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Multimedia Laptop Roundup

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EDITOR'S NOTE JOHN A. BUREK



AMERICA'S presidential election may be just a recent memory, but here at *Computer Shopper* we set the groundwork for our own get-out-the-vote efforts well before Barack Obama made history.

Every year for the last 23 (that would reach back to the Reagan administration), *Shopper* readers have chimed in on their favorite tech products, sellers, and Web services of the year, and this year plenty of you pulled the digital lever for your top picks. Although a good number of your choices for our Shoppers' Choice Awards were no surprise (the iPhone's mantel, for one, is getting mighty crowded), we saw some surprises in your 50 choices, for example, in the highly contested new category of netbooks. To get the scoop, check out our cover story, "2009 Shoppers' Choice Awards," on p. 47.

Once you're done leafing through our readers' picks, you might be inspired to update your own desktop tech,

replace an aging laptop, or shop for a second or third PC. Budget tech is always popular, but in tight economic times it's in greater demand than ever, and we lassoed an abundance of low-cost PCs into our biggest-ever budget-system roundup, "Budget-PC Blowout." We gathered 13 fresh models—desktops and laptops—that cost under \$800 each and subjected them to rigorous testing and tire-kicking. To find out which ones delivered maximum value, see our in-depth reviews starting on p. 60.

Whether you're working on a PC old or new, adding a second monitor to your desktop workspace is a superb productivity enhancer that doesn't cost a lot. Many of *Shopper's* editors swear by having two monitors on their desks to get their jobs done, and if you haven't yet experimented with dual displays, you might be surprised at just how liberating the extra screen space is. You can use an old monitor you have sitting around, or—with roomy 19-inch LCDs selling for as little as \$125 this past holiday season (and with even the least-expensive current graphics cards supporting the feature)—it's economical to add a second display. Your PC may even have dual-display capability built in! See p. 76 for a primer on how to do it.

Finally, as you flip to any of our stories this month, big or small, you'll notice *Shopper's* new appearance. We've refreshed the look of the recurring elements on most pages. Art Director Todd Betterley took the lead in this and several other "freshening up" initiatives you may have noticed over the last couple of issues. These, paired with our new "Boot Up" (opening) and "Shut Down" (closing) sections, aim to make *Computer Shopper* more engaging, eye-catching, and informative than ever.

As I mentioned last month in this space, *Shopper* turns 30 this year. (That would be continuous publication since the Carter administration.) And in print, or online at ComputerShopper.com, we want to be sure we're serving our constituents well. Write us: feedback@computershopper.com.

2009

SHOPPERS' CHOICE AWARDS



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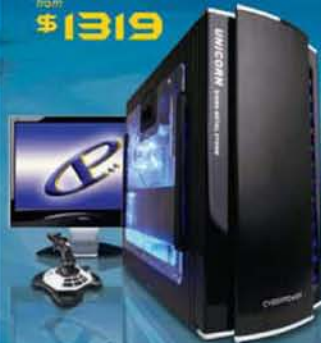
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BOOT UP

TRANSMISSIONS FROM THE WORLD OF TECH

Geek Speak

BY MATTHEW MURRAY
AND JOHN BUREK



M&J come to praise Silverlight, not squash it; wipe out a wing of the Library of Congress; and ponder PCs that pander.

ON THE 10TH FLOOR of Shopper HQ, in the heart of midtown Manhattan, two enterprising editors on a diet of tech, talk, and cheese bring you their impressions of the connected life...in a disconnected way.

TOO BIG TO FAIL

"One point five terabytes," John said. "Lotsa data."

Matthew and John were in Computer Shopper Labs. A Seagate Barracuda hard drive sat there on the counter, spent. It had just been through the rigors of a Shopper test trial. (See the Reviews section for that.) The only clue to its staggering capacity: tiny text on the top label reading "1.5TB."

Without warning, John grimaced, then shoved the drive off the counter. It hit the concrete floor, ricocheted off several boxes, and struck the wall with a head-wrecking clatter.

Matthew, aghast: "That wasn't necessary!"

John: "No? Your average Word document is what, maybe 30 kilobytes? Your average Project Gutenberg e-book is maybe half a megabyte? So, I just wiped out, what, about 3 million books? A nice-sized chunk of the Library of Congress."

Matthew picked up the drive and shook it gently. Something rattled. "Very not good. Seagate

will not be happy."

"A ripped DVD averages 5GB? I just bumped off, oh, 300 movies. Every Academy Award winner for Best Picture, ever. Maybe all the nominees, too."

"Sure," Matthew said. "If you're in the habit of dropping drives onto concrete. And piracy."

"Touché! Okay, try this: On a microcosmic scale, in terms of relative impact on your computing life, I just took out Citibank. Or Wachovia."

Matthew momentarily quit



In this Seagate press photo, the Barracuda is so big that it overshadows our planet.

contemplating whether microcosmic was a real word. "What?"

"Too big to fail!" John announced majestically. "And by the way, apropos nothing, I've solved the U.S. financial crisis."

Matthew couldn't wait to hear this one.

It was late '08, U.S. banks were juddering like a 52x CD-

ROM drive about to spit out a square-shaped CD, and media-pundit rhetoric raged about banking giants and insurance behemoths that, should they go belly-up, would upend Life As We Know It. In that macro-economic fright-fest, John saw a bright red line drawn straight to the state of modern PC storage. Terabyte-capacity drives might not be in every PC just yet, but the Neweggs and Buy.coms of the world were selling them for barely over \$100. And 1.5TB drives had just debuted—no local stops on this train, it's the Five Hundred Gig Express straight from 1TB to 1.5TB. Remember when jumping from 40GB to 60GB was a big deal?

"Too big to fail" is nothing new," John said. "We've been saying it since 1GB drives came out! But now? A terabyte and a half! Unless you're editing HD video, you'll be filling that thing for years. You'll get complacent and think it'll never fail. And when it does? Go ahead, reconstruct 150,000 photos of your kids and your origami collection, all those Kenny Rogers concert MP3s, your entire run of Gilligan's Island in DivX, and..."

"It's called RAID Level 1, John. Auto-backup to a second drive.

It's existed for decades."

"Precisely! Which is why these drives should only be sold in pairs. Never, ever, ever singly. Welded together, even."

Matthew had to admit—John had a point. "But what's this about the economy?"

"Don't you see? Same paradigm. RAID! Redundant Array of Independent Banks. If giant banks are going to hold this much economic sway, we need to demand what any smart CIO, or desktop user, for that matter, would. Create redundancy! Federal regulations should require a fully staffed, backup version of Citibank, operating in parallel with the 'real' one. So if the real one tanks, the redundant version kicks right in. Voilà!"

"John, if you were an economist, you'd be made 'redundant' in about five minutes."

SEEN THE SILVERLIGHT?

John has nothing against Microsoft Silverlight. Really he doesn't. It's just that he's a New York City native and, therefore by definition, too familiar with hardy vermin. (Matthew: "And that's relevant why?")

Well, whenever he's tooling around the Web and moseys over to www.microsoft.com, up pops a jarring box like an unwelcome creepy-crawler on the kitchen counter, pleading him to "enhance your experience on Microsoft.com." And John can't help himself from

free-associating that pesky behavior to "Microsoft Silverfish."

Granted, silverfish are benign compared with some of the armored, Panzer-grade city vermin John's encountered. (Ever hurl a book at a bug and it *throws it back*?) Still, you want to squash silverfish, and that's unfair to Silverlight; endure the minimal install pain, and it's actually rather cool technology. It's just the irksome necessity of OMNI, or One More Net Installer: Java update! Flash update! Adobe Reader update! Silverli—iiiiieeeeeee!

It's also that it's site-specific. John can understand installing plug-ins and updates usable across a range of sites. But an installer for a single site?

"It's a single site now," Matthew said, watching John glowering at Silverlight's download window. "This is Microsoft we're talking about here. Those Redmond folks... *have their ways*."

"But what is it?" John cried.

"Basically, it's a plug-in that renders XAML-based user interfaces within a Web browser."

John thought: *If that's the 'basically' version, do I really want to know what it does?*

"Think of it as a"—Matthew hated this term, but nothing else would do—"rich content" equivalent of PDFs for the Web. A way of presenting stuff so everyone who visits the page sees the same thing, independent of browser or operating system."

"So," John said. "It's like Flash?"

"Well, sort of. There's been talk of Silverlight as a 'Flash killer.' But it's just a way for .NET programmers to have fine control over Web applications, letting people play different content—without needing, say, Windows Media Player installed. It also supports streaming high-definition video files—which Microsoft can even host—making it quick and easy to get great-looking HD content

to anyone, anywhere, on any computer."

"Can you explain that in a way that sounds less like an ad?" John asked, his natural allergy for buzzwords sending shivers down his back.

"Not really," Matthew said. "This is more of a tech thing than a user thing."

"Still sounds like Flash."



"Well, yeah." Matthew pressed on. "One of the big benefits for site developers and owners is that because the applications are written in XAML—a markup language like HTML—they're discoverable by search engines like Google. That can make it easier for people to find your content on the Web."

John had to admit: That was a big deal. "But why do I need to install Silverli—light?"

"You probably don't," Matthew sighed, "unless you want to look at Microsoft's site without being bugged every time. But Microsoft will probably ensure you'll need it eventually, so get it over with. In Microsoft terms, it's a small download—and Windows Automatic Updates will do it for you, so you can spend more time updating Flash and Java."

John's shoulders drooped. Matthew was right: Sometimes—especially when dealing with multitendrilled software companies—the best defense is a good download. He begrudgingly okayed Silverlight, even

As pesky as any city vermin.



though he still detests having to install something for just one purpose.

Before Silverlight was done, Java popped up a friendly announcement: "Java 6, Update 11, General Release Available!" John wrenched off his size 9 wingtip and—WHAM!—whacked the screen!

(Incidentally, to the cruel beings who invented those Internet ads that actually simulate vermin crawling across your screen: John would like to discuss friendly judo chokeholds with you. Those ads nearly cost him a monitor—and an aorta—on several occasions!)

PANDER BEAR

The scene was the Hammerstein Ballroom in Manhattan, a tech demo one chilly evening. M&J stood before Hewlett-Packard's booth. In an arc were four HP Mini-model netbooks, in silver, in black, in black with a nice scrolly pattern on top, and—what's that? Is that netbook covered in *peonies*?

This particular "fashion" version of the Mini 1000 was designed by a certain Vivienne

Tam (who?) and cost \$699—a chunky \$200 premium

over a near-identical model without the floral treatment. Now this was a real purdy notebook, mind you. But here, John could smell the pander as clearly as if he were at the Washington Zoo. (Matthew: "Um, John, wrong kind of pander!") A giant premium for flowers on the case?

Granted, HP pitches this

At least it's cheaper than buying some of Vivienne Tam's dresses.

particular model as fashion art. Fine. But you can almost hear the planning gears that turned during this product's conception: "Gullible fashionistas...lots of disposable income...upper-middle-class guys buying this for their sweethearts...we'll make this one a mostly fixed configuration—this market segment couldn't configure a system, anyway!" Fine. Cynical thinking, but fine. M&J are sure HP did their homework, and this market exists. But the pandering! O, the stereotyping!

Come now—are many of us so easily defined? John, for one, knows a young woman whose two passions are World of Warcraft and French cuisine. Can she get a laptop with murlocs dueling croissants in chain mail? Didn't think so.

And while we're at it, let's talk guy stereotypes, too. Sure, all the sleek black and brushed aluminum that covers today's tech already tickles the male brain's tech cortex. And sure, we've seen the muscle-car and sports-car notebooks, and we're pretty certain someone's stuck NFL or Major League Baseball logos on a laptop lid or 20. (John interjects: Commodore—yes, that Commodore—just debuted official MLB-licensed Mets, Yankees, Red Sox, and Phillies towers with A-grade paint jobs. 'Nuff said.)

But we, too, aren't all one-dimensional sports or car nuts. John does "guy" stuff, but in a fusty, retro kind of way: building biplanes out of balsa wood, shooting model rockets, collecting postage stamps from dead countries. His heart's with the New York Mets, but not enough to tote on his notebook. Can he get a laptop, please, with an etched Graf Zeppelin and some stamps from Zululand on the lid, thanks? Mail Geek Speak at geekspeak@computershopper.com, and he'd be glad to provide the shipping address for that C.O.D. package.

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Clickable Culture



BY MATT SAFFORD

The Beatles enter the digital age, but is it too late?

IT'S OFFICIAL: Nearly 40 years after they called it

quits and went their own ways, the Beatles are coming to a video-game console near you. Details of the deal are still sketchy, but the announcement that music-game developers Harmonix will release a title using the band's iconic songs was met with a great deal of press, and with good reason.

The Beatles have been notoriously wary of commercializing their music and selling it in formats other than the traditional album. In 1987, the surviving members of the band filed a \$15 million lawsuit in response to a Nike ad that featured the band's classic "Revolution," even though Nike had paid Capitol-EMI Records for the rights to use it. To this day, the Fab Four's catalog is absent from iTunes and other digital download services—despite the fact that drastically falling sales of physical music formats have led retailers to allocate less space for CDs on store shelves. And, their own movies aside, the band's original songs have been similarly absent from film soundtracks.

I wonder how culturally relevant the Beatles' music is for the kids who will, in large part, be the target audience for the eventual Beatles video game. Some of the band's die-hard, baby-boomer fans will no doubt buy the game to play on their grandchildren's consoles, but it's the kids who will have to purchase the game en masse if it is to be a huge success.

Raised in the age of Napster, most kids get their music online, whether they pay for it or not. They don't shun commercialism, either; Chris Brown's "Forever" began life as a Wrigley's chewing-gum jingle before it was a hit last summer. Artists are embracing any means necessary to get noticed in a "mainstream" culture that's increasingly fragmented and flooded with content.

Will the Beatles video game break through all that digital noise to make the band's music a commercially successful cultural phenomenon all over again, this time with today's teenagers? Or will kids pick up their plastic guitars and play along to hits like "Hey Jude" and "Eleanor Rigby" at the urging of their parents and grandparents, only to forget the songs—which so many of us consider timeless—as soon as the next pop single or jingle makes its way to YouTube?

TechMom

BY SARAH E. ANDERSON

In a busy mom's life, when is blogging worth the time?



WHEN MY SON was born, he was diagnosed with craniosynostosis, and my first response was, *cranio-what?* So my husband and I did what any 21st-century parents would do: We Googled it. And although we learned a lot about his condition from experts, hospitals, and universities that had posted information, the most valuable sources of information were other mothers and their blogs.

User blogs are booming, and blogs written by mothers are especially viral. Despite their busy schedules juggling work and being providers for their kids, many moms find a way to keep up with their online story-telling, tip-giving, photo-sharing, and idea-swapping. With our son's condition, not only did we get to read other people's stories about craniosynostosis through their blogs, but we reached out to them, discussed doctors in our area, and made real connections.

But going through the seemingly never-ending variety of blogs can make your head spin. So if you're thinking about starting a blog of your own, here are some ways to create a standout presence on the Web for strangers and family alike.

SAY SOMETHING IMPORTANT. My son's condition is a good example of blogging with a purpose. I plan to turn the info I've gathered into a blog so that my experience can help other mothers going through the same thing. So whether you're dealing with a scary diagnosis, traveling around the world, or enduring a particularly exciting or difficult time in your life, blogging about it just might help someone experiencing something similar.

REVIEW PRODUCTS. According to the site Mom Central, over 78 percent of mom bloggers review products and services. Because moms wear so many hats, including that of family shopper,

they want to know which products work and which ones don't. They also become fast experts on everyday products, from cars and computers to toys and diaper bins.

MAKE FRIENDS. Unlike online forums frequented by anonymous users, blogs let you really get to know the people behind the words. With your blog, don't hesitate to reach out to your readers and create some new bonds.

STAY IN TOUCH. If you have family scattered across the country, like I do, I highly recommend finding one central place to post pictures and videos, make announcements, and share funny stories that help keep you all connected. A blog is perfect for this, and it's far simpler and more straightforward than social networking sites, especially for older relatives. You don't need to update it daily; once a month should do the trick.

NO RULES ON THE WEB, BUT... You can write pretty much whatever you want on the Web, but my personal pet peeve is writing just for the sake of writing. Keep your readers interested by maintaining a sense of relevance and importance to your posts. It will also get them to come back often.

As any mom will attest, life hurries by in a flash. But I've come to appreciate those who take the time to share their stories in a meaningful, insightful way.



The MommyBlog: a good place for moms to gather and share ideas.

CyberPower recommends Windows Vista™ Home Premium

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BY LES L. SHU



◀ Digital sherpa

Drivers aren't the only ones who can benefit from GPS devices. If you're the outdoors type, your chances of getting lost in the wild are even greater than on the interstate, so let the DeLorme **Earthmate PN-40** (\$399.95) be your guide. This rugged handheld GPS unit contains the latest topographic maps, aerial images, and nautical charts. The PN-40 even has road data for highways and backroads for when you're behind the wheel. *DeLorme, www.delorme.com*

PowerPoint helper ▶

Thanks to Apple's increased popularity and continued growth, Mac users are now being showered with peripherals designed just for them. Case in point: the Targus **Bluetooth Presenter** (\$79.99), a wireless pointing device that lets you navigate through your PowerPoint and Keynote presentation slides. (It also doubles as a cursor controller for all other apps.) And since all new Macs come with built-in Bluetooth, pairing is simple. *Targus, www.targus.com*



◀ Case closed

Timbuk2, the purveyors of cool messenger bags, are injecting some much-needed fun into the suddenly unglamorous travel industry with the \$225 **Suitcase**. A highlight of the company's new Travel collection, this Suitcase has enough room to store clothes for a business trip or a long weekend jaunt, but even handier is the laptop compartment you can easily detach and carry to meetings. The "Ninja" pocket lets you quickly stash your coins and cell phone when you go through security. *Timbuk2, www.timbuk2.com*



◀ Quick charge

Portable batteries are a great way to keep your handheld devices juiced up, but they're often cumbersome to carry around, especially when you don't have a bag to stash them in. The **Powerstick V2** from Ecosol (\$59.99) eliminates that problem. The Powerstick, the size of a stick of gum, charges via USB from your computer. When it's fully charged, it can provide a portable device with up to 90 minutes of battery life (depending on the device).
Ecosol, www.powerstick.com

Wannabe guitarist ▶

Guitar-based video games like Guitar Hero and Rock Band let you unleash your inner rock star even if you can't strum so much as two notes together. Now you can go cordless with Logitech's **Wireless Guitar Controller Premiere Edition** (\$250) for the PlayStation 3 and Xbox 360. To make the guitar more authentic-looking and -feeling, Logitech incorporated the same materials you'd find in a real guitar, including rosewood, metal frets, and tuning-peg handles. Unlike toy-like plastic guitar controllers, this one can be taken seriously.

Logitech, www.logitech.com



◀ Talk smarter

Headphones with a built-in microphone let you keep the tunes going without having to pull them out just to take a cell call, but oftentimes the headphones themselves aren't up to snuff. The affordable **SmartTalk** from Griffin (\$19.99) is a better solution. It lets you pair your favorite headphones with a microphone adapter instead. Designed for the iPhone and iPods with recording capability, the SmartTalk features a noise-cancelling mic and controls for play, pause, and skip forward.
Griffin Technology, www.griffintechnology.com

REVIEWS

THE LATEST HARDWARE AND SOFTWARE PRODUCTS

Toshiba Qosmio X305-Q708

Blazing performance and design

THE TOSHIBA QOSMIO X305-Q708 takes direct aim at the gaming crowd. Featuring an SLI graphics engine, a solid-state drive (SSD), and a high-end CPU, this slick-looking system is clearly built for speed, but you'll need some deep pockets to meet its \$4,199 price tag.

The X305's fiery-red Fusion Rogue finish achieves its goal; right out of the box, the 9-pound system looks fast without appearing garish. Under the lid, a subtler candy-apple-red bezel frames both the 17-inch screen and the piano-black keyboard deck.

The display has a maximum resolution of 1,440x900, which is disappointing given that this system is designed for 3D gaming. We expected a high-res screen. Even so, it is bright, delivers good image quality, and has a wide viewing angle. A 1.3-megapixel Webcam mounted on the upper bezel makes for easy Skype video sessions, but it produces grainy photos.

The full-size keyboard offers comfortable typing and plenty of wrist room, and a dedicated number pad is on the right. The touch pad's textured finish provides smooth cursor

EDITORS' RATING 7.8



PROS Very good 3D performance; slick design; good selection of ports

CONS Expensive; terrible battery life; relatively low-res screen

SPECS 2.53GHz Intel Core 2 Extreme QX9300; 4GB RAM; 320GB hard drive; 128GB SSD; DVD±RW drive; 17-inch display; two Nvidia GeForce 9800M GTS GPUs (1GB); 9 pounds; 1.7x16.2x12 inches; Windows Vista Ultimate

Toshiba America, 800-867-4488
explore.toshiba.com

Direct Price \$4,199

the color theme, red LEDs and red backlit media controls light up the upper portion of the keyboard deck.

The X305 has a nice assortment of multimedia ports, including HDMI and DisplayPort video outputs and a traditional VGA connector. Three USB Sleep-and-Charge ports and a FireWire port are scattered around the sides and rear of the system, along with an eSATA/USB combo port, a 5-in-1 card reader, an ExpressCard slot, and headphone, microphone, and S/PDIF audio jacks with a volume control. As with Toshiba's

control, and the two large silver mouse buttons are responsive and easy to reach. Above the keyboard are touch-sensitive multimedia controls and the X305's power switch, along with a pair of Harman Kardon speakers, which—combined with a second pair of speakers embedded in the wrist rest and a subwoofer mounted on the bottom of the chassis—provide top-notch audio output with a nice dose of bass response. In keeping with



G55-Q802, this system does not offer a Blu-ray drive option. Instead, it comes with a multiformat DVD burner. The 128GB SSD comes preloaded with Windows Vista Ultimate and Toshiba's DVD Player, Disc Creator, and ConfigFree software; a secondary 320GB drive is available for storage.

Using a powerful combination of top-shelf components, including a 2.53GHz Intel Core 2 Extreme QX9300 CPU and 4GB of DDR3 memory, the X305 set a new standard for laptop performance on our productivity benchmarks. Its score of 5,902 on the Futuremark PCMark Vantage test is the highest we've seen to date, as is its PCMark05 score of 7,889. The X305 handled our iTunes and Windows Media encoding tests with aplomb, quickly completing the tests in 3 minutes and 28 seconds and 3 minutes and 46 seconds, respectively. A score of 11,182 on our Cinebench 10 test also took top honors, nearly doubling that of the previous leader, the Lenovo ThinkPad W700.

Powered by dual Nvidia GeForce 9800M GTS graphics controllers running in Scalable Link Interface (SLI) mode, the X305 also showed it has the necessary chops to run today's intensive 3D gaming titles with ease, though it didn't break any records. Although its Futuremark 3DMark06 score of 12,707 was quite impressive, it couldn't overtake the Maingear eX-L's 15,364. The X305 made short work of our DirectX 9 (DX9) Company of Heroes tests, scoring 185.5 frames per second (fps) while running at 1,024x768 and 104.3fps at its native resolution. Similarly, with all the eye candy set to maximum levels, it produced a speedy score of 106fps on our F.E.A.R. test. Unfortunately, the X305 also set a new record for battery life: It lasted only 30 minutes and 20 seconds on our DVD battery-rundown test, the shortest time we've seen.

If you're looking for a gaming notebook that backs up its hot looks with blazing performance, put the Toshiba Qosmio X305-Q708 on your short list. Be prepared to shell out more than four grand for this speedster, however, and don't even think about wandering too far from a power outlet. —John R. Delaney

 For more: computershopper.com/laptops

MSI X58 Eclipse

Competition, look out—this Core i7 motherboard lives up to its name

EDITORS' RATING

B3

0 BETTER >> 10

PROS Extensive overclocking and power-saving features; supports both CrossFireX and SLI; 12 SATA/eSATA connectors; OLED diagnostic display; very good board layout; discrete sound card included; thorough documentation

CONS Only supports x4 channels when using three graphics cards together; no floppy connector

MSI Computer, 626-913-0828
www.msicomputer.com

Direct Price \$349



SOMEBODY apparently forgot to tell MSI that a single motherboard can't be everything to everyone, because the new X58 Eclipse not only tries, it succeeds in almost every category. Only those looking for a bargain-basement price are likely to be disappointed by this premium board.

The Eclipse is an ATX motherboard designed for Intel's new Core i7 processors. It sports the new LGA1366 socket and the X58 Express chipset. Six DDR3 RAM sockets allow you to add two sets of DIMMs in the triple-channel mode for the most memory bandwidth with the Core i7 series.

The board's layout and features are outstanding. The six primary SATA ports, for instance, face the side of the

board, so large graphics cards won't block them. Easily accessible power and reset switches right on the board allow you to run initial tests outside of your case; during the power-on sequence, the D-LED2's superbright organic light-emitting diode (OLED) display shows you as each component is initialized, helping you pinpoint any problems. The board even accommodates both three-pin and two-pin case power LEDs.

The Eclipse supports both Nvidia's SLI and AMD's CrossFireX for adding multiple graphics cards. There are three PCI Express (PCIe) x16 slots, but only two operate at full x16 capacity; the third is electrically an x4 slot. You'll also find two PCIe x1 slots and a pair of PCI slots.

MSI also includes a Sound Blaster X-Fi Xtreme audio card, allowing for better-quality audio, higher-end features, and room on the back panel for lots of ports: eight USB ports, plus connectors for four more; two FireWire ports; two Gigabit Ethernet connectors; two external SATA (eSATA) ports; and separate PS/2 mouse and keyboard connectors. There are also 10 SATA

ports on the board, plus an IDE port—all that's missing is a floppy connector.

MSI's BIOS includes a ton of overclocking features, giving you detailed control over both manual and automatic overclocking settings and support for making real-time voltage adjustments based on system load, overclocking, and power usage. The extensive documentation consists of multiple short "quick guides," a separate sound card manual, and a thick manual containing unusually thorough explanations of BIOS settings. —Denny Atkin

Only those looking for a bargain-basement price will be disappointed by this premium motherboard.



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Dell XPS 730x

Get lots of flash—for lots of cash

NOW THAT INTEL'S new Core i7 family of processors brings terrific performance out of the stratospheric price ranges where it's too often been trapped in recent years, outstanding machines can at last be built from middle-of-the-road CPUs. This is true even for gaming desktops, where the balance between green and glitz is more crucial than ever. Dell's new XPS 730x is right on the edge.

First, its components are impeccable. Its 2.93GHz Core i7-940 processor is the midrange model, offering virtually eight cores of high-speed processing power for under \$600. With that CPU matched with 5GB of triple-channel DDR3 RAM, the 64-bit version of Windows Vista Home Premium, and an Nvidia GeForce GTX 280 graphics card, the XPS 730x is primed to scream. Two 300GB hard drives in a RAID Level 0 configuration give you lots of storage space for installing games, while the two-stage H2C hybrid cooling system ensures you won't slow down just because you get heated up. (In case anything does go awry, you have at your disposal 24-hour phone support, 5GB of online backup space, and a two-year limited warranty with in-home service following remote diagnosis.)

The XPS 730x comes with two optical drives: a standard DVD±RW and a Blu-ray reader/DVD±RW for watching high-definition movies. A multiformat card reader occupies one of the two external 3.5-inch bays, while two other external 5.25-inch

EDITORS' RATING 8.1

0 BETTER >> 10

PROS Very good performance; attractive design; nice gamer-friendly features

CONS Expensive compared to similarly equipped Core i7 systems

SPECS 2.93GHz Core i7-940; 5GB DDR3; two 300GB hard drives (RAID Level 0); BD-ROM/DVD±RW; DVD±RW; no monitor; Nvidia GeForce GTX 280 (1GB); Windows Vista Home Premium (64-bit)

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

Direct Price \$3,809

38.8 frames per second (fps) at 1,280x1,024 resolution, 31.6fps at 1,600x1,200, and 27.6fps at 1,920x1,200. It also attained high scores in our DX10 Company of Heroes test, earning 58fps at 1,280x1,024, 55.9fps at 1,600x1,200, and 32.1fps at 2,560x1,600. With Futuremark's 3DMark Vantage gaming benchmark, it scored 32,297, 11,938, 8,068, and 5,331 using the Entry, Performance, High, and Extreme presets, respectively.

These scores, while excellent, are hardly unique among other recent Core i7 systems we've tested—all of which cost less than the \$3,809 XPS 730x. The \$2,499 iBuypower Gamer Paladin F870-SB edged out the Dell in every 3DMark Vantage test (33,232, 15,390, 10,278, and 7,203 in the presets) and

bays and two internal 3.5-inch hard drive bays remain free. Connectivity is of the standard, but useful, variety for this class of system: two USB, one FireWire, and headphone and microphone jacks up front; eight-channel audio, two Ethernet, six USB, one external SATA (eSATA), one FireWire, digital audio, and two PS/2 connectors in the back.

All this nets you some serious gaming capabilities. The XPS 730x achieved some of the best results we've seen in our DirectX 10 (DX10) Call of Juarez test:

bested it in all three of our DX9 Supreme Commander tests. (The iBuypower scored over 53fps at all three of the tested resolutions; the Dell's best score was 49.2fps at 1,280x1,024, with dips to 44.8fps at 1,600x1,200 and to 37.5fps at 2,560x1,600.) The \$2,999 Falcon Northwest Talon went even further, keeping pace with or slightly surpassing the iBuypower in 3DMark Vantage (34,628, 15,690, 10,310, and 7,218) and Supreme Commander (54.5fps, 54.2fps, and 55.1fps).

With price-performance differentials this narrow, the XPS 730x offers more for the dollar with both sleek case design (a sturdy angled-and-curved monolith that comes in blue, red, or silver) and special functionality aimed squarely at enthusiasts. XPS Thermal Monitor is software that lets you track, change, and even create specific usage profiles for the speeds of your various fans, so you can always maintain your preferred balance between cooling and noise. AlienFX lighting gives you fine-tuned control over your PC's appearance: You can set the LEDs that illuminate any of the PC's five lighting "zones" (the drive bays, the right intake fan, the left intake fan, the system's interior, and the rear panel) to any of 16 colors, in whatever combination most strikes your fancy. Want even more lighting? You've got it with Dell's new theater lighting: Interior lighting will turn on whenever you open the case, regardless of whether your PC is turned on.

Is all this really worth an extra \$800 over, say, Falcon Northwest's Talon, which meets and in many cases exceeds the XPS 730x in terms of gaming potential? Or an extra \$1,300 over the iBuypower, which narrows the performance gap even more—and offers a monitor as part of the deal? For us, the answer is no: Although we really like eye candy, we prefer to see it on the screen rather than on the case. —Matthew Murray



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Gateway LX6200-01

Low-cost home theater PC lacks performance

THOUGH GATEWAY'S \$779.99 LX6200-01 is outfitted with several useful tools that allow it to be classified as a home theater PC, we're not convinced those tools are worth the reduced speeds that come with them.

The CPU in the LX6200-01 is AMD's 2.2GHz Phenom X4 9500, which is paired with a super-healthy 8GB of RAM. Despite the four processing cores, all that memory, and the 64-bit version of Windows Vista Home Premium, the system's performance left something to be desired in nearly all of our benchmark tests, needing (for example) a lengthy 5 minutes and 14 seconds to finish Windows Media Encoder 9 and a poky 5 minutes for iTunes conversion.

The LX6200-01's media features are plentiful, however. In addition to the Media Center remote control, a generous 750GB hard drive (and room for three more), and a 15-in-1 card reader (with a Smart Copy button for easily transferring data from your cards to your hard drive), you also get Gateway's touch-operated Media Control Center in one of the external 5.25 bays, which lets you interact with your



multimedia content without needing to touch the mouse. A DVD±RW drive supporting Labelflash disc-labeling technology rounds out the hardware.

You'll find three RCA jacks on the pop-out front panel, which also holds a FireWire port and headphone and microphone jacks; an HDMI port on the rear panel (along with PS/2 keyboard and mouse ports, a VGA out, four USB, one FireWire, Ethernet, and eight-channel audio ports); and, of course, an NTSC/ATSC TV tuner in an expansion slot. Preinstalled software includes Microsoft Works 9 and 60-day trials of both Microsoft Office Home and Student 2007 and Symantec's Norton 360 one-touch security software; additional protection is provided via a one-year parts-and-labor warranty. —Matthew Murray

EDITORS' RATING 7.0



PROS Good media features for a home theater PC

CONS Lackluster performance all around

SPECS 2.2GHz Phenom X4 9500; 8GB DDR2; 750GB hard drive; DVD±RW; no monitor; integrated ATI graphics; Windows Vista Home Premium (64-bit)

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

Direct Price \$779.99

For more: computershopper.com/desktops

HP Pavilion Slimline s3650f

Well-outfitted home theater PC has game, too

IT'S RARE that we encounter a home theater PC better suited to gaming than to traditional media chores. But that certainly seems to be the case with HP's \$999 Pavilion Slimline s3650f.

Due in part to its energy-efficient but underperforming CPU and a 2GHz AMD Phenom X4 9350e—and despite its 4GB of DDR2 RAM and its Windows Vista Home Premium operating system—the s3650f did not sail through all of our productivity benchmarks. But its media extras—a 640GB hard drive, a Blu-ray reader and DVD±RW combo drive, a 15-in-1 card reader, an ATSC/NTSC TV tuner, an HDMI port for sending video from your computer to your HDTV, a digital audio-out jack, and even integrated 802.11b/g Wi-Fi—do help compensate for this.

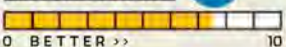
On the front panel you'll find two USB ports, a headphone jack, and a bay for accepting a proprietary HP Pocket Media Drive storage device. The collection of rear-panel



connections is completed with two PS/2, four USB, one FireWire, one Ethernet, and basic audio ports. The presence of both the video card and the TV tuner, combined with all the drive placement up front, means that this desktop's post-purchase expansion potential is essentially nonexistent, however.

But the Slimline's discrete Nvidia GeForce 9500 GS graphics card with 512MB of video memory gives it enough power to satisfy those with modest gaming ambitions. In our DirectX 9 (DX9) Company of Heroes test at the default settings, the s3650f pulled out an average frame rate of 45.1 frames per second (fps), and even in the DX10 version of the test, it managed 44fps—more than solid for a system that wasn't really designed with gaming in mind. —M.M.

EDITORS' RATING 7.5



PROS Good media features for the price; 3D card gives gaming a boost; HD optical drive, wireless networking included

CONS Unimpressive productivity performance; limited expansion capabilities

SPECS 2GHz Phenom X4 9350e; 4GB DDR2; 640GB hard drive; Blu-ray reader/DVD±RW; no monitor; Nvidia GeForce 9500 GS (512MB); Windows Vista Home Premium (64-bit)

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Apple MacBook Pro (15.4-inch)

Solid construction merges with top-notch performance



WITH THE NEW MACBOOK PRO, Apple has not only redesigned the case to make it even sleeker but updated the specs to make one potent portable.

Our \$2,499 review unit had a 2.53GHz Intel Core 2 Duo processor with a 1,066MHz front-side bus and 4GB of DDR3 memory. It features switchable graphics: Nvidia GeForce 9400M (integrated) and Nvidia GeForce 9600M GT (discrete). The 15.4-inch display supports 1,440x920 resolution, and the system has a 5,400rpm SATA hard drive with 320GB of storage. A slot-loading, dual-layer 8x DVD burner is included.

Apple builds the MacBook Pro with a Unibody enclosure, in which the unit's casing is created from a single piece of aluminum. Besides the power cord and adapter, there are no accessories.

The system has only two USB ports, and a single FireWire 800 port replaces the previous model's FireWire 400 port. It also has a 34mm ExpressCard slot, an Ethernet port, and audio-in and -out jacks. Bluetooth and 802.11n are onboard, and Apple has switched to the DisplayPort video connector from DVI.

The TrackPad, now one giant glass button, supports multi-



touch gestures. Although it does take some getting used to, we like the concept; it requires less finger travel and offers a cleaner design.

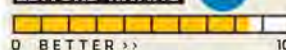
Applications launch quickly, and Web surfing is swift. In our iTunes encoding test, the MacBook Pro converted 11 MP3s into high-quality AAC format in 3 minutes and 50 seconds. In our DVD rundown test, the MacBook Pro lasted 2 hours and 44 minutes in

High Performance mode (where the

laptop was using discrete graphics). In Better Battery Life mode (using integrated graphics), the laptop lasted 3 hours.

This flagship portable continues to impress—not only in the design department, but in performance, too. —Les Shu

EDITORS' RATING 8.5



PROS Very good performance, including quick startup, shutdown; sleek design; solid construction; dual graphics solution; hard drive, memory easier to replace; bright LED display

CONS No non-glossy-screen option; limited data ports; no accessories beyond power cord, adapter; bottom can get quite hot; no Mini DisplayPort adapters to connect to VGA- or DVI-based monitors

SPECS 2.53GHz Intel Core 2 Duo T9300; 4GB RAM; 320GB hard drive; DVD±RW drive; 15.4-inch display; Nvidia 9400M integrated graphics; Nvidia GeForce 9600M GT graphics (512MB, switchable); 5.5 pounds; 0.95x14.4x9.8 inches; Mac OS X 10.5

Apple, 800-998-1000
www.apple.com

Direct Price \$2,499

For more: computershopper.com/laptops

Lenovo ThinkPad SL300

A good start for a budget notebook, but performance could be better

LENOVO'S THINKPAD SL line addresses the needs (and budgets) of small businesses by including many of the ThinkPad's benefits and discarding the corporate-focused extras that drive up the cost.

Except for its glossy black lid, the SL300's design is classic squared-off ThinkPad. At 1.4x12.5x9.4 inches (HWD) and 4.6 pounds, the SL300 is heftier than competing 13.3-inch notebooks, but the LED-backlit LCD is bright and crisp, and the 1,280x800 resolution keeps text readable.

In typical ThinkPad fashion, the keyboard is spacious and responsive. Lenovo includes both a TrackPoint pointing stick and a touch pad. It has no multimedia control keys, but you will find volume buttons.

Sound quality from the built-in speakers is good for a business portable. The SL300 comes with three USB ports as well as FireWire, Ethernet, VGA, and HDMI ports. It supports just SD/MMC memory cards, however, and there's no PC Card or ExpressCard slot. Lenovo includes a Webcam and fingerprint reader as well as a 250GB hard drive and DVD burner, but the optional Blu-ray burner costs \$500.

The SL300 scored 2,799 on Futuremark

PCMark Vantage, which is about right for its class. But the SL300's Windows Media Encoder time of 8 minutes and 43 seconds was slow, and its Cinebench 10 score of 3,352 was disappointing.

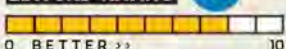
You can forget about high-end graphics with this unit's low Futuremark 3DMark06 score of 862 at 1,024x768. Battery life was an hour

longer than average, though, at 4 hours and 20 minutes on our DVD

rundown test. There's a lot we like about the ThinkPad SL300, and the main thing we don't like—the so-so performance—can be remedied by adding stronger components. If you are used to the feel of a ThinkPad, you'll be right at home with the SL300. —Jamie Bsales



EDITORS' RATING 8.0



PROS Active hard drive protection; wireless options aplenty; perfect keyboard; dual pointing devices

CONS Heftier than other 13.3-inch notebooks; small touch pad; merely passable performance for the price

SPECS 1.6GHz Intel Core 2 Duo T5670; 2GB RAM; 250GB hard drive; DVD±RW; 13.3-inch display; integrated Intel GMA X4500 graphics; 4.6 pounds; 1.4x12.5x9.4 inches; Windows Vista Business

Lenovo, 866-968-4465
www.lenovo.com

Direct Price \$949



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300P

Lenovo IdeaPad U330

A sleek consumer notebook with a touch of business class

LENOVO SEEMS TO HAVE COME into its own with the IdeaPad series. The \$1,249 U330 is polished both inside and out: Not just a solid performer and lightweight travel companion, it offers switchable graphics, facial-recognition software, and stylish design. If the battery lasted longer, it would be a real winner.

The 4.4-pound U330 will definitely turn a few heads. Its glossy lid (available in black or indigo), thin profile, and angular design make a strong style statement without being over-the-top—though it is a little flashy. Inside, you'll find edge-to-edge glass on the 13.3-inch display. A 1.3-megapixel camera and dual microphone array are in the top bezel. The drop-down hinge adds to the angular effect of this sleek 1.1x12.5x9.3-inch (HWD) machine.

In true Lenovo fashion, the full-size keyboard is big and comfortable. Above the function keys is a row of multimedia touch buttons, made visible when you touch the one orange circle to the right. When they're all lit up, the buttons resemble those on the Lenovo IdeaPad Y510.

With only two USB ports (both on the right-hand side), lefties who want to hook up a mouse are at a slight disadvantage. You will find FireWire, VGA, Ethernet, and HDMI ports, though, along with a 6-in-1 card reader, a 34mm ExpressCard slot, headphone and mic jacks, and a Wi-Fi switch, as well as a DVD burner. The U330 includes Bluetooth

2.0 and 802.11a/b/g/n Wi-Fi connectivity.

Watching movies on the 1,280x800, LED-backlit, glossy screen is a pleasure. The U330 handled *The Matrix's* fireballs and special effects beautifully. We noticed some glare in ambient lighting, but it wasn't too distracting. Viewing angles were good, but despite the Dolby Home Theater audio system, the two speakers located in the upper right- and left-hand corners of the keyboard return very little sound.

Inside, the U330 is fully loaded, with a 2GHz Intel

Core 2 Duo P7350, 2GB of RAM, and a 250GB, 5,400rpm hard drive. It performed admirably, hitting above-average marks on nearly all of our tests. On Futuremark's PCMark Vantage, the U330 managed a strong 3,037—at least 300 points higher than we'd expect for a thin-and-light.

Its ATI Mobility Radeon HD 3450 graphics card with 256MB of video memory scored an equally impressive 2,048 on Futuremark's 3DMark06 at the native resolution of 1,280x800; at 1,024x768, it scored 2,330—double the average for the category. That's still not high enough for serious 3D gaming, however: It managed just 17.5 frames per second (fps) on *Company of Heroes* at 1,024x768. But it can handle some light gaming and other graphics-intensive tasks without slowing to a crawl.

Although it was on par with other thin-and-lights for media encoding and file conversions, these scores were

less impressive. On our Windows Media Encoder test, the U330 took 7 minutes and 50 seconds to finish, which is just 3 seconds over the average. Likewise, the system took 4 minutes and 48 seconds to convert 11 iTunes files, just beating the average of 5 minutes and 8 seconds.

Battery life is a bit of a stumbling block for the U330. Lenovo claims over 5 hours of life on the standard six-cell battery, but we saw nothing close to that. Using the discrete graphics, we got just 1 hour and 46 minutes of life on our DVD battery-rundown test, and when we switched to the Intel GMA 4500MHD

integrated graphics, the battery lasted only 1 hour and 58 minutes—not the kind of improvement we expected. Under the best circumstances (Wi-Fi off, dimmed screen, integrated graphics), you can expect about 3 hours of battery life.

Lenovo includes its Active Protection system, which protects the data on the hard drive in case of a fall. One unexpected feature of the unit is its VeriFace facial-recognition technology, which uses the Webcam to scan your face upon login and allows for access to encrypted files (the encryption is software-based, and you can set it up from within the VeriFace application). This worked perfectly for us on the first try. The OneKey Rescue system can restore your system to its factory settings or to any other hard drive image you save.

Our configuration came with Windows Vista Home Premium, a 90-day trial of Norton Internet Security, a 60-day trial of Microsoft Office 2007, and CyberLink Power2Go. Lenovo backs the U330 with a one-year warranty covering parts and labor.

All in all, the Lenovo IdeaPad U330 is one impressive notebook. Though we're disappointed with the short battery life, at the very reasonable price of \$1,249, its feature set, top-notch performance, easy portability, and switchable graphics make it hard to pass up. —Sarah E. Anderson



EDITORS' RATING 8.6

0 BETTER >>> 10

PROS Very slim and light; good 3D and productivity performance; includes facial-recognition software

CONS Battery life is much shorter than company claims; weak speakers; mediocre media-encoding speeds

SPECS 2GHz Intel Core 2 Duo P7350; 2GB RAM; 250GB hard drive; DVD±RW drive; 13.3-inch display; ATI Radeon HD 3450 (256MB); 4.4 pounds; 1.1x12.5x9.3 inches; Windows Vista Home Premium

Lenovo, 866-428-4465
www.lenovo.com

Direct Price \$1,249

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Toshiba Satellite E105-S1402

A consumer-driven notebook that almost delivers

THE \$1,099 SATELLITE E105-S1402 isn't just any mass-produced laptop. It was mass-produced specifically for electronics retailer Best Buy, based at least partly on customer feedback. According to Toshiba, Best Buy customers asked for a lighter, slimmer 14.1-inch notebook with improved battery life, a backlit keyboard, and a good warranty. On those points, the E105 delivers. But Toshiba overlooks some other key details, keeping it from getting our top recommendation.

Weighing 5 pounds and measuring just 1.2 inches thick, the machine is a solid thin-and-light that's easy to tote. The chassis, unique to the E105, is about 3 ounces lighter and marginally thinner than that of Toshiba's M300 (the company's other 14.1-inch series). The E105 features an exclusive copper-and-gray design, along with the glossy gray Fusion finish, which adds to the sleek aesthetic. The keyboard is also new, and the multimedia-control soft keys are situated along the right of the keyboard.

Both the keyboard and handy multimedia-control buttons have a pleasant white backlight, which makes the letters and icons much easier to see in a dark room (and yes, it looks great, too). While the letter keys are full-size horizontally, the whole

EDITORS' RATING 7.6

0 BETTER >>> 10

PROS Good-looking Fusion finish; plenty of hard drive space; handy multimedia control keys; HDMI; eSATA

CONS Abysmal speaker quality; keyboard feels tight; average productivity performance; no ExpressCard or PC Card expansion slot

SPECS 2.26GHz Intel Core 2 Duo P8400; 4GB RAM; 320GB hard drive; DVD±RW drive; 14.1-inch display; Intel GMA 4500MHD; 5 pounds; 1.2x13.4x9.7 inches; Windows Vista Home Premium (64-bit)

Toshiba America, 800-867-4488
explore.toshiba.com

Direct Price \$1,099

connector, a 1.3-megapixel Webcam, a fingerprint reader, and a five-format memory-card reader. Missing from the mix are a modem and an ExpressCard or PC Card expansion slot. But Toshiba throws in an integrated FM tuner (a small antenna attaches to a jack on the side) along with a slick utility that lets you scan for stations and store presets.

The front-firing stereo speakers are disappointing for a consumer notebook. You'll be able to hear the dialogue in a movie or video readily enough, but the sound is thin. And when we played a music CD, the sound quality was akin to what you might get from a transistor radio—one that's been dropped.

Processing power comes from a 2.26GHz Intel Core 2 Duo

keyboard feels cramped vertically. The ancillary keys on the right-hand side and the function keys along the top are downright tiny.

Other features are more appealing. The 1,280x800 screen delivers a bright, crisp image, and when we watched *Pirates of the Caribbean: The Curse of the Black Pearl* we were pleased to find excellent color and motion reproduction. The system has a generous 320GB hard drive, a DVD±RW drive with Toshiba's LabelFlash label-etching technology, Bluetooth and 802.11a/g/n wireless, an HDMI port, an external SATA (eSATA)



P8400 and 4GB of RAM. That combination delivered a score of 2,728 on Futuremark's PCMark Vantage productivity benchmark, average for this class and price point. The laptop showed decent ability in our multimedia encoding trials; it took 8 minutes to complete our Windows Media Encoder 9 test and 4 minutes and 23 seconds to convert 11 tracks to AAC format in iTunes. But the E105's score of 495 on Cinebench 9.5 is a little low. The \$1,399 Fujitsu LifeBook T1010, for instance, managed 757 with the same processor but a smaller, 13.3-inch screen. The laptop's score of 4,642 on Cinebench 10, however, is right on track, beating out the LifeBook T1010's score of 4,611.

As expected from a relatively inexpensive machine with integrated graphics, the E105 is no gamer. It scored 1,054 on Futuremark's 3DMark06, which is fine for a machine in this class. You'll be able to play less-demanding 3D titles, but high-frame-rate shoot-'em-ups will tax the system's abilities. We saw just 16fps on F.E.A.R. at 1,024x768 resolution; dropping down to 800x600 yielded an almost-playable 24fps. But Company of Heroes was unplayable, yielding a sluggish 11.8fps at 1,024x768 and 8.6fps at the E105's native resolution. The machine ran for nearly 3 hours in our harsh DVD rundown test, so in typical use you should see the promised 5.5 hours.

Toshiba backs the E105 for two years, up from the one-year warranty standard among consumer laptops. There's even a handy Geek Squad icon preloaded on the desktop, so you can quickly find support options (phone, chat, e-mail) should you need it (though the Geek Squad tech support is free only for the first 30 days).

In addition to the extended warranty, the E105 includes a 12-month subscription to Norton Internet Security 2008, as opposed to the 60-day trial we are used to seeing. The machine also comes with Ulead DVD Movie Factory 5, a useful program for making home movies.

The Satellite E105-S1402 is good for the price and includes some welcome touches for buyers set on a 14.1-inch thin-and-light. You'd be hard-pressed to find another system with these features at this weight and price, but we recommend trying out the keyboard and speakers before you buy. If those pass muster, you won't be disappointed. —Jamie Bsates

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Seagate Barracuda 7200.11 1.5TB

Spacious and inexpensive storage for media—or anything else

REMEMBER WHEN a 1TB hard drive for \$300 was a bargain? Seagate has shot that scheme full of holes with its \$149 Barracuda 7200.11 1.5TB drive.

Our testing with HDTach showed a burst transfer rate of 249.5MB per second and an average read speed of 107.6MB per second. In real-world data transfers, our 10GB packet of files and folders was pasted to the Barracuda in 2.3 minutes and copied from the drive in 2.5 minutes—an average of 69.6MB per second. For comparison, we performed the same tests on a 1TB Hitachi DeskStar 7K1000.B. This drive showed a 259.5MB per second burst speed and 99.7MB per second average read speed through

HDTach. The 10GB file transfer took 2.1 minutes to paste and 2.4 minutes to copy from the DeskStar—74.4MB per second, about 4.8MB per second faster than the Barracuda.

Is the trade-off of roughly 7 percent of its transfer speed worth the 50 percent additional storage capacity? We say so. You might encounter some other issues,

however.

During our testing, Windows Vista Ultimate stubbornly refused to format more than 73 percent of the drive. According to Seagate, the Nvidia chipset on our system's Asus M2N-MX motherboard needed updating; everything worked fine once Nvidia's update was applied. If you have an older motherboard, you'll need to check with its manufacturer to determine compatibility.

Seagate has also investigated complaints that a small number of its 1.5TB Barracudas with firmware revisions SD15, SD17, and SD18 might hang during write operations. We ran our drive (with SD17 firmware) nonstop under a heavy load for days and encountered no problems. The included five-year warranty should offer some measure of assurance for its reliability. —Bill O'Brien



EDITORS' RATING 8.3

0 BETTER >> 10

PROS Large capacity; low cost per gigabyte; no speed degradation with the extra platter; five-year warranty

CONS May not work with all motherboard chipsets; early drives had a nondestructive write flaw

Seagate, 800-732-4283
www.seagate.com

Direct Price \$149

For more: computershopper.com/components

ATI Radeon HD 4830

Get high performance—and details—at a low price

WITH THE RELEASE of the \$129 ATI Radeon HD 4830, AMD has closed the one gap in the company's graphics-card lineup, offering performance good enough to play the latest games at decent resolutions and high detail at a price under \$150.

This single-slot PCI Express (PCIe) x16 card includes 512MB of GDDR3 memory and runs at a clock speed of 575MHz. It requires a six-pin connector from the power supply. Our test board included a pair of dual-link DVI connectors, a component/S-Video analog output, and an HDMI adapter.

In typical operation, the single fan is barely audible and the card idles at 45 degrees Celsius. When the GPU is stressed after prolonged gaming, though, temperatures in our tests reached 84 degrees, which might raise overall temperatures in cases with limited airflow. You can manually crank up the fan using the ATI Catalyst Control Center software to bring temps down (and increase noise).

The 4830 supports DirectX 10.1 (DX10.1),

though virtually all games use only DX10 features. Its 3D performance is very good, falling just a few frames per second (fps) behind the more expensive HD 4850 in most of our tests. You can drop up to three additional HD 4830 cards into a system with a CrossFireX-compatible motherboard and available PCIe x16 slots, boosting performance even further.

Thanks to ATI's typically superb anti-aliasing and filtering—and enough speed to run the latest games at medium wide-screen resolutions (such as 1,680x1,050) with maxed-out details—the 4830's image quality is excellent. The card, which supports surround-sound output when using the HDMI adapter, also beautifully upscales DVD content to your monitor's native resolution; ATI's Avivo HD technology enables hardware decoding of the H.264 and VC-1 compression used by HD DVD and Blu-ray. —Denny Atkin



EDITORS' RATING 8.6

0 BETTER >> 10

PROS Inexpensive; quiet; excellent performance at medium resolutions and below; top-notch visual quality

CONS Requires PCIe power connector; runs hot at full load

Advanced Micro Devices
877-284-1564
ati.amd.com

Direct Price \$129

BenQ E2400HD

Cheap 16-to-9, but performance doesn't shine

WE LIKE THE \$369 E2400HD'S understated design and slim profile. Gaming and movies also look good—but not great—on this matte-finished, 24-inch, 1,920x1,080 monitor. Expect to see more 16-to-9 screens this year, as panel manufacturers are looking to cut costs by making one aspect ratio for all screens meant for multimedia purposes.

The E2400HD is surprisingly lightweight (15.4 pounds), but unfortunately the screen only tilts forward and back. There are VGA, DVI, and HDMI plugs behind the screen, which makes this monitor a viable all-in-one video display for cramped apartments and people on a tight budget.

But in DisplayMate (www.displaymate.com), we noticed



PROS Simple but pleasing design; lightweight; relatively slim; excellent button controls

CONS Average performance; minor analog issues; no USB ports; stand lacks height, side-to-side angle adjustment

BenQ, 973-984-3000
www.benq.com

Direct Price \$369

the single-pixel white border was cut off from the left side of the screen. Adjusting the screen position with the onscreen display resulted in the border vanishing from the right side. It's just one column of pixels and hardly noticeable, but if you're paying for the resolution, the monitor should be able to show all of it. Fortunately,



using a DVI cable fixed the problem.

The monitor managed to display the darkest and lightest shades of gray, though just barely. There was no visible streaking in the fast-paced scenes of *The Bourne Identity*, thanks to the 2ms (gray-to-gray) response time. In *Doom 3* we saw no noticeable loss of detail in dark corners, and although colors didn't pop the way they do on a glossy screen, that's a fair trade-off for not having glare issues. The screen, offering 300 candelas per square meter, is bright without being blinding.

The BenQ E2400HD offers average performance, but its slim profile, light weight, and HDMI port make it a good choice for dorm-bound college students and those who live in small apartments but still want HD performance from their PC and game systems. —Matt Safford

For more: computershopper.com/lcd-monitors

Asus LS221H

High-end features, ho-hum performance

THE ASUS LS221H IS A 22-INCH (1,680x1,050) monitor with stunning design elements, including a slim profile, a leather-adorned bezel, and a hardened glass screen that strikes the perfect balance between glossy and glare. In our tests, however, the LS221H didn't quite perform at a level that matches its outstanding good looks.

The button controls are simple but serviceable and smartly incorporated into the silver trim. A leather panel sits below the buttons, adding some visual contrast. The hardened glass screen is bright (300 candelas per square meter) without being too glossy to impede office productivity. The solid stand, however, only allows tilt adjustment.

We're glad the LS221H comes with VGA and HDMI, but to connect to DVI, we had to use an included adapter. The connectors are in the back of the stand's



base, which keeps cable clutter under control but doesn't let you push the base up against a wall.

On our DisplayMate (www.displaymate.com) white-level saturation test, the brightest few shades appeared white. Turning

down the brightness helped, but it didn't eliminate the issue. The darkest levels of gray weren't easily distinguishable from black, either. In game and video tests, the LS221H produced no visible streaking, thanks to its 2ms gray-to-gray pixel-response time. But in both *Doom 3* and *The Bourne Identity*, we noticed a slight loss of detail in the darkest scenes.

If you don't mind paying a premium for style, there's no reason not to choose the LS221H. Office workers who like to watch movies and play a few games after hours (or when no one's watching) will find the monitor a striking addition to their desks. —M.S.



PROS Svelte profile, sleek design; glossy screen has little glare; HDMI port

CONS Expensive for a 22-inch monitor; whites slightly over-saturated; gray-scale performance could be better

AsusTek Computer, 510-818-4804
usa.asus.com

List Price \$349

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Epson WorkForce 600

A business MFP with a photo finish



EPSON'S \$199.99 WORKFORCE 600 has just about everything SOHO users need, including superior-quality business text and graphics, wired and wireless networking, and a 30-page automatic document feeder. Better yet, it's one of the fastest inkjets in its class. And though it's a business-oriented multifunction printer (MFP), the WorkForce 600 comes equipped with lots of nifty photo features and functions.

The two-toned black-on-black WorkForce 600 is a compact, handsome-looking device. Although the body and many of its innards are plastic, Epson's attention to detail and the sleek design give it the look and feel of a quality build. The ports (USB 2.0, Ethernet, and two phone lines) are strategically positioned on the rear right side but recessed rather than flush against the back, so cables won't be jammed against a wall or backdrop. The front control panel conveniently swivels to allow easy access to its bright, highly legible 2.5-inch LCD and well-marked control buttons.

Paper feeds from a single, adjustable 100-page slot on top, and although we would have preferred two slots—one for

EDITORS' RATING 8.8

0 BETTER >> 10

PROS Fast print speed; Wi-Fi connectivity; excellent text quality; good ergonomics; attractive styling; bright, legible 2.5-inch LCD; two-year warranty

CONS Limited paper handling; average photocopy speed; manual, not automatic, duplexing

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

Direct Price \$199.99

regular paper and another for envelopes or photo paper—we did not experience any jams or misfeeds in our tests. Both the paper-size-adjustment lever and the pull-out paper-receiver tray are flimsy, however. Also, we wish the WorkForce 600 offered automatic duplexing.

Setup was refreshingly uncomplicated and trouble-free. Software installation, including a variety

of business templates, was also quick and painless, as was connecting wirelessly to the network. Though the included documentation is somewhat sparse, a desktop icon automatically connects to the Epson Information Center's WorkForce 600 Series Web site. Because the WorkForce 600 is designed for business use rather than photo printing, the engine uses only four inks. The cartridge holder is color-coded, allowing for fast and easy insertion. Color cartridges come in regular (\$12.34) and high-capacity (\$16.99) sizes, the latter good for 485 pages in quality text mode, or 14 cents per page. Black is available in high-capacity (\$16.99) and extra-high-capacity (\$28.49) cartridges, the latter capable of producing 835 pages in quality text mode, at a competitive 3.4 cents per page.

Scanning, copying, and printing are fast and convenient. A single text page scanned in 13.8 seconds, and a 4x6-inch photo in 1 minute and 22 seconds. Printing is even faster. Our 10-page text-and-graphics document printed in draft mode in 40.7 seconds, with quality text mode taking a blazing 4 minutes and 21 seconds. A 20-page text-only document

printed in 1 minute and 15 seconds in draft mode and 1 minute and 36 seconds in quality mode. A 4x6-inch photo took a respectable 49.5 seconds. Compare these times with those of the HP Officejet J4680, which printed a 10-page document in 2 minutes and 52 seconds, a 20-page document in 2 minutes and 56 seconds, and a 4x6 photo in 2 minutes and 16 seconds (though note that the J4680 sells for just \$129).

The WorkForce 600 can also fax in color as quickly as 3 seconds per page and holds up to 180 pages in its memory. It stores up to 60 fax numbers in its speed-dial memory. Copy speed is mixed, at a quick 13 seconds for a one-page text document but a slow 2 minutes and 52 seconds for an 8x10 photo.

Business print quality is excellent, with sharp, crisp, well-formed characters, even down to 3.5 points. Although colors are slightly muted on plain paper, Epson says the inks are waterproof and fade-resistant.

As with many home-oriented inkjets, the WorkForce 600 features PictBridge, memory card slots, basic photo-editing and correction capability, and printing without a computer. Users can even scan photos directly to a memory card or USB drive. Photo print quality is generally good, although it lacks the snap and contrast produced by photocentric MFPs such as Epson's own outstanding Artisan 800. The company claims photo archivability ranging from 54 years to 185 years, depending on how the pictures are stored (54 years for photos that are exposed to the elements, 185 years for storage in a dark room or when framed with UV-filtered glass, and 105 years when framed behind non-UV-filtered glass). The printer is backed by a two-year warranty.

Epson's WorkForce 600 will appeal to SOHO users primarily because of its speed and ability to produce laser-quality text and graphics at a competitive cost per page. And throwing in the photo capability means you can use it for a variety of purposes, though we wouldn't recommend it for special family shots you're looking to frame. —Daniel Grotta and Sally Wiener Grotta



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Canon Pixma MP620

Packed with features, but lags in performance

CANON PULLS OUT ALL THE STOPS with its \$149.99 Pixma MP620. This all-in-one printer offers every connection option under the sun, better-than-average print quality, and a few surprising extras.

With its black-and-gray finish and rounded edges, the MP620 doesn't look like a typical low-cost printer. At 18.7 pounds, it's also heavier—and potentially sturdier—than many competing models. Although the built-in 2.5-inch LCD is small, its 230,000 pixels convey a fair amount of information. The scan preview is detailed enough to help you judge how the image will be positioned on the printed page. The scrolling selection wheel makes navigating the menus easy. Highlights include the ability to initiate a scan from the printer and route the scan to a memory card, USB-attached flash drive, or networked computer. Another nice touch: The paper-output tray automatically opens when you print or copy.

Canon offers a full slate of connection options for the MP620. Out of the box, it supports USB, Wi-Fi, Ethernet, and PictBridge. Canon's optional \$49.99 BU-30 adapter adds Bluetooth compatibility to the mix. If you have an older digital

EDITORS' RATING 7.7

0 BETTER >> 10

PROS Lots of connectivity options; outstanding readability in high-quality print mode; inks have excellent longevity; can scan to a printer-hosted memory card or flash drive, or to a networked computer

CONS Very slow high-quality print speeds; cost-per-page information not yet available

Canon U.S.A., 800-828-4040
usa.canon.com

Direct Price \$149.99

single-lens-reflex camera (dSLR) that uses CompactFlash cards, you'll appreciate the fact that Canon has included support for CompactFlash in the MP620's three memory-card slots (17 formats are accepted in all).

With so many options, installing drivers can be confusing. Partway through the software installation, you'll have to choose among three connection options that aren't well-

explained. Fortunately, the manual is a better guide: It contains a flowchart with step-by-step instructions for the different network-connection setups.

The MP620's print engine has a native 2,400x9,600-dot-per-inch (dpi) color resolution and 600x600dpi black resolution. The scan engine has a 2,400x4,800dpi optical resolution and 19,200x19,200dpi interpolated resolution (yes, take that claim with a grain of salt). Scans are input to 24-bit color but processed out to 48-bit color. The MP620 doesn't have fax capabilities.

This printer uses five color ink tanks, which helps you save on ink costs. The inks are rated for up to 300 years when stored in an album or 30 years when displayed in a glass frame. Unfortunately, we were not able to determine the cost per page because the MP620 uses a new line of replacement ink tanks. At press time, Canon didn't have an estimate as to how many pages can be printed with a tank of ink.



For all its features and connectivity options, the MP620 isn't exactly a speed demon. Overall, its performance is right in line with its price (just a little faster than the \$129 HP Photosmart C4580), but that doesn't mean we're satisfied with it. Our 10-page document with a mix of text and images clocked in at 2 minutes and 41 seconds, while the 20-page text document took 3 minutes and 31 seconds. A 4x6-inch photo printed in 1 minute and 4 seconds on photo paper, using the best-quality setting. After switching to regular paper and the regular-quality setting, the photo printed in 31 seconds. The unit's copy speeds were more typical: 48 seconds for color and 33 seconds for black-and-white. A full page of black text scanned in at a fast 14 seconds. Compare that with the admittedly twice-as-expensive \$299 Epson Artisan 800, our current Editors' Choice, which managed a 10-page document in 1 minute and 20 seconds and copied a black-and-white document in just 12 seconds.

When we used the regular-quality print setting, text was legible down to 3.5-point type, though the individual letters were slightly pixelated. The text was also a tad too light, especially in color. We liked how the MP620 handled text when printing in high-quality mode, though print speeds slowed to a crawl. Our 10-page test document jumped from 2 minutes and 41 seconds to a whopping 17 minutes and 9 seconds when we switched to that mode. Some printed images had intermittent dark lines using the regular-quality setting. We were much more impressed with the high-quality print setting, which produced laser-quality text and near-flawless graphics. On regular paper, our color photos were well-saturated and lifelike. On photo paper, the colors were even richer and showed an increased sense of depth, though some photos displayed a bit too much contrast, which tended to squeeze out detail.

Overall, this is a strong printer in terms of connectivity, photo quality, and photo longevity. If speed is a priority and you can swing \$300, we highly recommend the Epson Artisan 800. But if \$150 is all you want to spend and you don't mind the wait, the Canon Pixma MP620 won't disappoint. —David English

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Samsung i8

Do-it-all cam is merely competent

THE SAMSUNG i8 FOLLOWS the trend of convergence devices: It's a digital camera, an MP3 player, a text viewer, a traveler's guide, and a video player. As a camera, though, the i8 performs competently, but not exceptionally.

The i8 is a slim, 8-megapixel digital camera featuring a 2.7-inch LCD and a 3x optical zoom lens. At 4 ounces and 3.6x2.3 inches, it is both light and compact enough to fit in most pockets. There is no optical viewfinder, however, so you'll have to rely solely on the LCD to frame shots.

The camera's rich feature set boasts 14 scene modes and a handy face-detection feature to ensure that faces are in focus. Unfortunately, users with large hands may find it difficult to press the diminutive i8's small button clusters. Another shortcoming is that the camera has three menus, including one that cycles in two different directions. Novice photographers might find the i8's menus challenging to navigate; when we gave the camera to a newbie

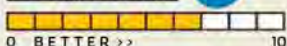
during our tests, she had difficulty making sense of the system.

Compensating for its tricky menus, however, is its reasonably good image quality: In our tests, the i8's metering was accurate, and the camera produced sharp images with natural colors and relatively low noise. Moreover, the face-detection feature did a good job

with self-portraits—a welcome addition to the package.

The i8 was disappointingly slow. Shutter lag is noticeable (and frustrating), and shot-to-shot time is just under two seconds. The i8 takes about 2.5 seconds to start up, which is moderately sluggish. —John B. Stafford

EDITORS' RATING 7.0



PROS Compact; light; handy face-detection feature; built-in media player, text viewer; affordable

CONS Confusing menu system; small buttons; unremarkable camera performance

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

List Price \$129

Canon PowerShot SD880 IS

Great point-and-shoot for a reasonable price

LIKE MOST MODELS in Canon's ELPH line, the 10-megapixel PowerShot SD880 IS is stylish and easy to use. Image quality is respectable, and \$299 is not a bad price for a camera that shoots well.

Packed in a sleek silver or gold case, the SD880 is nice-looking, easy to hold, and feels sturdy in your hands, though at 5.5 ounces, it is a bit heavy.

The back has plenty of space for the 3-inch Pure-Color LCD II, which accurately renders subjects. It works respectably in a wide range of lighting conditions, too. We shot outside on a

sunny day and never had a problem seeing the screen.

More important, the SD880 captures very good images. We were impressed with the camera's color rendition, and all hues were properly saturated. Images were sharp and crisp, especially in better-lit conditions. White balance was also accurate.

With 16 scene modes and many built-in features, it's a breeze to shoot with the SD880. The DIGIC 4 Image Processor provides impressive face detection, auto focus, and auto contrast correction. We weren't impressed, however, when we used higher ISO settings, which generally yielded noisy images.

The 4x optical zoom lens captured clear images, which also allowed for impressive wide-angle shots. The optical image stabilizer let us snap clear images of cars passing at about 35mph on a busy street.

In terms of performance, this camera is a mixed bag. Startup time and shutter lag are both less than a second, but shot-to-shot time was a bit sluggish at 3.5 seconds.

—Jonathan Rougeot

EDITORS' RATING 7.9



PROS Great image quality; fast startup time; easy to use

CONS Slightly heavy; slow shot-to-shot time; noisy images when shooting in high ISO

Canon U.S.A., 800-385-2155
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BlackBerry Bold (AT&T)

Slick interface makes this RIM's best smartphone to date

THE BLACKBERRY BOLD marks a new era for RIM, whose smartphones have traditionally been used mostly for business e-mail. The latest model, priced at \$299.99 with a two-year service agreement from AT&T, boasts a new display, a redesigned user interface, a full HTML browser, and the best keypad we've seen on any smartphone.

The exterior of the Bold isn't a radical departure from the BlackBerry Curve. It features the now-familiar trackball, which lets you scroll through the phone's user interface with ease. It's responsive, but it picks up dirt easily. The rear has a faux-

leather back cover that lets you grip the Bold firmly.

The bright, 2.8-inch display lends itself nicely to multimedia enjoyment. Although video playback with certain files was choppy, the Bold's screen made colors pop. Photos looked just as good. For music, the phone's built-in speaker was impressive, and you can also pair the Bold with your favorite headphones via its 3.5mm jack.

As for connectivity, the

Bold has it all, including built-in Wi-Fi, 3G, Bluetooth 2.0, and GPS. RIM's new browser now displays Web pages in full HTML. In our tests, images weren't always rendered properly, but combined with AT&T's 3G network, which provided good coverage around New York City, the Bold's browser was solid.

In our tests, the phone experienced occasional slowdowns and system freezes. In addition, we had a multitude of Java errors when opening certain apps. But as a phone, the Bold's voice quality was flawless. Its battery life was equally impressive, lasting two full days with intermittent 3G and Wi-Fi use before requiring a recharge. —Louis Ramirez



EDITORS' RATING 7.6

0 BETTER >> 10

PROS Great keypad; excellent wireless connectivity, including Wi-Fi and 3G; sharp display; impressive speakers

CONS Trackball easily picks up dirt; certain video files experienced lag; occasional slowdowns and freezes

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

Direct Price \$299.99 (with two-year agreement from AT&T)

For more: computershopper.com/cell-phones

HP iPAQ 910

Business-centric handheld suffers from a few quirks

THE HP IPAQ 910 BUSINESS MESSENGER is a good, though not stellar, Windows Mobile 6.1 Professional smartphone. With a sharp 2.5-inch, LED-backlit display, a QWERTY keypad that's comfortable to use, and various connectivity options—including Wi-Fi and 3G (HSDPA)—the \$499.99 unlocked phone has a good feature set. It falls short in the multimedia department but has plenty of business-oriented features to make up for it.

Despite the smooth, piano-black exterior, the iPAQ 910 isn't exactly sleek. It weighs 5.4 ounces and is 0.6 inch thick, making it one of the chunkier smartphones we've seen.

Performance is speedy, thanks in part to its 416MHz processor. Applications such as Word Mobile and Excel Mobile launched instantly with little or no lag. (Windows Mobile 6.1 also lets you cut and paste between

applications, an option that wasn't available in previous versions.)

To navigate through files and menus, you can use the built-in stylus and trackball. BlackBerry users will be familiar with the trackball; because of its small size, however, clicking the trackball can be tricky.

Surfing was a mixed bag. The iPAQ 910 makes getting online easy, but the Web pages we tried wouldn't always load properly in Internet Explorer; sites that use table layouts were often mangled. For heavy Internet use, you'll want to look elsewhere.

Call quality on the iPAQ 910 was good, but we quickly hit the unit's volume limit. The phone's mono speaker was also weak. In our battery-life tests, the iPAQ 910 offered around 9 hours and 20 minutes before requiring a recharge, which should be sufficient for a typical business user. —L.R.



EDITORS' RATING 6.5

0 BETTER >> 10

PROS Sharp display; responsive OS; comfortable keypad; Wi-Fi, 3G connectivity

CONS Bulkier than most smartphones; scroll wheel hard to use; low call volume; poor Internet experience

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Sonos Multi-Room Music System

Great audio solution at a premium

THERE ARE MANY WAYS to pipe digital music throughout your house, but they often result in a mishmash of PCs, media servers, and extenders that don't always play nice together. With Sonos's new Multi-Room Music System, you have full control of an extensible, end-to-end setup that pumps out the jams from a wide variety of sources, including network-attached-storage devices, the Internet, and PCs. Just be prepared to pay for it.

Our review setup, the Sonos Bundle 150 with Loudspeakers (BU150, \$1,149), consisted of four separate units: the ZonePlayer 90 (ZP90), which connects to your existing home theater system; the ZonePlayer 120 (ZP120) amplifier, which can function without a home theater system (all you need to attach are speakers); a controller (CR100) for accessing music and controlling the ZonePlayer devices in your house; a charging cradle (CC100) for the CR100; and a pair of Sonos SP100 Loudspeakers. A version without the speakers retails for \$999.

Setting up the Sonos is a relatively painless process. Using 802.11n wireless for improved range, each of the ZonePlayer

units in this bundle can be deployed in any room of an average-size home. The Sonos system is also expandable. To get everything functioning, one of the ZonePlayers in the bundle must be connected to your router with an Ethernet cable, and the Sonos Desktop Controller software has to be installed on a PC (Windows PCs and Macs are supported). You then add additional ZonePlayers to the network wirelessly by holding down the volume-up and mute buttons

EDITORS' RATING **8.7**
0 BETTER >> 10

PROS Relatively easy setup; tons of music options; able to browse music on computers, NAS drives; mesh network bypasses wireless encryption; excellent audio quality; iPhone controller app

CONS No touch screen on controller; requires one wired connection; no iTunes DRM integration

Sonos, 800-680-2345
www.sonos.com

Direct Price \$1,149 (Sonos Bundle 150 with Loudspeakers)

on their front panel. Sonos's transparent mesh network spares you the trouble of tinkering with encryption keys.

As for design, both the ZP120 and ZP90 base stations are small, color-neutral cubes that will meld nicely into your home decor. For audio output, the ZP120 amplifier is the larger of the two (3.5x7.3x8.15 inches and 5.1 pounds) and includes high-quality terminals to power the Sonos speakers, as well as RCA jacks for independently powered speakers. The ZP90 (5.4x5.5x2.9 inches and 1.5 pounds) has stereo RCA inputs and outputs, as well as an optical audio-out jack.

The audio quality of the Sonos Loudspeakers was incredible. Bass and treble response in every genre sounded authentic and nuanced. Similarly, live music was accompanied by bombastic crowd noise, and symphonies were crystal clear.



Once you're up and running, the Sonos system works seamlessly. Using either the Sonos Desktop Controller or the CR100, you can easily and intuitively add or browse music, playlists, and album art from a variety of sources, including networked computers or network-attached-storage devices; for-pay services like Rhapsody and Sirius Radio; plus tons of free content from a long list of Internet radio stations, all sortable by genre, artist, album, or track. Sonos recently announced that Pandora and Last.fm support are now built-in and free, adding even more selections to the available music sources. Both the CR100 and the software controller also allow you to set up music in different rooms (also known as "zones") and independently change music sources and volume levels while linking or dropping zones with just a few clicks. You still can't play music purchased from the iTunes Store, but you can play DRM-enabled music from Microsoft's Zune Marketplace.

The CR100 is a solid piece of hardware. For one thing, it gets about three days of moderate use on one charge. Its 3.5-inch color LCD, meanwhile, is sharp, and the buttons are well laid out, though we feel the iPod-inspired scroll wheel should be axed in the next iteration in favor of a touch screen.

As an alternative to the CR100, Sonos offers the Sonos Controller for the iPhone, a free downloadable app from the iTunes App Store. The app lets you connect your iPhone or iPod Touch to your Wi-Fi network and use it to control your Sonos system. Best of all, you can search for music by typing queries on your touch screen, which is actually easier than using the regular CR100's scroll wheel. The app's interface is clean and simple, and—like the other control options—it automatically recognizes a Sonos network.

There are certainly cheaper options than the Sonos, but none give you the same level of control. And if you're mixing and matching equipment to build an audio network, there's no guarantee everything will work together. So if money is no object, Sonos remains the best end-to-end multiroom music system we've seen. —Mike Spitalieri

For more: computershopper.com/peripherals



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McAfee Total Protection 2009

Good security, but poky and poorly designed

"TOTAL PROTECTION" is a huge claim for any security package. It makes even less sense when the product in question is difficult to operate and lacks some useful features—all of which describe McAfee Total Protection 2009.

Installation and updating took about 20 minutes, and at one point, the program scanned our Registry and refused to continue until we removed security programs it didn't like—even though none of these programs was currently installed. We had to find and delete all traces of them in the Registry before installation would continue.

EDITORS' RATING **6.0**

0 BETTER >> 10

PROS Excellent malware protection; strong antispam and firewall user options; shareware trial

CONS Slow installation, virus scanning; installation problems; frustrating interface; lacks many common user options; complains if you opt for partial protection; plenty of false positives; doesn't learn from your choices

McAfee, 888-847-8766
www.mcafee.com

Direct Price \$59.95

The single significant improvement from last year's release is Artemis, a new component added to real-time antivirus protection that queries McAfee's virus database for instructions. In our tests, Artemis found viruses when they were present, but false positives still occurred regularly. Since the software doesn't learn from how you handle viruses, this can be a source of long-term frustration. Other elements are also



awkward. The program effortlessly blocks malware but doesn't let you select an individual file for scanning. It's excellent at finding viruses, but it's slow and doesn't flag applications that have vulnerabilities that put your system at risk. The Anti-Theft vaults guard information well, but the Personal Information Protection module only prevents user-defined data from being transferred to the Web; e-mail and messaging systems aren't stopped. Antispam filtering and firewall options are first-rate, but you're forced to delete everything the program finds, or nothing. Worse, apocalyptic warnings appear when you cancel even minor features, punishing you for taking control of your own configuration.

Total Protection 2009 delivers solid protection, but its slow speed, cumbersome design, and lack of refinements mean you'll probably want to pass on it. —Barry Brenesal

For more: computershopper.com/software

Trend Micro Internet Security Pro 2

Feature-rich security package prefers to work alone

TREND MICRO Internet Security Pro 2 offers a good selection of tools and an easy-to-navigate interface. It does the job, and if you get confused or experience problems, there's lots of built-in help, as well as free e-mail, phone, and online chat support. But we wish it were friendlier to a mix of security tools.

If you try to install Internet Security Pro 2 with other security programs in place, you get an error message; you can't, say, mix and match Internet Security Pro 2's antivirus protection with someone else's firewall. Once we got going, installation took about five minutes, though the time was slightly extended by the software complaining we hadn't installed an update we had applied.

Once everything was installed, though, we were generally impressed. The virus protection caught—but couldn't remove—the viruses we had deliberately placed on a pair of computers. We didn't like the way the software left us in the dark regarding

the filename and directory containing a potential threat. On the other hand, the software triggered far fewer false positives than other programs, and its scans were very, very fast. The firewall offers four preconfigured security levels as well as advanced settings for individual programs and protocols.

The bottom left of the main screen interface includes a Pro Features button, which offers five options: Remote File Lock, System Tuner, Security Activity Dashboard (for keeping track of the number, source, and type of threats the program finds—hardly a feature at all), Toolbar (which boosts Firefox's and Internet Explorer's antiphishing capabilities), and Mobile Security (spam filtering and virus scanning for Internet-enabled cell phones). —B.B.



EDITORS' RATING **7.5**

0 BETTER >> 10

PROS Good variety of tools; extensive help system; free chat, phone support; fast scans; few false positives; adds strong value to browser antiphishing capabilities; easy-to-manage firewall levels; excellent malware detection

CONS Painful, sometimes confusing installation and updating; occasionally can't remove malware it finds

Trend Micro, 800-656-5426
us.trendmicro.com

Direct Price \$69.95



Bento 2

Personal database software is easy to learn, use

CREATED BY APPLE-OWNED subsidiary FileMaker for the general computer user, the Mac-only Bento is personal database software that's easy to learn, thanks to its intuitive, visually attractive interface.

Bento looks and behaves like a native OS X application. Its simple, iTunes-like interface includes a search box at the top right and a library pane on the left. We also like the fact that it doesn't require a lot of system resources, and in our trials it launched fairly quickly, even on a five-year-old Mac.

You can look at information in a spreadsheet-like Table view or in a Form format, which lists everything in boxes that correspond to the fields you populate. In Form view, you can

easily drag or resize forms, add a new field by dragging it from the field box onto the form, or even integrate music or video (though it would be nice to have a media browser for previewing files before adding them to the database). If you don't have time to build a form from scratch, Bento comes with premade templates for a variety of tasks, including media management, inventory, time billing, and expenses.

Seamless integration with Mac OS X's Apple Mail, Address Book, and iCal apps

allows you to pull information from those programs within Bento. You can also easily import data from Excel and Apple's Numbers spreadsheet app.

Although you can upload and share your templates with other Bento users, you can't collaborate (or share a database) with someone else. You can, however, export to Excel, Numbers, or plain text. We found some quirks when we exported to Excel, though Bento did better exporting to Numbers. —Les L. Shu

EDITORS' RATING 8.0

0 BETTER >> 10

PROS Easy to learn; intuitive, attractive interface; integrates with Address Book, Apple Mail, iCal; imports from Excel, Numbers, plain text; elegant premade templates; link to media files; affordable

CONS Some quirks when exporting info to Excel; no direct connection to iLife apps; requires Mac OS X 10.5 or later

FileMaker, 800-325-2747
www.filemaker.com

Direct Price \$49 (single license); \$99 (five licenses)

The Print Shop 23 Deluxe

Quick and easy printing for thousands of projects

THE PRINT SHOP 23 Deluxe (\$49.99), the latest version of the popular consumer-oriented desktop-publishing program, has more than 21,000 project templates, 370,000 images, and 600 fonts, as well as advanced photo-editing tools. The interface remains somewhat awkward, but the software remains as varied and useful as ever.

The 25 project categories include banners, brochures, greeting cards, invitations, newsletters, presentations, signs, slide shows, and résumés. You can even create matching stationery sets, where the text and logo repeat across business cards, letterheads, envelopes, and fax cover sheets—ideal for a small business, community organization, or school, or for family gatherings.

You can create your own projects from scratch or alter a preexisting template; the layout tools should feel familiar, even if you're a desktop-publishing novice. You can convert projects to Web pages or PDFs, print more than 200 of the projects on Avery labels or custom paper sizes, and use mail merge with the built-in address book.

We experienced occasional interface quirks. When we browsed projects, we often wanted to go one step back and return to the

Project Picker menu, but we had to close the project window and start again. We also had trouble positioning an imported image within a sign project. We wanted to crop it, but the crop tool was grayed out.

The 298-page user's manual didn't offer a solution, and though it provides instructions for most every feature, it doesn't have an index—only a table of contents.

Broderbund also offers The Print Shop 23 (\$29.99), with fewer projects, images, and fonts, and The Print Shop 23 Deluxe Pro Publisher (\$99.99), with improved layout features, superior text tools, advanced photo-editing tools, and a calendar-creator module, as well as form and logo creators and professional form and color tools. —David English

EDITORS' RATING 8.4

0 BETTER >> 10

PROS Large selection of fonts, templates, images, projects; can convert projects to Web pages or PDFs; generally good documentation

CONS Interface awkward in places; manual doesn't have an index

Broderbund, 800-395-0277
www.broderbund.com

Direct Price \$49.99



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2009

SHOPPERS' CHOICE AWARDS

OUR READERS CHOOSE THE TOP TECH FROM THE PAST YEAR

MORE ONLINE!

See the products that our readers voted the top five runners-up in each category. Click over to www.computershopper.com/2009shopperschoice

Although people pick up magazines like *Computer Shopper* (and visit tech sites like ComputerShopper.com) to read reviews of the latest products, there's an equally important source of information that can help you make important tech decisions: the opinions of fellow buyers.

Long before the Web became what it is today, *Computer Shopper* recognized how much you value other readers' opinions. So, 23 years ago, we began polling you, our readership, about your thoughts on the best tech products of the preceding year—and the Shoppers' Choice awards were born. This year, you made your voice heard on your favorite desktops and laptops, the hardware and software you considered essential, and the best places to buy everything tech in 2008.

Read on to find out if your picks match those of your fellow readers. Limited space in the magazine means we can only highlight the winners and first runners-up, but point your Web browser to www.computershopper.com/2009shopperschoice to see our readers' top five picks in every category.

BEST

Computer Systems

Gaming/Performance Desktop

Alienware Area-51 ALX

Alienware's Area-51 ALX is your performance-PC pick for the second year in a row. It's certainly not cheap, but what the Area-51 ALX draws from your savings account it returns to you in style and performance. From its haunting, extraterrestrial-themed case to the powerful components that kept it at—or near—the top of our benchmark-testing results, the Area-51 ALX remains the go-to choice for gamers who are stuck on Earth but would rather reach for the stars.

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

Direct Price: \$4,549 (base model)

Runner-Up: Dell XPS 730



Budget Desktop

Dell Inspiron 530

Dell proved once again in 2008 that you don't need to shell out a ton of money for a capable, configurable desktop, and you replied by singling out the Inspiron 530. You can pay the base price of \$279 for a PC that's ready for basic tasks (with a Celeron CPU, 2GB of memory, and a 320GB hard drive) or add upgrades to get as much computer as you need—or want.

Dell • www.dell.com

800-915-3355

Direct Price: \$279 (base model)

Runner-Up: HP Pavilion A6560f



Dell
Inspiron
530

adding options can quickly drive the price beyond the base \$750, this model and its successor are still some of the best mainstream-PC values of the year.

Hewlett-Packard

www.hp.com • 800-289-6947

Direct Price: \$749.99

(base model, m9400t)

Runner-Up: Dell XPS 630

Midrange Desktop

HP Pavilion Elite m9200t

(Replaced by the HP Pavilion Elite m9400t)

Can't decide what you want to do with your PC? Don't. HP's Pavilion Elite m9200t PC is a powerhouse home-media system loaded with features to help you manage your photos, music, and video with ease. Though

again in 2008 that you don't need a big machine to manage big tasks. The s3330f model includes an 802.11n wireless adapter, a high-definition optical drive that can read both Blu-ray and HD DVD discs, and a TV tuner to put you at full entertainment readiness.

Hewlett-Packard

www.hp.com • 800-289-6947

Direct Price: \$999.99

(base model, s3650f)

Runner-Up: Apple Mac Mini

Home Theater PC

Sony VAIO VGX-TP25E/B

Home theater PCs skyrocketed in popularity in 2008 as consumers became more conscious of their living spaces—and their budgets. Sony's VAIO VGX-TP25E/B not only offered full media-center functionality with its TV tuners and Windows Vista Home Premium operating system, but it also made a design statement. Small, round, and black, this VAIO was ideal



Sony VAIO
VGX-TP25E/B

Small-Form-Factor Desktop

HP Pavilion Slimline s3330f

(Replaced by the HP Pavilion Slimline s3650f)

With its Slimline series of desktops, HP proved again and

for anyone who wanted a PC that didn't look like one—or who had a fondness for hockey pucks.

Sony Electronics

www.sonymstyle.com

877-865-7669

Direct Price: \$1,999 (base model)

Runner-Up: HP TouchSmart IQ506

Desktop-Replacement Notebook

HP Pavilion HDX Entertainment Notebook PC (Replaced by HP HDX18)

HP's giant, 21-inch Pavilion HDX Entertainment Notebook PC was quickly supplanted by the more manageable HDX18 and even smaller HDX16. Still, the HDX line remains a standout in mobile entertainment, providing top-notch performance and a bevy of multimedia ports and controls in a movie- and TV-friendly package. While the replacement systems aren't as jaw-dropping as the original, both the 16- and 18.4-inch options are serious contenders in this growing category of notebooks.

Hewlett-Packard • www.hp.com

800-289-6947
Direct Price: \$1,349 (base model, HDX18)

Runner-Up: Sony VAIO VGN-FW198U/H



Alienware Area-51 m17x

Gaming Notebook

Alienware Area-51 m17x

Nabbing the highest laptop-gaming scores to date—beating even Alienware's own Area-51 m9750—the m17x busted the mobile-gaming scene wide open. Together with its little brother, the Area-51 m15x, this 17-inch gamer delivers



Apple MacBook Air

unparalleled graphics performance, a spacious backlit keyboard (the first of its kind to have its lighting scheme coincide with gameplay), and a generous assortment of ports and components, including a Blu-ray drive. Though our test system didn't sport the newest processor (it offers a Santa Rosa-based Core 2 Extreme X9000), that didn't slow performance a bit. Still, if you're set on nothing but the latest, check out Alienware's new m17, which can be configured with dual Mobility Radeon HD 3870 GPUs in a CrossFireX arrangement, as well as Intel's Core 2 Extreme Quad QX9300 processor.

Alienware

www.alienware.com

800-254-3692

Direct Price: \$1,999 (base model)

Runner-Up: Alienware Area-51 m15x

Thin-and-Light Notebook

Sony VAIO VGN-FZ485U/B

Sony's VAIO VGN-FZ485U/B offers just about everything you could ask for in a 15.4-inch notebook, including style, performance, and portability. The FZ series has a Blu-ray drive combined with a 1,280x800 screen—not full 1080p but a good compromise for the screen size. With 4GB of RAM, an Nvidia GeForce 8400M GT graphics card (with 256MB of video memory), and a 300GB hard drive, the FZ series is a strong multimedia contender.

Sony Electronics

www.sonymstyle.com

877-865-7669

Direct Price: \$2,199 (base model)

Runner-Up: Lenovo ThinkPad SL400

Ultraportable Notebook

Apple MacBook Air

Who can forget the ad in which Apple's 3-pound MacBook Air is pulled out of an envelope? Certainly not you, who ranked it the best ultraportable of the year. And while the Air's light weight and remarkable thinness meant that it had no optical drive, no battery options, and few ports, Apple made up for that with a versatile touch pad, a gorgeous 13.3-inch screen, and a Remote Disc feature, which lets you wirelessly use the optical drive of a nearby PC. It has its trade-offs, but a notebook that feels as light as a Frisbee and offers enough power to satisfy demanding users is tough to ignore.

Apple • www.apple.com

800-692-7753

Direct Price: \$1,799 (base model)

Runner-Up: Lenovo ThinkPad X300

Netbook

HP 2133 Mini-Note PC

HP's 2133 Mini-Note PC wasn't just your favorite netbook of the year: It was one of ours, too. HP introduced this—its first netbook—with a killer keyboard, a big 8.9-inch screen (though 10.1 inches is the



HP 2133 Mini-Note PC

Best Place to Buy Desktops, Notebooks, Software, Peripherals, Components

Overall Best Place to Buy Online

Newegg.com

Newegg.com is a portal for electronics sales, and you ranked it number one for shopping for notebooks, desktops, peripherals, components, and software, as well as the best overall online tech-sales site. The Newegg.com Daily Deals feature 10 products, reduced in price every day. We particularly like the amount of information given on each product: Specifications are comprehensive, and photos abound for every product, from every angle. Plus, the site is easy to use, easy to search, and easy to buy from. The best part by far, though, is the pricing. Newegg.com often has the best prices around, sometimes with free shipping. Regardless of what kind of tech you're shopping for, Newegg.com is a highly recommended place to start your search.

Newegg.com • 800-289-6947

way to go now), and a choice of SUSE Linux, Windows Vista Home Basic, or Vista Business. Though its 1.6GHz Via C7-M ULV processor returned less-than-spectacular test results, the overall package was still appealing—at least until Intel introduced the Atom CPU, designed just for these little notebook wonders. Now, HP has upped the ante with its bigger, faster Mini 1000, which offers another superb keyboard plus the Atom processor and a 10-inch screen.

Hewlett-Packard

www.hp.com • 800-289-6947

Direct Price: \$499 (base model)

Runner-Up: Asus Eee PC 1000H

BEST

Components & Peripherals

CPU

Intel Core 2 Quad Q9550

Based on the 45-nanometer Penryn manufacturing process, the Core 2 Quad Q9550 processor made Intel's already enviable line of lower-end quad-core processors even more powerful and attractive. Running at 2.83GHz, supporting front-side bus speeds of up to 1,333MHz, and loaded with 12MB of L2 cache, these processors packed plenty of punch at a more reasonable price than the barn burners in the Core 2 Extreme series.

Intel • www.intel.com • 408-765-8080

Mfr. Est. Price: \$316

Runner-Up: AMD Phenom X4 9850 Black Edition



Intel Core 2 Quad Q9550

Motherboard

Asus P5E3 Premium WiFi-AP @n

Based on Intel's X48 chipset, the Asus P5E3 Premium WiFi-AP @n offered just about everything performance freaks would want in an LGA775 motherboard: three PCI Express slots, out-of-the-box support for 1,600MHz front-side bus speeds, support for DDR3 memory, and more overclocking tools than just about any other model on the market. An unexpected benefit was the addition of a built-in 802.11n wireless adapter that can double as an access point.

AsusTek Computer
usa.asus.com • 502-995-0883

Mfr. Est. Price: \$349

Runner-Up: Asus P5Q Deluxe



Asus P5E3 Premium WiFi-AP @n

Case

Cooler Master Cosmos S

A clean-and-mean exterior swathed in black and dark gray, an expansive (and mostly tool-free) interior, and heavy-duty cooling potential made Cooler Master's sporty Cosmos S case one of the sleekest we saw this year. A large, side-mounted fan and other smaller improvements throughout helped keep the sturdy aluminum Cosmos S running quietly, even when loaded with the noisiest components.

Cooler Master
www.coolermaster.com
909-673-9880

Mfr. Est. Price: \$249.99

Runner-Up: Antec Twelve Hundred

with a variety of connectors and convenient features. With the inclusion of the upcoming display connector called DisplayPort, it's future-proof. Plus, Dell provides a standard three-year warranty, so you can have some peace of mind after dropping all that cash.

Dell • www.dell.com
800-915-3355

Direct Price: \$1,999

Runner-Up: ViewSonic VP2250wb



Nvidia GeForce 9600 GT

Budget Graphics Card

Nvidia GeForce 9600 GT

Offering almost double the performance of its midrange predecessor, the GeForce 8600 GT, Nvidia's GeForce 9600 GT gave gamers without trust funds the ability to play the latest titles at higher resolutions and detail levels than had previously been possible. The card's support for

DirectX 10 also ensured users would be able to see all of the latest and greatest bells and whistles.

Nvidia • www.nvidia.com
Price: Varies depending on vendor

Runner-Up: Nvidia GeForce 8800 GT

Performance Graphics Card

Nvidia GeForce 9800 GX2

When they were released in the first half of 2008, cards based on Nvidia's 9800 GX2 chipset were the fastest graphics hardware we'd yet seen. The secret: Each card was powered by two GPUs working together, delivering the potential of a two-card Scalable Link Interface (SLI) setup in one PCI Express slot. Though expensive and power-hungry, these cards were a big leap forward for Nvidia, and an exciting anchor for the year's 3D games.

Nvidia • www.nvidia.com
Price: Varies depending on card maker

Runner-Up: ATI Radeon HD 4870 X2





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PC Connection



"The price tag on the new UPS is \$99. While I'm not in the habit of endorsing products in this blog, if you're in the market for a workstation-class UPS, why not opt for the greener option?"

- Heather Clancy,
ZDNet.com

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*Average savings are based on comparable competitive models, and are comprised of two energy saving features: an ultra efficient electrical design, and the master/controlled outlets feature.

(Continued from page 50)

BEST Components & Peripherals

Input Device

Logitech MX 1100 Cordless Laser Mouse

It's hard to imagine spending more than \$20 for a mouse, but when it's a well-designed product like the MX 1100, you make exceptions. In addition to a palm-friendly design, the MX 1100 has a ton of buttons and features to help you navigate your computer more easily, including a free-spinning scroll wheel that lets you fly through Web pages and Excel spreadsheets, as well as a switch that changes the laser's sensitivity. The only downer: It doesn't offer a rechargeable battery. But that's worth the sacrifice for the features you get.

Logitech • www.logitech.com
800-884-9480

Direct Price: \$79.99

Runner-Up: Microsoft Natural Ergonomic Desktop 7000 Keyboard and Mouse



Logitech MX 1100 Cordless Laser Mouse

Home Networking Device

Linksys Dual-Band Wireless-N Gigabit Router with Storage Link (WRT600N)

The WRT600N is Linksys's flagship 802.11n router, and it even looks a bit like a ship with its two antennas and paddle sticking up like sails on the side. Its most interesting feature: It sports both 2.4GHz and 5GHz Wi-Fi radios, allowing it to broadcast two separate networks simultaneously.



Linksys Dual-Band Wireless-N Gigabit Router with Storage Link (WRT600N)

(2.4GHz for 802.11b/g/n devices and 5GHz for 802.11a/n devices). Most routers force you to choose one frequency or the other, making the WRT600N unique in its class. Plus, its performance is decent and its range superb.

Linksys • www.linksys.com

800-546-5797

Direct Price: \$199.99

Runner-Up: Linksys Simultaneous Dual-Band Wireless Router (WRT610N)

PC Gaming Device

Logitech G15 Keyboard

Logitech has built many features into the G15 keyboard that will appeal to gamers, including an LCD panel that prominently displays information about your system and the game you're playing (a user community builds dedicated apps just for the LCD). The board's six programmable macro keys as well as its dedicated media keys are highly responsive, which makes typing on the G15 a joy. Plus, the characters light up—when you're gaming in the dark, you can adjust the keys' brightness.

Logitech • www.logitech.com

800-884-9480

Direct Price: \$79.99

Runner-Up: Headplay Personal Cinema System

Inkjet Printer

Canon Pixma iP2600

Canon's Pixma line has been nothing short of impressive, and the iP2600 offers just what you need and nothing you don't. At just \$49, this basic printer is practically free—or at least it would be if it weren't for the ink. The iP2600 is perfect for users who simply need a printer that works and works well: It doesn't provide extras like built-in networking or a memory-card reader, but you do get excellent color reproduction, decent print speeds, and stellar photos. For \$50, you can't go wrong.

Canon U.S.A. • usa.canon.com

800-828-4040

Direct Price: \$49

Runner-Up: HP Photosmart B8550



Logitech G15 Keyboard

Personal Laser Printer

HP CP1215

Simplicity and affordability reign when it comes to home laser printers. At just \$299, HP's CP1215 color laser printer doesn't offer networking, automatic duplexing, or multiple paper trays, and it prints somewhat slowly. But it's also light, affordable, and easy to set up. It can handle text and graphics fine, though we wouldn't recommend it for photos or heavy workloads. Still, if you want easy color printing, the CP1215 is the way to go.

Hewlett-Packard

www.hp.com • 800-289-6947

Direct Price: \$299

Runner-Up: Xerox Phaser 3250/DN

Multifunction Printer

HP Photosmart C8180

Even though HP's Photosmart C8180 is packed with features, the print quality really makes it sell. Its photos are comparable to those printed on the Epson PictureMate Zoom, a longtime favorite among dedicated photo printers. Images are rated to last more than 200 years when stored in the dark and 40 years when stored behind glass. Print

times are a little sluggish, but you do get plenty of features, including Wi-Fi and Bluetooth connectivity, network capabilities, a LightScribe-compatible DVD burner for archiving photos, a 3.5-inch touch screen, and a 35mm slide-scan adapter.

Hewlett-Packard

www.hp.com • 800-289-6947

Direct Price: \$400

Runner-Up: Canon Pixma MX7600

Photo Printer

HP Photosmart A636

Small, light, and easy to carry, the 3.4-pound HP Photosmart A636 unfolds into a powerful little dedicated photo printer. It delivers sharp print quality and decent (though not spectacular) speeds, as well as basic editing features and effects, complete with a stylus for easy manipulation on the 4.8-inch touch screen. You can add picture frames, draw on photos, and write captions, all without a PC. The low price is also a boon for budget shoppers.

Hewlett-Packard • www.hp.com

800-289-6947

Direct Price: \$149

Runner-Up: Canon Selphy CP770



HP Photosmart A636



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BEST

Consumer Electronics

Smartphone

Apple iPhone 3G

The iPhone is more than just a great-looking cell phone. It doubles as an excellent handheld computer that lets you surf the Internet, listen to music, and watch videos. Beyond that, its killer feature is the ability to run apps from the iTunes App Store, a repository of free and paid software that covers just about every task: playing games, finding a gas station, budgeting your finances. And now that the iPhone is compatible with AT&T's 3G network, its speed has increased. If the BlackBerry is the smartphone for the business crowd, the iPhone is the smartphone for everyone else.

Apple • www.apple.com • 800-692-7753

Direct Price: \$199 (8GB) or \$299 (16GB), with two-year AT&T service agreement

Runner-Up: RIM BlackBerry Curve 8330

Apple iPhone 3G



arguing that this is the best the iPod has ever been. New features include an internal speaker and volume-control buttons and, as with its iPhone cousin, you can download and run applications on the device.

Apple • www.apple.com
800-692-7753

Direct Price: \$229 (8GB);
\$299 (16GB); \$399 (32GB)

Runner-Up: Sony PSP

Flat-Screen Television

Sony Bravia KDL-46Z4100

This stylish, 46-inch Bravia offers good performance as well as features to improve the picture quality: blur and noise reduction, movies at 24 frames per second from compatible video sources, and DLNA support, which lets you access digital content from compliant devices such as NAS drives and computers. It also has four HDMI ports and a VGA port, which means you won't run out of connectors for your attached components anytime soon.

Sony Electronics
www.sonymstyle.com
877-865-7669

Direct Price: \$2,199

Runner-Up: Samsung
LN52A650

Digital Still Camera

Canon PowerShot SD1100 IS

Not only is the PowerShot SD1100 IS a favorite at Shopper labs, but it's a hit with our readers, too. Besides a compact form factor that makes it easy to carry anywhere, it churns out great images and features optical image stabilization. It's also a fast overall performer, and there's minimal



waiting between shots when you're shooting lots of photos at once. This is a purely automatic camera, so don't expect manual controls, but do expect ease of use.

Canon U.S.A. • usa.canon.com
800-652-2666

Mfr. Est. Price: \$199.99

Runner-Up: Nikon D300

Canon
PowerShot
SD1100 IS

never have to worry about carrying a supply of tapes again. The Carl Zeiss optical lens not only captures great video quality in high definition, but it shoots good-looking stills (a rarity among video camcorders). It has face detection for focusing on subjects in your frame. The camcorder records in the AVCHD format, supported by the latest video-editing software. And if you don't need to edit your shots, you can just plug it directly into your HDTV.

Sony Electronics
www.sonymstyle.com
877-865-7669

Direct Price: \$1,199

Runner-Up: Canon Vixia HV30



Sony
Handycam
HDR-SR12

Mario makes use of nonstandard controls through the Wii's accessories, making the Wii a truly one-of-a-kind gaming console.

Nintendo • www.nintendo.com
List Price: \$249.99

Runner-Up: Xbox 360

Portable Media Player/ Gaming Device

Apple iPod Touch

Apple calls its second-generation iPod Touch "the funnest iPod ever." And with a growing list of games, along with best-in-class media management and navigation, Wi-Fi, and a host of other useful features, there's no

Best Gaming Device

Nintendo Wii

The Wii is the video-game console that nongamers love. Why? Because so many of its games involve physical activity and don't resemble how a traditional video game is played. When you play tennis, for example, you simulate the swing of a racquet. Even playing a standard video game like Super Paper

Nintendo Wii



Best Place to Buy Consumer Electronics

Best Buy

This megastore of all things consumer tech can be found in most regions across the country. In recent years, Best Buy has evolved into more than just a typical big-box retailer. Its Magnolia division is dedicated to helping you set up a home theater environment, and its Geek Squad service is there to assist you should your PC or electronics go bust. Besides having a major retail presence, Best Buy also has a liberal return policy.

Best Buy
www.bestbuy.com

Runner-Up: Amazon.com



BEST

Software & Online Services



Office Productivity

Microsoft Office 2007

Office software doesn't get more useful—or more ubiquitous—than Microsoft Office. Individual apps offer something for every user at work or at home, from the go-anywhere utility of Word and the endlessly comprehensive functionality of Excel to the sheer power and flexibility of the Access database and Outlook's unsurpassed e-mail, contact, and task management. Different suites are available with specific selections of apps at gradually increasing prices, but there's an Office for every budget.

Microsoft

www.microsoft.com

800-642-7676

Direct Price: \$149.95 to \$679.95

Runner-Up: OpenOffice.org 2.4

Personal Productivity

Microsoft Works 9

If you don't need the high-level functionality—or if you don't want to pay the high-level price—of the full-blown

Microsoft Office, Works continues to be an attractive alternative. Its word processor, spreadsheet, database, calendar, contact, and project-management components help you keep your personal and home life organized, all in one easy-to-navigate package.

Microsoft • www.microsoft.com

800-642-7676

Direct Price: \$39.95

Runner-Up: TurboTax Premier

Photo Editing/ Organizing

Adobe Photoshop CS4

(Replaced by Adobe Photoshop CS4)

No other photo editor is quite like Photoshop, which



remains tops year after year thanks to its robust feature set and unparalleled ease of use. The stratospheric price hasn't dropped at all with the latest version, Photoshop CS4, but plenty of new additions and enhancements—like nondestructive corrections, content-aware scaling, and killer new 3D

tools—have helped ratchet up its value for seasoned professionals and enthusiastic amateurs alike.

Adobe • www.adobe.com

800-833-6687

Direct Price: \$699 (Standard);

\$999 (Extended)

Runner-Up: Adobe Photoshop Elements 6

Utility Package

Norton SystemWorks

Norton SystemWorks is still the suite to beat for a wide array of must-have system utilities. The latest incarnation, version 12, introduces rapid-fire “pulse” updating and smarter scanning to accompany its powerful virus fighter, malware killer, and Windows and hard drive optimization and repair tools. The Premier edition also includes file and full-system backup-and-restore features.

Symantec • www.symantec.com

408-517-8000

Direct Price: \$49.99 (Basic

Edition); \$69.99 (Standard Edition);

\$99.99 (Premier Edition)

Runner-Up: WinZip 11

Internet Security

AVG Internet Security 8.0

Offering antivirus, antispyware, antispam, antiphishing, and antirootkit protection, as well as robust firewall and e-mail-scanning tools, AVG Internet Security 8.0 is a powerful, thorough, and feature-rich alternative to the heavier (and more expensive) security suites on the market. Frequent updates also help keep you secure all the time, and free around-the-clock support and service offer



another important layer of protection.

AVG Technologies

www.grisoft.com

Direct Price: \$54.99

Runner-Up: Norton Internet Security

CD/DVD Utility

Nero 8 Ultra Edition

(Replaced by Nero 9)

Nero has long offered a slick slate of features for burning and authoring discs, and Nero 8 Ultra Edition was no different, introducing, amid the myriad tweaks and enhancements,



support for HD authoring and a jazzed-up interface to make tasks in every area of the program even easier. That tradition continues in this year's release, Nero 9.

Nero • www.nero.com

Direct Price: \$99.99

Runner-Up: Roxio Easy Media Creator 10

Instant-Messaging Service

Yahoo

It seems like everyone is on Yahoo IM these days, and with good reason. With photo sharing, PC-to-PC calls, text messaging, and Webcam service, there's a lot to like. You can also communicate with friends who use Windows Live Messenger (our second-place winner), broadening Yahoo's network even further. Yahoo also offers impressive productivity options, such as IM forwarding to mobile devices.

Yahoo • www.yahoo.com

Price: Free

Runner-Up: Windows Live

(Continued from page 57)

BEST Software & Online Services

Webmail Service

Gmail

Despite some stiff competition from Yahoo and Windows Live, Gmail remains your favorite for the second year in a row. Offering a huge amount of storage and an intuitive interface, Gmail has recently added voice and video chat, integrated chat with AOL Instant Messenger users, colored organization labels, and group chat. Gmail also eliminates the need to check any other accounts by allowing you to forward mail from up to five other accounts to your Gmail account.

Google • www.gmail.com

Price: Free

Runner-Up: Yahoo Mail

PC Game

Crysis

The year 2008 will be remembered for a slew of great PC games, and the one at the top of the list is—rightly so—Crysis. This sci-fi first-person shooter takes place in a near future in which an alien spacecraft has been discovered; your mission is to save the archaeologists who unearthed it. Besides the standard shooter fare, your player wears a nano-suit that gives you special abilities.

What's even cooler is that the game takes advantage of DirectX 10 for improved graphics rendering. And for fans who couldn't get enough of Crysis, Electronic Arts released a companion game, Crysis Warhead, which delivers great first-person and multiplayer experiences.

Electronic Arts • www.ea.com

Mfr. Est. Price: \$39.99

Runner-Up: Mass Effect



Media Player

Windows Media Player 11

Media Player is no longer just an add-on that comes with every PC. With its sleek interface, nimble searching options, and easy-to-use interface, it

made our readers think outside the iTunes box for the second year in a row. Plus, new in version 11 is a media-streaming function that lets you share content in your Media Player library across a home network.

Microsoft • www.microsoft.com

Price: Free

Runner-Up: iTunes

Free Online Service

YouTube

The Internet's best time-waster is also your choice for best free online service for the second year in a row. Aside from the requisite TV clips and music videos, YouTube has made it possible for just about anyone to be a star. And with the prices of digital video cameras dropping, everyone's birthday party or bar mitzvah can now be seen on this service.

YouTube • www.youtube.com

Price: Free

Runner-Up: Google Earth

For-Pay Online Service

Netflix

It doesn't get much better than having your DVDs delivered directly to your mailbox with one click of a button. Wait, yes it does: Netflix now allows you to watch movies

NETFLIX

instantly on your PC. And with plans starting as low as \$4.99 per month, it's no wonder you voted Netflix your top paid online service.

Netflix • www.netflix.com

Price: \$4.99 to \$16.99 per month

Runner-Up: Consumer Reports

Free Download

Mozilla Firefox

There are many reasons to love Firefox: the tabs, the security features, the seamless download manager. But the add-ons are what make Firefox really stand out.

Allowing you to track the weather, monitor your e-mail, engage advanced security features, and so much more, Firefox add-ons take productivity to a whole new level.

Mozilla • www.mozilla.com/firefox

Price: Free

Runner-Up: Adobe Reader



BEST Overall

Most Innovative Product

Apple iPhone 3G

The iPhone 3G, also your choice for best smartphone, is a truly magnificent device. This cell phone/portable PC/MP3 player/personal gaming device was given a boost with the addition of AT&T's 3G network and a large price reduction from the previous

model. The iTunes application store, which includes productivity and entertainment programs, launched a few days before the release of the iPhone 3G and further boosted excitement for this already megapopular product.

Apple • www.apple.com

800-692-7753

Direct Price: \$199 (8GB) or \$299 (16GB), both with new two-year AT&T service agreement

Runner-Up: Asus Eee PC

Best Service and Support

Dell

Over the years, our readers have consis-



tently stuck with Dell as their pick for the best service and support. Despite criticism in the past few years about the PC giant shipping its support overseas, the company has invested substantially to improve service, which is especially apparent in its introduction of the Dell DataSafe online storage option for customers.

Runner-Up: Hewlett-Packard

Best Place to Buy Retail

Best Buy

Nowadays, as big-box stores such as CompUSA close their doors due to the increasing popularity of online

shopping, it's a testament to Best Buy that the company soldiers on. Offering such extras as its Magnolia service, which helps customers set up a home theater, and Geek Squad, which offers at-home tech assistance, Best Buy matches its huge number of stores with admirable customer service. It also combines its online and store venues by letting customers purchase products online and pick them up in the store.

Runner-Up: Fry's Electronics





PHENOMIC
BY AMD



starting \$1,069

FORCE RECON

- Intel® Core™ i7 Extreme Quad/Dual Core/ Core 2 Duo or AMD Phenom™ 2/Phenom™ X4 Quad Core/Athlon™ 64 Dual Core Processor
- Intel® X58/Skylake/X48/NVIDIA® 780i/790i/780a/AMD RD790X/790FX Platform
- NVIDIA® GeForce® GTX295/285/260+ATI Radeon 4870 X2 Series Graphics
- NVIDIA® 3-way/Quad SLI/ATI Quad CrossFireX Ready
- Ultra Fast Gaming SSD (Solid State Drive)
- Ultra Performance DDR3/2 Gaming Memory
- Vigor A.T.O.M.I.C. VGA Cooling System



starting \$689

HORNET

- Intel® Core™ 2 Extreme Quad/Dual Core/ Core 2 Duo or AMD Phenom™ 2/Phenom™ X4 Quad Core/ Athlon™ 64 Dual Core Processor
- NVIDIA® GeForce® 9800GTX+/9600/ATI Radeon 4870/4850 Series Graphics
- NVIDIA® SLI/ATI CrossFire Ready
- Ultra Fast Gaming SSD (Solid State Drive)
- Ultra Performance DDR2 Gaming Memory
- Vigor A.T.O.M.I.C. LT VGA Cooling System



starting \$1,999

ATLANTIS

- Intel® Core™ 2 Extreme Dual Core/ Core 2 Duo/Quad/AMD Turion 64 Dual Core Processor
- 17"/20.1" WUXGA+ 1920x1200 Super ClearView Wide Screen
- NVIDIA® GeForce® Go 9800M GTX/ Quadro FX 1600M w/up to 1 GB MB VRAM
- NVIDIA® SLI Ready
- High Performance 800MHz DDR2 Memory
- Built-In 1.3MP Digital Camera



starting \$1,099

ARES

- Intel® Core™ 2 Extreme Dual Core/ Core 2 Duo Mobile/Core 2 Duo Processor
- 15.4" WSXGA+ 1680x1050 Super ClearView Wide Screen
- NVIDIA® GeForce® Go 9800M/ 8600M Series Graphics
- Built-In 2.0MP 240° Rotational Digital Camera
- Built-in Finger Print Reader



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By Matthew Murray
and John R. Delaney

Budget-PC Blowout

These 13 desktops
and laptops
pack major
features and
functionality for
under \$800 each.
Should one be
your next PC?

JUST BECAUSE

MONEY'S TIGHT doesn't mean you have to give up on upgrading your tech life. If you need to buy a new computer now—whether as a replacement for your primary PC, or as an inexpensive second or third machine—you're actually shopping at a prime time for bargain hunters.

Recent trends have made today's budget computers more powerful and richer in features than ever. So whether you're looking for a desktop or a laptop, a big one or a small one, for general tasks or something more specific, you can find a machine to meet your needs—for \$800 or less.

We rounded up 13 currently available systems and put them through our battery of benchmark tests to find out what you get for your money. We didn't expect to find any performance powerhouses here—and we didn't. But we did discover some excellent bargains that can help you stretch your technology dollar further than you might have thought possible.

THE DESKTOPS

eMachines ET1161-03

Editors' Rating: 7.0 out of 10

Pros: Very inexpensive; fairly expandable

Cons: Generally poor performance

THE ENTIRE PC INDUSTRY, including the desktop market, is feeling the effect of the netbook revolution. We named the netbook our product of the year for 2008 for exactly this reason: Low-cost technology that people actually use and like has an impact on everything around it. Although we're seeing this effect to a small degree in supertiny "nettops" like



the Asus Eee Box and the Shuttle X27D (also reviewed in this story), there hasn't yet been a similar wave of budget desktops. But we've seen inexpensive systems that do more—and cost less—than ever, while remaining fairly traditional. The eMachines ET1161-03 is a good example.

This eMachines model is not, by most measures, a startling desktop. It's a typical minitower, with the usual sedate color scheme (black with silver accents) and run-of-the-mill components (a 2.3GHz AMD Athlon X2 Dual-Core 4400 processor, 3GB of DDR2 RAM, a 320GB hard drive, a DVD±RW drive, integrated Nvidia GeForce 6150SE graphics, and 32-bit Windows Vista Home Premium). But its price of just \$399.99 should put it squarely in the sights of someone who needs a basic PC (or a second or third system) with some room to grow.

That's because, unlike the \$479.99 Lenovo H210 we also reviewed, the eMachines has a fair amount of expansion room. True, there are no free RAM slots, and of the four expansion slots—one PCI Express (PCIe) x16, two PCIe x1, and one regular PCI—one, the PCI slot, contains a modem. But the one free external 5.25-inch drive bay and two 3.5-inch internal bays give you a bit of additional room to maneuver if your needs or desires change. But with a multifunction card reader, two USB ports, and headphone and microphone jacks on the front panel, and two PS/2, four USB, VGA, and Ethernet connectors on the back panel, the eMachines and Lenovo models are quite similar. One difference: The eMachines PC has eight-channel audio jacks for setting up a surround-sound speaker system.

The eMachines is also noticeably less of a performer. Of the budget systems in this roundup, only the Shuttle X27D scored lower in our benchmark tests. Otherwise, the eMachines PC's scores of 3,583 in the 32-bit version of Cinebench 10, 8 minutes and 46 seconds in Windows Media Encoder 9, 4 minutes and 46 seconds in iTunes conversion, and 2,809 in the 32-bit run of Futuremark PCMark Vantage were the lowest we saw. Even its Company of Heroes score—2.5 frames per second (fps)—



was the lowest, but when most of its competitors (the iBuypower Gamer Paladin Q600-SB, at 16.3fps, excepted) are only managing around 3.3fps, that's not quite a badge of dishonor.

Still, if you're paying only \$399 for a desktop PC, you have to keep your expectations and requirements in check. If you can do that, the eMachines ET1161-03 is a decent starter or secondary system.

Gateway DX4710-05

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

Pros: Good performance for the price; large amount of RAM

Cons: Not good for gaming

IT WASN'T TOO LONG AGO that quad-core systems were luxuries rather than the norm. But as technology marches on, encompassing and inventing new trends as it goes, even budget buyers benefit. Case in point: Gateway's DX4710-05 desktop, priced at \$679.99 and based on an Intel quad-core processor. Until recently, few similarly priced systems boasted so much potential.

The black case has a glossy front panel, attractive silver trim, and even a red "racing" stripe circling its bottom edge. You also get a DVD burner and a 15-format memory-card reader with Gateway's Smart Copy button, which lets you easily move files from

a card to your hard drive. In general, though, the system is laid out much like most of the under-\$750 models we see. Port selection is fairly standard: on the front panel you'll find two USB, one FireWire, and headphone and microphone ports; in the rear are PS/2 keyboard and mouse ports, VGA-out (sorry, no DVI here), four more USB ports, one more FireWire port, an Ethernet jack, and seven-channel audio output. One interesting addition: an external Serial ATA (eSATA) port for easily setting up an external hard drive.

Compared with its media-aware cousin, the LX6200-01 (see the Reviews section), which costs \$100 more and is powered by a four-core AMD processor, the DX4710-05 proved a markedly better performer. Whereas the LX6200-01 scored 6,577 on our Cinebench 10 rendering test, the DX4710-05 managed a score of 9,478; the LX6200-01 took 5 minutes and 14 seconds to run through our Windows Media Encoder test, while the DX4710-05 completed it in just 4 minutes and 8 seconds; and the LX6200-01 took a solid 5 minutes to convert 11 songs to AAC format in iTunes, a task the DX4710-05 finished 49 seconds faster. Only in terms of gaming did the LX6200-01 win out: Its average of 12.3fps in Company of Heroes was better than the DX4710-05's 3.2fps.

Budget-PC Blowout

(This is cold comfort, though, as neither is legitimately playable.)

While the two PCs are aimed at slightly different markets, these gaps in performance scores are still surprisingly large. Aiding the 2.4GHz Core 2 Quad Q6600 processor is a hefty 6GB of DDR2 RAM, which the DX4710-05 can take full advantage of, since it's powered by the 64-bit version of Windows Vista Home Premium. Even though the LX6200-01 has 8GB of RAM and the same 64-bit OS, its CPU just isn't powerful enough to compete with the Core 2 Quad—a reminder of how important it is for all the components to work well together.

We wish the expansion options were a little better. As is the company's wont, Gateway has filled one of the four expansion slots with a modem. The other three slots—PCI Express (PCIe) x16, PCIe x1, and regular PCI—are vacant. There's room to add another external 5.25-inch device, as well as three additional internal hard drives if you want (though the motherboard only has two free SATA connectors). Unsurprisingly, all the RAM bays are filled, but with 6GB of RAM—and solid performance—we think it's unlikely you'll want to add more anyway. The DX4710-05's 640GB hard drive is roomy and comes preloaded with software, including Microsoft Works 9 and 60-day trials of Microsoft Office Home and Student 2007 and Norton 360. The system comes with a limited one-year parts-and-labor warranty that includes toll-free phone support.

Overall, this is an impressive package that looks great, too. Although we don't think the DX4710-05 is quite fast enough to warrant that red "racing" stripe, given its capabilities and price, perhaps it has earned the right to a bit of flair.

iBuypower Gamer Paladin Q600-SB

Editors' Rating: 7.7 out of 10

Pros: Nice design; lots of expansion room, interior space; wireless adapter card included; free copy of Halo 2 included with purchase

Cons: Underwhelming gaming performance

WE'RE USED to boutique-PC manufacturer iBuypower catering to the hardcore enthusiast with its (relatively) low-cost, high-performance PCs. Systems aimed at those with tighter budgets aren't usually the company's order of the day. Now that we've become acquainted with its \$719 Gamer Paladin Q600-SB, we understand why.

This is, per iBuypower's usual routine, a slick-looking machine. The Vantage Gaming case offers no hint of the Paladin's budget status, bearing decisive design elements on its front panel and drive-bay door, mostly based on triangles (including the crystal blue power button), that give it an imposing, exciting look. The side panel goes even further, with explosively colorful Halo 2 artwork that not only provides serious visual pop but also ties into one of the system's chief premiums: a free copy of Halo 2 with purchase.



Granted, the rest of the traditional black exterior is more closely related to low-frills budget systems than all-out gaming machines. On the front panel you'll find a simple DVD±RW drive, a 12-format card reader, two USB ports, and headphone and mic jacks. Around back, you'll see two PS/2 ports; HDMI-, DVI-, and VGA-out for exporting video; four USB ports; and single FireWire, Ethernet, and eight-channel audio connectors. (Speakers and a Creative Webcam, while not integrated, are also included.)

Only one of four expansion slots—PCI Express (PCIe) x1, PCIe x16, and two PCI—is filled (a wireless networking card is in a PCI slot). In terms of other expansion room, there's plenty: three free external 5.25-inch bays, one external 3.5-inch bay, and three internal 3.5-inch bays.

But although the Gamer Paladin Q600-SB has no shortage of room for the future, you should probably take advantage of it immediately if you want to get a lot of gaming done. The 2.33GHz Intel Core 2 Quad Q8200 processor, 4GB of DDR2 RAM, 500GB hard drive, and 64-bit version of Windows Vista Home Premium aren't enough to guarantee even passable 3D performance. You really need a discrete graphics card, which this system does not have. What it has instead is integrated GeForce 9300 graphics, which isn't going to be good enough for much more than basic video tasks.

This isn't to say you're completely lost: In both of our 1,280x1,024 Company of Heroes tests, the Gamer Paladin Q600-SB bested every other desktop in this roundup, pulling in average frame rates of 16.3fps in the DirectX 9 (DX9) test. It was also the only one with DX10 capabilities, and scored 19.3fps in Company of Heroes using the DX10 shaders. (Both tests were run at the game's out-of-the-box settings.) Unfortunately, these scores are below what most people consider playable. You could probably squeeze out slightly better scores by dialing down the details even more, but it's not as though they're cranked up already.

The Paladin's productivity scores, however, were better for its class,



Lenovo
H210

the Gateway and ZT systems, respectively). The iBuypower came in just shy of the ZT on our 64-bit run in Futuremark 3DMark Vantage: 4,030 versus 4,407. (The Gateway PC was unable to complete this test.)

Of course, nothing about the look or the name of the Gamer Paladin Q600-SB suggests it's aimed at productivity, regardless of its test scores or its inclusion of a 60-day free trial of Microsoft Office 2007. This is a machine meant for gaming, a task for which it's only moderately capable in its current state. One solution would be to add an ATI Radeon HD 4670 graphics card, although you'd slightly overshoot the budget category of \$750. This would give you a considerably better gaming experience at lower resolutions and still not sap your budget. Think of it as using the money you don't have to spend buying Halo 2.

Lenovo H210

Editors' Rating: 6.9 out of 10

Pros: Inexpensive; handsome front-panel design

Cons: Poor gaming performance; extremely limited expansion room

LENOVO'S H210 DESKTOP may be priced at just \$479.99, but it doesn't look it. It's clad in black metal, with a high-gloss front panel that turns even the multifunction card reader, two USB ports, and headphone and microphone jacks into artistic statements. Plus, an elegant orange stripe and wood-grain-style decoration near the bottom provide a vivid contrast to the shiny

top portion. This is a PC that looks like a serious tool for serious—but not stuffy—people.

But if the H210's appearance belies its price, its performance does not. With a 2.5GHz Intel Pentium Dual-Core processor (not a newer Core 2 Duo), 4GB of DDR2 RAM, and the 32-bit version of Windows Vista Home Premium (which can't take advantage of that full complement of RAM), this machine is not primed for speed. And its other accoutrements—a 500GB hard drive, integrated Intel GMA3100 graphics, and a standard-issue DVD±RW drive—can't really compensate for the performance woes.

As a result, you get the slightly below-average speed you'd expect in traditional productivity applications. The H210 scored 4,973 in our 32-bit Cinebench 10 rendering test and 3,500 in Futuremark PCMark Vantage, both well ahead of the eMachines ET1161-03 and especially the Shuttle X27D, but lagging behind the other budget machines we tested for this story. The time it needed to complete our Windows Media Encoder and iTunes conversion trials—6 minutes and 22 seconds and 3 minutes and 39 seconds, respectively—were in keeping with this. (Interestingly, though, the Lenovo beat the iBuypower Gamer Paladin Q600-SB by a hair on the iTunes test, though the iBuypower surpassed it everywhere else.) Our Company of Heroes DirectX 9 gaming test went about as sluggishly as we predicted—the Lenovo could pull down only 3.3fps. (The iBuypower managed 16.3fps, which is better,

poised between those of the Gateway DX4710-05 and the ZT Affinity 7238Xi in most of our tests—the exception being Windows Media Encoder. (Its score of 4 minutes and 17 seconds was behind both the ZT's 4 minutes and 2 seconds and the DX4710-05's 4 minutes and 8 seconds.) The Paladin needed 3 minutes and 50 seconds to finish our iTunes conversion trial (the Affinity did it 17 seconds faster, the DX4710-05 21 seconds slower), and earned 9,607 in Cinebench 10 (compared with 9,478 and 10,494 on

DESKTOPS: FEATURE COMPARISON

	eMachines ET1161-03	Gateway DX4710-05	iBuypower Gamer Paladin Q600-SB	Lenovo H210	Shuttle X27D	ZT Affinity 7238Xi
EDITORS' RATING	7.0	8.0	7.7	6.9	6.6	8.5
CONFIGURATION						
Processor	2.3GHz Athlon X2 Dual-Core 4400	2.4GHz Core 2 Quad Q6600	2.33GHz Core 2 Quad Q8200	2.5GHz Pentium Dual-Core E5200	1.6GHz Atom 330	2.5GHz Core 2 Quad Q9300
Memory	3GB DDR2	6GB DDR2	4GB DDR2	4GB DDR2	2GB DDR2	4GB DDR2
Storage	320GB hard drive	640GB hard drive	500GB hard drive	500GB hard drive	80GB hard drive	500GB hard drive
Optical Drive	DVD±RW	DVD±RW	DVD±RW	DVD±RW	DVD±RW	DVD±RW
Monitor	None	None	None	None	None	None
Graphics	Nvidia integrated graphics	Intel integrated graphics	Nvidia integrated graphics	Intel integrated graphics	Intel integrated graphics	Nvidia integrated graphics
Operating System	Windows Vista Home Premium (32-bit)	Windows Vista Home Premium (64-bit)	Windows Vista Home Premium (64-bit)	Windows Vista Home Premium (32-bit)	Windows Vista Home Basic	Windows Vista Home Premium (64-bit)
COMPANY	eMachines www.emachines.com	Gateway www.gateway.com	iBuypower www.ibuypower.com	Lenovo www.lenovo.com	Shuttle Computers us.shuttle.com	ZT Systems www.ztsystems.com
DIRECT PRICE	\$399.99	\$679.99	\$719	\$479.99	\$399	\$749.99 (before \$100 rebate)

Budget-PC Blowout

though still not good.)

The H210 wasn't built for gaming, so its lack of facility isn't a surprise. This system is intended for small-business or home-office tasks such as e-mail, word processing, and Web browsing, and as long as you don't need many specialized capabilities, the Lenovo will do just fine. But external connectivity is basic, at best: In addition to the front-panel jacks mentioned above, you get two PS/2, a nine-pin serial, a VGA-out, four more USB, an Ethernet, and standard audio connectors on the back. All four internal expansion slots—one PCI Express (PCIe) x16, two PCIe x1, and one regular PCI—are unoccupied, but there are no extra RAM slots, and there's only one 3.5-inch internal bay for installing another hard drive. (There are no other external bays at all.)

Given the H210's price, though, these impediments don't have to be deal breakers. If all you need is a simple desktop for basic home or office tasks—or, even better, a second PC for yourself or maybe the kids—you might not need to upgrade this PC at all. And if that's the case, this Lenovo is a sensible option at a very sensible price.

Shuttle X27D

Editors' Rating: 6.6 out of 10

Pros: Very inexpensive; includes optical drive

Cons: Limited performance; no expansion room

YOU WON'T FIND many homes that don't have room for a traditional Shuttle; the PC manufacturer has long specialized in desktops so small they don't take up much more space than a shoebox. Still, we're not shocked that Shuttle would choose to cut a few inches (and a few dollars) off its systems to capitalize on the "nettop" craze for diminutive desktops. What

you get is the \$399 X27D, and the results are more or less what you'd expect—with a touch more flair and utility than you'd see in similarly styled and priced systems.

Measuring 2.9x7.25x9.5 inches (HWD)—less than half the size of a traditional Shuttle—the glossy black X27D is a veritable colossus compared with Asus's 1x8.75x7-inch Eee Box. The X27D's minute stature means, of course, that internal expansion is next to impossible; it has no slots for cards, drive bays, or even extra RAM. In our

If you plan on using the X27D as a second or third computer rather than as your primary system, this could be a significant benefit and may be what clinches the deal. Otherwise, there are very few surprises, though the X27D does offer a healthy selection of ports—two USB ports, plus headphone and mic jacks on the front, along with four more USB ports, PS/2 mouse and keyboard ports, DVI and VGA connectors, the Ethernet jack, and basic audio output jacks on the back.

Performance, too, is in line with the



review unit, the lone slot was filled with one 2GB stick—even electricity has to be outsourced to an external power brick. What you pay for is essentially what you're stuck with: a 1.6GHz Intel Atom processor, an 80GB hard drive, integrated Intel graphics, and the no-frills Windows Vista Home Basic operating system.

You do, however, get something unusual for this burgeoning category: a DVD±RW drive. Most nettops, like their mobile netbook cousins, forgo disc access to be as tiny, cool-running, and energy-efficient as possible. (This was certainly the case with the Eee Box.) But the addition of the optical drive affords you a lot more possibilities, even within the relatively limited realm of software the X27D can run well. You can still download software from the Internet (though there's no integrated Wi-Fi, so you'll have to stick with Ethernet), but you don't have to pass up using the selection of software you might already own.

price. You can forget about 3D gaming (though simple titles, like those that come with Windows, will probably be okay), but the other results it returned in our benchmark tests were hardly tops. The best that can be said about our productivity results—1,511 in Cinebench 10, 16 minutes and 58 seconds in Windows Media Encoder, and 18 minutes and 42 seconds for iTunes conversion—is that in every case they surpassed those of the Eee Box.

During the basic tasks for which it's intended—surfing the Web, e-mailing, typing, and the like—the Shuttle holds its own. That's undoubtedly enough for very light computer users or those who don't need a ton of power and don't want to clutter up their desks or their lives with any more system than is absolutely necessary. Serious tech types won't be impressed, but the DVD burner gives the X27D a slight leg up among its budget brethren, filling the bill without running up a huge one of its own.

ZT Affinity 7238Xi

Editors' Rating: **8.5** out of 10

Pros: Relatively good performance; includes full version of Microsoft Office; mail-in rebate shaves \$100 off price

Cons: Poor gaming capabilities

IF YOU'RE MORE interested in breadth than depth of performance, then get thee to a Costco right away. That's the only place you can pick up a ZT Affinity 7238Xi desktop, a machine that in almost every way redefines the kind of bang you can get for your budget-minded buck.

The 7238Xi's base price is \$749.99, and a mail-in rebate shaves an additional \$100 off that price. If that's not enough, every system comes preloaded with Microsoft Office Home and Student 2007. Not a 60-day free trial—the full version.

We're used to ZT pulling out the stops with its freebies, and these are nice additions that any computer user—budget-conscious or not—will be able to appreciate. These effectively shave about \$250 off the price of the Affinity, but even if they weren't included, the 7238Xi would still be practically as good as a \$749.99 desktop can be. You'll have little chance of being disappointed by its capabilities as long as you keep a firm rein on your expectations.

That's not to say there's anything wrong with the 2.5GHz Intel Core 2 Quad processor, 4GB of DDR2 RAM, 500GB hard drive, DVD±RW optical drive, or 64-bit Windows Vista Home Premium operating system. They're all fine elements that add up to acceptable—if not exceptional—

performance that's good enough to propel the 7238Xi to the top of our current under-\$750 desktop performance rankings.

In our 64-bit Cinebench 10, Windows Media Encoder, and iTunes conversion tests, the ZT outperformed both the iBuypower Gamer Paladin Q600-SB and the Gateway DX4710-05, earning scores of 10,494, 4 minutes and 2 seconds, and 3 minutes and 33 minutes, respectively. The Gateway system wouldn't run our Futuremark PCMark Vantage full-system benchmark, but the ZT edged out the iBuypower there, too: 4,407 to 4,030.

It was only in the gaming department that the 7238Xi completely disappointed. The integrated Nvidia GeForce 7050 graphics couldn't handle even our low-level DirectX 9

Company of Heroes gaming test. It pulled out an unmanageable average frame rate of 3.3fps, almost identical to the Gateway (3.2fps) but below the iBuypower (16.3fps, still too slow to be of much use).

If you're even somewhat interested in 3D, adding a graphics card to the 7238Xi would be a good way to go, and since it has a free PCI Express (PCIe) x16 slot on the motherboard (along with one PCIe x1 slot and two regular PCI slots), that's a possibility. There are no more RAM slots, but there is one empty 5.25-inch external drive bay and one free 3.5-inch external bay (the other 3.5-inch bay contains a 19-format card reader), as well as three free internal 3.5-inch bays for additional hard drives.

And why not do it? With all the

money ZT saves you via rebates, accessories, and software, tricking out the 7238Xi further is a workable, even attractive, proposition. If you don't need the fastest processor on the market, this package offers a value practically unparalleled in the budget-desktop world—or anywhere else.



DESKTOPS: BENCHMARK TESTS

	eMachines ET1161-03	Gateway DX4710-05	iBuypower Gamer Paladin Q600-SB	Lenovo H210	Shuttle X27D	ZT Affinity 7238Xi
Cinebench 10	3,583 (32-bit)	9,478 (64-bit)	9,607 (64-bit)	4,973 (32-bit)	1,511 (32-bit)	10,494 (64-bit)
Company of Heroes						
DirectX 9 (1,280x1,024)	2.5fps	3.2fps	16.3fps	3.3fps	1.3fps	3.3fps
DirectX 10 (1,280x1,024)	NA	NA	19.3fps	NA	NA	NA
Futuremark 3DMark06 (1,280x1,024)	334	307	NA	298	137	407
Futuremark 3DMark Vantage						
Entry (1,024x768)	NA	NA	3,737	NA	NA	NA
Performance (1,280x1,024)	NA	NA	484	NA	NA	NA
Futuremark PCMark Vantage	2,809 (32-bit)	64-bit, would not run	4,030 (64-bit)	3,500 (32-bit)	1,353 (32-bit)	4,407 (64-bit)
iTunes Conversion*	4:46	4:11	3:50	3:39	18:42	3:33
Windows Media Encoder 9*	8:46	4:08	4:17	6:22	16:58	4:02

* = Results expressed in minutes:seconds; lower is better. For all nontimed results, higher is better. NA = Not applicable

THE LAPTOPS

Acer Extensa 4630Z

Editors' Rating: 7.0 out of 10

Pros: Very affordable; superior display; group-leading battery life

Cons: Skimps on features; mixed performance

THE ONLY 14-INCH notebook in this roundup, the \$549 Acer Extensa 4630Z has a bright wide-screen display. Frequent travelers will appreciate its portability, but we were disappointed by its lack of available ports.

In typical business-notebook fashion, the Extensa sports an all-gray chassis with a small Acer badge adorning the lid. The inside is equally bereft of color, although a thin slice of silver trim surrounds the touch pad. At just 5.2 pounds, the Extensa is the lightest under-\$800—let alone under-\$600—full-featured notebook we've reviewed.

The glossy 14.1-inch display, with a maximum resolution of 1,280x800, is stunning and delivers vibrant colors without appearing too bright. Wide viewing angles let you share the screen with a couple of friends without losing image quality. This model uses the ergonomic curved-keyboard design found on previous

Extensa models. While it may look awkward, the keyboard is quite comfortable and has an appealing feel. The touch pad is wide and easy to reach. We were surprised, though, that this system doesn't offer a fingerprint reader or a Webcam. Above the keyboard is a pair of dull-sounding speakers and a set of programmable and preprogrammed quick-launch keys, one of which launches Acer's empowering technology portal, where you can change power settings and perform backups.

As for ports and slots, the Extensa comes up short. It has only two USB ports instead of the three or four found on most budget laptops and even some netbooks. It's also missing FireWire and HDMI ports, although there are a PC Card slot and a five-format memory-card reader located on the left side and a DVD±RW drive on the right. Our system was loaded with Windows Vista Home Premium, Intervideo's WinDVD media-player application, and NTI's Backup Now, Media Maker, and Shadow programs on the 160GB hard drive.

Based on a 2GHz Pentium Dual Core T3200 processor and 2GB of memory, the Extensa produced mixed results

on our benchmark tests. Its PCMark Vantage score of 2,536 was more than 500 points below that of our leader, the Fujitsu LifeBook A1110, and only 12 points above that of the Toshiba Satellite L305-S5902, which was our lowest. It fared better on our Cinebench 10 test, with a score of 3,466, but it needed 8 minutes and 31 seconds to finish our Windows Media Encoder test. (The LifeBook did it in 7 minutes and 44 seconds.) On the positive side, the system lasted for 2 hours and 18 minutes on our DVD battery-rundown test, taking top honors among notebooks in this class.

The Acer Extensa 4630Z is a capable and highly portable notebook with a very attractive price, but as is usually the case, you get what you pay for. In this instance, you give up some performance, but in return you get a low price, decent battery life, and easy portability. If you want a full notebook (as opposed to a netbook) for checking e-mail, getting online, and doing basic productivity chores on the go, this system is a very good choice for the money.

Fujitsu LifeBook A1110

Editors' Rating: 7.3 out of 10

Pros: Good performance; durable design; removable lid cover

Cons: Flimsy keyboard and mouse buttons; light on multimedia ports; short battery life

THE \$799 Fujitsu LifeBook A1110 is not only a good performer, but it's also built to withstand the rigors of everyday use, even though the keyboard has a bit too much give for touch typists.

The 6.3-pound LifeBook sports a basic black design with a square Fujitsu badge adorning the lid. If business black doesn't do it for you, Fujitsu offers three bright, colorful snap-on lid covers to spice things up. Available in green, pink, and blue, the add-ons confer a touch of style while protecting the original black plastic from scratches.

The notebook's lid is attached to the base by a pair of sturdy, reinforced hinges that are stiff but not overly so. Under the cover is a 15.4-inch display with a glossy coating and a 1.3-megapixel Webcam built into its top bezel. Movies look awesome on the





Fujitsu
LifeBook
A1110

1,280x800-resolution screen, but the integrated speakers at the top of the keyboard deck could be louder.

One of our biggest gripes with this system involves its input devices. The full-size keyboard is spill-resistant and protects the interior from water damage, but it feels cheap and makes a rattling sound while typing. The same can be said for the two mouse buttons: They are loud and intermittently unresponsive. The touch pad, on the other hand, works well and allows for fluid cursor control.

Unlike the HP Pavilion dv5-1140us, which has a wealth of ports, the LifeBook offers only the bare connectivity essentials. All three of its USB ports are bunched together along the right side of the chassis, making for a tight fit. Also on the right are headphone and microphone jacks, a VGA output, an ExpressCard slot, and an SD-card slot. A DVD burner is on the left.

You won't find FireWire, HDMI, or external Serial ATA (eSATA) ports on this laptop, although you do get plenty of storage, courtesy of a 250GB hard drive that comes with Windows Vista Home Premium and several applications preinstalled. These include Arcsoft's Webcam Companion, CyberLink's PowerDirector video-editing software, and Roxio's Easy Media Creator.

Driven by a 2GHz Core 2 Duo T5800 processor and 3GB of DDR2

memory, the LifeBook performed admirably on our benchmark tests. Its Futuremark PCMark Vantage score of 3,042 was the highest score yet for a 15-inch budget notebook, as was its Cinebench 10 score of 3,803. It completed our iTunes conversion test in 5 minutes and our Windows Media Encoder test in 7 minutes and 44 seconds, both of which are leading scores in this class. A Futuremark 3DMark06 score of 889 at native resolution was a close second to the Gateway M-7818u's score of 899. Unfortunately, the LifeBook didn't fare so well on our DVD battery-rundown test, lasting only 1 hour

and 40 minutes, a bit shy of the length of a typical full-length movie.

If you're looking for excellent speed at a reasonable price, the Fujitsu LifeBook A1110 is one of the best values around, but its flimsy keyboard, lackluster array of multimedia ports, and relatively short battery life hold it back.

Gateway M-7818u

Editors' Rating: **7.8** out of 10

Pros: Colorful design; solid performance; lots of RAM and storage

Cons: Tinny speakers; no FireWire port

Available exclusively from OfficeMax, the Gateway M-7818u looks more expensive than its \$779.99 price tag suggests. This stylish notebook comes with a sizable hard drive and lots of memory, but it could use a beefier audio system.

The 6.3-pound M-7818u features Gateway's attractive blue lid sealed with the company's inFuse finish, which protects it from the wear and tear of everyday use. The color extends to the wrist-rest portion of the keyboard and eventually gives way to a brushed-metal finish that matches the silver keyboard. The keyboard has just the right amount of give without feeling too squishy, and the black touch pad is responsive and smooth.

Framed by a piano-black bezel with a 1.3-megapixel camera mounted at the top, the 15.4-inch, 1,280x800 display produces rich color tones with minimal glare, and colors remain strong when viewed from an angle.



Gateway
M-7818u

Budget-PC Blowout

Flush-mounted media controls and a touch-sensitive volume slider are sandwiched between two speakers at the top of the keyboard deck. The speakers are the weak link in this otherwise appealing multimedia package, though, producing way too much treble and virtually no bass.

A generous selection of ports and slots is mounted along the edges of the notebook, including HDMI and VGA outputs, three USB ports, an ExpressCard slot, a five-format card reader, and microphone and headphone jacks. A multiformat DVD drive is positioned on the right side of the chassis. Unfortunately, this model does not have a FireWire port. However, it does come with a spacious 250GB hard drive loaded with Windows Vista Home Premium, the diagnostic utility BigFix, CyberLink's Power2Go CD/DVD burning software, and Gateway's Camera Assistant Webcam software.

The laptop is powered by a 2GHz Core 2 Duo processor (the T5800), Intel's GMA 4500MHD graphics controller, and a whopping 4GB of DDR2 memory, which is generous considering most budget systems offer only 2GB. As a result, the system turned in some very respectable scores on our benchmark tests. Its Futuremark PCMark Vantage score of 2,919 was among the highest for this class of notebook, as was its Cinebench 10 score of 3,750. Its Futuremark 3DMark06 score of 899 while running at its native resolution was best-in-category as well. The six-cell battery lasted 2 hours and 1 minute on our DVD rundown test, average for its class, and it booted into Windows in a timely 50 seconds.

The Gateway M-7818u's solid performance and robust configuration make

it a good choice for users seeking a stylish 15-inch notebook that will handle everyday computing chores without maxing out their credit cards.

HP Pavilion dv5-1140us Entertainment Notebook PC

Editors' Rating: **8.3** out of 10

Pros: Lots of multimedia features; cool design; large hard drive

Cons: Short battery life; long boot time; slightly expensive



HP'S PAVILION dv5-1140us Entertainment Notebook PC is at the high end of the budget-notebook price range (with a street price of \$800), but you get a lot for your money. Although its performance is average, its feature set and attractive design make it the best all-around budget

system in this roundup.

The 5.8-pound Pavilion's blue lid with HP's Imprint 2 design and white backlit logo are eye-pleasing, but what really sets this notebook apart is its all-chrome keyboard deck and piano-black display bezel, which together create a look that's sure to turn a few heads. The 15.4-inch display has a maximum resolution of 1,280x800 and uses HP's shiny BrightView coating to provide vivid colors and a wide viewing angle. It also has a built-in 1.3-megapixel Webcam. As with nearly all glossy screens, this one reflects ambient light but not to the point of distraction. Our test DVD, *The Green Mile*, looked great on the brightly lit wide-screen display. Even the integrated Altec Lansing speakers were a cut above the rest. While they lack the



HP Pavilion dv5-1140us

LAPTOPS: BENCHMARK TESTS

	Acer Extensa 4630Z	Fujitsu LifeBook A1110	Gateway M-7818u	HP Pavilion dv5-1140us	Lenovo ThinkPad SLS00	Sony VAIO VGN-NS160E/S	Toshiba Satellite L305-S5902
Battery Life (Hours:Minutes)	2:18	1:40	2:01	1:54	2:12	2:10	2:03
Boot Time*	1:01	0:58	0:50	1:27	0:50	1:12	0:43
Cinebench 10	3,466	3,803	3,750	3,757	3,419	3,440	3,581
Futuremark 3DMark06 (1,024x768)	735	953	949	873	882	866	817
Futuremark 3DMark 06 (Native Resolution)	715	889	899	759	835	822	709
Futuremark PCMark Vantage	2,536	3,042	2,919	2,575	2,811	2,766	2,524
iTunes Conversion*	5:20	5:00	5:12	5:06	5:39	5:25	5:21
Multitasking (iTunes with Defender)*	6:34	5:25	6:23	5:49	6:20	5:44	6:27
Windows Media Encoder 9*	8:31	7:44	8:13	7:47	8:55	8:21	8:12

* = Results expressed in minutes:seconds; lower is better. For all nontimed results, and battery life test, higher is better.

= Editors' Choice

ability to reproduce deep bass tones, they can handle high volume without distortion.

The full-size silver keyboard is comfortable and blends nicely with the rest of the keyboard deck, as do the silver touch pad and mouse buttons. At the top of the deck is a strip containing backlit touch-sensitive media controls, a volume slider, and the power switch. The Pavilion also comes with a remote that controls media components as well as Windows Media Center. It stashes away in the ExpressCard slot.

The Pavilion offers more connectivity ports than you'll find on most budget notebooks and rivals some more costly mainstream systems, too. In addition to a standard VGA port, you get an HDMI output and four USB ports, one of which doubles as an eSATA port for connecting high-speed storage devices. An ExpressCard slot, a five-format memory-card reader, and an HP Expansion Port 3 connector are along the left, and a DVD burner with LightScribe labeling technology is on the right. Two headphone jacks are up front. The large 250GB hard drive is preloaded with Windows Vista Home Premium.

The Pavilion comes with a 2GHz Core 2 Duo T5800 processor, 2GB of memory, and integrated Intel GMA 4500MHD graphics. Performance results were pretty much what you'd expect from a budget notebook, although its Futuremark PCMark Vantage score of 2,575 was slightly below average. Its Windows Media Encoding score of 7 minutes and 47 seconds was more than a minute faster than that of the Lenovo ThinkPad SL500, though, and its iTunes conversion score (5 minutes and 6 seconds) was close behind the Fujitsu LifeBook A1110's 5 minutes. At its native resolution, the Pavilion managed a Futuremark 3DMark06 score of 759, which indicates you'll have to settle for low-detail gaming. On the downside, the battery lasted only 1 hour and 54 minutes, and the system needed a lengthy 1 minute and 27 seconds to boot into Windows.

The HP Pavilion dv5-1140us won't wow you with killer speed, but it's certainly one of the most feature-rich budget notebooks around.

Lenovo ThinkPad SL500

Editors' Rating: 7.8 out of 10

Pros: Good business features; excellent keyboard; HDMI port

Cons: Heavy; no media-control buttons
AT JUST \$749, the Lenovo ThinkPad SL500 offers business-friendly technologies, marketed under the "ThinkVantage" moniker. A solid performer, this system will appeal to budget-minded professionals.

In keeping with ThinkPad tradition,

on other ThinkPads. Still, we love having both the TrackPoint pointing stick and the touch pad and the fact that each has its own set of buttons. Accident-prone typists can rest easy knowing that the keyboard is spill-resistant; there's even a draining mechanism that directs spilled liquids away from internal components, funneling them out the bottom of the chassis.

A fingerprint reader is on the right side of the deck: On the left, you'll



the SL500 comes in just black. Unlike most ThinkPad models, however, the SL500 sports a high-gloss lid. At 6.4 pounds, it's more than a pound heavier than Acer's entry, but it's still light enough to carry without straining your shoulder. Lifting the lid reveals a 15.4-inch wide-screen display featuring Lenovo's VibrantView technology, which provides a crisp, clear picture without being overly reflective. The 1.3-megapixel Webcam and microphone array embedded in the upper bezel use Roxio Media Import to capture photos and video.

Typing on a ThinkPad is always a pleasure. The keyboard is roomy and comfortable, and the keys are evenly spaced and responsive, but we were a little disappointed that this model doesn't offer the keyboard light found

find a blue LenovoCare button, as well as volume controls. The LenovoCare button opens up a screen where you can access Lenovo's ThinkVantage services, including the Active Protection hard drive security system and System Update utility. The speakers are adequate for casual listening as long as you don't crank up the volume.

The SL500 has HDMI and VGA video outputs, along with four USB ports, a FireWire port, and side-mounted headphone and microphone jacks. You'll also find SD-card and ExpressCard slots. The 160GB shock-mounted hard drive comes with Windows Vista Home Premium, ThinkVantage diagnostic tools and utilities, and Roxio Creator Small Business Edition DVD-burning software.

Despite its slow processor (a 1.8GHz

Budget-PC Blowout

Sony
VAIO VGN-
NS160E/S



Intel Core 2 Duo T5670) and 2GB of memory, the SL500 managed to keep pace with (and sometimes outperform) the other budget notebooks here. Its Futuremark PCMark Vantage score of 2,811 was 236 points higher than that of the HP Pavilion dv5-1140us, which came with a T5800 (2GHz) processor, though the SL500 trailed the Fujitsu LifeBook A1110 (which also came with a T5800) by 231 points.

Powered by Intel GMA 4500MHD graphics and set to its native resolution, the SL500 delivered a score of 835 on our Futuremark 3DMark06 test, about average for a budget system. Battery life was also middle-of-the-road: 2 hours and 12 seconds on our DVD battery-rundown test. Its iTunes (5 minutes

and 39 seconds) and Windows Media (8 minutes and 55 seconds) encoding times were quite slow, however.

The Lenovo ThinkPad SL500 offers a wealth of business-centric features—as well as a few unexpected perks—at a budget-friendly price. If you've always wanted a ThinkPad but found them too expensive, this system is for you.

Sony VAIO VGN-NS160E/S

Editors' Rating: **7.5** out of 10

Pros: Blu-ray drive; good software bundle; attractive display

Cons: No HDMI port; no Webcam

LIKE MOST budget notebooks, Sony's \$779.99 VAIO VGN-NS160E/S sacrifices a few features to keep costs down, but it has something that most low-cost systems don't: a Blu-ray

drive. Throw in some of Sony's slick entertainment software, and you've got an appealing multimedia notebook for under \$800.

Sporting a Granite Silver finish with a textured look and feel, the 6.4-pound NS160E/S is unusual in that it shuns the popular high-gloss look found on many of today's notebooks. The system's 15.4-inch, 1,280x800 display, based on Sony's XBrite-Eco technology, delivered vivid colors and matched up nicely with the included Blu-ray/DVD combo drive. We fired up Resident Evil: Extinction on Blu-ray Disc and were treated to a highly detailed, crystal-clear picture. The screen provided a wide viewing range, too. We were disappointed by the lack of a Webcam, though.

The keyboard deck is roomy and uncluttered, and the two-button touch pad is pleasingly wide and provides smooth cursor control. We appreciate the use of slightly larger-than-normal keys on the keyboard but miss the convenience of the media-control buttons found on nearly every consumer notebook these days. Instead, this VAIO has an AV Mode button that launches an onscreen media-control panel, and next to that is an audio mute button. The speakers located above the keyboard are loud and can pump out high volume without distortion, but they lack bass tones.

Unlike the Gateway M-7818u, HP Pavilion dv5-1140us, and Lenovo ThinkPad SL500 notebooks, this VAIO does not provide an HDMI port. However, it does offer four USB ports

LAPTOPS: FEATURE COMPARISON

	Acer Extensa 4630Z	Fujitsu LifeBook A1110	Gateway M-7818u	HP Pavilion dv5-1140us	Lenovo ThinkPad SL500	Sony VAIO VGN-NS160E/S
EDITORS' RATING	7.0	7.3	7.8	8.3	7.8	7.5
CONFIGURATION						
Processor	2GHz Pentium Dual-Core T3200	2GHz Core 2 Duo T5800	2GHz Core 2 Duo T5800	2GHz Core 2 Duo T5800	1.8GHz Core 2 Duo T5670	2GHz Pentium Dual-Core T3200
Memory	2GB DDR2	3GB DDR2	4GB DDR2	2GB DDR2	2GB DDR2	2GB DDR2
Hard Drive	160GB	250GB	250GB	250GB	160GB	160GB
Optical Drive	DVD±RW	DVD±RW	DVD±RW	DVD±RW	DVD±RW	Blu-ray reader/DVD±RW
Graphics	Intel GMA 4500M	Intel GMA 4500MHD	Intel GMA 4500MHD	Intel GMA 4500MHD	Intel GMA 4500MHD	Intel GMA 4500MHD
Screen Size	14.1-inch TFT	15.4-inch TFT	15.4-inch TFT	15.4-inch TFT	15.4-inch TFT	15.4-inch TFT
Weight	5.2 pounds	6.3 pounds	6.3 pounds	5.8 pounds	6.4 pounds	6.4 pounds
Operating System	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium
Warranty	One year	One year	One year	One year	One year	One year
COMPANY	Acer us.acer.com	Fujitsu Computer Systems www.fujitsupc.com	Gateway www.gateway.com	Hewlett-Packard www.hp.com	Lenovo www.lenovo.com	Sony Electronics www.sonystyle.com
DIRECT PRICE	\$549	\$799	\$779.99	\$800	\$749	\$779.99

✓ = Editors' Choice

and a FireWire port, as well as a VGA output and ExpressCard, SD, and Memory Stick Pro slots. The 160GB hard drive comes with Windows Vista Home Premium and a good selection of Sony's multimedia programs, including its Movie Story movie-creation software and Music Box music-cataloging application. You also get Sony's Click to Disc Editor for editing multimedia content and burning it to recordable media.

At the heart of the NS160E/S is an Intel Pentium Dual Core T3200 CPU running at 2GHz with 2GB of system memory, which

turned in a Futuremark 3DMark06 score of 822 while running in native-resolution mode, which indicates that this system is not well-suited for 3D gaming. The VAIO lasted 2 hours and 10 minutes on our DVD battery-rundown test, which means you should be able to get through a full movie without requiring a recharge.

The Sony VAIO VGN-NS160E/S has a few shortcomings, but its crisp display, Blu-ray drive, and spacious keyboard make them easy to overlook.

Toshiba Satellite L305-S5902

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

Pros: Great price; eye-catching, glossy display

Cons: Lacks 802.11n; short on ports

PRICED AT \$599.99, Toshiba's Satellite L305-S5902 is a no-frills, 15-inch notebook designed to meet your basic computing needs. Though this system is very affordable, it's light on features.

The 5.5-pound L305 sports the company's Onyx Blue color scheme and Fusion design, which is neither flashy nor dull but, like most glossy finishes, attracts its share of fingerprint smears. Beneath the lid,

the shiny motif continues; the 15.4-inch display (1,280x800) has a high-gloss coating, and the keyboard deck is done up in piano-black trim. The full-size keyboard is roomy, and the keys are well-spaced and responsive. Above the keyboard are six multimedia buttons and a power switch, and a two-button touch-pad controller is below. Whereas most touch pads are recessed into the deck, this one is slightly elevated and has a textured finish, which gives you more control over the cursor. A set of activity LEDs is embedded in the front bezel, and just below them are a Wi-Fi switch, headphone and microphone jacks, a volume wheel, and a four-format card reader.

The L305 has three USB ports, a VGA connector, and an ExpressCard slot, but that's all you get in terms of expansion and I/O features. We

would have liked to see an HDMI port, or at the very least, a FireWire port. In fact, this model lacks quite a few features that are standard-issue on most budget notebooks, including a Webcam and Draft N Wi-Fi. Instead, the L305 comes with an Atheros 802.11b/g adapter. The 160GB hard drive is loaded with Windows Vista Home Premium and a handful of Toshiba multimedia programs and diagnostic utilities.

We watched *Pirates of the Caribbean: The Curse of the Black Pearl* and were pleased with the image quality. Colors were bold, and the picture was bright and clear. The screen was a bit reflective, but that's a common trait among notebooks with glossy displays. More noticeable was the poor audio quality: The integrated speakers lacked volume and sounded extremely thin.

The L305 is outfitted with an Intel Pentium Dual Core T3200 processor, which runs at 2GHz but offers only 1MB of L2 cache and has a 667MHz front-side bus (FSB). By comparison, the Fujitsu, Gateway, and HP notebooks are configured with the T5800 CPU, which also runs at 2GHz but has an 800MHz FSB and twice the amount of L2 cache.

Armed with the T3200 CPU, Intel's GMA 4500M graphics controller, and 2GB of RAM, the L305 delivered performance that was mostly unimpressive. Its score of 2,524 in Futuremark PCMark Vantage was more than 500 points below that of the LifeBook A1110, and its Futuremark 3DMark06 score of 709 trailed the Gateway M-7818u's by 190 points. On the plus side, the machine needed only 43 seconds to complete the Windows boot sequence, and its iTunes conversion time of 8 minutes and 12 seconds was good for its size and price. A battery-rundown time of 2 hours and 3 minutes was average for this class of notebook.

Despite its lackluster performance, the Toshiba Satellite L305-S5902 is more than capable of handling the basics, such as e-mail, Web surfing, and light multimedia duty, and its low price will appeal to budget-conscious consumers. Just don't expect a lot of features with this model.



combined to deliver mediocre performance across the board. A Futuremark PCMark Vantage score of 2,766 lagged behind that of the Fujitsu LifeBook A1110 by 276 points but bettered the Toshiba Satellite L305-S5902 by 242 points. Its Windows Media (8 minutes and 21 seconds) and iTunes (5 minutes and 25 seconds) encoding times were also merely average, and it needed 1 minute and 12 seconds to boot into Windows.

The integrated Intel GMA 4500MHD graphics controller

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COMPUTER SHOPPER'S EDITORS SOLVE YOUR TOUGHEST TECH PROBLEMS

BIOS BAFFLER

I'm installing a 200GB Seagate Barracuda hard drive in my PC. The disk is visible in the BIOS, but when I run Windows XP Professional SP2, I get the error message "Setup did not find any hard disk installed in your computer." The interface of my drive is ATA (IDE).

"PAULAZIZ" VIA THE
COMPUTERSHOPPER.COM FORUMS



Assistant Editor
Matt Safford jumps
to the rescue:

First, make sure the Barracuda drive's jumper is set to

Master, assuming that the new drive is your only hard drive and the one on which you intend to install XP Professional. Examine the back of the drive; you'll find a small area between the four-pin Molex power connector and the IDE cable connector with a grid of 10 pins. A tiny plastic bridge, or "jumper," should be joining two of the pins. Make sure the jumper covers the correct pair of pins to designate the drive as a Master drive; the proper configuration should appear on a diagram on the label atop the drive. (If you can't grasp the jumper with your fingers, use tweezers or needle-nose pliers.) Once the jumper is set correctly to Master, and you've made sure the IDE and power connectors are seated snugly, try booting up again.

If that doesn't work, make sure SATA support is set to IDE or Compatibility mode in your BIOS before booting. (You access your PC's BIOS, or "startup" screen, via a key press indicated on your PC's initial boot screen.) If you aren't running any SATA drives, and assuming the BIOS

lets you, you could also try simply disabling this option. Once your OS setup is complete and everything is running smoothly, you can then go back into your BIOS and re-enable SATA support.

OUT OF TOUCH

I'm facing a problem with my Acer laptop, which uses Windows XP. To remove dirt from its keyboard, I tilted the notebook upside down and ran my finger through the keys. Some dirt particles did come out, but my touch pad has now gone out of order, and there is no cursor movement. During the operation—which, by mistake, was done with the laptop running—I didn't touch the touch pad at all.

I've been forced to buy a USB mouse to run XP. It appears that no other damage has occurred to the machine. Can the touch pad be repaired? I tried to rectify the problem by reinstalling the touch-pad software, but it didn't help.

"JGPAULI23" VIA THE
COMPUTERSHOPPER.COM FORUMS



Associate Editor
Les. L. Shu touches
on the subject:

The easiest solution, which you've already found, is to get yourself a

USB laptop mouse and call it a day. But before we write your touch pad a eulogy, let's try some troubleshooting methods that other users have found successful.

Try enabling/disabling the touch pad by pressing the function (Fn) key and the F7 key simultaneously. Perhaps, when you were cleaning out your keyboard, you inadvertently pushed this key combination and

disabled the touch pad. (Some laptops let you lock the touch pad to prevent you from inadvertently activating it when you're using only the keyboard.) This function is governed by your system's BIOS, not Windows, so you may need to pull up your BIOS menu to see which keys have been assigned to it. (Acer tends to use the Fn+F7 keys.)

No luck? Check Windows' Device Manager or Control Panel to see if it recognizes the touch pad. When you tilted your laptop upside down, it's possible you may have accidentally loosened the touch pad's connection to the system's motherboard. Since you mentioned that there's nothing wrong with the rest of the computer and that you've already tried reinstalling the driver, you may have a physical problem with the hardware. But unless you're savvy (and daring) enough to dismantle the case and examine the connection, take your laptop to a professional.

One final set of possibilities: Some users online have reported that by simply disconnecting the USB mouse, unplugging the computer, and removing and reinstalling the battery, their touch pads came back to life. Also, try running the laptop on AC power without the battery installed and see if that makes a difference. It sounds like a joke, but some Acer users have reported operational problems due to a battery that's near the end of its life.

Hopefully, one of these solutions will get your touch pad working again. There's no easy way to replace the touch pad—if nothing else works, you'll have to send it back to the manufacturer.

C For more: computershopper.com/forums

TECH TRAIL MIX

I'm planning on hiking the 2,170 miles of the Appalachian Trail and want to document every step of the way. I'm looking for an ultralight laptop with loads of storage for all the HD digital video and HD digital stills I intend to shoot. Of course, laptop runtime is important, too, but couldn't that be increased by a lightweight solar panel draped over my 40-pound backpack? And is 500GB of storage really available for the scenario described?

RICK BRUSH



Senior Editor Sarah Anderson gives some tough advice:

First things first: You need a Panasonic Toughbook. I've

tested plenty of them over the years, and they have proven time and again to withstand rugged situations like the one you're about to embark upon. They also have very good battery life without weighing a ton.

That said, expect a little heft with a fully rugged notebook like the Toughbook-30. If you were going on a business trip, I'd recommend a 3-pound business-rugged Toughbook with 10 hours of battery life. But you're going to be facing the elements, and for that, a notebook that can survive some bumps and bruises needs to take priority over weight, hard drive capacity, and battery life.

I would start with the Toughbook-30, which has a 13.3-inch daylight-readable screen and complies with the MIL-STD-810 and IP54 standards (which means it can survive a 3-foot drop, extreme temperatures, moisture, dust, and vibration). It's also available with mobile broadband or Gobi, which can keep you connected wherever you can get a cell-phone signal. It weighs around 8 pounds—not exactly ultralight—and starts at a little over \$3,000. If this seems like overkill, check out the Toughbook 52, which has

many of the same features but isn't quite as rugged. Models start around \$1,700 and weigh about a pound less.

None of the Toughbooks offers 500GB of storage. The Toughbook-30 offers just 80GB. I would recommend budgeting for LaCie's 500GB Rugged Hard Disk (\$219). It's small and lightweight (8.8 ounces), and it can handle the great outdoors. It has a shock-resistant sleeve, a protective aluminum shell, and rubber bumpers inside to protect the drive.

As for the solar panel, companies like Eclipse Solar Gear (www.eclipsesolargear.com) and Voltaic Systems (www.voltaicsystems.com) sell backpacks with solar panels, but most can only recharge gadgets like cell phones, not laptops. Voltaic has announced a \$599 bag, the Generator, that claims to be able to charge a laptop after a full day in the sun. You could also go with a panel over your backpack, as you suggest, but these tend to be cumbersome. I'd recommend the Solaris 26 (\$390 at Sierra Solar, www.sierrasolar.com), which weighs

28 ounces but is 21.5x37.5 inches. That seems big until you compare it with the



Panasonic Toughbook

SolarRoll 14 from Brunton (www.brunton.com), which measures just 12 inches wide but 57 inches long. (It weighs only 17 ounces but costs \$655.) You might be able to drape it over your backpack, but unless you're really tall, it would then drag on the ground behind you.

Regardless of the equipment you buy, good luck on your adventure, and safe travels!

SEARCH AND SCRUB

Is it possible to delete search-engine queries (for example, in Google, Ask.com, or Ask Jeeves)?

KRISTINE SIEMENS



Managing Editor Jonathan Rougeot erases your tracks:

There are several ways to delete your search-engine history. The

first and most thorough is through your browser. In Firefox, go to Tools > Options > Privacy, and click on the Settings button under Private Data. Make sure that the entry "Saved Form and Search History" is checked, then click OK. Then, to clear your current form history, hit the Clear Now button under Private Data. To do the same in Internet Explorer, open the Tools menu and click on Internet Options. Under "Browsing history," click Delete, then hit the button that says "Delete forms"—you're all set.

Once you've deleted this information, you can stop your browser from remembering it in the future. To do this in Firefox, open the Tools menu and choose Options > Privacy. In the resulting window, find the History section, which contains several checkbox items. The first offers the option of keeping a history of every Web page you've visited for a time period you specify; the second lets you tell your browser to remember what you've entered in forms and in the search bar. This second option is the one to deal with. Uncheck this box, and your browser won't remember what you've entered in form boxes, including search-engine queries. In Internet Explorer, go to Tools > Internet Options and click on the Content tab. Under AutoComplete, click the Settings button and make sure the box next to Forms is not checked.

Some search engines allow you to delete your history within your profile on the site. Ask.com, for example, offers an option called the AskEraser, which automatically deletes all of your search activity.

Either of these methods should guarantee that your search history stays private.



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How to Add a Second Monitor

BY MATTHEW MURRAY



IN RECENT YEARS, wide-screen displays have diminished the need for multiple monitors on your desktop—their extra width provides plenty of space for comparing documents, arranging windows, or viewing particularly unruly spreadsheets. But installing a second monitor can still provide some hard-to-beat freedoms. On some desks, it's easier to arrange two smaller displays than one very wide one. Also, you can maximize frequently used programs on the second screen, leaving your first monitor clear to the desktop. And many games let you use your second display to show crucial information while the first remains focused on the action.

You'll marvel at how much having two—or more—monitors can better organize your computing life. Procure a second monitor, and you're ready to go. (Though it's not strictly necessary, for best results, your second monitor should have the same diagonal screen size as the first; if they're both flat panels, a matching native resolution is ideal, too.)

C For more: computershopper.com/howto

1 Make the hardware hookups

For you to use two monitors, both must be able to physically connect to your computer. Many PCs are built on motherboards with integrated graphics and more than one monitor output; others may have a graphics card installed that has dual monitor connectors. If your computer falls into either category, you're set—skip to the last paragraph of this step. If not, you first need to upgrade your hardware to support dual displays.

The easiest way is by installing a graphics card with two monitor connectors. Just make sure when shopping for the card that the kind of connectors it has matches those on your monitors. A look at the monitors' manuals, or at where you plug in the various cords and cables, should give you the information you need. Almost all new cards today come with two DVI ports, or one DVI port and one VGA port, and some provide a DVI-to-VGA adapter in the box. (These adapters are also available separately.) You may also see a DisplayPort connector on some modern cards, but this connection type isn't widely used yet.

Installing the new card is simple. Turn off your computer, unplug the power cable, and open the case. You're looking for the PCI Express (PCIe) x16 slot, the longest slot on the motherboard. (At the slot's inward-facing end, you should see a small release lever.) Assuming there isn't a



When installing a graphics card, line up the gold-colored connectors with the long PCIe x16 slot and push the card into place until it's secure.

card in the slot already, free up the slot by removing the metal spacer where the slot intersects with the PC's rear panel. You may have to unscrew the spacer with a Phillips screwdriver, though some cases employ restraining clips instead. (Note: Some extra-wide video cards require you to remove two spacers rather than just one.)

Once you have a slot open, align the back edge of the video card (the part with the monitor connectors) with the open space and carefully push the card into the slot until it's secure and evenly seated. If it's not fully inserted, you could run into problems when you turn your computer on again.

Some video cards draw all the power they need through the PCIe expansion slot, but others—especially high-end

models—need a direct feed from the power supply, too. If your card does, find a free six- or eight-pin connector from the power supply, and connect it to the appropriate jack on your card, usually located along the card's inner-most edge. Next, screw the card into the slot (or, if you have a tool-free case, secure it using the case's mechanism), close up the system, and replace the power cable you unplugged earlier.

Connect both of your monitors to the video connectors on your computer and/or video card, and to power outlets. Turn them on, then boot up your computer.

2 Install drivers, if needed

If, when booting up, you notice that your computer is displaying the same image on both monitors, then you've done everything right. If you installed a graphics card in the previous step, you'll need to install the appropriate drivers for it. Chances are the card came with a disc that contains the software you need; pop it into the optical drive and follow the instructions. Alternately, you can ensure that you have the most recent drivers by downloading the latest versions from the video chipset's manufacturer; that's probably either ATI (ati.amd.com) or Nvidia (www.nvidia.com). If you go this route, simply double-click the file you downloaded, and the software should guide you through installation.

3 Set up your second monitor

Once your second monitor is connected, you need to instruct Windows how to recognize it. If your computer is running Windows Vista, right-click on the desktop, then click on Display Settings in the "Personalize appearance and sound" window that comes up. If you're using Windows XP, right-click on the desktop to bring up the Display Properties window, then click on the Settings tab.

In either version of Windows, once you're in the appro-

priate screen, you need to tell Windows not only how to see the second monitor, but what to do with it. On the visual representation of your setup, one monitor will be big, highlighted, and labeled "1" (this is your main monitor); your secondary monitor will appear smaller and dark. Right-click the secondary display and select "Attached" to activate it, then click the checkbox that says "Extend my Windows desktop onto this monitor."

Use the slider to adjust the second screen's resolution. Under most circumstances, having each monitor set to its native resolution will minimize disorientation when moving or looking from one to another. (Also remember that LCDs tend to look their best at their native resolutions.) Even so, you can experiment with different resolution combinations until you find one to your liking.

Once you're done, click Apply. Your second monitor is now ready to use.

4 Adjust your monitor layout

This step is optional, but if you don't want to have to move your cursor onto the second monitor by navigating off the upper-right edge of the screen, as the second monitor's default position dictates, you'll need to change its virtual positioning.

From the same window in which you set up the monitor in Step 3, click on your secondary monitor and drag it to its new position. You'll be informed of the exact pixel location of the second monitor as you move it, and it will "snap" to the nearest edge of the first monitor to automatically create an orderly layout (though you can stagger the two displays messily, if you so desire).

You can "move" the monitor to a position above, below, or to the left or right of your current monitor. For obvious reasons, we recommend having the physical monitor in the same position as its virtual counterpart, but this isn't essential if another setup works better for you.



5 Add even more monitors?

Today's cutting-edge graphics cards make it possible for systems using them to run three, four, or even more monitors. If your PC has two or more graphics cards set up in Nvidia's Scalable Link Interface (SLI) or ATI's CrossFireX configuration, and each of those cards has multiple video outputs, you could be well on your way to a wall of displays. You'll need enough video jacks, cables, and electricity to keep them all running, but you would set them up the same way you did your second monitor.

Just make sure to arrange them sensibly so you'll always know where you're working—it can be easy to get lost between screens. But once you start working with more than one monitor, you'll wonder how you did without them for so long.



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Core i7 cool

Noctua's \$65 **NH-U12P SE1366** is one of the first third-party CPU coolers we've seen that is compatible with Intel's blazing new Core i7 processors.

With a pair of quiet 120mm fans, a copper base, and six heat pipes, it certainly seems up to the task of keeping your CPU cores from smoking. But if you own a previous version of this cooler, Noctua will send you a free SecuFirm2 mounting kit to make it Core i7-compatible. Now *that's* what we call cool. Noctua, www.noctua.at



Masterful multimedia

Antec is best known for its computer cases, but its recent foray into drive-bay devices impressed us. Its top-of-the-line \$120 **Veris Multimedia Station Premier** occupies two 5.25-inch drive bays, offering up a nifty LCD, two large control knobs, and a host of other media-centric buttons. The kit comes complete with a large, well-designed infrared remote, so you can control your PC-bound media from afar. Also included is iMedian media-center software for organizing and navigating all your content. We only wish the screen came in colors other than cool blue. Antec, www.antec.com

Dual drive dock

As PC cases get smaller and smaller, devices like the **Vizo Ares II** drive-bay rack will no doubt become more popular. Occupying a single 3.5-inch bay, this \$40 device leaves space for two 2.5-inch Serial ATA (SATA) laptop hard drives or solid-state drives. Drives slide in and out on rails, with no need for tools; removing a drive is as easy as pressing a button and pulling it out. It's particularly useful if your motherboard supports hot-swappable SATA drives and you have several extra laptop drives lying dormant. Vizo Technology, www.vizo.com.tw



 For more: computershopper.com/build-your-own



Port-packing power

Palit calls its **Revolution 700 Deluxe** the world's fastest graphics card. This beastly board—with its two ATI Radeon HD 4870 GPUs overclocked to 750MHz and 2GB of GDDR5 memory running at a scorching 3,800MHz—has the hardware to contend for that lofty spot. Plus, with DisplayPort, dual-link DVI, HDMI, and VGA ports, as well as a maximum resolution of 2,560x1,600, this card will connect to just about any display, producing impressive DirectX 10.1 (Shader Model 4.1) graphics. But be warned: This massive card is so wide, it eats up three expansion slots. You may have to move into a bigger case! Palit Multimedia, www.palit.biz



Quad-card power

Seasonic's **M12D** modular power supply offers a DC-to-DC converter design, which the company claims should provide enhanced system stability. And it's 80 Plus Silver-certified, so you can feel eco-friendly while fragging your friends. The supply also comes with four PCI Express (PCIe) connectors, for powering up to four graphics cards. Models are available in 750-watt (\$199) and 850-watt (\$299) varieties. If you're aiming to use four cards, we recommend buying the latter wattage—and getting a second job. Seasonic U.S.A., www.seasonicusa.com

Externally excellent

It might not look like much, but the **SilverStone Clear CMOS** will save tweakers and overclockers a lot of time and trouble. Mounting in a rear expansion slot, it lets you clear your PC's CMOS after a failed overclocking attempt or similar mishap without having to crack open your PC case, move around components, or fumble with jumpers. A red flip-up cover prevents accidental resets, and the whole thing costs just \$10. If only solving all of life's minor annoyances were this inexpensive and easy. SilverStone Technology, www.silverstonetek.com



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I'm Todd Davis, CEO of LifeLock, and 457-55-5462 is my real Social Security number.

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A LOOK BACK INTO THE COMPUTER SHOPPER ARCHIVES

30 Years of Computer Shopper!

TO CELEBRATE our 30th anniversary year, we'll be digging back into the *Shopper* archives throughout 2009.

This month, our Wayback Machine halted in December

1986. The Cold War was raging, Iran-Contra had just hit the headlines, and the venerable Wang Laboratories unveiled the "ultimate laptop"—with a built-in printer!

Page 282 COMPUTER SHOPPER, DECEMBER 1986

Wang Announces Ultimate Laptop Computer

Wang Laboratories, Inc. has announced the new Wang Laptop Computer. The new product combines IBM and Wang desktop personal computing in one 14.25-pound unit designed for the mobile professional. It will be sold primarily by Wang's direct sales organization into major niche markets.

Priced at \$3,530 and available worldwide in November, the Wang LapTop Computer features the following as standard equipment: a quality, full-sized LCD (Liquid Crystal Display) supertwist screen, built-in 10MB hard disk storage, a full-sized keyboard, built-in communications and printer, and seamless IBM/Wang compatibility using the MS-DOS 3.2 operating system.

While many vendors offer portable computers, Wang's research indicates that most users do not want to sacrifice features simply to have the convenience of a "carry anywhere" unit. The Wang

Laptop prevents this from happening; it is a "no-compromise" system for mobile professionals who need office productivity tools while away from the office.

Win Burke, Director of Desktop Systems, said, "Industry analysts have long been predicting that the portable market would not take off until price came down and functionality became comparable to desktop systems. That time is now. The Wang LapTop offers the most comprehensive feature set of any products in its class and still can be easily carried. Better still, the LapTop's superior communications capabilities provide access to host systems, industry databases, and peripherals in both local and remote environments."

Distinguishing features of the Wang LapTop Computer include:

- The 8086-compatible 16-bit CMOS microprocessor

operating at 8MHz

- 512KB of RAM expandable to 1MB via an optional customer-installable card

- A weight of 14.25 pounds including display, printer, keyboard, Winchester drive, and battery

- A full-sized, 92-key keyboard with 16 programmable function keys, consistent with user expectations for touch typing and word processing performance

- A new supertwist LCD whose resolution is twice as crisp as standard LCD displays

- A built-in, near-letter-quality printer—the Wang LapTop is the only lightweight portable that offers this feature

- A 10MB fixed internal disk, eliminating the need to fuss with diskettes or floppy drives while on the road—the Wang LapTop is one of only a handful of portables that offer an internal hard disk drive; optional 3.5 inch, 720KB and 5.25 inch, 360KB floppy drives for loading application software and off-line storage

- The choice of two Hayes-compatible internal modems: 300/1200 baud and 300/1200/2400 baud—the Wang LapTop is the only portable offering these options



The Wang Laptop has it all!

ing these options

- Access to a complete document creation and routing system with Wang Word Processing, Wang Systems Networking to the VS, and Wang Office

- IBM PC XT compatibility
- IBM color graphics

adapter (CGA) compatibility.

For additional information contact Wang Laboratories, One Industrial Avenue, Lowell, MA 01851; (617) 459-5000.

Mention that you read about it in *Computer Shopper*.

In hardware terms, the \$3,530 Wang LapTop Computer was a more complete mobile-computing device for its time than anything comparable today.

Laptop Computer. The new product combines IBM and Wang desktop personal computing in one 14.25-pound unit designed for the mobile professional. It will be sold primar-

Mobile professionals, apparently, were very brawny back then!

crisp as standard LCD displays

• A built-in, near-letter-quality printer—the Wang LapTop is the only lightweight portable that offers this feature

- A 10MB fixed internal**

The built-in thermal printer resided above the keyboard and output to thermal paper at 180dpi.

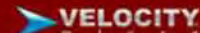
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Maingear recommends Windows Vista® Home Premium. *System shown with additional accessories.

Fusing technology with rapid fire.



Discover the power of a massive arsenal.

Ignite your gaming experience with the powerful engine of AMD Phenom™ II Processors. Crank up the pace with incredibly responsive gameplay. Get crushing performance. And reap the reward. That's the unbeatable combination we call Fusion. You'll call it sweet revenge.

With AMD Phenom™ II Processors you'll get:

- Leading-edge PC system performance with Direct Connect Architecture
- Dramatic application performance improvements with superior system throughput and low latency with integrated dual-channel DDR2 memory controller with up to DDR2-1066 support — all for a better PC experience
- Superior 3D graphics performance with the incredible system agility provided by HyperTransport™ 3.0 technology

AMD Phenom™ II available 01/08/09 at:



AMD
The future is fusion

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The AMD Fusion for Gaming utility can turn your PC into a lean, mean gaming machine. Temporarily shutting down background processes, boosting performance, and letting you select profiles for aggressive optimizations so you can quickly get down to serious business – gaming.

My Favourite Game - Windows

File Edit Game Help

My Favourite Game

Name	ID	Type	Date	File Size	Status
Adventure	1	Role w/ Profile	1/2/2004 12:00 AM	17.00 MB	
Puzzle	2	Theme w/ Profile	1/2/2004 12:00 AM	17.00 MB	
Event	3	Role w/ Profile	1/2/2004 12:00 AM	17.00 MB	

-
- New Profile**
- Profile Name:
- Profile Description:
- Hardware Configuration
- Software Configuration
- ☐ IIS6.0 Server
 - ☐ IIS6.0 WebSite
 - ☐ AT Cabinet Utility
 - ☐ Intel Wire Routerless
- Applications Exempted
- ☐ Background Intelligent Transfer Service
 - ☐ New Flowing Engine
 - ☐ DMS Key Institute
 - ☐ DMS Event System
 - ☐ DMS System-Application
- ☐ Make this my default profile

AMD OverDrive™

-
- AMD** The future is fusion

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Introducing: The New AMD Phenom™ II Processor



Experience Life

Deliver an intensely visual experience that's a step up from dual-core with the leading-edge technology of the AMD Phenom™ X3 8000 Series triple-core processor. It's dual plus one, with the power to perform.

- More power to take advantage of graphically rich applications
- Improved multitasking to power your digital lifestyle
- An amazing HD computing experience when combined with an AMD 780-Series chipset and ATI Radeon™ HD 3200 graphics

X3



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Do it all.

AMD Phenom™ II processors have the power to do it all. Featuring next-generation quad-core design, they [AMD Phenom™ II processors] crush even the most demanding tasks. So design it, render it, play it, create it, stream it, HD it.

* With AMD Phenom™ II processors, if you can imagine it, you can do it.

in the Fast Lane

AMD Phenom™ X4 Quad-Core processor & AMD Phenom™ II processor
Performance at Your Fingertips:

- Power visually stunning digital media and entertainment
- Systems with DirectX®10.1 capability allow you to immerse yourself in a more realistic, high resolution gaming experience.
- Extreme total system bandwidth using HyperTransport™ 3.0 technology to experience 1080p high-definition video.
- Don't burn more power than you need with Cool 'n' Quiet™ 2.0 technology



www.amd.com

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Fusing technology with might.



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AMD Phenom™ II X4 Processor
• 920 \$1074
• 940 \$1109



GAMER FIRE 585

AMD Phenom™ II X4 Processor
• 920 \$1499
• 940 \$1534

ASUS® NVIDIA® 750a SLI™ Chipset Motherboard

GENUINE Windows® Vista™ Home Premium

Silent & Overclocking Proof CPU Cooling System

CoolerMaster® HAF 932 Gaming Case + 550W Power Supply

Corsair 4GB DDR2-800 Memory

500GB SATA II 7200RPM Hard Drive

ATI® Radeon™ HD 4850 512MB Video

LG® 20x Double Layer DVD±RW Drive, LG® 16x DVD-ROM Drive

High Definition 8 Channel Surround 3D Premium Sound

GB Ethernet LAN

600 Watt Surround Sound Speakers

Logitech Deluxe Keyboard & Optical Mouse

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Certified CPU Liquid Cooling System - Overclocking Proof

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LG® GGC-H20L BLU-RAY Reader Drive, LG® 16x DVD-ROM Drive

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ATI Radeon™ HD 4870 X2 Graphics

No compromise. The new benchmark for the ultimate graphics card in the world has arrived. Only gamers wanting maxed out resolutions with unheard of frame rates need apply. See how the latest games were meant to be seen. With up to 2 GB of GDDR5 memory, the ATI Radeon™ HD 4870 X2 is truly the king of the hill.

Get the ATI Radeon™ HD 4870 X2, for less than \$ 549.99*



"It's real name ought to be Butt Kicking Benchmark Buster because these cards are fast..."

Staff, Maximum PC

Go to www.amd.com/radeon to find out more.



* Suggested AMD retail price

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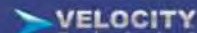
Fusing technology with power.



Accelerate a stunning visual experience beyond your media library.

AMD platform technology codenamed "Dragon" is a synthesis of power, strength, and wisdom — the fusion of the AMD Phenom™ II processor, the ATI Radeon™ HD 4870 graphics card, the AMD 790GX chipset, and AMD software that brings your digital media to life. Enjoy smooth HD video,¹ brilliant images, and immersive games with a new level of responsiveness and intensity. Whether you are creating, sharing, or enjoying the content, it's the PC platform that delivers an affordable high definition entertainment experience unlike any other. That's the unbeatable combination we call Fusion.

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Smooth Creations

Vigor Gaming

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¹ HD monitor required. As well, a Blu-ray drive is required for Blu-ray playback.

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1080p

5.1
CLASS-D
AMPLIFIER

HD
DVR
400 Hours of HD Recording.

HD TV
TUNER

COMPUTER SHOPPER

*"Stylish entertainment PC that plays
its home theater role well"*

-Bill O'Brien, May. 2008



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“AMD Hits 6.0 GHz, Steals Intel’s Core i7 Thunder”

“AMD is back. And yes, Intel’s Core i7 thunder has just been stolen completely. Core i7 is a great CPU, but quite expensive platform, with three channels of DDR3. AMD Phenom™ II comes out with 16 GB/s of memory bandwidth using only two channels, and clocking like there’s no tomorrow.”

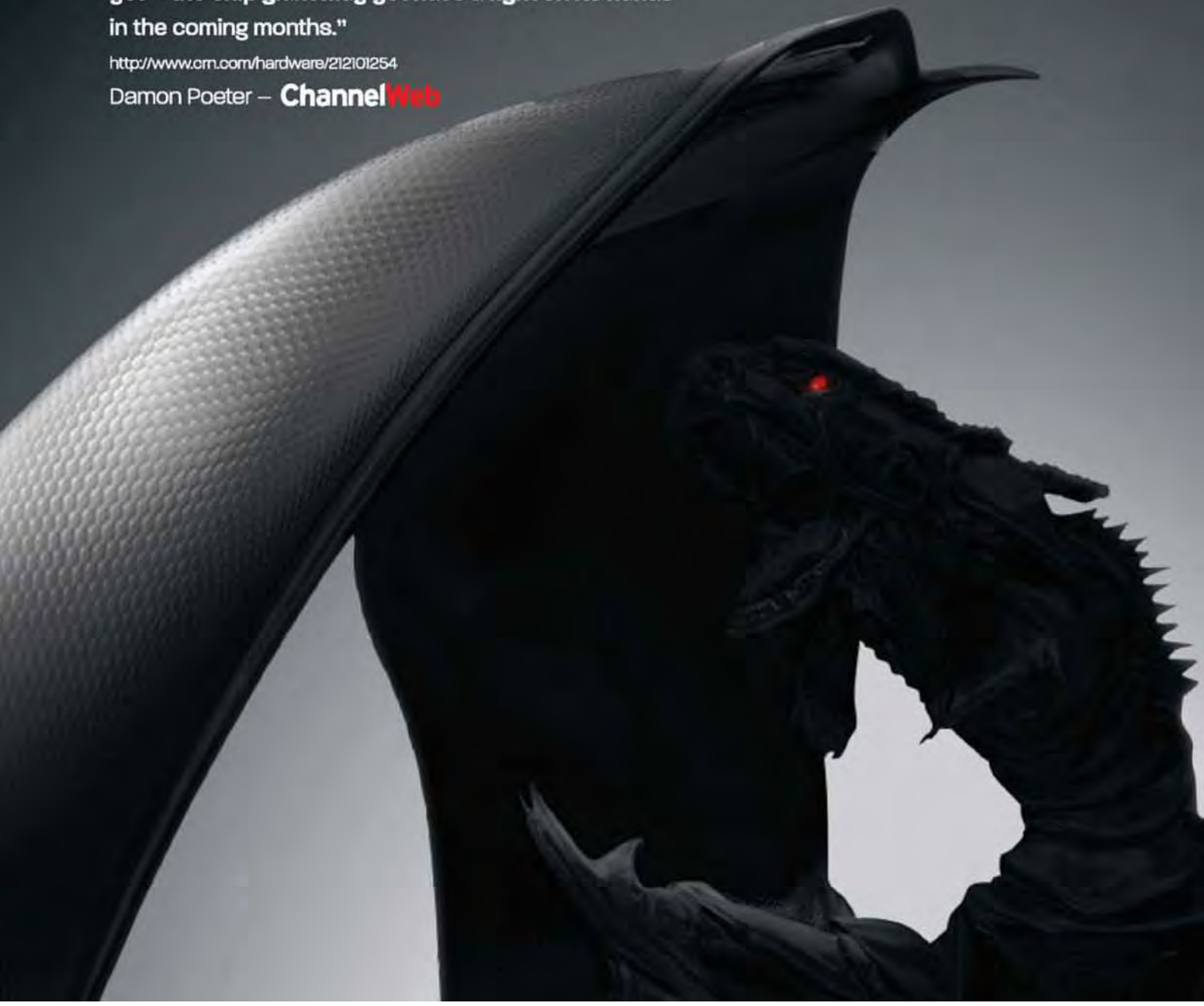
<http://theovalich.wordpress.com/2008/11/21/amd-hits-60-ghz-steals-intels-core-i7-thunder/>

Theo Valich – Theo’s Bright Side

“Hold the phone on handing the CPU performance crown to Intel’s new Core i7 processors just yet – the chip giant may yet have a fight on its hands in the coming months.”

<http://www.cm.com/hardware/212101254>

Damon Poeter – **ChannelWeb**



"Phenom™ II Runs Far Cry 2 at 5GHz+"

"The new core doesn't have overclocking problem, doesn't have TLB or any other cache related bug and it looks quite healthy and therefore deserves Phenom™ II brand."

http://www.fudzilla.com/index.php?option=com_content&task=view&id=10564&Itemid=1

Fudzilla – Fuad Abazovic, (international)

"...we recommend the Radeon™ HD 4870 X2, the fastest video card on the planet"

– Tom's Hardware

"AMD Phenom™ II Quad Core Overclocked to 6.3GHz"

<http://www.physorg.com/news146511302.html>



– John Messina

"What it will do is give AMD an extremely competitive chip for the meat of the mid-range market – what AMD calls the \$1,000 PC. With global economic recession on the cards, having the best value proposition on the market would be no bad thing."

<http://www.techradar.com/news/computing-components/processors/amd-demos-phenom-ii-at-5ghz-and-beyond-487683>



– Jeremy Laird, (UK outlet)

"AMD recently demonstrated the overclocking abilities of the new CPU using both dry ice and liquid nitrogen cooling ... with some stunning results."

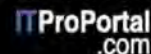
<http://www.custompc.co.uk/news/605226/phenom-ii-overclocked-to-6ghz.html>



– Ben Hardwidge, (UK outlet)

"AMD is betting on a complete platform aimed primarily at gamers to win marketshare. Dragon, as it is known, will combine AMD's CPU and Chipset with ATI's graphic firepower and will cost substantially less than Intel's equivalent platform."

<http://www.itproportal.com/articles/2008/11/23/amd-overclocks-phenom-ii-processor-63ghz/>



– IT Pro Portal (UK outlet)

"Hot damn! It looks like 2009 is shaping up to be a good year for AMD fan boys"

http://www.tweaktown.com/news/10655/amd_demonstrates_phenom_ii_running_at_6ghz/



– Cameron Wilmot, (international)



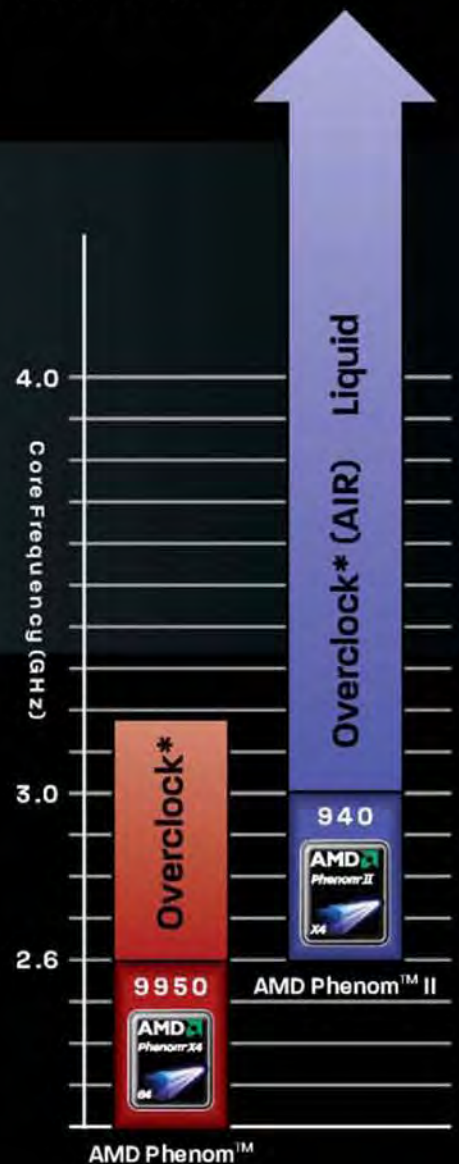
Introducing: The AMD Phenom™ II X4 940 Black Edition Processor

Experience maximum control. Experience Black

- Ready to Tune with Clock Multiplier Control and Advanced Clock Calibration*
- Get Unprecedented Control with AMD OverDrive™*
- The AMD Phenom™ II X4 940 Black Edition Processor: Massive Headroom

Processor Model	Freq.	TDP	Total Cache
AMD Phenom™ II X4 940	3.0Ghz	125W	8MB
AMD Phenom™ X4 9950	2.6Ghz	125W	4MB

AMD Phenom™ II X4 Processor



AMD 790 Series Chipset



ATI Radeon™ 4800 Series Graphics

*AMD's product warranty does not cover damage caused by overclocking, even when enabled via AMD OverDrive™ software.

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Massive headroom to accelerate performance - Introducing "Dragon"

The "Dragon" platform technology from AMD gives you power, strength, and the kick-ass technology needed to tune, tweak, and accelerate your PC gaming performance. The combination ATI Radeon™ HD 4870 graphics, AMD 790GX chipset and our NEW AMD Phenom™ II processors - plus AMD software that puts you in control. It's the PC platform that delivers an enthusiast experience unlike any other at a price that rocks. That's the unbeatable combination we call Fusion.



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