2GHz Turion 64 X2 TL-60; 4GB DDR2; 250GB hard drive; DVD±RW; 15.4-inch TFT; ATI Radeon X1270 (256MB); Windows Vista Home Premium

Gateway, 866-380-7353  
www.gateway.com

**Mfr. Est. Price \$849.99**



Weighing in at 6 pounds, the M-1626 isn't especially travel-friendly, and we were disappointed by its battery life: The notebook lasted just 1 hour and 10 minutes in our DVD-rundown test—a poor result, even for a budget midsize system. —S.S.

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## Asus U2E

Tiny system is slow but stylish

A FASHION-FORWARD ULTRAPORTABLE with middling performance, the \$1,999 Asus U2E is a real head-turner. It's a great choice—as long as speed is not your primary concern.

Measuring just 10.9x 7.6x1 inches—including a built-in optical drive and three-cell battery—the U2E's svelte design is highlighted by leather trim and brushed black aluminum.

**EDITORS' RATING** 7.5



**PROS** Great styling; includes two batteries, Bluetooth mouse, carrying case; built-in DVD burner

**CONS** Slow performance; three-cell battery life is abysmal; odd keyboard layout; screen is too reflective; bad off-angle viewing

**SPECS** 1.06GHz Core 2 Duo ULV U7500; 3GB DDR2; 120GB hard drive; DVD±RW; 11.1-inch TFT; integrated Intel GMA X3100 graphics; Windows Vista Business

AsusTek Computer, 888-678-3688  
usa.asus.com

Mfr. Est. Price **\$1,999**

Helping the U2E achieve its low 2.8-pound weight and tiny dimensions is an 11.1-inch LED-backlit screen. The glossy 1,366x766-resolution display is bright and produces vivid colors, but it suffers from too much glare and offers poor off-angle viewing.

Like all 11.1-inch laptops, the U2E's keyboard is cramped: Not only are the letter keys tiny, but the notebook also has some oddly positioned function keys. With practice, however, our fingers were able to adjust. The touch pad is

comfortable to use, as well. Plus, Asus includes a Bluetooth mouse and a carry case.

With its ultra-low-voltage processor and integrated graphics, the U2E certainly didn't break any records on our benchmarks tests, scoring lower than more-powerful ultraportables we've tested.

In our battery-life test, the U2E's three-cell battery lasted an abysmal 1 hour and 6 minutes; fortunately, the nine-cell battery Asus bundles with the machine more than tripled that time. But there's a drawback: The nine-cell battery protrudes about an inch from the rear of the notebook, adding significant bulk and weight to the system. —Shane McGlaun



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## Fujitsu LifeBook P8010

Ultraportable doesn't stand out from the crowd

FUJITSU'S \$2,009 LIFEBOOK P8010 ultraportable laptop delivers many nice features, as well as solid performance at a competitive price, but ultimately, it offers nothing to make it a premier machine.

Weighing in at 2.9 pounds, the P8010 manages to cram a 12.1-inch, 1,280x800-resolution display and an optical drive into a chassis that's smaller than a sheet of paper. Perhaps as a result of a misguided attempt at style, the P8010 features a hideous sparkly black top, which picks up fingerprints far too well. Instead of using a latch, Fujitsu designed the screen's hinge to stay closed through gravity, which makes the notebook impossible to open with one hand.

Inside, you'll find a decent-size touch pad with two buttons separated by a fingerprint sensor. We liked replacing our Windows login with a fingerprint, but the sensor's



size and placement shrink the P8010's touch-pad keys, making clicking more difficult. The 82-key keyboard is also cramped, although we do like that the system includes a set of customizable function buttons. The laptop also includes a Wi-Fi switch on its front edge; it's a useful addition, but its positioning makes it all too easy to disable the wireless adapter by accident.

Battery life on the P8010 was impressive: The notebook lasted 2 hours and 45 minutes on our punishing DVD-rundown test. The P8010's other benchmark scores proved that—while the system runs more than quickly enough to handle word processing and the like—it shouldn't be your first choice for gaming, or intensive video or audio rendering. —Eric B. Hanson

**EDITORS' RATING** 7.0



**PROS** Built-in optical drive; long battery life; fingerprint reader; keyboard function keys

**CONS** Cramped keyboard; opening lid requires two hands; Wi-Fi switch in front

**SPECS** 1.2GHz Core 2 Duo SL7100; 2GB DDR2; 120GB hard drive; DVD±RW; 12.1-inch TFT; integrated Intel GMA X3100 graphics; Windows Vista Business

Fujitsu Computer Systems  
800-831-3183  
www.fujitsu.com

Direct Price **\$2,009**



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## In Win Metal Suit GD

Full-featured midtower is tool-less and sound-less

IN WIN'S \$135 METAL SUIT GD is an impressive midtower chassis that supports both ATX and MicroATX form factors while offering features usually found on cases that cost much more.

Aside from a removable aluminum faceplate, the case is made from steel that's light enough to keep the weight down, without sacrificing rigidity. It contains four external 5.25-inch bays and two 3.5-inch bays.

The Metal Suit GD is mostly tool-less—you'll only need tools to install or remove the motherboard. The four internal case fans are wedged into plastic holders; you release them by pushing on tabs. Internal and external drives are installed

using tool-less rails, and PCI cards are secured using plastic tabs that lock into place with the push of a finger. You don't even have to install standoffs for the motherboard.

The rubber-and-plastic rails for securing drives are ingeniously designed to reduce noise output by absorbing vibration caused by spinning drives (there are enough for every drive bay).

The cooling system includes a side air duct and 120mm front intake and rear exhaust fans, both of which feature rubber sleeves (where they make contact with their frames) to reduce noise. The bottom of the case features a long plastic cover that holds two 80mm fans pointed at the PCI cards (though these fans would be blocked by an extra-long video card).

The front I/O ports, which include four USB 2.0, FireWire, and headphone and mic jacks, are difficult to access on the left side of the case. Also, the internal cable for the USB ports that plugs into the motherboard isn't a solid block, but instead a gaggle of four separate pins, so you'll have to consult the manual to ensure proper fitting. —Josh Norem

**EDITORS' RATING** 8.2



**PROS** Completely tool-less; great cooling; very easy to install, remove components; affordable

**CONS** Front ports are difficult to access; front USB headers are not single blocks

In Win, 909-348-0588  
www.in-win.us

**Direct Price \$135**



For our full version of these reviews, and more new component reviews, go to [computershopper.com/components](http://computershopper.com/components)

## CoolIT Pure

Quiet-running cooler good for midrange rigs

COOLIT'S \$134.99 PURE CPU COOLER is a pre-assembled, all-in-one liquid cooling kit that bolts onto your case and CPU in a few steps, making it a relatively easy way to upgrade your rig's cooling system. But while it's quiet and rather affordable, its performance isn't very different from a high-end heat-sink-and-fan combination.

The Pure works on all Intel LGA775 motherboards; AMD boards are also supported, but the instructions only mention Socket AM2 types. Motherboard removal is required for both platforms, which is unfortunate but rather common when installing a high-end cooler these days.

Once you've removed the motherboard, you'll have to install standoffs around the CPU socket with the included wrench and attach the Fluid Heat Exchanger (or waterblock) to the CPU. Then, remove your 120mm case fan and attach the cooler's

apparatus to your case using the four included screws (if your case has either an 80mm or 92mm fan, it won't work with this cooler), attach a four-pin Molex power connector to the unit to power the fan and pump, and you're done.

Most of the hour-long installation time was spent removing our motherboard; installing the cooler only took about 15 minutes, and the photo-filled manual was a great help. We were pleased with the Pure's low noise level and attractive appearance, but it didn't cool our Intel Core 2 Duo E6700 test processor much more than the stock Intel heat sink and fan could. (When idle, the CPU ran six degrees cooler; at full load, it was nine degrees.) The 120mm fan doesn't spin up at all as temperatures rise, which hurts cooling performance a bit, but keeps the Pure running whisper-quiet. —J.N.

**EDITORS' RATING** 6.8



**PROS** No-hassle liquid cooling; very quiet; low-maintenance

**CONS** Average performance; installation requires motherboard removal

CoolIT, 866-621-2665  
www.coolitsystems.com

**Direct Price \$134.99**



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# Antec Mini P180

Compact foundation for a powerful, expansive system



ANTEC'S \$129 MINI P180 is a stylish case that's a perfect start for building a quiet, compact computer that doesn't sacrifice expandability. Though it's designed to accommodate small MicroATX motherboards, it still has plenty of room for expansion cards and drives. And like the original full-size P180 case, it offers surprisingly quiet operation.

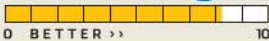
On the outside, the all-metal Mini P180 has a slick, flat-black appearance, with dark gray brushed-metal panels on the sides and front. Inside, the case is separated into two chambers to isolate the power supply and thereby reduce heat. The top chamber houses the motherboard, a cage for three vertically mounted 3.5-inch drives, and a 5.25-inch bay. The bottom chamber holds the power supply, along with a cage for two

horizontally mounted 3.5-inch drives; there's also room for a pair of 5.25-inch drives. The upper and lower drive cages can be removed if not needed. The bottom chamber has another feature gamers will appreciate: space for a full-size ATX power supply. For cooling, the Mini P180 has the top-mounted 200mm fan as well as a rear-mounted 120mm fan. You also get room for two optional front-mounted 120mm fans, but you'll have to remove one or both of the 3.5-inch drive cages to accommodate those. With the 200mm fan on low and the 120mm fan on medium, however, our system remained cool enough that we didn't see the need for the additional fans.

Best of all, the fans are nice and quiet.

The Mini P180 also includes rubber mounting grommets to reduce drive vibration, and the side panels are designed to further isolate interior sounds. Meanwhile, there's plenty of room behind the right-side panel to route cables behind the motherboard, increasing airflow and making for a neater-looking interior. —Denny Atkin

**EDITORS' RATING** 8.2



**PROS** Quiet; lots of expansion room; good cooling; solid construction

**CONS** Large for a MicroATX case; adding additional fans requires sacrificing drive bays

Antec, 800-222-6832  
www.antec.com

Mfr. Est. Price \$129

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# Shuttle XPC Prima SX48P2 Deluxe

Bare-bones unit is loaded with functionality and connectivity

THE SHUTTLE XPC PRIMA SX48P2 DELUXE'S support for the latest component technology and its above-average integrated extras make it a bare bones that's a solid starting platform for anything but an entertainment or gaming PC.

The small, all-aluminum enclosure houses a 450-watt power-supply unit, along with a motherboard based on the Intel X48 chipset, which accepts Intel CPUs with front-side bus speeds of up to 1,600MHz via its LGA775 socket. Up to 8GB of pricey DDR3 memory (running at up to 1,600MHz) is also supported. There's a custom CPU-cooling mechanism, though the case and PSU fans are noisy.

On the front panel, you'll find two USB ports, headphone and microphone jacks, and a fingerprint reader, as well as one 5.25-inch bay for an optical drive. Rear-panel connectivity includes six USB 2.0 ports, two external Serial ATA (eSATA) ports, two Gigabit Ethernet ports, and a bank of audio outputs (for eight-channel surround sound, Toslink digital output, and S/PDIF). Wireless connectivity



comprises 802.11b/g Wi-Fi and Bluetooth 2.0 modules.

There are two 3.5-inch trays for hard drives, and a 3.5-inch front-accessible bay suitable for a flash-card reader or third hard drive. But the SX48P2 falls seriously short on the expansion-card front:

You get just two PCI Express (PCIe) x16 slots (supporting ATI's CrossFireX technology), and you'll need one since onboard graphics are AWOL. But because the slots are squeezed tightly together, many card pairs simply won't fit.

We had no trouble assembling a test config in under 20 minutes, especially as cabling is conveniently prerouted. Our only quibble: The two hard drive trays can't accept IDE drives; they have cutaways for passing through cables, and they line up only with SATA-drive connectors. —John A. Burek

**EDITORS' RATING** 7.5



**PROS** Highly compact; prerouted cabling; supports 1,600MHz front-side bus; CrossFire support

**CONS** Requires pricey DDR3 memory; no onboard graphics; only two PCIe slots; tight spacing between slots; two of three hard drive bays can't accept IDE drives

Shuttle Computer Group  
888-972-1818  
us.shuttle.com

Mfr. Est. Price Not yet set



## HP Media Vault MV2120

### A great drive with a few small issues

THE HP MEDIA VAULT MV2120 is a multitasking network-attached-storage (NAS) drive that offers a wide range of storage, backup, and file-sharing options for networked PCs. It's easy to use, but we ran into several issues that soured our experience a smidge.

The Media Vault comes with a 500GB 7,200rpm hard drive and features a removable bay for adding a second Serial ATA (SATA) drive, which can either mirror the first drive or be added as extra storage. You can also plug in a USB drive to add it to the network or to copy the contents of the Media Vault to an external drive.

#### EDITORS' RATING 7.3



**PROS** Great backup features; can add second drive; provides remote access; Mac-, Linux-compatible file sharing

**CONS** Numerous issues with password-protected files; slow read times; can't automatically open router ports for remote access; no one-touch option for backups

Hewlett-Packard, 877-203-6108  
www.hp.com

**Direct Price \$299.99**

drive can also be accessed remotely. You get a remote-access domain for one year; it's \$9.99 a year after that. We had trouble opening the port on our router for Web access, however, and we also had major file-sharing problems with password-protected folders due to a Windows issue.

In our 10GB file-transfer test, the Media Vault showed decent write speeds, but much slower read speeds than we've seen with other NAS drives. —Josh Norem

In addition to simple file-sharing, the Media Vault also includes excellent backup capabilities. The backup software only runs on Windows XP and Vista, though file-sharing is supported for older versions of Windows, as well as Mac OS X and Linux-based systems. Backups are simple, but the unit lacks a one-touch restore option.

The Media Vault offers many administrative options related to file-sharing and folder access, and the

## Netgear HD/Gaming 5GHz Wireless-N Networking Kit

### Upgrade your network to Wireless N easily



NETGEAR'S PRICEY \$199.99 HD/Gaming 5GHz Wireless-N Networking Kit (WNDEB111) is a unique product, indeed. It includes two 5GHz Draft 802.11n access points/bridges—one plugs in to your existing router and serves as an access point, while the other plugs into an Xbox 360, set-top box, or other

#### EDITORS' RATING 8.4



**PROS** Includes two 5GHz 802.11n access points/bridges; relatively easy setup; excellent performance

**CONS** Setup routine needs polishing; expensive; port must be forwarded manually

Netgear, 408-907-8000  
www.netgear.com

**Mfr. Est. Price \$199.99**

media-streaming device elsewhere. You then have a high-speed wireless link between the two, plus a fancy new 5GHz wireless network broadcasting alongside your existing 802.11b/g network.

With its relatively easy setup and above-average performance, the networking kit is a simple way to add 5GHz 802.11n-based networking to your exist-

ing setup. We had to manually open a port on our router in order to stream media, but once we completed that step, we were able to stream video from our PC to our television with no hiccups or lag of any kind. Online gaming was equally fluid.

We tested the Draft N network for both file-transfer speeds and range using Netgear's RangeMax dual-band USB adapter (WNDA3100), and it performed extremely well in all tests. At 50 feet we were able to transfer a 100MB file in a mere 18 seconds, and our 500MB test file in 1 minute and 31 seconds—both times the fastest we've seen from a 5GHz access point. We were also able to stream video all the way out to 150 feet, which is also impressive. —J.N.



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## Logitech Squeezebox Duet

### Getting music off your PC just got easier

THE \$399.99 LOGITECH SQUEEZEBOX DUET system is a relatively affordable unit that utilizes wireless 802.11b/g Wi-Fi or wired Ethernet networking to stream music—from your PC or the Internet—over your home network. The Duet comprises a receiver box that connects to a set of speakers or a sound system, plus a wireless handheld controller that lets you activate the receiver, access music, and adjust settings. You can expand the system to different rooms of your house by adding extra receivers and controllers.

Setting up the Duet is easy, but it does require a multi-step process that might intimidate users who aren't networking savvy. To help the Controller locate your music, you pair it with a computer (Windows, Mac, or Linux) where your music library is stored. You can also use the controller to access Internet-based music services such as Rhapsody, as

well as Internet radio stations. One downside for those who have purchased music online, however: The Duet will only work with Digital Rights Management (DRM)-free music.

With a combination of a physical scroll wheel, function buttons, and a 2.4-inch color LCD, navigating the elegant menu system is similar to using Apple's iPod. The menu system is so intuitive that even non-iPod users will find it a breeze to

pick up. Our one gripe is that the Controller isn't responsive at times, and scrolling through the menus can be frustratingly slow.

Despite the inconveniences, the Duet worked extremely well. We also had no trouble streaming music, and calling up a song in our library was near instantaneous, which was much appreciated. —Les L. Shu

**EDITORS' RATING** **8.3**

0 BETTER >> 10

**PROS** Easy to set up, use; expandable; works with wide selection of music sources; Mac-, Windows-, Linux-compatible; elegant menu system

**CONS** Works only with non-DRM files; controller not terribly responsive; scrolling through menus is slow

Logitech, 800-231-7717  
www.logitech.com

**Direct Price \$399.99**

## Microsoft Wireless Laser Mouse 7000

Sleek, configurable, and rechargeable

WITH ITS \$69.95 WIRELESS LASER MOUSE 7000, Microsoft is out to show us that a mouse can be both an artistic statement and a decent pointing device.

The rechargeable 7000 has a fittingly futuristic look that makes it right at home when paired with the most progressive desktops. But the design comes at the cost of stability. The two thumb buttons on the mouse's left side are located well-above the natural position of the thumb, for instance.

**EDITORS' RATING** **7.2**

0 BETTER >> 10

**PROS** Rechargeable; attractive; all buttons are programmable

**CONS** Lightweight; intended for right-hand use only; oddly placed thumb buttons

Microsoft, 800-642-7676  
www.microsoft.com/hardware

**Mfr. Est. Price \$69.95**


Using the rear button requires you to pull your thumb back and up; this forces more weight onto the right side of the mouse, which makes it wobble whenever you use that button. Pressing the front thumb button, however, just requires raising the thumb, so it's less of a problem.

Unlike its predecessor, the 6000, the 7000 has a smaller, smoother wheel that greatly

improves vertical scrolling. The other axis is another matter: Although the wheel does move from side to side, it does so much more tightly. You also get an audible noise that makes it feel like you're clicking the wheel button, rather than navigating with it.

The mouse comes with Microsoft's IntelliPoint 6.2 software, which lets you adjust pointer style and options, scrolling and clicking sensitivity, and even button behavior. And, while we wish the scroll wheel and thumb buttons were more conveniently designed, the 7000 remains a mouse we like to use as much as we like to admire. —Matthew Murray



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## Samsung SyncMaster T220HD

### Monitor moonlights as television



THE ELEGANT \$449 SAMSUNG SYNCMASTER T220HD is a monitor that doubles as a television. Besides DVI and VGA connectors, this 22-inch LCD has two HDMI ports, component-video and coaxial inputs, and a built-in ATSC TV tuner. It is an excellent buy for consumers looking to purchase a small high-definition television for a bedroom or kitchen.

With a max resolution of 1,680x1,050 pixels, the T220HD can handle 720p high-definition (HD) content natively (though it will support 1080p). The rest of the specs include a 0.258 pixel pitch, a 5-millisecond response time, a brightness of 300 candelas per square meter, and a contrast ratio of 1,000-to-1 (dynamic contrast ratio at 10,000-to-1).

**EDITORS' RATING** 8.1



**PROS** Elegant design; good performance for most users; two HDMI ports; built-in HD TV tuner; impressive-sounding speakers

**CONS** VGA connection a bit weak; on-screen menus difficult to navigate using function buttons

Samsung, 800-726-7864  
www.samsung.com

Mfr. Est. Price \$449

The T220HD has built-in speakers that support Dolby Digital Surround, and they sound great. In keeping with its TV pedigree, the on-screen display is exactly the same as those used in Samsung's televisions. The menus are nicely designed and easy to understand, but navigating them is a chore unless



you use the included remote control.

In our DisplayMate tests, the T220HD did fairly well. It had a slightly weaker performance with a VGA connection during the color-scaling, high-contrast, and midrange-streaking tests. The digital connection yielded better results, except when reproducing extreme light blue in the color-scaling test. The T220HD won't please color purists, but most users will find the performance more than satisfactory. —Les L. Shu

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## Asus MK241H

### Good for gaming and fast-motion video

ALTHOUGH IT LACKS the multiple audio/video ports or TV tuner that would make it a true multimedia marvel, Asus' \$539 MK241H delivers very good performance as a monitor.

With a resolution of 1,920x1,200, the MK241H can handle 1080p high-definition content natively. The monitor also has a 0.27 pixel pitch, a brightness of 450 candelas per square meter, and a contrast ratio of 3,000-to-1. In addition to VGA and DVI, there's an HDMI connector.

Built into the display are speakers and a Webcam. Despite the Webcam's 1.3-megapixel resolution, video quality was subpar during a Skype call. The speakers suffered from too much bass, and had volume issues with certain apps.

In our DisplayMate tests, the VGA connection was weaker than DVI, as expected. We noticed quite a bit of video noise, and the



MK241H wasn't strong in the darkest end of the extreme gray-scale test. It had trouble with the extreme light pink, and it showed trails, streaks, and shadows in the high-contrast and midrange streaking tests. The MK241H

handled fonts well, however: We were able to read font sizes down to 5.3 points comfortably. Overall, the casual user should be fine using either type of connection, but we suggest going with DVI (or HDMI) if you can.

In our DVD test, colors looked a bit off with the VGA connection. We thought the blacks could be darker, though motion was perfectly fine. With the DVI connection, things improved with warmer, more accurate colors. The MK241H excelled in gaming. It exhibited little to no clipping, and we noticed nice details in shadows. —L.L.S.

**EDITORS' RATING** 7.8



**PROS** Good performance, particularly with DVI connection; HDMI port; handles games well

**CONS** So-so Webcam, speakers; subpar VGA connection had issues

AsusTek Computer,  
888-678-3688  
usa.asus.com

Mfr. Est. Price \$539



## Epson Stylus C120

Fast text printer also delivers beautiful color prints

ALTHOUGH IT LACKS ETHERNET and Wi-Fi connectivity, you don't get a memory-card reader or USB cable, the Epson Stylus C120's impressive text print speeds and high-quality photo prints make it a solid choice for home users.

The all-black unit weighs just 10.4 pounds and has only three buttons on its front bezel: Power, Ink Charge, and Cancel Job. Its paper tray holds 100 sheets. The C120 comes with five separate ink tanks: one each of cyan, magenta, and yellow, and two of black, which emphasizes the printer's focus on black-and-white document printing. The C120's estimated cost per page is 6 cents for both black tanks, and 11 cents for all three color tanks—about average for an ink-jet, but not the best we've seen.

The C120 comes with ArcSoft PhotoImpression 6 for viewing, editing, and printing photos, as well as making photo slide shows. It's a full-featured program that does a good job of simplifying tasks such as editing and e-mailing, but

it was a bit too basic for our tastes.

The unit's performance was mixed in our print-speed tests. It printed text documents very quickly, but was much slower printing photos. Outputting our 10-page test document of text and photos, the C120 turned in a decent time of 2 minutes and 44 seconds, and it tore through a 20-

page text document in a mere minute and a half. A 4x6-inch photo took 2 minutes and 5 seconds, which is rather slow, but photos looked good enough to frame. The C120 also comes with a decent year-long warranty. —Josh Norem

**EDITORS' RATING** 8.0



**PROS** Fast text printing; high-quality photo prints

**CONS** Slow photo print speed; no networking capability, memory-card reader

Epson America, 800-463-7766  
www.epson.com

**Direct Price \$69.99**

## HP Color LaserJet CM1312

A multifunction laser for any printing occasion

HP's latest color laser multifunction printer, the \$499.99 Color LaserJet CM1312, can handle almost any job your home or small office tosses its way, including printing faxing, scanning, and copying. It can't connect wirelessly to a network or handle extra paper trays, but if these features aren't crucial to your printing future, you'll find a lot to like with this all-in-one, especially if you're printing a lot of marketing materials and snapshots.

**EDITORS' RATING** 7.5



**PROS** Great small-photo output; built-in card reader, 2.4-inch LCD; stand-alone fax capabilities; excellent text quality

**CONS** Built-in Wi-Fi; single paper tray

Hewlett-Packard 800-752-0900  
www.hp.com

**Direct Price \$499.99**

The CM1312's print resolution is fixed at 600x600 dots per inch (dpi), although the printer can interpolate that resolution all the way up to 3,600dpi using HP's Image Resolution Enhancement technology. Doing so produced fantastic results when printing text documents in both color and monochrome. Logos and charts looked great, but text really stood out, with sharp

edges and a professional appearance. Photos also looked very good—even at sizes up to 8x10 inches—but it delivered especially high-quality 4x6-inch snapshots.

HP claims the CM1312's print speed is 8 pages per minute (ppm) for color and 12ppm for monochrome, and our tests indicate HP isn't fudging the numbers. Our 10-page mixed document of text, charts, and photos took 1 minute and 34 seconds to print, and a 20-page unformatted text file took 1 minute and 48 seconds. The CM1312 also shines as a copier, and the included memory-card reader works very well in tandem with the 2.4-inch LCD. —J.N.



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# Shooting in High Definition: Digital Camcorders

Despite trade-offs, these latest HD camcorders deliver good-quality video

WHILE THEY STILL COST a premium when compared with standard-definition camcorders, high-definition (HD) models have now reached price points (around \$1,000 or less) that make them more affordable to the masses.

But HD camcorders come in a variety of models, ranging from tapeless, flash- or solid-state memory-based units like the Panasonic HDC-SD9, to MiniDV tape-based versions like Canon's Vixia HV30. Both offer myriad features, but they each have certain trade-offs.

## PANASONIC HDC-SD9

The \$799 Panasonic HDC-SD9 is one of the smallest HD camcorders you can buy, but it packs full 1080p-resolution recording, advanced features like face recognition, and a 10x zoom lens. But the AVCHD recording format it uses can make editing recordings problematic.



format, and even some of those programs that do support it are problematic and prone to crashes. Panasonic's bundled HD writer software does, however, support simple editing, and one slick feature is the ability to copy up to 45 minutes of HD video to a standard writeable DVD that's playable in some Blu-ray players.

Overall, the video quality is superb in well-lit situations, but we did see some occasional color artifacts when we panned too quickly, as well as occasional blown-out highlights. In dimmer lighting, the internal image processing attempts to lessen noise, but that causes the video to lose detail. Audio quality is good, but we'd have also liked to see a jack for an external microphone.

## CANON VIXIA HV30

While Canon's \$999 Vixia HV30 uses the older MiniDV recording format, the camera shoots good video and offers a number of features.

A MiniDV tape has its advantages. It's relatively inexpensive, and can record up to 80 minutes of HD video in the HDV format. You can also use the HV30 to play old DV tapes you've archived, so it's a great choice if you're upgrading from a standard-def MiniDV camcorder. The HV30 is larger than solid-state models, but it's easier to hold steady than the smallest camcorders. Almost all of the camera's controls can be reached with your thumb and forefinger, allowing easy adjustment while shooting.

The HDV format has wider support among third-party editing programs than the AVCHD format. Because it uses MPEG-2 compression, the footage doesn't require as much horsepower to edit. The downside, however, is that the HV30 transfers in real-time, and the format only supports up to 1,440x1,080 resolution.

Regardless, the HV30's video quality is excellent, with accurate color and sharp detail under bright conditions. Exposure and autofocus react quickly and accurately when panning to a new subject. In low-light situations, video starts to get noisy, but the grain level is lower than typical for a consumer camcorder. Color remains good even in low light. The top-mounted stereo microphone does a good job picking up audio from all directions; unfortunately, in quiet environments, it also picked up a bit of tape-motor noise. —Denny Atkin



The HDC-SD9 records onto removable SDHC memory cards; an 8GB card can hold up to three hours of video, depending on quality. Because of the placement of controls, you'll need both hands to hold this camera.

The AVCHD format makes transferring video easy, but even though the format has been on the market for more than 18 months, AVCHD is still a mixed bag. On the upside, it supports full-resolution 1,920x1,080-pixel HD video, but the MPEG-4-based compression takes a lot of horsepower to edit and play back smoothly. Also note that only the newest video-editing programs support the

### Product Summary

	Panasonic HDC-SD9	Canon Vixia HV30
EDITORS' RATING	7.5	8.0
PROS	Superb video in brightly lit conditions; extremely small; includes software to burn HD footage to standard DVDs	Good video quality; above-average low-light performance; uses inexpensive MiniDV tapes; plays DV camcorder recordings
CONS	AVCHD files are problematic to edit; one-handed control is difficult; low-light footage lacks detail; no microphone jack	Larger than solid-state camcorders; HDV has lower horizontal resolution than true 1080p units; microphones can pick up tape-motor noise
COMPANY	Panasonic 800-405-0652 www.panasonic.com	Canon U.S.A. 800-652-2666 usa.canon.com
MFR. EST. PRICE	\$799	\$999

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## Dream Pinball 3D

Pinball game leaves much to be desired

VIDEO GAME REPRESENTATIONS of arcade pinball are based usually on accurate ball physics and interesting table design. Unfortunately, the \$19.99 Dream Pinball 3D excels at neither of these areas, but there are just enough features to keep us from calling it a nightmare.

Dream Pinball 3D is a budget title from SouthPeak Games that features six tables of varying themes, but the table designs are somewhat generic and uninspired. Visuals are a mixed bag as well: The tables feature good-looking, unique artwork, but the seven camera angles are poorly implemented—some too close, others too far—and nearly all of them fail to track the ball properly.

Sound is one strong point of the game. Each table's unique sound effects, music, and commentary go along with the theme of the table, and they're generally well done. The game's biggest failure, however, is in the physics. The flippers don't allow the ball to be hit with finesse. Flippers are either "active" or not, and there's no in-between, which makes it difficult to aim and perform precision



shots. The ball physics feel "off" as well, as if the ball has no weight.

Dream Pinball 3D also lacks innovative gameplay. There is nothing to unlock, nor are there any other gameplay modes with which to experiment, so you're stuck trying to beat your own high score over and over again.

Even worse, Dream Pinball 3D requires Internet activation. (If you don't, you get access to only one of the six tables.) We hate this requirement even on full-price titles, but having to activate a budget-priced game is just insulting. —Rich Grech

EDITORS' RATING **5.0**



**PROS** Good sound effects; nice table artwork

**CONS** Ball and flipper physics aren't great; uninspired table design; requires online activation

SouthPeak Games  
www.southpeakgames.com

Mfr. Est. Price **\$19.99**

 For our full review, and more new PC game reviews, go to [computershopper.com/software](http://computershopper.com/software)

## Belkin Nostromo n52te

A gamepad that stands out among the rest

FOR SOME GAMERS, a gaming keypad (or gamepad) like the \$69.99 Belkin Nostromo n52te is an invaluable tool. It offers only the keys you want and places them all in close proximity, so you don't have to reach across the entire keyboard to access them when gaming.

For the latest incarnation of Belkin's original Nostromo, Belkin teamed up with gaming-peripheral maker Razer to create software that enables you to program commands and macros for 15 numbered keys, as well as the directional pad, scroll wheel, and thumb button. Gamers who rely on macros will appreciate the n52te's ability to map up to 42 keystrokes to any button.

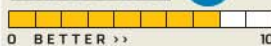
The Razer software lets you control how fast the macro repeats, along with the timing between the virtual key presses. Macros requiring several simultaneous keystrokes can be created as well, and three different key maps can be assigned to the n52te. We also like that the macros and profiles are stored inside



the n52te, so all info is retained regardless of whichever computer you use it with.

The n52te has a learning curve when you first use it, but it works very well. The soft blue glow of the backlighting lets you see the keys easily when you're gaming in a dark room. While the keys are arranged well, and the main keys arrayed around the movement keys are easy to get to, reaching the extra button above the directional pad was a stretch. The low-mounted, thumb-activated button below the directional pad may also be a reach for users with smaller hands. —Shane McGlaun

EDITORS' RATING **8.0**



**PROS** Nice backlighting; great software; can record long macros

**CONS** Steep learning curve; some keys hard to reach

Belkin International, 800-223-5546  
www.belkin.com

Direct Price **\$69.99**

 For our full review, and more new gaming peripherals reviews, go to [computershopper.com/peripherals](http://computershopper.com/peripherals)

## Plantronics Calisto Pro

### Headset system juggles multiple phone lines

WITH ITS SIMPLE DESIGN and excellent sound quality, Plantronics's \$279.95 Calisto Pro Bluetooth headset and cordless-phone combo lets you seamlessly switch between landline, cellular, and VoIP calls without getting caught up in a mess of cables, though it's a bit pricey.

Setting up the system is as simple as connecting the base to a phone jack via the included cable, and pairing the headset with a Bluetooth-enabled phone is just as easy. To answer VoIP calls, you'll need to connect the base to your computer via the included USB cable. The Calisto Pro can handle Skype calls, but support is somewhat limited: You cannot pull up your Skype contacts or use caller ID with Skype callers.

The phone has a 300-foot range from the base station; we tried it in multiple rooms and call quality did not suffer. Moreover, it did not interfere with our wireless network.

The headset's volume level—as well as that of the handset's speakerphone—should be sufficient for most office and home-office environments, although



occasionally we found ourselves pushing it to the max. As for battery life, we managed to get a full work day from both the headset and phone before needing to recharge. The base powers up both devices simultaneously, although you'll need to press down firmly to get the headset to attach to the base and charge correctly. —Louis Ramirez

EDITORS' RATING **7.4**



**PROS** Simple setup; easily shuttles between VoIP, landline, and mobile calls; solid call quality

**CONS** No caller ID support for Skype; headset has trouble fitting into charging base; VoIP calls require connection to PC

Plantronics, 800-544-4660  
www.plantronics.com

**Direct Price \$279.95**



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## RIM BlackBerry Pearl 8120 (T-Mobile)

### Smartphone packs Wi-Fi into a small package

IT'S NOT IDEAL FOR WEB BROWSING, but T-Mobile's version of the BlackBerry Pearl 8120 is a champion cell phone and messaging device. Plus, it lets you make "free" Wi-Fi calls, so it may save you money over time.

Slim, lightweight, and sheathed in drab gunmetal gray, the 8120 measures 4.2x2x0.6 inches and weighs a mere 3.2 ounces. Like the previous Pearl, this model incorporates RIM's SureType keyboard, which employs fewer keys to allow for a slimmer design. Although the keyboard's predictive-text system works quite well, there's definitely a learning curve. Likewise, navigating the phone's somewhat-confusing, icon-heavy using the 8120's tiny trackball takes practice.

T-Mobile's EDGE network manages push e-mail and instant messaging well enough, but it can't match 3G's acumen for Web browsing. (Not that you'll want to do much of that, anyway; the 8120's cramped screen makes for unpleasant browsing.) Thankfully, the 8120 can tap Wi-Fi networks and will automatically switch between EDGE and Wi-Fi, depending on



what's available. The phone supports T-Mobile's Hotspot@Home service, which lets you can make unlimited calls anywhere there's an open Wi-Fi network.

The 8120 offers a number of useful features, including T-Mobile's MyFaves, which lets you make unlimited calls to any five people, a 2-megapixel camera with a flash, a media player, and wireless music support. The only things missing are GPS and push-to-talk capabilities.

We have only good things to say about the Pearl's call quality; even the speakerphone sounded loud and clear. RIM promises an impressive 15 days of standby time, though just 4 hours of talk time. —Rick Broida

EDITORS' RATING **7.9**



**PROS** Supports T-Mobile's Hotspot@Home service for Wi-Fi calling; incorporates MyFaves into BlackBerry interface; still tops for e-mail and messaging; solid call quality, standby time; nice camera, media player

**CONS** Predictive keyboard is awkward with numbers and punctuation; confusing icon-heavy interface; trackball takes some practice; no GPS or push-to-talk; dismal Web browser

Research in Motion, 519-888-7465  
www.blackberry.com

**Direct Price \$149.99** (with two-year T-Mobile service plan after rebates)

# Adobe Acrobat 9

Tons of new PDF features, but do you need them all?

WITH ITS LATEST RELEASE of the PDF viewer, writer, and editor Acrobat—the ninth—Adobe is showing that while the software is not yet suffering the most severe symptoms of feature bloat, it's begun coughing regularly.

Those who want to maintain complete control over the design and formatting of their documents will find much to admire in Acrobat 9, but we're not sure everything new is worth the cost: \$699 for the complete edition (Acrobat 9 Pro Extended) or \$229 for the upgrade from a prior version.

**EDITORS' RATING** **7.5**

0 BETTER >>> 10

**PROS** Finally supports 256-bit encryption; enhanced controls for working with forms and converting Web pages to PDFs; some features fill conspicuous technology gaps

**CONS** Some additions are of dubious value; many of the best additions are available only in the most expensive versions

Adobe Systems, 800-585-0774  
www.adobe.com

**Direct Price:** Standard: **\$299** (full version), **\$99** (upgrade); Pro: **\$449** (full version), **\$159** (upgrade); Pro Extended: **\$699** (full version), **\$229** (upgrade)

There have been very few earth-shattering interface changes since Acrobat 8, so unless you have extremely specialized needs, that version (or even a previous one) will probably remain good enough for now.

The anchor feature of Acrobat 9 is a perfect example. PDF Portfolios let you bind together multiple types of files (Word or Excel documents, images, Flash videos, and so forth) into one compressed file that you can then "present" by decorating with a title, logo, contact information, and even a cover page.

You have full control over

browsing the portfolio's contents: You can preview files without launching the full associated apps, or view them in any number of visually intriguing ways. (One, called Revolve, reminded us of the Cover Flow graphical interface used in Apple's iTunes and Mac OS X 10.5 Leopard.) But it still strikes us as not much more than a glorified ZIP file.

You also get Adobe Presenter, which blends Adobe Reader and Microsoft PowerPoint to create stand-alone presentation PDFs that anyone with Reader can open; they can contain audio, video, or interactive content. But Presenter requires PowerPoint to create the source presentation in the first place—how many will really consider an automated presentation worth the extra time and trouble?

Far more useful are the added or updated features that help you bring newer technology to—or make better use of—the traditional PDFs you already know and love. A built-in video converter allows you to change QuickTime or Windows Media Video movies into the PDF-embeddable Flash format. You can also insert 3D objects and allow users to navigate above, below, and around them. With document comparison, you can see, at a glance, all the editing changes made between two versions of

a PDF—this is a terrific implementation that Microsoft Office apps would do well to learn from.

We also admire the addition of 256-bit encryption, a long-overdue security measure. New functionality for PDF maps, such as the capacity to measure the distance between two points, has definite — if limited — utility, and while not everyone needs form analysis and data redaction, those have been enhanced, to positive effect, from Acrobat 8. Adobe also took steps to ensure that Acrobat 9 loads and runs quicker than its predecessor—we can't precisely verify the company's claim that Adobe 9 is twice or three times faster, but we can confirm a detectable increase.

Another benefit is tight integration with Acrobat.com, Adobe's new collection of hosted services designed to facilitate collaboration. This new tool set allows multiple people to work on, comment on, and review documents; track their status; and hold meetings while using features such as screen sharing and digital white boards. Acrobat.com could greatly aid projects where it's difficult (if not outright impossible) to get everyone in the same room at the same time.



Perhaps Acrobat.com's most significant quality, however, is that it's free. The snazziest of Acrobat 9's new capabilities, on the other hand, are reserved for Acrobat Pro and Acrobat Pro Extended—the most expensive versions. If you really can't live without those PDF Portfolios or Adobe Presenter (which we can), or the redaction and video-conversion options, you might have to take the plunge. It's a shame, though, that you have to pony up extra money for that great document comparison update, or the ability to synchronize document views with remote colleagues—tasks far less rarefied than converting 2D or 3D images from CAD programs or creating XML forms, which even most professionals would seldom need.

We wouldn't mind seeing the more-everyday functions wend their way into Acrobat Standard, which with improved encryption and form controls—and better Web-page adaptation—will certainly do the trick. But if you're already using an older version of Acrobat, there's a good chance that it might already be good enough. Though Acrobat 9 breaks some impressive new ground, it's always been what you plant that matters most. We don't expect the majority of users to find Acrobat 9 much help in that department. —Matthew Murray

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# Programming Languages

How well do two software packages help you learn a foreign language—without leaving your desk

IF YOU'VE BEEN TO COLLEGE, chances are you had to learn a foreign language, spending a couple of years conjugating unruly verbs, and becoming a basket case about cases. But how much do you remember? Or do you wish you could learn something else? The Rosetta Stone and Tell Me More software packages give you that opportunity—without forcing you to enroll in a class.

## ROSETTA STONE

If Rosetta Stone has any one thing in its favor, it's diversity. There are 31 languages to choose from, offered in different packages based on the language's utility, how much you want to learn, and how much time you want to spend. Packages range in price from \$209 to \$499, and come in boxed versions and online subscriptions.

Whether you'll find it worth the money and trouble depends on how you learn. Rosetta Stone uses what it calls "Dynamic Immersion" to induce you into a new language the same way you learned your own: through a combination of sounds, images, and word



association. An included USB headset-microphone lets you listen to native speakers, as well as enable the software to determine how your own pronunciation is shaping up.

Lessons progress gradually from basic concepts to more-complicated ideas, but do so at a slow, repetitive pace that won't be ideal for everyone. If you want to start speaking useful phrases immediately, you'll be disappointed; if you're the analytical type that gets more out of tables of information than endless drilling, you'll be frustrated—in-depth grammar instruction is all but nonexistent.

It must be said, though, that the Rosetta Stone folks have taken great care to fashion an elegant and entertaining product. From the software's numerous and vivid photographs, along with the quality of the sound clips and the microphone, to the inclusion of a keyboard overlay sheet that aids in the written portions of the "course," this is a fully realized educational experience.

It's just not for everyone. We had a great deal of fun early on, and gained a solid (if elementary)

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understanding of many simple Spanish words and phrases, but we were dubious about the course without a better grasp of the language's mechanics. If you're a highly visual learner who can't think of anything less fun than cracking open a grammar book, however, Rosetta Stone will almost certainly take you far.

## TELL ME MORE

Tell Me More isn't just the name of a \$399.99 software package designed to teach you a foreign language—it's also what we found ourselves screaming at the computer during our classes.

French was our choice from among eight non-English Tell Me More possibilities. After installation, we were immediately dumped straight into full (if basic) conversations and word-matching exercises that made us feel like we'd been pushed out of an airplane over the Atlantic Ocean. Typing and speech tests routinely left us stymied; while we occasionally found ourselves able to discern a random phrase, most of the time we had no idea what was happening.

This disappointed us because Tell Me More is in many ways very advanced in its teaching method and presentation, mingling its dialogues and fill-in-the-blank quizzes with games, comics, videos, and online content. There are even detailed diagrams of the mouth, plus actual speech waveforms (of both native speakers and your own speech,



captured through an included headset-microphone) so you can get a better idea of how you should sound and how you *do* sound. The Performance edition, which we reviewed, contains 10 levels of difficulty and promises 2,000 hours of virtual class time.

But with difficult crosswords, finicky and generally unresponsive voice-recognition software, and limited ways of communicating how to create proper sounds, learning a new language from scratch can potentially be a chore. We liked Tell Me More's grammar primers and multiple modes of study, but found them insufficient.

On the plus side, Tell Me More's detailed design makes it a good way to begin revisiting a language that may have grown rusty from disuse. As maddening as we found French, popping in the disc for German (which we spent a few years studying) was more satisfying and let us sharpen our skills.

—Matthew Murray

### Product Summary

	Rosetta Stone	Tell Me More
EDITORS' RATING	7.0	5.5
PROS	Wide selection of language choices; good for beginners	Offers a wide variety of language-learning methods
CONS	Slow-paced "Dynamic Immersion" instruction won't satisfy everyone	Far too advanced for some beginners; provides questionable depth of instruction
COMPANY	Rosetta Stone 800-788-0822 <a href="http://www.rosettastone.com">www.rosettastone.com</a>	Auralog 888-388-3535 <a href="http://www.tellmemore.com">www.tellmemore.com</a>
DIRECT PRICE	\$499	\$399.99

# Microsoft Takes to the Skies

Plus, five great freeware utilities to improve your computing life

FREE SOFTWARE isn't usually what comes to mind when you think about Microsoft, but the Redmond campus does produce some useful freebies in its spare time. Its most notable recent download is **WorldWide Telescope**, which joins Google Sky in bringing stargazing onto your desktop. Combining imagery from telescopes both on Earth and in space (including the Hubble Space Telescope and the Chandra X-Ray Observatory), this program is designed to provide you with a seamless view of the known universe. Zoom in and out of regions using your



WorldWide Telescope

mouse, or take a guided multimedia tour of some of the universe's phenomena. At nearly 21MB, this download may take a while to transfer, but just keep in mind that no matter how long it takes, it's less than a blink of an eye in cosmic time.

Microsoft offers something a little more terrestrially grounded with its **AutoRuns** utility. Most users resort to typing "**msconfig**" when they want to see what's running at startup, but AutoRuns is like the System Configuration Utility on steroids. AutoRuns doesn't just show you which apps and services load at bootup, it shows you *everything*—browser helper objects, print monitors, toolbars, and much, much more. And unlike the System Configuration Utility, AutoRuns gives you detailed information when you click on an item, and it even lets you export your startup list to a text file for further analysis.

System tweakers know that a too-hot processor can threaten a PC's stability. Recent CPUs, including Athlons, Phenoms, and Core 2 Quads, use a digital thermal sensor to check each core's heat—information that can be utilized by a software program like **Core Temp 0.99**, which displays temperatures in real time as you load various programs. It's the only thing Core Temp does, but it's crucial for aggressive overclockers and cautious users who keep a close eye on CPU temperature.

**Asterisk Key 8.3** is another limited, but very useful, piece of freeware. Anyone can appreciate the need to protect passwords by concealing them with asterisks, but that doesn't

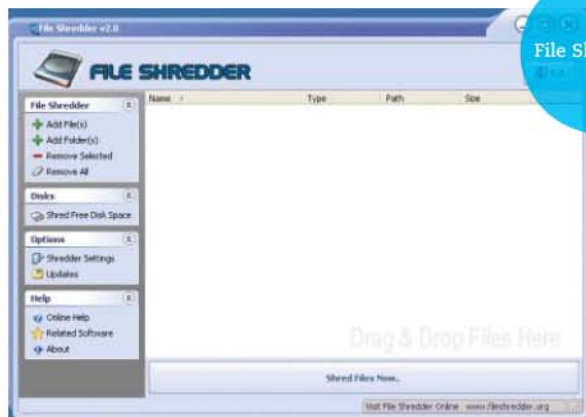
help you much if it's your password and you can't remember it. Asterisk Key solves the mystery for you, uncovering those hidden passwords and letting you save its findings to a text file—you know, what you probably should have done in the first place.

We all know that putting a file into the Recycle Bin doesn't really remove it from your PC. In fact, it doesn't even take a forensics expert to retrieve a "deleted" file from your hard drive. If you'd like a little more peace of mind after you trash sensitive files, **File Shredder 2** can come to the rescue.

Using a choice of different data algorithms, this app overwrites deleted items multiple times. If you're still paranoid, take advantage of the Disk Wiper feature, which will overwrite the unused portion of your hard drive.

Apple's iTunes jukebox software hits a lot of the right notes, but it'd be nice if it were more in harmony with your newest music files. Even though we're at version 7.6.x of iTunes, Apple still hasn't added a feature to automatically check for—and import—new audio files you add to your music folder. That's where **iTunes Folder Watch 2.0.1** comes in. You establish "Watch Folders" for this utility to monitor, and whenever a new AAC or MP3 file is

added to one of those folders, it automatically dumps it into your iTunes library. You can place iTunes Folder Watch in your Taskbar to monitor continuously for new tracks, or you can run it in the foreground whenever you want to import new songs. — Sean Portnoy



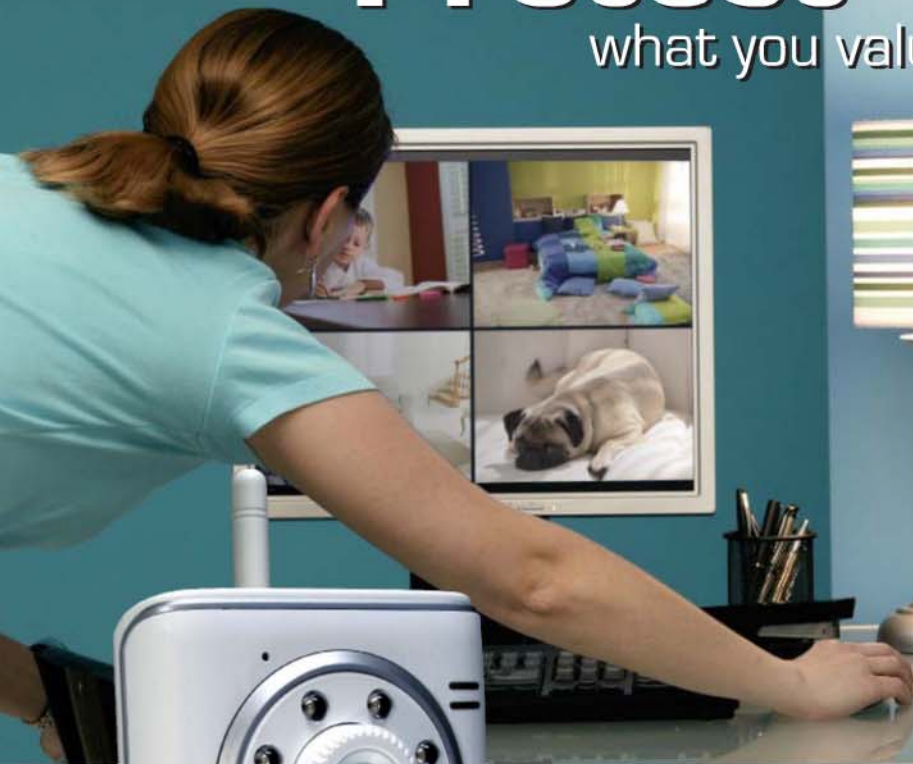
File Shredder 2

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# TOP 5 ALTERNATIVE-BRAND DESKTOPS

THESE FIVE MODELS PROVE QUALITY PCS DON'T JUST COME FROM THE BIG GUYS.

# 1

## Cyberpower Gamer Infinity SLI 8800

www.cyberpowerpc.com  
\$3,185 (as tested)  
Editors' Rating: **8.8** ✓

### Specs

- 3GHz Core 2 Extreme QX9650 (overclocked to 3.8GHz)
- 4GB DDR2 memory
- 500GB hard drive; two 150GB hard drives (10,000rpm)
- Double-layer DVD±RW; DVD-ROM
- Two nVidia GeForce 8800 GT graphics cards (512MB, SLI)
- 22-inch LCD
- Three-year warranty

### Bottom Line

Cyberpower's Gamer Infinity SLI 8800 is an astonishing example of a speed-demon desktop at a reasonable price. Of course, \$3,185 isn't exactly pocket change, but this Penryn-based system is a flat-out bargain compared with its pricier competitors.

# 2

## Cyberpower Gamer Infinity Ultimate\*

www.cyberpowerpc.com  
\$4,025 (as tested)  
Editors' Rating: **8.6** ✓

### Specs

- 3GHz Core 2 Extreme QX6850 (overclocked to 3.6GHz)
- 2GB DDR2 memory
- 500GB hard drive; two 150GB hard drives (10,000rpm)
- Double-layer DVD±RW; DVD-ROM
- Two nVidia GeForce 8800 GTX graphics cards (768MB, SLI)
- 20-inch LCD
- Three-year warranty

### Bottom Line

A hot new quad-core processor and two top-end video cards make Cyberpower's Gamer Infinity Ultimate an excellent gaming machine at a remarkable price. Plus, this model comes with a big batch of useful peripherals.

# 3

## Polywell Poly P3503/P503\*

www.polywell.com  
\$4,431 (as tested)  
Editors' Rating: **8.5** ✓

### Specs

- 3GHz Core 2 Extreme QX9650
- 2GB DDR3 memory
- 1TB hard drive; two 74GB hard drives (10,000rpm)
- Blu-ray burner; double-layer DVD±RW
- nVidia GeForce 8800 GTS graphics (512MB)
- 22-inch LCD
- One-year warranty

### Bottom Line

Polywell's Poly P3503/P503 is a serious computer for performance mavens who want the best for a price that—while high—won't send buyers on a fast track to the poorhouse. Our one caveat: Adding a second graphics card in a Scalable Link Interface (SLI) requires you to also upgrade the system's power supply.

# 4

## ABS Ultimate X Magnum Extreme\*

www.abs.com  
\$6,417 (as tested)  
Editors' Rating: **8.5**

### Specs

- 3GHz Core 2 Extreme QX6850 (overclocked to 3.5GHz)
- 4GB DDR3 memory
- 750GB hard drive; two 150GB hard drives (10,000rpm)
- Two double-layer DVD±RW drives
- Two ATI Radeon HD 3870 graphics cards (512MB, CrossFire)
- One-year warranty

### Bottom Line

Top-notch performance has been a constant from ABS and its upscale gaming-PC line, and the Ultimate X Magnum Extreme upholds that reputation. If your goal is to own a cutting-edge gaming rig, this system should be a serious contender for your dollars.

# 5

## AVADirect Gaming Cube\*

www.avadirect.com  
\$1,713 (as tested)  
Editors' Rating: **8.3**

### Specs

- 2.4GHz Core 2 Quad Q6600 (overclocked to 3.2GHz)
- 2GB DDR2 memory
- 320GB hard drive
- Double-layer DVD±RW
- nVidia GeForce 8800 GTX graphics (768MB)
- Three-year warranty

### Bottom Line

AVADirect's Gaming Cube is a powerful, lug-gable PC that's ideal for taking along to your next gaming party. Its impressive performance and great price make it a terrific option for a stay-at-home desktop, too, but be aware that you'll find little room for expansion inside its small-form-factor case.

Polywell Poly P3503/P503\*



AVADirect Gaming Cube\*



ABS Ultimate X Magnum Extreme\*



✓ = Editors' Choice

\* = Configuration changed from original review



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# TOP 5 THIN-AND-LIGHT LAPTOPS

THESE CAPABLE PORTABLES LET YOU TAKE PERFORMANCE ON THE ROAD.

# 1

## Fujitsu LifeBook S6510\*

www.fujitsu.com  
\$2,169 (as tested)  
Editors' Rating: **8.4** ✓

### Specs

- 2.4GHz Core 2 Duo T7700
- 4GB DDR2 memory
- 120GB hard drive
- Double-layer DVD±RW
- Integrated graphics
- 14.1-inch TFT
- 4 pounds
- One-year warranty

### Bottom Line

If you've been searching for a thin-and-light portable for your home office or business—but find a 13.3-inch screen a wee bit cramped—the LifeBook S6510 is your answer. It may be a bit expensive, but it's priced in line with other powerful portables that cram a lot of technology into a svelte package.

# 2

## Dell Inspiron 1420\*

www.dell.com  
\$899 (as tested)  
Editors' Rating: **8.4**

### Specs

- 2GHz Core 2 Duo T5750
- 3GB DDR2 memory
- 160GB hard drive
- Double-layer DVD±RW
- nVidia GeForce Go 8400M GS graphics (128MB)
- 14.1-inch TFT
- 5.4 pounds
- One-year warranty

### Bottom Line

The 5.4-pound Inspiron 1420 hits the mainstream sweet spot in features, price, and performance. Thanks to its solid set of components, our review unit was able to keep up with more-expensive machines we've tested. And, true to Dell's word, the 1420 doesn't come bloated with trialware.

# 3

## Apple MacBook Pro\*

www.apple.com  
\$1,999 (as tested)  
Editors' Rating: **8.3** ✓

### Specs

- 2.2GHz Core 2 Duo T7500
- 2GB DDR2 memory
- 200GB hard drive
- Double-layer DVD±RW
- nVidia GeForce 8600M GT graphics (128MB)
- 15.4-inch TFT
- 5.4 pounds
- One-year warranty

### Bottom Line

Portable enough to take on the road, yet powerful enough to replace your desktop, the MacBook Pro is a great mix of top specs and high style. The silver notebook features an LED-backlit display that delivers stunning images and power savings at the same time. The system also features the design panache that has become Apple's hallmark.

# 4

## Apple MacBook\*

www.apple.com  
\$1,499 (as tested)  
Editors' Rating: **8.2** ✓

### Specs

- 2.2GHz Core 2 Duo T7500
- 2GB DDR2 memory
- 250GB hard drive
- Double-layer DVD±RW
- Integrated graphics
- 13.3-inch TFT
- 5.2 pounds
- One-year warranty

### Bottom Line

If you're looking for a laptop that works as well on the road as it does in the home (and looks good doing it), the MacBook is your best bet. Our \$1,499 test configuration (the base model costs \$1,099) offered a near-perfect balance of style, performance, and price, plus a killer application package that will make any Windows user drool.

# 5

## Dell XPS M1330\*

www.dell.com  
\$1,499 (as tested)  
Editors' Rating: **8.1**

### Specs

- 2.2GHz Core 2 Duo T7500
- 4GB DDR2 memory
- 320GB hard drive
- Double-layer DVD±RW
- nVidia GeForce Go 8400M GS graphics (128MB)
- 13.3-inch TFT
- 4 pounds
- One-year warranty

### Bottom Line

With its handsome design, sharp screen, and long list of feature options, it's hard not to love the XPS M1330—this powerful but lightweight machine should impress even the most jaded PC buyers. For mobile users who need a constant computing companion, it's worth a long look.



Dell Inspiron 1420



Apple MacBook Pro



Fujitsu LifeBook S6510

✓ = Editors' Choice

\* = Configuration changed from original review



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# TOP 5 PC CASES

BUILD A KILLER SYSTEM WITH THESE SOLID ENCLOSURES.

# 1

**Cooler Master Cosmos 1000 Extended ATX**  
www.coolermaster.com  
\$199  
Editors' Rating: **9.1** ✓

#### Specs

- 23.5x10.5x24.7 inches
- Five 5.25-inch drive bays, six 3.5-inch drive bays

#### Bottom Line

No two ways about it: Cooler Master's Cosmos 1000 case is an absolute pleasure to work with. You get loads of expansion space, plus everything in the case is well-labeled. The design is tool-less, and your finished system won't sound like a wind tunnel.

# 2

**Cooler Master Cosmos S**  
www.coolermaster.com  
\$249  
Editors' Rating: **8.7**

#### Specs

- 23.5x10.5x24.7 inches
- Seven 5.25-inch drive bays, four 3.5-inch drive bays

#### Bottom Line

With its black-and-dark-gray design, red-LED-lit fans, and mesh front panel, the Cosmos S certainly looks the part of a performance PC. And it also happens to be one of the better choices for builders looking for lots of room for expansion.

# 3

**Antec P190**  
www.antec.com  
\$499  
Editors' Rating: **8.5**

#### Specs

- 20.3x8.1x23.4 inches
- Four 5.25-inch drive bays, one 3.5-inch drive bay

#### Bottom Line

The P190 comes at a considerable price—it costs about as much as some budget systems we've reviewed. For that amount, however, you get a built-in snake light, two power supplies, two removable hard drive cages, and dual-layer side panels for noise reduction.

# 4

**In Win Metal Suit GD**  
www.in-win.us  
\$135  
Editors' Rating: **8.2**

#### Specs

- 17.2x9.2x21.8 inches
- Four 5.25-inch drive bays, two 3.5-inch drive bays

#### Bottom Line

A full-featured midtower that offers completely tool-less upgrades, excellent cooling, and silent operation, the Metal Suit GD is a great chassis for the price—with a cool, giant-robot-inspired design.

# 5

**Thermaltake Xaser VI**  
www.thermaltakeusa.com  
\$299  
Editors' Rating: **7.7**

#### Specs

- 26x9.8x23.8 inches
- Seven 5.25-inch drive bays, seven 3.5-inch drive bays

#### Bottom Line

The Xaser VI is a solid chassis with tons of expansion room, and we like its mostly tool-less design and relative ease of use. Its flashy look will likely either turn you on or off, but there's no denying the Xaser's impressive capacity to swallow more hardware than most PC cases on the market.



Cooler Master  
Cosmos 1000  
Extended ATX



Cooler Master  
Cosmos S



Antec P190

✓ = Editors' Choice



For more of our editors' favorite tech products, go to [computershopper.com/top-products](http://computershopper.com/top-products)

# TOP 5 HEADPHONES

KEEP YOUR TUNES PUMPING LOUD AND CLEAR WITH THESE SWEET-SOUNDING CHOICES.

# 1

## Shure SE530 Sound Isolating Earphones

www.shure.com

\$499.99

Editors' Rating: **8.7**

### Specs

- Wired earbuds
- 1.5-foot cord
- In-line volume control

### Bottom Line

Frequent fliers will be infinitely pleased with the noise-cancelling SE530 earphones. They provide a comfortable fit and sound that is clear with deep bass, and they also feature adapters for use with airplane headset jacks. For those with deep pockets, these earbuds should be at the top of the short list.

# 2

## Denon AH-D2000

usa.denon.com

\$350

Editors' Rating: **8.5**

### Specs

- Wired over-ear headphones
- 10-foot cord
- No in-line volume control

### Bottom Line

This set is a bit pricey, but the AH-D2000 delivers deep bass. The cups are well-padded, and the overall construction is solid, something you would expect from a manufacturer like Denon. If you do most of your listening at home and don't want to disturb anyone, then these phones are an excellent option.

# 3

## Koss PortaPro Headphones

www.koss.com

\$49.99

Editors' Rating: **8.3** ✓

### Specs

- Wired over-ear headphones
- 3-foot cord
- No in-line volume control

### Bottom Line

It's back to the '80s with the PortaPro. Its retro design might not appeal to everyone, but the price and sound quality are good enough to bring big shoulder pads and leg warmers back into style. These headphones create excellent 3D sound, perfect for audiophiles and home theater buffs. Plus, Koss covers the PortaPro with a lifetime warranty, regardless of which decade you're living in.

# 4

## Sennheiser HD 600

www.sennheiserusa.com

\$499.95

Editors' Rating: **8.2**

### Specs

- Wired over-ear headphones
- 10-foot cord
- No in-line volume control

### Bottom Line

Like most high-end headphones, the HD 600 will please those who want the best pair for listening at home. Besides deep-sounding bass and cups that feel downright luxurious on your ears, the cord is replaceable if it ever breaks.

# 5

## Sony MDR-AS50G

www.sonystyle.com

\$49.99

Editors' Rating: **8.0** ✓

### Specs

- Wired headphones
- 4-foot cord
- No in-line volume control

### Bottom Line

If you're looking for headphones optimized for gym or casual use, the MDR-AS50G is a good buy. Sound quality is great for an affordable set, and although the neckband isn't adjustable, it will stay on when you're exercising.



Shure SE530  
Sound Isolating  
Earphones



Denon  
AH-D2000



Koss PortaPro  
Headphones

✓ = Editors' Choice



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# TOP 5 DIGITAL IMAGE CREATION & EDITING PROGRAMS

PERFECT YOUR PHOTOS AND CREATE NEW IMAGES WITH THESE APPS.

# 1

## Adobe Photoshop CS3 Extended

www.adobe.com

\$999

Editors' Rating: **9.0** ✓

### System Requirements

- Pentium 4 or faster processor (PC); PowerPC G4/G5 or multicore processor (Mac)
- 512MB RAM; 64MB video RAM
- 1GB hard drive space (PC); 2GB hard drive space (Mac)
- Windows XP SP2 or Vista; Mac OS X 10.4.8 or later

### Bottom Line

Photoshop CS3 Extended is very expensive, and its advanced features, coupled with a steep learning curve, will make it a tough sell for everyday users. But if you need its high-end features, you won't find a better alternative.

# 2

## Corel Painter X

www.corel.com

\$419

Editors' Rating: **9.0** ✓

### System Requirements

- 700MHz Pentium III or faster processor (PC); PowerPC G4, G5, or Intel processor (Mac)
- 256MB RAM
- 360MB hard drive space (PC); 280MB hard drive space (Mac)
- Windows 2000 SP4 or later; Mac OS X 10.3.9 or later

### Bottom Line

Painter X can be difficult to learn because of its extensive toolbox, but Corel has included lots of helpful resources, including a printed user guide, training videos, and tutorials. If digital painting on steroids is what you're looking for, this software could be for you.

# 3

## Adobe Photoshop Elements 6

www.adobe.com

\$99.99

Editors' Rating: **8.5** ✓

### System Requirements

- 1.3GHz or faster processor
- 256MB RAM; 32MB video RAM
- 1.5GB hard drive space
- Windows XP SP2 or Vista

### Bottom Line

Bursting with new editing tools and a superb organizer, Adobe's Photoshop Elements 6 is a powerful addition to any digital photographer's software library. It's a richly featured and easy-to-use way to fix and file the photos in your unruly digital album.

# 4

## CorelDraw Graphics Suite X4

www.corel.com

\$429

Editors' Rating: **8.4**

### System Requirements

- 800MHz Pentium III or faster processor
- 512MB RAM
- 430MB hard drive space
- Windows XP SP2 or Vista

### Bottom Line

CorelDraw Graphics Suite X4, the latest update to the stalwart illustration and image-editing package, focuses on improving productivity, adding a handful of useful new tools and enhancing many of the existing features. Although the changes aren't revolutionary, they do let you work smarter and more effectively—both alone and with a contingent of colleagues.

# 5

## Photobot

www.photobot.com

\$29.95

Editors' Rating: **8.0**

### System Requirements

- 1.33GHz or faster processor
- 64MB RAM
- 20MB hard drive space
- Windows 2000 or later

### Bottom Line

Professional photographers and digital-imaging specialists aren't likely to appreciate the lack of control in Photobot. But amateur or casual users can get good results from this automatic editor—without needing to shell out a lot of money or time.

CorelDraw Graphics Suite X4



Adobe Photoshop CS3 Extended



✓ = Editors' Choice



For more of our editors' favorite tech products, go to [computershopper.com/top-products](http://computershopper.com/top-products)



www.nZone.com

Capcom Entertainment, Inc. recommends NVIDIA graphics processors for *Lost Planet™: Extreme Condition*



**CAPCOM™**

**LOST PLANET™**  
EXTREME CONDITION

www.lostplanetcommunity.com



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# BACK TO SCHOOL

## Welcome to *Computer Shopper's* Back to School special section!

As much as we want it to, summer can't last forever. Soon enough, students will be heading back to class, and more than ever, many of them will use technology to take notes, conduct research, and complete assignments.

So we've taken the opportunity to put together several features to help students and parents choose the right PC for the upcoming school year. First up is "The Budget Beat" (p. 64), which rounds up new and recent desktops that are \$750 or less—perfect for student budgets. Our "How to Shop for a Laptop" story (p. 73), on the other hand, gives you all the info you need if you choose to buy a mobile system instead of a deskbound PC. And, we know you can't do schoolwork all the time, so we've also highlighted the best PC gaming gear in "Gamer's Delight" (p. 83).

For even more buying advice and tech tips for students, see our Back to School guide online at [computershopper.com/back-to-school](http://computershopper.com/back-to-school); look below for a preview of some of the site's great content. We'll be updating throughout the summer, so come back often!



FEATURES

1

The Budget Beat



2

How to Shop for a Laptop



3

Gamer's Delight



Back to School



### Need to Know

Lots of Tech, Too Little Space

About to move into a dorm room with enough electronics to rival the local Best Buy? Check out these space-saving tech solutions.



### Parents' Guide to Buying a PC

Get ready to be the ones using their new computers, but parents are actually the ones who are paying for them. If you have to purchase a desktop or laptop for your student, here's what you need to know as you buy the right system for your child's needs.

### Tips | 142 Great PC Shortcuts

Whether you want to master Microsoft Office or speed up your Internet downloads, we reveal the best tricks that can make your computing the easier.



### Which iPad Is Right for You?

Apple used to make just one flavor of iPad, but now there are four different varieties to choose from. Our quick guide helps you pick the perfect player to house your digital tunes (and videos).



### More Essential Info

- 1 Desktop or Notebook?
- 2 Great Classroom Tech
- 3 Online Student Discounts
- 4 Study Resources on the Net
- 5 Cool Designer Laptops

ComputerShopper.com Poll  
Are you buying a new PC for the upcoming school year?

Yes  
No  
Vote  
View results

# The Budget Beat

Need a computer, but don't have a truckload of cash to fork over? Don't worry: Many manufacturers offer desktop configurations for \$750 or less that can meet your needs—whatever they may be. Here's a look at five inexpensive systems and what they can do for you.

By Matthew Murray



## GREAT FOR GAMING

### Cyberpower Gamer Infinity 1000

Editors' Rating: **7.9** out of 10

**Pros:** Appealing design; good gaming performance

**Cons:** Pedestrian CPU; limited expansion capabilities

PUTTING TOGETHER a great computer is usually about compromises: what you need, versus what you're willing to do without. Cyberpower seems to have nailed the formula with the \$750 Gamer Infinity 1000, an inexpensive system that doesn't look—or perform—like a budget box.

From the outset, it's not immediately clear what's lacking. The desktop's blue-and-black Apevia Telstar Jr. case is a deft mixture of stalwart and new-wave design that combines sinewy curves with compact size. A slick (and handy) temperature gauge can be found among the other front-panel connectors, which include headphone and microphone jacks, two USB 2.0 plugs, and a FireWire port. You even get a windowed side panel, just like on more-expensive rigs.

True, the processor is a bit humdrum: a 2.66GHz Intel Core 2 Duo E8200, which is just below the midpoint on the mainstream-CPU spectrum. But you also get 2GB of DDR2 RAM (just what you need for making the most of Windows Vista Home Premium), a fairly spacious 320GB hard drive, integrated eight-channel audio, and the de rigueur double-layer DVD±RW drive. All in all, a generous mix for the price.

The piece de resistance, however, is the ATI Radeon HD 3870 graphics card, which gives the Gamer Infinity 1000 an unusual amount of polygon-processing punch for a budget machine (and helps offset the ordinariness of its CPU). And on the basic 3D tests we run on systems in this price





range, the Cyberpower acquitted itself admirably: It pulled in a terrific 10,012 on Futuremark's 3DMark06 at 1,280x1,024 resolution, as well as a score of 10,674 on 3DMark Vantage, Futuremark's new DirectX 10 (DX10) benchmark test, on the Entry preset. Meanwhile, the machine delivered an average of 125.4 frames per second (fps) in the DX9 version of our Company of Heroes gaming benchmark test, and an average of 46.4fps in the same game using the DX10 shader. We see plenty of costlier systems that don't score even remotely as well. Just one caveat: Don't push the resolutions much higher, especially in DX10.

So what do you have to give up with the Gamer Infinity 1000? Only the ability to take your gaming to infinity. The PC has some expansion potential, with two free RAM slots and a handful of free drive bays (three 5.25-inch, two 3.5-inch). The empty slots on the MSI P35 Neo-F motherboard, on the other hand, aren't that useful. And although some enterprising souls could probably find good uses for the one PCI and three PCI Express (PCIe) x1 slots available, it would require substantial creativity. This selection also means you can't add a second video card for a CrossFireX setup (and rocket-speed gameplay), and it's going to be challenging to stuff a larger card, such as a Radeon 3870 X2, into this case.

Of course, this is likely to be a liability only if you're a compulsive tinkerer—and if you are, you're probably looking for a system with a bit more flash, anyway. But if you want an inexpensive second computer, or a cheap, simple machine that doesn't need to be afraid of 3D, the Gamer Infinity 1000 could be an excellent choice.

## SUPPORT-SYSTEM SYSTEM

### Dell Inspiron 530

Editors' Rating: **7.0** out of 10

**Pros:** Above-average performance for the price; good service, support

**Cons:** Limited expandability; FireWire port doesn't come standard

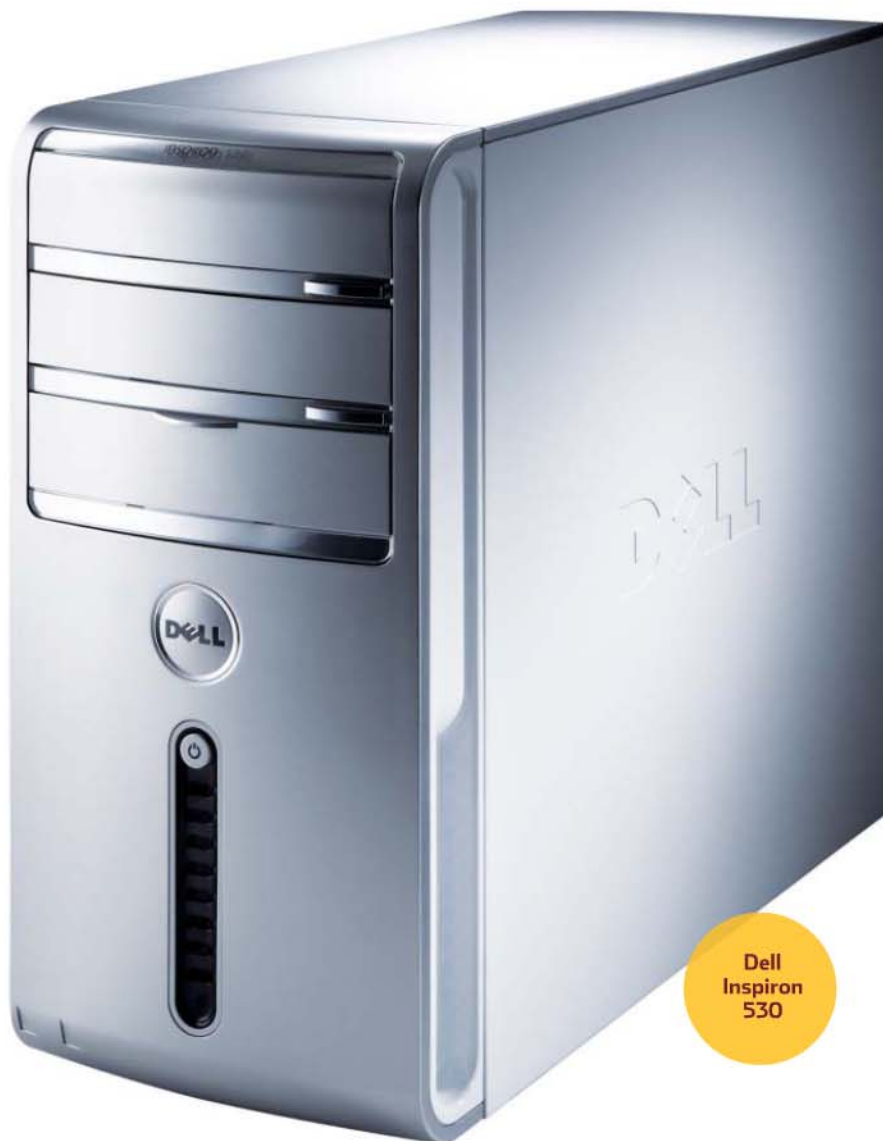
**IT'S SAD, BUT TRUE:** When it comes to computers, you almost invariably get less when you spend less. You might sometimes be able to even things out—a system with higher specs, for

## Pint-Size PC Preview

### ASUS EEE BOX

Asus revolutionized laptops with its Eee PC budget ultraportable, and now the company is looking to do the same for the desktop market. With dimensions of 1x8.5x7 inches (HWD) and weighing just 2.2 pounds, the Eee Box is smaller and lighter than a phone book—and many other kinds of books, for that matter. But it packs up to 2GB of RAM along with 160GB of hard drive storage; built-in Wi-Fi and video (with a maximum resolution of 1,600x1,200), as well as a multiformat memory-card reader, are standard. Pricing ranges from \$269 to \$299, depending on the configuration, and whether Windows XP or Linux is your operating system of choice.





oring gives it a slightly more refined look than we're used to seeing—it is, for the most part, unexceptional. You get a multiformat memory-card reader, a DVD±RW drive, four USB ports, and headphone and microphone jacks up front. On the rear panel, you'll find four more USB ports, an Ethernet jack, and integrated eight-channel audio. No FireWire port comes standard, although you can add one during configuration on Dell's Web site—for an extra charge.

In short, with the Inspiron 530, what you see is what you get. And while the setup isn't bad—a 2.4GHz Core 2 Quad Q6600 CPU, 2GB of DDR2 RAM, and Windows Vista Premium—you'll find no surprises whatsoever, even by the sedate standards of budget PCs. Even expandability options are far from exciting: There are two free RAM bays, but only two free expansion slots, both of which are straight-up PCI. You also get a slot for one more hard drive and a free front-accessible 5.25-inch bay.

Still, Dell exceeded expectations with its package of solid service extras: a year of in-home service (parts and labor), 24/7 phone support, and 3GB of DataSafe Online backup space for one year. These offerings prove that even if the Inspiron 530 isn't much more than a computer that will do in a pinch, its manufacturer will never leave you in a bind.

## VALUE PROSPECT

### eMachines T5254

Editors' Rating: **7.3** out of 10

**Pros:** Sufficient RAM, hard drive space; room for expansion; monitor included

**Cons:** Unexceptional performance

GATEWAY'S EMACHINES lines have long been as unremarkable as they are dependable, but the PCs are nonetheless a good way to stretch a

example, might have less preinstalled software than another—but, in general, the lower the price, the lower your expectations should be.

Because recent Dell PCs have managed to impress us with their value-for-money ratio, however, we expected the \$750 Dell Inspiron 530 to be comparable with the best systems available at that price. We were disappointed to find this wasn't the case.

We didn't expect it to blow the roof off the *Computer Shopper* offices, but the Inspiron 530 still finished above every other unit in this roundup—aside from Cyberpower's Gamer Infinity 1000—in every task, save for converting audio files to iTunes' proprietary AAC format. The Dell was a poor performer there, needing an uncharacteristically lengthy 6 minutes

and 17 seconds—the slowest we've seen here. Despite its ATI Radeon HD 2400 Pro graphics card (which came with just 128MB of discrete video memory), the Inspiron 530 could only muster 11.7fps in our basic DX9 Company of Heroes test—only slightly more unplayable than the HP Pavilion a6560f, but ahead of the non-Cyberpower competitors. (The Inspiron 530 wouldn't run any of our DX10 tests.)

Weighed against its competition, the Inspiron 530 becomes almost nondescript. With the Cyberpower, you get a robust graphics card, while the eMachines comes with a monitor and costs \$150 less. Meanwhile, the HP is loaded with media features, and the Shuttle is a compact conversation piece. Although the Inspiron 530 is attractive—its white-and-dull-silver col-

# CHIEFTEC



**BH-01B-B**



**CG-01B-B**



**WH-02B-B**



**14CM  
FAN**



**Cable Set**



**Nylon Sleeve**

## A135 Series



**CX-05SL-SL**

## SAS BACKPLANE



**SST-2131SAS**



**SST-3141SAS**



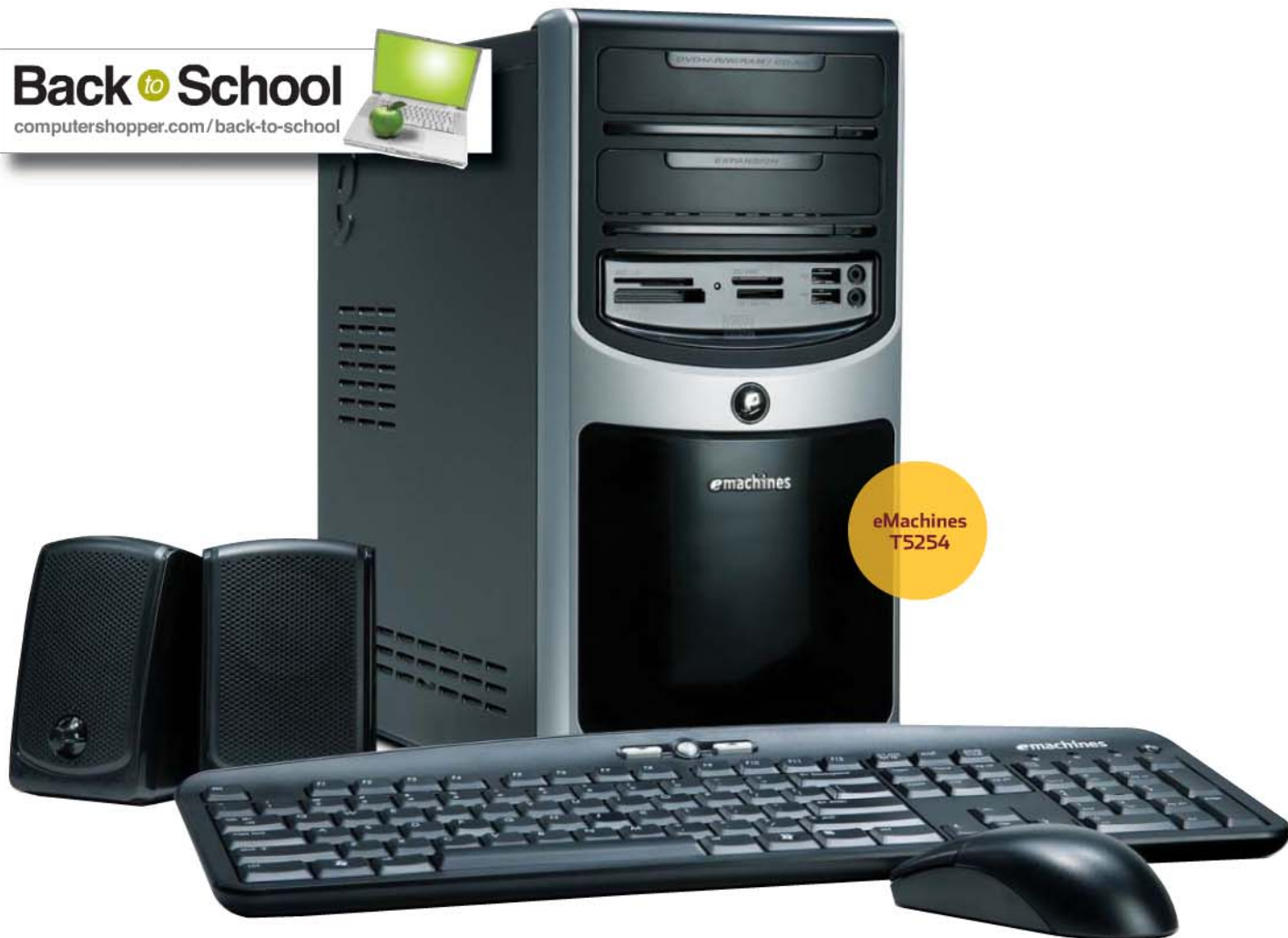
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buck—assuming your needs aren't too extensive. The T5254 continues this tradition, offering a full-featured Windows desktop and a monitor for \$600, a good deal by any reckoning, even if neither is top of the line.

The 2.1GHz AMD Athlon 64 X2 BE-2350 processor doesn't get the T5254

off to an auspicious start, although it gets a much-needed boost from 2GB of DDR2 RAM. (Because the preinstalled operating system is Windows Vista Home Premium, 2GB was practically a necessity.) It's hard to quibble with the 300GB hard drive, however, and the DVD±RW drive will allow you to burn

more data to CDs or DVDs. Integrated graphics (a 128MB nVidia GeForce 6100 solution) round out the picture, one that you can display on the included 17-inch wide-screen LCD.

As those modest components suggest, we don't recommend relying on

## How We Tested

**IN ADDITION** to our anecdotal observation of each system's construction, components, and basic performance, we also perform a regular series of procedures to evaluate the performance capabilities of each PC. Here's a look at the benchmark tests we ran on each computer, which we rebooted between each test.

### PRODUCTIVITY TESTING

To test general system performance, we began with Maxon's Cinebench 10 software, which renders a photorealistic image in real time and can utilize all of a CPU's processing cores. Cinebench returns a "CB-CPU" number, which is the score we recorded.

We measured a system's aptness for media manipulation with Windows Media Encoder 9. We prepared an 8MB, 5-minute-and-55-second Windows Media file for download and playback on a computer by encoding it with DVD-quality video at a 2Mbps constant bit rate (CBR) and

CD-quality audio (also CBR). We recorded the amount of time the application required to complete the full encoding process.

In recognition of the popularity of digital music, we used Apple's iTunes software to test the system's speed at encoding 11 MP3 files into the proprietary

Apple AAC format. All 11 files were converted sequentially, and we reported the amount of time required for the conversion process to complete.

We also ran two full-system benchmark tests to measure a system's performance under a variety of real-world conditions.



the T5254 for games. The system scored a paltry 223 on our Futuremark 3DMark06 test (our newer 3DMark Vantage test wouldn't run), and elicited only 2fps in our DX9 Company of Heroes gaming test. Our nongaming-test results were somewhat more satisfactory: 3,290 in Cinebench 10, 9 minutes and 42 seconds for Windows Media Encoder, 5 minutes and 14 seconds for iTunes conversion, 2,629 in Futuremark's PCMark Vantage, and 80 in BAPCo's SYSmark 2007.

Clearly, this machine was intended for productivity time, not playtime. The selection of ports is bare bones and businesslike (provided your office is slightly behind the times). On the back, you'll find a nine-pin serial port, a parallel port, a VGA jack, a modem, and four USB 2.0 ports, as well as Ethernet and sound connections. Up front are two more USB ports, headphone and microphone jacks, and a memory-card reader.

Should you outgrow these built-in capabilities, the T5252 has three free expansion slots: one PCI, plus both a PCIe x1 and a PCIe x16—great for adding a discrete graphics card. Both of the motherboard's memory slots are filled, but you will find two free front-accessible drive bays (one 5.25-inch and one 3.5-inch), along with one free internal hard drive bay. The interior isn't exactly roomy, but it's open and neat enough for you to install extra components frustration-free.

## BENCHMARK TESTS

		Cyberpower Gamer Infinity 1000	Dell Inspiron 530	eMachines T5254	HP Pavilion a6560f	Shuttle G2 6800b
BAPCo Windows Media Encoder 9** (Minutes:Seconds)		5:33	5:55	9:42	6:18	10:08
Cinebench 10*		5,387	5,692	3,290	4,789	3,207
Company of Heroes	DirectX 9	125.4fps	11.7fps	2fps	12.5fps	1.8fps
	DirectX 10	46.4fps	***	***	***	***
Futuremark 3DMark06*		10,012	***	223	1,678	296
Futuremark 3DMark Vantage		10,674	***	***	***	***
Futuremark PCMark Vantage*		4,101	3,150	2,629	3,894	2,349
iTunes conversion** (Minutes:Seconds)		3:23	6:17	5:14	3:56	5:22
SYSmark 2007*		128	90	80	117	76

\* = Higher is better \*\* = Lower is better \*\*\* = Unable to complete test

Although the T5254's internal components don't quite match its elegant and gloss-gray appearance, the whole package is a bit better than your average budget-desktop fare.

## MEDIA DARLING

### HP Pavilion a6560f

Editors' Rating: **8.0** out of 10

**Pros:** Excellent hardware selection for myriad tasks, including Media Center functions

**Cons:** Poor gaming performance; limited expansion options

OKAY, SO IT'S NOT SO HOT at gaming, but otherwise, you'll have a hard time finding a basic task for which HP's \$718.99 configuration of the Pavilion a6560f isn't well-suited.

That especially includes top-tier media chores. Though unusual for a system in this price range, the Pavilion a6560f comes with a TV-tuner card, so you can record and play back your favorite TV shows using the Media Center features of the included Windows

Vista Home Premium operating system. (The 300GB hard drive gives you plenty of space to store them.) Plus, because HP has outfitted the machine with 3GB of RAM, you'll be able to do other tasks at the same time. In addition, the 256MB nVidia GeForce 9300GE video card has an HDMI port, so you can output to your high-definition television. You also get a multiformat memory-card reader, eight-channel surround-sound jacks, and digital audio ports.

If these are the kinds of specs you're looking for, the Pavilion a6560f is one of the most economical choices out there. Of course, there are a couple of drawbacks: The 2.6GHz Intel Core 2 Duo E4700 processor isn't exactly a performance superstar, for one. The desktop's expansion potential is also moderate at best: two front-accessible drive bays (one 5.25-inch, one 3.5-inch), one internal hard drive bay, one PCI slot, and one PCIe x1 slot are all that's available—even the RAM

Futuremark's PCMark Vantage tests how a system handles tasks such as photo manipulation, video playback and recording, audio transcoding, Web-page rendering, text editing, and hard drive access. BAPCo's SYSmark 2007 simulates scenarios in graphic editing, video

creation, office tasks like spreadsheets and e-mail, and 3D modeling. Each test resulted in an overall performance score, which we recorded.

### 3D AND GAME TESTING

Even though most budget machines are not ideally equipped

for serious gaming or other 3D work, we still ran our most basic tests in those areas on these units, in recognition of the fact that systems of any price level may be used for these tasks, regardless of appropriateness.

The Futuremark 3DMark06 and

3DMark Vantage tools measure real-time 3D rendering over a series of tests that measure graphics, physics, and multicore capabilities. We ran the tests at a resolution of 1,280x1,024 and reported the results we received.

We then proceeded to use the THQ game

Company of Heroes to test mainstream 3D-gaming performance, recording the average number of frames per second (fps) achieved. Finally, we ran the built-in performance test, at a resolution of 1,280x1,024, using both DirectX 9 (DX9) and DX10 shaders where applicable.

slots are maxed out. But given what you get, we're inclined to forgive much of what you don't, including gaming prowess.

Our DX9 Company of Heroes test returned sad results (only 12.5fps at 1,280x1,024 resolution), and our 3DMark06 score of 1,678 was also disheartening. (Our DX10 graphics tests wouldn't even run.) While some people would undoubtedly prefer that a computer so ideally suited for the living room handled 3D better, we think

they'd be satisfied with the TV-tuning functionality, regardless.

Special mention should also be made of HP Advisor, which guides you through the setup process prior to starting Windows for the first time, and provides a one-stop shop for common software functions later on. We were somewhat annoyed at how long the process took (roughly 10 minutes), but it was certainly friendlier than most of Microsoft's methods. We can see how HP Advisor would be

of use to someone with little or no computer knowledge, plugging in the tower for the first time; experienced users, might be a bit frustrated by the time investment. But when word gets out about this system's considerable value as a super-affordable TiVo replacement, we wouldn't be surprised if a few gurus went after the Pavilion a6560f, anyway.

## SHINY SPACE SAVER

### Shuttle G2 6800b

Editors' Rating: **6.4** out of 10

**Pros:** Compact size; attractive; some expansion potential

**Cons:** Underwhelming performance

HOW MUCH ARE YOU willing to sacrifice for the sake of convenience? That's the key question you'll have to answer if you're considering Shuttle's \$699 G2 6800b desktop.

With the attractive, black-metal G2 6800b, you're getting a stylish-looking computer that's also tiny enough to stick wherever you need it. Unfortunately, one of the biggest problems with miniaturization is that you pay as much for the process as you do for the results. This Shuttle, which measures 7x8x11.5 inches (HWD), isn't just smaller than a bread box—it's also smaller than many loaves of bread. But it's not destined to toast anything beyond the simplest apps.

Almost everything about the G2 6800b, beyond its size, is standard issue. You get a middle-of-the-road AMD budget processor (the Athlon 64 X2 BE-2350), just 1GB of DDR2 memory (the only system in our roundup to come with less than 2GB), a DVD±RW drive, a multiformat memory-card reader, integrated graphics (nVidia GeForce 7025), and the appropriately named Windows Vista Home Basic. You do, however, get a slight bit of variety in the ports. Up front are two USB 2.0 jacks, along with headphone, microphone, and four-pin FireWire connectors. Around back are four more USB 2.0 ports, as well as VGA, eight-pin FireWire, Ethernet, and six-channel audio connections. You also get two external Serial ATA (eSATA) jacks—perfect for supplementing the skimpy 150GB preinstalled internal hard drive.



HP Pavilion  
a6560f



For the most part, however, performance opportunities are limited by all the unexceptional out-of-the-box hardware. The G2 6800b was very sluggish for all but the simplest tasks, and it posted some of the lowest results we've seen on our benchmark tests. With Futuremark's PCMark05 and PCMark Vantage general-use testing, it eked out scores of only 3,600 and 2,349, respectively. The G2 6800b struggled with Windows Media Encoder for 10 minutes and 8 seconds, and with iTunes for 5 minutes and 22 seconds (not quite a new record, thanks to the Dell Inspiron 530). The 76 the PC earned in our BAPCo SYSmark 2007 full-system productivity test is also the lowest we've seen.

**Shuttle G2 6800b**



The integrated graphics helped ensure that the G2 6800b's 3D rendering was even worse. In Cinebench 9.5, it turned in a score of 559, and in Cinebench 10, it managed a 3,207—both disappointing numbers. Even low-level 3D gaming proved well-outside its comfort zone; the G2 6800b achieved a depressing 296 in Futuremark's

3DMark06, and only 1.8fps in the DX9 Company of Heroes benchmark test. (Because the G2 6800b's graphics hardware doesn't support DX10, our new 3DMark Vantage test wouldn't run.)

As long as you stick to everyday jobs like word processing and Web surfing, many of these deficiencies won't matter much. It might, however, be best to view the G2 6800b as a building block toward a stronger system down the line. Because it has one free PCIe x16 slot, you could add

a beefier graphics card. Plus, you get an open PCI slot and one free RAM bay. Although there's no room to cram a second hard drive inside the case, those eSATA ports could be your gateway to the wide, wonderful world of external storage options.

So while the G2 6800b isn't much to e-mail home about, it's also far from hopeless. But to maximize the latent potential of this pint-size desktop, you'll almost certainly have to shell out more than the \$699 it takes to make it yours.

## FEATURE COMPARISON

	Cyberpower Gamer Infinity 1000	Dell Inspiron 530	eMachines T5254	HP Pavilion a6560f	Shuttle G2 6800b
<b>EDITORS' RATING</b>	7.9	7.0	7.3	8.0	6.4
<b>CONFIGURATION</b>					
Processor	2.66GHz Core 2 Duo E8200	2.4GHz Core 2 Quad Q6600	2.1GHz Athlon 64 X2 BE-2350	2.6GHz Core 2 Duo E4700	2.1GHz Athlon 64 X2 BE-2350
System Memory	2GB DDR2	2GB DDR2	2GB DDR2	3GB DDR2	1GB DDR2
Graphics	ATI Radeon HD 3870 (512MB)	ATI Radeon HD 2400 Pro (128MB)	Integrated nVidia GeForce 6100	nVidia GeForce 9300 GE (256MB)	Integrated nVidia GeForce 7025
Hard Drive	320GB	250GB	300GB	300GB	150GB
Optical Drive	Double-layer DVD±RW	Double-layer DVD±RW	Double-layer DVD±RW	Double-layer DVD±RW	Double-layer DVD±RW
Monitor	None	None	17-inch wide-screen LCD	None	None
Operating System	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Basic
<b>COMPANY</b>	<b>Cyberpower</b> 800-707-0393 www.cyberpowerpc.com	<b>Dell</b> 800-915-3355 www.dell.com	<b>eMachines</b> 408-273-0888 www.emachines.com	<b>Hewlett-Packard</b> 888-999-4747 www.hp.com	<b>Shuttle Computer Group</b> 888-972-1818 us.shuttle.com
<b>DIRECT PRICE</b>	<b>\$750</b>	<b>\$750</b>	<b>\$600 (Mfr. Est. Price)</b>	<b>\$718.99</b>	<b>\$699</b>



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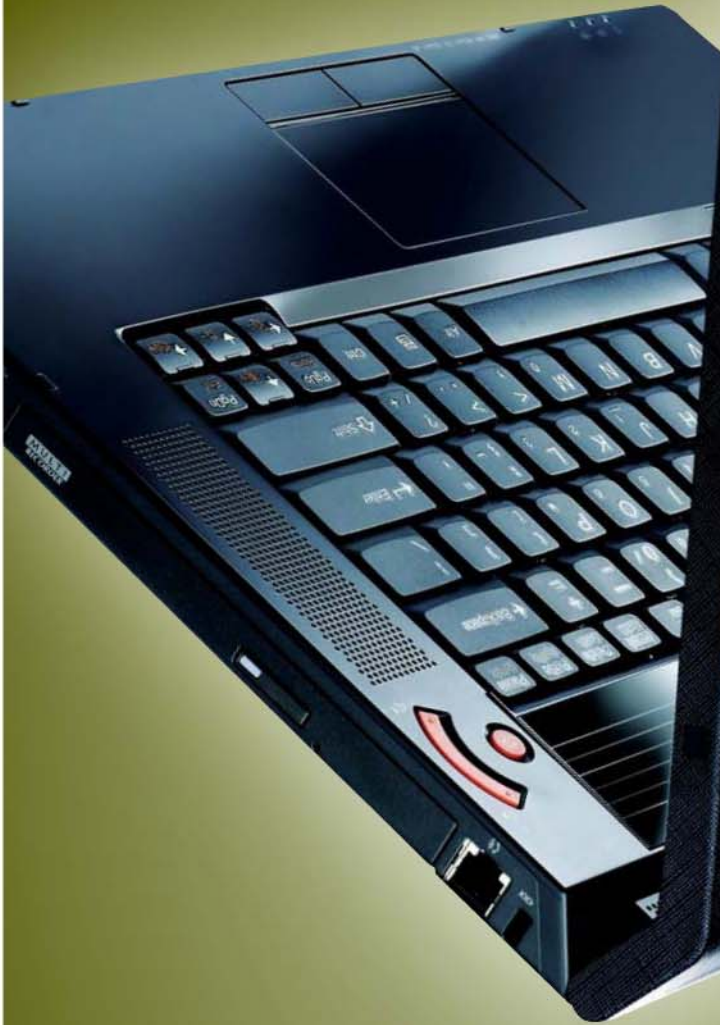


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*lenovo*



# How to **Shop** for a Laptop

By Erin Kandel

Not sure which notebook is right for you? Our buying advice will get you on your way to portable-computing glory.

# Since the notebook market exploded in popularity,

shoppers now have a greater variety of laptops to choose from than ever before. But when you don't know the difference between an ultraportable and a desktop replacement (or any portable system in between), let alone which notebook is best suited to meet your computing criteria, those options are more a source of frustration than joy.

That's where we can help. In this guide, we've split the laptop field into five categories, and have provided essential buying advice for each class. Whether you're looking for a system that costs as little as possible, one to travel with, something for handling your digital media collection, or a rig ready for the latest 3D games, our shopping tips will help you find your ideal notebook. To give you a taste of today's available models, we've also featured a top-quality system in each category.

## Ultraportables Travel Light

The thinnest and lightest notebooks you can buy, ultraportables raise the question: Why stay at your desk when you can work on the go? If you're constantly on the road, and need a featherweight notebook as your travel companion, you'll want one of these petite portables. While these systems typically cost more than \$1,500, we've seen a new breed of budget-price ultraportables—such as the Asus Eee PC 900 (see our review on p. TK)—starting at as little as \$299.

At less than four pounds and generally no more than an inch thick—the super-slender Apple MacBook Air measures just 0.76 inch at its thickest point—an ultraportable won't weigh down your backpack or briefcase. Screen sizes typically range from 7 to 13.3 inches; most are wide-format TFTs, though

we're seeing more and more models with slim LED-backlit displays, which offer increased power savings. When it comes to cases, a metal-alloy model will stand up to more knocks and drops on the road than a plastic one, without adding weight.

Intel's Ultra Low Voltage (ULV) Core Duo and Core 2 Duo processors deliver the longest battery life (up to seven hours), though many top-of-the-line ultraportables now carry Intel's more powerful Core Duo and Core 2 Duo CPUs. Note that these small systems are largely valued for portability, not speed; while processors running at 1.06GHz, 1.2GHz, and 1.6GHz aren't scorching by any means, they should offer plenty of power for on-the-road productivity chores, especially when paired with at least 2GB of system memory.

Wireless connectivity is a major must-

have for the frequent traveler. Built-in 802.11 wireless networking is a given on ultraportables, but look out for integrated Bluetooth 2.1 (useful for connecting an external keyboard or mouse), as well as a built-in wireless wide-area-network (WWAN) radio, which lets you tap into mobile broadband networks from AT&T, Sprint, or Verizon for a monthly fee.

Of course, you can't have it all in a system so small. Many ultraportables, especially the really tiny ones, tend to lack features that come standard on larger notebooks—most notably, optical drives. Some models do include internal drives, however, and a few give you the option of swapping the optical drive for an extra battery. Also, pay close attention to the size and quality of the keyboard, which is typically smaller (and hence less comfortable) than the average laptop's.

FEATURED SYSTEM **Apple MacBook Air**EDITORS' RATING **7.9**

**PROS** Ultrathin case packs 13.3-inch screen, full-size keyboard; decent performance, battery life for an ultraportable

**CONS** Only one USB port; lacks optical drive; no option for WWAN radio; few upgrade options

Apple, 800-692-7753  
www.apple.com  
**\$1,928**

The Apple MacBook Air is a fairly priced, decently powerful ultraportable with a killer design. Depending on your needs and priorities on the road, however, this notebook's missing features could be deal-breakers.

Clad in silver aluminum, the 3-pound Air is the thinnest we've seen—only 0.16 inch at its front edge. Open the notebook's slender lid and you're

greeted with a gorgeous 1,280x800-resolution display that, thanks to its LED backlighting, is both slim and bright. Below it, Apple included a full-size keyboard with backlit keys and a spacious track pad.

As you might surmise from the size of its chassis, the Air does not include a built-in optical drive. Another shortcoming is connectivity: The notebook includes just

three wired connections—one USB 2.0 port, a headphone jack, and a display port. Although it comes with 802.11n Wi-Fi and Bluetooth 2.1, Apple did not equip the Air with a WWAN module for Internet access via a high-speed cellular data service.

Compared with other ultraportables, the MacBook Air is reasonably priced at its \$1,799 baseline configuration, which includes a 1.6GHz Core 2 Duo processor, 2GB of RAM, an 80GB hard drive, and Intel GMA X3100 integrated graphics. (Our review unit came to \$1,928 with accessories.) We wish Apple offered more hardware-configuration options, however, especially in the hard drive department: The only alternative to the 80GB drive is a \$999 64GB solid-state drive.

Performance-wise, the Air delivers more than enough power for basic tasks like Web surfing, multimedia playback, and productivity chores. The unit's battery lasted a decent 2 hours and 49 minutes in our DVD-rundown test; we also eked out just over four hours of everyday use. —Erin Kandel



Apple  
MacBook  
Air

## Entertainment Laptops Play More Media

If encoding MP3 music files, editing home movies, and Photoshopping your family's photo collection are high on the to-do list for your PC, then you'll need a desktop-replacement laptop that's built to handle the demands of digital media. Stocked with powerful parts and useful extras, these entertainment notebooks are heavy, hot-running, and short on battery life. Plus, they don't come cheap—expect prices to start at around \$1,200.

Weighing as much as 15 pounds, entertainment laptops are designed for home use, not travel. Much of their weight comes from the display: The sweet spot in this category is a 17-inch wide-screen LCD, though we've seen systems with larger 18.4-, 19-, and 20.1-inch displays. (More screen real estate is always better, especially because portability and battery life are not issues.) For crisp text and smooth video playback, go with the maximum resolution available on the screen size you choose. If watching high-definition (HD) content is a must, make sure your display supports HD-capable resolutions. You may also want to add a Blu-ray drive, which can play compatible HD movies, as well as write up to 50GB of data to double-layer Blu-ray discs. This upgrade is pricey, however—usually around \$600. For standard-definition media playback, look for a multiformat (DVD±RW) DVD burner, which writes to CDs, as well as plus- and minus-format DVD media. The drive's write speed is a secondary consideration, and slower drives are cheaper.

Notebooks usually disappoint in terms of audio, but more manufacturers have been upping the quality of the built-in speakers they put into their media-centric laptops. Features like Dolby Digital Surround and a built-in subwoofer are good signs that a notebook's sound will be top-tier, but your best bet is to head to a local tech retailer to listen for yourself.

Along with a roomy keyboard and touch pad, many entertainment laptops come with a set of hard or touch-sensitive buttons for controlling media playback,

### FEATURED SYSTEM

#### **Sony VAIO VGN-FZ485U/B**

The Sony VAIO VGN-FZ485U/B combines all manner of multimedia goodies into a still-portable midsize notebook. The \$2,199 price may seem steep at first, but given its high-def Blu-ray drive and other components (like 4GB of RAM and a 300GB hard drive), the machine is fairly priced.

Wrapped in a silver chassis, the 6.1-pound VGN-FZ485U/B looks like a less-elegant MacBook Pro. Lift the lid and you'll find one of the system's main selling points: a 15.4-inch LCD with Sony's Xbrite-HiColor LCD technology. Indeed, text is razor-sharp, colors pop, and the screen is among the brightest we've seen on a notebook. In fact, Blu-ray playback looked stunning, with excellent detail and motion reproduction. Sure, the panel's 1,280x800 resolution is not the full 1080p resolution found on larger-screen multimedia desktop replacements, but we were not disappointed by its HD

adjusting audio settings, launching applications, and other tasks. You'll also find a large selection of ports and slots—be on the lookout for essentials like a media-card reader, DVI or HDMI video ports, a FireWire jack for connecting to a digital video camera, and an S/PDIF out, which lets you output audio to a set of external surround-sound speakers. If you plan to watch and record TV programs, make sure your laptop includes a TV tuner.

A dual-core CPU and at least 2GB of RAM should offer enough oomph to handle your multimedia chores; for better overall performance, opt for RAM that runs at 667MHz or faster. Some vendors may offer the option to add Intel Turbo memory to your system. These flash-memory modules, available in 512MB or 1GB varieties, reduce the time it takes for your computer to power up, access programs, and write data to the hard drive.

Speaking of the hard drive, be sure to configure your entertainment laptop with a large hard drive for storing all of your digital media files—we suggest 250GB at minimum. Instead of integrated graphics, opt for a dedicated video card with at least 128MB of video memory to add extra processing speed for media tasks.







## EDITORS' RATING **8.2**

**PROS** Bright, HD screen; Blu-ray burner; good multimedia performance; jumbo hard drive; HDMI port

**CONS** Average speakers; merely passable 3D-gaming power; short battery life; loaded with trialware

**Sony Electronics**  
877-865-7669  
www.sonystyle.com  
**\$2,199**

image quality. Standard-def DVDs also looked good, if a bit dark, with colors that tended to be reddish.

Beyond the screen, other hardware in the VGN-FZ485U/B is also top-shelf. In addition to the Blu-ray player/burner, Sony delivers Intel's latest Penryn-class processor, a whopping 4GB of RAM, a 300GB hard drive, and a 256MB nVidia

GeForce 8400M GT graphics card. The complete contingent of ports includes HDMI, three USB ports, FireWire, VGA, S-Video, Memory Stick Duo and SD card slots, and an ExpressCard/34 slot (note that PC Cards and ExpressCard/54 devices won't fit).

The full-size keyboard is comfortable to type on, though we found the touch pad a bit cramped. We do,

however, like the circular multimedia control pad above the Function-key row, as well as the "AV Mode" button that brings up on-screen icons to launch Windows Media Player, Windows Photo Gallery, InterVideo WinDVD, Internet Explorer, and others. (There's also a customizable quick-launch button.) We could live without all the preloaded trialware Sony piles on, though.

The VGN-FZ485U/B is near-silent during operation, which is good since the built-in stereo speakers certainly could use more volume, along with richer sound. They aren't bad for a notebook, but considering this is a Sony, we expected better audio fidelity and presence.

As for performance, the VGN-FZ485U/B offered better-than-average scores on our multimedia benchmark tests, but it was less successful as a 3D-gaming machine: While the machine is usable for the casual gamer, serious 3D players will want to look to a more expensive rig.

At just 1 hour and 10 minutes, battery life on our DVD-rundown test was decidedly low. —*Jamie Bsales*



Sony VAIO  
VGN-  
FZ485U/B

## Budget Notebooks Spend Less

With their eye-catching cases and surprisingly capable components, today's budget notebooks don't look or act a smidge like their clunky, pokey predecessors. If your needs don't go much beyond DVD watching, productivity work, and Web surfing, you can net a quality low-cost system for under \$1,000.

In terms of size and weight, budget notebooks span every category, from itty-bitty ultraportables weighing less than four pounds, to beefy desktop replacements of more than seven pounds. What size you choose should depend on your need for portability, but keep in mind that the plastic cases typically used for budget models aren't the most durable. And while bland-looking black or gray cases are still the norm, some manufacturers offer an exciting variety of color options and designs for their low-cost systems.

Although many budget laptops feature a 14.1- or 15.4-inch wide-screen LCD, screen sizes can range from 7 to 17 inches. The smaller the system, the smaller the keyboard and touch pad; hands-on testing is the best way to see if a particular model suits your typing style. Besides the usual ports and connectivity options (which should include 802.11b/g Wi-Fi), many manufacturers now include an HDMI output, which lets you connect the notebook to a big-screen television or display.

Low-power AMD Sempron and Intel Celeron processors used to be the norm for budget models, but many now come equipped with speedier dual-core CPUs such as Intel's Pentium Dual-Core, Core Duo, and Core 2 Duo, as well as AMD's Turion 64 X2. Save a little money by opting for lower clock speeds, such as 1.6GHz or 1.8GHz, which still offer enough power for e-mailing, Web browsing, media playback, and the like. Just don't skimp on RAM: We recommend going for 2GB of DDR memory, along with at least 100GB of hard drive space (the more you can afford, the better). Most budget laptops employ integrated graphics, which is fine for basic tasks. If you'll be dealing with anything more sophisticated, however, you'll want to spend more for a system with discrete graphics from ATI or nVidia.

## FEATURED SYSTEM *Lenovo IdeaPad Y510*

At the magical \$899 price point, you'll find a lot of consumer-targeted budget notebooks offering nearly identical feature sets and components. The retail-only Lenovo IdeaPad Y510 more than holds its own in this crowded market, offering an attractive combination of brains and (mild) brawn. It's a solid, affordable system for students and home users.

Right out of the box, it's clear you're not looking at your father's ThinkPad. The Y510 features a slick, stylish design starting with the attractive, scratch-resistant textured plastic on its outer lid. You'll also find touch-sensitive media keys, a volume control, and audio buttons for equalizer presets such as Rock and Jazz.

The IdeaPad may look different, but Lenovo hasn't changed its signature sturdy construction. Our evaluation model felt very solid, and the spacious keyboard has an excellent feel. The touch pad and actuation buttons are comfortable, as well.

Underneath this attractive case, however, is a rather mundane list of components: a 1.66GHz Core 2 Duo T5450 processor, 2GB of RAM, a 250GB hard drive, and integrated Intel GMA X3100 graphics. Unsurprising as these parts are, they happily came together to deliver better-than-average performance on our benchmark tests. In real-world terms, the IdeaPad should have no trouble running most consumer applications and handling basic multimedia tasks. On our demanding DVD-rundown test, the IdeaPad lasted only 1 hour and 36 minutes, near the bottom range of systems we've recently reviewed.

While the notebook's 15.4-inch WXGA screen provides rich, saturated colors and crystal-clear video playback, its protective coating is simply too reflective, making for poor off-axis viewing. We were also disappointed to see that the IdeaPad lacked an HDMI port, as well as any productivity software—features you'll find in many competing systems. Beyond that, though, the IdeaPad offers the usual connections, as well as a Webcam, which integrates well with the system's cool VeriFace face-recognition security software. —Asa Somers

### EDITORS' RATING **7.0**

**PROS** Fairly priced; great-looking; solidly built; good performance; face-recognition security software

**CONS** Screen is too reflective; no productivity suite, HDMI port; mediocre battery life

**Lenovo**, 866-968-4465  
www.lenovo.com  
**\$899**



## Thin-and-Lights Keep It Slim



Providing the best of both worlds, thin-and-light laptops are powerful enough to handle most tasks, yet svelte enough to take on the road. They're perfect fits for travelers who want more features, flexibility, and power than ultraportables can offer.

With prices starting around \$1,000, these notebooks are fairly affordable, although their starting specs can be on the weak side. The good news is that most vendors will let you configure your notebook with a number of high-end parts—if you're willing

to pay more.

Thin-and-lights don't demand as many compromises as ultraportables do, but they do weigh a bit more: about four to six pounds. With that somewhat-heftier chassis, you'll usually find a full-size keyboard, hard drives as large as 320GB, more ports and slots, and a larger display, usually ranging from 12.1 to 15.4 inches. Nearly all thin-and-lights have built-in optical drives; most come with a DVD burner, but a few models can be configured with a

Blu-ray drive.

Most of these totable notebooks will disappoint gamers because they forgo dedicated 3D chips in favor of integrated graphics, which not only cost less, but also help reduce the heft of the laptop case. You may find a few models with lower-end dedicated chips, however, such as the ATI Mobility Radeon HD 2400 or nVidia GeForce 8400M. While they won't rip through the latest titles at the highest resolutions, these Vista-compatible cards should satisfy casual gamers with their 128MB or 256MB of dedicated video RAM and DirectX 10 support.

For long battery life, strong performance, and cool running temperatures, look for a model powered by AMD's Turion 64 X2 processor or Intel's Core 2 Duo. And as always, go with 2GB of RAM or more. Batteries on these systems can last up to four hours.

### FEATURED SYSTEM **Dell XPS M1330**

#### EDITORS' RATING **8.1**

**PROS** Eminently portable; available with LED-backlit screen; very good performance; HDMI port

**CONS** Options drive up price quickly; thin sound from built-in speakers

Dell, 800-915-3355  
www.dell.com  
**\$2,404**

With its handsome design, sharp screen, and long options list, it's hard not to love the Dell XPS M1330. For buyers who need a constant computing companion, it's worth a long look.

Available in matte "tuxedo black" or "crimson red," the 4-pound M1330 is very light and easy to carry. Its full-size keyboard is exceedingly comfortable to type on, and we love the touch-sensitive multimedia control buttons.

The real draw is the option to get a wide-screen (1,280x800) LED-backlit display—a \$200 premium that's worth every penny. On the M1330, DVDs showed lifelike color reproduction and very good shadow detail. Sound quality from the built-in stereo speakers was a bit thin and lacking in bass, however.

The M1330 has most of the inputs and outputs you would expect, plus two headphone jacks and a welcome HDMI port. A fingerprint reader, Webcam, Bluetooth and 802.11a/b/n wireless, and embedded Dell Wireless Broadband connectivity rounded out our test configuration's very complete set of options.

Equipped with a 2.2GHz Core 2 Duo CPU, 2GB of RAM, nVidia GeForce Go 8400 GS graphics, and a 160GB hard drive, our \$2,404 test unit ranked in solid numbers on our productivity benchmark tests. Its lackluster score of 1,893 on Futuremark's 3DMark06, however, means avid 3D gamers will want to look elsewhere. The nine-cell extended battery delivered just over three hours of runtime on our DVD-rundown test. —J.B.



Dell XPS  
M1330

## Gaming Laptops Frag on the Go

Desktops may edge out laptops in terms of speed and configurability, but powerful gaming notebooks are still a compelling alternative for 3D enthusiasts who like to go out and get their game on. These brawny desktop replacements let you pack in high-end components capable of some serious frame rates and digital design prowess, but that power comes at a price: These notebooks start around \$1,700, and can cost over \$5,000 with upgrades.

Like entertainment notebooks, gaming laptops are large and in charge, with hefty cases that weigh over seven pounds; big, high-resolution displays; full-size keyboards; and an extensive assortment of audio and video ports. You may even find a few media-centric extras here, as well, including integrated TV tuners, Blu-ray drives, and media-control buttons.

For the best gaming and graphics performance, you'll want to outfit your notebook with the fastest components you can afford. You'll certainly do well with a high-end Intel Core 2 Duo processor, though for maximum power, go for a Core 2 Quad or Core 2 Extreme if you have the option to. While these speedy chips are a great choice for increased performance, be aware that they often run hotter and drain battery power faster than other processors.

Integrated graphics are a major no-no for gaming. To handle the latest titles, these notebooks need dedicated mobile graphics processors with 256MB or 512MB of memory. The speediest systems even manage to pack in two cards with nVidia's Scalable Link Interface (SLI) technology for 1GB of dedicated graphics memory. You may also be able to "double up" on other components, as well: We've seen gaming laptops with two optical drives and dual 500GB RAID-array hard drives. (Those who want to access data quickly should consider desktop-caliber drives spinning at 7,200rpm.) As for RAM, 2GB is the minimum here—go for 4GB if you can afford to.

Of course, with all these top-notch parts, your gaming notebook could run hot enough to scorch your lap. Battery life, too, will take a hit, so don't expect to stray from a plug for more than an hour or so.



### FEATURED SYSTEM **Alienware Area-51 m15x**

EDITORS' RATING **8.7**

**PROS** Unparalleled performance; top-of-the-line components; Blu-ray playback; HDMI port

**CONS** Bland, flimsy case design; awkward touch controls, mouse

Alienware, 800-254-3692  
www.alienware.com  
**\$4,858**

If you've been holding off on buying a new gaming laptop, consider Alienware's Area-51 m15x. Simply put, this 15.4-inch machine is the fastest mobile gamer we've ever tested.

Although the m15x starts at a reasonable \$2,149, Alienware's long list of stellar parts quickly runs up the bill: Our souped-up review unit cost a whopping \$4,858. Thankfully, it also came loaded with top-end components, including a 512MB GeForce 8800M GTX graphics chip, an Intel Penryn-based 2.8GHz Core 2 Extreme X9000 processor, 4GB of

DDR2 RAM, a Blu-ray burner, a 200GB internal hard drive, and an additional 320GB swappable drive.

At 7.1 pounds, the m15x does have portability going for it, but we're not big fans of its boring, blocky, cheap-feeling plastic case. Other design faux pas: an awkward touch pad, along with unresponsive control buttons. We did like the multitude of LEDs built into the notebook's backlit keyboard (a \$50 upgrade option) and encircling the case lid, emblem, and touch pad. Watching Blu-ray movies on the notebook's 15.4-inch HD display was breathtaking, as well; you can also use the HDMI port to pipe video and audio directly out to a high-definition television.

In our benchmark testing, the m15x positively smoked the competition, scoring a blazing 76.2 frames per second (fps) in Company of Heroes and 96fps in F.E.A.R. (both at 1,900x1,200 resolution with anti-aliasing off). The system also prevailed at our 3DMark06 test, posting 7,381 at 1,900x1,200, which shattered the score of 5,921 the Dell XPS M1730 recorded. As expected, battery life wasn't great, lasting 1 hour 22 minutes in our rundown test. —Mike Spitalieri



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coverage, go to  
[computershopper.com/  
laptops](http://computershopper.com/laptops)

Toshiba recommends  
Windows Vista® Home Premium



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**Saitek X52 Pro**  
The X52 Pro is considered one of the best flight-sim accessories. This joystick-and-throttle combo looks like it's better suited for piloting virtual fighter jets, but it's actually designed for any kind of flying. (It supports Microsoft Flight Simulator X out of the box.) The X52 has seven control axes, 19 programmable buttons, three hat switches, and a mouse control, as well as a three-way mode switch that triples each button's functionality.

Saitek • [www.saitekusa.com](http://www.saitekusa.com) • \$169.95

# Gamer's Delight

By Serguei Servianov

GAMING PERIPHERALS tend to span the spectrum from the hokey to the absurd. From old-school, arcade-style joysticks to controllers with built-in fans, companies are constantly coming up with creative (and expensive) hardware in the hopes that you'll drop the cash to increase the fun. Unfortunately, many of these accessories are one-trick ponies that will spend more time in a dark closet than in your hands. "There's a reason I only game with my Logitech mouse and keyboard," says Matt Bertz, an editor at *Game Informer Magazine*. "Because everything else out there feels gimmicky." ... Sometimes, however, the right gear can give you an extra edge, especially when the accuracy of that split-second blaster shot rests on how responsive your hardware is. And then there's stuff that you simply must possess if you're ever going to call yourself a true gamer. The best products don't attempt to reinvent the wheel, according to Scott Steinberg, a gaming journalist. "They simply improve general handling and comfort," he says, "while offering players immediate, tangible benefits." ... From flight sticks to gaming mice to speakers, here are the latest ways controllers crank your games to 11.

## Logitech Z Cinema Advanced Surround Sound System

Don't mistake the Cinema Advanced's pretty face for a lack of power. Although the three-channel system lacks rear speakers, SRS TruSurround HD technology creates a surround-sound environment with only three components. The subwoofer helps deliver deep bass, and a USB connection to your PC ensures that the digital audio signal remains crisp and free of unwanted noise. The included remote even lets you control Windows Media Center features.

Logitech • [www.logitech.com](http://www.logitech.com) •  
\$299.99



## Need to Know: *Flight Simulators*

When gamers take to the skies, the most important item is a good stick-and-thrust system (or a yoke-and-thrust system for civilian flight simulators like Microsoft Flight Simulator X), preferably one made from durable components. Look for enough programmable buttons and features that will allow you keep your hands off the keyboard, which makes the flight experience more realistic. If you want to enhance the experience even further, consider getting a set of pedals, which will allow you to manipulate the rudders and toe brakes of your virtual aircraft.



## Creative PCI Express Sound Blaster X-Fi Titanium Fatal1ty Professional Series

The name is a bit loaded, but then again so is this sound card. The official audio card of the Championship Gaming Series competition, this PCI Express-based Sound Blaster supports EAX 5.0 sound effects, X-Fi virtual surround sound, and Dolby Digital Live for true six-channel surround sound. If you want the most out of your audio experience during gaming, add this component to your desktop.

Creative Technology • [us.creative.com](http://us.creative.com) • \$149.99



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[computershopper.com/software](http://computershopper.com/software)





**Razer Goliathus**

A mouse pad designed for gaming seems laughable, but if it's from the experts at Razer, it might be something to take seriously. The Goliathus was actually conceived with the help of professional gamers from around the world, who also field-tested the product during competitions. The pad uses special woven fibers and is available in two versions: one designed for speed, and another for control and accuracy.

The Speed and Control Editions are available in three sizes.

Razer U.S.A. • [www.razerzone.com](http://www.razerzone.com) • \$14.99, \$19.99, and \$24.99, depending on size



**Need to Know:**  
**Playing Role-playing & Real-Time Strategy Games**

If there's one thing that unites role-playing-game (RPG) and real-time strategy (RTS) players, it's the need for a programmable keyboard, and a fast mouse with plenty of mappable buttons, since games from both genres require players to execute complex maneuvers quickly. Combining several actions into a single push of a button saves you time during intense battles and may give you an edge over your opponents. And, if you're planning to join others in a massively multiplayer online (MMORPG or MMORTS) game, you'll need a good headset for hands-free communication with your fellow players.



**Microsoft Sidewinder**

The Sidewinder mouse heralded Microsoft's return to the gaming world, bringing back a familiar name in gaming accessories. You can change the mouse's sensitivity with a single push of a button and the adjustable weight lets you make it lighter or heavier.

Microsoft • [www.microsoft.com/hardware](http://www.microsoft.com/hardware) • \$79.95

# Gamer's Delight



### Zalman FPS Gun

You won't mistake this mouse for another. The FPS Gun's pistol-grip may increase the sense of realism, but the most unique aspect of the design is the sensor, which is mounted at the head of the mouse, rather than in the middle, as with most traditional mice. This allows for quicker, wider movement. Like the Microsoft Sidewinder, the FPS Gun lets users change the sensitivity instantly during the game.

Zalman Tech • [www.zalman.co.kr](http://www.zalman.co.kr) • \$69.99

### Sennheiser PC 350

The PC 350 headset features full-size earcups that help isolate you from the real world so you can immerse yourself in the virtual one. Plus, the noise-cancelling microphone ensures that your opponents hear you loud and clear when you frag them.

Sennheiser Electronic • [www.sennheiserusa.com](http://www.sennheiserusa.com) • \$249.99



## Need to Know: First-Person Shooters

Speed is a concern for fans of first-person shooters (FPS). Some prefer to use gamepads in lieu of a keyboard, considering them more responsive for fast-paced play (like the Belkin Nostromo n52te reviewed on p. TK). Others like to stick with a dedicated gaming keyboard and an extra-responsive mouse that's quick and precise. Since these games can be incredibly intense—and more often than not, visually and aurally stunning—a large display and a slick set of speakers are also essential.



**SteelSeries 7G Professional Gaming Keyboard**

Keyboards don't get any more luxurious than the 7G. It looks like an ordinary keyboard at first glance, but hidden from view are gold-plated mechanical switches, and built into the keyboard are two USB ports, along with headphone and microphone jacks to connect any additional gaming accessories.

SteelSeries • [www.steelseries.com](http://www.steelseries.com) • \$149.99



**Sharp Aquos LC-32GP3U**

If you want to experience gaming in high definition at 1,920x1,080 (1080p) resolution (provided the game can support it), the 32-inch Aquos LC-32GP3U is a dream come true. Doubling as both a high-definition LCD television and a monitor, this Aquos is optimized for gaming, thanks to its Vyper Drive game mode that helps decrease any lag between the game and the display. Three HDMI and two component-video inputs let you hook up other high-def sources such as a gaming console or digital cable box.

Sharp Electronics • [www.sharppusa.com](http://www.sharppusa.com) • \$1,399



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## COMPUTER CURES JOHN A. BUREK



### MOTHERING INSTINCT

*I want to upgrade my five-year-old Gateway laptop, including motherboard. Is this cost-effective?*

CECIL WILLIAMS

Alas, no. Laptop motherboards are very particular to specific laptop models. Unlike with standard desktop motherboards that comply with the ATX form factor or its derivatives, you can't simply swap a laptop motherboard out, since it's been engineered for the exact dimensions, cooling needs, and design of that notebook enclosure. Even a motherboard for a later model of the same laptop line might not be compatible.

Upgrading only the CPU is likely more trouble than it's worth, too. You'll be limited, at best, to the processor series the original notebook was outfitted for, so any performance boost is likely to be marginal.

In any case, even today's entry-level \$500 or \$600 notebooks will trounce most five-year-old laptops in terms of performance and features. I recommend saving for a new laptop and relegating the old one to second-string or hand-me-down status.

### POWER POINTERS

*I had PowerPoint Viewer 97 installed okay, but very recently I uninstalled it and installed PowerPoint 2007 instead. I can't seem to associate the new program with PPS files to open them. Can you help?*

COPDOC, VIA THE COMPUTER SHOPPER FORUMS

Changing file associations is one of those tasks that's often necessary, but just unintuitive enough that it calls for a refresher every time.

Assuming you're running Windows XP, in My Computer or Windows Explorer, go to Tools > Folder Options >

File Types tab for the control panel for tweaking file associations. In the rolling list of file types, scroll to the "PPS" extension (if it's there), highlight it, click the Change button, tick off the radio button labeled "Select the program from the list," and hit OK. (If you don't see "PPS" in the list, first create it by clicking New and typing PPS into the File Extension box.) Find PowerPoint 2007 in the list of apps, and highlight it; also, check the box "Always use the selected program to open this kind of file." Hit OK and Close, and test your work—double-clicking a PPS file should launch PowerPoint 2007.

**Unlike standard desktop motherboards, laptop motherboards can't simply be swapped out—they're engineered for the exact notebook enclosure.**

If this doesn't work, though, you may have to do a bit of behind-the-scenes Windows arm-twisting to make it launch the program. Go back to Tools > Folder Options > File Types tab, highlight "PPS," and click the Advanced button. There, you'll find a list of Actions that Windows can perform when the file is launched. In the list, double-click Open or Show, and make sure the file path points to the executable file for your installation of PowerPoint 2007. If it doesn't, click Browse and navigate to it. Setting that properly should fix the problem.

### SPEEDY DRIVE-THROUGH(PUT)

*I need to upgrade my 23GB 10,000rpm Serial ATA (SATA) drive to a larger drive. I bought it when these drives first came out. I recently read that the new SATA drives cannot be swapped out for the early ones, without adding a PCI card. Can someone tell me the caveats of switching my old drive for a new SATA drive?*

UNCLELAR68 VIA THE COMPUTER SHOPPER FORUM

In this case, it's not a necessity that you upgrade the SATA interface in your PC, but you may well want to. Recent-manufacture SATA drives are second-generation models (commonly dubbed "SATA II" drives), capable of transferring data at up to 300MB/sec. They do work with the original SATA interface, which was limited to 150MB/sec, but the SATA II drive will be constrained to the older interface's lesser maximum throughput. (Your motherboard almost certainly has the older interface, if it's the same age as or older than your 23GB drive.)

Note, though, that whatever the interface's maximum potential throughput, you'll achieve that speed only in the rare moments when the drive hits its "burst rate"—that is, when the PC requests information that's been predictively fetched to the drive's onboard cache memory or buffer. Because that doesn't happen most of the time, the performance hit from the interface bottleneck will be moderate at best.

Still, since you're opting for a 10,000rpm drive, maximizing performance is obviously important to you. In that case, a SATA PCI or PCI



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Express card that supports 300MB/sec transfers is what you need; it may also deliver the added benefit of support for Native Command Queuing (NCQ), another recent development in SATA drives. NCQ, if present in the drive and controller (and, with some versions of Windows, in a driver), enables the drive to prioritize read and write commands in the most efficient manner possible, increasing performance and reducing drive wear. It's mainly of importance if you're a heavy multitasker that, say, renders video in the background while performing other tasks.

Note that a card isn't your only option. If you're looking for a wider-ranging upgrade, a new motherboard with built-in SATA II support might not cost much more than a SATA II PCI card.

#### FINE TUNING TIPS

*I expect to be purchasing a new desktop soon and am considering getting a TV tuner bundled in. I also have thought about buying the digital-video-recorder (DVR) service offered through my cable-TV provider. Do you have tips and/or things to consider when deciding between the two? Or are there good arguments for getting both? My main concern is capturing shows that air when I am unable to watch.*

TWUPNY, VIA THE  
COMPUTER SHOPPER FORUMS

One big X-factor here will make the choice clear: If you're planning on recording programs from premium or high-definition (HD) digital cable channels, the TV-tuner approach will present some hurdles. A standard PC TV tuner should be able to capture or time-shift anything that your cable box puts out as an analog signal, if you connect the tuner via your set-top box's coaxial-cable or composite-video outputs. You'll be hampered, though, by recordings of mediocre-at-best quality. (Most TV tuners don't deliver

stellar analog recording quality.)

Capturing premium digital and HD cable, though, is PC tuners' real weak spot. The only programming you'll be able to capture in purely digital format is over-the-air (that is, antenna-received) digital broadcasts, whether standard- or high-definition. Depending on the PC tuner, you may be able to capture digital channels that are sent over cable "in the clear," or unencrypted. These unencrypted channels, associated with a technology known as "Clear QAM," are usually the same digital channels that you can receive locally over the air, however. Your tuner-card software must specifically support Clear QAM for you to take advantage of this (Windows Media Center's TV functionality, unfor-

### CableCard tuners will allow PC capture of premium digital content within whatever DRM parameters a given program is transmitted with.

tunately, cannot), and it can be kludgy to access and map these channels. AVerMedia ([www.avermedia.com](http://www.avermedia.com)) offers cards with beta software that can make Clear QAM accessible in Media Center; SiliconDust ([www.silicondust.com](http://www.silicondust.com)), with its HD HomeRun tuner, offers similar functionality.

The major exception here is if you purchase a prebuilt PC that employs a CableCard tuner. CableCard tuners will allow PC capture of premium digital content within whatever digital-rights-management (DRM) parameters a given program is transmitted with.

So, the short answer: If you're not fussy about quality and most of your

viewing will not involve premium digital channels, a PC TV tuner might suffice. (Presumably, you'll also get the added benefit of easy access to a DVD burner in your PC.) But if you're recording lots of Discovery HD or other premium digital channels—and convenience is paramount—the DVR box and service are the way to go for now.

#### A STRETCH FOR INFRARED

*I recently purchased a new HP PC equipped with Media Center. I have a question about extending the infrared (IR) wire connection to the TV set-top box—the box in a different room than my PC. How far will the signal travel, and what kind of wire should I use? Or are there wireless options?*

GUY GAGNE

The IR wire you're talking about is known as an "IR blaster" or "IR flasher"—it's used to transmit a simulated remote-control signal from the Media Center PC to your cable or satellite set-top box (STB), allowing Media Center to change channels on the box when you give your PC the command. The blaster typically plugs into a jack on a Media Center PC, or into the back of a USB IR receiver that picks up the signals from your Media Center remote. (The remote works through your PC and Windows, not directly with your STB.) At the other end of the wire is a small transmitter you stick onto the front face of your STB, near its IR receiver, to flash the channel-changing signal the PC sends. All of the blasters I've seen, though, only give you about six feet of wire.

The problem with entirely replacing this blaster with another solution is twofold. First, Media Center looks for the blaster during setup and grinds the process to a halt if it's not found. Second, you need the blaster to keep your STB and Media Center in sync; otherwise, the Guide function, which lets you identify and change channels within Media Center, won't work correctly. So you need to work with what you have.

The jack on the end of the typical IR blaster is a common 1/8-inch mini-jack of the type used by compact headphones. I experimented with

spare stereo and mono audio-extension cables I had on hand (the kind you use to extend the reach of headphones). A 15-foot cable indeed served as a workable extension cable—the IR blaster on my Media Center PC still flashed strong enough to change channels on my STB. So, for a relatively short distance like this, a wire like RadioShack's number 42-2562 ([www.radioshack.com](http://www.radioshack.com)) should suffice.

For a really long wire run, though, consider a product like Smart-AVI's \$199 IR100 ([www.smartavi.com](http://www.smartavi.com)). It serves as a hardwired infrared "bridge," letting you run Ethernet cable to carry an IR signal. You can run up to 1,000 feet of CAT-5 network cable between its two termini.

For shorter distances, wireless options exist, and they're much more cost-effective than the IR100. What you're looking for is marketed as a "remote control extender"—it employs a receiver to detect an IR signal at one location, converts it to radio frequency (RF), and transmits it to a matching module, which then reconverts it to IR and flashes it at your

## For shorter distances, wireless "remote control extenders" are more cost-effective than hardwired IR bridges.

nearby equipment. Check out models like the PowerMid from X10 or the LF-IRX Leapfrog from Terk Technologies ([www.audiovox.com](http://www.audiovox.com)). They cost under \$50 and keep you from having to run lots of wire. You'd stick your Media Center PC's IR blaster onto the device's receiver; the blaster would flash the signal to the other room, where your STB is located.

### UP-FRONT ADVICE

*I just recently constructed a new system, and it's running beautifully, except for the front audio ports. Neither one will recognize any device plugged into it, and neither will produce sound. I thought that maybe I had improperly connected*

*them to the motherboard, but that is not the case. I had the same problem with my last computer, which also had an MSI board with Realtek HD Audio. Any suggestions?*

DARKMANDALORIAN VIA THE COMPUTER SHOPPER FORUMS

First, in the motherboard BIOS, see if there's a selector that allows you to switch the front-panel audio standard. Some BIOSes have an option that lets you toggle between the two major standards that govern front-panel audio: AC '97 and HD Audio. You'll want to make sure the BIOS setting matches the type of front-panel-audio connector that your case provides. (Usually "HD Audio" or "AC '97" will be stenciled right on the rectangular plug at the end of the cable running from the ports.)

Otherwise, here's an excellent idea suggested by one of our online forum administrators: In your Realtek audio chip's software control panel, see if there's an option to disable front-panel-audio detection. This option has often proved to be balky, and turning it off might be all you need to do.

## TIP OF THE MONTH: E-LOCK XP

*There comes a point when you just don't want to remember any more passwords, but you don't want to compromise security, either. Biometric devices are still pricey, but a cheaper alternative might help: I usually log in to Windows XP via a flash drive. Like the writer from an earlier Tip of the Month who suggested using old 16MB flash drives to store a spreadsheet with your passwords, you can use that same flash drive to physically log into Windows.*

*You must first set up your flash drive as the A: drive in Windows. To rename it, access Disk Management with your flash drive plugged in. (Right-click on My Computer, and select Manage, and from there click Disk Management.) Right-click on your flash drive, click Change Drive Letter and Paths, click the Change button, select "A:" from the drop-down list, and press OK. You're ready to move on to the next step.*

*Click Start > Run, type **syskey**, and hit OK. Make sure encryption is enabled, then click the Update button. Select the option that says Store Startup Key on Floppy Disk, and follow the prompts to save the encryption key to A:, your flash drive.*

*That's it! Reboot your computer, and when Windows loads up,*



*a different message will appear, asking you to insert a key. Plug in your flash drive, wait a few seconds, and log in. Without the flash drive, however, you can't log in, so that can cut both ways.*

JACOB AHN

*This is indeed a good tip for securing a laptop you take on the road (or a desktop in an insecure location). Storing the key*

*apart can be effective protection for sensitive data you might have on the system. My only reservation, of course, is yours, as well—if you lose the key, or the key gets corrupted, you've got a major problem. So keeping important data backed up in a location apart from your boot drive is crucial.*

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# Upload Your Videos to YouTube

BY DAVID ENGLISH



**UNLESS YOU'VE BEEN LIVING IN A CAVE,** you probably know about YouTube ([www.youtube.com](http://www.youtube.com)). It's a great way to view movie trailers, music performances, celebrity footage, and clips of your friends, among other things. But have you ever thought about uploading your own videos?

It's easier than you might think. In fact, there's a good chance you already have everything you'll need to record, edit, and upload video files. And if you don't want to share your videos with the *entire* world, YouTube lets you make any video private—available to you and as many as 25 other people. So what are you waiting for? Here are five easy steps that will quickly have you streaming your video creations over the Internet.



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## 1 Shoot Your Video

You can use almost any video-recording device for YouTube, including digital cameras, cell phones, flash-based camcorders (such as Flip Video), MiniDV/DVD/hard drive camcorders, and even Webcams. If you can save the video to—and view the video on—your computer, odds are you'll be able to edit it and upload it to YouTube.

Before you shoot your video, think about how you watch other people's videos on YouTube. If the action is too hard to see, the video is too tiny, out-of-focus, or jerky, or you can't see the point of the video in the first few seconds, then you'll quickly lose interest. Now address those annoyances in your own video production. Use mostly close-ups. Record in a resolution of at least 320x240—but 640x480 would be even better. Use a frame rate of 30 frames per second. And forget the long-winded intro—go right to the interesting part.

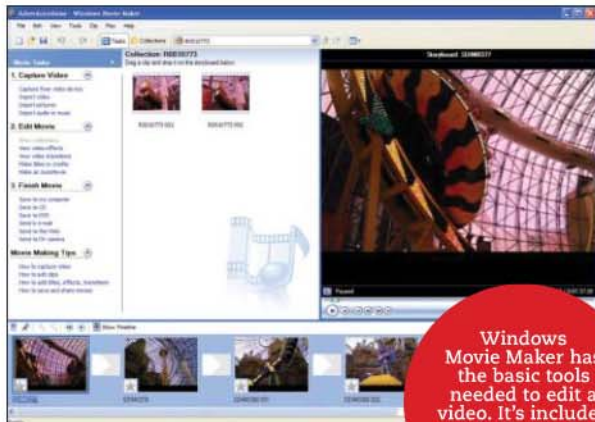


If your digital camera has a movie mode, you may be able to use it to record your YouTube video.

## 2 Edit Your Video

YouTube can accept a wide range of video formats, including AVI, MOV, MPG, and WMV files. If you plan to edit your video, make sure your video-editing program can save it to a file format that's compatible with YouTube. Your editing program will recompress the video as it saves your edited version, so save it to the highest quality possible.

You may already have a video editor on your computer. Both Windows XP and Windows Vista include Windows Movie Maker, a simple-to-use video-editing application. Recent versions of Nero and Roxio Easy Media Creator also have a video-editing component. We'll be using Windows Movie Maker from Windows XP for our example because it's widely available, but if you have another



Windows Movie Maker has the basic tools needed to edit a video. It's included with both Windows XP and Windows Vista.



program you're comfortable with—and it's compatible with your video-recording device and YouTube's video formats—then use that one.

With Windows Movie Maker, you can arrange the order of your video shots, trim the shots if necessary, as well as add dissolves, transitions, and special effects. To save a file at the highest quality, choose File and then Save Movie File from the pull-down menus. Select My Computer as the save location, click Next, and click Next again if you're content with the default filename and directory. Then select Other Settings and then "High quality video (large)." Click Next again to complete the process.

YouTube generally limits each video file to 10 minutes and 100MB, so plan to stay within those parameters. There are exceptions, however. You can exceed the 100MB restriction if you use the YouTube Uploader application, rather than the usual upload method. And you can exceed the 10-minute limitation if you apply for a special account, such as Director, Comedian, Musician, or Guru. Check the Help section on YouTube for details.

### 3 Sign Up with YouTube

If you don't already have an account with YouTube, you'll need to sign up to become a member. Click "Sign Up" at the top of YouTube's main page. There's no cost or obligation, though the site does request some personal information, such as your e-mail address, zip code, gender, and date of birth. You'll have an opportunity to read the Terms of Use and Privacy Policy, which cover ownership rights to the video, restrictions on the content you can upload, and how your personal information might be used by YouTube and third-party companies. Once you've selected a username and password, a verification e-mail will be sent to the e-mail address you've provided. Click on the link in that message, and you'll be ready to start uploading.

### 4 Upload Your Video

Log into your account from YouTube's opening page, and click the yellow Upload button in the upper-right-hand corner of the screen. You'll need to add a title, description and category along with tags for your video. The title and description will be displayed alongside your video, so try to have them zero in on what makes your video worth watching. If it's an event in a park, you might mention both the event and park by name in the title. If your video is highly unusual, explain why in the description. You select the category from a menu list, so choose the category that seems to be the best fit. The tags are keywords that help people find your video, so think about all the different word associations that might lead users to your content.

You'll have additional options, such as whether to make your video public or private, whether to allow comments, and whether to have your video available for viewing on cell phones and televisions. Once you're done, click the "Upload a video..." button, and you'll progress to another page that will help you browse your hard drive for the file you want to upload. Even with a broadband connection, it could take anywhere from a few minutes to over an hour to upload the file, depending on the file size and connection speed. Once the upload is complete, you'll be provided with some HTML code you can embed into your Web site, so visitors can go directly to the video's Web page on YouTube.

Choose words for your video's title, description, and tags that will help it stand out from the other videos.



### 5 Test Your Video

To try out your video, select Account from the YouTube menu options positioned across the top of the screen. Then choose My Videos from the pull-down menu. From there, you can click on the video title to go to the page where YouTube visitors can access your clip. Run the video to see if it plays as expected. The address in your browser's location bar is your video's URL, which you can copy and paste it into an e-mail for friends and family. If you've chosen interesting tags for the video, you should see an increase in the views count within an hour or two. You can return to My Videos at any time and edit the video's title, description, category, and tags. You'll also find an Insight button, which shows you a breakdown, by country, of where your video has been viewed since you uploaded it.

The My Videos page also lets you delete the video, which is useful if you decide to resubmit it in a re-edited form, or if you want to experiment with different compression rates or file formats. Once your video has been online for a while, don't be surprised if you receive requests for additional footage or background information. Think of your video as a work in progress, as well as a learning experience that may attract people with similar interests. As you add videos under your YouTube username, you may even develop an audience that eagerly awaits your next masterpiece.



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# Build Your Own



NEW PRODUCTS FOR BUILDING A CUSTOM PC | BY JOHN A. BUREK



## Aggressive passive

The name must be tongue-in-cheek: Few CPU coolers are less “hyper” than Cooler Master’s **Hyper Z600**. That’s because this is a rare passive CPU cooler, built to cool a processor without the services of a dedicated fan and its attendant noise. (It can, optionally, be outfitted with one or even two 120mm fans for heat-hog chips or overclocking.) This hulking sentinel measures 6.3 inches high, so a large case with lots of overhead clearance is a prerequisite, but it’s rated to cool any of the entire run of Intel LGA775 or AMD Socket 940/AM2/AM2+ chips, if adequate airflow is provided. Pricing was not available at press time. Cooler Master, [www.coolermaster.com](http://www.coolermaster.com)

## ThreeForce cooler

Tweakers driven to cranking their graphics well past posted speed limits will perk up at Arctic Cooling’s **Accelero Xtreme 9800**. This third-party cooler fastens onto nVidia’s new-kid GeForce 9800 GTX-based graphics cards, replacing the stock cooler. The feature that sets it apart? A threesome of 80mm fans—not just the usual single spinner—allows for an expansive heat sink backed by an array of heat pipes for first-class heat-wicking potential. Use the popular RivaTuner utility to tweak the \$54.95 Accelero for your ideal balance of quiet and cool—just make sure you have plenty of clearance around your card. Arctic Cooling, [www.arcticcooling.com](http://www.arcticcooling.com)



## Towering achievement

Power users and game fanatics can orchestrate a serious dream PC with the \$209.95 **Antec Twelve Hundred**, an imposing enthusiast ATX case. With a dozen drive bays, a fully perforated front for massive airflow, and the ability to accept up to eight fans (including a gargantuan 200mm top-mounted exhaust), this 23-inch tower qualifies as a luxury high-rise for the PC set. Plus, two nice touches: A storage well up top holds your music player while you’re transferring tunes, and washable dust filters help keep the interior clean. Just be sure to factor a power supply into the equation, as none is provided. Antec, [www.antec.com](http://www.antec.com)



For more PC-building info, go to [computershopper.com/build-your-own](http://computershopper.com/build-your-own)

## BUILD YOUR OWN

### Rammed at top speed

Half the fun of overclocking hardware is doing it yourself, so why deny yourself the pleasure? Because with Corsair's **Dominator DDR3 2000MHz 4GB** RAM kit, you're guaranteed extreme overclocking performance in RAM modules engineered for stability—no funky memory crashes when you're running the latest graphics-mashing shooter at top resolution. Plus, no need to worry about running your RAM out of spec and voiding your warranty—Corsair guarantees the chips for life. Special multi-layer heat dissipation keeps these extreme-performance DIMMs from overheating. Performance isn't the only extreme aspect, though: At \$675 a set, you won't want—or need—to buy RAM again for a while. *Corsair, [www.corsair.com](http://www.corsair.com)*



### DIY micro machine

Just how small can a small-form-factor Windows PC get? VIA may have reached the practical limit. With the \$299.99 **Artigo Pico-ITX Builder Kit**, you can assemble a truly minuscule Windows XP/2000 or Linux-based PC, small enough to fit into the 5.25-inch drive bay of a standard PC tower—or even get lost under the sheaf of bills on your desk. You provide the hard drive (a 2.5-inch IDE laptop-style model) and RAM (up to 1GB in a single SO-DIMM module). Graphics are integrated, as is the CPU (a 1GHz VIA C7), so don't expect to breeze through benchmark tests, but a "real" PC with a motherboard about the size of an iPod is nonetheless a marvel. *VIA Technologies, [www.via.com.tw](http://www.via.com.tw)*

### Speedy stor-o-saurus

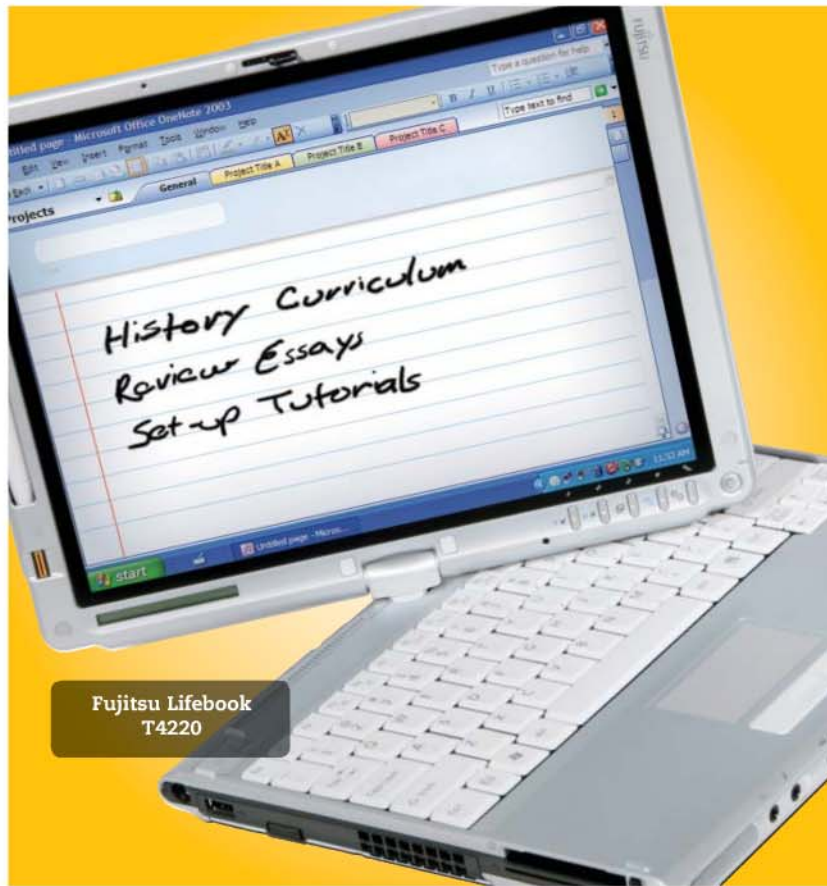
The 10,000rpm hard drive—headlined by Western Digital's Raptor line—has long been the silver-platter standard for extreme-performance consumer hard drives. WD's next evolutionary step, the **VelociRaptor**, is a 300GB drive—the highest current capacity for drives at this spin rate—with an unusual form factor. It's a 2.5-inch drive (a size usually reserved for mobile or laptop drives) embedded in a combination heat sink and frame WD dubs the "IcePack," which fits into a standard 3.5-inch hard drive bay. This Serial ATA (SATA) drive features a 16MB buffer and support for the second-generation 3Gbps SATA II interface. Expect pricing around \$299. *Western Digital, [www.wdc.com](http://www.wdc.com)*



For more build-your-own products, go to [computershopper.com/new-byo](http://computershopper.com/new-byo)

# The Right Tablet PC

BY SERGUEI SERVIANOV



Fujitsu Lifebook  
T4220

Tablet PCs are convertible laptop computers that let you type and write on a touch-screen display. If you want to be able to draw or take notes using a stylus, give pen-based computing a try. Here's how to pick the one that's perfect for you.

## SHOPPING SPECS

### PROCESSOR

Look for a model powered by Intel's Core 2 Duo dual-core processor, which is designed to provide long battery life, strong performance, and cool running temperatures. If you're interested in an AMD-based laptop, go with one that uses the Vista-friendly Turion 64 X2 CPU.

### MEMORY

Inadequate system memory can drastically reduce overall performance, so don't be frugal. We recommend 2GB of DDR2 SDRAM, as most tablet PCs run Vista Home Premium or Vista Business, and we've had trouble running those versions of Vista with less RAM.

### DISPLAY

Tablet-PC screens can be as small as 8.9 inches or as large as 14.1 inches. The smaller the screen, the more portable the system will be; the trade-off is that accurately selecting menu icons and other items on an itty-bitty display can be tough. Go with a notebook that has a display size and system weight that strike an appropriate balance based on your needs. Also, many screens now come with a reflective coating that provides a better viewing experience for movie-watching. The reflectivity of these glossy screens, however, can be especially distracting in a brightly lit office environment. Always be sure to check a tablet PC's screen in person first before purchasing.



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### 3 GREAT BUYS

#### GOOD

**Asus R1E-B1**  
([usa.asus.com](http://usa.asus.com), \$1,799)

The R1E-B1 has everything you'd expect in a good thin-and-light notebook, but in tablet form. It weighs less than 5 pounds, and its 2.4GHz Core 2 Duo processor is powerful enough to take on any app you throw at it. It also includes a removable optical drive.

#### BETTER

**Toshiba Portégé M700-S7002**  
([www.toshiba.com](http://www.toshiba.com), \$1,799)

The Portégé M700-S7002 is a small notebook designed for business users constantly on the move. It has a bright, clear 12.1-inch matte screen, great stylus-to-type recognition software, and active hard drive protection, which minimizes damage to your data from sudden drops.

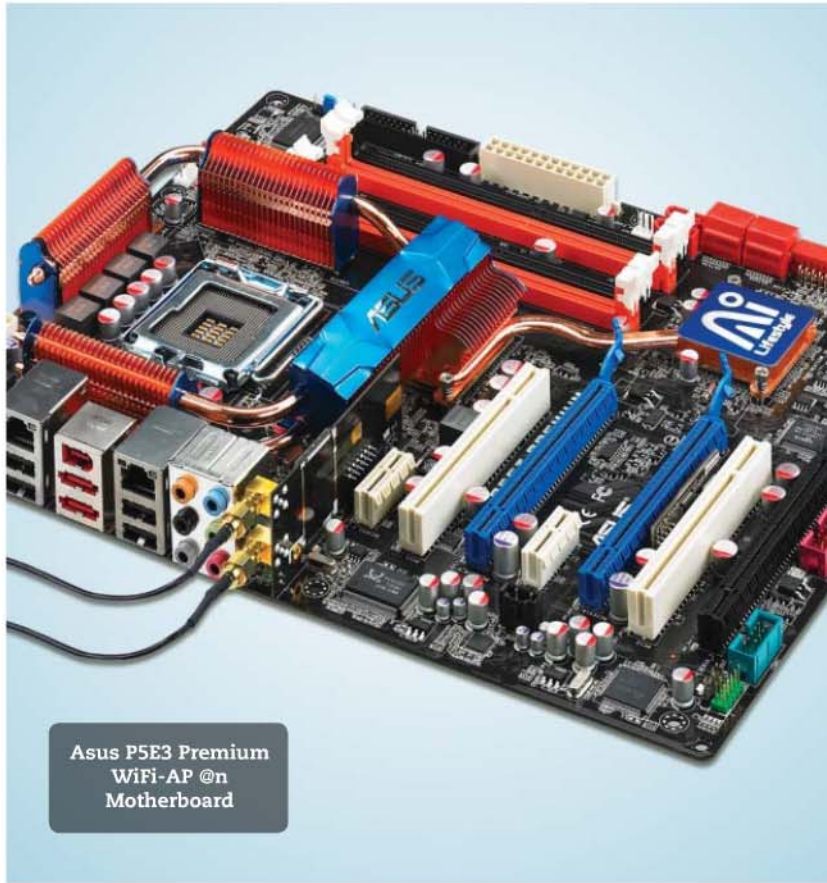
#### BEST

**Fujitsu LifeBook T4220**  
([www.fujitsu.com](http://www.fujitsu.com), starting at \$1,959)

Aside from excellent tablet performance, the LifeBook T4220 has great options for users who need to keep their data secure, including two lock slots, a fingerprint reader, hardware disk encryption, and a set of quick-launch buttons that double as a combination lock.

# The Right Motherboard

BY SERGUEI SERVIANOV



Asus P5E3 Premium  
WiFi-AP @n  
Motherboard

The motherboard is the foundation on which your PC is built, housing your processor, memory, graphics card, and more. Here's how to buy one that can accommodate all the components you want.

## SHOPPING SPECS

### FORM FACTOR

The form factor sets the standard for a motherboard's dimensions and layout and for the positioning of mounting holes, expansion slots, and ports. Your case must support the form factor of the board you choose; most motherboards are laid out in the ATX form factor. Home-theater buffs looking to build a PC for the living room should consider a smaller MicroATX board.

### CPU SOCKET

Before you buy a motherboard, make sure you know which processor family you want the board to support. Socket numbers correspond to the number of pins found on the bottom of the processor. Depending on the particular subfamily, AMD's various CPUs are compatible with Sockets 754, 939, 940, AM2, and AM2+. Sockets 478 and LGA775 support Intel Pentium 4, Celeron, Core 2 Duo, Core 2 Quad, and Core 2 Extreme processors; the only difference is that the LGA775 design has the pins located on the motherboard CPU socket instead of on the CPU itself.

### RAM SLOTS

Most motherboards feature two to four memory slots. (Because of their size, Micro-ATX boards tend to offer fewer slots than their ATX counterparts.) Regardless of which board you choose, make sure it has enough slots to accommodate your needs. Most motherboards use the DDR2 memory standard, but for optimum performance and enhanced future expandability, look for boards that support faster DDR3 memory.



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### 3 GREAT BUYS

#### GOOD

Asus P5K3 Deluxe ✓  
([usa.asus.com](http://usa.asus.com), \$259.99)

With plenty of overclocking options, four DDR3 memory slots, ATI CrossFire capability, and support for Intel's Core 2 series and earlier Socket 775 processors, there's plenty to like about the P5K3.

#### BETTER

XFX nForce 790i Ultra ✓  
([www.xfxforce.com](http://www.xfxforce.com), \$349.99)

The XFX nForce 790i Ultra, based on the nVidia's new nForce 790i Ultra SLI chipset, comes with all the features you need on a great board. It can handle Intel's fastest CPUs, offers DDR3 memory support, and features easy-to-use overclocking capabilities.

#### BEST

Asus P5E3 Premium WiFi-AP @n ✓  
([usa.asus.com](http://usa.asus.com), \$369.99)

The P5E3 Premium is a Socket 775 motherboard that accommodates processors ranging from older Pentium 4s to the newest 45-nanometer CPUs. Along with its DDR3 and ATI CrossFireX support, the board's instant-boot Express Gate browser is a cool innovation.

✓ = Editors' Choice



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## CLOSE UP: Ports

*Want a better idea of what you can do with your new laptop? Check out our laptop buying guide on page 73. Here's a look at some of the data and communication and data ports you'll find.*


### DATA

#### USB



The most popular way to hook up almost everything to your computer, USB is a low-powered connector that allows for plug-and-play capability. The latest version, USB 2.0, has a maximum speed of 480Mbps; some devices, such as portable hard drives, require two USB 2.0 ports—one for power and the other for data transfer. (USB 3.0, which is 10 times faster than 2.0, is slated for release in consumer products next year.)

#### FIREWIRE (1394)



Less used but more robust than USB, FireWire is frequently used on external hard drives and on video devices such as camcorders. Unlike many USB drives, FireWire can usually deliver power to a connected device. FireWire 400 has a maximum speed of 400Mbps, while FireWire 800 can transfer up to 800Mbps.


#### EXTERNAL SERIAL ATA (eSATA)



eSATA is a fairly new standard, mostly found on high-end systems, that provides data transfer to external storage devices at speeds of 1.5Gbps to 3Gbps—far greater than either USB or FireWire. eSata devices require a separate power supply, however.


### COMMUNICATION

#### RJ-11



The same plug used to connect telephones to landlines, RJ-11 is the connector used by modems and faxes. As broadband Internet becomes more widespread, RJ-11 is being used less frequently.

#### RJ-45 (ETHERNET)



RJ-45 looks very similar to RJ-11, except it has a bigger connector head. It's used for high-speed connections to a DSL or cable modem, a router in a network, or external devices such as network-attached-storage drives.

## \* Chatter Capture

June poll results:

### Have you ever built your own computer?

Yes, multiple times **48%**

Yes, once **17%**

No **35%**



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